Improving the Provision of Nutrition Advice and Referral to Dietetics Professionals in the General Practice Setting

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Statement of Originality

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying subject to the provisions of the Copyright Act 1968.

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Lana J. Mitchell

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Publications

- Mitchell, L. J., Capra, S., & MacDonald-Wicks, L. (2009). Structural change in Medicare funding – Impact on the dietetics workforce. Nutrition & Dietetics, 66(3), 170-175.
- Mitchell, L. J. (2007). CDE Impact Revealed in Medicare EPC Data. Australian Diabetes Educator, 10(Supp 1), 6.
- Mitchell, L.J., MacDonald-Wicks, L., & Capra, S. (2010). Improving the delivery of nutrition advice in General Practice. Nutrition & Dietetics, 67(1), S9 (Abstract from 2010 DAA National Conference).

- Mitchell, L.J., MacDonald-Wicks, L., & Capra, S. (2010). Increasing referrals through enhanced relationships. Nutrition & Dietetics, 67(1), S49 (Abstract from 2010 DAA National Conference).
- Mitchell, L. J., Capra, S., & MacDonald-Wicks, L. (2007). Structural change in Medicare funding – what does it mean for dietetics? Nutrition & Dietetics, 64(Supp 1), S28. (Abstract from 2007 DAA National Conference)

List of Abbreviations

AH	Allied Health
AGPN	Australian General Practice Network (previously Australian Divisions of General Practice)
AHP	Allied Health Professional/Practitioner
APD	Accredited Practicing Dietitian
CDM	Chronic Disease Management
DAA	Dietitians Association of Australia
DGP	Division of General Practice
EPC	Enhanced Primary Care
FTE	Full-time equivalent
GP	General Practitioner (includes primary care physician and family physician)
HEARNET	Health Evaluation and Research Network
H-EPC	High EPC (practitioners from divisions providing a high number of dietetics Enhanced Primary Care consultations per population and/or number of dietetics professionals)
HUDGP	Hunter Urban Division of General Practice (named subsequently changed to GP Access)
L-EPC	Low EPC (practitioners from divisions providing a low number of dietetics Enhanced Primary Care consultations per population and/or number of dietetics professionals)
PCP	Primary care practitioner
PHI	Private Health Insurance
PN	Practice Nurse
PP	Private practice
SES	Socioeconomic status
SNAP	Smoking, Nutrition, Alcohol and Physical Activity

Glossary

Accredited Practicing Dietitian	The status granted by the Dietitians Association of Australia to qualified dietetics professionals who are engaged in continuing professional development
Allied health	As there are many definitions as to what allied health includes, for the sake of this thesis it will be limited to those professions covered by 'Allied Health Services Under Medicare' [Aboriginal Health Worker; Audiologist; Chiropractor; Diabetes Educator; Dietitian (Dietetics Professional); Exercise Physiologist; Mental Health Worker; Occupational therapist; Osteopath; Physiotherapist; Podiatrist; Psychologist; Speech Pathologist]
Allied Health Individual Services Under Medicare	Initially referred to as the 'Allied Health and Dental Care Initiative' which was introduced as part of the Government's Medicare Plus 'Strengthening Medicare' package; this commenced in July 2004 (Pratt, 2004; Senate Select Committee on Medicare Secretariat, 2004). As part of this initiative patients with a complex condition being treated under an approved care plan are eligible for rebates (Pratt, 2004).
Chronic condition	'A chronic medical condition is one that has been or is likely to be present for at least six months including, but not limited to, asthma, cancer, cardiovascular illness, diabetes mellitus, mental disorders, arthritis and musculoskeletal conditions' (pg 10) (Department of Health and Ageing, 2008)
Complex care needs	'A patient is considered to have complex care needs if they require ongoing care from a multidisciplinary team consisting of their GP and at least two other health care providers' (pg 10) (Department of Health and Ageing, 2008)
General Practice Activity in Australia data (BEACH program)	General Practice Activity in Australia data is taken from the BEACH program (Bettering the Evaluation And Care of Health), which is 'a continuous national study of general practice activity in Australia. It uses details of about 100,000 encounters between GPs and patients (about a 0.1% sample of all general practice encounters) from a random sample of approximately 1,000 recognised practising GPs from across the country…GP completes details for 100 consecutive GP–patient encounters on structured paper encounter forms...They each also provide information about themselves and their major practice.' (pg 2) (Britt, et al., 2008a)
General Practitioner (GP)	Also referred to primary care physician or family physician

GP Access	A Division of General Practice in NSW covering the regions of Newcastle, Newcastle West, Eastlakes, Westlakes and Maitland (previously titled Hunter Urban Division of General Practice)
Health Evaluation and Research Network (HEARNET)	A network established by the GP Access (HUDGP) to engage primary health practitioners in Primary Care research. Members of the network agreed to receive newsletters and other information about research projects
Interview Participants	Private practice dietetics professionals that participated in the Telephone Interview
Nutrition advice	Includes a range of activities related to discussion regarding nutrition, from raising awareness of nutrition through to in-depth counselling
Survey Participants	Private practice dietetics professionals that participated in the Online Survey

Publications arising from this thesis

Articles

1. Mitchell, L. J., Capra, S., & MacDonald-Wicks, L. (2009). Structural change in Medicare funding – Impact on the dietetics workforce. *Nutrition & Dietetics, 66*(3), 170-175.
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Abstracts

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Presentations

1. Increasing referrals through enhanced relationships, May 2010, DAA 28th National Conference.
2. Presentation of DAA Membership and Medicare data. Rural Dietitians meeting, February 2007, Tamworth
3. Presentation of Lifescripts© at John Hunter Hospital Dietetics Department case studies – Oct 2007
4. Work presented by Sandra Capra (PhD Supervisor) at DAA 25th National Conference 2007 - "Structural change through Medicare funding – what does it mean for Dietetics?"

Abstract

Good nutrition is relevant for every person, with the delivery of nutrition advice vital for optimising the populations' health, reducing risk of developing lifestyle diseases and managing the increasing numbers of people with chronic disease. The primary health care setting, specifically general practice, is an ideal location for the delivery of nutrition advice, as the majority of the population regularly accesses their GP; however, the barriers to the provision of nutrition advice and preventative care in this setting are extensive. Government initiatives have been developed to improve the delivery of lifestyle advice, including Lifescripts© and 'Allied Health Services under Medicare'. However, it is unclear what the most effective means of delivering nutrition advice in the general practice setting are.

Research in this thesis focused on evaluating the effectiveness of initiatives to increase and improve the provision of nutrition advice through the Lifescripts© implementation study, using General Practitioners (GPs), practice nurses (PNs), and patients. Baseline and follow-up questionnaires for GPs and PNs were developed around Lifescripts© training and implementation; the opinions of patients receiving Lifescripts© were also obtained using separate questionnaires and telephone interviews. Telephone interviews and an online survey were used to assess private practice (PP) dietetics professionals' opinions. Dietitians Association of Australia (DAA) membership data and Medicare Enhanced Primary Care (EPC) Allied Health (AH) consultations were also analysed. This research was combined to form four individual chapters evaluating: patient access to nutrition advice by GPs, PNs; access to nutrition advice provided by dietetics professionals; implementation of nutrition advice by GPs and PNs, specifically via Lifescripts©; and implementation of nutrition advice by dietetics professionals, in particular via the EPC Program.

GPs, PNs and dietetics professionals have key roles in providing nutrition advice in the general practice setting. GPs are the gatekeepers, believing nutrition is part of their role, and are trusted by patients. Practice nurses are approachable and supportive; however additional nutrition training is required. Dietetic professionals are the

acknowledged nutrition experts with the training to provide individualised complex nutrition advice to patients.

Lifescripts© are evidence based and should theoretically be effective in increasing the provision of nutrition advice. However, it is unclear if the implementation of Lifescripts in the general practice setting will be sufficient to overcome the well documented barriers to the implementation of nutrition advice in this setting, including time and lack of reimbursement. Poor recruitment of GP, PN and patient participants to the studies in this thesis, despite multiple recruitment strategies, highlights the difficulty of interventions into the general practice setting. 'Allied Health Services under Medicare' appears to be more effective, providing motivation for referral via structured pathways and reimbursement, utilises support from PNs, raises nutrition awareness via goal setting followed by expert nutrition advice.

Initiatives to improve the delivery of nutrition advice need to involve GPs, PNs and dietetics professionals; have clear pathways for the provision of advice and referral; be reimbursable; and condition specific. GPs should raise nutrition awareness with patients, while PNs provide scripted nutrition advice using decision trees. Dietitian referral provides access to in-depth, personalised advice. It is essential that general practice patients have access to effective nutrition interventions, for without this, improvements in health outcomes will not be possible.

Chapter 1

General introduction

1.1 Delivery of nutrition advice in general practice

General practice is an ideal location to be providing nutrition advice. However, it is often not utilised to its full potential. This is not surprising considering the many barriers that exist to health promotion and providing nutrition advice in the general practice setting. It is important to ascertain the most effective ways to deliver nutrition messages to general practice patients and how current efforts can be improved.

1.2 Thesis Summary

There are various avenues through which nutrition is being addressed with general practice patients; however, the most effective means of improving the delivery of nutrition advice in general practice is not adequately addressed in the literature. This thesis looks at nutrition service delivery in general practice through access to nutrition advice through GPs, PNs and referral to dietetics professionals. It also addresses the implementation of nutrition services via Lifescripts© for GPs and PNs, and the Medicare EPC Program for PP dietetics professionals. In doing this, this thesis aims to discover the activities which may be most effective. It does not seek to evaluate outcomes of nutrition service delivery, for without appropriate access and implementation a quality nutrition service cannot be attained.

This thesis draws upon Splett's model of 'the cascade of events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions' (Figure 1-1) (Splett, 1996) (also see Section 2.4). This can be used to evaluate systems issues and identify where the barriers exist for effective nutrition care.

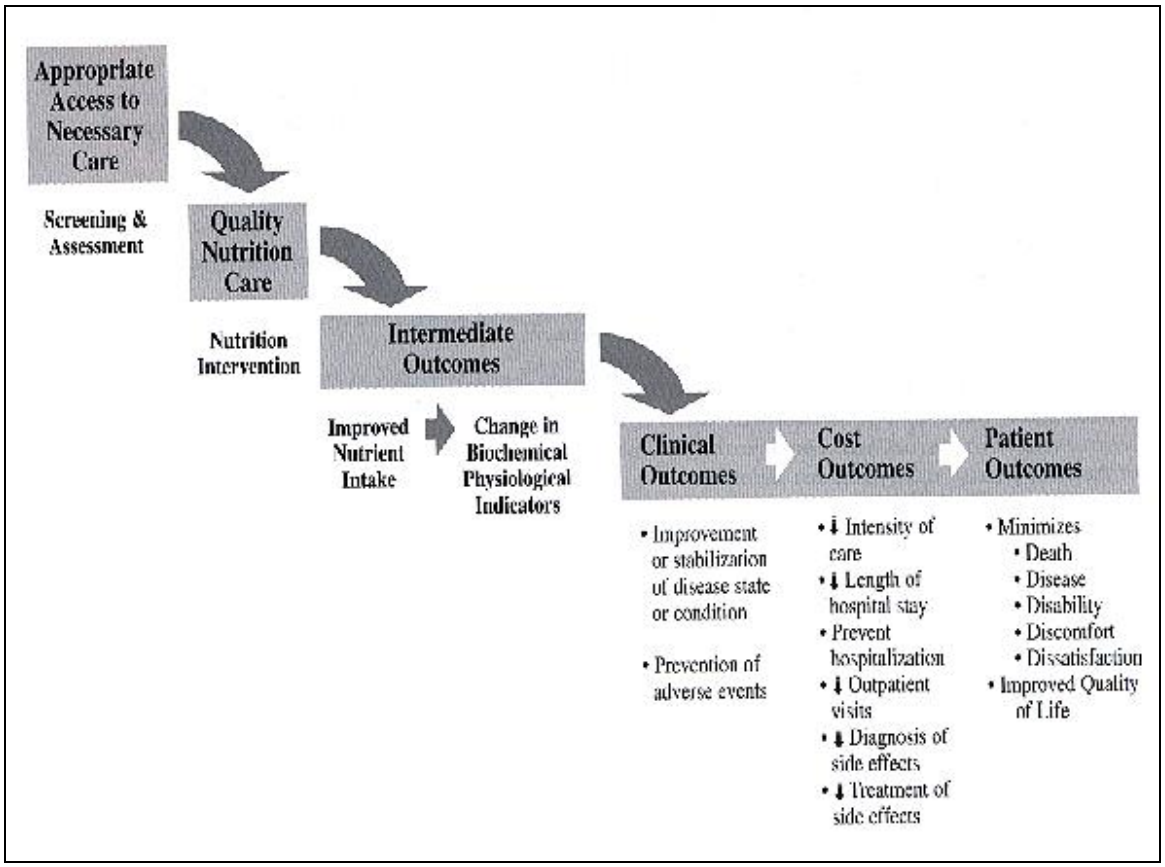


Figure 1-1 The cascade of events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions' (Splett, 1996); used with permission of Patrica L. Splett

The theoretical framework for this thesis has been developed from Splett's model (Figure 1-2). 'Appropriate access to necessary care' may be via GPs, PNs, and PP dietetics professionals. 'Provision of quality nutrition care' includes provision of nutrition advice by GPs and PNs (focusing on Lifescripts©) as well as PP dietetics professionals (focusing on the Medicare EPC Program). These Government initiatives have been developed to improve the delivery of nutrition advice in general practice and thus improve patient outcomes. However, their effectiveness needs to be evaluated. This thesis focuses on access (screening and assessment) and implementation (nutrition intervention) of the nutrition care model. For nutrition service delivery to be effective in general practice, each aspect of the cascade must be operating successfully. While outcomes (immediate, clinical, cost and patient) are an essential element of evaluating care, unless effectiveness can be shown in the 'access' and 'implementation' aspects of the cascade then positive outcomes will not be achieved.

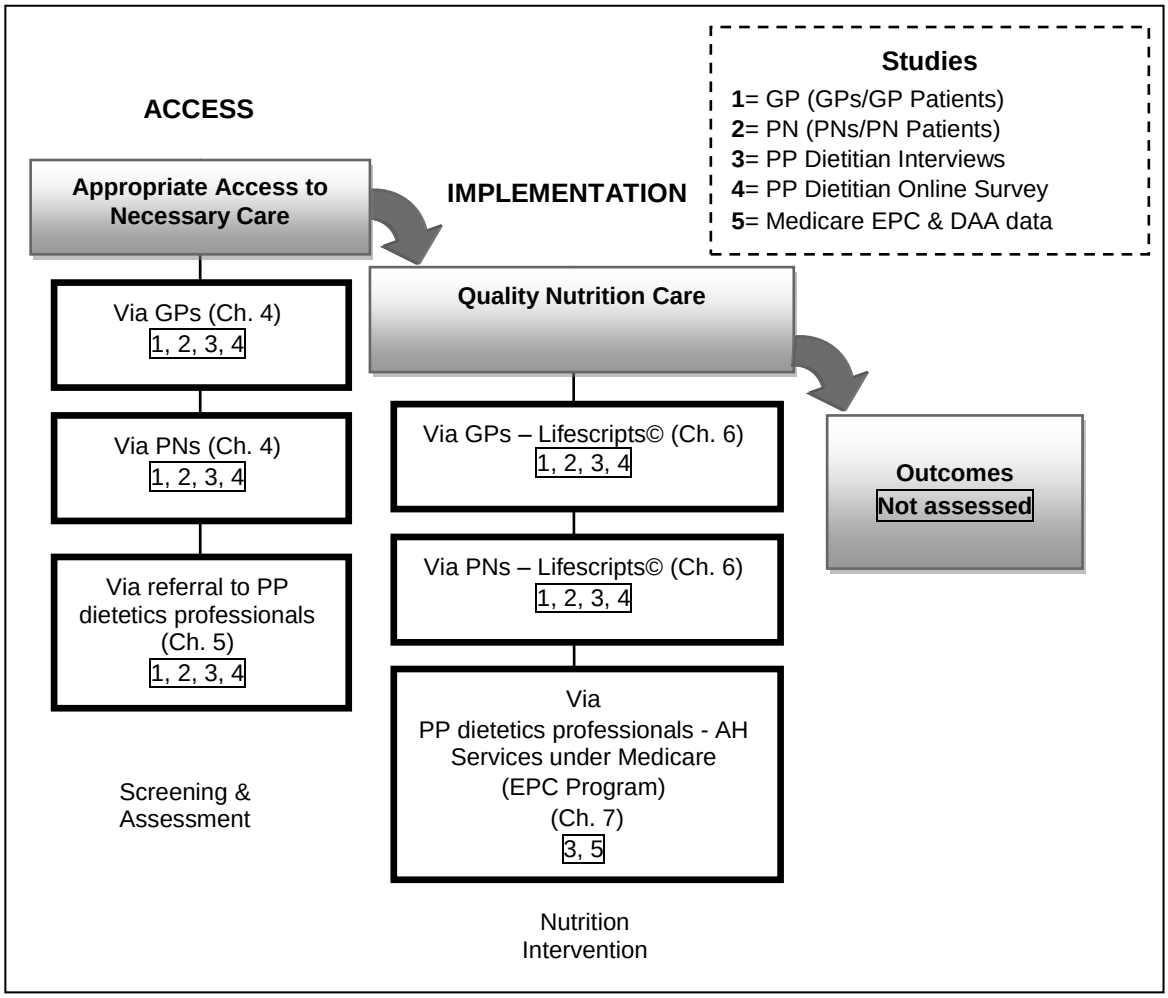


Figure 1-2 Cascade model for improving the delivery of nutrition advice in the general practice setting (Adapted from: Splett (1996) 'The cascade of events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions')

Note: General Practitioner (GP); Practice Nurse (PN); Private Practice (PP); Dietitians Association of Australia (DAA); Enhanced Primary Care (EPC); Allied Health (AH).

Following on from this general introduction, Chapter 2 looks at the current research in the area of nutrition advice in general practice, bringing together the information into clear topics related to this thesis. The methods used for the research undertaken for this thesis are outlined in Chapter 3. These include the Lifescripts© implementation studies for GP, PN, general practice patients; PP dietetics professionals telephone interviews and online survey; and the analysis of DAA membership and Medicare EPC data. Chapter 3 also includes information on recruitment for these studies, and the difficulties experienced. Chapters 4-7 separate these research findings into the areas of:

- Access to nutrition advice by GPs and PNs (Chapter 4);

- Access to nutrition advice by dietetics professionals (Chapter 5);
- Implementation of nutrition advice by GPs and PNs, with particular focus on Lifescripts© (Chapter 6); and
- Implementation of nutrition advice by dietetics professionals, specifically via the EPC Program (Chapter 7).

Chapter 8 brings this research together and discusses its implications to practice as well as recommendations for future initiatives.

1.3 Thesis Aims and Hypotheses

The primary aim of this thesis is to evaluate the delivery of nutrition advice in the general practice setting.

Secondary aims are:

- To establish the most effective means of improving the delivery of nutrition advice in the general practice setting
    - Hypothesis: PNs will be more effective than GPs in delivering nutrition advice to patients via Lifescripts© due to their role in preventive health within the general practice setting;
- To evaluate the use of Lifescripts© and the Medicare EPC Program as vehicles to deliver nutrition advice to general practice patients
    - Hypothesis: The Medicare EPC Program will be a more effective vehicle in delivering nutrition advice to general practice patients than Lifescripts©

The individual aims and hypotheses of each chapter of this thesis are:

- Chapter 2 - to provide an overview of the literature regarding nutrition advice in general practice.
- Chapter 3 - to outline study methods and recruitment numbers, identifying the issues of recruitment in general practice.
- Chapter 4 - to evaluate access to nutrition advice by GPs and PNs, including: GP and PNs' estimation of the number of patients requiring and receiving

nutrition advice; GPs and PNs' provision of nutrition advice; and GPs, PNs and PP dietetics professionals' opinions of this.

- Chapter 5 - to evaluate access to the nutrition advice provided by PP dietetics professionals through GP and PN referral including: GPs and PNs' opinions and referral practices; GPs' views on the impact of EPC Program; dietetics professionals' views of factors influencing referral; and patients' views of dietetics professionals.
- Chapter 6 - to assess the implementation of nutrition advice by GPs and PNs, including: GPs and PNs' views and provision of nutrition advice; PP dietetics professionals and patients' opinions of GPs and PNs' provision of nutrition advice; GPs, PNs and PP dietetics professionals' awareness, opinions/use of Lifescripts©; and patients' views of Lifescripts©.
    - Hypothesis: training in the use of Lifescripts© will positively impact on GPs and PNs' use of Lifescripts© and nutrition knowledge and confidence.
- Chapter 7 - to evaluate the implementation of nutrition advice by PP dietetics professionals via the EPC Program, including trends in Medicare EPC and DAA membership data; and PP dietetics professionals' participation in and opinions of the EPC Program.
    - Hypothesis: the introduction of rebates for dietetic services for people with a chronic disease resulted in an increase in service provision, clients accessed and the number of PP dietetics professionals and full-time equivalents (FTEs).
    - Hypothesis: dietetics professionals from a Division of General Practice (DGP) providing a high number of EPC consultations based on division population and PP dietetics professional FTEs will have different characteristics and more positive opinions than those providing a low number.
- Chapter 8 – to consolidate and discuss this thesis' findings.

Chapter 2

Introduction & Literature review

This chapter provides an overview of nutrition advice in the general practice setting and outlines the benefit of this setting, current activities, and suggested strategies for improving the delivery of nutrition advice.

2.1 The Australian Health Care Setting

The national health care funding system in Australia aims to give universal access to health care while allowing choice for individuals through the private sector (Commonwealth of Australia, 2000). The Commonwealth Government funds most out-of-hospital medical services while public health services are administered by the States and Territories, with additional Commonwealth funding (Commonwealth of Australia, 2000).

It is the desire of the Australian Government that 'Australians have access to high quality, well-integrated and cost-effective primary care' (Department of Health and Ageing, 2009c). This can be achieved through Medicare funded primary care services, as well as a focus on improved management of chronic conditions and Government support of GPs and AH practitioners.

Medicare is the means by which the Commonwealth funds primary health care in Australia. This was introduced in 1984 as a health insurance system that would provide eligible Australians with 'affordable, accessible and high-quality health care' (Medicare Australia, 2007). Medicare has undergone many revisions over the years in the aim of meeting the shifting demands of the Australian population and achieving better health for all.

Medicare is funded through taxes, with Australians contributing 1.5% of taxable income above certain income thresholds as well as an additional 1% of taxable income for high income earners without sufficient private health insurance (Commonwealth of Australia, 2000; Medicare Australia, 2007). Medicare reimburses at least 85% of the

Schedule fee for out-of-hospital medical services, including GP visits; however the rate charged by GPs is not restricted by the Scheduled amount (Commonwealth of Australia, 2000). A variety of item numbers exist for services Medicare rebate.

The 'Allied Health and Dental Care Initiative' was introduced as part of the Medicare Plus 'Strengthening Medicare' package in October 2003; this commenced in July 2004 (Pratt, 2004; Senate Select Committee on Medicare Secretariat, 2004). As part of this initiative patients with a complex condition being treated under an approved care plan are eligible for rebates (Pratt, 2004). This was a major advancement for AH as previously Medicare funding was not available for these AH professions. This was retitled 'Individual Allied Health Services under Medicare' in July 2005 when improvements were made to the system (Department of Health and Ageing, 2005a)

2.2 Divisions of General Practice

Australia is divided into 119 local organisations (Divisions), including eight state-based organisations (SBOs); 66 urban and 53 rural divisions (Hordacre, Howard, Moretti, & Kalucy, 2008). The Australian General Practice Network (AGPN) is the peak national body representing Divisions and SBOs (Australian Divisions of General Practice, 2006a). It endeavours to ensure all Australians have access to a high quality health care by providing local health solutions through general practice (Australian General Practice Network, 2009). More than 90-95% of GPs and an increasing number of PNs and allied health professionals (AHPs) are members of their local Division (Australian Divisions of General Practice, 2006a). In June 2007, 19 960 of the 25 523 Division members were GPs (78%). Non-GP members, including practice staff, PNs and AHPs, increased almost six-fold between 2004 and 2007 (Hordacre, et al., 2008).

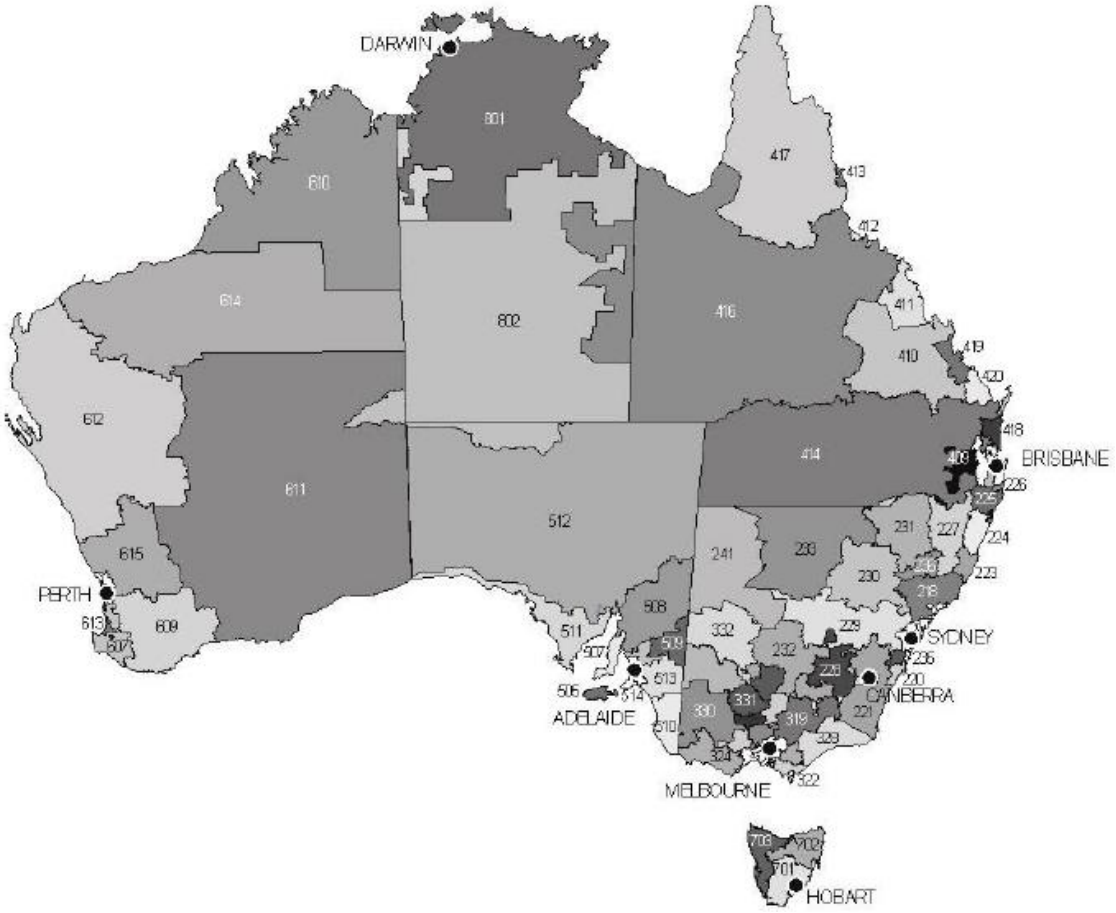


Figure 2-1 Map of Australian by Divisions of General Practice

Source: (Hordacre, et al., 2008); used with permission

2.2.1GP Access (Hunter Urban Division of General Practice)

GP Access (previously the Hunter Urban Division of General Practice) includes the regions of Newcastle, Newcastle West, Eastlakes, Westlakes and Maitland (GP Access, 2009); located 160km north of Sydney, New South Wales (Australian Divisions of General Practice, 2006a). This division comprises of 148 practices and 438 GPs (GP Access, 2009), servicing a population of 416,000 (2001 Census) (Australian Divisions of General Practice, 2006a). The GP Access prides itself on its national reputation for innovation (Australian Divisions of General Practice, 2006a). A great deal of GP professional development is provided through the Hunter Medical Research Institute. As a result the GP Access provides a high level of support to PNs.

HUDGP Sub-region Network Map

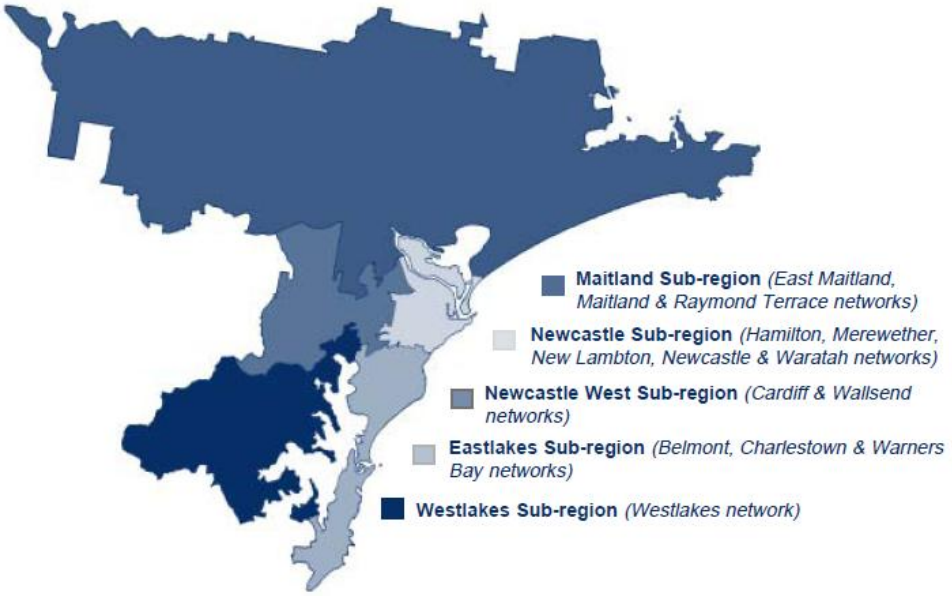


Figure 2-2 Map of the GP Access Region (Hunter Urban Division of General Practice)

Source: (Hunter Urban Division of General Practice, 2000); used with permission

HUDGP Population Demographics

	HUDGP	Newcastle	Newcastle West	Westlakes	Eastlakes	Maitland
Total Population	409,304	104,769	59,803	52,885	85,137	106,710
No. over 65 years	57,034	18,994	6,479	8,201	11,985	11,375
No. under 14 years	88,265	17,330	13,723	12,030	18,661	26,521
Unemploy-ment Rate	11.4%	12.8%	10%	12.5%	11%	10.5%
Household Income*	$500-$699	$300-$499	$500-$699	$500-$699	$500-$699	$700-$999

Source: 1996 ABS Census Data.
**Household Income is the median weekly earnings range.*

Figure 2-3 GP Access (Hunter Urban Division of General Practice) Population Demographics

Source: (Hunter Urban Division of General Practice, 2000); used with permission

2.3 Dietitians Association of Australia

DAA is a national Association, representing approximately 3900 members (Dietitians Association of Australia, 2009a). DAA's vision is to be the 'Leader in Nutrition'; with their mission 'supporting members and advocating for better food, better health, better living for all'(Dietitians Association of Australia, 2009a). While its precursor was established in 1976 and known as the Australian Association of Dietitians, it was not until 1983 that it became known as DAA. Accredited Practicing Dietitian (APD) status is granted by the DAA to qualified dietetics professionals who are engaged in continuing professional development.

2.4 Evaluating the delivery of nutrition advice in the general practice setting using Splett's Cascade Model

Nutrition service delivery can be examined using Splett's model of the 'cascade events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions' (Figure 2-4) (Splett, 1996). This model is based on 'outcomes research', which evaluates the effectiveness of health interventions based on clinical, cost and patient outcomes (Splett, 1996). This can then be used to guide clinical practice, ensuring that nutrition interventions are cost effective (Splett, 1996). Outcomes research in nutrition needs to assess the effectiveness of a nutrition intervention against at least one reasonable alternative, determining the cost value of health care with each alternative (Splett, 1996). This model is useful in evaluating systems issues and identifying where the barriers exist for effective nutrition care. It has been used to evaluate the effectiveness of nutrition programs (Bauer, Capra, Battistutta, Davidson, & Ash, 2005; Hedberg, et al., 1999; Sikand, Kashyap, Wong, & Hsu, 2000). For nutrition service delivery to be effective in general practice, each aspect of the cascade must be operating successfully.

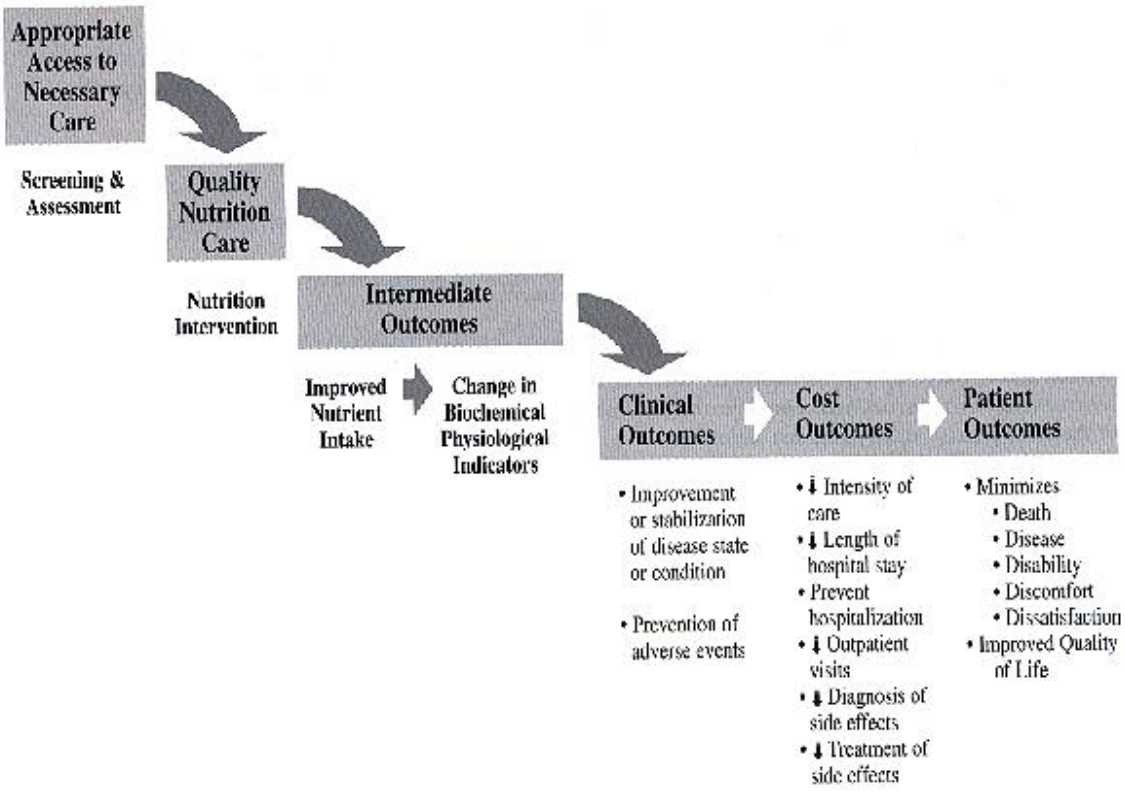


Figure 2-4 The cascade of events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions (Splett, 1996); used with permission of Patrica L. Splett

Nutrition screening is a means by which patients requiring nutrition intervention can be identified (Splett, 1996). General practice is the ideal location to conduct screening and assessment for nutrition interventions due the populations' high level of contact with this setting (Britt, et al., 2005). Nutrition intervention then needs to be provided by the professional, or referred on in order to achieve successful outcomes. 'Immediate outcomes' may include changes to biochemical or physiological indicators as result or improved dietary intakes (Splett, 1996).

2.5 Importance of preventive health activities in general practice

Disease prevention and health promotion are important parts of the role of the GP (Bonevski, Sanson-Fisher, & Campbell, 1996; Brotons, et al., 2003; Holund, et al., 1997; The Royal Australian College of General Practitioners, 1998). Table 2-1 identifies the literature providing insight into this area. General practice is an ideal location to provide systematic preventive care (Australian Divisions of General Practice, 2005; Bonevski, et al., 1996; The Royal Australian College of General Practitioners, 1998). Patients acknowledge this role of GPs, and see them as a credible source of preventive advice (Bonevski, et al., 1996; The Royal Australian College of General Practitioners, 1998). It is also believed that GPs are effective in their role in health promotion and disease prevention (The Royal Australian College of General Practitioners, 1998).

However, the health care setting is orientated towards illness rather than prevention, with GPs being financially rewarded for episodic treatment rather than preventive activities (Douglas, et al., 2009; The Royal Australian College of General Practitioners, 1998). Acute conditions take priority, even for minor issues. Less than 2% of the $94 billion that Australians spent on health in 2006–07 was directed towards preventing illness (National Health and Hospitals Reform Commission, 2009). Therefore, it is unsurprising that GPs are not performing preventive activities at recommended rates (Bonevski, et al., 1996). Ideally this will change, with the Government placing an increasing focus on prevention in the health care setting, starting with their 'A Focus on Prevention 2003-04 Budget' (Department of Health & Ageing, 2003). Lifestyle prescriptions (see Section 2.10.1) were introduced at this time to encourage preventative activities by GPs (National Heart Foundation of Australia and Kinect Australia for the Lifescripts consortium, 2005). Another such initiative the '45-49 health check' introduced in November 2006 for people in this age group who are at risk of developing a chronic disease (The Royal Australian College of General Practitioners, 2006).

Table 2-1 Importance of preventive health activities in general practice

Author/year /country	Method	Participant characteristics	Relevance	Conclusions
(Department of Health & Ageing, 2003) Australia	'A Focus on Prevention' Report	Discusses the Commonwealth Governments' 2003-04 'A Focus on Prevention' Budget	Importance of prevention	A significant proportion of chronic disease is preventable; the 2003-04 budget integrates prevention, health promotion and disease management making prevention a key aspect of Medicare; aims to improve the health and productivity of an ageing workforce and ease cost pressures on the health system; persuasive body of evidence that prevention is cost effective
(Brotons, et al., 2003) Europe	Postal survey sent to GPs (piloted by 10 GPs in each country); email survey to GPs representing national colleges	1976 GPs: from 10 European countries, mean age=44, 61% female; 15/28 GPs representing national colleges	Health promotion/prevention activities; clinical scenarios; beliefs and attitudes in practice; barriers to prevention	Disease prevention and health promotion are important daily tasks for all GPs; GPs in ideal position to provide preventive and health promotion opportunistically
(The Royal Australian College of General Practitioners, 2002) Australia	Report: Guidelines for preventive activities in general practice'; 'The Red Book'	N/A	Recommended preventive activities in general practice	To be effective in prevention GPs need to be: opportunistic in offering preventive care; anticipatory in routinely assessing the preventive care needs; proactive in targeting preventive care most intensively to high risk individuals and those least likely to seek out assistance; prevention difficult due to time; preventive activities should be evidenced based
(The Royal Australian College of General Practitioners, 1998) Australia	Report: 'Putting prevention into practice- A guide for the implementation of prevention in general practice setting; 'The Green Book'	N/A	Implementation of prevention in general practice	General practice is vital to the delivery of preventive activities; GPs and health authorities see prevention as an important part of GPs' role; patients acknowledge this role of GPs, and see them as a credible source of preventive advice; GPs are effective in providing prevention; preventive activities reduce the morbidity and mortality associated with a number of diseases
(Holund, et al., 1997) Denmark	GP questionnaire; adapted from Netherlands version; included case study questions	374/1000 Denmark GPs; 75% male	attitudes, perceived barriers and importance of diet and gender in prevention of illnesses	Majority of GPs confirmed prevention is part of their obligations however most of their time was spent on treatment

Author/year /country	Method	Participant characteristics	Relevance	Conclusions
(Bonevski, et al., 1996) Australia	Systematic review; Medline database search; 1991-1994; descriptive studies conducted in primary care settings; involving three preventive actions of interest	12 articles: four practitioner surveys; two patient surveys; three community surveys; one chart audit; two claims or billing data	Prevention in primary care; barriers to prevention	Primary care practitioners (PCPs) are well placed to provide systematic preventive care; patients accept this role of practitioners
(Orleans, George, Houpt, & Brodie, 1985) USA	Mail survey; three mailings over 6 months; survey participants randomly selected from American Medical Association files	350/610 (57%) family practice physicians; 95% male; 65% >40 years; representative	Prevalence and treatment of obesity; frequency of referral; perceived obstacles to effective treatment and referral	Attitudinal barriers to health promotion more common than practical constraints of primary care practice

2.6 Importance of good nutrition

It widely recognised that good nutrition is important for promoting health and reducing disease risk. Nutrition advice in the general practice setting is important for prevention in the general population as well as for improving the condition of patients with chronic disease.

2.7 Sources of nutrition information for the general population

Sources of nutrition information that are used by the general population are outlined in Table 2-2. GPs are a highly sought after source of nutrition advice (Hiddink, Hautvast, van Woerkum, Fieren, & van 't Hof, 1997a; Hunt, et al., 2001; Macario, Emmons, Sorensen, Hunt, & Rudd, 1998; Tan, Zwar, Dennis, & Vagholkar, 2006; van Dillen, Hiddink, Koelen, de Graaf, & van Woerkum, 2006). Other sources for patients or the general population include:

- Dietetics professionals (Buttriss, 1997; Hiddink, et al., 1997a; Hunt, et al., 2001; Serra-Majem & Calvo, 1999);
- Nurses (Buttriss, 1997; Hiddink, et al., 1997a; Hunt, et al., 2001; Serra-Majem & Calvo, 1999);

- Pharmacists (Hiddink, et al., 1997a; Pineiro, et al., 2005; Serra-Majem & Calvo, 1999);
- Media (Buttriss, 1997; Hunt, et al., 2001; Pineiro, et al., 2005; Serra-Majem & Calvo, 1999); and
- Family and friends (Macario, et al., 1998).

Studies showed that GPs are the highest reported source of nutrition advice (Hunt, et al., 2001; Macario, et al., 1998; van Dillen, et al., 2006) with dietetics professionals also perceived to be valuable sources (Hiddink, et al., 1997a; Hunt, et al., 2001). The Media was reported to be a common source of advice, however its credibility was perceived to be low (Buttriss, 1997; Hunt, et al., 2001).

Table 2-2 Sources of nutrition information for the general population

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Tan, et al., 2006) Australia	Waiting room survey; five purposively sampled general practices; may-Aug 2005; questionnaire; height, weight, and waist circumference measured	227/295 (78%) eligible patients ≥18yrs; 36 excluded as were pregnant, too unwell, or had poor English	Patients' opinions of GPs' role in weight management; usefulness of weight loss advice; weight loss behaviours	>80% patients perceived advice on healthy eating to be useful/very useful; 58% would ask GP for weight loss advice
(van Dillen, et al., 2006) Netherlands	GP focus groups. nine Dutch cites; random sample of 100-200 GPs within 50km of city; sourced from the telephone book; mailed invitation; followed up by phone call; focus group lasted 2h; guided by experienced moderator	81 GPs from nine cities. 70 male; 50 from solo practice, 23 dual practice, eight group practice; even distribution between city and country	GPs' perceptions of nutrition communication; nutrition information seeking behaviour	Patients expect a lot from GPs and perceive them as an expert on every topic, including nutrition
(Pineiro, et al., 2005) Europe	Postal survey sent to sample of GPs and nurses from the EUROPREV (European network on prevention); piloted with five GPs from each country; timeframe= four months	120 GPs, 51 nurses from 12 countries (response rate not indicated); 60.7% females; mean age 41 (sd:9.36; range: 21-61)	Usefulness of a guide on healthy eating; perceived sources of nutrition information for the general population	GPs and nurses view main source of information on healthy diet for the population are media (76%), general practice (38%), public institutions (28%), and pharmacies (9%)

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Hunt, et al., 2001) USA	6 practices; random assignment to intervention/control; invitations mailed to patients >18yrs scheduled for routine health visit within following two months; Intervention participants received tailored letter providing feedback on their consumption of target foods along with recommendations for improvement, stage matched nutrition education booklets, a diet-health endorsement from either the GP or nurse practitioner and two motivational interviewing telephone calls	Intervention sites - 28 providers, 230/566 patients >18yrs (41% response rate). Control sites - 50 providers, 274/617 (44% response rate); 195 (85%) of intervention and 252 (92%) control returned final survey after three months	Feasibility of intervention in which primary care providers provided a brief health endorsement; consumption of fruit and vegetables, red and processed meats and low fat dairy products; sources of nutrition information	Patients identified television, magazines and newspapers as top three sources of nutrition information; doctors, dietetics professionals and nurses were most valuable sources
(Serra-Majem & Calvo, 1999) Spain	Population based nutrition survey; interviews conducted in homes by 19 trained dietetics professionals ; timeframe=12 months; included anthropometry, biochemistry and questionnaire (semi quantitative food frequency questionnaire, 2x 24h recalls, information on knowledge, opinions, beliefs and attitudes related to food/nutrition	1747/2600 (67.2%); age: 6-74yrs	Food intake data; preferred sources of nutrition information	High level of reliance on GPs as source of nutrition information (79%), nurses including dietetics professionals (52%), pharmacists (50%), and TV programmes (38%)
(Macario, et al., 1998) USA	Interviews with experts: semi-structured interview format; recorded and transcribed; incentive; $20 per participant. Focus groups: 6 x 1hr groups	Interviews: five physicians, 10 nurses, 10 nutritionists and 10 literary experts (100% response rate). Focus groups: members of adult basic education classes	Sources of nutrition information; benefit of a GP; role of PN; benefit of dietetics professionals; referral to dietetics professional; provision of health and nutrition information to low literacy patients	Most health care providers and patients acknowledged that patients perceive GPs are authorities on health; patients with low literacy skills first turned to family members and friends for health information

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Hiddink, et al., 1997a) Netherlands	Telephone questionnaire - consumers; random sample; computer aided structured questionnaire; predominately closed questions	608/1200 consumers (52%)	Referral to nutrition information sources; perceived expertise of these sources; interest in nutrition information; nutritional attitudes and beliefs	Most used sources GPs (36%), dietetics professionals (21%), food and nutrition bureau (17%); dietetics professional used more by older people, those with a lower level of education, higher interest in information about health diet or with a higher perceived expertise of the source
(Buttriss, 1997) UK	Quantitative face-to-face interviews; where necessary data was weighted to reflect known population profiles; 6 qualitative group discussions held to aid development of questionnaire	>1700 general public; ≥18 yrs; ~half female; nationally representative	Nutrition knowledge; sources of nutrition information and perceived usefulness	GP (29% used; 13% found useful); dietetics professional (9% vs 5%); hospital doctor (8% vs 4%); PN (6% vs 4%); health visitor (6% vs 3%); media was the most used source but low perceived credibility; 46% trusted information seen in doctors' examining rooms and hospitals; 57% obtained information from television but only 15% thought it useful

2.8 Sources of nutrition information for GPs

If GPs are going to provide nutrition information to patients they must have adequate nutrition knowledge. Sources of nutrition information for GPs are identified in Table 2-3. These included:

- Dietetics professionals (Buttriss, 1997; Hiddink, Hautvast, van Woerkum, Fieren, & van 't Hof, 1997b; Kelly & Joffres, 1990; Kirby, Chauncey, & Goebel Jones, 1995; Kushner, 1995);
- Literature (Buttriss, 1997; Hiddink, et al., 1997b; Kelly & Joffres, 1990; Kirby, et al., 1995; Kushner, 1995; Talip, Steyn, Visser, Charlton, & Temple, 2003; van Dillen, et al., 2006);
- Continuing medical education courses (Kelly & Joffres, 1990; Kirby, et al., 1995; Talip, et al., 2003);
- Nutrition and food service organisations (Hiddink, et al., 1997b; van Dillen, et al., 2006);

- Medical school/additional training (Kirby, et al., 1995; Kushner, 1995; van Dillen, et al., 2006); and
- Media (Buttriss, 1997; Kirby, et al., 1995; Talip, et al., 2003).

Table 2-3 Sources of nutrition information for GPs

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(van Dillen, et al.) Netherlands	GP focus groups. nine Dutch cites; random sample of 100-200 GPs within 50km of city; sourced from the telephone book; mailed invitation; followed up by phone call; focus group lasted 2h; guided by experienced moderator	81 GPs from nine cities. 70 male; 50 from solo practice, 23 dual practice, eight group practice; even distribution between city and country	GPs' perceptions of nutrition communication; nutrition information seeking behaviour	Top five sources: scientific studies, specialist literature, postgraduate training courses, education offices of the food sector and companies, Dutch nutrition centre
(Talip, et al., 2003) South Africa	Descriptive cross-sectional validation study; phase 1: test planning of an instrument to measure lifestyle knowledge and practices; phase 2: test evaluation	1186/322 (58%) health professionals; 60 dietetics professionals , 37 dietetic interns; 14 GPs; 23 medical students; 52 nurses	Knowledge and practices of the role of lifestyle modification; counselling confidence, barriers and perceived effectiveness	GPs: continuing medical education courses (55%); scientific journals; medical students: media (74%)
(Buttriss, 1997) UK	Postal questionnaire; three samples: early 1992, late 1992, 1993;	Study 1: 149 GPs, 51 PNs; >40% response rate for each; study 2: 228 GPs; study three 236 GPs	Nutrition knowledge; sources of nutrition information and perceived usefulness	Media (however 45% found it personally confusing and contradictory and 70% believed general public would also find it to be
(Hiddink, et al., 1997b) Netherlands	Questionnaire; random sample of 1000/2798 primary care physicians in Netherlands; reminder letter sent every two weeks (up to 3); telephone reminders after 11 weeks (up to 3)	633/1000 (63%) primary care physicians; representative sample	Nutrition attitudes and beliefs; provision of nutrition advice; sources of nutrition advice for GPs	Dietetics professional (72% contacted in the past two years); literature (34%); Food and Nutrition Education Bureau (33%); Heart Foundation (22%); no nutrition information seeking (15%)
(Kirby, et al., 1995) USA	Family practice residents participated in four teaching sessions over five months; pre/post-testing for residents and control group; 3-day diet diary	Intervention: all 19 first, second and third year family practice residents; control 12/16 took pre-test and 15/24 post-test	Changes in nutrition knowledge and interest	Medical school, books and articles, nutritionists, family, other courses and television

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Kushner, 1995) USA	Random sample questionnaire mailed to 2250 primary care physicians; Thankyou/reminder postcards were sent two weeks after initial mail out; questionnaires resent four months later with small amount of money included to encourage participation	1030/2250 physicians (46%); 1103 responded (49%) however 73 (6%) of these excluded due to missing data.	Rates and barriers of nutrition advice and referral	Medical journals (69% reported primary source of current nutrition information); dietetics professionals (58%); seminars and conferences (46%); nutrition journals, nutrition texts and popular magazines (16% or less)
(Kelly & Joffres, 1990) Canada	Physician questionnaire; pretested by 20 physicians; reminder sent after three then five weeks to non-respondents	255/478 eligible physicians responded (53%); limitation: not representative for many demographic variables	Sources and evaluation of nutrition information	Own knowledge and training (99%); medical journals (95%); continuing medical education (94%); other health professionals (including dietetics professional) (88%)

2.9 Access to nutrition advice in the general practice setting

The effective delivery of nutrition advice to general practice patients relies on GPs and PNs highlighting the importance of nutrition and providing basic nutrition advice. A 'one-minute message' based on nutrition resources developed by dietetics professionals may be sufficient, with referral to a dietetics professional for those needing additional information and support.

2.9.1 Access to nutrition advice by GPs

2.9.1.1 Benefit of GPs providing nutrition advice

There are many benefits to GPs providing nutrition advice, and these are provided in Table 2-4. GPs are a trusted (Macario, et al., 1998; Truswell, Hiddink, & Blom, 2003; Wiesemann, 1997) and sought after source of nutrition advice (Hiddink, et al., 1997a; Tan, et al., 2006) with a high perceived expertise by patients (Hiddink, et al., 1997a; Tan, et al., 2006; van Dillen, et al., 2006). They have access to the majority of the population with approximately 85% of the population visiting the GP in any one year, with an average of 4.5 visits per person per year in 2004-05 (Britt, et al., 2005). If a GP

regularly sees a patient they are more likely to be familiar with their patients' nutrition related condition and behaviours (Wiesemann, 1997). Therefore GPs have multiple opportunities to discuss nutrition and provide repetition of nutrition messages (Truswell, et al., 2003). It also allows them to support long term maintenance of dietary change (Bonevski, et al., 1996).

GPs are the first point of contact for patients and act as a gatekeeper to the health system (Bonevski, et al., 1996; The Royal Australian College of General Practitioners, 1998). This allows them to identify patients with nutrition related risk factors or conditions, providing initial advice and referring on to other health professionals when required (American Dietetic Association, 1998; Bonevski, et al., 1996). General practice is a good setting to provide preventive work, as it has a focus on holistic care and can provide it opportunistically (Bonevski, et al., 1996; Brotons, et al., 2003; The Royal Australian College of General Practitioners, 1998).

Table 2-4 Benefit of a GP providing nutrition advice

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Pomeroy & Worsley, 2009a) Australia	Quantitative cross-sectional surveys of Victorian GPs, cardiologists and dietetics professionals; 19 questions with 159 closed and open items to GPs and dietetics professionals about their roles in dietary management; Oct 2005-June 2006	248/825 GPs (30%); 189/405 cardiologists (47%); 180/300 dietetics professionals (60%)	Role of GPs in providing nutrition advice to cardiac patients	Primary role perceived by most to be motivation patients to attempt dietary change; majority of GPs prepared their patients for dietary change by warning about risks of current lifestyle then discussed benefits of healthy diet (83%); 7/10 asked about sources of saturated fat and intention to change diet; facilitation of weight loss goals and clinical test used to assist patients in problem solving
(Pomeroy & Worsley, 2009b) Australia	Face to face interviews: contacted by telephone and invited to participate; Feb-May 2005; interviews recorded, transcribed and analysed. Questionnaire: 19 questions with 159 closed and open items to GPs and dietetics professionals about their roles in dietary management; Oct 2005-June 2006	Semi-structured interviews: 30/100 GPs; surveys: 248/825 GPs (30%) & 180 dietetics professionals (60%)	Role of GPs in providing nutrition advice to cardiac patients	Three main roles: Influence (explained relationships, encouraged change – 87% believed part of their role), coordination (referral to dietetics professionals – 70%), and education (discussion on nutrition and behaviour change – 23%)

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Brauer, Dietrich, & Davidson, 2006) Canada	Modified Delphi process; lead physicians and Registered Dietetics professionals (RDs) from three Family Health Networks and relevant health professionals invited to send a representative; participants met for 1.5 days to identify various feasible options and approaches for practice; Delphi questionnaire created and emailed to participants; teleconference discussions	29 organisations contacted; 23/24 participants completed Delphi process; 11 RDs; 12 other professions	Models of nutrition services	Consensus that physicians screen for nutrition-related problems, provide basic advice, indentify willing patients and referral to RDs for counselling; reinforce nutrition counselling; limited support for providing nutrition counselling
(Tan, et al., 2006) Australia	Waiting room survey; five purposively sampled general practices; may-Aug 2005; questionnaire; height, weight, and waist circumference measured	227/295 (78%) eligible patients ≥18yrs; 36 excluded as were pregnant, too unwell, or had poor English	Patients' opinions of their weight, role of GPs in weight management; usefulness of weight loss advice; weight loss behaviours, comparison of BMI to opinions	Most patients felt GPs had a role in weight management (78%); >80% perceived advice on healthy eating and physical activity to be useful/very useful; 58% would ask GP for weight loss advice; 69% thought GP had necessary knowledge and skills to manage weight
(van Dillen, et al., 2006) Netherlands	GP focus groups. nine Dutch cites; random sample of 100-200 GPs within 50km of city; sourced from the telephone book; mailed invitation; followed up by phone call; focus group lasted 2h; guided by experienced moderator	81 GPs from nine cities. 70 male; 50 from solo practice, 23 dual practice, eight group practice; even distribution between city and country	GPs' perceptions of nutrition communicatio n; nutrition information seeking behaviour	Perceived by patients to be experts in every topic, including nutrition
(Britt, et al., 2005) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	953 GPs; 95300 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	Access majority of population (~85% of Australians visit the GP in any one year); frequent contact (average 4.5 visits/person in 2004-05)

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Sacerdote, et al., 2006) Italy	33 GPs were selected as being 'most motivated'; all non-obese patients 18-65 attending the GP wards without gastrointestinal problems or dietary restrictions were eligible; GPs attended a 4-day nutrition course conducted by clinical nutritionists; randomised to 2 groups using random number generation; patients attended 3 visits; intervention group - 15 minute personalised nutrition intervention plus brochure; control group – simpler and non-personalised conversation without brochure; 40 item food frequency questionnaire, brief lifestyle questionnaire and anthropometric measures	3186 patients; baseline: intervention - 795 male, 797 female, age 44.7 (12.6); control 793 male, 794 female, age 44.2 (12.1)	Effectiveness of nutrition interventions by GPs	BMI decreased only in intervention group: -0.41 [-0.11 to -0.53] Intervention showed greater improvements in intake of fruit and vegetables, decrease meat, and increased olive oil, with 'healthy diet score' significantly higher post intervention; no BMI change in control group
(Talip, et al., 2003) South Africa	Descriptive cross-sectional validation study; phase 1: test planning of an instrument to measure lifestyle knowledge and practices; phase 2: test evaluation	1186/322 (58%) health professionals; 60 dietetics professionals , 37 dietetic interns; 14 GPs; 23 medical students; 52 nurses	Knowledge and practices of the role of lifestyle modification; counselling (confidence, barriers and perceived effectiveness)	Patients are more likely to be in contact with general health professionals; not enough trained people to educate the entire population
(Truswell, et al., 2003) Australia	Third Heelsum International Workshop, Nutrition Guidance of Family Doctors Towards Best Practice, 2001; 17 papers presented; discussed by workshop participants; discussions recorded, transcribed and summarised	17 papers presented; workshop participants (no additional details provided)	Nutrition guidance by GPs; benefit of a GPs; strategies to increase nutrition advice	Trusted; patients expect diet advice off GPs; can provide reinforcement of behaviour change recommendations; when required should refer to dietetics professional and share the patient's nutrition management
(Whitlock, Orleans, Pender, & Allan, 2002) U.S.	Systematic review of behavioural counselling interventions; adapted existing United States Preventive Services Task Force (USPSTF) methods to behavioural counselling intervention reviews (full methods sited elsewhere)	The Counselling and Behavioural Interventions Work Group of the USPSTF	Impact of behavioural counselling interventions on health outcomes; Benefit of GP; role of PNs	Advice based on personal health status encourages change; primary care interventions are more effective then intensive group interventions due to their greater reach
(American Dietetic Association, 1998) U.S.	Position statement; 'Nutrition education for health care professionals;	N/A	Nutrition education; role of health professionals; dietetics professional referral	PCP can diagnose nutrition related conditions, prescribe diets, provide initial nutrition counselling and refer when necessary

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Macario, et al., 1998) USA	Interviews with experts: semi-structured interview format; recorded and transcribed; incentive; $20 per participant. Focus groups: 6 x 1 hr groups	Interviews: five physicians, 10 nurses, 10 nutritionists and 10 literary experts (100% response rate). Focus groups: members of adult basic education classes	Sources of nutrition information; benefit of a GP; role of PN; benefit of dietetics professional; referral to dietetics professional; provision of health and nutrition information to low literacy patients	GPs are authority figures; they are listened to and more compelled to follow advice
(The Royal Australian College of General Practitioners, 1998) Australia	Report: 'Putting prevention into practice- A guide for the implementation of prevention in general practice setting; 'The Green Book'	N/A	Implementation of prevention in general practice	Patients view GPs as a key, first contact credible source of advice; patients more likely to follow their advice as trusted
(Hiddink, et al., 1997a) Netherlands	Telephone questionnaire - consumers; random sample; computer aided structured questionnaire; predominately closed questions	608/1200 consumers (52%)	Referral to nutrition information sources; perceived expertise of these sources; interest in nutrition information; nutritional attitudes and beliefs	GPs were the most used source of nutrition information (36%); second highest level of perceived nutrition expertise (following dietetics professionals); consumers prefer GPs as a source of nutrition information, despite their lower perceived level of nutritional expertise
(Wiesemann, 1997) Germany	Heidelberg symposia on nutrition (1994, 1995); conferences on nutrition counselling in family practice;	17 GP University lecturers, two internist, one nutritional psychologist, one nutritionist, insurance company health professional, one manager of inviting foundation on nutrition	Benefit of GP; education and counselling, support for improved teaching and knowledge about nutritional attitudes and food	Trusted; practical experience in long term patient management; familiar with patients' conditions and lifestyle
(Bonevski, et al., 1996) Australia	Systematic review; Medline database search; 1991-1994; descriptive studies conducted in primary care settings; involving three preventive actions of interest	12 articles: four practitioner surveys; two patient surveys; three community surveys; one chart audit; two claims or billing data	Prevention in primary care; barriers to prevention	PCPs are ideal providers of preventive activities providing screening, counselling, referral and follow-up

2.9.1.2 Rates of nutrition advice by GPs

Current research shows that GPs are not providing nutrition advice to every patient who would benefit from it (Boulton & Williams, 1983; Brotons, et al., 2003; Galuska, Will, Serdula, & Ford, 1999; Holund, et al., 1997; Levine, et al., 1993; Maiburg & Hiddink, 1999; McArtor, Iverson, Benken, & Dennis, 1992; Orleans, et al., 1985; Tan, et al., 2006; van Dillen, Hiddink, Koelen, & van Woerkum, 2005; Witt, Brauer, Dietrich, & Davidson, 2006). Studies reporting rates of nutrition advice are reported in Table 2-5. These looked at a range of patient groups and showed varying results. Self-reported rates are likely to be even lower than reported as GPs tend to over report their delivery of preventive services compared to medical record review or patient survey (Bonevski, et al., 1996; Lewis, 1988; Stange, et al., 1998).

'General Practice Activity in Australia' provides the best estimation of the rate of provision of nutrition advice by Australian GPs. During 2007-08 GPs provided nutrition/weight advice/counselling in 4.2% of consultations (Britt, et al., 2008b). While this peaked at 5.6% in 2000-01, when the Smoking, Nutrition, Alcohol and Physical activity (SNAP) initiative was introduced (Britt, et al., 2005), it dropped to 3.4% in 2006-07 (Britt, et al., 2008a). This is lower than that reported in studies from other countries (Boulton & Williams, 1983; Centers for Disease & Prevention, 1998; Eaton, Goodwin, & Stange, 2002; Lin, Hyman, & Larson, 2005).

Levine *et al.* (2003) found that rates of providing nutrition advice increased when GPs had a:

- Belief in the efficacy of diet and nutrition counselling;
- Good relationship with the patient; and
- Confidence to effectively counsel people to change eating patterns.

However, further nutrition study did not result in greater provision of nutrition advice, despite more favourable attitudes about the role of diet (Boulton & Williams, 1983; Levine, et al., 1993). Therefore, positive attitudes towards nutrition will not necessarily result in an increase in the provision of nutrition advice (US Department of Health and Human Services, 2000).

Table 2-5 Measured rates of nutrition advice by GPs

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Britt, et al., 2008b) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	953 GPs; 953,000 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	2007-08 nutrition/weight advice/counselling (4.2 consultations per 100; total 4041); increased since previous year
(Britt, et al., 2008a) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	930 GPs; 930,000 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	2006-07 nutrition/weight advice/counselling (3.4 consultations per 100; total 3077); decreased since previous year
(Britt, et al., 2007) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	1,017 GPs; 101,700 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	Significant decreases in nutrition/weight advice/counselling (3.6 consultations per 100 in 2005-06, vs. 5.3 in 2004-05); may be due to PNs receiving Medicare rebates for providing advice thus PN rates increasing
(Britt, et al., 2005) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	953 GPs; 95300 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	Provision of nutrition and weight management counselling has increased since 1998-99 by approximately 1.5 million consultations per year; increased significantly in 2000-01 when the Smoking, Nutrition, Alcohol and Physical activity (SNAP) initiative was introduced, to 5.6 per 100 consultations
(Lin, et al., 2005) USA	Comparison of the National Ambulatory Medical Care Survey (NAMCS) and the National Hospital Ambulatory Medical Care Survey (NHAMCS), 2000. Data collected via Patient Record form completed by doctor, indicated counselling /education was conducted	National data sets collected by National Centre for Health Statistics to describe ambulatory medical care - NAMCS: N=28923 patient visits; NHAMCS: N=21992 patient visits	Rates of nutrition advice	Primary care visits for all patients: diet discussed in 21.7% of office based, and 14.8% of hospital based outpatient visits; primary care visits chronic conditions: diet discussed in 28% of office based and 18% of hospital based outpatient visits
(Litaker, Flocke, Frolkis, & Stange, 2005) USA	GP survey and direct observation of consultations	128 physicians and 2708 adult patients	Perceived importance, effectiveness and rates of specific preventive services	Average proportion of patients receiving dietary counselling was lowest compared to other preventive activities, with 10% (n=2708 patients) up to date with recommended care

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Eaton, et al., 2002) USA	Cross sectional study of 84 GP practices. Direct observation of 138 GPs for consecutive patients over two days ~4 months apart (1994-95). Medical record audits, patient and GP questionnaires for all observed visits	138 GPs; 3478 patient consultations	Rates of nutrition counselling	Of 3475 consecutive visits, nutrition counselling occurred in: 24% (total), 17% (acute), 30% (chronic), 41% (well-care), 45% (diabetes), 25% (CVD), 31% (HT) 26% (prenatal), 33% (obese); nutrition counselling provided in >50% of consultations (6%), 15-30% (54%), <10% (18.8%); consultations discussing nutrition were longer (12.8 min) compared to those not discussing nutrition (9.8min); average nutrition discussion time=1min (<20sec->6min)
(National Center for Health Statistics, 2001) USA	'Healthy People 2000 – review of progress' report; aimed at significantly improving the health of all Americans by the year 2000 and monitoring progress	22 priority areas; >300 national objectives;	Rates of nutrition advice	In 1988 19% of family physicians inquired about diet/nutrition and 24% formulated a diet/nutrition plan with 81–100% of patients; aim to increase this to 75% by 2000 (however progress for this objective was not calculated)
(Centers for Disease & Prevention , 1998) USA	Analysis of CDCs National Ambulatory Medical Care Survey to assess rates of counselling for CVD risk factors; physicians completed standardised survey for visit diagnoses, patient characteristics, and provision of diagnostic and preventive services	29273 office visits for people ≥20 yrs seeking general medical or routine gynaecologic examination	Physician counselling for preventive health behaviours	Reported counselling for: diet (22.8% of office visits), weight reduction (10.4%); more common in 50-64 year olds and men
(Stange, et al., 1998) USA	Data collection on content and context of consultation; two separate days for each physician using direct observation, medical records review, patient exit questionnaire, practice environment checklist, billing data, physician questionnaire	138/531 invited physicians (mean age=43); 4454/4994 (89%)	Accuracy of non-observational methods of measuring delivery of outpatient medical services	Diet advice observed 3/128 direct observations and 2/152 medical records reviews; weight 4/128 observations, 14/152 medical record reviews; height 4/128 observations and 3 /152 medical records; diet advice 525/4432 = 27% sensitivity, 96% specificity
(van Weel, 1997) Netherlands	Review of continuous morbidity registration (CMR). Record of all new episodes of illness 1989-93	4 practices, seven family physicians, ~12000 patients	Number of episodes of nutrition sensitive diseases	16.5% of conditions were nutrition sensitive (83,307/503,713/year)

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(McArtor, et al., 1992) USA	A health risk evaluation form completed for each patient 18-25yrs visiting GP office Feb-Oct 1988; residents recorded identified health risk factors on the form and medical record problem list, as well as perceived level of patient motivation for involvement in problem management; BMI measured by office nurse	25 family practice residents; 2746 patients; average BMI of residents=23.9; 25.5% patients obese (BMI≥30)	Identification and management of obesity	Obesity identified on risk factor form for 51.6% of obese; recorded on medical record for 71% of those identified on risk factor form; when obesity recorded on the problem list, action was taken to manage patients for 93%, when recorded on risk factor form but not problem list management action taken for 57%; management actions taken for 46.5% obese patients overall; for patients with obesity recorded on risk factor form and problem list 57.4% received 'self-care' strategies
(Boulton & Williams, 1983) UK	GP consultations transcribed in full and analysed using transcriptions and audio recordings; a sample with new educational issues selected from larger study; additional random sample of 75 case (5%) were analysed as a representative sample	405 consultations chosen from 1470 for more intensive study (16 doctors, ~25/doctor); 136 men, 202 women, 67 young children; 42% consultations for new problem or episode	Opportunities for health education, discussion that occurred and advice that was provided	7% of consultations in intensive sample (29/405), and 21% in random sample (16/75) provided the doctor with the opportunity to discuss diet; diet was raised in 18/29 of intensive and 3/16 of random; advice provided in 13/29 of the intensive and 2/16 of the random; the highest response to opportunities was when the main concern was weight (4/29 in intensive, 1/16 random); all occasions topic was initiated by patients, all women; gap between positive attitudes and actual behaviour; dietary advice provided mostly for dealing with current problems not for health promotion

Self reported rates tended to document the per cent of GPs reporting to provide nutrition advice, rather than number of actual consultations, making comparison to measured rates difficult (Table 2-6).

Table 2-6 Self reported rates of nutrition advice by GPs

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Witt, et al., 2006) Canada	Registered Dietetics professionals employed in Family Health Networks (FHNs); FHN selected from proposals from FHNs and primary care models meeting specific conditions; FHN staff received letter and questionnaire; workload measurement, receptionist time and questions collected twice for 2-week periods; physician referral activity for one week; forms and questionnaires pilot tested or reviewed	3 FHNs chosen from eight submissions; three Registered Dietetics professionals; 27/41 physicians (66%); 1884 patients reviewed	Rates of nutrition advice; rates of referral;	17.5% of patients reported to have a contributing nutrition problem; GPs discussed nutrition issues with 12% of patients
(Amoroso, Hobbs, & Harris, 2005) Australia	Surveys; mailed to GPs in one urban and one rural DGP in NSW along with information statement and letter of support from the DGP; non-respondents sent second mail out after 2 weeks as well as telephone/fax via practice manager; 25-item survey; piloted with GPs and reviewed by public health and general practice experts	146/276 GPs (57.0%; 31 ineligible); 68.5% GPs urban; participating practices represented 62.5% of those in the rural division and 79.0% urban; characteristics similar between responder/non-responders; characteristic differences between urban and rural	Provision of SNAP risk factors advice and referral; training	47.8% offer verbal advice 'very often' (same as alcohol but lower than smoking and physical activity); GPs provision of verbal advice "very often' associated with use of guidelines (chi^2=10.226, p=0.001); Female more likely to give verbal advice than male GPs (chi^2=4.460, p=0.035)
(Nicholas, Pond, & Roberts, 2005) Newcastle , Australia	Self-completed questionnaire; distributed May 2004; two reminders at four-weekly intervals	163/399 GPs completed questionnaire (45%)	provision of nutrition advice; GPs' knowledge/ skills/ confidence/ experience	97% provide nutrition counselling; 59% often assessed patients readiness to change their diet, 85% provided nutrition leaflets, with 59% often discussing these
(van Dillen, et al., 2005) Netherlands	Questionnaire; random sample of 600 family doctors from Netherlands Institute for Health Services Research	267/600 Dutch family doctors in practice for 5-25 yrs (45%); 74% male; 40% solo; 37% duel practice; average time in practice 17 years	Nutrition communicatio n styles; rates of nutrition advice	Nutrition discussed in 14% of consultations; with an average duration of five minutes; nutrition most often discussed in: overweight/obesity (73% always); diabetes (72%); hypercholesterolemia (68%); IBS (45%); CHD (44%); 56% GPs generally took initiative to discuss nutrition; 4% the initiative was mainly taken by the patient; 40% initiative was equally patient and GP

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Nicholas, Pond, & Roberts, 2004) Newcastle, Australia	Self-administered questionnaire; sent to GPs in HUDGP; Oct 2001; reminder after 6 weeks	159/419 HUDGP GP (40%)	Rates of nutrition advice and referral; nutrition confidence	82% provided nutrition counselling
(Brotons, et al., 2003) Europe	Postal survey sent to GPs (piloted by 10 GPs in each country); email survey to GPs representing national colleges	1976 GPs: from 10 European countries, mean age=44, 61% female; 15/28 GPs representing national colleges	Health promotion/prevention activities; clinical scenarios; beliefs and attitudes in practice; barriers to prevention	60% advise overweight patients to lose weight; 45% estimate BMI
(Sciamanna, et al., 2002) USA	Four year prospective study; training to counsel patients to modify cancer risk behaviours; comprehensive office system component; baseline and follow-up surveys for physicians, administered via laptop as interview or self administered	130 PCP; 361 physicians from 274 offices were potentially eligible from prior study lists; n=58 ineligible; n=63 refused; n=130 enrolled; n=110 not contacted when recruitment numbers reached	Factors impacting on GPs' nutrition advice	PCP were more likely to counsel if they restricted their own fat intake, had greater confidence in their counselling skills; those who limited dietary fat were 3.2 (1.3-7.9) times more likely to ask about their patient's diet and 3.5 (1.5-8.6) times more likely to advise about fibre and fat.
(Hunt, et al., 2001) USA	6 practices; random assignment to intervention/control; invitations mailed to patients ≥18yrs with routine health visit within following two months; intervention -tailored feedback letter on consumption of target foods, recommendations for improvement, stage matched nutrition education booklets, a diet-health endorsement from either GP or nurse practitioner and two motivational interviewing phone calls	Intervention sites - 28 providers, 230/566 patients >18yrs (41% response rate). Control sites - 50 providers, 274/617 (44% response rate); 195 (85%) of intervention and 252 (92%) control returned final survey after three months	Feasibility of intervention in which PCP provided brief health endorsement; consumption of certain foods; sources of nutrition information	71% of providers (n=15) reported acknowledged diet-health relationship or discussed tailored recommendations (same as patient report)
(Richards & Mitchell, 2001) Australia	Identical questionnaires pre/post dissemination of nutrition manual; adapted from validated questionnaire	45 GPs (56% response rate)	Attitudes towards nutrition; current nutrition counselling practices	Provide dietary counselling to average of 15% (baseline) and 17% at 6 months; average eight minutes discussing dietary change with patients

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Campbell, Engel, Timperio, Cooper, & Crawford, 2000) Australia	Cross sectional survey; two questionnaires; separate groups to reduce respondent burden; one examined attitudes and other practices;<10 minutes to complete; pilot tested with 24 GPs	752/1500 (50%) sample of 24,000 GPs on Royal Australian College of GPs database (750 in each group)	GPs attitudes and practices regarding prevention and management of overweight and obesity	7% reported offering weight loss advice only when requested; for weight management GPs assessed: weight history (83% usually done), dietary habits (88%)
(Maiburg & Hiddink, 1999) Netherlands	Questionnaire; based on questionnaire that has been used and validated in cross-sectional and longitudinal investigations	575/985 GP trainees (58% response rate); 62% female	Determinants of nutrition guidance practices of Dutch GP trainees; self reported rates of nutrition advice	Participants saw 1-2 patients with nutrition-related complaint per day but gave nutrition advice <1 patient/day
(Holund, et al., 1997) Denmark	GP questionnaire; adapted from Netherlands version; included case study questions	374/1000 Denmark GPs; 75% male	attitudes, perceived barriers and importance of diet and gender in prevention of illnesses	38% of GPs contacted daily with diseases or symptoms related to diet; only 30% gave dietary advice once a day or more; female GPs gave dietary counselling more often than male GPs
(Kristeller & Hoerr, 1997) Minnesota, USA	Mail questionnaire; random national samples of 750 physicians in 6 specialty areas; 8-page survey based on previous literature; reminders: postcard (1 week), follow-up letter and additional questionnaire (3 weeks), postcard (7 weeks)	383/4117 (43%); family practice: n=222 (43%); mean age: 43.7; 77% male	Obesity related activities of family practice physicians	Likelihood of treatment approaches based on 5 point likert scale, with 5=very likely; discuss health consequences (4.5); provide counselling (4.0); provide written information (3.8); develop specific plan (3.7)
(Lazarus, 1997) USA	Physician nutrition education intervention; physician nutrition specialists provided physicians with individualised recommendations to discuss with patients; pre/post nutrition knowledge test; patient questionnaires; 3-day diet records for physicians	7 faculty members; nine residents; clinic patients ≥15yrs (number not reported)	Nutrition knowledge; perception of importance of nutrition in health maintenance; rates of nutrition advice	Physician nutrition specialist previewing charts and making recommendations significantly improved rates of asking about nutrition and providing nutrition advice; chart documentation of discussion of nutrition was not significantly improved with intervention (pre: 11.4%; post: 13.8%)
(Glanz, Tziraki, Albright, & Fernandes , 1995) Hawaii	Self administered mailed survey of PCP members of Society of General Internal Medicine; peer review and two pre-tests with 150 PCP; four page, 21 items; two mailings	960/1897 (53%); 67% male; personally attempted dietary change for weight loss (64%) or cholesterol (49%)	Rates of nutrition advice; confidence providing variety of nutrition advice; interest in nutrition	2/3 provide nutrition counselling to patients; of these, 70% discussed dietary change ≤5min and 8.7% usually or always counselled about diet for ≥9min

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Hiddink, Hautvast, van Woerkum, Fieren, & van 't Hof, 1995) Europe	Postal questionnaire sent to random sample of 1000 from 2798 GPs in Netherlands in practice for 5-15 yrs; developed after focus group discussions and in depth interviews; initially letter + questionnaire; up to three reminder letters two weeks apart; telephone reminders after 11 weeks (≤3)	633/1000 GPs (64%); 82% male; mean age 41 (3.6) years; practicing average 11 yrs; mean 30-35 patients/day	Barriers to providing nutrition advice; rates of nutrition advice; sources of nutrition information; nutrition education	Provided daily nutrition information to ~10% of patients (28%) or ~5% of patients (48%); paid attention to the body weight of at least 80% of patients (28%) or 50-80% of patients (37%); GPs reported to see 2/35 per day in which poor dietary behaviours had contributed to the condition
(Kushner, 1995) USA	Random sample questionnaire mailed to 2250 primary care physicians; Thankyou/reminder postcards were sent 2wks after initial mail out; questionnaires resent four months later with small amount of money included to encourage participation	1030/2250 physicians (46%); 1103 responded (49%) however 73 (6%) of these excluded due to missing data.	Rates and barriers of nutrition advice and referral	>2/3 provide dietary counselling to 40% or less of patients; 68% spend <5 min discussing nutrition including ~19% <2min; of patients who received counselling, 87% of GPs stated they provided counselling themselves
(Soltesz, Price, Johnson, & Tellijohann, 1995) USA	Mail survey sent to random sample of 500 family physicians from the American Academy of Family Physicians; reminders sent at 2&4.5 weeks	237/486 (49%; 14 addresses not valid); age 44yrs (sd=10.8)	GP agreement with nutritional counselling recommendations	GPs agreed they should provide periodic counselling regarding: dietary fat and cholesterol (75%); complex carbohydrate and fibre (58%), energy intake (53%), sodium (50%); GPs with fewer years experience were more likely to agree that GPs should provide counselling regarding fat and cholesterol
(Ammerman, et al., 1993) USA	Survey of residents and attending physicians in outpatient General Internal Medicine Clinic; previously tested; survey was pre-test for cholesterol intervention study;	2nd and 3rd year residents in internal medicine (37) or medicine/ paediatrics (9) and general medicine attending physicians (14) (100%)	Rates of nutrition advice; nutrition attitudes; barriers to nutrition advice; referral rates	Discuss patients' diet (90%); describe health benefits (95%); give stern warning about health risks of current diet (72%); offer tailored recommendations (40%); give written educational material (36.7%)
(Bradley, Elliot, & White, 1993) New Zealand	Questionnaires; management of dyslipidaemia mailed to all New Zealand GPs and New Zealand members of the Cardiac Society of Australian and New Zealand and fellows of the Royal Australasian College of Physicians; resent to non-responders after two months	1798/3010; (64%) GPs, physicians and cardiologists;	Rates of nutrition advice; rates of referral	96% of doctors report to give dietary advice to patients with high cholesterol

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Levine, et al., 1993) USA	Mail survey; randomly selected GPs listed with American Medical Association as primary care physicians; anonymous; demographic, attitude and behaviour data	3416/30000 primary care physicians (11%); age: 27-71 y, median 45y; male 84%	GP attitudes and practices; rates of nutrition advice	20-43% reviewed nutritional status, varying with items; 19-42% reported using nutritional resources; 59-66% identified those with nutritional problems; 52-75% advised, taught, and prescribed with nutrition in mind; additional study in nutrition produced more favourable attitudes about role of diet but not greater use of clinical nutrition skills
(Secker-Walker, Morrow, Kresnow, Flynn, & Hochheiser, 1991) USA	Questionnaire sent to family physicians in Vermont; developed by (Kottke, Foels, Hill, Choi, & Fenderson, 1984) with questions added; pre-tested with 30 family physicians; resent to non-respondents after three weeks with phone call after one month	101/123 family physicians; graduation from medical school 1933-1982; median 1973; 12% female	Rates of nutrition advice; nutrition attitudes; referral	65% reported making dietary recommendations to <40% of non-diabetic patients <40yrs; 27% routinely took diet history (those who took diet history were more likely to counsel)
(Waisman & Sauve, 1990) Canada	Face-to-face interviews; participants were randomly selected physician members of the College of Physicians and Surgeons of Alberta; five pilot interviews; included questions on 10 patient scenarios	71/158 (45%);	Rates of provision of nutrition advice and referral; reasons for providing counselling/referral	Provided counselling themselves 60% of the time; when patient asked for nutrition information most common behaviour was for GP to provide counselling (76%); when nutrition intervention required but not patient initiated, GPs solely counselled 44.5% of the time, counselled and referred 47% and solely referred 8.5%
(Orleans, et al., 1985) USA	Mail survey; three mailings over 6 months; survey participants randomly selected from American Medical Association files	350/610 family practice physicians (57% response rate); 95% male; 65% >40yrs; representative	Prevalence and treatment of obesity; frequency of referral; perceived obstacles to effective treatment and referral	Advise overweight patients about health risks of obesity and recommend specific diets on a fairly regular basis (~84%); provide diet advice ≥50% of patients (60%); regularly refer obese patients to outside weight-loss programs (almost 40%)
(Kottke, et al., 1984) USA	64 GPs were randomly selected from the University of Minnesota Family Practice Clinical Faculty; participants sent either an open-ended questionnaire or one with pre-coded responses with option for open ended response; questionnaires resent once to non-respondents	49/64 (77%) GPs	Nutritional intervention practices for saturated fat, sodium and fibre; barriers to providing nutrition advice	Almost 50% of GPs gave advice about fat, sodium or fibre to <20% of patients; ~10% of GPs gave advice to >80% of patients

Patient reported rates of nutrition advice by GPs are outlined in **Error! Reference source not found.**. Stange *et al.* (1998) believes that patient report following a consultation is a more objective method of measuring GP practices compared with GP self report. Counselling practises tend to be reliably reported by patients (Bonevski, et al., 1996). While patient reports are influenced by their ability to recall, they do provide useful data of what the patient heard the GP say, as well as what they remember, know and believe was said or done (Lewis, 1988). Only one study compared GP and patient reported rates of nutrition advice, with similar rates reported (Hunt, et al., 2001). Two studies identified that not all patients who believed they required weight loss advice from their GPs received it (Galuska, et al., 1999; Tan, et al., 2006).

Table 2-7 Patient reported rates of nutrition advice by GPs

Author/year/ country	Method	Participant characteristics	Relevance	Conclusions
(Tan, et al., 2006) Australia	Waiting room survey; five purposively sampled general practices; may-Aug 2005; questionnaire; height, weight, and waist circumference measured	227/295 (78%) eligible patients ≥18yrs; 36 excluded as were pregnant, too unwell, or had poor English	Patients' opinions of their weight, role of GPs in weight management; usefulness of weight loss advice; weight loss behaviours, comparison of BMI to opinions	31% felt they needed to lose weight and had been advised by GP to do so; 33% felt they needed to lose weight but had not been advised by their GP to do so
(Hunt, et al., 2001) USA	6 practices randomly assigned intervention /control. Invitations mailed to patients >18yrs scheduled for a routine health visit within two months. Intervention participants received tailored feedback letter food intake with recommendations, stage matched nutrition education booklets, a diet-health endorsement from either the GP or nurse practitioner and two motivational interviewing telephone calls	intervention sites: 28 providers, 230/566 patients >18yrs (41% response rate); control sites: 50 providers, 274/617 (44% response rate); 195 (85%) of intervention and 252 (92%) control returned final survey after three months	Feasibility of intervention in which PCP provided a brief health endorsement; consumption of fruit and vegetables, red and processed meats and low fat dairy products	71% of patients (n=154) reported acknowledged diet-health relationship or discussed tailored recommendations (same as providers); at baseline 50% of patients in intervention and 53% of control patients reported receiving at least one nutrition discussion with their provider in the year prior to the study
(Galuska, et al., 1999) Columbia USA	analysis of data from the Behavioural Risk Factor Surveillance System random digit telephone survey	12835 obese adults (>=18yrs) who visited their GP for a routine check-up during previous 12 months; 78% completed interviews	reported advice from health care professional to lose weight, reported attempts to lose weight	42% reported to be advised to lose weight by a health care professional despite 67% trying to lose weight
(Hunt, Kristal, White, Lynch, & Fries, 1995) USA	Random digit telephone survey, if possible included male and female from each household; ~25 min using a Computer Aided Telephone Interview system; questions on dietary habits, dietary change in previous five years, and stage of dietary change in adopting a low fat diet	Population based sample of 1972 persons ≥18yrs in Washington State; females=75% response rate, males=61%	Rates of nutrition advice; GP dietary recommendations; current dietary habits and planned change; benefit of a dietetics professional; referral to a dietetics professional	14.4% of men and 22.5% of women reported receiving a physician's recommendations for dietary change; 31% of those with chronic disease; 10% of those without chronic disease

Note: PCP=primary care provider/practitioner/physician

2.9.1.3 Barriers to providing nutrition advice in the general practice setting

Interventions to increase GP provision of nutrition advice must consider the numerous barriers that exist. These can be seen in Table 2-8 and include structural barriers as well as those related to GP and patient characteristics. Structural barriers identified in the literature include:

- Lack of time (Ammerman, et al., 1993; Amoroso, et al., 2005; Bonevski, et al., 1996; Campbell, et al., 2000; Hiddink, et al., 1995; Kushner, 1995; Macario, et al., 1998; Nicholas, Pond, & Roberts, 2003; Talip, et al., 2003);
- Lack of reimbursement (Bonevski, et al., 1996; Hiddink, et al., 1995; Kushner, 1995; Nicholas, et al., 2003; Talip, et al., 2003);
- Inadequate resources, such as patient handouts and education materials (Ammerman, et al., 1993; Kushner, 1995); and
- Lack of practical support such as staff/colleagues, and a work environment that is conducive to the delivery of prevention activities (Bonevski, et al., 1996).

GP related barriers include:

- Insufficient nutrition knowledge (Hiddink, et al., 1995; Kottke, et al., 1984; Kushner, 1995; Lazarus, 1997; Macario, et al., 1998; Nicholas, et al., 2003; Talip, et al., 2003);
- Lack of skills, experience, training and confidence in nutrition counselling (Bonevski, et al., 1996; Hiddink, et al., 1995; Kushner, 1995; Nicholas, et al., 2003);
- Failure to recognise the benefit of diet therapy (Kottke, et al., 1984);
- Difficulty translating nutrition knowledge into practice (Bonevski, et al., 1996; Kottke, et al., 1984; Macario, et al., 1998; Murray, Narayan, Mitchell, & Witte, 1993);
- Belief that the patient will be unable to comply or will not be willing to change (Ammerman, et al., 1993; Hiddink, et al., 1995; Kottke, et al., 1984); and

- Not considering the relevance of nutrition to the condition (Bonevski, et al., 1996).

Patient characteristics that are barriers to GPs providing nutrition advice include:

- Lack of compliance (Ammerman, et al., 1993; Amoroso, et al., 2005; Campbell, et al., 2000; Hiddink, et al., 1995; Kushner, 1995; Talip, et al., 2003);
- Lack of motivation (Campbell, et al., 2000);
- Lack of interest (Ammerman, et al., 1993; Amoroso, et al., 2005; Campbell, et al., 2000; Hiddink, et al., 1995; Kottke, et al., 1984; Nicholas, et al., 2003); and
- Competing priorities during a consultation (Bonevski, et al., 1996);

Table 2-8 Barriers to providing nutrition advice in the general practice setting

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Amoroso, et al., 2005) Australia	Surveys; mailed to GPs in one urban and one rural DGP in NSW along with information statement and letter of support from the DGP; non-respondents sent second mail out after 2 weeks as well as telephone/fax via practice manager; 25-item survey; piloted with GPs and reviewed by public health and general practice experts	146/276 GPs (57.0%; 31 ineligible); 68.5% GPs urban; participating practices represented 62.5% of those in the rural division and 79.0% urban; characteristics similar between responder/non-responders; characteristic differences between urban rural	Provision of SNAP risk factors advice and referral; training	Structural factors: time (2nd most commonly reported barrier); patient factors: patient compliance and attitude major barrier to GPs providing verbal nutrition advice (28.5%)
(Nicholas, et al., 2003) Australia	Questionnaire; convenience sample of GPs linked with university and dietetics professional members of the Regional Dietetics professionals Group; postal reminder after two weeks	GPs: 14/20 (70%); 71% female; dietetics professionals: 15/30 (50%)	Barriers to nutrition advice; barriers to referral	Structural factors: lack of financial reimbursement, time; GP factors: lack of nutrition knowledge, inadequate experience, lack of nutrition confidence; patient factors: lack of patient interest. Limitation: not representative sample

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Talip, et al., 2003) South Africa	Descriptive cross-sectional validation study; phase 1: test planning of an instrument to measure lifestyle knowledge and practices; phase 2: test evaluation	186/322 (58%) health professionals; 60 dietetics professionals , 37 dietetic interns; 14 GPs; 23 medical students; 52 nurses	Knowledge and practices of the role of lifestyle modification; counselling (confidence, barriers and perceived effectiveness)	Structural factors: lack of financial reimbursement, time; GP factors: lack of knowledge; Patient factors: lack of patient compliance
(Campbell, et al., 2000) Australia	Cross sectional survey; two questionnaires; separate groups to reduce respondent burden; one examined attitudes and other practices;<10 minutes to complete; pilot tested with 24 GPs	752/1500 (50%) sample of 24,000 GPs on Royal Australian College of GPs database (750 in each group)	GPs attitudes and practices regarding prevention and management of overweight and obesity	Structural factors: time constraints (6%); Patient factors: poor compliance (33%), lack of motivation (15%), lack of success/progress for patient (13%), inability to maintain weight loss (12%), lack of commitment/interest of patient (11%), patient denies actual habit (7%), unrealistic expectations by patient/expect immediate weight loss (5%), underlying emotional or psychological issues (5%)
(Macario, et al., 1998) USA	Interviews with experts: semi-structured interview format; recorded and transcribed; incentive; $20 per participant. Focus groups: six x 1hr groups	Interviews: five physicians, 10 nurses, 10 nutritionists and 10 literary experts (100% response rate). Focus groups: members of adult basic education classes	Sources of nutrition information; benefit of a GP; barriers to nutrition advice; role of PN; benefit of dietetics professional; referral to dietetics professional; provision of health and nutrition information to low literacy patients	Structural factors: lack of time; GP factors: lack of nutrition knowledge, difficulty translating nutrition data to practice advice
(Lazarus, 1997) USA	Physician nutrition education intervention; physician nutrition specialists provided physicians with individualised recommendations to discuss with patients; pre/post nutrition knowledge test; patient questionnaires; 3-day diet records for physicians	7 faculty members; nine residents; clinic patients ≥15yrs (number not reported)	Nutrition knowledge; perception of importance of nutrition in health maintenance; rates of nutrition advice	GP factors: lack of nutrition knowledge; physicians are not necessarily more knowledgeable about nutrition than their patients; limitation: number of patients not reported

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Bonevski, et al., 1996) Australia	Systematic review; Medline database search; 1991-1994; descriptive studies conducted in primary care settings; involving three preventive actions of interest	12 articles: four practitioner surveys; two patient surveys; three community surveys; one chart audits; two claims or billing data	Prevention in primary care; barriers to prevention	Structural factors: lack of financial reimbursement, time, resources, practical support (staff, colleagues, work environment); GP factors: lack of nutrition training, lack of nutrition confidence, unclear recommendations, forget; patient factors: patient reluctance, competing priorities during a consultation
(Hiddink, et al., 1995) Europe	Postal questionnaire sent to random sample of 1000 /2798 GPs in Netherlands in practice for 5-15 yrs; developed after focus group discussions and in depth interviews; initially letter + questionnaire; up to three reminder letters two weeks apart; telephone reminders after 11 weeks (≤3)	633/990 GPs (64%); 82% male; mean age 41 (3.6) years; practicing average 11 yrs; mean 30-35 patients/day	Barriers to providing nutrition advice; rates of nutrition advice; sources of nutrition information; nutrition education	Structural factors: lack of financial reimbursement, time; GP factors: lack of nutrition knowledge, lack of skills, lack of nutrition training, lack of nutrition confidence, GP belief that patient does not want to/won't change; patient factors: lack of patient compliance, lack of patient interest
(Kushner, 1995) USA	Random sample questionnaire mailed to 2250 primary care physicians; Thankyou/reminder postcards were sent 2wks after initial mail out; questionnaires resent four months later with small amount of money included to encourage participation	1030/2250 physicians (46%); 1103 responded (49%) however 73 (6%) of these excluded due to missing data.	Rates and barriers of nutrition advice and referral	Structural factors: lack of financial reimbursement, resources, time; GP factors: lack of nutrition knowledge, training, confidence; patient factors: lack of patient compliance
(Ammerman, et al., 1993) USA	Survey of residents and attending physicians in outpatient General Internal Medicine Clinic; previously tested; survey was pre-test for cholesterol intervention study	2nd and 3rd year residents in internal medicine (37) or medicine/paediatrics (9) and general medicine attending physicians (14) (100%)	Rates of nutrition advice; nutrition attitudes; barriers to nutrition advice; referral rates	Structural factors: lack of resources, time; GP factors: GP belief that patient does not want to/will not change; patient factors: lack of patient compliance, lack of patient interest
(Murray, et al., 1993) UK	Postal questionnaire of primary care workers in 10 representative practices in Grampian; based on previously validated questionnaire, modified and piloted	58/70 health professionals; 26 GPs, 20 community nurses, 12 PNs	Nutritional knowledge; barriers to nutrition advice	GP/PN factors: difficulty translating nutrition knowledge into practice

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Kottke, et al., 1984) USA	64 GPs were randomly selected from the University of Minnesota Family Practice Clinical Faculty; participants sent either an open-ended questionnaire or one with pre-coded responses with option for open ended response; questionnaires resent once to non-respondents	49/64 (77%) GPs	Nutritional intervention practices for saturated fat, sodium and fibre; barriers to providing nutrition advice	GP factors: lack of nutrition knowledge, lack of belief in diet, complexity and time required to assess nutritional behaviours , unclear recommendations, belief that dietary counselling is inefficient use of GPs' time, GP belief that patient does not want to/won't change; patient factors: lack of patient interest

A variety of strategies are required to overcome the barriers to providing nutrition advice for GPs, including GP education and training, provision of appropriate resources, and revisions of funding structures. The utilisation of PNs in providing nutrition advice may also be a valid approach in addressing GP time barriers.

2.9.2Access to nutrition advice by PNs

The number of PNs in Australian general practices is rapidly increasing, with a 50% increase between 2004-05 and 2006-07 (4 987 to 7 493) (Hordacre, et al., 2008). This resulted in an increase in the number of practices employing PNs from 37% of practices in 2004-05 to 51% in 2006-07 (35% increase) (Hordacre, et al., 2008). This figure differs from the 'General Practice Activity in Australia' data which estimated that approximately 60% of practices had a PN in 2004-05 and 2005-06 (Britt, et al., 2007), equating to 71% of GPs in 2007-08 (Britt, et al., 2008b). Figures by Hordacre *et al.* (2008) are based on Annual Surveys of Divisions of General Practice, and are therefore likely to be more reflective than the sample of GPs in Australia included in the 'General Practice Activity in Australia' data.

2.9.2.1 Benefit of PNs in the general practice setting

In recent times, the role of PNs has been expanded in the general practice setting in order to ease the burden of GP workforce shortages (Britt, et al., 2007; Hegney, Eley, Buikstra, Rees, & Patterson, 2006; Oldroyd, et al., 2003; Watts, et al., 2004). Table 2-9 summarises the literature on benefit of PNs in the general practice setting. General Practice statistics show that a higher proportion of practices from rural and remote

areas employ PNs, accounting for the reduced availability GPs in these areas (Hordacre, et al., 2008). The literature suggests PNs may be better placed than GPs in delivering nutrition advice as PNs are better at following guidelines, are possibly more persuasive with some patients (Harrison, Dowswell, & Wright, 2002; Phillips, et al., 2009) and were more likely to believe they could be effective in providing lifestyle counselling (Steptoe, Doherty, Kendrick, Rink, & Hilton, 1999). Patients may also be more satisfied with consultations delivered by PNs (Hegney, et al., 2006; Phillips, et al., 2009) due to better interpersonal skills (Atkin & Lunt, 1996; Phillips, et al., 2009) with more time to spend with them (Atkin & Lunt, 1996; Harrison, et al., 2002; Phillips, et al., 2009).

Table 2-9 Benefit of PNs in the general practice setting

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Phillips, et al., 2009) Australia	Sub-study 1: Cross-sectional study; 1 day-long visit per practice (interviews, observations, photos, field notes, practice maps); Sub-study 2: action research (a process of collective problem solving); practices identified by DGP as 'cutting edge' or 'mainstream' (baseline, process and outcome data over 1 year period)	Nurses, managers and GPs; NSW and Victoria, Australia; Sub-study 1: 25 practices; Sub-study 2: 7 practices	Role of PNs	Many GPs believed patients communicated more freely to nurses, raising important issues not raised with GPs (due to not wanting to bother the GP and nurturing responsive nature of nurses); nurses placed personal importance on meeting patient needs/positive patient interaction
(Hegney, et al., 2006) Australia	Questionnaire; recruitment via general practices, a DGP and community groups and contacts; developed from the literature; 15 minute to complete prior to interview or focus group	Consumers of general practice care (n=106); 82% female; from five Queensland towns	Perceived role of PNs by consumers	Improves quality of patient care; frees up GP time spent on certain tasks so eases GP workforce shortages; holistic and family oriented approach; patients generally more satisfied with consultations received from PNs
(Goldstein, Whitlock, & DePue, 2004) USA	Review of evidence for interventions that address health behaviours in primary care settings	US Preventive Services Task Force recommendations and systematic reviews	Strategies for improving delivery of nutrition advice	Nurse-led teams are useful in sharing the responsibility and burden of delivering interventions especially in chronic disease or when intensive levels of counselling are beneficial

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Watts, et al., 2004) Australia	National telephone survey of PNs; 14 workshops with GPs and PNs around Australia; qualitative responses	222 PNs; EN/RNs; from urban and rural areas	Role of PN	PN add value and enhance quality of patient care as they work alongside GPs; relieve some of GPs' work load
(Harrison, et al., 2002), UK	Stratified random sample of 49 GPs from different practices; subsample of 29 PNs; interviewed three times over 16 months; 30-60 minutes; taped and transcribe	49 GPs; 29 PNs (100%)	Benefit and role of a PN; attitudes, use and assessment of importance of guidelines	PNs are better at following guidelines and protocols than GPs; most GPs believed PNs are consistent and reliable in routine tasks, have more time and more persuasive with some patients
(Whitlock, et al., 2002) USA	Systematic review of behavioural counselling interventions; adapted existing United States Preventive Services Task Force (USPSTF) methods to behavioural counselling intervention reviews	The Counselling and Behavioural Interventions Work Group of the USPSTF	Impact of behavioural counselling interventions on health outcomes; benefit of GP; role of PNs	When the entire health care team takes appropriate and complementary roles in delivering efficacious interventions GPs efforts are enhanced
(Atkin & Lunt, 1996) UK	Interviews; in-depth, qualitative; semi-structured; average length =45min ; from 10 Family Health Service Authorities (FHSA) across England and Wales	56 PNs, 29 GPs, 11 managers of provider units, 12 commissioners of community nursing services, 17 FHSA representatives, 12 RHA managers and 1 Welsh Office representative	Role of PN	Patients talk to PNs about things considered to waste GPs' time; PNs more accessible and more time to listen than GPs; PNs prevent unnecessary use of the GPs time, enabled the practice to meet its targets, extended the range of services offered by the practice; their interpersonal skills make it more likely that patients will talk to them; provide continuous care

2.9.2.2 Role of PNs in the general practice setting

In Australia, the role of PNs in delivering nutrition advice in general practice is expanding (Table 2-10). There are an increasing number of Medicare PN item numbers which provide funding for PNs to assist GPs with activities within the PNs' scope of practice (Atkin & Lunt, 1996; Hegney, et al., 2006; Macario, et al., 1998). Evidence shows that PNs have an increasing role in delivering preventive activities (Atkin & Lunt, 1996; Raftery, Yao, Murchie, Campbell, & Ritchie, 2005; Steptoe, et al., 1999), chronic disease management (Atkin & Lunt, 1996; Oldroyd, et al., 2003; Watts, et al., 2004) and advising patients about dietary behaviours in the general practice setting (Britt, et al., 2007; Brotons, et al., 2003; Pineiro, et al., 2005). 'General practice activity in Australia 2007-08' data indicates that clinical treatments made up 7.7% of PNs' workload, with counselling or advice about nutrition/weight accounting for 6.7% of

clinical treatments, or 0.5% of all PN encounters (Britt, et al., 2008b). The introduction of Medicare item numbers have resulted in PNs conducting more of the counselling/advice to patients, with a subsequent decrease in that provided by GPs (Britt, et al., 2007).

Table 2-10 Role of PNs in delivering nutrition advice in the general practice setting

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Phillips, et al., 2009) Australia	Sub-study 1: Cross-sectional study; 1 day-long visit per practice (interviews, observations, photos, field notes, practice maps); Sub-study 2: action research (a process of collective problem solving); practices identified by DGP as 'cutting edge' or 'mainstream' (baseline, process and outcome data over 1 year period)	Nurses, managers and GPs; NSW and Victoria, Australia; Sub-study 1: 25 practices; Sub-study 2: 7 practices	Role of PNs	PNs have many roles and change between them rapidly; roles: patient carer, organiser (organisational aspects of patient care and the systems supporting this), quality controller (especially related to practice accreditation), problem solver, educator (to patients and practice staff), agent of connectivity (between differing professions and patients - 45% of time in contact with patients; 16% in contact with staff); 43.5% of observed time was spent on clinical activities; 21% of clinical activities undertaken directly funded through Medicare
(Britt, et al., 2008b) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	953 GPs; 953,000 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	2007-08 clinical treatments accounted for 7.7% of PN activity; counselling/ advice about nutrition/weight accounted for 6.7% of clinical treatments
(Britt, et al., 2008a) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	930 GPs; 930,000 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	2006-07 clinical treatments accounted for 8.9% of PN activity; counselling/ advice about nutrition/weight accounted for 13% of clinical treatments

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Britt, et al., 2007) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	1,017 GPs; 101,700 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months;	General practice activity; nutrition advice by GPs/PNs; referral	60% practices had a PN in 2004-05 and 2005-06; PNs conducted <1% of clinical treatments (such as advice, education and counselling); clinical treatments accounted for only 5% of the PN activity; counselling/advice about nutrition/weight accounted for 11% of clinical treatments; introduction of PN item numbers and growing role and number of PNs means certain tasks will increasingly be transferred to PNs
(Brauer, et al., 2006) Canada	Modified Delphi process; lead physicians and dietetics professionals from three Family Health Networks invited to send a representative; participants met for 1.5 days to identify feasible approaches to practice; Delphi questionnaire created and emailed to participants; teleconference discussions	29 organisations contacted; 23/24 participants completed Delphi process; 11 RDs; 12 other professions	Models of nutrition services	Consensus that nurses should screen for nutrition-related problems indentify willing patients and refer to RD for nutrition counselling; moderate support for nurses to provide basic advice and referral to RDs for counselling; limited support for nurses to provide nutrition counselling
(Hegney, et al., 2006) Australia	Questionnaire; recruitment via general practices, a DGP and community groups and contacts; developed from the literature; 15 minute to complete prior to interview or focus group	Consumers of general practice care (n=106); 82% female; from five Queensland towns	Perceived role of PNs by consumers	Mean level of comfort of consumers with PNs providing services (1=very comfortable, 2=somewhat comfortable, 5=very uncomfortable): providing education related to health issues (1.34); giving lifestyle advice (1.54); overseeing management of chronic disease (1.84)
(Raftery, et al., 2005) U.K	Nurse led secondary prevention clinic at general practices for one year; protocol included: review of symptoms/risk factors, treatment, promotion of healthy behaviours and secondary preventive medical treatment; patients' notes and SF-36 quality of life questionnaire at baseline, 1&4 years, deaths, hospital admissions and outpatient attendances	patients with diagnosis of coronary heart disease (CHD) without terminal illness, dementia or housebound	Impact of nurse led CHD clinic	Nurse led clinics for the secondary prevention of CHD in primary care are relatively cost effective and resulted in improvements in length of life

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Hegney, Price, Patterson, Martin-McDonald , & Rees, 2004) Australia	2 Questionnaires; recruitment via general practices, a DGP and community groups and contacts; developed from the literature; 15 minute to complete prior to taped focus group; workshops/interviews with key stakeholders used to check research recommendations	Consumers of general practice care; study 1: n=170 from around Australia; study 2: n=106 from five towns in Queensland, 82% female	Perceived role of PNs by consumers	Consumer belief that PNs should enhance the work of the GP rather than replace it; patient choice should remain with neither acting as gatekeepers to other
(Watts, et al., 2004) Australia	National telephone survey of PNs; 14 workshops with GPs and PNs around Australia; qualitative responses	222 PNs; EN/RNs; from urban and rural areas	Role of PN	PNs play a key role in supporting the role of the GP; there is need for one PN for every GP; GPs identified the need to expand the role of PNs in patient educations and chronic disease management; PNs desired a greater role, level of professional autonomy, and to be conducting more nurse run clinics, patient educations and chronic disease management; funding structures for PNs impact on their role and activities conducted
(Oldroyd, et al., 2003) Australia	10 focus groups; GPs recruited through one rural and four urban DGP; standard interview schedule used; GPs received reimbursement and CPD points	54 GPs; 72% male; mean age 49 yrs (range 31-67); mean yrs experience in general practice 24 (range 9-41); 37% solo practitioners (range 1-24 GPs); (unclear of response rate)	GPs' views of chronic-disease care; role of PNs	GPs believed PNs' had a key role in patient educations for chronic disease management; PNs reduced GPs' burden in chronic-disease care not by taking over clinical duties, but rather assisting by educating patients, generating recalls and undertaking routine tests
(Brotons, et al., 2003) Europe	Email survey to GPs representing national colleges	15/28 GPs representing national colleges	Role of PN; health promotion/prevention activities	11/15 say that both the GP and PN advise patients about dietary practices; nurse play an important role in providing nutrition advice
(Steptoe, et al., 1999) UK	Questionnaire sent to GPs/PNs from practices participating in RCT of behavioural counselling for cardiovascular disease prevention; completed prior to randomisation; series of attitudinal statements	107 GPs and 58 PNs from 19 practices (100% response)	Role of PN; training of PN	Majority of GPs (59%) and PNs (64%) agreed that PNs are the most appropriate to carry out health promotion; more PNs than GPs believe they 'can offer patients a great deal in the way of lifestyle counselling' (50% vs. 17.3%)

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Macario, Emmons et al. 1998) USA	Interviews with experts: semi-structured interview format; recorded and transcribed; incentive; $20 per participant. Focus groups: 6x1hr groups	Interviews: five physicians, 10 nurses, 10 nutritionists and 10 literary experts (100% response rate). Focus groups: members of adult basic education classes	Provision of health and nutrition information to low literacy patients;; benefit of a GP; role of PN	The introduction of PN item numbers and the growing role and number of PNs is likely to result in the PNs conducting activities that were previously conducted by GPs; nurses also have time constraints limiting their role
(Atkin & Lunt, 1996) UK	Interviews; in-depth, qualitative; semi-structured; average length =45min ; from 10 Family Health Service Authorities (FHSA) across England and Wales	56 PNs, 29 GPs, 11 managers of provider units, 12 commissioners of community nursing services, 17 FHSA representatives, 12 RHA managers and one Welsh Office representative	Role of PN	Chronic disease management and health promotion commonly preformed; viewed as major component of PN role; often PNs took full responsibility for organising the chronic disease clinics, especially when had additional training

2.10 Implementation of nutrition advice in the general practice setting

Initiatives such as Lifescripts© have been developed in order to aid the implementation of nutrition advice by GPs and PNs. Chronic disease is on the increase in Australia, with this accounting for nearly 70 per cent of the total health expenditure on disease (National Health and Hospitals Reform Commission, 2009). However, many chronic diseases are preventable, being influenced by behaviours such as poor nutrition, smoking, excessive alcohol and lack of physical activity (National Health and Hospitals Reform Commission, 2009). These factors are associated with 32% of Australia's health burden (National Health and Hospitals Reform Commission, 2009). Therefore it is important that health habit counselling is provided to impact these behaviour issues and reduce preventable morbidity and mortality (Stange, Flocke, Goodwin, Kelly, & Zyzanski, 2000).

2.10.1 Lifescripts©

Lifestyle prescriptions, otherwise known as Lifescripts©, are a Commonwealth initiative launched in September 2005. Lifescripts© were originally developed for use by GPs to deliver a variety of health messages in a prescription format. They are designed to assist general practices to support patients to make healthier lifestyle choices (National Heart Foundation of Australia and Kinect Australia for the Lifescripts consortium, 2005). Scripts exist for the five key lifestyle areas of smoking, nutrition, alcohol, physical activity & weight management (refer to Appendices).

Lifescripts© were developed out of the Smoking, Nutrition, Alcohol and Physical activity (SNAP) initiative that was launched in 2001 (Department of Health and Ageing, 2005b). Lifescripts© were developed by a consortium comprised of (Kinect Australia for the Lifescripts consortium, 2005):

- Nutrition and weight management – Faculty of Health, University of Newcastle, Kinect Australia and the National Heart Foundation of Australia;
- Smoking cessation – Department of General Practice, Flinders University;
- Alcohol – Southcity GP Services; and
- Physical activity – Kinect Australia and the National Heart Foundation of Australia.

Lifescripts© aim to overcome many of the barriers associated with delivering nutrition advice, prompting GPs as to which aspects of diet should be assessed (assessments), and providing recommendations (prescriptions). They are designed to be incorporated into activities that Divisions or practices are currently working with; so are not meant to be an added burden, or an unrealistic expectation (Drenthen & Beijaert, 2000). Lifescripts© also include the evidence behind the recommendation to help increase the GPs' belief in the role of diet.

For the patient, the nutrition messages provided by the GP are more likely to be reinforced by taking home a Lifestyle Prescription, as it provides a succinct reminder of the recommendations. This helps to overcome the barrier of patients forgetting the important messages that were given during the short consultation (National Heart

Foundation of Australia and Kinect Australia for the Lifescripts consortium, 2005). The tick-box format also allows patient to feel like the advice has been tailored to suit their needs. The prescription format is tailored to GPs (Australian General Practice Network, 2007).

The scripts are available as either prescription pads or as computer templates. Lifescripts© reminder stickers can be inserted into medical records to prompt follow-up. The package includes a CD on motivational interviewing, providing demonstrations of Lifescripts© in action as well as written materials. This aims to help build the GPs confidence with using Lifescripts©.

Lifescripts© also aim to encourage appropriate referral to a dietetics professional. They outline specific conditions that would benefit from further assessment and counselling from dietetics professionals, many of which the GP may have not been aware on not previously thought about. Lifescripts© also prompt referral to a dietetics professional and provide the DAA 'find a dietetics professional' contact details.

2.10.1.1 Evaluations of Lifescripts©

Demonstration Division projects have been implemented with funding from the Commonwealth Government to evaluate Lifescripts© (Department of Health and Ageing, 2009b). These Demonstration Divisions implemented Lifescripts© in general practices in a variety of ways. At the time the work in this thesis was commenced no evaluations were initiated. At the time of writing, no completed evaluations were available for review.

The Community Health Risk Factor Management Research Project evaluates the use of 'action plans' for risk factor management in the community health setting (Table 2-11) (Laws, et al., 2008). This project uses an adaption of the Lifescripts© resources in their assessment form and 'action plans' to make it suitable for use by community health staff.

Table 2-11 Evaluations of Lifescripts© in the general practice setting

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Laws, et al., 2008) Australia	Adapted Lifescripts© materials for use in the Community Health Setting; "action plans" for each risk factor; involved two Area Health Services and three community health teams; initial needs assessment undertaken to inform development of risk factor management models; models were piloted over a six month period; quantitative and qualitative research methods; clinician survey and prospective client audit (baseline and follow-up); semi structured interviews with purposeful sample of clinicians and managers; client survey and two client focus groups	Generalist community nurse team (metropolitan) (n=35); co-located multi-disciplinary community health team (rural) (n=15); multidisciplinary primary health care team (rural and remote) (n=10); 37/41 (90%) clinicians completed baseline survey; 48/55 (87%) clinicians completed post intervention survey; client survey (n=181); 35/41 (85%) clinicians completed the audit (baseline, post intervention); Semi-structured interviews: clinicians (n=23), team managers (n=3), project officers (n=2) and senior community health managers (n=2)	Role of community health clinicians in providing lifestyle advice	Appropriate setting for risk factor management due to access to the population, continuity of care and congruence between risk factor management and clinician roles and service priorities; 91% agreed or strongly agreed that community health staff should ask about lifestyle risk factors and 87% agreed or strongly agreed that community health staff should undertake lifestyle risk factor interventions with appropriate clients; Community health staff seen by clients as appropriate and reliable source of support for lifestyle change; 50% clinicians reported asking most (>75%) new clients about nutrition, 31% of clinicians reported routinely providing verbal nutrition advice for those identified with a lifestyle risk factor project resulted in an increase in clinician knowledge and confidence across all aspects of risk factor management; all clinicians rated resources as highly useful (prompt recommendations/ strategies; provided credible information and practical management strategies; increased clinicians' confidence to offer interventions)

The development of Lifescripts© was influenced by the New Zealand 'Green Prescription' for physical activity (Gribben, Goodyear-Smith, Grobbelaar, O'Neil, & Walker, 2000; Service Planning and Funding Capital and Coast District Health Board, 2003; Swinburn, Walter, Arroll, Tilyard, & Russell, 1997; Swinburn, Walter, Arroll, Tilyard, & Russell, 1998) and the Victorian Active Script Programme (Sims, Huang, Pietsch, & Naccarella, 2004) which are both based on physical activity scripts delivered by GPs (Table 2-12).

Table 2-12 Predecessors to Lifescripts©

Author/ year/ country	Overview of program	Evaluation results	Positives/negatives
Green Prescriptions			
(Service Planning and Funding Capital and Coast District Health Board, 2003) New Zealand	Started in New Zealand; individual written physical activity prescription delivered by the GP/PN; resulted from the large percentage of people at risk of health concerns as overweight/obese with low physical activity levels; 3-4 telephone follow-ups with exercise specialist for motivational counselling; quarterly newsletters and exercise programme information; no cost to the patient; GP/PN training on benefits of exercise, how to prescribe it and how to use the assessment/prescription forms	Most often used for hypertension, diabetes, heart disease, or routine follow-up; follow-up considered important to add to value of exercise prescription; PN had in phone-calls and follow up at regular check-ups; appropriate training and resource material identified as important for successful implementation (limitation of evaluation: GPs were reimbursed for time training, conducting the prescriptions and attending the focus groups which is not realistic in the usual situation	POSITIVES: confidence and proficiency increased with use; reminders of the benefits and risks of exercise increased GPs' confidence to discuss and prescribe appropriate physical activity goals; involving patients in developing goals was important for improving success; GPs believed beneficial/patients left with written goal to support verbal advice provided NEGATIVES: Time constraints: assessment/prescription ~5 minutes/patient; used less often during busy times as put GP behind schedule
(Gribben, et al., 2000) New Zealand	GPs given four hours of training prior to implementation	48–65% of GPs were using the tools; prescriptions mainly used when requirement for increased exercise and presence of high-risk medical conditions such as hypertension, cardiovascular disease, obesity and diabetes.	POSITIVES: GPs had no difficulty discussing physical activity with patients NEGATIVES: Reasons not used: already providing physical activity advice, concern that the tools were patronising and simplistic, issues with compliance and lack of time
(Swinburn, et al., 1998) Australia	RCT assessing impact of written (green prescription) vs. verbal physical activity advice from GPs over six weeks for sedentary people; conducted in two New Zealand urban centres over 13 weeks	N=239 participants randomised to green prescriptions, n=252 to verbal advice only; 35 lost to follow-up; increase in number of people participating in any recreational physical activity increased more in green prescription group (p=0.004) as was number of people that changed their amount (p=0.02)	POSITIVES: increase physical activity over a six week period were seen; written advice was more effective than verbal advice alone

Author/ year/ country	Overview of program	Evaluation results	Positives/negatives
Green Prescriptions			
(Swinburn, et al., 1997) Australia	Training included information on benefits of exercise, how to prescribe it and how to use the assessment/ prescription forms	25 GPs participated in focus groups on attitudes and perceptions towards green prescriptions; appropriate training and resource material were identified as important for successful implementation	POSITIVES: large increases in physical activity sedentary and random groups during six week period; written advice more effective than verbal advice alone; the goal setting format was perceived to be a positive way to prescribe physical activity; patients expect to receive a 'piece of paper' from their GP; GPs were favourable towards the Lifescripts© and preferred giving the written advice; patients responded positively NEGATIVES: time constraints major barrier; remuneration in this study used financial barriers, however this is not usually available
Active Script program (ASP)			
(Sims, et al., 2004) Australia	Began 1999; aimed to increase number of Victorian GPs providing effective physical activity advice; GPs were provided with a ASP kit, including a GP information folder, script pad, assessment tool, poster, and patient record stamp; training: seminars and individual practice visits; referral and collaboration encouraged between the GPs and community providers of physical activity	Evaluation via GP fax back surveys; clinical audits from five GPs and patient telephone interviews (n=54);	POSITIVES: 3/4 of GPs who participated in the evaluation more frequently advised patients to be active as a result of the EPC Program; 2/3 assessed physical activity levels more often; patients believed GPs have a role in encouraging physical activity, and found the scripts helpful in motivating them and prompting them to remember advice after the consultation; moderate increase in physical activity by most patients; cost effective with improvements to health offsetting GP time to conduct NEGATIVES: follow-up reminders were needed in addition to the education and practice visits to prompt GPs to use the ASP resources and promote physical activity; more patients remembered verbal advice (30) than written (20)
(Booth, Nowson, Huang, Lombard, & Singleton, 2006) Australia	Active Nutrition Script (ANS) are a follow on from the ASP; brief (<5 min) nutrition and physical activity tool for use in general practice; includes five nutrition messages and personalised exercise advice for healthy lifestyle and prevention of weight gain	19 Melbourne GPs; provided scripts to 145 patients; median of nine scripts over four weeks; interviews conducted with 17/19 GPs	GPs reported that ANS provided clear messages that were simple to deliver; while scripts were aimed at healthy weight/ overweight patients for prevention of weight gain, 52% of patients were obese; approximately 4.9 minutes to deliver each script; suggested PNs may be more appropriate to deliver ANS

2.11 Implementation of nutrition advice by dietetics professionals

While the benefits and role of GPs and PNs in delivering nutrition advice have been acknowledged, this basic advice cannot replace referral to dietetics professionals. Dietetics professional referral for personalised counselling should follow the provision of basic nutrition advice by GPs and PNs for willing patients (American Dietetic Association, 1998; Bloom, 1999; Brauer, et al., 2006; Bridle & Hawkes, 1990; Brotons, et al., 2003; Macario, et al., 1998; McClain, McKinney, & Ralston, 1992; Peel Health Care Ltd, 2007).

2.11.1 Benefit of dietetics professionals

A key way of improving delivery of nutrition advice is to increase referrals to dietetics professionals. The benefit of dietetics professionals are shown in Table 2-13. Dietetics professionals are the experts in nutrition, having extensive nutrition knowledge (American Dietetic Association, 1998; Hiddink, et al., 1997a; Macario, et al., 1998; Talip, et al., 2003; van Dillen, et al., 2006; Waisman & Sauve, 1990). Dietetics professionals are able to provide more effective nutrition education than GPs as they have more time and are able to provide more intensive interventions (Macario, et al., 1998). They can also provide practical and specific advice and have the appropriate educational materials (American Dietetic Association, 1998; Macario, et al., 1998).

While GPs are in an ideal position to initiate nutrition advice, collaboration with dietetics professionals, who have the necessary knowledge and skills, is recommended (Hunt, et al., 1995; Macario, et al., 1998; van Binsbergen, 1997) and assists GPs in reinforcing messages (Pomeroy & Worsley, 2009b). This could also help to remove some of the barriers that are perceived by GPs to providing nutrition advice. Collaboration results in GPs' time being more productive, allowing them to focus their attention on patients medical problems, provide brief dietary messages and refer the patient if necessary (Kushner, 1995). It also provides an independent opinion of the patient's dietary capabilities (Pomeroy & Worsley, 2009b). Dietetics professionals can

improve GPs' nutrition advice by working closely with them and sustaining good communication and cooperation (van Binsbergen, 1997).

Table 2-13 Benefit of dietetics professionals

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Pomeroy & Worsley, 2009b) Australia	Face to face interviews: contacted by telephone and invited to participate; Feb-May 2005; interviews recorded, transcribed and analysed. Questionnaire: 19 questions with 159 closed and open items to GPs and dietetics professionals about their roles in dietary management; Oct 2005-June 2006	Semi-structured interviews: 30/100 GPs; surveys: 248/825 GPs (30%) & 180/300 dietetics professionals (60%)	Role of dietetics professional	Dietary assessment, education and behaviour change skills of dietetics professional perceived by GPs to be highly important and distinguish them from other service providers; GPs are reliant on dietetics professionals performing this role and providing feedback in order to reinforce messages
(Brauer, et al., 2006) Canada	Modified Delphi process; lead physicians and Registered Dietetics professionals (RDs) from three Family Health Networks (FHN) and relevant health professionals invited to send a representative; participants met for 1.5 days to identify various feasible options and approaches for practice; Delphi questionnaire created and emailed to participants; teleconference discussions	29 organisations contacted; 23/24 participants completed Delphi process; 11 RDs; 12 other professions	Models of nutrition services	Consensus that RDs are responsible for nutrition services within the FHN; evaluating nutrition health services and gaps; participating in nutrition-related continuing education activities and sharing information with in the FHN;
(van Dillen, et al., 2006) Netherlands	GP focus groups. nine Dutch cites; random sample of 100-200 GPs within 50km of city; sourced from the telephone book; mailed invitation; followed up by phone call; focus group lasted 2h; guided by experienced moderator	81 GPs from nine cities. 70 male; 50 from solo practice, 23 dual practice, eight group practice; even distribution between city and country	GPs' perceptions of nutrition communicatio n; nutrition information seeking behaviour	GPs viewed dietetics professionals as nutrition experts
(Goldstein , et al., 2004) USA	Review of evidence for interventions that address health behaviours in primary care settings;	US Preventive Services Task Force recommendations and systematic reviews	Strategies for improving delivery of nutrition advice	Multidisciplinary teams are useful in sharing responsibility and burden of delivering interventions especially in chronic disease or when intensive counselling is required

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Talip, et al., 2003) South Africa	Descriptive cross-sectional validation study; phase 1: test planning of an instrument to measure lifestyle knowledge and practices; phase 2: test evaluation	186/322 (58%) health professionals; 60 dietetics professionals , 37 dietetic interns; 14 GPs; 23 medical students; 52 nurses	Knowledge and practices of the role of lifestyle modification; counselling (confidence, barriers and perceived effectiveness)	Dietetics professionals and dietetic interns had best nutrition knowledge scores
(Pritchard, Hyndman, & Taba, 1999) Australia	Consecutive patients screened opportunistically by study dietetics professional; those with overweight, hypertension or type two diabetes indicated by notes or visibly overweight invited; weight, height, BP, glucose; allocated to three groups: dietetics professional, doctor/dietetics professional and control; dietetics professional provided 6 counselling sessions; doctor discussed progress	273/296 patients 25-65 years; 71% female	Cost effectiveness of nutrition counselling	Doctor/dietetics professional combination resulted in higher attendance and better results than dietetics professional alone as doctor acted as motivator
(American Dietetic Association, 1998) USA	Position statement; 'Nutrition education for health care professionals;	N/A	Nutrition education; role of health professionals; dietetics professional referral	Dietetics professionals have unique training and ability; they assess nutritional status, identify nutrient needs and help translate these into appropriate foods for each client
(Macario, et al., 1998) USA	Interviews with experts: semi-structured interview format; recorded and transcribed; incentive; $20 per participant. Focus groups: 6x1hr groups	Interviews: five physicians, 10 nurses, 10 nutritionists and 10 literary experts (100% response rate). Focus groups: members of adult basic education classes	Sources of information; benefit of GP & dietetics professional; role of PN; referral to dietetics professional; provision of health and nutrition information to low literacy patients	Nutritionists can be more effective than other providers as have the appropriate educational materials (food models) and knowledge of food substitutions and measurements; nutritionists have more time than GP and nurses to talk about nutrition
(Hiddink, et al., 1997a) Netherlands	Telephone questionnaire for consumers; random sample; computer aided structured questionnaire; predominately closed questions	608/1200 consumers (52%)	Referral to and perceived expertise of nutrition information sources; nutritional interest, attitudes/ beliefs	Dietetics professionals had highest level of nutrition expertise; second highest used source (21%)

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(van Binsbergen, 1997) Netherlands	Evaluation of the Dutch College of GPs (NHG) standards that outline the preferred policy of detection, treatment, and control of different clinical conditions in general practice in relation to nutrition	N/A	Nutrition related aspects of the NHG standards	Regular consultations with dietetics professionals will assist GPs in providing adequate nutritional advice
(Hunt, et al., 1995) USA	Random digit telephone survey, if possible included male and female from each household; ~25 min using a Computer Aided Telephone Interview system; questions on dietary habits, dietary change in previous five yrs, and stage of dietary change in adopting a low fat diet	Population based sample of 1972 persons ≥18yrs in Washington State; females=75% response rate, males=61%	Rates of nutrition advice; GP dietary recommendations; current dietary habits and planned change; benefit of a dietetics professional; referral to a dietetics professional	Dietetics professionals can work with physicians to provide high-contact intervention through multiple channels to identify and educate patients and support long-term maintenance of dietary change
(Waisman & Sauve, 1990) Canada	Face-to-face interviews; participants were randomly selected physician members of the College of Physicians and Surgeons of Alberta; five pilot interviews; included questions on 10 patient scenarios	71/158 (45%); 72% male; representative; 73% saw patients full-time	Rates of provision of nutrition advice and referral; reasons for providing counselling/ referral	Physicians view dietetics professionals as the nutrition experts

2.11.2 GP referral to dietetics professionals

2.11.2.1 Rates of GP referral to dietetics professionals

Many studies reported on GP referral rates to dietetics professionals; however, the majority of these relied on self-reported data, and were therefore subject to bias (Bonevski, et al., 1996; Lewis, 1988; Stange, et al., 1998). Overall studies showed that a high percentage of GPs reported referring to dietetics professionals; however, the number of patients actually referred was low (Table 2-14). 'General practice activity in Australia' reports revealed there were only 0.2 dietetics professional referrals per 100 patients each year between 2003-04 and 2007-08; between 6.4% and 7.9% (Britt, et al., 2008a; Britt, et al., 2008b; Britt, et al., 2007). While 'Individual AH services under

Medicare' were introduced in 2004-05, it was not until 2005-06 that a large increase in the number of dietetics professional referrals was seen (Britt, et al., 2007).

Table 2-14 Rates of referral to dietetics professionals – Measured

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Britt, et al., 2008b) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	953 GPs; 953,000 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	0.2 dietetics professional referrals per 100 patients (2007-08); 215 referrals; 6.5% of AH referrals
(Britt, et al., 2008a) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	930 GPs; 930,000 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	0.2 dietetics professional referrals per 100 patients (2006-07); 210 referrals; 7.5% of AH referrals
(Britt, et al., 2007)	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	1,017 GPs; 101,700 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	No significant changes in referral over past three years; 2003-04– 178 referrals; 6.9% of AH referrals; 2004-05– 180 referrals; 7% of AH referrals; 2005-06– 232 referrals; 7.9% of AH referrals; 0.2 per 100 encounters for each of these years; Medicare rebates not significantly affected this data; dietetics professionals received 4th highest number of referrals
(Witt, et al., 2006) Canada	Registered Dietetics professionals employed in Family Health Networks (FHNs); FHN selected from proposals from FHNs and primary care models meeting specific conditions; FHN staff received letter and questionnaire; workload measurement, receptionist time and questions collected twice for 2-week periods; physician referral activity for one week; forms and questionnaires pilot tested or reviewed	3 FHNs chosen from eight submissions; three Registered Dietetics professionals; 27/41 physicians (66%); 1884 patients reviewed	Rates of nutrition advice; rates of referral;	1.26% of patients were referred to the dietetics professionals in one year (an additional 1.1% were referred to community programs); 757 new referrals from 41 GPs, or 379 per FTE dietetics professional; 302 patients per FTE dietetics professional were seen

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Britt, et al., 2005) Australia	Randomly selected Australian GPs completed details for 100 consecutive GP-patient encounters; GPs approached by letter; followed up by telephone	953 GPs; 95300 patient encounters; GPs claiming ≥375 general practice Medicare items of service in previous three months	General practice activity; nutrition advice by GPs/PNs; referral	0.2 dietetics professional referrals per 100 patients (2004-05)

Self-reported data shows a variety of rates, depending on frequency of referral reported, ranging from almost all for those who do refer to a dietetics professional (Hiddink, et al., 1997b; Nicholas, et al., 2004) to 48-83% who regularly refer (Ammerman, et al., 1993; Amoroso, et al., 2005; Hiddink, et al., 1995; Maiburg & Hiddink, 1999). This data is presented in Table 2-15.

Table 2-15 Rates of referral to dietetics professionals – Self report

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Amoroso, et al., 2005) Australia	Surveys; mailed to GPs in one urban and one rural DGP in NSW along with information statement and letter of support from the DGP; non-respondents sent second mail out after 2 weeks as well as telephone/fax via practice manager; 25-item survey; piloted with GPs and reviewed by public health and general practice experts	146/276 GPs (57.0%; 31 ineligible); 68.5% GPs urban; participating practices represented 62.5% of those in the rural division and 79.0% urban; characteristics similar between responder/non-responders; characteristic differences between urban rural	Provision of SNAP risk factors advice and referral; training	47.5% offer referral 'often' or 'very often'; 81.9% find it 'easy' or 'very easy' to access referral services (highest of all SNAP risk factors)
(Nicholas, et al., 2004) Newcastle, Australia	Self-administered questionnaire; sent to GPs in HUDGP; Oct 2001; reminder after six weeks	159/419 HUDGP GP (40%)	Rates of nutrition advice and referral	99% reported to refer to a dietetics professional (1% missing data)
(Brotons, et al., 2003) Europe	Postal survey sent to GPs (piloted by 10 GPs in each country); email survey to GPs representing national colleges	1976 GPs: from 10 European countries, mean age=44, 61% female; 15/28 GPs representing national colleges	Health promotion/ prevention activities; clinical scenarios; beliefs and attitudes in practice; barriers to prevention	5/15 reported that they can refer to a trained nutrition specialist

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Maiburg & Hiddink, 1999) Netherlands	Questionnaire; based on questionnaire that has been used and validated in cross-sectional and longitudinal investigations	575/985 GP trainees (58% response rate); 62% female	Determinants of nutrition guidance practices; rates of nutrition advice/ referral	76% regularly referred to dietetics professional
(Hiddink, et al., 1997b) Netherlands	Questionnaire; random sample of 1000/2798 primary care physicians in Netherlands; reminder letter sent every two weeks (up to 3); telephone reminders after 11 weeks (up to 3)	633/1000 (63%) primary care physicians; representative sample	Nutrition attitudes and beliefs; provision of nutrition advice; sources of nutrition advice for GPs	Almost all respondents provided nutrition information and referred
(Kristeller & Hoerr, 1997) Minnesota, USA	Mail questionnaire; random national samples of 750 physicians in six specialty areas; 8-page survey based on previous literature; reminders: postcard (1 week), follow-up letter and additional questionnaire (3 weeks), postcard (7 weeks)	383/4117 (43%); family practice: n=222 (43%); mean age: 43.7; 77% male	Obesity related activities of family practice physicians	Likelihood of treatment approaches based on 5 point likert scale, with 5=very likely; refer to dietetics professional (3.6)
(Lazarus, 1997) USA	Physician nutrition education intervention; physician nutrition specialists provided physicians with individualised recommendations to discuss with patients; pre/post nutrition knowledge test; patient questionnaires; 3-day diet records for physicians	7 faculty members; nine residents; clinic patients ≥15yrs (number not reported)	Nutrition knowledge; perception of importance of nutrition in health maintenance; rates of nutrition advice	Lower frequency of referral of patients to the clinic dietetics professional after intervention as GPs were providing advice themselves (pre: 10%; post: 5.8%); limitation: number of patients not reported
(Glanz, et al., 1995) Hawaii	Self administered mailed survey of PCP members of Society of General Internal Medicine; peer review and two pre-tests with 150 PCP; four page, 21 items; two mailings	960/1897 (53%); 67% male; personally attempted dietary change for weight loss (64%) or cholesterol (49%)	Rates of nutrition advice; confidence providing variety of nutrition advice; interest in nutrition;	Counselling was also provided by office dietetics professional (45%) or nurse (22.5%) or dietetics professional outside the practice (32.1%)
(Hiddink, et al., 1995) Europe	Postal questionnaire sent to random sample of 1000 from 2798 GPs in Netherlands in practice for 5-15 yrs; developed after focus group discussions and in depth interviews; initially letter + questionnaire; up to three reminder letters two weeks apart; telephone reminders after 11 weeks (≤3)	633/990 GPs (64%); 82% male; mean age 41 (3.6) years; practicing average 11 yrs; mean 30-35 patients/day	Barriers to providing nutrition advice; rates of nutrition advice; sources of nutrition information; nutrition education	72% regularly contacted dietetics professionals

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Kushner, 1995) USA	Random sample questionnaire mailed to 2250 primary care physicians; Thankyou/reminder postcards were sent two weeks after initial mail out; questionnaires resent four months later with small amount of money included to encourage participation	1030/2250 physicians (46%); 1103 responded (49%) however 73 (6%) of these excluded due to missing data	Rates and barriers of nutrition advice and referral	Of patients who received counselling 51% referred to dietetics professional outside practice, 34% to office nurse and 27% to office dietetics professional; 3/4 of GPs felt that they should utilise dietetics professionals more often
(Ammerman , et al., 1993) USA	Survey of residents and attending physicians in outpatient General Internal Medicine Clinic; previously tested; survey was pre-test for cholesterol intervention study;	2nd and 3rd year residents in internal medicine (37) or medicine/ paediatrics (9) and general medicine attending physicians (14) (100%)	Rates of nutrition advice; nutrition attitudes; barriers to nutrition advice and referral; referral rates	83% report frequent dietetics professional referrals
(Bradley, et al., 1993) New Zealand	Questionnaires about management of dyslipidaemia mailed to all New Zealand GPs and New Zealand members of the Cardiac Society of Australian and New Zealand and fellows of the Royal Australasian College of Physicians; resent to non-responders after two months	1798/3010; (64%) GPs, physicians and cardiologists	Rates of nutrition advice; rates of referral	50% of doctors refer <1/4 of patients with dyslipidaemia to dietetics professionals although 83% stated that they had ready access to a publically funded-dietetics professional
(Secker-Walker, et al., 1991) USA	Questionnaire sent to family physicians in Vermont; developed by (Kottke, et al., 1984) with questions added; pre-tested with 30 family physicians; resent to non-respondents after three weeks with phone call after one month	101/123 family physicians; graduation from medical school 1933-1982; median 1973; 12% female	Rates of nutrition advice; nutrition attitudes; referral	27% had dietetics professional or health educator in their practice; 86% made referrals to local dietetics professionals or nutritionists
(Waisman & Sauve, 1990) Canada	Face-to-face interviews; participants were randomly selected physician members of the College of Physicians and Surgeons of Alberta; five pilot interviews; included questions on 10 patient scenarios	71/158 (45%); 72% male	Rates of provision of nutrition advice and referral; reasons for providing counselling/referral	GPs referred with no counselling 2.3% of the time (nutrition patient initiated), 8.5% (GP initiated); GPs referred after providing some counselling 19.4% (patient initiated) and 47% (GP initiated); 8.5% refer with no counselling

2.11.2.2 Factors influencing GP referral to dietetics professionals

Many influential factors associated with dietetics professional referral were identified in the literature. These are provided in Table 2-16 and include:

- GPs' knowledge of local AHPs' ability and impact (Lowe & Lawrence, 2005);
- Good relationships between GPs and dietetics professionals (Lowe & Lawrence, 2005);
- GPs knowing who to refer to via the availability of referral information (Kelly & Joffres, 1990);
- Complicated nutrition related conditions (van Dillen, et al., 2006);
- GPs lacking time, skill or confidence to provide nutrition advice themselves (Amoroso, et al., 2005; Lazarus, 1997; Soltesz, et al., 1995);
- Believing dietetics professionals are the experts in nutrition (van Dillen, et al., 2006);
- Lack of change following GP advice (Ammerman, et al., 1993); and
- Onsite services (Lowe & Lawrence, 2005).

Table 2-16 Factors influencing referral to dietetics professionals

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(van Dillen, et al., 2006) Netherlands	GP focus groups. nine Dutch cites; random sample of 100-200 GPs within 50km of city; sourced from the telephone book; mailed invitation; followed up by phone call; focus group lasted 2h; guided by experienced moderator	81 GPs from nine cities. 70 male; 50 from solo practice, 23 dual practice, eight group practice; even distribution between city and country	GPs' perceptions of nutrition communicatio n; nutrition information seeking behaviour	Patients presenting with complicated nutrition related requirement was primary reason for referral; most GPs viewed dietetics professionals as experts
(Amoroso, et al., 2005) Australia	Surveys; mailed to GPs in one urban and one rural DGP in NSW along with information statement and letter of support from the DGP; non-respondents sent second mail out after 2 weeks as well as telephone/fax via practice manager; 25-item survey; piloted with GPs and reviewed by public health and general practice experts	146/276 GPs (57.0%; 31 ineligible); 68.5% GPs urban; participating practices represented 62.5% of those in the rural division and 79.0% urban; characteristics similar between responder/non-responders; characteristic differences between urban rural	Provision of SNAP risk factors advice and referral; training	Inverse relationship between provision of advice and referral for nutrition and smoking
(Lowe & Lawrence, 2005) Australia	Systematic literature review using four electronic databases 1999-2003; pilot survey (respondents from National Rural Faculty email list & professional network of the researcher); discussion of developed models at a GP conference	Literature review: 56 articles, 43 with focus on relationship between AHP and GPs; pilot survey - 17 GPs	GP perceptions of the roles of AHPs; referral	Rates of referral are impacted by GPs' knowledge of local AHPs' ability and effect; good relationships and onsite services will improve multidisciplinary work, hence referral
(Goldstein, et al., 2004) USA	Review of evidence for interventions that address health behaviours in primary care settings;	US Preventive Services Task Force recommendatio ns and systematic reviews	Strategies for improving delivery of nutrition advice	If more intensive dietary or obesity counselling is required referral is required
(Brotons, et al., 2003) Europe	Postal survey sent to GPs (piloted by 10 GPs in each country); email survey to GPs representing national colleges	1976 GPs: from 10 European countries, mean age=44, 61% female; 15/28 GPs representing national colleges	Health promotion/pre vention activities; clinical scenarios; beliefs and attitudes in practice; barriers to prevention	GPs can refer patients to a trained nutrition specialist for detailed dietary counselling after they promote the benefits of good nutrition and advise of desirable dietary practices

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Eaton, et al., 2002) USA	Cross sectional study of 84 GP practices. Direct observation of 138 GPs for consecutive patients over two days ~4 months apart (1994-95). Medical record audits, patient and GP questionnaires for all observed visits	138 GPs; 3478 patient consultations	Rates of nutrition counselling	It is beneficial for in-depth nutrition counselling to occur outside a normal primary care visit as participants spent <1 minute on nutrition counselling
(American Dietetic Association, 1998) USA	Position statement; 'Nutrition education for health care professionals;	N/A	Nutrition education; role of health professionals; dietetics professional referral	Dietetics professional referral is required for patients who have complex nutritional needs, need considerable dietary change or are not successful with standard nutrition prescriptions
(Macario, et al., 1998) USA	Interviews with experts: semi-structured interview format; recorded and transcribed; incentive; $20 per participant. Focus groups: 6 x 1hr groups	Interviews: five physicians, 10 nurses, 10 nutritionists and 10 literary experts (100% response rate). Focus groups: members of adult basic education classes	Sources of nutrition information; benefit of a GP & dietetics professional role of PN; referral to dietetics professional; health and nutrition information to low literacy patients	GPs and nurses believed it is important for GPs to initiate teaching then refer
(Lazarus, 1997) USA	Physician nutrition education intervention; physician nutrition specialists provided physicians with individualised recommendations to discuss with patients; pre/post nutrition knowledge test; patient questionnaires; 3-day diet records for physicians	7 faculty members; nine residents; clinic patients ≥15yrs (number not reported)	Nutrition knowledge; perception of importance of nutrition in health maintenance; rates of nutrition advice	Lower frequency of referral of patients to the clinic dietetics professional after intervention as GPs were providing advice themselves (pre: 10%; post: 5.8%); limitation: number of patients not reported
(Soltesz, et al., 1995) USA	Mail survey sent to random sample of 500 family physicians from the American Academy of Family Physicians; reminders sent at 2 & 4.5 weeks	237/486 (49%; 14 addresses not valid); age 44yrs (sd=10.8)	GP agreement with nutritional counselling recommendations	53% GPs agreed they should refer patients to a registered dietetics professional; GPs with fewer years of experience were more likely to agree that GPs should refer patients to dietetics professionals if they lack the time or skill to provide

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Ammerman, et al., 1993) USA	Survey of residents and attending physicians in outpatient General Internal Medicine Clinic; previously tested; survey was pre-test for cholesterol intervention study	2nd and 3rd year residents in internal medicine (37) or medicine/ paediatrics (9) and general medicine attending physicians (14) (100%)	Rates of nutrition advice; nutrition attitudes; barriers to nutrition advice and referral; referral rates	If change unsuccessful with GPs alone patient should be referred to dietetics professional; GP should continue to play an active role in counselling to reinforce importance of diet
(Kelly & Joffres, 1990) Canada	Physician questionnaire; pretested by 20 physicians; reminder sent after three then five weeks to non-respondents	255/478 eligible physicians responded (53%); limitation: not representative for many demographic variables	Sources and evaluation of nutrition information	Information about referral agencies should be developed in local communities and promoted to GPs
(Kottke, et al., 1984) USA	64 GPs were randomly selected from the University of Minnesota Family Practice Clinical Faculty; participants sent either an open-ended questionnaire or one with pre-coded responses with option for open ended response; questionnaires resent once to non-respondents	49/64 (77%) GPs	Nutritional intervention practices for saturated fat, sodium and fibre; barriers to providing nutrition advice	Options for GPs not wanting to provide nutrition education: hire a dietetics professional, contracting for a dietetics professionals services, use a hospital based dietetics professional or referring to a program

2.11.2.3 Barriers to referral to dietetics professionals

Many barriers exist for GPs to refer patients to dietetics professionals. These barriers are outlined in Table 2-17 and include:

- Long waiting lists (Nicholas, et al., 2003);
- A lack of perceived access (Kottke, et al., 1984; Nicholas, et al., 2003);
- A lack of knowledge of the service provided, the skills of a dietetics professional or where to refer (Kelly & Joffres, 1990; Nicholas, et al., 2003; Pediani & Bowie, 1999)
- Perceived lack of dietetics professional training/experience (Splett, Reinhardt, & Fleming, 1994);
- Lack of belief in the value of diet or dietetics professionals' ability to make a difference (Kottke, et al., 1984; Splett, et al., 1994).

- Lack of interest from patients (Kottke, et al., 1984; Nicholas, et al., 2003);
- Cost concerns by the patient (Brotons, et al., 2003; Kelly & Joffres, 1990; Kottke, et al., 1984; Nicholas, et al., 2003; Pritchard, et al., 1999);
- Lack of time to refer (Nicholas, et al., 2003);
- Belief that GPs can provide advice themselves (Nicholas, et al., 2003);
- Poor relationships with dietetics professionals (Splett, et al., 1994); and
- Inadequate feedback and communication from dietetics professionals (Splett, et al., 1994).

Table 2-17 Barriers to referral to dietetics professionals

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Brotons, et al., 2003) Europe	Postal survey sent to GPs (piloted by 10 GPs in each country); email survey to GPs representing national colleges	1976 GPs: from 10 European countries, mean age=44, 61% female; 15/28 GPs representing national colleges	Health promotion/ prevention activities; barriers to prevention	Cost to patient
(Nicholas, et al., 2003) Australia	Questionnaire; convenience sample of GPs linked with university and dietetics professional members of the Regional Dietitians' Group; postal reminder after two weeks	GPs: 14/20 (70%); 71% female; dietetics professionals: 15/30 (50%)	Barriers to nutrition advice; barriers to referral	Cost to patient; lack of perceived access; long waiting lists; patient not interested; unsure where to refer; unsure of skills of dietetics professionals/ ability to make a difference; GP believing they can provide the service; lack of time to refer
(Pediani & Bowie, 1999) UK	Self completed postal questionnaire; mailed to 63 GPs in three local health centres; resent after two weeks; additional actively data collected from departmental records using small pre-designed data collection sheet	45/63 (71%)	Reasons for not referring to diabetes dietetic clinic	Reasons for not referring: referred to hospital clinic (55%); prefer PN to provide dietary advice (15%); not reviewed any suitable patients (20%); prefer to use leaflets and printed information (5%); colleague has special interest in diabetes (5%); referral rates increased with increased awareness of a service

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Pritchard, et al., 1999) Australia	Consecutive patients screened opportunistically by study dietetics professional; those with overweight, hypertension or type 2 diabetes indicated by notes sight invited; weight, height, BP, glucose; three groups: dietetics professional, doctor/dietetics professional and control; dietetics professional provided 6 counselling sessions; doctor discussed progress	273/296 patients 25-65 years; 71% female	Cost effectiveness of nutrition counselling	As most GPs cannot afford to employ a dietetics professional without subsidy use of a dietetics professional would be limited to those who could afford to pay
(Splett, et al., 1994) USA	352 surveys mailed to physicians; two follow-up mailings sent to non-respondents; developed using literature and eight semi-structured interviews	130/352 (37%) Minnesota Obstetrics and Gynaecology Society members; 64% men; 78% metropolitan areas	Perception about nutrition services and experiences working with dietetics professionals; referral to and satisfaction with dietetics professionals' services	Lack of training/experience; responds poorly to GP/patient needs; poor relationships with physician and staff; unable to establish rapport patients; poor feedback and communication; lack of outcomes; cost to patient (written from perspective of enablers not barriers)
(Kelly & Joffres, 1990) Canada	Physician questionnaire; pretested by 20 physicians; reminder sent after three then five weeks to non-respondents	255/478 eligible physicians responded (53%); limitation: not representative for many demographic variables	Sources and evaluation of nutrition information	Cost to patient; lack of referral information
(Kottke, et al., 1984) USA	64 GPs were randomly selected from the University of Minnesota Family Practice Clinical Faculty; participants sent either an open-ended questionnaire or one with pre-coded responses with option for open ended response; questionnaires resent once to non-respondents	49/64 (77%) GPs	Nutritional intervention practices for saturated fat, sodium and fibre; barriers to providing nutrition advice	Lack of perceived access; cost to patient; patient not interested; lack of belief in the value of diet

2.12 Suggested strategies to increase delivery of nutrition advice in the general practice setting

In order to achieve the effective delivery of nutrition advice in the general practice setting, it is important that the barriers that exist for patients, health professionals, and systems be understood, with targeted strategies applied to overcome the barriers. Literature identifies a variety of strategies designed to improve the delivery of nutrition advice in general practice.

2.12.1 Strategies to improve implementation of nutrition advice in general practice

2.12.1.1 Increased nutrition training for GPs

In general, GPs have a lack of training in nutrition (Bonevski, et al., 1996; Hiddink, et al., 1995; Kirby, et al., 1995; Lazarus, 1997; Moore, et al., 2003). Therefore, it is recommended that the amount of nutrition training that GPs are provided with is increased (American Dietetic Association, 1998; Lazarus, 1997). This should include ways to provide more effective patient centred counselling as well as how to provide practical information in a time efficient manner (Goldstein, et al., 2004; Lazarus, 1997). Table 2-18 summarises the literature which discusses nutrition training for GPs.

The literature provides mixed results for the benefits of nutrition training for GPs. Lazarus (1997) suggested that GP training in nutrition will improve the provision of nutrition advice by GPs (Lazarus, 1997). Alternatively, it resulted in more diet sheets being provided but no differences in other behaviours (Moore, et al., 2003) and more favourable attitudes about the role of diet but not increased use clinical nutrition skills (Levine, et al., 1993).

Table 2-18 Improved access to nutrition advice via increased nutrition training for GPs

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Amoroso, et al., 2005) Australia	Surveys; mailed to GPs in one urban and one rural DGP in NSW along with information statement and letter of support from the DGP; non-respondents sent second mail out after 2 weeks as well as telephone/fax via practice manager; 25-item survey; piloted with GPs and reviewed by public health and general practice experts	146/276 GPs (57.0%; 31 ineligible); 68.5% GPs urban; participating practices represented 62.5% of those in the rural division and 79.0% urban; characteristics similar between responder/non-responders; characteristic differences between urban rural	Provision of SNAP risk factors advice and referral; training	38.7% attended nutrition training in the past year; 65.8% wanted further training
(Goldstein , et al., 2004) USA	Review of evidence for interventions that address health behaviours in primary care settings;	US Preventive Services Task Force recommendations and systematic reviews	Strategies for improving delivery of nutrition advice	Training is needed to improve the delivery of effective patient centred counselling
(Moore, et al., 2003) UK	Paired cluster randomised trial; intervention (received maximum of 7.5 hours training over 6 months and control groups; patient questionnaires pre/post to assess practitioner consultation behaviour; pre/post questionnaires assessed practitioner knowledge/attitudes of diet and CHD	6 intervention/6 control practices; baseline: 84/109 (77%) practitioners; post-training 64/109 (59%); 1200 patients screened in each intervention and control pre/post; intervention: (pre) 128 (complete questionnaires)/14 5 (discussed diet) (88%); (post) 105/127 (83%); control: (pre) 123/160 (77%); (post) 124/153 (80%)	Nutrition advice behaviours; nutrition training and knowledge	Nutrition training for GPs, PNs and other staff resulted in more diet sheets being provided but no other differences in consulting behaviours; trained practitioners 30% more likely to believe nutrition knowledge up to date, no significant difference in actual knowledge; currently limited formal nutrition education for GPs
(American Dietetic Association, 1998) USA	Position statement; 'Nutrition education for health care professionals;	N/A	Nutrition education; role of health professional s; dietetics professional referral	"It is the position of The American Dietetic Association that nutrition education is an essential component of the curricula for the majority of health care professionals. Curricula should include nutrition principles and identification of nutrition risk factors for appropriate and timely referral to a qualified dietetics professional for comprehensive nutrition services"

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Lazarus, 1997) USA	Physician nutrition education intervention; physician nutrition specialists provided physicians with individualised recommendations to discuss with patients; pre/post nutrition knowledge test; patient questionnaires; 3-day diet records for physicians (limitation: number of patients not reported)	7 faculty members; nine residents; clinic patients ≥15 years (number not reported)	Nutrition knowledge; perception of importance of nutrition in health maintenance; rates of nutrition advice	Increase in nutrition knowledge scores post intervention; increase percentage asked about nutrition and recommended diet post-intervention; not all physicians have better nutrition knowledge than their patients; physicians' belief that they can incorporate nutrition advice more often in patient care may be aided by a program emphasising nutrition that stresses easy ways to provide practical information quickly
(Kirby, et al., 1995) USA	Family practice residents participated in four teaching sessions over five months; pre/post-testing for residents and control group; 3-day diet diary	Intervention: all 19 first, second and third year family practice residents; control 12/16 took pre-test and 15/24 post-test	Changes in nutrition knowledge and interest	Nutrition education resulted in large increases in nutrition knowledge (51% vs. 70%) while comparison group stayed the same (43% vs. 42%); those who participated in the diet diary improved the most
(Kushner, 1995) USA	Random sample questionnaire mailed to 2250 primary care physicians; Thankyou/reminder postcards were sent two weeks after initial mail out; questionnaires resent four months later with small amount of money included to encourage participation	1030/2250 physicians (46%); 1103 responded (49%) however 73 (6%) of these excluded due to missing data.	Rates and barriers of nutrition advice and referral	PCPs were most interested in a 'nutrition counselling and skills' newsletter as a potential strategy to improve nutrition counselling
(Cogswell & Eggert, 1993) USA	Focus groups; held at a meeting usually attended by participants	34 focus groups with 322 health care consumers; 60% women, 74% white, 35% 18-44, 28% 45-64, 37% >65	Reasons for visiting doctor; attitudes towards prevention; outcomes of physician-patient encounters	Increase knowledge and experience in nutrition will allow physicians to encourage patients, answer questions and be aware of the barriers patient would experience
(Steptoe, et al., 1999) UK #316	Questionnaire sent to GPs/PNs from practices participating in randomised control trial of behavioural counselling for cardiovascular disease prevention; completed prior to randomisation; included series of attitudinal statements	107 GPs and 58 PNs from 19 practices (100% response)	Role of PN; training of PN	Just under half of GPs (49%) and PNs (48%) felt properly trained to give lifestyle counselling.

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Hiddink, et al., 1995) Europe	Postal questionnaire sent to random sample of 1000 from 2798 GPs in Netherlands in practice for 5-15 yrs; developed after focus group discussions and in depth interviews; initially letter + questionnaire; up to three reminder letters two weeks apart; telephone reminders after 11 weeks (≤3)	633/1000 GPs (64%); 82% male; mean age 41 (3.6) years; practicing average 11 yrs; mean 30-35 patients/day	Barriers to providing nutrition advice; rates of nutrition advice; sources of nutrition information; nutrition education	Lack of nutrition knowledge and education was perceived to be a barrier to providing nutrition advice, with 65% listing it in their top three barriers
(Levine, et al., 1993) USA	Mail survey; randomly selected GPs listed with American Medical Association as PCP; anonymous; demographic, attitude and behaviour data	3416/30000 PCP (11%); age: 27-71 y, median 45y; male 84%	GP attitudes and practices; rates of nutrition advice	Those with additional study in nutrition had more favourable attitudes about the role of diet but did not use clinical nutrition skills to any greater degree than others.

2.12.1.2 Increased nutrition training for PNs

If PNs are utilised to deliver nutrition advice they will require adequate training to enable them to have a sufficient level of knowledge (Kyle, 1993; Watts, et al., 2004). While nurses' knowledge of nutrition is generally low, it has been shown that training by a primary care dietetics professional can improve their nutrition knowledge, enabling them to provide basic healthy eating advice (Cadman & Findlay, 1998; Kyle, 1993). Nutrition training also increased the nurses' perceived level of knowledge and confidence to discuss diet with patients (Cadman & Findlay, 1998; Kyle, 1993). Therefore it is important that PNs receive adequate nutrition training on an ongoing basis (Cadman & Findlay, 1998). After training however, nurses still tended to provide blanket healthy eating advice rather than tailoring it to the patient's needs (Kyle, 1993). Consequently, while nurses may be effective in increasing the provision of health promotion in the area of nutrition, it is still important to involve dietetics professionals when the patient has a specific need. Table 2-19 provides literature on increased nutrition training for PNs.

Table 2-19 Improved access to nutrition advice via increased nutrition training for PN

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Goldstein, et al., 2004) USA	Review of evidence for interventions that address health behaviours in primary care settings;	US Preventive Services Task Force recommendations and systematic reviews	Strategies for improving delivery of nutrition advice	Training is needed to improve the delivery of effective patient centred counselling
(Watts, et al., 2004) Australia	National telephone survey of PNs; 14 workshops with GPs and PNs around Australia; qualitative responses	222 PNs; EN/RNs; from urban and rural areas	Role of PN	Education for general practice nursing is not adequate to meet the current or future demands of the PN role
(Steptoe, et al., 1999) UK #316	Questionnaire sent to GPs/PNs from practices participating in RCT of behavioural counselling for cardiovascular disease prevention; completed prior to randomisation; included series of attitudinal statements	107 GPs and 58 PNs from 19 practices (100% response)	Role of PN; training of PN	Just under half of GPs (49%) and PNs (48%) felt properly trained to give lifestyle counselling
(Cadman & Findlay, 1998) UK	Self competed nutrition questionnaires conducted pre/post training; adapted from previously used questionnaire; training pack provided with nutrition training session presented by dietetics professional; eight x1 hour sessions	59 PNs from 30 GP practices	Impact of nutrition training; nutrition knowledge and confidence	Training improved PNs confidence in providing nutrition advice; mean difference pre/post training = 11.6 (95%CI=7.8, 15.4); nutrition training should be provided regularly to ensure nutrition advice is consistent and up-to-date
(Fishman & Schiferl, 1998) USA	Position statement; 'Nutrition education for health care professionals;	N/A	Nutrition education; role of health professionals; dietetics professional referral	Nutrition education should be a component of educations programs for the majority of health care professionals due to the need to integrate nutrition services into their practice; this should include identification of nutrition risk factors for referral
(American Dietetic Association, 1998) USA	Position statement; 'Nutrition education for health care professionals;	N/A	Nutrition education; role of health professionals; dietetics professional referral	Educational programs should incorporate a nutrition component
(Kyle, 1993) UK	Training in conducting health promotion clinics; self completed for all participants; subgroup requested to complete either a case study questionnaire or observation interview	83/149 PNs in Somerset received training; 65/83 returned questionnaires (78%); 6/10 case history questionnaires; 14/20 observed interviews	Nutrition training for PNs	With adequate training PNs can improve their knowledge, skills, and confidence enabling them to deliver basic healthy eating advice; initial training and regular updates required

2.12.1.3 Increased system supports

The use of systems supports for GPs assist in improving the delivery of nutrition advice in general practice (Berg, et al., 2003; Goldstein, et al., 2004; Ockene, et al., 1999) (Table 2-20). These include:

- Patient assessments (Goldstein, et al., 2004; Ockene, et al., 1999);
- Patient reminders (Berg, et al., 2003; Cogswell & Eggert, 1993; Oldroyd, et al., 2003):
- GP prompts (Berg, et al., 2003; Goldstein, et al., 2004);
- Counselling algorithms (Berg, et al., 2003; Goldstein, et al., 2004; Ockene, et al., 1999); and
- Handouts/feedback (Goldstein, et al., 2004; Ockene, et al., 1999).

Table 2-20 Improved access to nutrition advice via increased system supports

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Goldstein, et al., 2004) USA	Review of evidence for interventions that address health behaviours in primary care settings;	US Preventive Services Task Force recommendations and systematic reviews	Strategies for improving delivery of nutrition advice	Systems supports (reminders, computerised assessments, decision-support tools) improve success of health behaviour counselling
(Berg, et al., 2003) USA	US Preventive Services Task Force (USPSTF) reviewed evidence on nutritional and behavioural counselling by practitioners in a variety of clinical settings	physicians, nurses, nutritionists, dietetics professionals and health educators	Nutrition counselling recommendations; strategies to improve delivery of nutrition advice	Dietary counselling significantly improved through office level systems supports (prompts, reminders, and counselling algorithms)
(Oldroyd , et al., 2003) Australia	10 focus groups; GPs recruited through one rural and four urban DGP; standard interview schedule used; GPs received reimbursement and CPD points	54 GPs; 72% male; mean age 49 yrs (range 31-67); mean yrs experience in general practice 24 (range 9-41); (unclear of response rate)	GPs' views of chronic-disease care; role of PNs	recall/reminder systems were viewed as crucial to structured chronic disease care
(Ockene, et al., 1999)	Physicians randomised by site; 3 groups (usual care; physician nutrition counselling training; physician nutrition counselling training plus office support); training included 2.5 hour small group session plus 30-minute individualised tutorial: office support included provision of: dietary risk assessment filled out in waiting room; patient's flagged lipid profile; counselling algorithm; handouts	45/46 primary care internist in a health maintenance organisation; 64% male; mean age=38.1; mean patients per week=76	Impact of office systems supports on nutrition counselling	Combination of physician training in patient-centred counselling intervention of nutrition change and a low-cost office support system has beneficial effects on patient's dietary fat intake, weight and lipids; appropriate office support is essential to prompt the physician for preventive activities in a busy practice
(Cogswell & Eggert, 1993) USA	Focus groups; held at a meeting usually attended by participants	34 focus groups with 322 health care consumers; 60% women, 74% white, 35% 18-44, 28% 45-64, 37% >65	Reasons for visiting doctor; attitudes towards prevention; outcomes of physician-patient encounters	Patients appear to respond well to patient reminders and feel that GP cares about them; communicates that the GP thinks prevention is important

2.12.1.4 'One-minute message'

As a major barrier to GPs providing nutrition advice is lack of time, nutrition advice needs to be delivered as a brief targeted message supported by community resources that provide a more comprehensive service (Stange, Woolf, & Gjeltema, 2002). Encouraging GPs to deliver a 'one-minute message' to patients about health promotion promotes it to be included in the usual care for a patient (Stange, et al., 2002). Referral to a dietetics professional can also accompany the 'one-minute message'. Table 2-21 includes the literature which discuses the use of brief nutrition interventions to improve general patients' access to nutrition advice.

Table 2-21 Improved access to nutrition advice via brief nutrition interventions by GPs

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Stange, et al., 2002) USA	Review – opinion	N/A	Health behaviour counselling	Many characteristics in primary care are viewed as barriers to health promotion however they are also reasons why PCPs have great access to the public and are influential on health behaviour; clinicians should spent one targeted minute on health behaviour counselling and support this with community resources
(Cogswell & Eggert, 1993) USA	Focus groups; held at a meeting usually attended by participants	34 focus groups with 322 health care consumers; 60% women, 74% white, 35% 18-44, 28% 45-64, 37% >65	Reasons for visiting doctor; attitudes towards prevention; outcomes of physician-patient encounters	Suggest physicians provide brief recommendations and follow up on these recommendations, even when time is short as can often spur behaviour change

2.12.1.5 Increased utilisation of PNs

The expanding role of PNs and the benefits of PNs in the general practice setting emphasises their use in delivering nutrition advice.

2.12.2 Strategies to improve implementation of nutrition advice by dietetics professionals

2.12.2.1 Increasing dietetics professionals working in PP

Increasing the number of private dietetics professionals, especially in areas where there are currently inadequate numbers, will improve patient access to nutrition advice. In areas without Medicare registered dietetics professionals, GPs are unable to refer patients through the Medicare EPC Program. Encouraging dietetics professionals to enter PP will assist in the delivery of nutrition advice through improved access. This involves highlighting the benefits of PP, identifying and overcoming the barriers, and increasing PP education and training during university study or continuing professional development. Many of the following references refer to PP for other AHP or AHPs in general, however they are relevant to PP dietetics professionals.

Benefits for practitioners working in PP

Practitioners choose to work in the private sector for a number of reasons (Table 2-22). A desire for autonomy is one such reason, including the ability to operate their business as they choose and to be their own boss (Bridle & Hawkes, 1990; McClain, et al., 1992; Peel Health Care Ltd, 2007). PP does not present the same restrictions on practice felt in other sectors (Bridle & Hawkes, 1990). It also allows greater freedom and flexibility with work (Bridle & Hawkes, 1990; McClain, et al., 1992; Peel Health Care Ltd, 2007). PP can theoretically be more financially rewarding than the public sector, with a higher income potential (Bridle & Hawkes, 1990; McClain, et al., 1992; Peel Health Care Ltd, 2007). Finally, practitioners report increased job satisfaction from working in PP (McClain, et al., 1992; Peel Health Care Ltd, 2007). It presents a challenge to practitioners (Bridle & Hawkes, 1990), providing an opportunity to develop new personal and business skills (Peel Health Care Ltd, 2007). The increased variety may also stimulate an increase in clinical skills (Peel Health Care Ltd, 2007) and provide the ability to specialise (Bridle & Hawkes, 1990).

Practitioner also feel that PP offers the opportunity to have a greater patient focus, including the ability to tailor a service to suit the desires of the client, to deliver services in the client's own environment, and to provide a more timely service (Bridle & Hawkes, 1990; Peel Health Care Ltd, 2007).

Table 2-22 Benefits of working in private practice

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Peel Health Care Ltd, 2007) Australia	Semi-structured interviews with AHPs working in PP and those considering it; (limitation: small sample size; not representative)	12 AHPs representing 7 professions; 6 (in PP); 6 (in public interested in PP); Tamworth, NSW; average age: 44 (PP), 34 (public)	Perceived benefits, barriers and facilitators to PP	Main reasons for entering PP include: flexibility (n=6, 100%); issues with previous employment (n=5); desire to be own boss/control; clinical satisfaction/meet need (n=2), perception of increased work satisfaction in private practice; benefits: freedom/ flexibility with work hours and activities; organisation to suit the practitioner; increased skills/ variety (clinical/personal); satisfaction; financial rewards; timeliness of service; ability to offer services clients want
(McClain, et al., 1992) USA	2-page survey developed and pilot tested (n=6); distributed to national random sample of occupational therapists in PP	74/105 (70%) PP occupational therapists; 70 female; age range: 27-72; mean age: 38	Perceived benefits and risks of PP; preparation for PP	Autonomy main motivating factor for PP (flexible work hours; being their own boss; then independence in clinical decisions); once in PP financial benefits ranked third; personal satisfaction; opportunity to specialise
(Bridle & Hawkes, 1990) Canada	Questionnaire; mailed to all association members working in PP; 53-items; fixed response and open-ended; pilot tested (n=5) and refined by instrument expert	132/164 (80%) occupational therapists returned; 118 completed; 46% 31-40 years	Benefits, barriers, facilitators and preparation required for PP	Main reasons for starting PP: desire for autonomy (54%); limitations of institution based practice (49%); higher income potential (22%); lack of job opportunities (11%)

Barriers to working in PP

Barriers to working in PP are outlined in Table 2-23. These provide insight into why practitioners either do not move into PP, or do not succeed as expected. While PP can be theoretically more financially rewarding than the public sector, with a higher income potential (McClain, et al., 1992; Peel Health Care Ltd, 2007), this is not the experience of all private practitioners (Cant & Aroni, 2007; Peel Health Care Ltd, 2007). Unstable income and unpaid administration hours may contribute to this (Cant & Aroni, 2007; Peel Health Care Ltd, 2007). The financial commitment associated with setting up a PP also presents a barrier (Bridle & Hawkes, 1990; McClain, et al., 1992; Peel Health Care Ltd, 2007). Practitioners need to make a living from their business, however, fees can only be charged at a rate that clients are willing to pay. Reimbursement for services may be problematic if clients or third parties fail to pay in a timely manner (Cant & Aroni, 2007; McClain, et al., 1992).

Current employment security in terms of income, conditions and hours required may act as a deterrent for those considering PP, as PP often commences on a part time basis while the referral base is being established (McClain, et al., 1992; Peel Health Care Ltd, 2007). AH often lack the business experience and expertise required for PP (Peel Health Care Ltd, 2007), including financial knowledge and management skills (Peel Health Care Ltd, 2007). Practitioners not familiar with or trained in the set up and operation of an effective and efficient private sector business may experience fear of economic failure (Peel Health Care Ltd, 2007).

Fear of professional or personal isolation, as well as a lack of professional support may be experienced, especially if there are no other private AHPs available to provide mentoring, or competition between practitioners prevents this (Peel Health Care Ltd, 2007). Isolation is a major concern in PP as AH professionals place a great importance on working with other health professionals (Stagnitti, Schoo, Reid, & Dunbar, 2005).

Table 2-23 Barriers of working in private practice

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Cant & Aroni, 2007) Australia	Semi-structured interviews/focus groups; invitations mailed to a purposive sample	15/42 (36%); mailed to 10% of Victorian PP dietetics professionals	Issues with using Medicare EPC Program	Issues with using Medicare programs; payment provided is not adequate to meet time commitments and requirement of paperwork back to referring GP; if bulk billing reimbursement is often problematic,
(Peel Health Care Ltd, 2007) Australia	Semi-structured interviews with AHPs working in PP and those considering it; (limitation: small sample size; not representative)	12 AHPs representing seven professions; six (in PP); six (in public interested in PP); Tamworth, NSW; average age: 44 (PP), 34 (public)	Perceived benefits, barriers and facilitators to PP	Professional/personal isolation (difficulty attending CPD; lack of professional supports); lack of business or financial experience/ expertise; difficulty establishing/ maintaining appropriate referrals; choosing an appropriate location; operational complexities (paperwork, streamlining operations, not letting the professional practices slip); fear of failure; uncertainty of demands; financial and personal commitment
(Lysack, Stadnyk, Paterson, McLeod, & Krefting, 1995) Canada	Survey; mailed to 200/552 Ontario Community Occupational Therapists; 27-items; fixed response and open-ended questions; critiqued by instrument expert	130/200 (65%); mailed to 69 in PP (unsure of response rate); 36% self employed	Barriers to PP	Limited number of participants in PP felt adequately prepared for it by undergraduate training (8%)
(McClain, et al., 1992) USA	two-page survey developed and pilot tested (n=6); distributed to national random sample of occupational therapists in PP	74/105 (70%) occupational therapists; 70 female; age range: 27-72; mean age: 38	Perceived benefits and risks of PP; preparation for PP	Prior to starting PP highest perceived risks were: reimbursement; referral sources; overheads (rent, equipment); after being in PP: staffing shortages ranked highest; tended to move from full-time to part-time when starting PP
(Bridle & Hawkes, 1990) Canada	Questionnaire; mailed to all association members working in PP; 53-items; fixed response and open-ended; pilot tested (n=5) and refined by instrument expert	132/164 (80%) occupational therapists returned; 118 completed; 46% 31-40 years	Benefits, barriers, facilitators and preparation required for PP	Need for start up capital; difficulty billing insurance companies; lack of support from institution based professionals (despite being third largest referral source)

Preparation and enablers to starting in PP

There are many facilitators to PP that increase practitioners' confidence in PP and lead to long-term success. Starting a PP business requires adequate preparation and planning (Table 2-24), including:

- Conduct a business needs assessment (Bridle & Hawkes, 1990; Peel Health Care Ltd, 2007);
- Seek assistance from:
    - practitioners' professional association (Bridle & Hawkes, 1990; Peel Health Care Ltd, 2007);
    - Others in PP (McClain, et al., 1992; Peel Health Care Ltd, 2007);
- Acquire the necessary business skills (Bridle & Hawkes, 1990; Peel Health Care Ltd, 2007);
- Be prepared for financial responsibilities (Bridle & Hawkes, 1990; Peel Health Care Ltd, 2007);
- Accurately estimate costs in order to set fees (Bridle & Hawkes, 1990; Peel Health Care Ltd, 2007);
- Establish a reliable referral base (McClain, et al., 1992; Peel Health Care Ltd, 2007); and
- Ensure suitability to PP (Bridle & Hawkes, 1990).

Table 2-24 Preparation required for establishing a private practice business

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Peel Health Care Ltd, 2007) Australia	Semi-structured interviews with AHPs working in PP and those considering it; (limitation: small sample size; not representative)	12 AHPs representing 7 professions; 6 (in PP); 6 (in public interested in PP); Tamworth, NSW; average age: 44 (PP), 34 (public)	Perceived benefits, barriers and facilitators to PP	Preparation: contact professional association; gain business/ management skills; assess need; seek professional support/ mentoring; legal advice; factors considered to be core components of a PP include: clinical experience and competence; business management skills; good communication/rapport; good reputation; referrals; networks; equipment
(Bloom, 1999) USA	Opinion	N/A	Preparation for PP	Develop a business plan; start with sufficient money; know your competition; focus the business; cater to customers; communicate with customers; market the business; hire the right people; get good legal advice
(Lysack, et al., 1995) Canada	Survey; mailed to 200/552 Ontario Community Occupational Therapists; 27-items; fixed response and open-ended questions; critiqued by instrument expert	130/200 (65%); mailed to 69 in PP (unsure of response rate); 36% self employed	Barriers to PP	Additional information thought to be useful to PP includes PP guidelines; practice standards, ethics, billing; quality assurance information, cost effectiveness of treatments and general financial management
(McClain, et al., 1992) USA	2-page survey developed and pilot tested (n=6); distributed to national random sample of occupational therapists in PP	74/105 (70%) occupational therapists; 70 female; age range: 27-72; mean age: 38	Perceived benefits and risks of PP; preparation for PP	Work experience was most beneficial preparation for PP (67%); ability to obtain information from others; opportunity to observe others; formal training (workshops, texts, courses) mentioned less often; establish reliable referral base
(Bridle & Hawkes, 1990) Canada	Questionnaire; mailed to all association members working in PP; 53-items; fixed response and open-ended; pilot tested (n=5) and refined by instrument expert	132/164 (80%) occupational therapists returned; 118 completed; 46% 31-40 years	Benefits, barriers, facilitators and preparation required for PP	Things to consider prior to PP: need to be suited to PP (personal attributes, expertise, experience, self discipline, willingness to work hard and be autonomous); be prepared for the financial responsibilities (start up money; covering own super, insurance, membership fees, sick leave, vacations); gain business skills; ensure fee structure covers all forms of time spent operating in PP; assess need for service; gain assistance from professional association (special interest groups, newsletters and CPD opportunities); indicators for success: good business practices; need and growth of referrals; reputation/ recognition; financial viability; personal job satisfaction and growth; client satisfaction

Increasing dietetics professionals working in PP in rural areas

In general, AH services in rural areas are inadequate (National Rural Health Alliance, 2004; O'Kane & Curry, 2003; Rowan, 1998).Table 2-25 includes literature on PP in rural areas. Lack of private services results in a high reliance on the public sector (Brown, Capra, & Williams, 2006; Grimmer & Bowman, 1998; National Rural Health Alliance, 2004; O'Kane & Curry, 2003). Characteristics of rural populations may also require greater access to AH, with more elderly, increased rates of chronic disease and greater travel distances to health services (Australian Institute of Health and Welfare, 2002; Grimmer & Bowman, 1998). PP services in rural areas is one way to improve service provision (Fitzgerald, Hornsby, & Hudson, 2000; Peel Health Care Ltd, 2007). However, this may be impeded by the lower level of employment in these areas (Australian Institute of Health and Welfare, 2002; Grimmer & Bowman, 1998), income (Australian Institute of Health and Welfare, 2002; National Rural Health Alliance, 2004) and private health insurance (Grimmer & Bowman, 1998).

The Government has also provided funding for AHPs to be employed in general practice in rural areas under the More Allied Health Services (MAHS) Program (Commonwealth of Australia, 2004). Through this program, eligible rural Divisions of General Practice are able to fund AH professionals to provide services to people living in Rural, Remote, and Metropolitan (RRMA) 4-7 areas (Commonwealth of Australia, 2004). To be eligible, Divisions must have a minimum of 5% of their total population living in rural areas (Commonwealth of Australia, 2004). In 2003-04, 24.1 FTEs, or 11.4% of MAHS funded FTE positions were dietetics professionals (Department of Health and Ageing, 2007c).

Table 2-25 Improving access to dietetics professionals through PP in rural areas

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Peel Health Care Ltd, 2007) Australia	Semi-structured interviews with AHPs working in PP and those considering it; (limitation: small sample size; not representative)	12 AHPs representing 7 professions; 6 (in PP); 6 (in public interested in PP); Tamworth, NSW; average age: 44 (PP), 34 (public)	Perceived benefits, barriers and facilitators to PP	Increasing AH PP services is a potential solution to meeting the AH service shortfall; increasing PP numbers through: establishing PP networks; provide access to continuing professional development; marketing/ promotion of AH; provide business skills development; seek funding for the development of a co-located multi-disciplinary AH services
(Brown, et al., 2006) Australia	Analysis of ABS 2001 data	Australian dietetics professional workforce statistics	Percentage of urban/ rural dietetics professionals working in PP	Urban areas have greater proportion of dietetics professionals working in PP (46% vs. 37% in rural/remote)
(National Rural Health Alliance, 2004) Australia	Report	N/A	AHPs in rural/ remote areas	In rural/remote areas: 24% of AHP and 24% of dietetics professionals service 32% of population; high reliance on public AH services; limited PP due to limited financial resources and incentives to practise in lower socioeconomic areas and dispersed population requiring more travel
(O'Kane & Curry, 2003) Australia	7th National Rural Health Conference; Symposium reporting on 2001 census data about AHPs	2001 census data about AHPs	AH workforce data	Access to AHPs in rural/remote areas is not equitable with urban areas; rural areas have larger percentage of dietetics professionals employed in public sector/less private than urban areas
(Australian Institute of Health and Welfare, 2002) Australia	Report: Australia's Health 2002; compilation of key health statistics and analysis based AIHW work	N/A	Urban/ rural differences in health status	Compared to urban, rural/ remote areas have poorer access to GPs/specialists and relatively more nurses; greater travel distances; lower levels of education, employment and income; higher costs commodities; higher mortality
(Fitzgerald, et al., 2000) Australia	Open and targeted consultation; questionnaires; 65+ questions; dissemination using network approach; focus groups/interviews in number of rural and remote facilities	1620/4000 (41%) AHPs; 6.3% dietetics professionals; 16.7% PP	Workforce in rural areas	PP can contribute significantly to rural workforce and assist in improving access and increasing choice in rural areas; innovative practice arrangements should be encouraged as long as not disadvantaging business potential of others including PP rights for part-time public AHPs and co-location in public facilities

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Grimmer & Bowman, 1998) Australia	AH services in hospitals; up to 10 months data collection; cumulative 53 months	AH services in 8 hospitals (5 metropolitan; 3 country); 46 AH services; 6 nutrition and dietetics	AH services in metropolitan /country areas	Country areas had: older patients; more reliable on government income; less private health insurance; increased chronic disease; often only hospital-based services available with greater travel distances
(Rowan, 1998) Australia	20 focus groups; 9 cities; 10 pairs of groups (with service provider and consumer representative); invitations via letter, telephone follow-up	60/114 providers; 53/135 consumers	AH service issues	Smaller communities receive minimal/insufficient AH services resulting in low GP/self referral and high utilisation of non-specialist services; transport is a barrier to accessing AHPs

2.12.2.2 Enhancing dietetics professional partnerships with GPs

Patient health outcomes can be enhanced through effective collaboration between GP and other members of the health care team (Hurley, Kalucy, & Battersby, 2002), specifically dietetics professionals (Kuppersmith & Wheeler, 2002). Increasing the number of dietetics professionals working with GPs and improving these relationships will encourage GPs to refer patients for more intensive nutrition interventions (Table 2-26). To achieve collaboration, GPs and other team members need to have good communication, be accessible, establish trust and have an understanding and appreciation for the roles of each other (Hurley, et al., 2002). Effective partnerships through improved communication is essential to improve the delivery of nutrition in the general practice setting (Kuppersmith & Wheeler, 2002). Dietetics professionals should provide GPs with the patient's nutrition care plan and patient specific behavioural goals to enable GPs to reinforce recommendations (Kuppersmith & Wheeler, 2002).

Table 2-26 Improved partnerships between GPs and dietetics professionals

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Hurley, et al., 2002) Australia	Independent evaluation of the SA Health Plus trial; mail surveys and interviews for GPs and service coordinators	272 GPs; surveys in May 1998 (n=161) and Feb 1999 (n=156); sample interviewed in 1998 (n=18) and in 1999 (n=10); 38 service coordinators surveyed (1998) and interviewed (1999)	Collaboration between GPs and health professionals	Effective collaboration between GPs and health professionals is dependent on good communications, accessibility, establishing trust and appreciation for each others' roles and perceived benefits of collaboration; effective collaboration enhanced patient care; working as a collaborative team rather than subordinate to GPs was more satisfying to health professionals
(Kuppersmith & Wheeler, 2002) America	Mailed surveys; family physicians and dietetics professionals; resent twice to non-respondents 6-weeks apart; closed-ended, likert format; tested with five of each and modified as necessary; requested samples of dietetics professionals' outpatient nutrition correspondence	235/626 family physicians (38%); 389/504 dietetics professionals (77%); sample notes from 104 dietetics professionals; 2/3 of both worked >10 years; family physicians (21% female); dietetics professionals (98% female)	Communication of nutrition goals	Effective communication between dietetics professionals and family physicians allows family physicians to reinforce nutrition goals with patients; communication can be improved by standardising nutrition correspondence; dietetics professional notes are a valuable addition to medical records as they obtain useful lifestyle and education information from patients
(Worsley & Worsley, 1989) New Zealand	Questionnaire; random sample of New Zealand GPs; three short questionnaires, each to one-third of group	775 GPs completed (unsure of response rate)	Information and resource needs in nutrition promotion	76% reported that services of a dietetics professional would be important for their practice (if financially feasible) (74% on a part-time basis; 2% full time); 73% wanted better access to dietetics professionals

2.12.2.3 Medicare Enhanced Primary Care (EPC) Program

'The Allied Health and Dental Care Initiative', was introduced in July 2004, expanding Medicare funding to include more AH services. It was later retitled 'Individual Allied Health Services under Medicare' in 2005 when dental services were redirected. This initiative allows patients with a complex chronic condition and a GP administered EPC plan to be eligible for rebates from Medicare for up to five services supplied by registered AH providers (Pratt, 2004).

Benefits of participation in the EPC Program

The benefits of participation in the EPC Program are provided in Table 2-27. This Program has encouraged multidisciplinary care through increased referrals to AHPs thus providing additional expertise and saving GPs' time (Shortus, McKenzie, Kemp, Proudfoot, & Harris, 2007). The care planning process prompts GPs to consider referral to AHPs and facilitates this to occur, thus providing GPs with a greater understanding of the skills of AHPs (Shortus, et al., 2007). Patients appreciated these referrals and the rebates that were available (Shortus, et al., 2007) and gained a greater appreciation of the team care approach in their chronic disease management (Cant & Aroni, 2007). Benefits to AHPs include increased clients and hours (Cant & Aroni, 2007). Providing Medicare rebates for AHPs in primary care is anticipated to reduce the demand placed on already strained GP services, while patients will have access to more appropriate health care, potentially leading to a lower overall cost to the heath care system (Productivity Commission, 2005; Senate Select Committee on Medicare Secretariat, 2004).

Table 2-27 Benefits of participation in the Enhanced Primary Care (EPC) initiative

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Cant & Aroni, 2007) Australia	Semi-structured interviews/focus groups; invitations mailed to a 10% purposive sample	15/42 (36%) Victorian PP dietetics professionals	Issues with using Medicare EPC Program	Increased clients and hours; increased patients' appreciation of the importance of team approach in management their chronic condition
(Shortus, et al., 2007) Australia	Semi structured interviews; grounded theory methodology; recruitment via DGP, a NSW GP research network and patients through participating AHPs; purposive sampling initially to ensure range of health professionals and NSW settings; subsequent sampling guided by theory development until saturation; interviews tape recorded and transcribed	38 participants; 19 GPs, eight AHPs (four diabetes educators, three dietetics professionals, one podiatrist), two endocrinologists , nine patients with type 2 diabetes	Opinions of and involvement in care plans	Care plans often used to increase patients' access to AHPs; helped patients become involved in their own care; encouraged multidisciplinary care via increased referrals to AHPs; patients appreciated the plan for their future care, referral and rebates; increased GPs' knowledge of AHPs' skills

Barriers to participation in the EPC Program

While funding for AH consultations through the EPC Program is a major advancement for healthcare, barriers have been identified which impact on uptake by dietetics professionals and patients (Allied Health Professions Australia, 2007; Cant & Aroni, 2007, 2008; Foster, et al., 2008) (Table 2-28). These must be considered and overcome to encourage further participation of the EPC Program.

The maximum of five consultations per year for all AHP has been perceived by many to be inadequate as it does not allow sufficient care for many patients with chronic disease (Allied Health Professions Australia, 2007; Cant & Aroni, 2007, 2008; Foster, et al., 2008; Harris, Chan, & Dennis, 2009). The rebate is indexed in November each year, increasing from $44.95 in 2004 (Department of Health and Ageing, 2007b) to $48.95 in November 2008 (Department of Health and Ageing, 2008).

The rebate is believed to be insufficient in that it is lower than that normally charged by professions and does not account for many of the additional tasks associated with the EPC Program such as consulting with GPs and report writing (Allied Health Professions Australia, 2007; Cant & Aroni, 2007, 2008; Foster, et al., 2008). Thus many practitioners charge a gap on services, impacting on the number of patients accessing the service (Cant & Aroni, 2007, 2008; Foster, et al., 2008). Shorter length consultations may also be offered to overcome the inadequate rebate, which may compromise quality of the service (Cant & Aroni, 2007, 2008; Foster, et al., 2008). Bulk billing is also viewed negatively by many practitioners (Cant & Aroni, 2007, 2008). The required communication between AHPs and referring GPs has been viewed as excessive (Cant & Aroni, 2007; Shortus, et al., 2007), although this has decreased with time.

These factors may result in practitioners being unwilling to participate in the EPC Program. Nevertheless, despite these less than ideal aspects of the EPC Program, it shows progress in encouraging multidisciplinary care, and providing better access to AHPs in the primary care setting (Foster, et al., 2008). Understanding of how patients are responding to this Program and the impacts on clinical outcomes would be beneficial (Cant & Aroni, 2008; Foster, et al., 2008). Foster *et al.* (2008) identified that awareness of how AHPs are responding to this Program would be beneficial, however,

dietetics professionals' opinions have since been published (Cant & Aroni, 2008). These should be used to improve the EPC Program, thus access to multidisciplinary care.

Table 2-28 Barriers to the uptake of the Enhanced Primary Care (EPC) Program

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Harris, et al., 2009) Australia	Opinion paper	N/A	Care Plans	Inadequate number of visits; effectiveness is limited to high-risk patients (i.e. uncontrolled diabetes); recommendation of graded access to services based on need.
(Cant & Aroni, 2008) Australia	Online questionnaire; five questions, including 38 items; open and closed format; tested face validity and expert review; two reminder initiations sent to non-respondents	356 PP dietetics professionals (47% of eligible from 2007-08 DAA membership); 20 purposely sampled for telephone interview; 9 conducted before 'saturation'	Evaluation of Medicare EPC Program	Mandatory minimum 20 minute initial consultation inadequate; inadequate rebate and number of visits; needs to include remuneration for related activities; E-referral/ E-reporting for communication with GPs; inadequate rebate for bulk billing
(Foster, et al., 2008) Australia	Opinion paper	N/A	Issues with Medicare EPC Program	Inadequate number of visits; keeping care to funded visits may affect patient care as often to not meet recommendations; reimbursement not provided for additional activities related to multidisciplinary care; does not fully utilise expertise of AHPs to tailor plans for patients and facilitate self management and behaviour change; inadequate rebate; copayment results is inequitable access
(Allied Health Professions Australia, 2007) Australia	Allied Health Professions Australia Briefing Paper	N/A	Suggested improvem ents to the Medicare EPC Program	Suggested improvements: GP referral to AHPs should be easier with less paperwork; AHPs should be able to claim for case management and case conferences; more visits should be allowed for when required, following the 6+6+6 formula used in Mental Health; rebates should differ (initial, 30 min review, extended consultation 45 minutes and over); the range of eligible conditions should be expanded where sufficient evidence for treatment

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Cant & Aroni, 2007) Australia	Semi-structured interviews/focus groups; invitations mailed to a 10% purposive sample	15/42 (36%) Victorian PP dietetics professionals	Issues with Medicare EPC Program	Inadequate number of visits; inadequate rebate to meet time commitments and paperwork requirements; reimbursement often problematic if bulk billing; failure to attend as patients may be less motivated
(Shortus, et al., 2007) Australia	Semi structured interviews; grounded theory methodology; recruitment via DGP, a NSW GP research network and patients through participating AHPs; purposive sampling initially to ensure range of health professionals and NSW settings; subsequent sampling guided by theory development until saturation; interviews tape recorded and transcribed	38 participants; 19 GPs, eight AHPs (4 diabetes educators, three dietetics professionals, one podiatrist), two endocrinologists, nine patients with type 2 diabetes	Opinions of and involvement in care plans	Patients recalled little about their care plan; very few patients had care so complex that it required additional collaboration than referral and feedback letters however Medicare expects active discussion between GPs and AHPs at the time of plan development; eligibility criteria should be clarified;

Allied Health Group Services under Medicare for patients with type 2 diabetes

In May 2007 Medicare introduced AH items for group services for people with type 2 diabetes (Department of Health and Ageing, 2007a). To be eligible for these rebates patients must have type 2 diabetes, have a care plan written by their GP and be referred to either a dietetics professional, diabetes educator or exercise physiologist (Department of Health and Ageing, 2007a). These items are additional to the five services available to patients with a chronic disease under the AH and dental care initiative (Department of Health and Ageing, 2007a). Prior to attending the group sessions patients must be assessed for eligibility for the group sessions, by either a dietetics professional, exercise physiologist or diabetes educator (Department of Health and Ageing, 2007a). This should include a thorough patient history, discussion of goals and linking the patient to an appropriate group service program (Department of Health and Ageing, 2007a). Only one assessment rebate of $60 is available per calendar year and must last for at least 45 minutes (Department of Health and Ageing, 2007a). If patients are deemed to be appropriate for the group sessions they will receive a $15 rebate for up to eight group sessions per calendar year

2.12.2.4 Onsite dietetic services

Onsite dietetic services have been reported to improve patient care with better patient access and uptake of services (Bradshaw, 1994; Lowe & Lawrence, 2005; Sturmberg & Overend, 1999; Witt, et al., 2006) (Table 2-29). Onsite services encourage relationships between GPs and the health care team (Lowe & Lawrence, 2005) through enhanced communication (Bradshaw, 1994; Witt, et al., 2006). It also highlights importance of dietetics professionals in health care team and provides 'whole person' care (Bradshaw, 1994). Onsite services are also more convenient for patients, with easier appointment making, less need for travel and the benefit of service being provided at the same place and time (Bradshaw, 1994; Lowe & Lawrence, 2005; Sturmberg & Overend, 1999; Witt, et al., 2006).

Table 2-29 Improved access to dietetics professionals through onsite services

Author/ year/ country	Method	Participant characteristics	Relevance	Conclusions
(Brauer, et al., 2006) Canada	Modified Delphi process; lead physicians and Registered Dietetics professionals (RDs) from three Family Health Networks and relevant health professionals invited to send a representative; participants met for 1.5 days to identify various feasible options and approaches for practice; Delphi questionnaire created and emailed to participants; teleconference discussions	29 organisations contacted; 23/24 participants completed Delphi process; 11 RDs; 12 other professions	Models of nutrition services	Comprehensive nutrition services are logically placed in general practice where majority of diet related conditions are diagnosed and long-term relationships established; ongoing follow-up
(Witt, et al., 2006) Canada	Registered Dietetics professionals employed in Family Health Networks (FHNs); FHN selected from proposals from FHNs and primary care models meeting specific conditions; FHN staff received letter and questionnaire; workload measurement, receptionist time and questions collected twice for 2-week periods; physician referral activity for one week; forms and questionnaires pilot tested or reviewed	3 FHNs chosen from eight submissions; three Registered Dietetics professionals; 27/41 physicians (66%); 1884 patients reviewed	Rates of nutrition advice; rates of referral;	Indirect cost savings; reduced travel time by patients; convenient to make appointment at the general practice; and improved chronic disease management through improved communication between the GP and dietetics professional
(Lowe & Lawrence, 2005) Australia	Systematic literature review using four electronic databases 1999-2003; pilot survey (respondents from National Rural Faculty email list & professional network of the researcher); discussion of models developed at a conference for GPs	Literature review: 56 articles, 43 with focus on relationship between AHP and GPs; pilot survey- 17 GPs	GP perceptions of the roles of AHPs; referral; onsite services	Increases multidisciplinary care as strengthens relationship between AHPs and GPs; achieves practice based efficiency improvements; delivers better services and access to patients
(Sturmberg & Overend, 1999) Gosford, Australia	Evaluation of diabetes clinic; 593/704 patients with diabetes were asked to participate; onsite team of GP, dietetics professional and diabetes educator; diabetes treatment and complications data collected	580/593 consented; 91% retention; 52% female; mean age 64.9 years (S.D 4.6) range 5-91	Patient satisfaction with onsite services	Patients were highly satisfied with general practice based diabetes clinic due to convenience of all services provided in the same place at the same time
(Bradshaw, 1994) UK	Structured diabetes clinics; dietetics professional in practice compared to open-access dietetic services at a central site; attendance and HBA1c data collected after 6 months	Onsite dietetics professional: 10 practices, 191 patients; not onsite: 6 practice, 81 patients; patients not matched	Onsite dietetic services	improved uptake of dietetic services; facilitates communication; raises profile of dietetics professionals; convenient for patients; whole person care; resulted in improved diabetes care

2.13 Summary of the literature review

This review of the literature shows that there are many advantages, barriers and influencing factors to GPs, PNs and dietetics professionals providing nutrition advice to general practice patients. GPs are not providing nutrition advice at the recommended levels and there is no detailed understanding of how in Australia the systems mesh together to provide the best access to nutrition care. While strategies have been suggested for how to improve the delivery of nutrition advice in general practice, including government initiatives, the literature is unclear on the most effective means of achieving this.

While the literature is clear that GPs, PNs and dietitians all have a role in the provision of nutrition advice in general practice, clarification on their specific roles is required. The role of PNs in general practice is expanding, and there are many benefits to PNs being involved in the delivery of nutrition advice. However, it is unclear if PNs are a more effective avenue than GPs in delivering nutrition advice in general practice.

The literature is clear that not all patients who would benefit from nutrition advice are being referred, due to the many barriers to referral. Strategies have been suggested to improve referrals to dietetics professionals, and hence the provision of nutrition advice, but it is unclear what is the most effective.

This leads us to pose the questions outlined in 'Thesis aims and hypothesis (Section 1.3). Most importantly to ascertain whether specific tools can be used to overcome some of these barriers and improve the access to, and implementation of, nutrition advice in general practice, including the most appropriate roles of by GPs, PNs and dietetics professionals.

Chapter 3

Methods & Response Rates

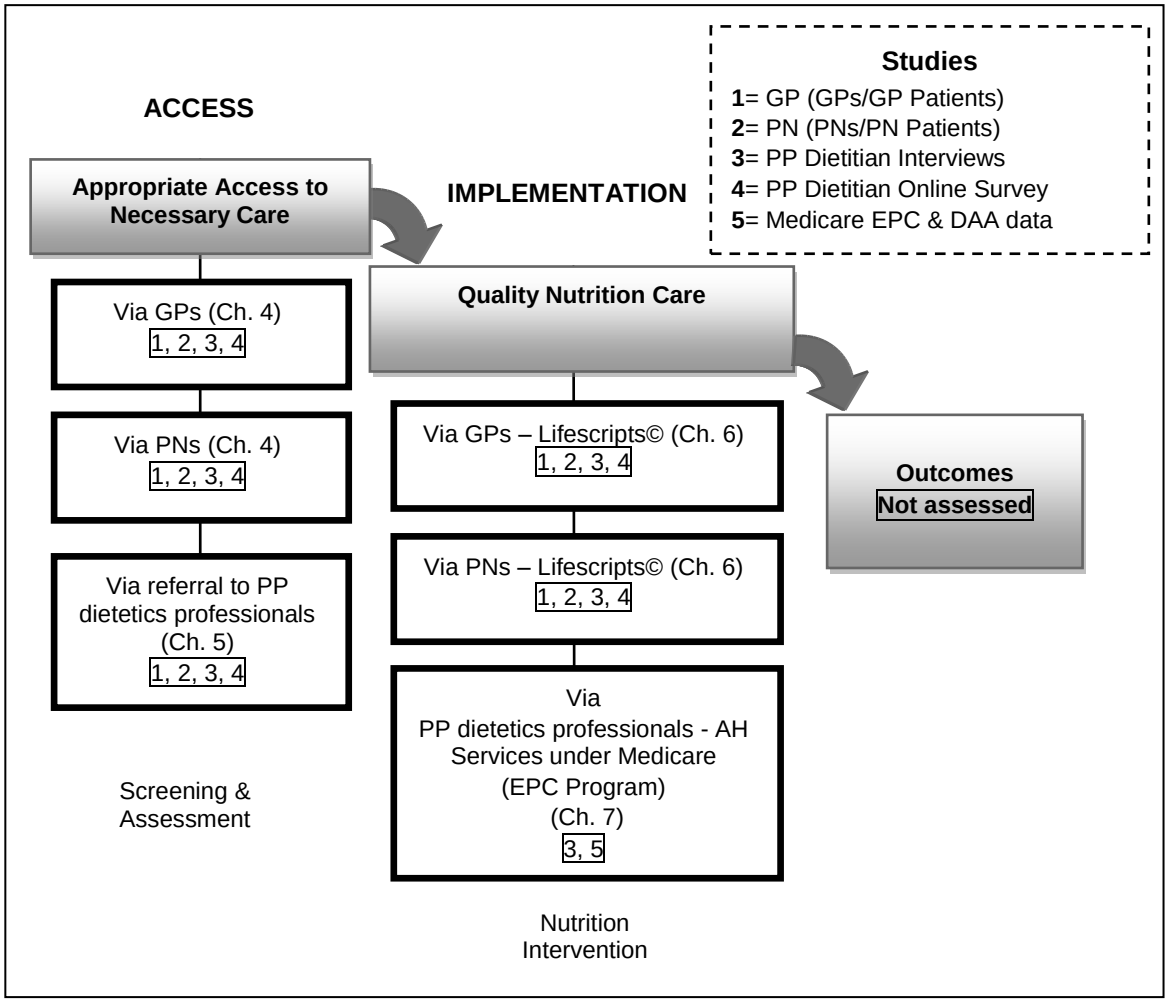


Figure 3-1 Cascade model for improving the delivery of nutrition advice in the general practice setting (Adapted from: Splett (1996) 'The cascade of events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions')

Note: General Practitioner (GP); Practice Nurse (PN); Private Practice (PP); Dietitians Association of Australia (DAA); Enhanced Primary Care (EPC); Allied Health (AH).

3.1 Introduction

This chapter provides an overview of the experimental research included in this thesis. Five studies were conducted to evaluate the most effective means of improving the delivery of nutrition advice in the general practice setting. These studies incorporated six participant groups in order to obtain a variety of perspectives.

GP Access (previously the Hunter Urban Division of General Practice), a DGP in the Hunter Area, is one of the 119 divisions in Australia (Hordacre, et al., 2008). GP, PN and patient participants were recruited from this Division. Dietetics professional participants were recruited from the DAA PP membership.

This chapter outlines recruitment numbers for each study in this thesis, highlighting the problems encountered. The nature of general practice, including excessive workloads and lack of time, makes recruiting GPs and their co-workers to research projects challenging (Asch, Connor, Hamilton, & Fox, 2000; Down, et al., 2009; Franke, et al., 2008; Goodyear-Smith, et al., 2009; Hummers-Pradier, et al., 2008; Mapstone, Elbourne, & Roberts Ian, 2007). Competing priorities from other urgent projects (Down, et al., 2009; Goodyear-Smith, et al., 2009), practical barriers (Yallop, McAvoy, Croucher, Tonkin, & Piterman, 2006), or practice organisation and internal constraints (Down, et al., 2009) may also be barriers to recruitment. The beliefs that research, competes with patient care, is not part of the GPs' role, and does not directly benefit general practices may also result in GPs being unwilling to participate in research (Hummers-Pradier, et al., 2008). GPs may also be hesitant to involve/recruit their patients (Hummers-Pradier, et al., 2008) believing it may impact on doctor-patient relationships (Mapstone, et al., 2007), or they may have concerns about their patients' privacy (Asch, et al., 2000; Down, et al., 2009; Mapstone, et al., 2007). A fear of being observed/evaluated (Asch, et al., 2000; Goodyear-Smith, et al., 2009; Hummers-Pradier, et al., 2008) as well as a perceived lack of rewards/ recognition (Mapstone, et al., 2007) may also have a role.

3.2 GP Study

The GP Study incorporated training and implementation of Lifescripts©, with questionnaires assessing GPs' provision/opinions of nutrition advice and Lifescripts©.

3.2.1Participants

Participants included GPs from GP Access (HUDGP) (GP Participants). This group was chosen due to its physical proximity to the researchers. The Australian Divisions of General Practice (2006b) website indicates there are approximately 400 GPs and GP Registrars in the GP Access Division.

3.2.2Recruitment

3.2.2.1 Intervention group

Intervention GPs were initially recruited through the Health Evaluation and Research Network (HEARNET); a network established by the HUDGP to engage primary health practitioners in Primary Care research. Members of the network agreed to receive newsletters and other information about research projects, including projects in which they might like to participate. This group was chosen to be contacted initially as they were more likely to participate in research. GPs were also recruited via the HUDGP newsletter and word-of-mouth by HUDGP staff. As this study aimed to provide case study information, a large sample size was not essential.

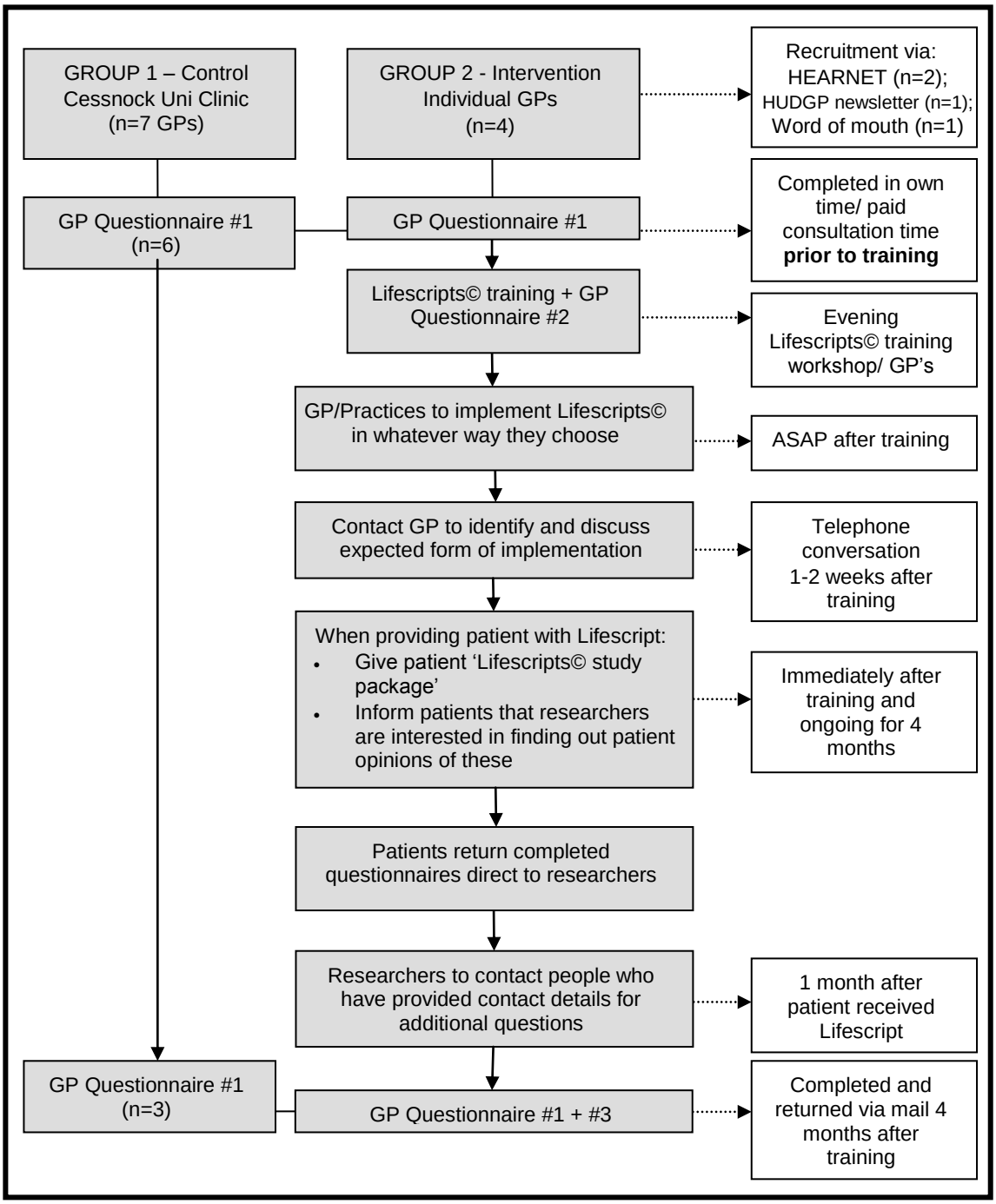
3.2.2.2 Control group

Control GPs were from a general practice within HUDGP associated with Newcastle University with an on-site dietetics professional at the time of recruitment. All GPs working within the practice at the time of recruitment were invited to participate. At follow-up, new GPs were also invited to participate. This practice was included due to its innovative model, including onsite dietetic services, thus also offering insight into the provision of nutrition advice and referral to dietetics professionals under this

model. However, on-site dietetic services had ceased by the time recruitment commenced.

3.2.3Study design

This was an intervention study, with intervention-control comparisons. GPs were provided with Lifescripts© training and then given the opportunity to implement Lifescripts© with their patients. Baseline and follow-up questionnaires were



completed.

Figure 3-2 Overview of study design for GP Project

3.2.3.1 Questionnaires

Self-completed questionnaires were conducted. 'GP Questionnaire #1' was carried out at baseline and follow-up for control and intervention GPs (refer to Appendices). This assessed GPs':

- Attitudes and behaviours;
- Perceived barriers to providing nutrition counselling;
- Referral practice to dietetics professionals;
- Awareness/knowledge of Lifescripts©.

The questionnaire included both qualitative and quantitative questions, with responses in the form of Likert scales and open-ended questions. Questions were developed from a literature search which identified the type of information that would be beneficial to assess, including the barriers and enablers associated with providing nutrition advice and referral. Some questions were used with permission from a completed thesis (Nicholas, 2006).

Follow-up was completed approximately four months after baseline questionnaires, providing an opportunity for GPs to implement Lifescripts©. Intervention GPs conducted an additional questionnaire at this time to gain further insight into their opinions of Lifescripts© (refer to Appendices). All questionnaires were tested by GPs within the University for face and content validity and timing, and adapted based on recommendations.

GP self report is a commonly used method in the literature, however, it is acknowledged that it is prone to overestimate the delivery of preventive services, especially when compared with medical record review or with patient survey (Bonevski, et al., 1996; Stange, et al., 1998). While direct observation is the gold standard way of measuring events occurring during a consultation this is expensive, intrusive and time consuming (Bonevski, et al., 1996; Glanz, 1997; Stange, et al., 1998).

Medical records can be more objective than self-report. However, they tend to underreport the delivery of services compared to review of recorded visits, due to failure to record and incomplete records (Ammerman, et al., 1993; Lewis, 1988; Stange, et al., 1998). Counselling practises are poorly documented in the medical records (Bonevski, et al., 1996); 'claims data' is also unreflective of certain services, as it only includes reimbursed procedures (Lewis, 1988; Stange, et al., 1998).

Initially the questions were planned to be administered in the form of an interview as they were being conducted during a consultation time. However, expert opinion suggested that this process will be more time consuming and GPs may prefer to fill the answers out themselves. Therefore we changed to self-complete questionnaires.

3.2.3.2 Training in the use of Lifescripts©

GPs in the intervention group were provided with Lifescripts© training by dietetics professionals familiar with the tools. Training aimed to provide GPs with an understanding of Lifescripts©, how they are used, and the benefits of using them, in particular the nutrition and weight management Lifescripts©. Evaluation of the training session was provided (refer to Appendices).

3.2.3.3 Implementation of Lifescripts©

After training, GP Participants were requested to implement Lifescripts© in their practice and provide a 'Lifescripts© study package' along with all the Lifescripts© they distributed. This included a patient information statement, questionnaire and consent form for a telephone interview. Questionnaire ID codes were used to identify the number of packages distributed by each GP and to link patients responses to their GP. No other requirements were made to keep the participant burden low.

3.2.4Ethics

This study was approved by the Hunter Research Ethics Committee at the University of Newcastle in August 2006; approval number H-253-0706 (revised March 2007).

3.3 PN Study

As with the GP Study, the PN Study incorporated training and implementation of Lifescripts©, with questionnaires assessing PNs' provision/opinions of nutrition advice and Lifescripts©.

3.3.1Participants

PNs from GP Access (HUDGP) were invited to participate in the research (PN Participants). As recruitment of GPs for the study was problematic, PNs were recruited to evaluate this group as an alternate pathway to deliver nutrition advice in the general practice setting. GP Access offers a high level of support and training for its PNs, and was therefore utilised as an avenue to reach this group.

3.3.2Recruitment

In planning this study, consultations were conducted with key experts and PNs from GP Access to identify whether PNs were a viable group for the provision of nutrition advice and implementation of Lifescripts©. PNs from practices who had expressed interest in Lifescripts© to GP Access were invited to participate in the focus group. The PN Study was developed using feedback from this focus group.

PNs were recruited to the PN Study via mailed information packages sent to all practices within GP Access who had previously expressed interest in Lifescripts©. PNs who attended the focus group were also contacted to ensure they received an information package. PNs were only excluded if they worked in a practice with a participating GP.

3.3.3Study design

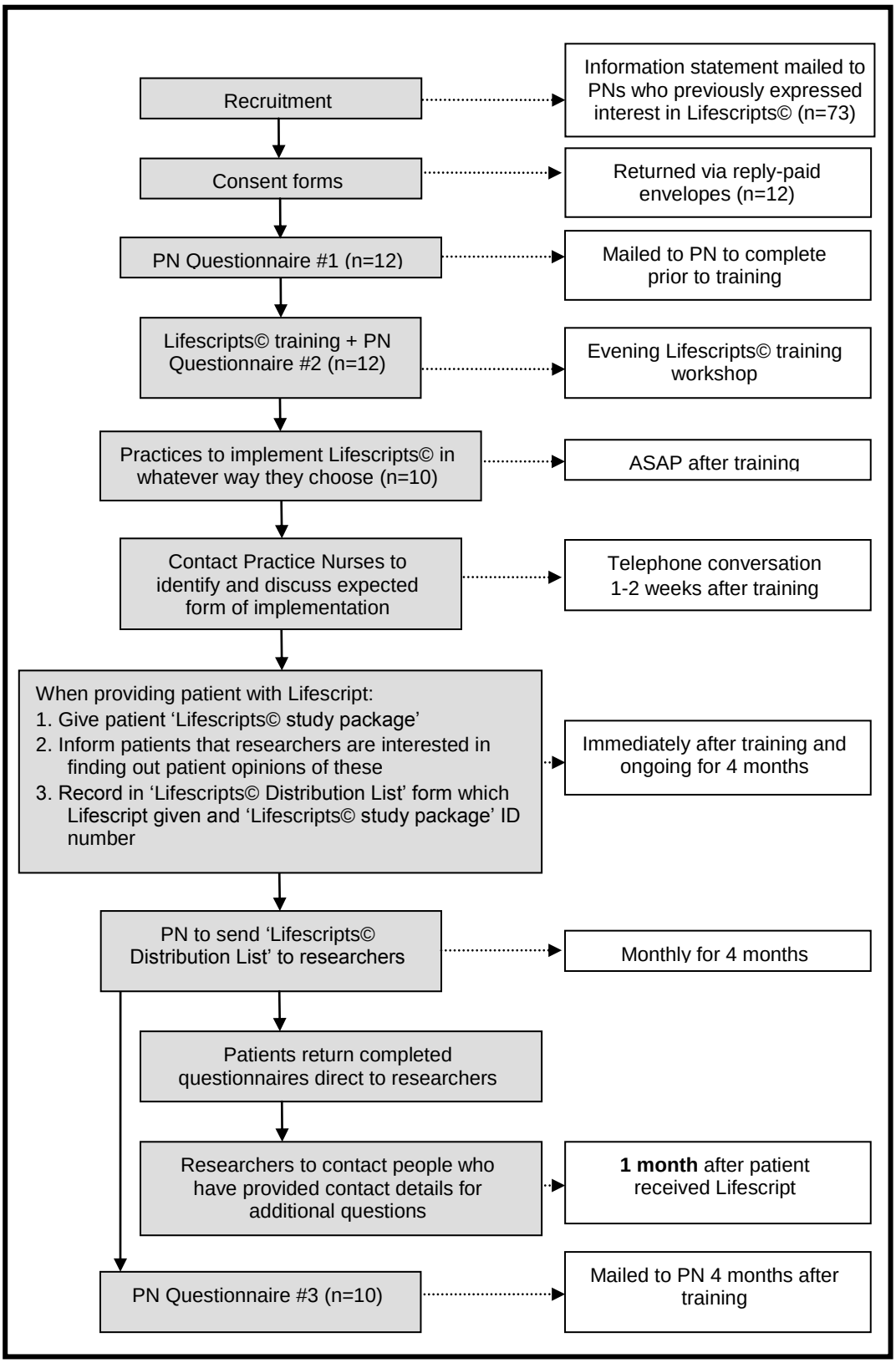


Figure 3-3 Overview of study design for Practice Nurse Study

3.3.3.1 Questionnaires

Following consent and prior to Lifescripts© training, PN participants completed the 'PN Questionnaire #1' (refer to Appendices). This questionnaire assessed PNs' awareness and implementation of Lifescripts©, attitudes towards nutrition counselling and referral to dietetics professionals as well as these related behaviours. Questions were derived from the GP questionnaire. It included both qualitative and quantitative questions, with responses in the form of Likert scales and open-ended questions. The similarity to the GP questionnaires allows for comparisons between groups.

Following the four months of Lifescripts© implementation, PNs completed 'Practice Nurse Questionnaire #3' (refer to Appendices). This questionnaire aimed to assess PNs' opinions and use of Lifescripts©, barriers to their implementation, as well as their impact on the PNs' nutrition counselling and referral attitudes and behaviours.

3.3.3.2 Training in the use of Lifescripts©

Lifescripts© training included:

- What Lifescripts© are, how to use them, and possible ways for them to be implemented within a practice;
- Further information about the study; and
- Useful resources when providing nutrition or weight management advice.

Training was provided by dietetics professionals familiar with Lifescripts© and was evaluated using 'Practice Nurse Questionnaire #2' (refer to Appendices).

3.3.3.3 Implementation of Lifescripts©

Following training, PNs implemented Lifescripts©. PNs were requested to provide a 'Lifescripts© study package' to patients along with any Lifescripts©, including an information statement, questionnaire and consent form for a telephone interview. Questionnaires had ID codes to indicate which PN participant distributed the package. A 'Lifescripts© distribution form' was used to record the date, the 'Lifescripts© study package' ID number, Lifescript/s provided and context of the visit in which it was

provided (refer to Appendices). PNs faxed the completed 'Lifescripts© distribution form' to the researchers at the end of each month for four months.

3.3.4Ethics

This study was approved by the Hunter Research Ethics Committee at the University of Newcastle in April 2007; approval number H-403-0407 (revised June and September 2007).

3.4 Patient Study

Questionnaires and telephone interviews were conducted with patients recruited from the GP and PN Studies.

3.4.1Participants

Eligible participants were those who received Lifescripts© from the GP and PN Studies (Patient Participants). Patient interview post-consultation has been shown to be a more objective method of measuring GP practices compared with GP self report (Stange, et al., 1998). Counselling practises tend to have been reliably reported by patients (Bonevski, et al., 1996). While patient reports were influenced by their ability to recall, they did provide useful data of what the patient heard the GP say, as well as what they remembered, knew and believed was said or done (Lewis, 1988). Investigating patients' views of: Lifescripts©, GP and PN provision of nutrition advice and referral to dietetics professionals was a necessary aspect of this research. Eligible patients received a Lifescripts© from their GP/PN, were ≥18 years of age and were able to communicate with the researchers.

3.4.2Recruitment

General practice patients were recruited using the 'Lifescripts© study package', provided by either their GP or PN upon provision of a Lifescript. The package

included an information statement, questionnaire and consent form for a telephone interview.

3.4.3Study design

Completion of the questionnaire was taken as participation consent. The questionnaire aimed to evaluate patients' opinions of Lifescripts©, and resulting changes to lifestyle behaviours and weight. Patients consenting to the telephone interview (Patient Telephone Interview Participants) were phoned approximately one month after the Lifescript was received.

3.4.4Ethics

This study was approved by the Hunter Research Ethics Committee at the University of Newcastle; approval numbers H-253-0706 (August 2006; revised March 2007) and H-403-0407 (April 2007; revised June and September 2007).

3.5 PP Dietetics Professionals' Telephone Interviews

Semi-structured telephone interviews with PP dietetics professionals (Interview Participants) were conducted in order to assess their opinions of the provision of nutrition advice in general practice, including the Medicare EPC Program.

3.5.1Participants

Participants were PP dietetics professionals in Australia from a range of general practice divisions deemed to have a high or low number of dietetics professional EPC consultations per population and/or PP dietetics professional FTEs. Dietetics professionals were perceived to be important as they deliver nutrition advice to general practice and consult closely with GPs and PNs in the provision of nutrition advice to patients.

3.5.2Recruitment

The number of dietetics professional EPC consultations per DGP was purchased from Medicare Australia. PP dietetics professional FTEs per division were calculated from DAA 2007 membership data using postcodes. Divisions were ranked by number of dietetics professional EPC consultations, relative to population (Primary Health Care Research & Information Service, 2006) and PP dietetics professional FTEs. High and low divisions were then selected based on rankings, urban or rural status as well as the state in which located, in order to attain a broad range of eligible participants. Eighteen divisions were chosen, eight high EPC (H-EPC) and ten low (L-EPC). Divisions with less than one FTE were excluded with the exception of one Tasmanian division as all three had less than one FTE. More urban divisions were selected as this is proportional to total numbers.

'Find an APD' (Accredited Practicing Dietitian) is an online database provided by DAA in which its members who are APDs register their service details (Dietitians Association of Australia, 2009c). This database is available to the public and dietetics professionals can be searched by postcode or DGP. This feature was used to obtain a list of dietetics professionals who reported to work in each division. Postcodes included in each of the DGP were sourced from the Australian General Practice Network (AGPN) 'Network Directory' (Australian Divisions of General Practice, 2006b). It is not uncommon for dietetics professionals to work in more than one division and therefore, dietetics professionals that worked in both high and low or urban and rural divisions were not excluded. Eligible dietetics professionals were invited to participate via email if their email address was provided on 'Find an APD', otherwise their invitation was sent via mail. Reminder emails were sent after three weeks to non-respondents. Three $100 incentive nutrition resource vouchers were provided in the attempt to increase the response rate.

3.5.3Study design

Upon consent, dietetics professionals were contacted to organise a suitable interview time. Interviews took 15-25 minutes on average, recorded with participant permission,

and then transcribed. Participants received questions prior to the interview to aid efficiency. To ensure consistency, when clarification on a question was required a standardised prompt was used. Questions were developed from literature and the GP/PN surveys. These were pilot tested with three PP dietitians for face/content validity as well as timing, and revised accordingly.

3.5.4Ethics

Ethics approval was gained from the Human Research Ethics Committee at The University of Newcastle in March 2008; approval number H-2008-0070.

3.6 PP Dietetics Professionals' Online Survey

An online survey was conducted with PP dietetics professionals (Survey Participants) in order to assess their opinions of the provision of nutrition advice in general practice, including the use of Lifescripts© by GPs and PNs.

3.6.1Participants

Dietetics professionals working in PP in Australia were invited to participate (n=770). PP dietetics professionals consulting to the general practice setting provide a unique insight into the provision of nutrition advice by GPs and PNs, referral practices of GPs and tools such as Lifescripts©.

3.6.2Recruitment

PP dietetics professionals were recruited via email link to the online electronic quantitative survey using the DAA weekly member email update. Reminder invitations were sent via the DAA PP interest group email. One $100 incentive nutrition resource voucher was provided to increase response rate.

3.6.3Study design

An online survey was developed (SurveyMonkey.com., Copyright ©1999-2009). The survey consisted of four components: demographic data, the role of GPs in delivering nutrition advice, the role of PNs in delivering nutrition advice and Lifescripts©. Questions were formed based on the literature and pilot tested with five PP dietitians for timing, face and content validity.

3.6.4Ethics

This study was approved by the Hunter Research Ethics Committee at the University of Newcastle in March 2008; approval number H-2008-0038.

3.7 Medicare Allied Health Enhanced Primary Care data

Medicare EPC consultations are one avenue by which PP dietetics professionals can deliver nutrition advice to general practice patients. Assessing trends in this data was imperative to this research, as it identified whether this is a viable avenue to encourage the delivery of nutrition advice.

Data on the number of dietetics professional EPC consultations were obtained from Medicare for 2004-05, 2005-06 and 2006-07 financial years. These data were reported at the Division of General Practice level, for the number of dietetics professional EPC consultations conducted each month. Information was also obtained on the number of AHPs making EPC claims during the three financial years. The total number of EPC consultations claimed for each profession was accessed from the Medicare website (Medicare Australia, 2009).

Additional information was gathered from 'Australian Divisions of General Practice - Key Division of General Practice characteristics 2004-2005' (Primary Health Care Research & Information Service, 2006). This included population, estimated number of GPs, Full-time Workload Equivalents (FTEs), GP to population ratio, and the FTE GP to population ratio (Primary Health Care Research & Information Service, 2006).

The total number of EPC consultations claimed for each profession was used to identify the market share and average number of EPC consultations per professional. Classification of divisions according to their urban or rural status was provided from the AGPN 'Network Directory' (Australian Divisions of General Practice, 2006b).

3.7.1 Ethics

Ethics approval was granted by Medicare Australia's External Request Evaluation Committee, reference number 2006/00845 (June 2006).

3.8 Dietitians Association of Australia membership data

DAA membership data was assessed to identify trends in the number and characteristics of PP dietetics professionals. This was compared to Medicare data to evaluate the impact of the introduction of EPC consultations on dietetic workload.

Every year, membership statistics are recorded, including personal details and the self-reported average number of hours worked weekly in each of the listed work areas. De-identified data was extracted at the end of each year from 2004-2007 and obtained from DAA. Postcodes were used to identify the DGP in which members were located, hence whether they were urban or rural, and any trends between DAA membership and Medicare EPC data.

Membership data was analysed to identify changes in the number and work hours of PP dietetics professionals in Australia. PP dietetics professional FTEs were calculated based on 40 hours per week. For this study, those members who indicated their greatest number of hours were in PP, including dietetics professionals who work solely in PP, were considered to be primarily working in PP. The membership data used included dietetics professionals working in Australia, and excluded students, those not currently working, associates, retirees and overseas workers. As dietetics professionals must be APDs in order to participate in the EPC Program, it was assumed that DAA membership data included all Medicare providers.

3.9 Statistics

Data manipulation and statistical analyses were performed using Microsoft Office Excel 2007 and Intercooled Stata 9 software (StataCorp, 2005). Descriptive analysis was conducted on quantitative data, including counts, percentages and proportions. When data was able to be separated into two categories, chi-squared tests were performed to test significance at the $p<0.05$ level. Qualitative data was analysed using content analysis, with frequencies of themes tabulated. Questions common between participant groups allowed for comparisons of responses.

3.10 Recruitment - Response rates

3.10.1.1 GP Participants

Recruitment was poor, with four GPs participating in the intervention arm of the study (n=3 female; n=1 male). This was despite extensive support from the DGP. Multiple recruitment strategies were used, including mailed invitations to GP members of 'HEARNET' (Health Evaluation and Research Network) (n=2/19 GPs recruited; 10.5% response), an advert in the HUDGP's newsletter (n=1) and word-of-mouth by HUDGP staff (n=1). Effort was also made to minimise respondent burden. Six out of the seven GPs in the control practice completed baseline questionnaires, with follow up questionnaires completed by two of the four GPs who were still at the practice, and one new GP.

3.10.1.2 PN Participants

Twelve PNs were initially recruited to the study (14.3% response rate) (all female); nine of which completed the study. Three PNs withdrew from the study due to leaving the practice (n=2) or being too busy (n=1). One participant who withdrew after one month still completed the final questionnaire, and one PN completed the specified four months of data collection but was unable to complete the final questionnaire (baseline questionnaire n=12; 4 months of Lifescripts© implementation n=10, follow-up questionnaire n=10).

3.10.1.3 General Practice Patients

Thirteen of the 72 patients who received Lifescripts© packages returned questionnaires (18%); 4/20 GP Patients (20%) and 9/52 PN Patients (17%). Lifescripts© were provided to an additional five patients who did not receive/refused study packages. Seven patients participated in telephone interviews (2 GP; 5 PN). All patient participants were female. The majority of patients were 45-69 [18-24 (n=1); 45-49 (n=3); 50-59 (n=2); 60-69 (n=6); 70+ (n=1)].

3.10.1.4 PP dietetics professionals: Telephone Interview Participants

Fifty-two PP dietetics professionals representing 14 DGP consented to participate (22% of those invited) (Table 3-1). Eighteen participants worked in divisions deemed to have provided a high number of consultations based on population and dietetics professional FTEs (H-EPC); 16 urban and two rural. Thirty-seven worked in divisions providing a low number of services based on population and dietetics professional FTEs (L-EPC); 35 urban and two rural. Three urban participants reported working in both H-EPC and L-EPC divisions. H-EPC divisions had a better response than L-EPC divisions (30% vs. 20%). Overall the response rate from urban divisions was double that of rural divisions (24% vs. 11%). H-EPC urban group had the highest overall response rate at 31%, with H-EPC rural and L-EPC urban having equal response rate of 22%. L-EPC rural had the lowest response rate of 8%.

Three additional consent forms were received after recruitment finished and, therefore, were not able to participate in the study.

Table 3-1 Number and response rates of PP dietetics professionals participating in Telephone Interviews, by Divisions of General Practice

		Number of respondents	Number invited	Response rate
H-EPC urban	Adelaide Central & Eastern DGP	5	28	18%
	Adelaide Northern DGP	1	6	17%
	Eastern Ranges DGP	6	9	67%
	Macarthur DGP	2	6	33%
	Redcliff Bribie Caboolture DGP	3	7	43%
	TOTAL	16	52	31%
H-EPC rural	Greater Bunbury DGP	2	2	100%
	Wide Bay DGP Association	0	6	0%
	Top End DGP	0	1	0%
	TOTAL	2	9	22%
L-EPC - Urban	ACT DGP	5	11	45%
	Gold Coast DGP	4	17	24%
	GP partners (Brisbane North)	7	53	13%
	Hornsby Kurringai Ryde DGP	4	28	14%
	Hunter Urban DGP (GP Access)	11	24	46%
	Whitehorse DGP	4	29	14%
	TOTAL	35	157	22%
L-EPC - rural	Hunter Rural DGP	1	3	33%
	Sunshine Coast DGP	1	19	5%
	South East NSW DGP	0	3	0%
	GP North DGP	0	1	0%
	TOTAL	2	26	8%
	OVERALL TOTAL	52	236	22%

Note: totals do not equal individual sections as some dietetics professionals were represented more than once (4 dietetics professionals belonged to 2 different divisions)

3.10.1.5 PP dietetics professionals: Online Survey Participants

Ninety Australian PP dietetics professionals participated in an online survey (12% of 2007 DAA PP members).

Summary

The barrier to recruitment of both GP and PNs was significant despite multiple and extensive methods being used. Anecdotally GPs and PNs reported not having time to undertake the study, even though interested. This impacted greatly on the ability of the researcher to complete this section of the planned studies. While slightly more PNs participated, this was not as high as anticipated.

3.11 Conclusion

Significant barriers were experienced in recruiting GPs to this study which was unexpected despite the nature of general practice, including high workloads and lack of time. GPs' interest in the research was not sufficient to overcome the burden associated with participating in a study. Similar barriers were experienced with PNs, however, a slightly greater interest in participating was observed. Recruiting PP dietetics professionals was more successful, presumably due to the higher interest in the area.

Chapter 4

Patient access to nutrition interventions in the general practice setting - GPs & PNs

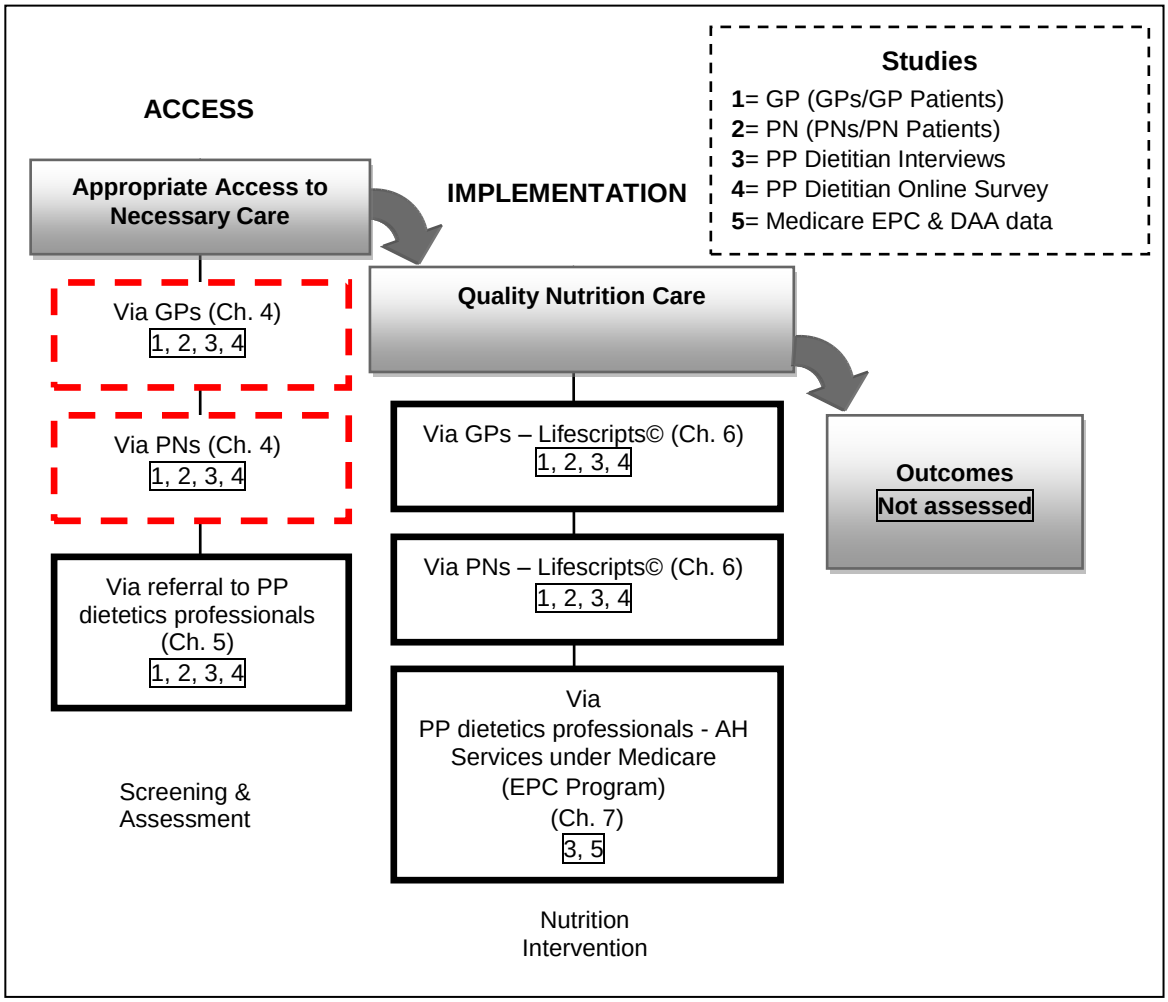


Figure 4-1 Cascade model for improving the delivery of nutrition advice in the general practice setting (Adapted from: Splett (1996) 'The cascade of events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions')

Note: General Practitioner (GP); Practice Nurse (PN); Private Practice (PP); Dietitians Association of Australia (DAA); Enhanced Primary Care (EPC); Allied Health (AH).

4.1 Introduction

The purpose of this chapter is to evaluate access to nutrition advice by GPs and PNs. The aim is to discover GPs and PNs' views on and provision of nutrition advice, as well as PP dietetics professionals' opinions of GPs' provision of nutrition advice.

General practice is the ideal setting to be providing nutrition advice due to the high level of access to the majority of the population (Britt, et al., 2005). There are many benefits for GPs providing nutrition advice to their patients as can be seen in Section 2.9.1.1. GPs are a trusted (Macario, et al., 1998; Truswell, et al., 2003; Wiesemann, 1997) and sort after source of nutrition advice (Hiddink, et al., 1997a; Tan, et al., 2006) with a high perceived expertise (Hiddink, et al., 1997a; Tan, et al., 2006; van Dillen, et al., 2006). By raising the patient's awareness about dietary behaviours, GPs are likely to motivate patients to change behaviour (Pomeroy & Worsley, 2009a, 2009b).

The literature identifies that GPs are not providing nutrition advice at the required levels. GPs reported they provided advice less often than necessary (Maiburg & Hiddink, 1999; Witt, et al., 2006), and patients believed they required advice but did not receive it (Galuska, et al., 1999; Tan, et al., 2006). This may be attributed to the many barriers to providing nutrition advice that exist in general practice, including those that relate to the structure of general practice, as well as GPs and patients (see Section 2.9.1.3). These barriers must be considered when developing strategies to increase the delivery of nutrition advice.

The role of PNs in providing nutrition advice cannot be overlooked. The expanding role of PNs allows them to assist GPs in a variety of tasks, easing the burden on GPs and assisting in GP workforce shortages (Atkin & Lunt, 1996; Britt, et al., 2007; Hegney, et al., 2006; Oldroyd, et al., 2003; Watts, et al., 2004). As Section 2.9.2.1 shows, PNs may be better placed than GPs in delivering nutrition advice (Atkin & Lunt, 1996; Harrison, et al., 2002; Phillips, et al., 2009; Steptoe, et al., 1999). While PNs may have more time to spend with patients (Atkin & Lunt, 1996; Harrison, et al., 2002) they must still ensure their practice is time and cost effective (Macario, et al., 1998). A focus group with PNs from 'GP Access' indicated that PNs often do more of the preventive work within their

practices than GPs and have more time to spend with patients to provide lifestyle counselling. Booth et al (2006) also believe that it may be more realistic for PNs to conduct health promotion programmes due to the barriers experienced by GPs. Therefore, it appears that PNs may be an appropriate avenue through which to deliver Lifescripts© and provide nutritional advice to patients.

It is important to note that PNs are not intended to take the role of dietetics professionals. While PNs can provide brief nutrition advice, dietetics professionals are essential to provide specific tailored advice to patients (American Dietetic Association, 1998).

4.2 Aims

This chapter aims to evaluate:

1. GPs and PNs' opinions of the number of patients requiring and receiving nutrition advice, and the perceived influencing factors on this; and
2. PP dietetics professionals' opinions of GPs' provision of nutrition advice, prompting factors to the provision of nutrition advice and ways of increasing the number of patients receiving nutrition advice.

4.3 Methods

A full description of the methods can be seen in Chapter 3; including:

- GP Study (Section 3.2);
- PN Study (Section 3.3);
- PP Dietetics professional Telephone Interviews (Section 3.5); and
- PP dietetics professional Online Survey (Section 3.6).

4.4 Results

4.4.1 Proportion of patients requiring and receiving nutrition advice – GPs' views

The 11 GPs' baseline estimations of the percentage of patients requiring nutrition advice varied considerably, with 0-20% (n=4), 30-50% (n=4), 70% (n=1), and 80% (n=1) and 'many of them' (n=1). The percentage of patients who were provided with nutrition advice of the patients that were perceived to require it also varied [<10% (n=1), 10% (n=1) 30-40% (n=2), 50%-75% (n=2), 80-90% (n=1), 100% (n=2), 'most but probably very minimal advice' (n=1) and 'many of them - mainly high cholesterol' (n=1)]. Overall a low percentage were provided with nutrition resources, with <10% (n=2), 10-20% (n=3), 30-40% (n=3), 50% (n=1), 100% (n=2) and 'most' (n=1). No clear differences were observed between intervention GPs' views on the proportion of patients requiring and receiving nutrition advice at baseline and follow-up.

4.4.2 Factors influencing delivery of nutrition advice – GPs' views

Overall, GPs agreed that having education material available and time were important in influencing their decision to counsel (Table 4-1). Mixed responses were given for the importance of adequate reimbursement, however, overall GPs were neutral (mean 3.3-3.5; median 3.0-3.5). No major differences were seen between intervention and control GPs, or as a result of Lifescripts© training for intervention GPs. Except for Lifescripts© training, intervention GPs had not conducted any more training in nutrition during the study period.

Table 4-1 Intervention and control GPs' views on factors that influence their provision of dietary advice at baseline and follow-up

'How important is … in influencing your decision to counsel?'	Intervention GPs				Control GPs			
	Baseline (n=4)		Follow-up (n=4)		Baseline (n=6)		Follow-up (n=3)[a]	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
adequate reimbursement	3.5	3.5	3.5	3.0	3.5	3.5	3.3	3.0
time	4.3	4.0	4.0	4.0	4.2	4.0	4.0	4.0
having education material available	4.3	4.0	4.5	4.5	4.5	4.5	4.0	4.0

[a] n=1 control GP had follow-up results but no baseline

Note: very high importance=5; high importance=4; neutral=3; low importance=2; very low importance=1GP provision of nutrition advice – dietetics professionals' views

4.4.3GP provision of nutrition advice – dietetics professionals' views

Table 4-2 outlines dietetics professionals' responses when asked whether they believe the majority of GPs they work with are providing nutrition advice. Less than half (40.3%) of Interview Participants believed the majority of GPs they worked with were providing nutrition advice (11.9% specified basic advice only). Of those who believed that the majority of GPs were not providing advice (46.2%), 23.1% believed GPs just refer patients to dietetics professionals); 9.6% believed only a minority were providing nutrition advice. It was suggested that GPs who do not commonly refer may more often provide nutrition advice. No significant differences were observed between H-EPC and L-EPC Participants.

Half of Survey Participants believed the majority of GPs they work with were providing nutrition advice (7.0% indicating GPs provide basic advice only); 39.5% believed the majority were not providing advice, with another 9.3% believing it was the minority only.

Table 4-2 Interview and Survey Participants' beliefs as to whether the majority of GPs are providing nutrition advice

	Interview Participants		Survey Participants	
	n	(%)	n	(%)
Yes	21	[a](40.3)	43	[b](50.0)
Minority only	5	(9.6)	8	(9.3)
No	12	(23.1)	34	(39.5)
No, just refer on	12	(23.1)	1	[c](1.2)
Not sure	2	(3.8)	0	(0.0)
TOTAL	52	(100.0)	[d]86	(100.0)

[a] Includes 11.9% specifying basic advice only
[b] Includes 7% specifying basic advice only
[c] Option not provided for Survey Participants
[d] 'n/a' n=1; missing data n=3

4.4.4 Factors prompting GPs' delivery of nutrition advice –dietetics professionals' views

Factors perceived by Interview and Survey Participants to prompt GPs to provide nutrition advice are presented in Table 4-3. Interview Participants believed the two main factors that prompted GPs to provide nutrition advice were patients requesting advice or presenting with nutrition related conditions (42.3%). No significant differences were observed between H-EPC and L-EPC Participants. The five main factors reported by Survey Participants were: GPs' interest in nutrition (82.8%), GPs' belief that diet change would make a difference (72.4%), time/longer consultations (65.5%), patients requesting advice/asking questions (59.8%), GPs' belief that giving nutrition advice would result in improvement in patient eating habits (56.3%) and adequate nutrition knowledge/skills (51.7%).

Table 4-3 Factors perceived by Interview and Survey Participants to prompt GPs to provide nutrition advice

	Interview Participants (n=52)		Survey Participants (n=87)[a]	
	n	(%)	n	(%)
GPs' interest in nutrition[b]	4	(7.7)	72	(82.8)
GP's belief that diet change would make a difference[b]	0	(0.0)	63	(72.4)
Time/longer consultations[b]	6	(11.5)	57	(65.5)
Patient requesting advice/asks question[b]	22	(42.3)	52	(59.8)
GPs' belief that giving nutrition advice would result in improvement in patients eating habits[b]	0	(0.0)	49	(56.3)
Adequate nutrition knowledge/skills[b]	0	(0.0)	45	(51.7)
Reimbursement[b]	4	(7.7)	35	(40.2)
Nutrition related condition[b]	22	(42.3)	32	(36.8)
GPs' confidence in providing nutrition advice[b]	0	(0.0)	32	(36.8)
Adequate resources[b]	6	(11.5)	30	(34.5)
Skills in behaviour change techniques [b]	0	(0.0)	16	(18.4)
Prompts to referral	7	(13.5)	1	(1.1)
Interim advice prior to seeing dietetics professional	6	(11.5)	0	(0.0)
Can't/won't refer	5	(9.6)	0	(0.0)
Belief in their own knowledge	4	(7.7)	1	(1.1)
See it as their role	1	(1.9)	1	(1.1)

[a] Missing data for n=3 Survey Participants

[b] Conditions provided in tick box format for survey, while others identified through 'other' category; no prompting provided for interviews

Note: 'nutrition education' was provided by n=1 Interview Participant and 'personal experience' by n=1 Survey Participant

4.4.5GPs' awareness of conditions benefitting from nutrition advice – dietetics professionals' views

Table 4-4 presents Interview and Survey Participants' responses when asked whether they believe GPs are aware of the key conditions that would benefit from nutrition advice. The majority of Interview Participants believed that GPs were aware of the key conditions (80.8%); 13.5% of these believed that they were aware of the 'common conditions' (definition not provided). It was felt by one participant that GPs 'are aware of some [conditions] but not the extent to which dietetics professionals can be effective' (Interview 14). Many dietetics professionals believed that the GPs they worked with were aware of the main conditions, with limited 'inappropriate referrals'; however, the GPs that do not regularly refer had poorer awareness. This can be seen by the expressed belief:

> I guess the ones who refer to APDs are going to be the ones who are more aware of conditions that need dietetic intervention...but there are still certain areas where there may be inappropriate referrals, or we see people privately who...haven't been referred. (Interview 18)

While 15.4% of Interview Participants believed that the majority of GPs were not aware of the key conditions that would benefit from nutrition advice, 3.8% were not sure. No significant differences were observed between H-EPC and L-EPC Participants. Over half (55.2%) of Survey Participants believed GPs were aware of the key conditions that would benefit from nutrition advice, while 44.8% did not.

Table 4-4 Interview and Survey Participants' beliefs as to whether GPs are aware of the key conditions that would benefit from nutrition advice

	Interview Participants		Survey Participants	
	n	(%)	n	(%)
Yes	35	(67.3)	48	(55.2)
Common conditions	7	(13.5)	[a] -	-
No	8	(15.4)	39	(44.8)
Not sure	2	(3.8)	[a] -	-
TOTAL	52	(100.0)	[b] 87	(100.0)

[a] Option not provided for Survey Participants
[b] Missing data n=3

4.4.6 Increasing the number of patients receiving nutrition advice – dietetics professionals' views

Strategies suggested by Interview and Survey Participants for increasing the number of patients receiving nutrition advice via GP/PN factors are presented in Table 4-5. One-third (32.7%) of Interview Participants suggested GP or PN related strategies as potential ways of increasing the number of patients receiving nutrition advice, including 7.7% who did not additionally suggest dietetics professional related strategies. The main GP related factors that were identified by Interview Participants were: appropriate resources (16.0%) and better nutrition education/keeping up to date (14.0%). Reimbursement for GPs to provide nutrition advice was suggested by one Interview Participant. H-EPC Participants were more likely to report longer consultations than L-EPC Participants (11% vs. 0%; $p<0.05$). Survey participants believed the three most effective methods of increasing the number of patients receiving nutrition advice via GPs were: appropriate resources (40.2%), concise

nutrition related best practice guidelines for GPs (37.9%) and better nutrition education/keeping up to date (34.5%).

Table 4-5 Potential (Interview Participants) or most effective (Survey Participants) ways of increasing the number of patients receiving nutrition advice via GP/PN factors

	Interview Participants (n=50)		Survey Participants (n=87)[a]	
	n	(%)	n	(%)
Appropriate resources e.g. patient education materials[b]	8	(16.0)	35	(40.2)
Concise nutrition related best practice guidelines for GPs[b]	1	(2.0)	33	(37.9)
Increased GP nutrition education/training[b]	7	(14.0)	30	(34.5)
Patient group education sessions[b]	0	(0.0)	22	(25.3)
Providing reimbursement for nutrition advice[b]	1	(2.0)	21	(24.1)
GP training in behaviour change techniques[b]	0	(0.0)	9	(10.3)
Have PNs provide nutrition advice[b]	2	(4.0)	9	(10.3)
GP training/promotion of conditions requiring nutrition advice/benefit of dietetics professional	0	(0.0)	2	(2.3)
Increasing GPs belief in/valuing of nutrition advice	3	(6.0)	0	(0.0)
Promote conditions requiring nutrition advice	2	(4.0)	0	(0.0)
Longer consultations	2	(4.0)	0	(0.0)

[a] Missing data for n=3 Survey Participants

[b] Options provided in tick box format for survey, while others identified through 'other' category; no prompting provided for interviews

Note:

- The following options were provided by n=1 Interview Participant: GP initiating nutrition discussion with patients; Patient confident to ask; nutrition information in waiting rooms.
- The following options were provided by n=1 Survey Participant: GP get client interested and then refer to dietetics professional; reinforcement of dietetics professional advice by GP and PN

Summary

It was considered that the majority of GPs were providing nutrition advice by 40.3% of Interview Participants and 50.0% of Survey Participants. The main factors Interview Participants believed prompted GPs to provide nutrition advice were patients requesting advice or presenting with nutrition related conditions. Survey Participants believed the main prompting factors were GPs' interest in nutrition, belief that diet change would make a difference, time and patients requesting advice. The majority of Interview Participants (80.8%) and just over half of Survey Participants (55.2%) agreed that GPs were aware of the key conditions that would benefit from nutrition advice. The most effective ways of increasing the number of patients receiving nutrition advice via GPs were: appropriate resources, better nutrition education and concise nutrition related best practice guidelines for GPs. Reimbursement for GPs providing nutrition

advice was not suggested by many Interview Participants to be a way of increasing advice.

4.4.7 Proportion of patients requiring and receiving nutrition advice – PNs' views

PNs reported the percentages of the patients seen in the previous week requiring nutrition advice were: <20% (n=3), 25-30% (n=3), 50% (n=3) 70% (n=2), and 90% (n=1). However, the percentage of patients who received nutrition advice, of those perceived to require it, varied with <10% (n=1), 50% (n=2), 70% (n=1), 80% (n=1), 100% (n=6), and all diabetics (n=1). Overall, PN reported similar rates at follow-up.

4.4.8 Factors influencing the delivery of nutrition advice – PNs' views

PNs' views on factors that influence their provision of dietary advice are outlined in Table 4-6. At baseline, PNs agreed that having education materials available and time were important in influencing their decision to counsel; reimbursement was ranked as neutral. After training PNs were more likely to strongly agree that time is important in influencing their decision to counsel.

Table 4-6 PN Study Participants' views on factors that influence their provision of dietary advice at baseline and follow-up

'How important is.... in influencing your decision to counsel?'	PN Study Participants			
	Baseline (n=12)		Follow-up (n=10)	
	Mean	Median	Mean	Median
adequate reimbursement	2.9	3.0	3.1	3.0
time	4.0	4.0	4.7	5.0
having education material available	4.3	4.0	4.2	4.5

Note: very high importance=5; high importance=4; neutral=3; low importance=2; very low importance=1

The main conditions that PNs reported to require nutrition advice were: diabetes (n=10), weight related issues (n=10), elevated cholesterol/lipids (n=7) and hypertension (n=6) (Table 4-7).

Table 4-7 Conditions reported to prompt their provision of nutrition advice by PN Study Participants

	PN Study Participants		
	Baseline (n=12)	Follow-up (n=10)	Either (n=12)
Diabetes	7	9	10
Weight related issues	9	9	10
Elevated cholesterol/lipids	4	6	7
Hypertension	6	3	6
Heart disease	1	2	3
Decreased renal function	1	1	2

Note:

- No prompting was provided
- The following were provided by n=1: coeliac disease; impaired glucose tolerance; insulin resistance; iron deficiency anaemia; fussy eaters; malnutrition; chronic disease; age/mobility; those without knowledge of health nutrition guidelines; and anything that is affected by diet.

4.5 Discussion

This chapter aimed to evaluate access to nutrition advice by GPs and PNs. There was no consensus from GPs and PNs about the proportion of patients requiring nutrition advice, or how many of those requiring it actually received it. Likely factors such as the individual's interest in nutrition or their belief in the value of nutrition intervention impacted here; however it was apparent that participants interpreted this question differently. PNs were more likely than GPs to report to provide nutrition advice to a greater percentage of patients that they perceived required it.

PP dietetics professionals had mixed opinions towards GPs' provision of nutrition advice; just under half believed that the majority of GPs provided nutrition advice. However, as dietetics professionals' opinions are based on their local GPs and the knowledge and feedback of patients' who are referred to them, this is a very subjective opinion and likely to reflect dietetics professionals' perceptions rather than actual behaviour. The level of advice provided may impact on the effectiveness of such advice, with this ranging from one statement to in-depth discussion and counselling.

It was perceived by GPs, PNs and dietetics professionals that a variety of factors affected the provision of nutrition advice by GPs and PNs. GPs and PNs ranked having education material available, time and adequate reimbursement in the same order of importance. However, GPs believed themselves to be more influential than PNs perceived themselves to be. While dietetics professionals agreed that all these factors

influenced a GPs' decision to provide nutrition advice, adequate time was suggested by more dietetics professionals, followed by adequate reimbursement and appropriate resources. The literature supports the influence of time (Ammerman, et al., 1993; Amoroso, et al., 2005; Bonevski, et al., 1996; Campbell, et al., 2000; Hiddink, et al., 1995; Kushner, 1995; Macario, et al., 1998; Nicholas, et al., 2003; Talip, et al., 2003). Dietetics professionals indicated that the availability of appropriate resources for GPs would be an effective strategy to increase the number of patients receiving nutrition advice. This is also reflected in the literature, with recommendations for readily available, appropriately targeted educational resources (Ammerman, et al., 1993; Kushner, 1995). PNs did not rank adequate reimbursement as important in influencing their decision to counsel. Nevertheless, comments by many PNs suggested that reimbursement did contribute to activities. While PNs may not want reimbursement to influence their decision to provide nutrition advice, it is clear they are often under pressure from the practice for their time to be financially viable. There may be an acceptability bias in reporting reimbursement had a role, as PNs may not want to admit that they do not provide nutrition advice if they are not being paid for it. Additionally, as these participants represent GPs and PNs that were willing to give their time to nutrition research, reimbursement may be more influential in the general population. Ultimately, activities that attract a rebate will be given a higher priority within the practice than those that do not. While one-quarter of Survey Participants believed reimbursement for GPs providing nutrition advice would improve this, it was only suggested by one Interview Participant. This is surprising considering the importance of reimbursement for GP activities suggested by the GPs in this study, as well as the literature identifying that lack of reimbursement is a barrier to GPs providing nutrition advice (Bonevski, et al., 1996; Hiddink, et al., 1995; Kushner, 1995; Nicholas, et al., 2003; Talip, et al., 2003).

The main influencing factors for GPs' provision of advice suggested by dietetics professionals were: GPs' interest in nutrition; belief that diet change would make a difference time; and patients requesting advice or presenting with nutrition related conditions. The literature supports the impact of GPs' interest on the likelihood of GPs providing nutrition advice (Glanz, 1997), as well as their belief in the benefit of diet

therapy (Glanz, 1997; Kottke, et al., 1984; Nicholas, et al., 2004). Nicholas *et al.* (2003) indicated that GPs and dietetics professionals believed that patients presenting with nutrition related conditions was the main influencing factor on GPs' decision to provide nutrition advice and that patients requesting advice was also a key factor. The literature also acknowledges that unless preventive care is directly related to a patient's presenting problem, then it is difficult to perform (Bonevski, et al., 1996).

While very few GP or PN Participants had attended nutrition training in the previous year, this was believed by both PNs to have changed their nutrition counselling practices. Better nutrition education was suggested by dietetics professionals as a way of increasing the number of patients receiving effective nutrition advice via GPs. The need for better nutrition education for GPs was also highlighted in the literature (American Dietetic Association, 1998; Lazarus, 1997). However, mixed results for the benefits of nutrition training were reported. Lazarus (1997) suggested that GP training in nutrition will improve the provision of nutrition advice, while Moore *et al.* (2003) reported that it resulted in more diet sheets being provided but no differences in other behaviours. Levine *et al.* (1993) also indicated that it led to more favourable attitudes about the role of diet but not increased use clinical nutrition skills. While dietetics professionals did not mention the benefit of training of PNs, it would also be necessary if they are utilised in the delivery of nutrition advice to patients. The literature highlights the need for adequate training for PNs to enable them to have a sufficient level of knowledge (Kyle, 1993; Watts, et al., 2004). Training by a primary care dietetics professional has been shown to improve PNs' nutrition knowledge (Cadman & Findlay, 1998; Kyle, 1993). Nutrition training increased the nurses' perceived level of knowledge and confidence to discuss diet with patients (Cadman & Findlay, 1998; Kyle, 1993). However, it is important to highlight that nutrition training would be in how to deliver scripted nutrition advice for specific conditions, potentially with the use of a decision tree for implementation. GPs and PNs do not require a high level of training as they are not intended to conduct the role of dietetics professionals.

For PNs, specific cases, such as diabetes and weight issues were more likely to result in the provision of nutrition advice. These conditions, along with elevated cholesterol and

hypertension, are common nutritional issues experienced in general practice for which scripted nutrition advice and resources could be made available. Dietetics professionals agreed that GPs were aware of the key conditions that would benefit from nutrition advice, largely as the appropriate patients were referred to them for nutrition advice. Van Dillen *et al.* (2005) and Eaton *et al.* (2002) both identified patients with chronic diseases such as obesity, chronic heart disease and diabetes as most likely to receive nutrition advice from GPs. Other literature focuses on the provision of nutrition advice for weight issues (Boulton & Williams, 1983; Britt, et al., 2008b; Centers for Disease & Prevention, 1998; McArtor, et al., 1992).

Concise nutrition related best practice guidelines for GPs were also mentioned by dietetics professionals, and in the literature, as an effective strategy to increase the number of patients receiving nutrition advice from GPs (Amoroso, et al., 2005). A lack of standardised guidelines has been identified as a barrier to GPs providing nutrition advice (Bonevski, et al., 1996). A review by Conroy and Shannon (1995) shows that overall the implementation of guidelines resulted in improvements in care and encouraged standardised treatment. However, the availability of guidelines is not sufficient. They have to be implemented by individual GPs, some of whom feel that guidelines reduce autonomy and limit practice (Conroy & Shannon, 1995).

The literature identified the benefits and disadvantages of both GPs and PNs providing nutrition and lifestyle advice, suggesting that both professions have key roles. This research was not able to show conclusively that either GPs or PNs were more appropriate than the other in providing nutrition advice, supporting the importance of a combined approach.

4.5.1Limitations

The small sample size of GPs and PNs is a limitation of this research. However, as multiple recruitment strategies were used, the small sample size is itself a useful finding as it highlights the difficulty recruiting in general practice. While these results may not be reflective of the population due to the lack of participants, they are still able to offer insight into the topic. Poor recruitment is a well known barrier of GP research

(Asch, et al., 2000; Down, et al., 2009; Franke, et al., 2008; Goodyear-Smith, et al., 2009; Hummers-Pradier, et al., 2008; Mapstone, et al., 2007). This research was not able to identify an effective recruitment strategy for GPs. The literature suggests recruitment strategies such as using GPs to recruit (Asch, et al., 2000; Goodyear-Smith, et al., 2009) and payment or incentives (Mapstone, et al., 2007; Yallop, et al., 2006). These strategies were not able to be undertaken in this research due to resource and ethical limitations. Therefore more research on appropriate recruitment strategies are required to adequately report on this area.

Additionally, some qualitative questions in the GP and PN questionnaires would have been more appropriately asked in a quantitative form, as responses were too varied to be able to appropriately categorise and gain useful data.

Comparison of Interview and Survey Participants in discussions about dietetics professionals is often difficult due to the open ended nature of question for Interview Participants compared to the 'tick box' format for Survey Participants. This also resulted in Survey Participants providing more responses to the multi-response question, as they just had to agree with them rather than identify the factors themselves. Additionally, Interview Participants were asked about the 'potential' ways of increasing the number of patients receiving nutrition advice, while Survey Participants were asked about the most effective. It is unclear whether this greatly impacts on results or whether differences are based on the prompting received by Survey Participants.

The majority of participants in these studies were female. This is representative of DAA membership for dietetics professionals, with the majority of PNs also being female. However this is not representative of GP or patient populations. The literature identifies higher participation rates for female GPs (Brotons, et al., 2003; Maiburg & Hiddink, 1999; Nicholas, et al., 2003) and patients (Hegney, et al., 2006; Hunt, et al., 1995; Pritchard, et al., 1999).

4.6 Conclusion

The nature of general practice, with high workloads and competing priorities, makes access to nutrition advice from GPs and PNs difficult. GPs and PNs reported varying rates of patients perceived to require nutrition advice as well as how often it was provided. Therefore, provision of nutrition advice appears to be dependent on individual GP and PN factors. Factors reported to influence GP provision of nutrition advice were their interest in nutrition and the perceived benefit of providing advice. Time is limited in general practice and often nutrition is not a priority for many GPs and their patients. Adequate education materials are also necessary in order for GPs to feel confident to provide advice. Dietetics professionals felt that appropriate resources for GPs, more nutrition education and concise best practice guidelines would assist GPs in providing advice. Access to nutrition advice by PNs appears to be reliant on PNs having adequate time with the patient, as well as resources assisting them to provide advice. While reimbursement for providing nutrition advice was not viewed as important, ultimately activities that attract a rebate will be prioritised. In order for nutrition advice to be higher on the agenda for GPs and PNs, it needs to be linked to a Medicare item number. This study shows that being interested and supported is not enough to overcome the barriers to providing nutrition advice by GPs and PNs. The structural reform such as those proposed via the 'super clinic' model may be required.

Chapter 5

Patient access to nutrition advice by dietetics professionals

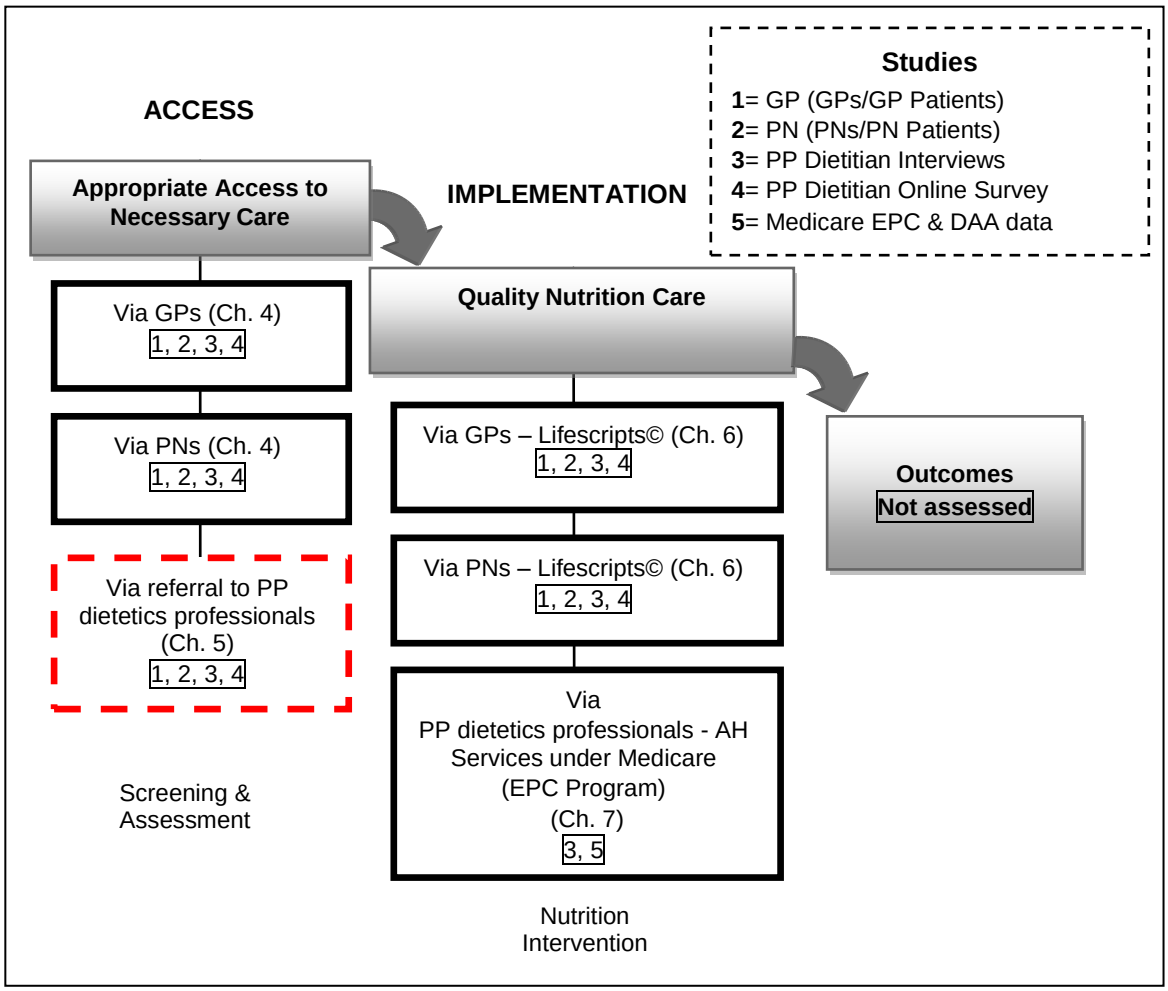


Figure 5-1 Cascade model for improving the delivery of nutrition advice in the general practice setting (Adapted from: Splett (1996) 'The cascade of events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions')

Note: General Practitioner (GP); Practice Nurse (PN); Private Practice (PP); Dietitians Association of Australia (DAA); Enhanced Primary Care (EPC); Allied Health (AH).

5.1 Introduction

This chapter is designed to provide information on the nutrition advice provided by PP dietetics professionals through GP and PN referral. It evaluates GPs, PNs and patients' views of dietetics professionals and referral, PP dietetics professionals' characteristics, as well as factors perceived to influence referral. The Medicare EPC Program is examined as an avenue through which dietetics professionals can provide nutrition advice to general practice patients.

Dietetics professionals are the experts in nutrition, having extensive nutrition knowledge (American Dietetic Association, 1998; Hiddink, et al., 1997a; Macario, et al., 1998; Talip, et al., 2003; van Dillen, et al., 2006; Waisman & Sauve, 1990). While GPs and PNs have a role in providing nutrition advice in general practice, they cannot take the place of dietetics professionals. It is recommended that after GPs screen their patients for nutrition-related conditions and provide the initial advice, they should refer patients requiring additional assistance to a dietetics professional (American Dietetic Association, 1998; Brauer, et al., 2006; Brotons, et al., 2003; Macario, et al., 1998; Pomeroy & Worsley, 2009b). It is also important that GPs reinforce the importance of the nutrition advice provided by dietetics professionals at subsequent visits (Ammerman, et al., 1993; Brauer, et al., 2006; Truswell, et al., 2003). However, many barriers impact on GP referral to dietetics professionals; these are further explored in Section 2.11.2.3.

Strategies are required to overcome these barriers and improve general practice patients' access to dietetics professionals. In recent years Government initiatives have been introduced to improve access to private AHPs. Individual and Group AH services under Medicare are avenues by which patients with chronic disease can access nutrition advice through private dietetics professionals. Providing early intervention to patients with chronic disease will reduce the long-term cost to the healthcare system. While free AH services were available to patients through the public health system, Medicare rebates allow the private system to be more cost-effective for patients,

potentially with shorter waiting periods. The Government recognises the gate keeping role of GPs, with access to Medicare rebates being reliant on GP referral.

Referral to dietetics professionals is often limited by the availability of practitioners. Therefore, increasing the number of private dietetics professionals will improve patient access to nutrition advice. While there are many benefits to working in PP, for some practitioners these may be outweighed by the disadvantages. To encourage success in PP adequate preparation is required. These factors are further explored in Section 2.12.2.1.

The benefit of onsite dietetic services in improving patient care through better patient access and uptake of services has been highlighted (Bradshaw, 1994; Lowe & Lawrence, 2005; Sturmberg & Overend, 1999; Witt, et al., 2006). As can be seen in Section 2.12.2.4, it not only improves dietetics professional's relationships with GPs, but is more convenient for patients (Bradshaw, 1994; Lowe & Lawrence, 2005; Witt, et al., 2006). Improving collaboration between GPs and dietetics professionals will encourage referrals and assist in maximising patients' health (Hurley, et al., 2002; Kuppersmith & Wheeler, 2002).

5.2 Aims

This chapter aims to discover:

1. Demographic characteristics for PP dietetics professionals Interview and Survey Participants;
2. GP and PNs' views, practices and reported barriers to referral to dietetics professionals;
3. GPs and dietetics professionals views of the impact of the EPC Program on referral;
4. PP dietetics professionals' reported contexts for seeing patients, commonly referred conditions, perceived factors influencing referral, opinions of different practice contexts, relationships with GPs and perceived ways of increasing the number of patients receiving nutrition advice; and

5. Patients' views of dietetics professionals.

5.3 Methods

A full description of the methods can be seen in Chapter 3; including:

- GP Study (Section 3.2);
- PN Study (Section 3.3);
- Patient Study (Section 3.4);
- PP Dietetics professional Telephone Interviews (Section 3.5); and
- PP dietetics professional Online Survey (Section 3.6).

5.4 Results

5.4.1 Demographic data - Interview and Survey Participants

5.4.1.1 Gender

Table 5-1 compares the gender breakdown of Interview and Survey Participants to DAA 2007 PP membership data. The majority of Interview (96.2%) and Survey Participants (90.9%) were female, similar to the DAA 2007 membership (93.4%).

Table 5-1 Gender of Interview and Survey Participants compared to Dietitians Association of Australia (DAA) 2007 membership

	Interview Participants		Survey Participants		2007 PP Members	
	n	(%)	n	(%)	n	(%)
Female	50	(96.2)	80	(90.9)	721	(93.4)
Male	2	(3.8)	8	(9.1)	51	(6.6)
TOTAL	52	(100)	88	(100.0)	772	(100)

5.4.1.2 Age groups

The age groups of Interview and Survey Participants' are shown in Figure 5-2. Interview Participants' ages were well distributed. Survey Participants had a high number of 20-30 year olds (43%), and a low number in the age groups of 50-60 (9%)

and 60+ (1%). Interview Participants had fewer 20-30 year olds than Survey Participants and greater percentages of 50-60 and 60 plus year olds; however the 60 plus was the only group significantly different (10% vs. 1%; p=0.015).

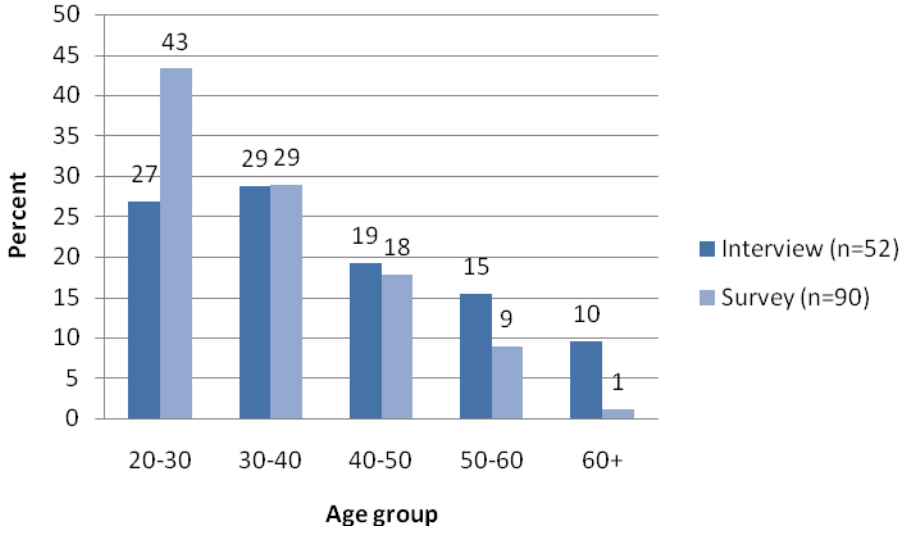


Figure 5-2 Age groups of Interview and Survey Participants

5.4.1.3 Years since graduating

Table 5-2 summarises the years since graduating of Interview and Survey Participants and links this to DAA 2007 PP membership data. Similar percentages of Interview Participants graduated between 0-<5, 5-<10, 10-<20 and 20-<30 years prior (23.1%, 25.0%, 23.1% and 23.1% respectively) (Table 5-2). Just over one in five Survey Participants had graduated 1-<3 years prior (22.0%), with another 24.0% between three and five years. Interview Participants were significantly less likely to have reported graduating 1<3 years prior (3.8% vs. 22.0%; p=0.005), with more graduating 20-<30 years prior (23.1% vs. 10.0%; p=0.034). No significant difference was seen in the number of years since graduating between Interview Participants and DAA 2007 PP members. Survey Participants were more likely to have graduated 1-<3 years prior to data collection than DAA 2007 PP members (21.0% vs. 12.5%; p=0.02), with less graduating 20-<30 prior (10.0% vs. 20.0%; p=0.037).

Table 5-2 Years since graduating of Interview and Survey Participants compared with Dietitians Association of Australia (DAA) 2007PP membership

	Interview Participants		Survey Participants		DAA 2007 PP Members	
	n	(%)	n	(%)	n	(%)
<1	1	(1.9)	1	(1.0)	0	(0.0)
1-<3	2	(3.8)	19	[a](21.0)	94	(12.5)
3-<5	9	(17.3)	21	(24.0)	127	(16.8)
5-<10	13	(25.0)	15	(17.0)	145	(19.2)
10-<20	12	(23.1)	18	(20.0)	183	(24.3)
20-<30	12	(23.1)	9	[a](10.0)	151	(20.0)
30-<40	2	(3.8)	5	(6.0)	40	(5.3)
40+	1	(1.9)	1	(1.0)	14	(1.9)
Total	52	(100)	89	(100)	[b]754	(100.0)

[a] Significant difference compared to DAA PP members (p≤0.05)
[b] n=18 DAA 2007 PP members missing year graduated

5.4.1.4 Years worked in PP

Interview Participants tended to have a great deal of experience in PP, with 29% having worked in PP more than 15 years, including 13.5% with more than 20 years of experience. Eight percent had begun PP within the year (Figure 5-3). Almost half (46%) of Survey Participants had been working less than three years in PP, with another quarter (23%) working less than five years. Interview Participants had a significantly higher proportion of participants with 15 or more years experience (29% vs. 10%; p=0.003) and lower proportion with 1-<3 years (13% vs. 29%; p=0.036).

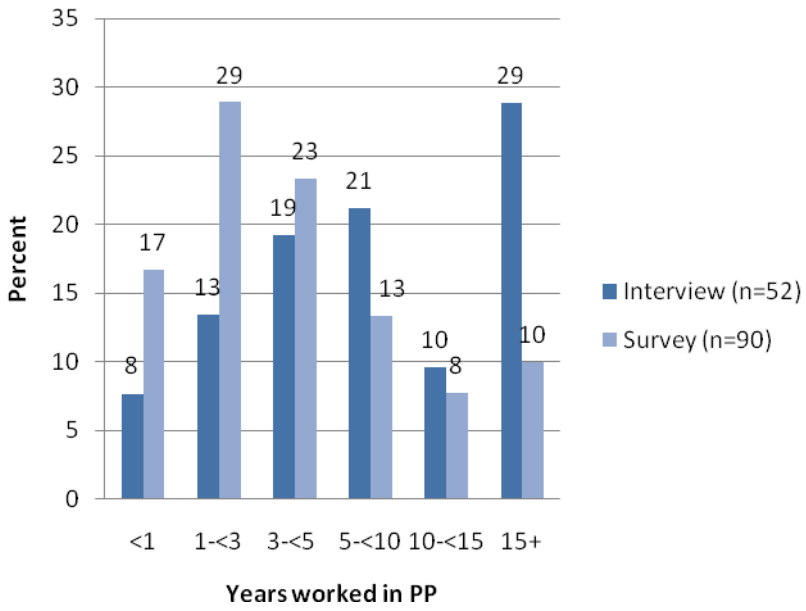


Figure 5-3 Years worked in private practice (PP) by Interview and Survey Participants

5.4.1.5 Number of dietetics professionals working in practice

The majority of Interview Participants (77%) worked in practices where they were the only dietetics professional, with an additional 10% with two dietetics professionals (Figure 5-4). An additional 10% worked in practices with two dietetics professionals. The largest practice represented was 10 dietetics professionals from a low urban division. Similarly, most Survey Participants (72%) worked in practices where they were the only dietetics professional.

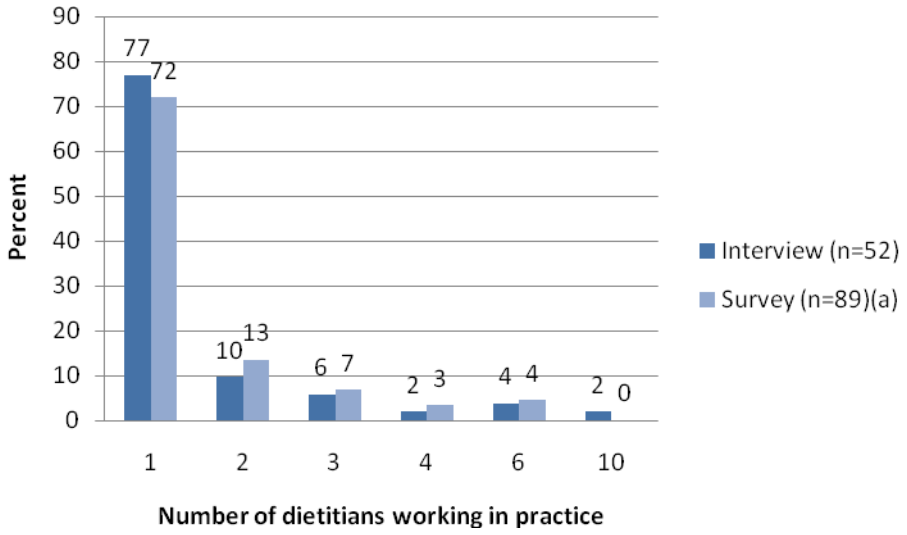


Figure 5-4 Number of dietetics professionals working in each participants' practice reported by Interview and Survey Participants

[(a)] Missing data for n=1 Survey Participant

5.4.1.6 Dietetics professional FTEs working in PP

The number of FTEs working in their practice reported by Interview and Survey Participants is shown in Figure 5-5. Overall there were no trends in terms of number of FTEs in each practice. Just under one-quarter of Interview Participants had 0.2-<0.4 FTEs (23%) or 0.4-<0.6 (21%); only 26% had one or more FTEs (Figure 5-5). The average FTE per practice for Interview Participants was 0.83. Forty-three per cent of Survey Participants had less than 0.4 FTEs in their practice, while 40% had more than one FTE. Significantly more Interview Participants reported 0.6-<0.8 FTEs (14% vs. 0%; p=0.005).

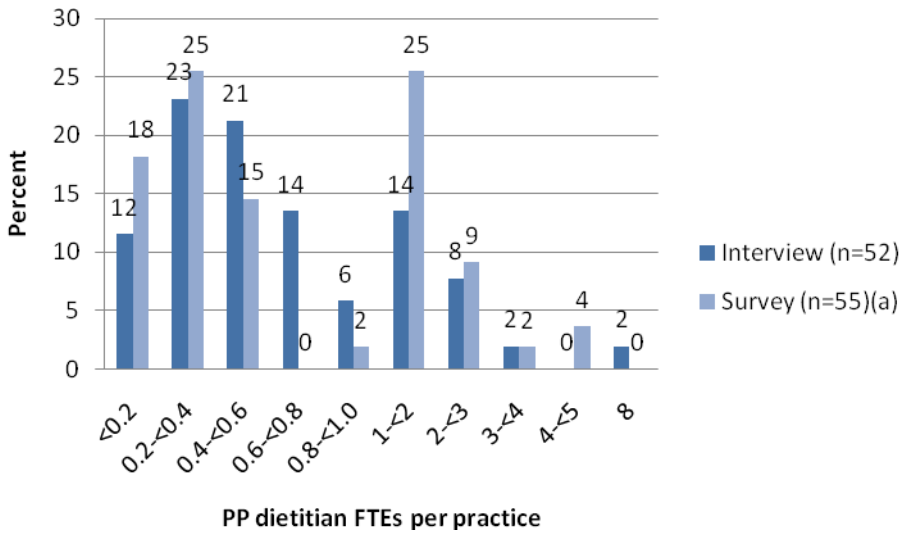


Figure 5-5 Number of private practice (PP) dietetics professional full-time equivalents (FTEs) in each participants practice

[(a)] 35 Survey Participants did not provide an answer to this question.

5.4.1.7 Hours worked per week

Table 5-3 compares the weekly work hour categories of Interview and Survey Participants to DAA 2007 PP members. Interview Participants were less likely than DAA 2007 PP members to work fewer than 10 hours per week in PP (31% vs. 47%, p=0.02), while more often working 20-<30 hours (21% vs. 11%, p=0.023) (Table 5-3). The hours worked per week by the Survey Participants was reflective of DAA membership, with no significant differences found; 48% worked less than 10 hours per week in PP.

Table 5-3 Hours worked per week by Interview and Survey Participants compared to Dietitians Association of Australia (DAA) 2007 members

	Interview Participants		Survey Participants		DAA 2007 PP Members	
	n	(%)	n	(%)	n	(%)
<10	16	[(a)](30.8)	43	(48)	366	(47.4)
10-<20	12	(23.1)	27	(30)	211	(27.3)
20-<30	11	[(a)](21.2)	6	(7)	87	(11.3)
30-<40	6	(11.5)	9	(10)	46	(6.0)
40+	7	(13.5)	5	(6)	62	(8.0)
TOTAL	52	(100)	90	(100)	772	(100.0)

[(a)] Significant difference compared to DAA PP members (p≤0.05)

5.4.1.8 Number of patients seen per week

Half of Survey Participants and 35% of Interview Participants reported seeing 0-9 patients per week, while approximately one quarter of each saw 10-19 patients per week (Figure 5-6). While Interview Participants tended to report seeing more patients in categories greater than 20 patients per week, no significant differences were observed.

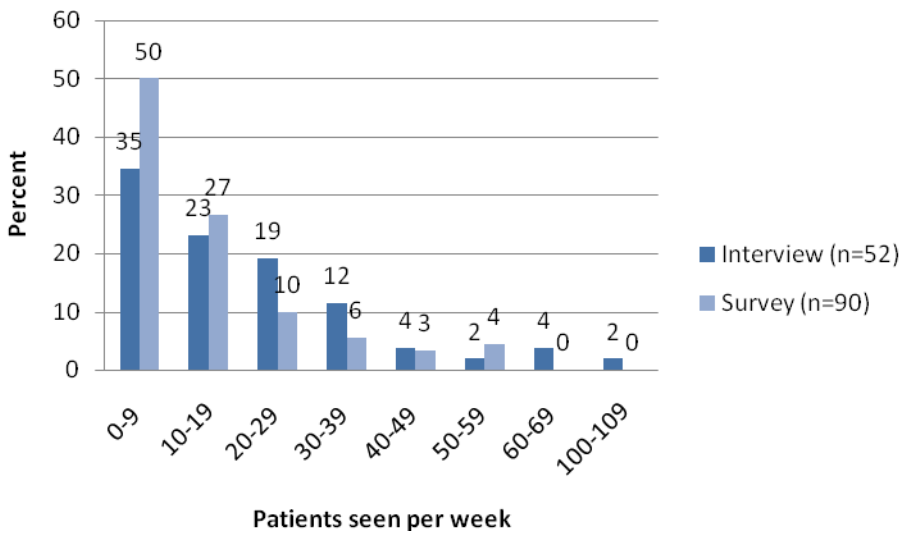


Figure 5-6 Number of patients seen per week reported by Interview and Survey Participants

5.4.1.9 Demographic data for H-EPC and L-EPC Participants

No significant differences in participant characteristics (demographic data) were observed between H-EPC and L-EPC Interview Participants, including: total PP hours per week, hours with PP clients, years worked in PP, years since graduating, years between graduating and starting PP, age groups, number of dietetics professionals in each practice, number of FTEs and patients seen per week.

Summary

Compared to DAA 2007 membership data, Interview Participants reported working more hours than anticipated, while Survey Participants had graduated more recently. Overall, Interview Participants were older, had more years experience in dietetics and PP, and saw more patients per week than Survey Participants.

5.4.2 Referral pathways from GPs to PP dietetics professionals - GPs' views and practices

GPs' views and practices related to dietetics professional referral are presented in Table 5-4. At baseline, half of intervention GPs reported to regularly refer to a dietetics professional (n=2/4), as did all control GPs (n=5; 1 missing). At follow-up the same two interventions GPs still agreed, however one of the disagreeing GPs reported being neutral. Two of the three control GPs reported to regularly refer to a dietetics professional at follow-up.

It was hard to identify clear patterns in referrals as there was considerable variability in the number of hours worked and scales of reporting. However, there did appear to be an overall increase in the intervention GPs' referral. Referral rates through the EPC Program varied ranging from nil to almost all. GPs indicated that the rate of referral of patients without an EPC Plan varied, however all but one GP reported that they do refer patients without a care plan.

At baseline more than half (n=6/10) of GPs reported to have a regular dietetics professional to whom they referred. No changes were seen in the number of intervention GPs who had a regular dietetics professional to whom they referred to at baseline and follow-up (75%). Training and use of Lifescripts© was reported by GPs to have a neutral effect on knowledge of the conditions that should be referred to a dietetics professional (mean/median=3.0/3.0) (Table 5-4). GPs tended to disagree that the use of Lifescripts© meant that they referred to a dietetics professional more often (2.5/2.0). Having a dietetics professional within the practice was believed to make referral easier, with the majority of GPs either agreeing or strongly agreeing (n=8/10 at baseline; n=7/7 follow-up).

Table 5-4 Intervention and Control GPs' views on referral to dietetics professionals at baseline and follow-up

	Intervention				Control			
	Baseline (n=4)		Follow-up (n=4)		Baseline (n=6)		Follow-up (n=3)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
I regularly refer patients to a dietetics professional	3.3	3.0	3.3	3.5	[(a)]4.2	4.0	3.3	4.0
Having a dietetics professional within the practice would make it easier to refer	4.3	4.5	4.3	4.0	4.2	5.0	[(a)]4.5	4.5
Lifescripts© have increased my awareness of the types of patients I should refer to a dietetics professional	-	-	3.0	3.0	-	-	-	-
Using Lifescripts© has meant that I have referred to a dietetics professional more often	-	-	2.5	2.0	-	-	-	-

[(a)] Data missing for n=1 participant

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

5.4.3 Factors influencing GP referral to dietetics professionals - dietetics professionals' views

Table 5-5 and Table 5-6 summarises the factors reported by Interview and Survey Participants to influence GPs' referral to dietetics professionals. Interview participants reported the most common factors believed to influence GP referral to dietetics professionals include:

- Cost of seeing a dietetics professional (26.9%);
- The quality of relationships with the dietetics professional (25.0%);
- Knowledge of what a dietetics professional can do or who would benefit (23.1%); and
- Ease of referral/assistance with paperwork (often associated with EPC Program) (21.2%).

Survey Participants believed the main influencing factors to referral were:

- GPs' relationships with dietetics professionals (80.5%);
- Availability of Medicare items (EPC plans) (75.9%);
- GPs' level of interest in nutrition (72.4%); and

- The GPs' belief in effectiveness of nutrition intervention (71.3%).

Interview and Survey Participants indicated that referral is positively influenced by GPs knowing the dietetics professional they are referring to (15.4% and 56.3% respectively):

> GPs need to know the person they're referring to. They do not particularly want to refer their patients to someone they have never met. So if they have met you, usually in a professional development sort of forum... they know what you look like and how you speak, they know that you are normal, then you usually pick up the work. (Interview 3)

Table 5-5 Factors reported by Interview and Survey Participants to influence GPs' referral to dietetics professionals – Prompting provided for Survey Participants

	Interview Participants (n=52)		Survey Participants (n=87)	
	n	(%)	n	(%)
Relationships with dietetics professionals	13	(25.0)	70	(80.5)
Availability of Medicare items (e.g. EPC plan)	4	(7.7)	66	(75.9)
GP's level of interest in nutrition	1	(1.9)	63	(72.4)
Belief in effectiveness of nutrition intervention	8	(15.4)	62	(71.3)
Patients' willingness to see a dietetics professional - stages of change	8	(15.4)	58	(66.7)
Location of dietetics professional/easy access	7	(13.5)	52	(59.8)
Ease of referral/assistance - Good at doing care plans	11	(21.2)	51	(58.6)
Knowing who to refer to	8	(15.4)	49	(56.3)
Cost to patient/availability of health fund rebate	14	(26.9)	48	(55.2)
Positive/negative patient outcomes/patient feedback	12	(23.1)	43	(49.4)
Time constraints (lack of time for referral/provide advice themselves)	7	(13.5)	25	(28.7)

[(a)]Factors provided in tick box format for Survey Participants

Table 5-6 Factors reported by Interview and Survey Participants to influence GPs' referral to dietetics professionals – No prompting provided for Survey Participants [(a)]

	Interview Participants (n=52)		Survey Participants (n=87)	
	n	(%)	n	(%)
Knowledge of what a dietetics professional can do/who would benefit	12	(23.1)	1	(1.1)
Previous experience with dietetics professional	7	(13.5)	0	(0.0)
Availability of dietetics professionals (access)	6	(11.5)	1	(1.1)
GPs not wanting to loose their patients	1	(1.9)	1	(1.1)
Believe patient requires advice/medical diagnosis	6	(11.5)	0	(0.0)
Patient request	5	(9.6)	0	(0.0)
Trust in the practitioner	5	(9.6)	0	(0.0)
Reimbursement for referral	4	(7.7)	0	(0.0)
Good communication/feedback	3	(5.8)	0	(0.0)
Marketing of dietetics professionals/visibility	2	(3.8)	0	(0.0)
Lack of knowledge to provide advice themselves	2	(3.8)	0	(0.0)

[(a)]Factors identified through 'other' category

Note: the following factors were provided by n=1 Interview Participant: think advice from GP will be sufficient; whether they think about it; trying to refer more/less patients (do not want to be seen as over-servicing).

5.4.4 Impact of the EPC Program on GP referral to dietetics professionals – GPs' views

GPs' views on the impact of EPC Program at baseline are presented in Table 5-7. The majority of GP participants agreed or strongly agreed that EPC Team Care Arrangements make it easier to refer to a dietetics professional (n=9; mean/median 4.3/4.0) and streamlined the process of referral (n=7; 3.5/4.0). Just under half agreed or strongly agreed that it overcame barriers to referral (n=5; strongly disagree=1; disagree=1; neutral n=4); however, on average GPs were neutral for this (3.4/3.0; where 3=neutral). It was reported that it removes the financial constraints associated with referral, provides an organised/structured method of referral, promotes the development of a management plan, and avoids the long waiting lists of public dietetics professionals. However, it takes time to complete the EPC paperwork, which is confusing, and a dietetics professional is not always available. The barrier associated with paperwork was reduced when referral was linked to electronic medical records or when someone else, such as a PN, was able to complete. One GP believed 'they are a bureaucratic waste of time' (GP301).

When commenting on the support required for setting up EPC Team Care Arrangements, some GPs indicated that it was easier to do through Medical Director and therefore they did not need more support. Computer proforma was requested by someone who had not set up this function or was using alternative software. Assistance completing paperwork was requested (n=1), as was providing a list of dietetics professionals available (n=1).

Table 5-7 GP Study Participants' views on the impact of the Enhanced Primary Care (EPC) Program at baseline (n=11)

I believe EPC Team Care Arrangements.....	Mean	Median
make it easier to refer to a dietetics professional	4.3	4.0
have streamlined the process of referral	3.5	4.0
overcome many barriers to referral	3.4	3.0

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

5.4.5 Impact of the EPC Program on GP referral to dietetics professionals – dietetics professionals' views

Table 5-8 outlines Interview Participants' beliefs as to whether the EPC Program made it easier for GPs to refer to dietetics professionals. Fifty-one percent of Interview Participants believed that the EPC Program made it easier for GPs to refer, while an additional 7.8% believed that it potentially could and 27.5% reported that it does except for the paperwork. It was believed to be more difficult by 11.8%. No significant differences between H-EPC and L-EPC Interview Participants.

Table 5-8 Interview Participants' beliefs as to whether the EPC Program made it easier for GPs to refer to a dietetics professional

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Yes	10	(55.6)	18	(50.0)	26	(51.0)
Potentially	2	(11.1)	2	(5.6)	4	(7.8)
Except for the paperwork	4	(22.2)	11	(30.6)	14	(27.5)
No	1	(5.6)	5	(13.9)	6	(11.8)
Unsure	1	(5.6)	0	(0.0)	1	(2.0)
TOTAL	18	(100.0)	[(a)]36	(100.0)	[(a)]51	(100.0)

Note: no significant differences between H-EPC and L-EPC Interview Participants
[(a)] n=1 indicated n/a as did not provide Medicare services

Reasons reported by Interview Participants for why the EPC Program made it easier or not for GPs to refer to dietetics professionals are provided in Table 5-9. PP dietetics professionals believed referral was made easier through the EPC Program as the cost barrier is overcome (35.3%), however this same percentage believed that it was made more difficult due to the paperwork (35.3%). H-EPC Participants believed that referral was made easier with the EPC Program as it increased GPs' awareness of conditions that can be referred (16.7% vs. 0%; p=0.011)

Table 5-9 Reasons reported by Interview Participants for why the EPC Program made it easier/not easier for GPs to refer to a dietetics professional

	H-EPC Interview Participants (n=18)		L-EPC Interview Participants (n=36)[a]		Total Interview Participants (n=51)[a]	
Reasons how it is made easier	n	(%)	n	(%)	n	(%)
Overcomes cost barrier	4	(22.2)	15	(40.5)	18	(35.3)
Patients more likely to attend	3	(16.7)	4	(10.8)	7	(13.7)
If assistance with paperwork	3	(16.7)	4	(10.8)	6	(11.8)
Prompts GP to refer	3	(16.7)	4	(10.8)	5	(9.8)
More likely to have relationship with dietetics professional/know who to refer to	2	(11.1)	2	(5.4)	4	(7.8)
Increased GP awareness of dietetic services	1	(5.6)	3	(8.1)	4	(7.8)
Increased awareness of conditions that can be referred	3	(16.7)	0	[b](0.0)	3	(5.9)
GP receives rebate for referral	0	(0.0)	3	(8.1)	3	(5.9)
Reasons how it is <u>not</u> made easier	n	(%)	n	(%)	n	(%)
Paperwork	7	(38.9)	12	(32.4)	18	(35.3)
Would refer anyway	1	(5.6)	2	(5.4)	3	(5.9)

[a] n=1 indicated n/a as did not provide Medicare services
[b] Significant difference between H-EPC and L-EPC Interview Participants (p≤0.05)
Note: the following were each provided by n=1: increased number of PP dietetics professionals; increased awareness amongst patients.

Table 5-10 outlines Interview Participants beliefs as to whether the EPC Program overcame barriers to GP referral to dietetics professionals. There were mixed feelings as to whether it overcame barriers to referral, with 35.3% reporting yes, 13.7% reporting some of them and 48% that they did not overcome barriers. L-EPC Participants were more likely to believe that it did not overcome barriers to referral (19.4% vs. 0%; p=0.48).

Table 5-10 Interview Participants' belief as to whether the EPC Program overcame barriers to GP referral to a dietetics professional

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Yes	5	(27.8)	13	(36.1)	18	(35.3)
Some	12	(66.7)	16	(44.4)	25	(49.0)
No	0	(0.0)	7	[a](19.4)	7	(13.7)
Unsure	1	(5.6)	0	(0.0)	1	(2.0)
TOTAL	18	(100.0)	36	(100.0)	[b]51	(100.0)

[a] Significant difference between H-EPC and L-EPC Interview Participants ($p \leq 0.05$)
[b] n=1 indicated n/a as did not provide Medicare services

Interview Participants' views regarding the referral barriers overcome or not overcome by the EPC Program are presented in Table 5-11. Barriers reported by Interview Participants to be overcome were cost (49.0%), knowing who to refer to (13.7%) and patients being more likely to attend (9.8%). The main barriers believed to not be overcome was paperwork (23.1%); 11.5% believed the cost barrier was not overcome as there was often still a cost to patient; 9.6% reported the patient must want/think they need nutrition advice (9.6%). H-EPC Interview Participants reported barriers overcome were knowing who to refer to/awareness of a dietetics professional (27.8% vs. 5.6%; $p=0.02$).

Table 5-11 Interview Participants' views as to the referral barriers overcome and not overcome by the EPC Program

	H-EPC Interview Participants (n=18)		L-EPC Interview Participants (n=36)[a]		Total Interview Participants (n=51)[a]	
Referral barriers overcome	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
Cost	9	(50.0)	19	(52.8)	25	(49.0)
Awareness of a dietetics professional/who to refer to	5	(27.8)	2	[b](5.6)	7	(13.7)
Patient more likely to attend	2	(11.1)	3	(8.3)	5	(9.8)
Emphasises role of dietetics professional	1	(5.6)	2	(5.6)	3	(5.9)
Have support for paperwork/referral	2	(11.1)	1	(2.8)	3	(5.9)
Encourages communication	1	(5.6)	1	(2.8)	2	(3.9)
Prescriptive - clearer referral	0	(0.0)	2	(5.6)	2	(3.9)
Referral barriers not overcome	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
Paperwork	4	(22.2)	8	(22.2)	12	(23.1)
Still cost to patient	0	(0.0)	6	(16.7)	6	(11.5)
Patient must want nutrition advice	1	(5.6)	4	(11.1)	5	(9.6)
Limited visits	0	(0.0)	4	(11.1)	4	(7.7)
May still/not refer depending on GP/condition	3	(16.7)	3	(8.3)	3	(5.8)
Need to know a dietetics professional	0	(0.0)	2	(5.6)	2	(3.8)
GPs may consider it too hard and not refer/not do EPC plans	1	(5.6)	2	(5.6)	2	(3.8)

[a] 1 participant indicated n/a as did not provide Medicare services
[b] Significant difference between H-EPC and L-EPC Interview Participants ($p \leq 0.05$)

Note:

- The following referral barriers overcome were each provided by n=1: encourages dietetics professional to work in surgery therefore transport; rebate for paperwork; think about referring; less inclined to provide the service themselves; GPs now refer for more conditions than previously; overcome barriers for GP
- The following referral barriers not overcome were each provided by n=1: time; GPs still need to trust dietetics professional; not broad enough eligibility
- Total may not equal sum of H-EPC and L-EPC as n=3 worked in both high and low divisions

Summary

GP reported referral to dietetics professionals did not appear to substantially impacted by Lifescripts© training and implementation. GPs agreed that having a dietetics professional within the practice would make it easier to refer. Both Interview and Survey Participants believed the key to increasing GP referral rates was developing a relationship between dietetics professionals and GPs. The majority of GPs believed that the EPC Program made it easier to refer to a dietetics professional and streamlined the process of referral, however many barriers still existed, including the time and confusion with paperwork and availability of a dietetics professional to refer to. Dietetics professionals also believed that the EPC Program made referral easier and overcome the barrier of cost; however referral was made more difficult with the amount of paperwork required.

5.4.6 Referral pathways from PNs to PP dietetics professionals - PNs' views and practices

At baseline n=6/11 PN participants indicated that both the GP and PN were involved in referral to dietetics professionals using the EPC Program; four indicated only the GP was involved and one PN was solely involved (missing=1). At follow-up, participants reported that referral to a dietetics professional through the EPC Program was usually initiated by both the GP and PN (n=8), with only one respondent reporting that the GP did all the initiating (missing=1).

Table 5-13 outlines PN Study Participants responses to questions related to their referral to a dietetics professional. No change occurred in the proportion of PNs reporting to have a regular dietetics professional in whom they referred to at baseline and follow-up (7/12 vs. 6/9). The dietetics professional was located in the practice for only one PN at baseline/follow-up. A third of PNs reported to still refer patients without EPC plans to dietetics professionals at baseline (n=4) compared to half at follow-up (n=5). The majority of PNs that reported that referral for patients without an EPC plan would occur indicated that this does not occur very often. PNs tended to agree that having a dietetics professional within the practice would make it easier to refer (n=8; mean/median=4).

Table 5-12 Factors related to PN Study Participants referral to a dietetics professional at baseline and follow-up

	PN Study Participants					
	Baseline (n=12)			Follow-up (n=10)		
	Yes	No	Missing /NA	Yes	No	Missing /NA
Do you have a regular dietetics professional to whom you refer patients to?	7	5	0	6	3	1
Is the dietetics professional located within your practice?	1	6	5	1	6	3
Do you refer patients to a dietetics professional without an EPC?	4	7	1	5	4	1

PNs' tended to be neutral/disagree that Lifescripts© increased awareness of the types of patients that should be referred (2.8/3.0) and that through using Lifescripts© they have referred to a dietetics professional more often (2.6/2.5) (Table 5-13).

Table 5-13 PN Study Participants' responses to questionnaires relating to Lifescripts© at follow-up

	PN Participants (n=10)	
	Mean	**Median**
Lifescripts© have increased my awareness of the types of patients I should refer to a dietetics professional	2.8	3.0
Using Lifescripts© has meant that I have referred to a dietetics professional more often	2.6	2.5

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

The barriers to dietetics professional referral identified by PN Study Participants are provided in Table 5-14. The main barriers to referring to dietetics professionals included:

- Patients' lack of interest, motivation or compliance (n=6);
- Cost to the patient (n=6), especially if the patient does not qualify for an EPC plan (n=2);
- Time (n=2); and
- Distance of dietetics professional/transport for patient (n=3).

It was noted that patients would be more inclined to see a dietetics professional within the practice (n=2): 'Some people who are pressed for time and/or transport would be more inclined to attend a dietetics professional within our surgery. Generally people ask for a local dietetics professional' (PN702).

Table 5-14 Barriers to referral to a dietetics professional identified by PN Study Participants (n=12)

	PN Study Participants	
	n	(%)
Patient's lack of interest/motivation/compliance	6	(50.0)
Cost	6	(50.0)
Distance of dietetics professional/transport for patient	3	(33.3)
Patients would be more inclined to see a dietetics professional within the practice	2	(16.7)
Patient not qualifying for an EPC	2	(16.7)
Time to do referral	2	(16.7)
Lack of available appointments	2	(16.7)

Note:

- Includes baseline and follow comments
- The following barriers were provided by n=1 participant: inconvenient; threatening; thinking they need to change; Past poor experiences; PN not always sure of dietetics professionals' specialty areas and if they most appropriate for patient's needs

Summary

Lifescripts© training and use appeared to have marginal impacts on PN referral to dietetics professionals. At follow-up, a greater proportion of PNs reported to be involved in EPC referral as well as refer patients without an EPC; however, referral did not occur very often. Having a dietetics professional within the practice may have assisted with referral. Lack of patient interest and cost were the main barriers to referral to a dietetics professional.

5.4.7 Conditions commonly referred – dietetics professionals' views

Conditions reported by Interview and Survey Participants to be commonly referred for are presented in Table 5-15 and Table 5-16. Survey Participants received prompting for conditions in Table 5-15 but not for Table 5-16 . The most commonly referred conditions reported by Interview Participants were: diabetes (92.3% of Participants), weight management (80.8%), increased lipids/high cholesterol (50.0%), allergy/intolerance (26.9%), eating disorders (23.1%), cardiovascular disease (21.2%), and coeliac disease (21.2%). Many conditions associated with the EPC Program were similar in H-EPC and L-EPC (diabetes, impaired glucose tolerance, eating disorders, under nutrition, weight management, polycystic ovarian syndrome, fatty liver and

renal disease). No conditions achieved clinical and statistical significant differences between H-EPC and L-EPC.

Survey Participants reported diabetes and weight management to be the most commonly referred conditions (97.7%), followed by increased lipids (87.4%). Approximately half reported gastrointestinal (56.3%), hypertension (54.0%) or coeliac disease (46.0%).

Table 5-15 Conditions commonly referred - identified through tick box options for Survey Participants and open-ended options for Interview Participants

	Interview Participants (n=52)		Survey Participants (n=87)	
	n	(%)	n	(%)
Diabetes	48	(92.3)	85	(97.7)
Weight management	42	(80.8)	85	(97.7)
High lipids/cholesterol	26	(50.0)	76	(87.4)
Gastrointestinal tract	4	(7.7)	49	(56.3)
Hypertension/blood pressure	7	(13.5)	47	(54.0)
Coeliac disease	11	(21.2)	40	(46.0)
Allergy & intolerance	14	(26.9)	29	(33.3)

Table 5-16 Additional conditions commonly referred - identified through 'other' category for Survey Participants and open-ended options for Interview Participants [(a)]

	Interview Participants (n=52)		Survey Participants (n=87)	
	n	(%)	n	(%)
Eating disorders	12	(23.1)	4	(4.6)
Cardiovascular disease	11	(21.2)	0	(0.0)
Underweight/under nutrition	9	(17.3)	3	(3.4)
Irritable bowel syndrome	9	(17.3)	1	(1.1)
Bowel	8	(15.4)	1	(1.1)
Heart disease	7	(13.5)	0	(0.0)
Polycystic ovarian syndrome	3	(5.8)	3	(3.4)
Renal/kidney disease	3	(5.8)	2	(2.3)
Pre-diabetes	4	(7.7)	0	(0.0)
Gestational diabetes	2	(3.8)	0	(0.0)
Impaired glucose tolerance/ insulin resistance	2	(3.8)	1	(1.1)
Osteoporosis	2	(3.8)	1	(1.1)
Metabolic syndrome	2	(3.8)	0	(0.0)
Cancer	2	(3.8)	1	(1.1)
Fatty liver	2	(3.8)	0	(0.0)
Sports	2	(3.8)	0	(0.0)
Bariatric/lap band/lap sleeve	2	(3.8)	0	(0.0)
Specialty/fad diets	2	(3.8)	0	(0.0)
General healthy eating	1	(1.9)	2	(2.3)
Iron/vegetarian diets	1	(1.9)	2	(2.3)

Note: The following conditions were provided by:

- n=1 Interview Participant and n=1 Survey Participant: failure to thrive; frail elderly; paediatrics
- n=1 Interview Participant only: gout; pain management; child and maternal health; vitamin D; Parkinson's disease;
- n=1 Survey Participant only: depression; ADHD; autism

5.4.8 Common practice locations – dietetics professionals' views

Table 5-17 presents Interview and Survey Participants reported practice locations for seeing clients. Participants indicated that the common practice locations were GP surgery (57.7% Interview vs. 52.2% Survey), joint office with AHPs (26.9% vs. 33.3%), own office (26.9% vs. 17.3%) and home office (11.5%). Interview Participants more commonly reported to work in specialist centre (17.3% vs. 5.8%; p=0.024) and less likely to do home visits (3.8% vs. 20.0%; p=0.008). H-EPC Participants were more likely to see clients at GP surgeries (72.0% vs 54.1%), while those from L-EPC Participants were more likely to see clients from their own office (27.0% vs 16.7%) or a home office (16.2% vs 0%). While differences were seen, these did not reach statistical significance.

Table 5-17 Common practice locations for seeing clients reported by Interview and Survey Participants

	Interview Participants (n=52)		Survey Participants (n=90)	
	n	(%)	n	(%)
GP surgery	30	(57.7)	47	(52.2)
With other Allied Health Professionals	14	(26.9)	30	(33.3)
Own office	14	(26.9)	15	(6.7)
Specialist centre	9	(17.3)	5	[(a)](5.6)
Home office	6	(11.5)	11	(12.2)
Sports clinic/gym/club rooms	5	(9.6)	5	(5.6)
Private hospital	2	(3.8)	5	(5.6)
Nursing home	3	(5.8)	5	(5.6)
Home visits	2	(3.8)	18	[(a)](20.0)
Private rooms in hospital complex	1	(1.9)	1	(1.1)

[(a)] Significant difference between Interview and Survey Participants (p≤0.05)

Note:

- No significant differences between H-EPC and L-EPC Interview Participants
- Participants could select more than one option
- The following locations were provided by n=1 Interview Participant: defence force and mines

The majority of Interview Participants believed that being located in a GP surgery makes it easier for GPs to refer to them (69.2%). Eleven participants (21.1%) believed it makes it both harder and easier. Reasons why Interview Participants believed being located in a GP surgery made it easier or not to get referrals are summarised in Table 5-18. The main reasons why being located in a GP surgery made referral easier was that it acted as a reminder or provided better exposure (30.8%): 'I believe 'in sight in mind'...being in there with them, working with them, seeing them regularly, that's the best way to go' (Interview 6). Better communication and interaction was reported by 28.8%: You 'actually get to talk to the GPs as opposed to never being able to see them' (Interview 5). It was also to provide easier access for patients (23.1%): 'You'd be right there on the spot and the client would be more inclined to make appointment with you before they left the surgery' (Interview 8).

The main reason why it did not make referral easier was that it was only easier for the GPs in the practice (9.6%):

> I think it reminds them to refer, but I do not think it actually makes it any physically easier...If you're working in one GP practice, I think other GPs in different practices tend to generally very hesitant to refer patients to see you if you're working in a different doctor's room. The doctors within that practice would probably be more likely to, but other GPs would probably be less likely to. (Interview 4)

No significant differences were observed between H-EPC and L-EPC Participants regarding their beliefs as to whether being located in the GP practice made referral easier, or the reasons why.

Table 5-18 Reasons why Interview Participants believed being located in a GP surgery made it easier or not to get referrals

	Interview Participants	
Makes referral easier	**n**	**(%)**
Acts as reminder/better exposure/aware you exist	16	(30.8)
Better communication/interaction	15	(28.8)
Easier access for patients and/or booking appointments	12	(23.1)
Better relationships/know you	8	(15.4)
Referral systems established/know how to contact you	5	(9.6)
Trust/confidence in service	4	(7.7)
GPs like in house services/not worried about losing patients	3	(5.8)
Does not make referral easier	**n**	**(%)**
Only easier for GPs within practice	5	(9.6)
Not all GPs within the practice refer	2	(3.8)
Do not always have better communication/contact	2	(3.8)
Do not always get more referrals	2	(3.8)
Already easy referral process	2	(3.8)

Note: The following reasons that being in a GP surgery does not make referral easier were provided by n=1: if know someone nearby who produces good results; do not always have rooms available; depends on how committed they are to refer; GPs are still busy more dependent on if the GP knows you.

Table 5-19 shows the perceived advantages of various practice locations reported by Interview Participants, while the disadvantages are presented in Table 5-20. The most advantages were reported for working in a GP surgery (n=80), followed by own office (n=48) and home visits (n=39). Home visits had the most reported disadvantages (n=63), followed by home office (n=48), GP surgery (n=44) and own office (n=27). The main perceived benefits of working in a GP surgery were increased referrals (32.7%), easier communication (25.0%; $p \leq 0.05$ compared to all other areas), convenient for patient (21.2%) and more visual which reminds the GP (19.2%; $p \leq 0.05$). The main disadvantages to working in a GP surgery were lack of flexibility or having to work around others (19.2%; $p \leq 0.05$) as well as decreased referrals (as a result of only GPs from your practice referring) (19.2%; $p \leq 0.05$). The higher costs (9.6%), lack of space (7.7%; $p \leq 0.05$) and requirement of transporting materials (7.7%) were also mentioned.

Benefits seen to working in your own office were flexibility and independence (13.5%), as well as increased referrals (as a result of not being limited to referrals from only GPs within one surgery) (13.5%), followed by being able to set up the location how you

want (11.5%; $p \leq 0.05$). The main disadvantage of practitioners having their own office was the higher costs (21.2%). Benefits to clients were the main advantages for home visits, including better access for clients (25.0%; $p \leq 0.05$). An advantage to the practitioner was that they were able to access the patients' cupboards (19.2%; $p \leq 0.05$). Home visits were seen to have higher costs/overheads (38.5%) and be an inefficient use of time due to the additional travel time (34.6%; $p \leq 0.0005$). Safety was also perceived to be an issue (15.4%).

Home office advocates believed it had lower costs and overheads (15.4%; $p \leq 0.05$) provided flexibility and independence (7.6%) and was convenient for practitioners (7.6%). However, home offices were reported to interfere on home life (28.8%; $p \leq 0.0005$), be less professional (17.3%; $p \leq 0.05$) and have location/environment issues (11.5%) such as location of the house, need for additional facilities and household noises. While not many commented on being co-located with other AHPs, the multidisciplinary aspect (11.5%; $p \leq 0.05$), increased referrals (from other AHPs) and lower costs/overheads (5.8%) were seen to be advantageous. No disadvantages to being co-located with AHPs were perceived to predominate.

Table 5-19 Perceived advantages of various practice locations reported by Interview Participants

	GP surgery		Own office		Co-located with Allied Health Professionals		Home office		Home visits	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Increased referrals	17	[(a)]32.7	7	[(b)]13.5	3	5.8	1	1.9	0	0.0
Better access for clients	2	3.8	3	5.8	0	0.0	0	0.0	13	[(a)]25.0
Lower costs/overheads	2	3.8	0	0.0	3	5.8	8	[(a)]15.4	3	5.8
Set up location as desired	1	1.9	6	[(a)]11.5	0	0.0	2	3.8	0	0.0
Access to patients' cupboards	0	0.0	0	0.0	0	0.0	0	0.0	10	[(a)]19.2
Access to resources	1	1.9	4	[(a)]7.7	0	0.0	0	0.0	0	0.0
Easier communication	13	[(a)]25.0	0	0.0	1	1.9	0	0.0	0	0.0
More visual/remind GP	10	[(a)]19.2	0	0.0	0	0.0	0	0.0	0	0.0
Reception support/benefits	5	[(a)]9.6	4	[(a)]7.7	0	0.0	0	0.0	0	0.0
Access to patient records	4	[(a)]7.7	0	0.0	0	0.0	0	0.0	0	0.0
Convenient for patient	11	[(a)]21.2	0	0.0	0	0.0	0	0.0	4	[(b)]7.7
Better relationships with GPs/part of team	6	[(a)]11.5	0	0.0	0	0.0	0	0.0	0	0.0
Flexible/independent	0	[(c)]0.0	7	[(a)]13.5	2	[(b)(c)]3.8	4	[(a)(b)]7.7	1	[(b)(c)]1.9
Choose location	0	0.0	4	[(a)]7.7	0	0.0	0	0.0	0	0.0
Multidisciplinary aspect	1	1.9	0	0.0	6	[(a)]11.5	0	0.0	0	0.0
Convenient for practitioner	0	0.0	0	0.0	0	0.0	4	[(a)]7.7	0	0.0
Location benefits	0	[(b)]0.0	5	[(a)]9.6	0	[(b)]0.0	2	[(a)(b)]3.8	3	[(a)(b)]5.8

Note:

- Numbers with different prefixes are significantly different ($p \leq 0.05$)
- No significant differences were reported for the advantages of being: more professional (GP surgery=2; own office=2); no transporting materials (own office=3; home office=1); positive environment (home office=3; home visits=3); more visual to patients/easy advertising (GP surgery=2); less isolating (GP surgery=1); access to waiting room (GP surgery=1); less expectation to bulk bill (own office=1); better service (own office=1; home office=1); greater motivation of clients (own office=3; home office=1).

Table 5-20 Perceived disadvantages of various practice locations reported by Interview Participants

	GP surgery		Own office		Co-located with Allied Health Professionals		Home office		Home visits	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Decreased referrals	10	[(a)]19.2	1	1.9	1	1.9	0	0.0	2	3.8
Less professional	0	0.0	0	0.0	0	0.0	9	[(a)]17.3	2	3.8
Safety	0	0.0	0	0.0	0	0.0	4	[(a)]7.7	8	[(a)]15.4
Higher costs/overheads	5	[(b)(c)]9.6	11	[(a)(b)]21.2	0	[(d)]0.0	2	[(c)(d)]3.8	20	[(a)]38.5
Privacy	0	0.0	0	0.0	0	0.0	5	[(a)]9.6	0	0.0
Interference on home life	0	0.0	0	0.0	0	0.0	15	[(a)]28.8	1	1.9
Have to transport materials	4	[(a)]7.7	0	[(b)]0.0	1	[(b)]1.9	0	[(b)]0.0	3	[(a)(b)]5.8
Inefficient use of time/travel time	1	1.9	0	0.0	0	0.0	0	0.0	18	[(a)]34.6
Lack of space	4	[(a)]7.7	0	0.0	0	0.0	0	0.0	0	0.0
Reception issues	2	[(a)(b)]3.8	2	[(a)(b)]3.8	1	[(a)(b)]1.9	4	[(a)]7.7	0	[(b)]0.0
Less flexible/work around others	10	[(a)]19.2	0	0.0	0	0.0	1	1.9	0	0.0
Location/environment issues	2	[(a)(b)]3.8	2	[(a)(b)]3.8	0	[(b)]0.0	6	[(a)]11.5	3	[(a)(b)]5.8

Note:

- Numbers with different prefixes are significantly different ($p \leq 0.05$)
- No significant differences were reported for the advantages of being: lack of visibility (GP surgery=2; own office=2); communication difficulties (GP surgery=1; own office=3); requires less patient motivation (home office=2; GP surgery=1); lack of convenience for practitioner (home office=3); isolating/may not fit in (GP surgery=1; own office=1; co-located=1; home office=1); independence (own office=1; co-located=1); no access to patients notes (GP surgery=1; own office=1); requires more promotion (own office=2); expectation to be bulk billed (GP surgery=2); less links and resources (own office=1).

Summary

More than half of PP dietetics professionals worked in a GP surgery. The majority of participants believed being located in GP surgery made referral easier. Dietetics professionals were also located with specialists or other AHPs, in their own office or a home office, as well as doing home visits.

5.4.9 Relationships with GPs – dietetics professionals' views

GP referral to dietetics professionals is very reliant on their relationships with them. Therefore, it is important to evaluate participants' relationships with GPs, how they were forged and how they impact on referral. Interview Participants' perceived quality of their relationships with GPs is outlined in Table 5-21. Overall, the majority of Interview Participants believed they had positive relationships with the GPs they worked with (63.5%), while 25.0% reported good with some/average relationships. Poor relationships were reported by 11.5%, including many who were mainly reliant on specialist referral. No significant differences between H-EPC and L-EPC Interview Participants were observed in the quality of relationships with GPs.

Table 5-21 Interview Participants perceived quality of their relationships with GPs

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Positive	13	(72.2)	22	(59.5)	33	(63.5)
Average/good with some	4	(22.2)	10	(27.0)	13	(25.0)
Poor	1	(5.6)	5	(13.5)	6	(11.5)
TOTAL	18	(100.0)	37	(100.0)	52	(100.0)

No significant differences between H-EPC and L-EPC Interview Participants

Table 5-22 indicates the methods used by Interview Participants to initially form relationships with GPs. The most common means of initially forming relationships with GPs were face to face introduction (48.1%), introductory letters (36.5%) and patient feedback letters (25.0%). L-EPC Participants reported they were more likely to have formed initial relationships with GPs via their involvement in the division (11.1%

vs. 0%; p=0.039) or GPs already referring to their practice before they started working there (11.1% vs. 0%; p=0.039).

Table 5-22 Methods used by Interview Participants to initially form relationships with GPs

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Face-to-face introduction	6	(33.3)	21	(56.8)	25	(48.1)
Introductory letters/update	6	(33.3)	15	(40.5)	19	(36.5)
Letters regarding patients	2	(11.1)	11	(29.7)	13	(25.0)
Word of mouth	3	(16.7)	5	(13.5)	7	(13.5)
Approached by GP to work in practice	3	(16.7)	4	(10.8)	6	(11.5)
Personally knew GP/own GP	2	(11.1)	5	(13.5)	6	(11.5)
Talk at seminars /forums/meetings	2	(11.1)	4	(10.8)	6	(11.5)
Being in GP clinic	1	(5.6)	4	(10.8)	5	(9.6)
Business cards	1	(5.6)	3	(8.1)	4	(7.7)
Attended seminars/meetings	1	(5.6)	2	(5.4)	3	(5.8)
Phone calls	2	(11.1)	1	(2.7)	3	(5.8)
Adverts in GP newsletter/ magazine/ editorials	1	(5.6)	2	(5.4)	3	(5.8)
Referral pads	1	(5.6)	2	(5.4)	3	(5.8)
GP initiated via referral	1	(5.6)	2	(5.4)	3	(5.8)
Through other work	1	(5.6)	2	(5.4)	3	(5.8)
Promoting EPC Program	0	(0.0)	2	(5.4)	2	(3.8)
Involved in the division	2	(11.1)	0	[(a)](0.0)	2	(3.8)
Other GPs from practice refer	0	(0.0)	2	(5.4)	2	(3.8)
GPs already referring to practice	2	(11.1)	0	[(a)](0.0)	2	(3.8)
Introduced to reception staff/building rapport	1	(5.6)	1	(2.7)	2	(3.8)
Introduced to PN	0	(0.0)	2	(5.4)	2	(3.8)

[(a)] Significant difference between H-EPC and L-EPC Interview Participants (p≤0.05)

Note: The following means of initially forming relationships with GPs were provided by n=1 Interview Participant: yellow pages; established by someone else; aged care panels; APD link; and through a friend.

The methods used by Interview Participants to maintain relationships with GPs are provided in Table 5-23. Patient feedback via letter, fax or email was the most popular method of maintaining relationships with GPs (76.9%), followed by phone calls (25.0%) and good communication and contact via timely, succinct, informative, consistent or not generic feedback (23.1%). No significant differences in methods of maintaining relationships with GPs were observed between H-EPC and L-EPC Interview Participants.

Table 5-23 Interview Participants' reported methods of maintaining relationships with GPs

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Patient letters/faxes/email	12	(66.7)	31	(83.8)	40	(76.9)
Phone calls	6	(33.3)	8	(21.6)	13	(25.0)
Good communication/contact/feedback	2	(11.1)	10	(27.0)	12	(23.1)
Meet with GPs (attend meetings, seminars, networking, personal contact)	4	(22.2)	8	(21.6)	11	(21.2)
Provide update information (including newsletter)	2	(11.1)	8	(21.6)	9	(17.3)
Provide talks/PD sessions	2	(11.1)	3	(8.1)	6	(11.5)
Provide great service (timely appointments, flexible, consistent)	3	(16.7)	2	(5.4)	5	(9.6)
Interact in clinic	3	(16.7)	2	(5.4)	4	(7.7)
Christmas cards/gifts	1	(5.6)	3	(8.1)	4	(7.7)
Positive feedback from patients/good results	0	(0.0)	2	(5.4)	2	(3.8)
Being personable/know how to maintain relationships	1	(5.6)	1	(2.7)	2	(3.8)
Been in practice/area a long time	0	(0.0)	2	(5.4)	2	(3.8)

Note:

- No significant differences between H-EPC and L-EPC Interview Participants
- The following means of initially forming relationships with GPs were provided by n=1 Interview Participant: Dietitians Association of Australia APD brochures; business cards/flyers; and referral pads.

Table 5-24 presents the strategies used by Interview Participants to make referral easier for GPs. The most reported strategy used to make referral easier for GPs was providing referral forms (36.5%). However, 36.8% of these indicated that referral forms were not effective or they no longer used them due to the increase use of an electronic system. Electronic referral forms either on a website or software were reported by 19.2%, which in many cases could also be emailed or faxed to the dietetics professional. Providing contact details to GPs was mentioned by 19.2%, either in the form of business cards (11.5%), information letters/brochures (7.7%), appointment cards (2%) or letter heads (1.9%). L-EPC Participants reported higher rates of making referral easier for GPs by explaining the process of referral or demonstrating how to do the paperwork (19.2% vs. 0%; p=0.048).

Table 5-24 Strategies used by Interview Participants to make referral easier for GPs

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Referral forms/pad	6	(33.3)	15	(40.5)	19	(36.5)
Electronic referral (form on website/contact details in computer/email referrals)	4	(22.2)	7	(18.9)	10	(19.2)
Provided contact details (business/appointment cards/ brochures/information on letter head)	3	(16.7)	7	(18.9)	10	(19.2)
Explained process of referral to GPs/how to do paperwork	0	(0.0)	7	[(a)](18.9)	7	(13.5)
Provided details about service (to GPs/PN and patient brochures)	2	(11.1)	4	(10.8)	6	(11.5)
Promote Medicare service and that they are a provider	0	(0.0)	5	(13.5)	5	(9.6)
Located in practice	2	(11.1)	3	(8.1)	4	(7.7)
Being contactable (receptionist available at all times/phone directly)	2	(11.1)	2	(5.4)	4	(7.7)
Advertising conditions that can be referred/areas of practice/specialising	2	(11.1)	1	(2.7)	3	(5.8)
Practice in convenient location	0	(0.0)	3	(8.1)	3	(5.8)
Fax/phone referral	1	(5.6)	2	(5.4)	2	(3.8)
On Division of General Practice lists	0	(0.0)	2	(5.4)	2	(3.8)
Bulk bill/provide EPC services	0	(0.0)	2	(5.4)	2	(3.8)
Feedback/communication	1	(5.6)	2	(5.4)	2	(3.8)

[(a)] Significant difference between H-EPC and L-EPC Interview Participants ($p \leq 0.05$)

Note: the following strategies were provided by n=1 Interview Participant: Dietitians Association of Australia 'Advanced Dietitian' brochures; business cards/flyers; and referral pads.

Effective activities used by Interview Participants to build relationships with GPs and increase referrals are displayed in Table 5-25. Personally meeting GPs was believed to be the most effective activity in building relationships with GPs and increasing referral rates (42.3%): 'the [GPs] who see her more often are the ones who more often refer. If you're out of sight you're out of mind' (Interview 11). It was also identified that personally explaining their service and what they do with patients was effective:

> Meeting with the practices and explaining our services and how they can complement the EPC services of the GP. Also showing the practices what we actually do with individual clients when they come it what sort of process we would undertake in each appointments and what the clients will get from attending an appointment. 'Cause (sic) I think some GPs probably aren't really aware of exactly what would happen in a dietetic consultation, and once they see what we do they are usually quite surprised. So I feel that's probably has been a really effective way to get out and talk to GPs and hopefully increase their referral rates and their awareness of what clients might get if they come and see us. (Interview 18)

Interview Participants believed that providing GPs with good feedback (38.5%) enhanced relationships and encouraged additional referrals. This included good report writing, timely feedback, and phone calls if concerned:

> Being proactive and writing back to the doctors straight away after you see their patient, within a reasonable amount of time and not letting it lapse, as I think that looks a bit unprofessional if you leave it too long between seeing a patient and writing back to the doctor. (Interview 6)

L-EPC Participants more often reported providing information/updates on service was effective (18.9% vs. 0 %; p=0.048). H-EPC were more often located in practice 22.2% vs. 5.4%, however just failed to gain significance (p=0.061).

Table 5-25 Effective activities in building relationships with GPs and increasing referrals reported by Interview Participants

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Face to face/personal contact	8	(44.4)	16	(43.2)	22	(42.3)
Feedback on patients	7	(38.9)	14	(37.8)	20	(38.5)
Good outcomes with patients	3	(16.7)	5	(13.5)	8	(15.4)
Information/updates on service	0	(0.0)	7	[(a)](18.9)	7	(13.5)
Talks/education sessions	1	(5.6)	5	(13.5)	6	(11.5)
Contact/communication	3	(16.7)	3	(8.1)	6	(11.5)
Located in practice	4	(22.2)	2	(5.4)	5	(9.6)
Building good relationship	3	(16.7)	3	(8.1)	5	(9.6)
Positive patient feedback	1	(5.6)	4	(10.8)	5	(9.6)
Providing good service	0	(0.0)	3	(8.1)	3	(5.8)
Seeing patients	2	(11.1)	1	(2.7)	2	(3.8)

[(a)] Significant difference between H-EPC and L-EPC Interview Participants (p≤0.05)

Note: the following strategies were provided by n=1 Interview Participant: demonstrate what consultation includes clients/what can cover letter head; and the build trust and confidence of the GP with dietetics professional.

Summary

A variety of strategies were used to initiate and maintain relationships between dietetics professionals and GPs. However, face to face contact and providing good feedback were believed to be the most effective.

5.4.10 Increasing number of patients receiving nutrition advice – dietetics professionals' views

When asked about potential ways of increasing the number of patients receiving nutrition advice, the majority of Interview Participants mentioned factors related to

access to dietetics professionals (90.4%), including one quarter who also mentioned factors that relate to GP provision of nutrition advice (see Section 4.4.6). The EPC initiative was identified by 32.0% as a method of increasing the number of patients receiving nutrition advice (Table 5-26). Referral to dietetics professional (24.0%) and marketing dietetics professionals/advocating good nutrition (22.0%) were also suggested. No significant differences were reported by H-EPC and L-EPC Participants.

Survey Participants believed the most effective method of increasing the number of patients receiving nutrition advice were to have GPs refer to dietetics professionals (92.0%), specifically via an EPC Plan (82.8%) (Table 5-26). Patient group education sessions were mentioned by 25.3%.

Table 5-26 Potential (Interview Participants) or most effective (Survey Participants) ways of increasing the number of patients receiving nutrition advice – Dietetics professional factors

	Interview Participants (n=50)		Survey Participants (n=87)[a]	
	n	(%)	n	(%)
Refer to a dietetics professional[b]	12	(24.0)	80	(92.0)
Referral to a dietetics professional via the EPC Program[b]	16	(32.0)	72	(82.8)
Patient group education sessions[b]	3	(6.0)	22	(25.3)
Marketing/advocating dietetics professionals/good nutrition	11	(22.0)	0	(0.0)
Increased GP knowledge of services available/what dietetics professional does	9	(18.0)	0	(0.0)
Easier referral/better process/communication of contact details	6	(12.0)	0	(0.0)
Good outcomes/effective dietetic practice	5	(10.0)	0	(0.0)
Better relationships/better known/more visual to GPs	5	(10.0)	1	(1.1)
Better patient awareness of dietetics professionals/EPC availability	5	(10.0)	0	(0.0)
Highlight conditions that would benefit from referral to dietetics professional	4	(8.0)	0	(0.0)
Raising the profile of dietetics professionals	3	(6.0)	0	(0.0)
Reducing cost to patient	3	(6.0)	0	(0.0)
Reducing stigma and making dietetics professionals more approachable	2	(4.0)	0	(0.0)
More dietetics professionals/hours/improved access	2	(4.0)	2	(2.3)
Dietetics professionals in GP surgeries/co-location of dietetics professionals and GPs in Allied Health Centres	1	(2.0)	1	(1.1)
Medicare improvements (more funding/visits)	0	(0.0)	3	(3.4)

[a] Missing data for n=3 Survey Participants

[b] Options provided in tick box format for survey, while others identified through 'other' category; no prompting provided for interviews

Note:

- The following options were provided by n=1 Interview Participant: evidence about impact of dietetics professional/effective dietetic practice;
- The following options were provided by n=1 Survey Participant: on call dietetic phone services; resources available that dietetics professional can use; PN referral; GP get client interested and then refer to dietetics professional; general public requesting referral/positive feedback; better infrastructure for dietetics professionals; positive experiences with dietetics professionals by GPs/PNs;
- AH= Allied Health; EPC= Enhanced Primary Care

Summary

Dietetics professionals outlined strategies to increase the number of patients receiving nutrition advice that were focused on the GP referring patients to dietetics professionals or using the EPC Program.

5.4.11 Patients' views of dietetics professionals

Patients' experiences and views of dietetics professionals are presented in Table 5-27. Lifescripts© did not prompt referral to a dietetics professional, with none of the respondents indicating they had been referred to a dietetics professional after receiving Lifescripts©. Only one participant reported that their GP/PN discussed with them the benefit of seeing a dietetics professional. Telephone contact with PNs suggests they were less likely to use Lifescripts© on patients who have already been to see a dietetics professional as the information provided by Lifescripts© was perceived to be much more basic. Very few respondents were prepared to see a specialist such as a dietetics professional or physiotherapist (n=3).

Table 5-27 Patient experiences and views of dietetics professionals

	GP Patients (n=4)				PN Patients (n=9)			
	Yes	Unsure	No	Missing	Yes	Unsure	No	N/A
I was referred to see a dietetics professional	-	-	4	-	1[(a)]	-	6	2
The GP/PN mentioned that it would be beneficial for me to see a dietetics professional	1	2	1	-		-	7	2
Would you be prepared to see a specialist? (i.e. dietetics professional, physio, or counsellor)	1	1	1	1	2	3	4	-

[(a)] Referral was prior to Lifescripts©

The views of dietetics professionals reported by Patient Study Participants receiving nutrition or weight management scripts are presented in Table 5-28. While there was a mixed response as to whether people would find a dietetics professional helpful, overall participants were neutral (mean=3; median=3; range: strongly agree=1 to disagree=4). Patient Telephone Interview responses were more favourable. No Patient Participants reported that seeing a dietetics professional would be a waste of time. The majority agreed that seeing a dietetics professional would be beneficial for weight loss (n=7). Patient Telephone Interview responses were less favourable to the benefit of a dietetics professional (strongly agree n=1; agree n=1, disagree n=2; neutral n=2). The two participants who were neutral towards finding a dietetics professional beneficial commented that they were doing 'pretty good' without a dietetics professional (GP401-01) or strongly agreed for others' however' didn't feel she needed a dietetics professional (PN201-01).

Most Patient Participants also agreed that seeing a dietetics professional is expensive (n=6), with only one person disagreeing (neutral=3). The Patient Telephone responses indicate that the one person who did not think it was expensive believes that, as she is on a pension, she would get it free. As a result, she would not be prepared to pay anything. Respondents thought it may cost around $80, and $50 would be more reasonable; around $30-40 per visit equating to $80/hour, like a massage; or were unsure, but as she is only on a pension it would be too much. Only two Participants were aware that it was possible to see a dietetics professional under the Medicare system.

No Patient Participants indicated that they would have liked a referral to a dietetics professional. Reasons for not wanting to see a dietetics professional included having already seen a dietetics professional and knowing everything they should do to lose weight, wanting to do it by themselves a little longer, and only having a small amount of weight to lose.

Six agreed that they would see a dietetics professional if referred, with three disagreeing. It was also indicated that respondents would be more likely to see a dietetics professional if referred (n=5), with only one disagreeing. All Patients participating in the Telephone Interview reported they would have seen a dietetics professional if referred.

Table 5-28 Views of dietetics professionals and referral by Patient Study Participants receiving nutrition or weight management scripts

	GP Patients (n=3)[a]		PN Patients (n=7)		Total Patients (n=10)[a]	
	Mean	Median	Mean	Median	Mean	Median
I would find a dietetics professional helpful	3.3	3.0	2.9	2.0	3.0	3.0
Seeing a dietetics professional is a waste of time	2.0	2.0	2.1	2.0	2.1	2.0
Seeing a dietetics professional would be beneficial for weight loss	3.7	4.0	3.7	4.0	3.7	4.0
Seeing a dietetics professional is expensive	3.7	4.0	3.4	4.0	3.5	4.0
I know that people with a chronic disease can see a dietetics professional and physio under the Medicare system	[b]3.0	3.0	3.3	3.0	[b]3.2	3.0
I would have liked the GP to refer me to a dietetics professional	2.7	3.0	2.1	2.0	2.3	2.0
I would have seen a dietetics professional if I was referred by the GP	3.3	4.0	3.3	4.0	3.3	4.0
I would be more likely to visit a dietetics professional if referred by my GP	3.7	4.0	3.3	3.0	3.4	3.5

[a] n=1 GP patient missing data for entire Section
[b] n=1 GP patient missing data for this question
Note: Strongly agree = 5; agree = 4; neutral=3; disagree=2; strongly disagree=1

Summary

Lifescripts© did not prompt referral to a dietetics professional. While it was believed seeing a dietetics professional would be beneficial for weight loss, and they would attend if referred, it was also agreed that dietetics professionals are expensive. No Participants indicated they would have liked to have been referred to a dietetics professional after receiving Lifescripts©.

5.5 Discussion

The purpose of this chapter was to provide information on access to nutrition advice by PP dietetics professionals through GP and PN referral. It evaluated GPs, PNs and patients' views of dietetics professionals and referral, PP dietetics professionals' characteristics, as well as factors perceived to influence referral.

The demographic data for PP dietetics professionals via Interview and Survey Participants was compared to DAA 2007 PP membership data, as well as findings by Cant and Aroni (2008). Interview Participants tended to work more hours per week in PP than the average PP population. Specifically, a greater per cent of Interview Participants reported to work more than 20 hours per week in PP (46.2%) compared to: DAA membership (25.5%), Survey Participants (23.0%) and Cant and Aroni (2008) (one-quarter; exact figure not reported). Survey Participants included more recent graduates than other PP groups. A greater per cent of Survey Participants had graduated in the previous five years (46.0%) or 10 years (63.0%) compared to: DAA membership (29.3% and 48.5% respectively), Interview Participants (23.0% and 48.0% respectively) and Cant and Aroni (2008) (24.7% in the past 5 years and 45.2% in the past 12 years). In particular, Survey Participants had significantly higher rates of those who graduated between 1-<3 years prior and lower rates between 20-<30 years prior compared to DAA 2007 PP membership.

Comparisons between Interview and Survey Participants showed that Interview Participants were older, had more years experience in dietetics and PP, and saw more patients per week. This may potentially be because completing an online survey is more anonymous, and easier than conducting a telephone interview, and therefore dietetics professionals that do not perceive themselves to be experts were willing to participate. Additionally, larger practices had one dietetics professional respond on behalf of the practice, which was often a senior dietetics professional.

Ascertaining GPs and PNs' views and practices of referral to dietetics professionals was a necessary element of this research. GPs appear to be the main referrers to dietetics professionals, with the majority of GPs reporting to regularly refer. PNs were

also actively involved in the referral process; only one-third reported to not be involved at baseline, further decreasing at follow-up. Therefore, while GPs usually took responsibility for referral to dietetics professionals, often PNs assisted in this process. No clear patterns to referral were identified for GPs and PNs; referral via the EPC Program also varied. As PNs are very involved in the care planning process it is not surprising that this would be PNs' main avenue for referral to dietetics professionals. However, PNs reported that non-EPC referral increased at follow-up, with Lifescripts© possibly prompting PNs to consider referral for more than just their chronic disease EPC Patients.

Unfortunately, Lifescripts© did not positively impact on GP referral rates, while only having a marginal impact on PN referral. GPs and PNs both disagreed that using Lifescripts© meant that they referred to a dietetics professional more often. This was not seen with the use of 'Active Nutrition Scripts', a follow on from the 'Active Script Programme' developed by VICFIT (see Table 2-12 Predecessors to Lifescripts©), where 16% of patients receiving scripts were referred to dietetics professionals. GPs and PNs also reported that it did not improve their knowledge of the types of conditions that should be referred on to a dietetics professional. This was despite Lifescripts© materials listing conditions that Lifescripts© were not appropriate for, and which should be referred on to dietetics professionals for more comprehensive assessment and advice. GPs and PNs may have already acknowledged that these conditions should be referred or possibly they did not attempt to use these resources on patients known to have these conditions.

Additionally, no patients reported that referral to a dietetics professional had been recommended as a result of Lifescripts©. The majority of Telephone Interview Patients felt they did not need additional information to what they had already received. While most patients were planning to go back and visit their GP or PN regarding Lifescripts©, very few were prepared to see a specialist, including a dietetics professional. Patients agreed that seeing a dietetics professional would be beneficial for weight loss, however they were not interested in seeing a dietetics professional themselves. This has not been previously reported in the literature. However it may be

that Lifescripts© nutrition and weight management material may not be beneficial for patients who have recently seen a dietetics professional, as presumably the information is much more basic than the advice they would have already received. This may suggest why those receiving Lifescripts© in the study were not interested in seeing a dietetics professional, as they were selected based on their need for basic information.

This poor impact on referral is disappointing. While Lifescripts© primary aim was to increase the provision of lifestyle advice, improving referral through increased awareness would have been beneficial. Therefore, from the study results it appears that it is not worth individual dietetics professionals encouraging Lifescripts© amongst local GPs to increase referrals. DAA support for Lifescripts© with the aim of increasing referrals would also not be beneficial. It is worth considering whether these Patients would have been interested in seeing a dietetics professional if they were not provided with brief advice by the Lifescripts©, which was seen to be sufficient. Alternatively, would they have never been prepared to see a dietetics professional, hence the brief advice provided by Lifescripts© was beneficial and resulted in them receiving something rather than nothing.

Many factors that influence GPs' referral to dietetics professionals were identified by study participants. One of the main influencing factors on GP referral to dietetics professionals were the quality of their relationships. Good relationships between GPs and dietetics professionals have been shown to be important in influencing GPs' referral (Lowe & Lawrence, 2005; Splett, et al., 1994). The majority of Interview Participants reported positive relationships with the GPs they worked with. Those that reported poor relationships tended to receive referrals via specialists rather than GPs. Face to face contact and providing good feedback were believed to be the most effective activities in building relationships with GPs and increasing referral rates. Recent research conducted on behalf of the DAA showed that ongoing correspondence and feedback are important in relationships with GPs, and that GPs desire face-to-face contact and thorough feedback (Dietitians Association of Australia, 2009b). Other literature identifies that adequate and timely communication is necessary for effective collaboration (Hurley, et al., 2002). Onsite services, thus, face-to-face contact between

GPs and AHPs have also been reported to improve relationships (Lowe & Lawrence, 2005).

GPs, PNs and dietetics professionals also indicated that referral would be assisted if the dietetics professionals were located on-site. While the majority of GP and PN Participants had a regular dietetics professionals to whom they referred, it was very uncommon for them to be located in the surgery. This was not altered by participation in the Lifescripts© study. Dietetics professionals believed being located in a GP surgery made it easier for GPs to refer to them; however, it was acknowledged that it then reduces referrals from GPs outside the practice. Many other benefits to onsite services in a GP practice were also provided by dietetics professionals which are supported by the literature. Co-location with GPs leads to easier and improved communication (Bradshaw, 1994; Witt, et al., 2006). Improved communication also leads to a greater recognition of being a vital member of the general practice team (Bradshaw, 1994; Lowe & Lawrence, 2005). On-site services are also more convenient for patients, with easier appointment making, less need for travel and the benefit of service being provided at the same place and time (Bradshaw, 1994; Lowe & Lawrence, 2005; Sturmberg & Overend, 1999; Witt, et al., 2006). A GP surgery was the most common practice location for Interview and Survey Participants with more than half of the participants working in this location. However, research by Cant and Aroni (2008) show that the most common practice location for their participants was sole practice (49.4%), followed by a GP practice (28.7% of participants). The higher responses of dietetics professionals who work in GP practices in this research may have been due to the increased interest in the area of nutrition advice in general practice.

The cost of seeing a dietetics professional was another key factor believed by Interview and Survey Participants to influence GP referral to dietetics professionals; including the eligibility for an EPC plan to help offset the cost. PN Study Participants and the literature also identified cost as a barrier (Brotons, et al., 2003; Kelly & Joffres, 1990; Kottke, et al., 1984; Nicholas, et al., 2003; Pritchard, et al., 1999). Patient Participants agreed that dietetics professionals are expensive; however the actual cost of seeing a dietetics professional was not clearly known. Participants also had a poor awareness of

the eligibility of those with a chronic disease to see a dietetics professional under the Medicare system. This highlights the importance of and need for better marketing and consumer information. GPs and dietetics professionals agreed that the EPC Program made referral to dietetics professionals easier as it assisted with the financial barrier of patients consulting dietetics professionals. However, both the participant groups acknowledged that the EPC paper work added to the complexity of referral. As a result, the ease of referral, or whether GPs have assistance with the paperwork was also identified as a key influencing factor by dietetics professionals. The benefits and disadvantages of the EPC Program, as well as the literature supporting these findings, are further discussed in Chapter 7.

GP knowledge of what a dietetics professional can do and which patients would benefit was reported by dietetics professionals to influence referral. This is supported by the literature, citing insufficient understanding of the role of dietetics professionals, their skills, the services they provide, and where to refer (Kelly & Joffres, 1990; Nicholas, et al., 2003). Similarly, a GP's belief in the effectiveness of nutrition intervention was also reported to impact on referral (Kottke, et al., 1984; Splett, et al., 1994). Marketing or advocating for the role of dietetics professionals/good nutrition was suggested by dietetics professionals as a way of increasing the number of patients receiving nutrition advice, as was increasing GPs' knowledge of the services that are available and what dietetics professionals can offer. As a way of marketing, two dietetics professionals commented that they demonstrate to GPs what a consultation involves and what is covered with clients. While this was not a common practice, it would be a useful activity, as many GPs would not have a good understanding of the dietetic process. Theoretically, if GPs have a better understanding of what they are referring their patients for, they may be more confident in referring. Pediani and Bowie (1999) also identified that increasing GPs' awareness of a nutrition service increased their referral rates.

GPs' interest in nutrition was also reported by dietetics professionals to influence referral. As Chapter 4 shows, GPs interest in nutrition influences their provision of advice, and presumably this would extend to referral for additional advice.

Particular conditions also prompt referral, with diabetes, weight management and increased lipids being the main referral conditions reported by dietetics professionals and PN Study Participants. While dietetics professionals can provide care for a range of conditions, these conditions are common and would be those which GPs and PNs would associated with dietetics professional intervention. This is similar to that reported in the literature (Aroni & Cant, 2008; Dietitians Association of Australia, 2009b).

A patient's lack of interest, motivation or compliance was reported as a barrier for PNs to refer which is also suggested by the literature (Kottke, et al., 1984; Nicholas, et al., 2003). Practitioners may feel there is no point referring a patient who is obviously not interested in being referred.

It was the opinion of dietetics professionals that the most effective way to increase the provision of nutrition advice was to increase referral to dietetics professionals, specifically through encouraging both EPC and non-EPC referrals from GP.

While Patient Participants believed seeing a dietetics professional would be beneficial for weight loss, and they would attend if referred, none indicated they would have liked to have been referred to a dietetics professional after receiving Lifescripts©. It is beneficial that Patients felt that the Lifescripts© material and interaction with the GP/PN were adequate for providing sufficient motivation and knowledge for dealing with their nutrition or weight management issues. However, the importance of referral was highlighted, as it may encourage those who would not have considered seeing a dietetics professional prior to referral.

Few differences were seen between H-EPC and L-EPC Participants. Participants from H-EPC divisions were more likely to see clients at GP surgeries, while those from L-EPC Participants were more likely to see clients from their own office or a home office. Perhaps being located in the GP surgery encouraged GP referral for EPC patients specifically, as it is reported to increase referral in general. Often clinics in GP surgeries were predominantly based on EPC patients, and had increased rates of bulk billing. Alternatively, these reasons may account for why H-EPC Participants were less likely to have their own office or provide home visits. No significant differences in other

participant characteristics (demographic data) were observed which suggests that these factors cannot account for any differences in the number of EPC consultations.

H-EPC and L-EPC Participants reported differences in their beliefs of the EPC Programs' impact on referral from GPs. H-EPC Participants were more likely to believe that the EPC Program increased GPs' awareness of conditions that can be referred, thus making referral easier. H-EPC Participants were also more likely to report that knowing who to refer to or awareness of dietetics professionals was a barrier overcome by the EPC Program. L-EPC Participants were more likely to believe that the EPC Program did not overcome barriers to referral. L-EPC Participants more often reported to have initially formed relationships with GPs via their involvement in the division or GPs already referring to their practice before they started working there. While these factors did reach significance, it is unclear as to their overall relevance. The small participant numbers and uneven group size may have masked more significant differences. These differences were unable to account for the higher number of EPC consultations in H-EPC division.

5.5.1Limitations

As mentioned in Chapter 4, the small sample size of GPs and PNs is a limitation of this research. The differences in open ended questions versus the 'tick box' format for Interview and Survey Participants respectively also makes comparisons for dietetics professionals difficult.

While it was felt that the dietetics professionals Telephone Interviews had reached saturation point in responses, with no new ideas being suggested, the uneven group sizes between H-EPC and L-EPC made significant differences difficult. A larger sample size for the PP Study may have resulted in the differences between H-EPC and L-EPC groups becoming more apparent. Group sizes that were reflective of the actual population were believed to be more representative. However, this prevented exploration of the differences between urban and rural participants, as rural numbers were too low to obtain significant results.

5.6 Conclusion

Dietetics professionals are experts in nutrition and are vital members of the primary care team. However, access to nutrition advice by PP dietetics professionals is often limited by poor GP and PN referral. While GPs reported to regularly refer to dietetics professionals, the actual number of patients referred was low. This reflects a potential acceptability bias, in that GPs and PNs 'know' they should refer, and so report they do. However, in reality, not all patients requiring referral are currently being referred. The Medicare EPC Program is an effective avenue to refer patients for nutrition counselling, offsetting the barrier of cost; however, the paperwork associated with an EPC referral was perceived to make referral more difficult. Lifescripts© did not prompt referral to dietetics professionals, with none of the patients being provided with dietetics professional referral at the same time as Lifescripts© and no patient indicating they would have liked to be referred. Access to nutrition advice by PP dietetics professionals can be encouraged through good relationships between GPs and dietetics professionals. Personal contact and good feedback are believed to be essential in encouraging relationships. GP surgeries were the most common location for dietetics professional to consult from. Access to nutrition advice via PP dietetics professionals needs to be encouraged by GPs and PNs in order to improve the delivery of nutrition advice in the general practice setting.

5.7 Acknowledgements

The Online Survey for PP dietetics professionals was conducted in conjunction with a 4th year Nutrition and Dietetics Honours student for which supervision was provided. Intellectual property belongs to the thesis author, who was also highly involved in each process of the study.

Chapter 6

Implementation of nutrition interventions in the general practice setting – GPs & PNs

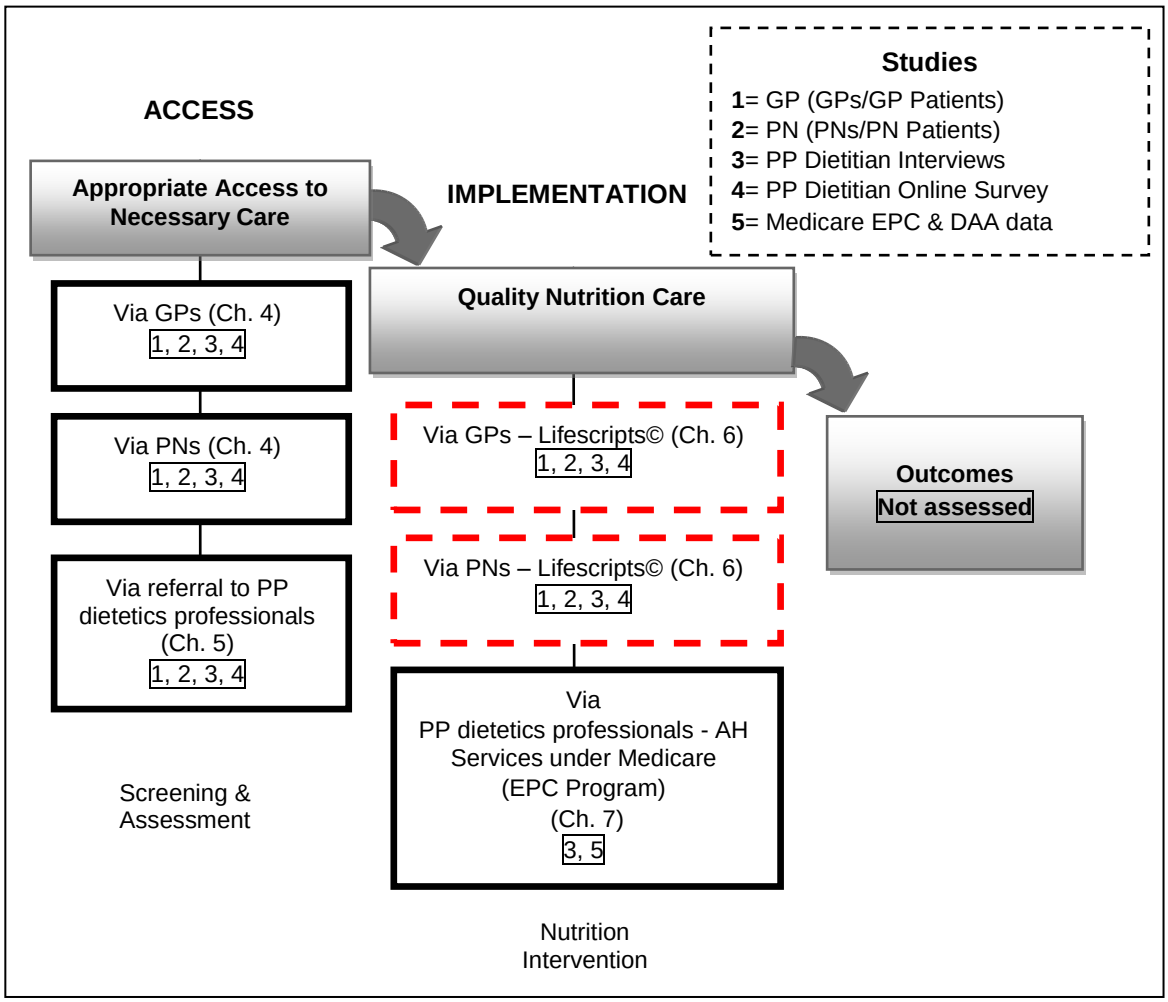


Figure 6-1 Cascade model for improving the delivery of nutrition advice in the general practice setting (Adapted from: Splett (1996) 'The cascade of events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions')

Note: General Practitioner (GP); Practice Nurse (PN); Private Practice (PP); Dietitians Association of Australia (DAA); Enhanced Primary Care (EPC); Allied Health (AH).

6.1 Introduction

The aim of this chapter is to provide an overview of the implementation of nutrition advice by GPs and PNs. GPs, PNs, PP dietetics professionals and patients' opinions are evaluated, with particular emphasis on the use of Lifescripts© as a tool to provide lifestyle advice.

Recommendations outline that it is the role of GPs and PNs to screen for nutrition-related problems, provide basic advice, identify willing patients and then refer these patients to dietetics professionals for counselling; nutrition counselling should then be reinforced at subsequent visits (American Dietetic Association, 1998; Brauer, et al., 2006; Brotons, et al., 2003; Macario, et al., 1998);Pomeroy, 2009B #520}. While logically this provides the best standard of care for general practice patients, this process is not always achieved. Many strategies have been utilised to attempt to improve the implementation of nutrition advice by GPs and PNs. However, it is imperative that strategies employed account for the many barriers that exist to implementing nutrition advice in general practice (Stange, et al., 2002).

One strategy that has been used to improve lifestyle advice is Lifestyle Prescriptions (Lifescripts©). Lifescripts© were launched in September 2005 with the aim of encouraging GPs to deliver a variety of health messages in a prescription format. Scripts exist for the five key lifestyle areas of smoking, nutrition, alcohol, physical activity & weight management (see Section 2.10.1 and Appendices). Lifescripts© aim to overcome many of the barriers associated with delivering nutrition advice. By providing the assessments and prescriptions for nutrition and weight management, appropriate nutrition advice is able to be provided within a few minutes. This makes it more achievable within the time constraints of a general practice setting. Outlining specific conditions that would benefit from further assessment and counselling from dietetics professionals and providing the DAA 'find an APD' contact details should have theoretically encouraged referral to dietetics professionals.

While Lifescripts© were originally targeted at GPs, anecdotal data from the HUDGP suggests that uptake by GPs is poor and PNs are more likely to implement them.

Therefore, ascertaining whether Lifescripts© are effective in the general practice setting, as well as who are the most feasible health professionals to implement them, in what situations, is important.

If GPs and PNs are utilised to deliver nutrition advice adequate training is essential to enable them to have the knowledge (American Dietetic Association, 1998; Kyle, 1993; Lazarus, 1997; Watts, et al., 2004). Training in nutrition has been shown to improve the provision of nutrition advice by GPs (Lazarus, 1997) and PNs' nutrition knowledge, enabling them to provide basic healthy eating advice (Cadman & Findlay, 1998; Kyle, 1993). Nutrition training also increased the nurses' perceived level of knowledge and confidence to discuss diet with patients (Cadman & Findlay, 1998; Kyle, 1993). Therefore, it is important that PNs receive adequate nutrition training on an ongoing basis (Cadman & Findlay, 1998).

6.2 Aims & Hypotheses

This chapter aims to discover:

1. GPs and PNs' views and provision of nutrition advice;
2. PP dietetics professionals' opinions of GPs' provision of nutrition advice and the perceived barriers to this;
3. Patients' views of advice from GPs compared to PNs;
4. PP dietetics professionals' opinions of whether PNs have adequate nutrition training and knowledge to provide brief advice;
5. GPs and PNs' awareness and use of Lifescripts© and impact of Lifescripts© training; and
6. Patients' and dietetics professionals view of Lifescripts©.

It is hypothesised that:

1. Training in the use of Lifescripts© will positively impact on GPs and PNs' use of Lifescripts© and nutrition knowledge and confidence.

6.3 Methods

A full description of the methods can be seen in Chapter 3; including:

- GP Study (Section 3.2);
- PN Study (Section 3.3);
- Patient Study (Section 3.4);
- PP Dietetics professional Telephone Interviews (Section 3.5); and
- PP dietetics professional Online Survey (Section 3.6).

6.4 Results

6.4.1GPs' provision of nutrition advice – GPs' views

Almost two-thirds of GP Participants most often provided nutrition advice in the form of verbal and written information (n=8). When nutrition was discussed, most GPs reported spending an average of 1-5 minutes (n=7), with the remainder reporting more than five minutes (n=4). Intervention GPs reported to spend more time discussing nutrition at baseline compared to follow-up (1-5 minutes n=1, >5 minutes n=3; 1-5 minutes n=3, >5 minutes n=1 respectively).

Table 6-1 outlines GPs' views on factors related to their provision of nutrition advice at baseline and follow-up after the Lifescripts© intervention. Overall, GPs agreed that dietary assessment and counselling is a role of GPs, that nutrition counselling will lead to changes in patient dietary behaviours, and that diet changes influence patient health outcomes. At baseline, intervention GPs were less likely than controls to feel they had the knowledge (mean/median=2.8/3.0, 3.5/3.5 respectively), confidence (mean/median=2.5/2.5, 3.7/4.0 respectively) and experience (mean/median=2.5/2.5, 3.3/3.5 respectively) to provide nutrition counselling. They were also more likely to disagree that they had appropriate resources to provide nutrition advice (mean/median=2.0, 3.0 respectively). At follow-up, intervention GPs responses had improved, reporting to have the same level of knowledge, confidence skills and experiences to provide nutrition counselling as control GPs (mean and median for all =

3.0), and a greater belief that they had appropriate resources (mean/median=3.5/4.0, 3.0/3.0 respectively).

At baseline, intervention GPs were less likely to disagree with having enough time to provide nutrition advice compared to follow-up (mean/median=2.8/2.5, 2.3/2.0 respectively), which suggests that the aim of a 'one-minute message' for Lifescripts© was not achieved. Intervention GPs were more likely to agree they had appropriate resources available to them to provide nutrition advice after Lifescripts© training (mean/median=2.0/2.0, 3.5/4.0 respectively). After training in Lifescripts©, GPs were slightly more likely to believe they have the skills (mean/median=2.8/2.5, 3.0/3.0 respectively), confidence (mean/median=2.5/2.5, 3.0/3.0 respectively) and experience (mean/median=2.5/2.5, 3.0/3.0 respectively) to provide nutrition counselling; however improvements were not as high as anticipated.

After Lifescripts© training GPs were less likely to believe that they required more nutrition information to effectively provide nutrition advice, with all participants either agreeing or strongly agreeing at baseline compared to one agreeing and all others neutral at follow-up (Table 6-1). Training did not lead to an increase in GP responses to using available resources to provide nutrition advice. While trends could be seen, the small numbers masked any significant differences.

Summary

Lifescripts© training improved GPs' confidence to provide nutrition advice and their belief that they had the experience, appropriate resources and adequate information to do this. However they were less likely to believe they had adequate time to provide nutrition advice and did not report an increase in using available resources to provide nutrition advice.

Table 6-1 Intervention and control GPs' views on dietary advice at baseline and follow-up

	Intervention GPs				Control GPs				Total	
	Baseline (n=4)		Follow-up (n=4)		Baseline (n=6)[a]		Follow-up (n=3)[a]		Baseline (n=10)[a]	
	Mean	Median	Mean	Median	Mean	Mean	Mean	Median	Mean	Median
I believe that dietary assessment and counselling is a role of GPs	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.2	4.0
I have the knowledge to provide nutrition counselling	2.8	3.0	3.0	3.0	3.5	3.5	3.0	3.0	3.2	3.0
I have the skills to provide nutrition counselling	2.8	2.5	3.0	3.0	3.0	3.0	3.0	3.0	2.9	3.0
I have the confidence to provide nutrition counselling	2.5	2.5	3.0	3.0	3.7	4.0	3.0	3.0	3.2	3.0
I have the experience to provide nutrition counselling	2.5	2.5	3.0	3.0	3.3	3.5	3.0	3.0	3.0	3.0
I believe that nutrition counselling will lead to changes in patient dietary behaviour	4.0	4.0	4.0	4.0	4.2	4.0	4.0	4.0	4.1	4.0
I believe that diet changes influence patient health outcomes	4.8	5.0	4.5	4.5	5.0	5.0	4.7	5.0	4.9	5.0
I find I have enough time to provide nutrition advice	2.8	2.5	2.3	2.0	2.3	2.0	2.7	2.0	2.5	2.0
I have appropriate resources available to me to allow me to provide nutrition advice	2.0	2.0	3.5	4.0	3.0	3.0	3.0	3.0	2.6	3.0
I use available resources to provide nutrition advice	3.8	4.0	3.5	4.0	3.8	4.0	3.3	3.0	3.8	4.0
I use reminders in medical notes to prompt me to provide appropriate nutrition advice	3.3	3.5	3.0	3.0	3.3	3.5	3.7	4.0	3.3	3.5
I require more nutrition information to effectively provide nutrition advice	4.5	4.5	3.5	4.0	4.2	4.0	4.0	4.0	4.3	4.0

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

[a] 1 control GP had follow-up results but no baseline

6.4.2 GPs' provision of nutrition advice - dietetics professionals' views

PP dietetics professionals' opinions of whether GPs have a role in providing nutrition advice are outlined in Table 6-2. The majority of Interview Participants (82.5%) agreed GPs have a role, including 15.4% who also provided reasons against, 26.9% specifying basic advice only and 3.8% that they should be advocates for good nutrition. An additional 17.3% of participants believed GPs had no role in providing nutrition advice to their patients. Almost three-quarters (72.2%) of H-EPC Participants believed GPs have a role in providing nutrition advice, compared to 45.9% of L-EPC Participants (p=0.006). More than three-quarters of Survey Participants (76.7%) agreed GPs have a role, with 23.3% believing they did not.

Table 6-2 Interview and Survey Participants' opinions of whether GPs have a role in providing nutrition advice

	Interview[a]						Survey	
	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants		Total Survey Participants	
	n	(%)	n	(%)	n	(%)	n	(%)
Yes[b]	13	[c](72.2)	17	(45.9)	27	(51.9)	66	(76.7)
Basic advice only	3	(16.7)	11	(29.7)	14	(26.9)	[d]-	-
Advocate for good nutrition	0	(0.0)	2	(5.4)	2	(3.8)	-	-
No	2	(11.1)	7	(18.9)	9	(17.3)	20	(23.3)
TOTAL	18	(100.0)	37	(100.0)	52	(100.0)	86	(100.0)

[a] Interview Participants have been divided into those from divisions providing high number of dietetics professional EPC consultations (H-EPC) and a low number (L-EPC)
[b] Includes 'yes but negatives noted' for Interview Participants: H-EPC (22.2%); L-EPC (10.8%); total (15.4%)
[c] Significant difference between H-EPC and L-EPC (p≤0.01)
[d] 'Yes' and 'no' were the only options provided for Survey Participants

Table 6-3 shows reasons provided by Interview and Survey Participants as to why GPs' have a role in providing nutrition advice. Approximately half of Interview Participants (48.1%) mentioned they should provide initial basic advice; 23.1% of these specified that they should then refer to a dietetics professional. Of the 77 Survey Participants offering comments, 53.3% believed GPs should provide initial basic advice, with 27.3% of these stating this should be followed by referral, 13.0% referral if required and 13.0% not mentioning referral.

The main reason why Interview and Survey Participants believed that GPs have a role in providing nutrition advice was that they are the first point of contact (28.8% and 18.2% respectively). 'They are usually the first professional the public will approach regarding a health concern' (Survey 53). 'They are the first port of call and some people won't go beyond that' (Interview 9).

They can also raise nutrition awareness or reinforce messages (17.3% and 19.5% respectively). 'So really, if they're not spreading the message about good nutrition, really it stops there, and we do not even have the chance to get our message across' (Interview 38). It was also believed that the team approach is important:

> Patients sees [GPs] more often perhaps than what they'd see the dietetics professionals so I think they're are essential in helping deliver the message or really cementing the message to the patients. So basically the team approach; and I think the contact between the dietetics professional and the doctor is integral in that, so we are both working on the same page and delivering the same message to patient. (Interview 6)

Participants also believed GPs have a role in providing nutrition advice as 'they have large influence with the population that they see' (Interview 5) and 'patients tend to listen to GPs' (Survey 42). Patients also 'take on board what the GPs says and they follow it religiously, so if you've got the backing of them plus your own...it gives it more power' (Interview 20). 'The public will respect the advice of a GP. A warning from a GP regarding the likely health consequences of poor diet is often taken seriously by the patient' (Survey 53). Others believed that 'they do have a role in encouraging good nutrition' (Interview 41) and a responsibility to deliver basic advice and encourage and reinforce goals:

> I believe they have a role in advocating it, and...providing some general information regarding nutrition, but I certainly wouldn't be recommending or encouraging them to go beyond the scope of specialist nutrition. (Interview 25)

However, it was strongly believed by many participants that referral to a dietetics professional needed to accompany general advice:

> I think they have a role in outlining what's important, but then need to ideally refer on to dietetics professionals for the specifics of how to implement... I think they need an understanding of the

general guidelines, but as far as patients implementing them, I think that is where the dietetics professional should step in, in terms of providing tools to implement them (Interview 22)

Table 6-3 Reasons provided by Interview and Survey Participants as to why GPs' have a role in providing nutrition advice

	Interview Participants (n=52)		Survey Participants (n=77)[(a)]	
	n	(%)	n	(%)
Should provide initial basic advice - then refer	12	(23.1)	21	(27.3)
Should provide initial basic advice - then refer if required	0	(0.0)	10	(13.0)
Should provide initial basic advice - referral not mention	13	(25.0)	10	(13.0)
Identify those requiring referral	0	(0.0)	7	(9.1)
First point of contact	15	(28.8)	14	(18.2)
Should raise nutrition awareness/reinforce messages	9	(17.3)	15	(19.5)
Influential/trusted/recognised/respected	5	(9.6)	7	(9.1)
Patient expects advice/answer questions/initial advice	4	(7.7)	3	(3.9)
Provide diet/information sheets	1	(1.9)	6	(7.8)
Frequent contact/access large number of people	2	(3.8)	5	(6.5)
Not all patients will see a dietetics professional	3	(5.8)	4	(5.2)
Whole of person care	2	(3.8)	1	(1.3)
Only GPs with additional training	2	(3.8)	0	(0.0)

[(a)] 77/90 Survey Participants provided comments outlining reasons for or against

Note:

- No prompting was provided for either Interview or Survey Participants
- The following were each provided by n=1 Interview Participant: if patients are better educated and are prepared to putting in some effort to learning as well

The reasons provided by Interview and Survey Participants as to why GPs do not have a role in providing nutrition advice are shown in Table 6-4. The main reason why it was believed that GPs did not have a role was they lack the knowledge, skills, expertise or training (25.0% and 14.3% respectively). The 'majority of GPs... admit they have almost no nutrition knowledge' (Interview 14). It was also reported that GPs provide inaccurate information or do not do it very well (15.4% vs. 13.0%). 'The advice I hear that clients have been told by GP is concerning at times' (Survey 69). Lack of time was also a key reason for why GPs do not have a role (14% vs. 8%). 'They do not have time to provide adequate information, nor do adequate assessments nor time to update any skills or knowledge on nutrition information' (Survey 60).

Table 6-4 Reasons provided by Interview and Survey Participants as to why GPs do not have a role in providing nutrition advice

	Interview Participants (n=52)		Survey Participants (n=77)[(a)]	
	n	(%)	n	(%)
Lack of knowledge/skills/expertise/training	13	(25.0)	11	(14.3)
Provide inaccurate information/ do not do it very well	8	(15.4)	10	(13.0)
Lack of time	7	(13.5)	6	(7.8)
Should just refer/identify those who require referral	2	(3.8)	3	(3.9)
Not individualised	2	(3.8)	3	(3.9)

[(a)] 77/90 Survey Participants provided comments outlining reasons for or against

Note:

- No prompting was provided for either Interview or Survey Participants
- The following were each provided by n=1 Interview Participant: lack of resources; lack of follow up; can't replace dietetics professional.

Table 6-5 presents Interview and Survey Participants' views of the effectiveness of nutrition advice provided by GPs. Only a small number of Interview Participants believed it was effective (9.8%); 21.6% to some degree, 9.8% depending on the GP and 9.8% depending on the accuracy of the advice. Almost half (47.1%) of the Interview Participants believed the nutrition advice provided by GPs was not effective. No significant differences were observed between H-EPC and L-EPC Participants.

The majority of Survey Participants thought GPs' advice was 'somewhat effective' (60.9%), with 8.0% believing it was effective and 13.8% ineffective. Nutrition advice provided by GPs was thought to be effective in that: 'patients like to believe what they are told by their doctors' (Interview 51). GPs are perceived to have a high level of credibility with their patients: 'If I say something to a client and the GP has said something a little bit different, the GP appears to have greater credibility' (Interview 24).

Many participants acknowledged that the effectiveness depended on many factors including: 'whether it is accurate or not' (Interview 13), the GPs' level of knowledge and personal biases of the GP.

> It varies from GP to GP I believe. I have seen some GPs that have their personal bias in terms of nutrition information, what they believe works and does not work. They tend to run with that. I think other GPs are a little more evidenced based. (Interview 25)

Reasons nutrition advice was not believed to be effective were that it 'isn't tailored to meet the needs of the individual' (Interview 35) and may be no different to what the general public would say:

> Essentially they tell people what they should do but not how to do it. So they tell people they should lose weight...just eat less, but that is not a solution, it's not a strategy, it's not a plan. They know what is needed but not how to achieve it. (Interview 14)

Many Participants suggested that basic advice to raise awareness may be effective, however GPs should 'offer referrals to the dietetics professional in conjunction with the advice that they give' (Interview 6).

Table 6-5 Interview and Survey Participants' belief as to whether the advice provided by GPs is effective

	Interview Participants			Survey Participants	
	n	(%)		n	(%)
Yes	5	(9.8)	**Mostly effective**	7	(8.0)
To some degree	11	(21.6)			
Depends on accuracy	5	(9.8)	**Somewhat effective**	53	(60.9)
Depends on GP	5	(9.8)			
No	24	(47.1)	**Ineffective**	12	(13.8)
Not sure	1	(2.0)	**Neutral**	15	(17.2)
TOTAL	[(a)]51	(100.0)	**TOTAL**	87	(100.0)

[(a)] N/A was indicated by n=1 Interview Participant

Note: options provided to Survey Participants based on five point likert scale while Interview Participants were open-ended

Table 6-6 details the perceived barriers to GPs providing nutrition advice reported by Interview and Survey Participants. The two main barriers reported by Interview Participants were lack of time (76.9%) and lack of knowledge or training (75.0%). No significant differences were observed between H-EPC and L-EPC Participants.

The majority of Survey Participants believed barriers to GPs providing nutrition advice were a lack of time (89.7%) and knowledge or training (74.7%), followed by GPs viewing nutrition as unimportant (41.4%). One-third believed a lack of: interest (33.3%), counselling skills or experience (32.2%) and resources (28.7%) were barriers.

Table 6-6 Perceived barriers to GPs providing nutrition advice reported by Interview and Survey Participants

	Interview Participants (n=52)		Survey Participants (n=89)	
	n	(%)	n	(%)
Lack of time[(a)]	40	(76.9)	78	(89.7)
Lack of knowledge/training[(a)]	39	(75.0)	65	(74.7)
View nutrition as unimportant[(a)]	0	(0.0)	36	(41.4)
Lack of interest[(a)]	4	(7.7)	29	(33.3)
Lack of counselling skills/experience[(a)]	5	(9.6)	28	(32.2)
Lack of resources[(a)]	1	(1.9)	25	(28.7)
Lack of confidence[(a)]	2	(3.8)	20	(23.0)
Lack of reimbursement[(a)]	0	(0.0)	15	(17.2)
Patient's lack of interest[(a)]	0	(0.0)	13	(14.9)
Provide inaccurate information	1	(1.9)	3	(3.4)
Competing priorities	4	(7.7)	2	(2.3)
Inability to individualise information	1	(1.9)	2	(2.3)
Personal bias	2	(3.8)	0	(0.0)
Favouring medications	2	(3.8)	0	(0.0)

[(a)] Options were provided in tick-box format for Survey Participants. No prompting provided for Interview Participants

Note:

- The following were each provided by n=1 Interview Participant: lack of empathy; lack of follow-up; and lack of understanding of complexity of nutrition issues;
- The following were each provided by n=1 Survey Participant: lack of awareness of role of nutrition in conditions and not asked by patient.

Summary

The majority of Interview and Survey Participants believed GPs had a role in providing basic nutrition advice. H-EPC Participants were more likely to have believed this than L-EPC. Very few dietetics professionals believed nutrition advice provided by GPs was completely effective. Dietetics professionals viewed lack of time and knowledge to be the greatest barriers to GPs providing nutrition advice.

6.4.3PNs' provision of nutrition advice – PNs' views

The majority of PNs reported to provide both verbal and written advice at baseline and follow-up (n=7), with the remainder most often only providing verbal advice (baseline n=5; follow-up n=3). On average, PNs reported spending more time discussing nutrition after training. At baseline, when nutrition was discussed, the majority reported spending 5-10 minutes (n=7), followed by 1-5 minutes (n=5). At follow-up, half spent 5-10 minutes, followed by 10-20 minutes (n=3) and 1-5 minutes (n=2).

Table 6-7 outlines PN Study Participants' views on dietary advice at baseline and follow-up. PNs were most likely to agree that:

- 'Diet changes influence patient health outcomes';
- They 'require more nutrition information to effectively provide nutrition advice'; and
- 'Nutrition counselling will lead to changes in patient dietary behaviour'.

After Lifescripts© training and implementation, PNs were slightly more likely to report they have the knowledge to provide nutrition counselling (mean: 3.3 vs 3.6; median: 3.5 vs. 4.0). It was anticipated that Lifescripts© training would have increased PNs' belief in their skills and confidence to provide nutrition counselling, however instead marginal decreases occurred. While those reporting to have and use appropriate resources to provide nutrition advice increased slightly, it was expected that this would be greater. Those believing that dietary assessment and counselling is a role of PNs decreased slightly. While the number of PNs reporting to require more nutrition information to effectively provide nutrition advice did decrease, this was still high. Presumably after receiving Lifescripts© and the training they should have been more equipped to provide nutrition advice. There was no change in those reporting to have enough time to provide nutrition advice with PNs tending to be on the disagree side of neutral.

Table 6-7 PN Study Participants' views on dietary advice at baseline and follow-up

	Baseline (n=12)		Follow-up (n=10)	
	Mean	Median	Mean	Median
I believe that dietary assessment and counselling is a role of PNs	3.9	4.0	3.8	3.5
I have the knowledge to provide nutrition counselling	3.3	3.5	3.6	4.0
I have the skills to provide nutrition counselling	3.3	3.5	3.3	3.0
I have the confidence to provide nutrition counselling	3.5	4.0	3.4	3.5
I have the experience to provide nutrition counselling	2.9	3.5	3.3	3.5
I believe that nutrition counselling will lead to changes in patient dietary behaviour	4.0	4.0	4.3	4.0
I believe that diet changes influence patient health outcomes	4.8	5.0	4.4	4.5
I find I have enough time to provide nutrition advice	2.8	2.5	2.7	2.5
I have appropriate resources available to me to allow me to provide nutrition advice	2.8	3.0	3.2	3.0
I use available resources to provide nutrition advice	3.8	4.0	4.0	4.0
I use reminders in medical notes to prompt me to provide appropriate nutrition advice	2.7	2.5	2.9	2.5
I require more nutrition information to effectively provide nutrition advice	4.5	4.5	4.0	4.0

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

Two of the twelve PN Study Participants had attended further nutrition training during the previous year at baseline and n=3/10 at follow-up, excluding Lifescripts© training (Table 6-8). All of these believed training changed their nutrition counselling practices.

Table 6-8 PN Study Participants' nutrition training at baseline and follow-up

	Baseline (n=12)			Follow-up (n=10)		
	Yes	No	missing /NA	Yes	No	missing /NA
Have you attended any further training in nutrition during the previous year	2	10		3	7	
Do you believe this has changed your nutrition counselling practices and attitudes	2	0	10	3		7

Summary

On average, PNs reported spending longer discussing nutrition at follow-up. Lifescripts© training did not have the expected impact on PNs view of many factors associated with providing nutrition advice.

6.4.4 PNs' provision of nutrition advice - dietetics professionals' views

Interview and Survey Participants' belief as to whether PN have adequate nutrition training and knowledge to provide brief advice is shown in Table 6-9. The majority of Interview Participants did not think that PNs had adequate nutrition training and knowledge to provide brief advice (59.6%). While 17.3% believed they did, an additional 19.2% believed that it depended on the PN or situation. No significant differences were observed between H-EPC and L-EPC Participants. The majority of Survey Participants did not think that PNs had adequate nutrition training (83.9%) or knowledge (79.1%) to provide brief advice.

Many participants believed that the nutrition information of PNs tends to be from poor sources and is outdated:

> [I] do not actually believe they can keep up to date with it as they should. A lot of their information is outdated, misguided from media, information they have gleaned. And a lot of is sometimes hearsay and anecdotal either from clients or other sources. (Interview 29)

It was reported that PN would require additional training before their knowledge could be considered adequate as nutrition training in nursing is minimal. 'Not without more training first. I used to be a nurse and the amount of nutrition training we did is very minimal' (Interview 16). However it was also indentified that while nurses 'could benefit from more nutrition training... [they are] better placed than GPs' (Interview 7). It was also believed to be dependent on the PNs' interest in nutrition: 'I think it is very specific to the PN themselves regardless of their training... it is probably the ones that are really interested that can do it well (Interview 18).

Those that believed they do not have a role attributed this to information they have heard PNs providing: 'I have heard some very dodgy things said by PNs so I think they certainly do not have adequate nutrition knowledge. I think in general I would say no' (Interview 12). Some dietetics professionals believed that brief advice is not beneficial in nutrition:

> Brief advice is not really workable for our field as we are talking about assessment... counselling... and finding out from the diet history then give a detailed ongoing support and advice for nutrition and dietetic aspects. So I do not think it's really appropriate for nurses to do that. (Interview 10)

Table 6-9 Interview and Survey Participants' belief as to whether PN have adequate nutrition training and knowledge to provide brief advice

	Interview Participants training and knowledge		Survey Participants training		Survey Participants knowledge	
	n	(%)	n	(%)	n	(%)
Yes	9	(17.3)	7	(8.0)	8	(9.3)
No	31	(59.6)	73	(83.9)	68	(79.1)
Depends on PN/situation	10	(19.2)	4	(4.6)	7	(8.1)
Unsure	2	(3.8)	3	(3.4)	3	(3.5)
Total	52	(100.0)	[(a)]87	(100.0)	[(b)]86	(100.0)

[(a)] Missing data for n=3 Survey Participants
[(b)] Missing data for n=4 Survey Participants
Note: Interview Participants were asked about training and knowledge in the one question, while Survey Participants were asked about them separately.

Table 6-10 indicates Interview and Survey Participants' opinions of whether with adequate training PNs' have a role in providing brief nutrition advice. Three-quarters (76.9%) of Interview Participants thought that with adequate training PNs had a role in providing brief nutrition advice, with 23.1% of these specifying that they do have a role but should still refer, while 19.2% believed that they had no role. Just under two-thirds (64.4%) of Survey Participants thought PNs had a role in providing brief nutrition advice, while 31.0% believed they did not.

Table 6-10 Interview and Survey Participants' opinions of whether, with adequate training, PNs' have a role in providing brief nutrition advice

	Interview Participants		Survey Participants	
	n	(%)	n	(%)
Yes[(a)]	28	(53.8)	54	(62.1)
Yes but should still refer	12	(23.1)	2	(2.3)
If specialising	1	(1.9)	0	(0.0)
Should provide handouts	1	(1.9)	0	(0.0)
No[(a)]	10	(19.2)	27	(31.0)
Reinforcing messages from dietetics professional	0	(0.0)	1	(1.1)
Will need ongoing training	0	(0.0)	1	(1.1)
Act as motivators	0	(0.0)	1	(1.1)
Not sure	0	(0.0)	1	(1.1)
Total	52	(100.0)	87	(100.0)

[(a)] 'Yes' and 'No' were the only options provided for Survey Participants

Reasons why Interview and Survey Participants believed PNs do or do not have a role in providing brief nutrition advice is outlined in Table 6-11. One-quarter of Interview Participants believed they should provide initial advice and refer on (26.9%). An additional 13.5% supported them providing basic advice and 11.5% reinforcing messages provided by the dietetics professional. The benefit of PNs providing advice was acknowledged as 'it can help to encourage those positive nutrition messages; just reinforcing things or getting the ball rolling' (Interview 25). However it was emphasised that this should not replace dietetics professional referral: 'As long as promote and accept that it is brief advice and that people should still access an APD (Interview 33).

Interview Participants also supported the role of PNs in providing nutrition advice as they are a first port of call (13.5%) and are accessible/have frequent contact with patients (11.5%). 'They're in a primary care setting so often they're a good first point of contact with a broader range of people who may not necessarily access other specialist service' (Interview 17). Many dietetics professionals emphasised that they should provide brief advice but that this should not replace dietetics professional referral. 'It can help to encourage those positive nutrition messages; just reinforcing things or getting the ball rolling' (Interview 25). However the importance of adequate training was stressed by many.

Those who did not believe PNs had a role in providing nutrition advice believed that brief training is not adequate (7.7%) and for PNs to be 'adequately trained' they would have to be a dietetics professional/nutritionist.

> My opinion of adequate training would be that they would probably need to be at least a nutritionist if not a dietetics professional to be providing individualised advice anyway. To do anything individualised I think they should be referring to a dietetics professional. (Interview 4)

It was also felt that they have inaccurate/non evidenced based advice (7.7%), as well as a lack of time (7.7%). Some also expressed that it was 'a dietetics professional's role' (5.8%) (Interview 34). 'Why would they [provide advice] when they can just refer to a dietetics professional' (Interview 5). There was also the fear that it would replace dietetics professional referral:

> My concern would be that GPs would think that was sufficient and not understand the difference between brief nutrition advice and medical nutrition therapy. (Interview 35).

When asked if PNs have a role in providing brief nutrition advice provided they have adequate training H-EPC were more likely to report that PNs need more than just training, they would require counselling experience/skills (11.1% vs. 0.0%). No other differences were observed.

Table 6-11 Reasons reported by Interview and Survey Participants' as to why PNs do/do not have a role in providing brief nutrition advice

	H-EPC Interview Participants [(a)]		L-EPC Interview Participants [(a)]		Total Interview Participants	
PNs have a role	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
Should provide initial basic advice and refer	3	(16.7)	11	(29.7)	14	(26.9)
Brief/basic (without mention of referral)	1	(5.6)	6	(16.2)	7	(13.5)
First port of call	3	(16.7)	5	(13.5)	7	(13.5)
Accessible/frequent contact	3	(16.7)	3	(8.1)	6	(11.5)
Reinforce message/advocate for nutrition	2	(11.1)	5	(13.5)	6	(11.5)
Handouts/samples	1	(5.6)	4	(10.8)	5	(9.6)
Not all patients will see dietetics professional	1	(5.6)	3	(8.1)	4	(7.7)
It will help patients/lead to change	1	(5.6)	3	(8.1)	4	(7.7)
If specialised	1	(5.6)	2	(5.4)	3	(5.8)
More time than GPs	1	(5.6)	2	(5.4)	3	(5.8)
Often do referring/care plans	1	(5.6)	1	(2.7)	2	(3.8)
If only minor issue	1	(5.6)	1	(2.7)	2	(3.8)
If do not add own interpretation	0	(0.0)	2	(5.4)	2	(3.8)
PNs do not have a role	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
Brief training not adequate/what is adequate training	1	(5.6)	3	(8.1)	4	(7.7)
Inaccurate/non evidenced based advice	1	(5.6)	3	(8.1)	4	(7.7)
Lack of time	2	(11.1)	2	(5.4)	4	(7.7)
Dietetics professionals' role/should refer	0	(0.0)	3	(8.1)	3	(5.8)
Less likely to see dietetics professional/role of dietetics professional overshadowed	2	(11.1)	1	(2.7)	2	(3.8)
Would require counselling experience/skills	2	(11.1)	0	(0.0)	2	(3.8)

[(a)] Interview Participants have been divided into those from divisions providing high number of dietetics professional EPC consultations (H-EPC) and a low number (L-EPC)

[(b)] Significant difference between H-EPC and L-EPC ($p \leq 0.05$)

Note: the following reasons why they have a role were each provided by n=1 Interview Participant: nurses like to help people; take pressure off GPs; less cost barrier; not enough dietetics professionals; good rapport/trusted; and as long not overshadowing role of dietetics professional.

Summary

The majority of Interview and Survey Participants believed that PNs had a role in delivering nutrition advice provided they have adequate training. Emphasis was given to them providing brief advice followed by dietetics professional referral.

6.4.5 Advice from GPs compared to PNs – Patients' views

Two-thirds of GP Patients (n=2/3) and one-third of PN Patients (n=3/9) reported that they would be more likely to change their behaviour if it was recommended by their GP rather than the PN. Reasons provided for this were that:

- GPs were more qualified;
- While they trust PNs, if they had to take drastic action would be more likely to listen to GP; and
- The good relationship with the GP that had been established. 'My GP and I have a very good relationship. I listen to her' (Patient PN501-04).

Reasons in favour of PNs were the increased approachability, understanding and comfort felt: 'In some ways I feel a nurse could be more approachable and understanding' (Patient PN201-01). 'I feel more comfortable talking to the nurse than my GP' (Patient PN502-14). Participants who were neutral trusted the PNs as they trust GPs. 'If my GP trusts the PN to advise me then I am prepared to trust her too' (Patient PN301-03).

6.4.6 GPs' awareness and use of Lifescripts©

While Lifescripts© were first released in 2005, only 1/11 GP participants had heard about Lifescripts© prior to 2007; 4/11 had not heard of them prior to the study. GPs reported to have first heard about Lifescripts© when Lifescripts© resources arrived at the surgery or at a surgery visit (n=5), via television and a colleague (n=1), and in the Medical observer (n=1). Prior to the study no control GPs had used Lifescripts©; one reported a nurse from their practice had used them. Mixed responses were received

from control participants for whether their practice had begun implementing, despite working in the same practice.

Intervention GPs distributed 20 Lifescripts© packages during the four month time frame (mean=5; median=6; range: 0-8). Four of these packages were returned by patients (20% response rate); two consented to a telephone Interview. Lack of time, poor understanding of Lifescripts©, lack of interest by patients, and competing priorities were identified by GPs as reasons for not providing Lifescripts©.

GPs reported that they would be most likely to provide a patient with 'nutrition' or 'weight management' Lifescripts© when discussing a clinical issue relating the lifestyle such as weight/obese (n=2), high lipids (n=2), diabetes (n=2), ischemic heart disease (n=1), hypertension (n=1), and arthritis (n=1); or during a health check-up (n=1) or care plan (n=1). The number of scripts GPs reported to provide was higher than that reflected by study packages, with nutrition and weight management scripts ranging from less than one of each per week to 5-10 combined per week.

Intervention GPs' opinions of Lifescripts© at follow-up are detailed in Table 6-12. GPs had varying opinions as to whether Lifescripts© were effective (agree=2; neutral=1; disagree=1), however overall they were neutral (mean=3.3; median=3.5, where 1=strongly disagree; 5=strongly agree). Overall GPs agreed Lifescripts© were easy to use, improved nutrition knowledge, made providing nutrition advice easier and that they were planning on using Lifescripts© in the future (mean=3.5; median=4).

Table 6-12 Intervention GPs' opinions of Lifescripts© at follow-up (n=4)

	Mean	Median
I have a good understanding of Lifescripts©	3.3	3.5
I believe Lifescripts© are effective	3.3	3.5
Lifescripts© have been beneficial to my practice	3.5	3.5
I do not think my patients have benefited from Lifescripts©	2.3	2.5
I find Lifescripts© easy to use	3.5	4.0
Lifescripts© have improved my nutrition knowledge	3.5	4.0
The use of Lifescripts© makes providing nutrition advice easier	3.5	4.0
Lifescripts© have increased my confidence in providing nutrition advice	3.3	3.5
I require more nutrition information to effectively provide nutrition advice	3.3	3.0
I am not confident to effectively use Lifescripts© to provide nutrition advice	2.8	2.5
I would find it beneficial to have a dietetics professional promoting Lifescripts©	3.5	3.5
I am planning on using Lifescripts© in my practice in the future	3.5	4.0

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

Lifescripts© were reported to be effective because patients like having items of paper to take with them and refer to, and beneficial as they prompt a discussion of lifestyle issues. Inability to implement them was reported as a reason they were not beneficial. Those that were unsure of the benefit of Lifescripts© had not used them enough to see a change (n=1) or were not sure if patients use them or throw them away (n=1).

The main barrier to using Lifescripts© reported by intervention GPs was the time it takes to use them (n=3). Being too busy and forgetting to use them, a lack of understanding of them, uncertainty of patients' interest in them and when attempting to have patients complete assessment forms at home they forget to bring them back, were all reported by individual participant. Longer consultation times and more training were suggested as ways of overcoming these barriers. Lack of time was the greatest perceived barrier to GPs implementing Lifescripts© reported by PNs (n=8).

A reason reported by one GP for using them in the future was that 'they are a great resource limited mainly by the time that it takes to discuss them'. That they had not been found to be effective so far was a reason for not using them.

Summary

GP awareness and use of Lifescripts© prior to the study was poor. Provision of Lifescripts© by intervention GPs was low. While GPs were positive towards several aspects of Lifescripts©, time was identified as the main barrier to implementing Lifescripts©.

6.4.7PNs' awareness and use of Lifescripts©

All PNs had heard of Lifescripts© prior to the study. The majority had first heard about Lifescripts© in 2006 (n=8) (early 2007 n=1; missing n=3). Most first heard through HUDGP (n=11/12). One-third agreed they had a good understanding of Lifescripts© at baseline, another third were neutral (disagree n=3; missing n=1). Half of participants (n=6) claimed to have partially implemented Lifescripts© at baseline with another four planning on implementing them (already implemented n=1; not planning to implement n=1). Those partially implementing them had done so with their '45-59

Health Check' and 'Diabetes Annual Cycle of Care'; however it was unclear how many participants interpreted this to mean discussing lifestyle factors rather than using the actual Lifescripts© resources.

At baseline, the PNs identified barriers to implementing Lifescripts©, including: lack of knowledge of how to implement (n=5), forgetting to use them (n=4), and lack of time (n=3). Prescription formats of the pads, PN's feelings of inadequacy, competing priorities, patient barriers, and the use of other resources for discussing lifestyle issues were each identified by n=1 PN.

The PNs distributed Lifescripts© to 57 patients (mean: 5.2; median: 4; range: 0-17), with 52 receiving packages (mean: 4.7; median: 4; 17% response rate). Table 6-13 outlines the number and per cent of total Lifescripts© provided by PN Study Participants. Of the total 115 Lifescripts© that were distributed by PNs, physical activity accounted for 38 (33%), weight management 33 (29%), nutrition 28 (24%), smoking 11 (10%) and alcohol five (4%), with an average of 1.6 scripts per person. The majority of Lifescripts© were provided during women's health checks (16; 28%; n=1 PN), Diabetes checks (15; 26%; n=5 PNs) and 45-49 health checks (13; 23%; n=5 PNs). GP referral was given as a reason for providing Lifescripts© for n=5/57 occasions; 'other' reasons were: weight management (n=2), injections (n=2), Care Plan (n=1), immunisation (n=1), spirometry (n=1), blood tests (n=1) and PN initiated due to smoking status (n=1).

The majority of PNs reported to provide one or less nutrition prescription and weight management prescription weekly (n=6); [1-2 (n=1), 2-3 (n=1), 3-4 (n=1), 12 (n=1)].

Table 6-13 Number and per cent of total Lifescripts© provided by PN Study Participants (n=11)

	PN scripts given	
	n	**(%)**
Nutrition	28	(24.3)
Weight management	33	(28.7)
Physical activity	38	(33.0)
Smoking	11	(9.6)
Alcohol	5	(4.3)
Total	115	(100.0)

PN Study Participants' views of Lifescripts© at follow-up are presented in Table 6-14. PNs tended to agree that they had a good understanding of Lifescripts©, they found Lifescripts© easy to use, and they made providing nutrition advice easier, and increased confidence in providing nutrition advice. PNs were not convinced Lifescripts© were effective (mean/median= 3.5/3.5), beneficial to their practice (mean/median=3.4/3.5) or that Lifescripts© improved their nutrition knowledge (3.3/3.0). While PNs reported that they planned to use Lifescripts© in the future, their responses were not strong (3.5/4.0).

Reasons Lifescripts© were reported to be beneficial by PNs were that patients like having something to take with them, it provides some good ideas and they 'prompt people to assess their own needs and discuss these with the nurse or doctor' (PN702). It was also reported that 'patients who have undertaken advice given regarding lifestyle changes have shown significant weight reduction, improvement in blood results and outcomes' (PN1001). However, 'they are effective only for those that are ready to make changes in their life habits as it is making them accountable to themselves and the nurse as they agree on the changes they can make' (PN301), and 'unfortunately patients are not always as enthusiastic as it requires effort, changes and commitment by them - not able to happen in a 'pill'!' (PN501).

Those who believed Lifescripts© were beneficial attributed the benefit to positive patient outcomes, prompting to discuss lifestyle issues, the provision of standard advice, and 'at the very least they are a starting point for people' (PN701). Those that were unsure of the benefit of Lifescripts© had not used them enough to see a change or were not sure if patients use them or throw them away. Inability to provide Lifescripts© was reported as a reason they were not beneficial.

After Lifescripts© training, time was identified as the biggest barrier to PNs implementing Lifescripts© (n=7), with Lifescripts© not being the 'one-minute message' that they were designed to be. Remembering to use them was also an issue (n=2), as was patient reluctance (n=2), lack of reimbursement (n=1), level of detail insufficient (n=1), inadequate knowledge and confidence (n=1), competing priorities during appointment (n=1). PNs suggested similar barriers to GPs using Lifescripts©, including

the time taken to understand and use the tools, remembering to use them, lack of reimbursement, and not seeing it as their role.

Strategies suggested by PNs for overcoming these barriers varied, including: reimbursement (n=1), having a dietetics professional located in surgery (n=1), providing review appointment to follow up the problem or frequent regular short appointments with patients to discuss progress and assess outcomes to improve motivation and provide more time (n=2), initiation of Lifescripts© by PN with GP being aware of this and following up (n=1), providing Lifescripts© prescription information to take home to read (n=1), education (n=1) and getting into the habit of using Lifescripts© (n=1).

Reasons PNs gave for using Lifescripts© in future were that it is convenient when appropriate (n=1), allows patients to realise their problems, is brief and succinct (n=2), can be used to build knowledge (n=1), reinforces information given (n=1), sets an agreement for the patient to do something (n=1), provides a good framework (n=1), and can be incorporated easily (n=1). However one PN Participant reported that 'it is impossible time wise to follow up clients or to provide Lifescript prescriptions to the standard I would like' (PN502).

Those who were unsure whether they would use Lifescripts© in the future found them to be time consuming (n=1), were already assessing similar things with different tools (n=1), or did not do specific health checks for which they reported they may be more useful (n=1). The only PN who was not planning on using Lifescripts© in the future was not continuing in general practice.

Table 6-14 PN Study Participants' responses to questionnaires relating to Lifescripts© at follow-up

	PN Participants (n=10)	
	Mean	**Median**
I have a good understanding of Lifescripts©	4.0	4.0
I believe Lifescripts© are effective	3.5	3.5
Lifescripts© have been beneficial to my practice	3.4	3.5
I do not think my patients have benefited from Lifescripts©	2.5	2.5
I find Lifescripts© easy to use	3.8	4.0
Lifescripts© have improved my nutrition knowledge	3.3	3.0
The use of Lifescripts© makes providing nutrition advice easier	3.9	4.0
Lifescripts© have increased my confidence in providing nutrition advice	3.7	4.0
I require more nutrition information to effectively provide nutrition advice	3.8	4.0
I am not confident to effectively use Lifescripts© to provide nutrition advice	2.7	2.5
I would find it beneficial to have a dietetics professional promoting Lifescripts©	3.3	3.5
I am planning on using Lifescripts© in my practice in the future	3.5	4.0

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

Summary

All PNs had heard of Lifescripts© prior to the study. Many barriers to implementing Lifescripts© were identified. Overall, the provision of Lifescripts© by PNs was low. Diabetes checks and the '45-49 health checks' were used by the most PNs to distribute Lifescripts©. Nutrition and weight management accounted for 24% and 29% of the scripts provided respectively.

6.4.8 Dietetics professionals' awareness and views of Lifescripts© - Survey Participants

The time since Survey Participants first heard of Lifescripts© is detailed in Table 6-16. Less than half of Survey Participants had heard of Lifescripts© prior to the Online Survey (n=35/78; 44.8%); however many participants did not answer questions in this Section. The majority of people reported having heard about them either between one month and one year ago (25.6%) or one and two years ago (37.2%) (Table 6-15). Approximately one-quarter (n=9/35) indicated they had heard of them three or more years prior, before they were published.

Table 6-15 Survey Participants' reported time between first hearing of Lifescripts© and conducting the Online Survey

	Survey Participants	
	n	%
<1 month	2	(5.7)
1 month- <1 year	9	(25.7)
1 year-<2 years	13	(37.1)
2-<3 years	2	(5.7)
3 years-<4 years	2	(5.7)
4 years-<5 years	2	(5.7)
5 years+	2	(5.7)
Unsure	3	(8.6)
TOTAL	[(a)]35	(100.0)

[(a)] Missing data for n=55 online Survey Participants

Participants most often heard of Lifescripts© through colleagues (40.0%) and DGPs (34.3%) (Table 6-16). Dietetics professionals reporting to work in a GP surgery did not have better awareness of Lifescripts©, with 38.3% of those working in a GP surgery having previously heard of Lifescripts© compared to 38.6% of those not working in a GP surgery.

Table 6-16 Survey Participants' reported method of hearing about Lifescripts©

	Survey Participants	
	n	(%)
Colleagues	14	(40.0)
Division of General Practice	12	(34.3)
Newsletters/promotional material	5	(14.3)
Dietetics professionals in PP Special Interest Group (DIPSIG)	2	(5.7)
Course	2	(5.7)

Note:

- Data only provided by n=35 online Survey Participants
- Cumulative total of >100% as respondents could provide more than one response
- The following were each provided by n=1 participant: involved in Lifescripts© development; from a referral; and university.

Table 6-17 shows Survey Participants' perceived understanding of Lifescripts© at the time of the Survey. The majority of participants reported their understanding of Lifescripts© was either extremely poor (50.0%) or poor (22.5%). Ten per cent reported good (7.5%) or excellent (2.5%) understanding of them. No significant differences were seen in Survey Participants' reported understanding of Lifescripts© based on location in a GP surgery.

Table 6-17 Survey Participants' understanding of Lifescripts© when completing the Online Survey

	Survey Participants	
	n	(%)
Extremely Poor	40	(50.0)
Poor	18	(22.5)
Average	14	(17.5)
Good	6	(7.5)
Excellent	2	(2.5)
TOTAL	[(a)]80	(100)

[(a)] Missing data for n=10 online Survey Participants

Dietetics professionals' views of the Weight Management Lifescript are presented in Table 6-19. Not all participants provided comment on this Lifescript (n=35-50 depending on factor). The majority thought they were 'average' in regard to quality of information (64.1%), depth of information (68.0%), layout (65.9%), usefulness for patients (65.3%), and usefulness for GPs (65.9%) and PNs (68.6%) (Table 6-18).

Table 6-18 Survey Participants' rating of the Weight Management Lifescript - 'poor' to 'excellent'

	Poor		Average		Excellent		TOTAL
	n	(%)	n	%	n	%	n
Content (quality of information)	3	(7.7)	25	(64.1)	11	(28.2)	39
Content (depth of information)	11	(22.0)	34	(68.0)	5	(10.0)	50
Layout	3	(7.3)	27	(65.9)	11	(26.8)	41
Usefulness for patients	11	(22.4)	32	(65.3)	6	(12.2)	49
Usefulness for GPs	5	(12.2)	27	(65.9)	9	(22.0)	41
Usefulness for PNs	3	(8.6)	24	(68.6)	8	(22.9)	35

Just under half of Survey Participants believed that Lifescripts© would be effective in the general practice setting (44.4%), another 42.0% were 'unsure' (Table 6-19).

Table 6-19 Survey Participants' views on whether or not Lifescripts© would be effective in the general practice setting

	Survey Participants	
	n	(%)
Yes	36	(44.4)
No	11	(13.6)
Unsure	34	(42.0)
TOTAL	[(a)]81	(100.0)

[(a)] Missing data for n=9 Survey Participants

The main reason dietetics professionals believed Lifescripts© may be effective for use by GPs and PNs was that they are quick, simple, standardised and/or reliable (14.3%) (Table 6-20). Reasons they were not thought to be effective were that:

- They are too brief or not individualised (19.0%);
- They take too much time to implement (16.7%);
- They may discourage referral to dietetics professionals (9.5%); or
- Patients already know the information but need help applying it (9.5%).

Table 6-20 Reasons for the effectiveness of Lifescripts© reported by Survey Participants

	Survey Participants	
Effective	**n**	**(%)**
Quick/simple/standardised/reliable	6	(14.3)
Guidance for referral	2	(4.8)
Prior to appointment	2	(4.8)
Increased credibility when from GP	2	(4.8)
Better than nothing/starting point	2	(4.8)
Not effective		
Too brief/not individualised	8	(19.0)
Time	7	(16.7)
May discourage referral	4	(9.5)
People know information and need help applying it	4	(9.5)
Depends on GP/condition/patient motivation	3	(7.1)
Just another piece of paper	3	(7.1)
Unsure if it would be used	3	(7.1)
Too much information for time/explanation	2	(4.8)
Not evaluated	2	(4.8)

Note:
- Data provided by n=42 online Survey Participants
- Cumulative total of >100% as respondents could provide more than one response
- The following reasons were provided by n=1 Survey Participant: good for those not requiring dietetics professional and confusing

Table 6-21 presents Survey Participants' perceived benefits of GPs and PNs using Lifescripts© with their patients. The four main benefits reported by Survey Participants were that Lifescripts©:

- Prompt health professional to deliver nutrition advice (68.8%);
- Provide patients with information to take home (62.5%);
- Are quick and easy (57.5%); and
- Provide standardised advice (53.8%).

Table 6-21 Survey Participants' reported benefits of GPs or PNs using Lifescripts©

	Survey Participants	
	n	(%)
Prompts health professional to deliver nutrition advice	55	(68.8)
Patient has information to take home	50	(62.5)
Quick and easy	46	(57.5)
Standardised advice	43	(53.8)
Simple to use	40	(50.0)
Increases delivery of lifestyle advice	38	(47.5)
Improved health outcomes	16	(20.0)

Note:
- Data provided by n=80 online Survey Participants
- Cumulative total of >100% as respondents could provide more than one response
- The following reasons were provided by n=1 Survey Participant: prompts referral to dietetics professional; discourages misinformation; good starting point for patients.

Survey Participants reported the top four disadvantages to GPs or PNs using Lifescripts© were that:

- It may replace referrals to dietetics professionals (73.5%);
- Advice provided is too brief or simplified (68.7%);
- It leads to an increase in workload (38.6%); and
- The time it takes to implement (32.5%) (Table 6-22).

Table 6-22 Disadvantages of GPs or PNs using Lifescripts© reported by Survey Participants

	Survey Participants	
	n	(%)
Replaces referrals to dietetics professionals	61	(73.5)
Advice provided is too brief/simplified	57	(68.7)
Increase to workload	32	(38.6)
Time to implement	27	(32.5)
Advice not individualised	13	(15.7)
Discounts need of dietetics professional	5	(6.0)
Does not consider behaviour change process	3	(3.6)

Note:
- Data provided by n=83 online Survey Participants
- Cumulative total of >100% as respondents could provide more than one response

Summary

Dietetics professionals' awareness and understanding of Lifescripts© was poor. After reviewing Lifescripts©, less than half believed they would be effective in general practice, with the majority ranking various aspects of the weight management Lifescript as average. The main reason Lifescripts© were thought to be effective was

that they were quick, simple, standardised and/or reliable. Lifescripts© being too brief/not individualised and time were the primary reasons PP dietetics professionals believed they would not be effective. Lifescripts© prompting health professionals to deliver nutrition advice was the main benefit and replacing dietetics professional referral the main barrier.

6.4.9Patients' views of Lifescripts©

Of the 13 patients who returned questionnaires, four received Lifescripts© from their GP while nine received them from a PN. Data for patients receiving Lifescripts© from both GPs and PNs will be addressed together to increase numbers and avoid repetition. Table 6-23 details the number of each of the Lifescripts© provided by GPs and PNs, indicating the percentage of patients receiving that script as well as the percentage of total scripts. Nine weight management scripts were provided, five physical activity, four nutrition and three smoking scripts. No alcohol Lifescripts© were given. GPs provided a greater percentage of nutrition and weight management scripts, while PNs provided more physical activity and smoking. Seven patients were initially given Lifescripts© by the PN, one by receptionist to fill out in the waiting room prior to seeing the PN, four by the GP and one by the PN at the GPs' request. A similar proportion of GP and PN Patients returned questionnaires, with n=4/20 GP Patients (20.0%) and n=9/52 PN Patients (17.3%).

Patient Telephone Interview Participants often did not remember which scripts they had been given without referring back to the actual Lifescripts©. Six of the respondents indicated they had been provided with specific recommendations on the Lifescripts©, with one person unable to remember. Overall, Patient Participants felt that the specific recommendations helped.

Table 6-23 Lifescripts© received by General Practice Patients completing questionnaires

	GP Patients (n=4)			PN Patients (n=9)			Total Patients (n=13)		
	n	% of GP Patients	% of scripts	n	% of PN Patients	% of scripts	n	% of patients	% of scripts
Nutrition	2	(50.0)	(28.6)	2	(22.2)	(14.3)	4	(30.8)	(19.0)
Weight management	4	(100.0)	(57.1)	5	(55.6)	(35.7)	9	(69.2)	(42.9)
Physical activity	1	(25.0)	(14.3)	4	(44.4)	(28.6)	5	(38.5)	(23.8)
Smoking	0	(0.0)	(0.0)	3	(33.3)	(21.4)	3	(23.1)	(14.3)
Alcohol	0	(0.0)	(0.0)	0	(0.0)	(0.0)	0	(0.0)	(0.0)
Total	7	[(a)](175.0)	(100.0)	14	[(a)](155.6)	(100.0)	21	(161.5)	(100.0)

Note: Patients may have received more than one Lifescripts©, therefore ≠ 100%

Patient Participants' opinions of Lifescripts© are shown in Table 6-24. Respondents were favourable towards Lifescripts©, with all reporting finding them helpful. Overall, patients thought that the Lifescripts© encouraged them to make changes (n=11/13), were easy to understand (n=9), were useful (n=8), easy to read (n=8), practical (n=6), relevant (n=4) and were a good size (n=1). No participant reported that Lifescripts© did not teach them anything new, had too much detail, were not relevant to them, or that the information was too basic.

Patient Participants' reported Lifescripts© to be helpful as they provided motivation and accountability for behaviour change, especially via the encouragement and support offered by the PN: 'the sister's encouragement and interest in my wellbeing and the changes I am making' (Patient Questionnaire PN301-02). They also acted as a reminder as the information was able to be referred back to, and provided realistic changes. Only one participant thought something could be done to improve Lifescripts©, requesting more information.

All respondents had considered making changes prior to receiving Lifescripts© (Table 6-24). Eleven had reported making changes by the time they completed the questionnaire. While they were already planning to change, having the GP or PN discuss it provided the motivation and prompted action. Patient Participants felt that Lifescripts© made it easy to make the changes as they provided recommendations; and placing the script in a visual place provided a continual reminder. The 'prescription format' was also reported to be helpful, as indicated by the following quote: 'it's as though the Dr. is controlling my eating' (patient questionnaire PN401-07). While it was felt that the Lifescripts© materials were helpful, the main driver for change appeared to be the interaction with the GP or PN. Respondents felt as though they had support for behaviour change, with one respondent commenting that because the nurse had made the effort to help her she felt that she would be letting her down if she did not change. All those participating in the telephone Interview had made changes; however many still had more changes to make.

Most Patient Participants felt they did not need additional information to what they had already received (n=10) (Table 6-24). Two Patients felt additional support would be

beneficial. Eleven were planning to go back and visit a GP or PN regarding Lifescripts©.

Summary

Patients were favourable towards Lifescripts©. While the majority had made lifestyle changes, they had contemplated making changes prior to receiving Lifescripts©. The support and motivation provided by Lifescripts© was believed to be important, rather than content only.

Table 6-24 Patient Participants' experiences and views of Lifescripts©

	GP Patients (n=4)			PN Patients (n=9)				TOTAL Patients (n=13)			
	Yes	Unsure	No	Yes	Unsure	No	Missing	Yes	Unsure	No	Missing
Did you find the Lifescript/s helpful?	4			9				13			
Were you given specific recommendations?	4			9				13			
Have you made any changes suggested by the Lifescript/s?	4			7	2[(a)]			11	2[(a)]		
Are you planning to go back and see your GP/PN about the Lifescripts©?	4			7	1	1		11	1	1	
Do you need additional information to be able to make a change?		2	2	1		7	1	1	2	9	1
Do you need additional support to be able to make a change?		2	2	2	2	4	1	2	4	6	1
Had you considered making any changes prior to receiving a Lifescript?	4	-		9	-			13	-		

[(a)] Not yet

6.5 Discussion

This chapter intended to ascertain the role of GPs and PNs in providing nutrition advice and the efficacy of this advice. The opinions of GPs, PNs, dietetics professionals and patients on the provision of nutrition advice by GPs and PNs were evaluated.

There was little difference between the GP and PN opinions at baseline. Overall, between GPs and PNs there was strong agreement on the role of diet in influencing patient health outcomes and that nutrition counselling will lead to changes in patient dietary behaviour. This opinion may have been influenced by acceptability bias. This is consistent with the literature, which shows that on average GPs' rated the role of nutrition in health as 7.51 out of 10 (55% believed fairy important; 42% very important) (van Dillen & Hiddink, 2008). GPs were more likely to agree that dietary assessment and counselling were part of their role than PNs, likely due to GPs' belief that all activities that can be conducted in general practice are part of their role, while the role of PNs is less well defined.

At baseline, the Intervention GPs were less likely than PNs to believe that they had the skills and confidence to provide nutrition counselling. PNs may have felt more comfortable and equipped to counsel due to their supportive role. Steptoe *et al.* (1999) also found that PNs were more likely than GPs to believe they could be effective in providing lifestyle counselling, while Ammerman *et al.* (1993) found 95% of GPs in their study lacked confidence to assist patients in making substantial changes in their diet. The majority of dietetics professionals believed that GPs have a role in providing brief nutrition advice; however, it was emphasised that this should be basic advice and cannot take the place of dietetics professionals. GPs' position as the first point of contact to the health system was mentioned by many dietetics professionals as a reason why GPs have a role. The literature clearly identifies that GPs are gatekeepers to the health system (Bonevski, et al., 1996; The Royal Australian College of General Practitioners, 1998), with patients frequently accessing their GP (Britt, et al., 2005). This allows GPs to identify patients with nutrition related risk factors or conditions, provide

initial advice, and refer on to other health professionals when required (American Dietetic Association, 1998; Bonevski, et al., 1996).

While GPs have a key role in referring to dietetics professionals, many patients will not go beyond their GP. Allied Health Professions Australia (2008) encouraged the availability of direct access to AHPs 'where appropriate'. This will not only improve the public's access to Medicare funded dietetics professionals, it will also reduce the time GPs need to spend on referral. However, even if direct access was possible, it does not overcome the barrier of patient willingness to consult an AHP, nor does it acknowledge the necessary role of GPs in raising nutrition awareness amongst patients. Key to this role is that of reinforcing the nutrition messages provided by themselves and dietetics professionals. Frequent contact with patients gives GPs numerous opportunities to discuss nutrition, reinforce nutrition messages (Truswell, et al., 2003) and support long term maintenance of dietary change (Bonevski, et al., 1996).

Dietetics professionals' views of the role of PNs in delivering nutrition advice were less clear. The literature suggests the role of PNs in general practice is expanding in terms of delivering preventive activities (Atkin & Lunt, 1996; Raftery, et al., 2005; Steptoe, et al., 1999), chronic disease management (Atkin & Lunt, 1996; Oldroyd, et al., 2003; Watts, et al., 2004) and advising patients about dietary behaviours (Britt, et al., 2007; Brotons, et al., 2003; Pineiro, et al., 2005). However, the majority of both Interview and Survey Participants did not believe PNs had adequate nutrition training and knowledge to provide even brief nutrition advice. While it was recognised that the level of knowledge is often dependent on the PN, with specialist nurses or those with a particular interest in the area being more equipped, overall nurse training included minimal nutrition information.

Dietetics professionals did believe that with adequate training PNs had a role in providing brief nutrition advice. However, as with GPs, there is a need for key referral pathways to dietetics professionals. It was recognised by dietetics professionals that in general practice, PNs also have a role as the first point of contact in the health system, having access to, and frequent contact with, patients. This allows them to advocated for good nutrition and reinforce nutrition messages. The role of PNs as identified by

dietetics professionals in this study matches the recommendations by Brauer *et al.* (2006) and the American Dietetic Association (1998), outlining that it is the role of GPs and PNs to screen for nutrition-related problems, provide basic advice, indentify willing patients and then refer these patients to dietetics professionals for counselling. Nutrition counselling should then be reinforced at subsequent visits with all health professionals.

The literature clearly shows that patients believe GPs have a high degree of nutrition expertise (Hiddink, et al., 1997a; Tan, et al., 2006; van Dillen, et al., 2006), are trusted (Macario, et al., 1998; Truswell, et al., 2003; Wiesemann, 1997) and are a sought after source of nutrition advice (Hiddink, et al., 1997a; Tan, et al., 2006). It also suggests that patients may be more satisfied with consultations delivered by PNs (Hegney, et al., 2006; Phillips, et al., 2009) due to them having better interpersonal skills than GPs (Atkin & Lunt, 1996; Phillips, et al., 2009). The literature also proposes that PNs may be better placed than GPs in delivering nutrition advice as PNs are possibly more persuasive with some patients (Harrison, et al., 2002; Phillips, et al., 2009). If PNs can provide lifestyle advice as effectively as GPs it will result in less cost to the health care system and reduce the burden on GPs. Therefore, the fact that the majority of Patients reported that they would be as likely to change behaviour if it was recommended by a PN opposed to a GP, is an interesting and novel finding. As shown in Section 3.10.1.5, Patient response rates to the questionnaire were similar from packages distributed by GPs (20.0%) and PNs (17.3%). This similar response rate may provide insight into the uptake of advice by GPs and PNs, as patients who would be more likely to apply advice by GPs would presumably also be more likely to participate in recommended studies. Additionally, it was reported that patients perceived PNs to be more approachable and understanding, and were more comfortable discussing these lifestyle factors with them. There is, however, going to be a subset of the population that will receive advice more readily from their GPs, as they perceive them to be more qualified or have established a good relationship and trust with them. However, overall it appears that PNs are a viable alternative to GPs in the delivery of nutrition advice in the general practice setting.

At baseline both GPs and PNs had limited faith in their knowledge and experience to provide nutrition counselling effectively. Both agreed they required more nutrition information to effectively provide nutrition advice. This is in line with the literature which identifies that generally GPs have a lack of training in nutrition (Bonevski, et al., 1996; Hiddink, et al., 1995; Kirby, et al., 1995; Lazarus, 1997; Moore, et al., 2003), as do PNs (Kyle, 1993; Watts, et al., 2004).

Overall, PNs were more likely than GPs to believe that they had sufficient time to provide nutrition advice, and were more likely to report spending additional time discussing nutrition, with the majority of PNs spending 5-10 minutes compared to 1-5 minutes for GPs. This result was expected, as GPs tend to provide shorter consultations than PNs and have less time for discussion. The literature identifies that a benefit of PNs providing nutrition advice is that they have more time to spend with patients (Atkin & Lunt, 1996; Harrison, et al., 2002; Phillips, et al., 2009). Kusher (1995) and Glanz *et al.* (1995) reported that when nutrition was discussed, the majority of GPs spent less than five minutes doing so. Eaton *et al.* (2002) reported the average time GPs spent discussion nutrition was one minute.

The majority of GP and PN Participants reported to most often have provided nutrition advice in the form of verbal and written information. This demonstrates that GPs and PNs do provide patients with targeted educational materials and use these to supplement their own knowledge as well as giving patients resources to take with them. It is also supported by the literature, indicating that 85% provided nutrition leaflets (Nicholas, et al., 2005). If GPs and PNs simply reinforce the messages provided in a high quality resource, benefits would be seen for patients.

Lifescripts© were designed to assist in the delivery of nutrition advice in general practice, providing 'one-minute messages' with brief nutrition recommendations, thus overcoming the previously mentioned barriers to providing nutrition advice. Awareness and use of Lifescripts© was evaluated in this chapter, as was the impact of these tools on GPs and PNs' nutrition related behaviours. This discussion compares GPs and PNs' responses, outlining the different impact Lifescripts© on Participants' opinions related to the provision of nutrition advice. The Commonwealth Government

has invested a substantial amount of money into developing these resources. Therefore it was unfortunate to see that GPs' awareness was very poor despite the roll-out being a couple of years prior, in 2005. While data is not representative, this suggests that more time and money were needed to be spent at the time of implementation on raising awareness of Lifescripts© amongst GPs. PNs had better awareness of Lifescripts©, which can be attributed to GP Access (HUDGP) PN training. Awareness of Lifescripts© among dietetics professionals was poor, with only 45% of Survey Participants reporting to have heard about Lifescripts© prior to the Survey. Lifescripts© were not targeted at dietetics professionals, therefore, it is to be expected that their awareness would be lower than GPs and PNs. One-quarter of Survey Participants indicated they had heard of Lifescripts© before they were published. This may be reflective of some Participants being involved in their development; however, due to this high number it is likely to show inaccuracy in reporting.

The similar number of Lifescripts© packages that were distributed by GPs and PNs during the four month time-frame contradicts initial expectations that PNs would be a more appropriate avenue to distribute Lifescripts© to general practice patients; especially since PNs received more frequent telephone contact. Theoretically, participants would have handed out more study packages if they used Lifescripts© as much as reported in the questionnaires; even the highest PN provider of Lifescripts© only distributed an average of one per week. However, reports may have been based on an ideal week. The part-time hours of the majority of participants would have influenced the number of scripts provided, similarly impacting GPs and PNs. Theoretically, study participants should have been more likely to use Lifescripts© than their colleagues, due to receiving Lifescripts© training and having their behaviour monitored. The contact with the researchers during the study period may have provided further prompting to use Lifescripts©. Anecdotally, members of GP Access perform well at this type of initiative as the division is highly regarded for its innovation and focus on health and resource gains (Australian General Practice Network, 2008). This low provision by GPs and PNs reflects the difficulty in implementing Lifescripts©.

PNs most often reported using Lifescripts© during Women's health checks, the 'Diabetes Annual Cycle of Care' and '45-49 Health Check'. The '75+ Health Check' was not utilised, with many PNs indicating that this was due to the patients not being appropriate due to their age. The difficulty many PNs reported that if they were not conducting these assessments they were unable to find an appropriate avenue to implement Lifescripts© with patients, or that Lifescripts© were not suited to their clientele.

GPs and PNs were positive towards Lifescripts©, with these being reported to overcome some of the barriers associated with providing nutrition advice by GPs and PNs. Lifescripts© are resources that assist in providing nutrition advice; prompting as to the questions to ask patients, with standard advice based on patients' responses. Ammerman *et al.* (1993) recommended that patient educational material should encourage communication between GPs and patients, providing specific, practical and realistic advice that allows the GPs to place their authority behind the recommendation without a great deal of nutrition knowledge. Theoretically, this is achieved in Lifescripts©. It is also beneficial for patients to have material to take with them from the consultation. At baseline, both GPs and PNs were neutral that they had appropriate resources to allow them to provide nutrition advice; however, they both agreed that they use the available resources. Lifescripts© training dramatically improved GPs' belief that they had appropriate resources, yet it did not have a large impact on PNs' responses. It is unclear why PNs did not feel that the Lifescripts© material provided them with adequate resources. It may have been the prescription format of the Lifescripts© that resulted in PNs not feeling that they were appropriate. In their project with community health staff, Laws *et al.* (2008) adapted Lifescripts© prescription forms into 'action plans' to encourage behaviour change. These were felt to be more suited for use by non-GP health professionals.

GPs and PNs equally agreed that Lifescripts© were easy to use, made providing nutrition advice easier and that they were planning on continuing to use Lifescripts©. Both groups weakly agreed that Lifescripts© were effective, were beneficial to their practice and had benefited their patients. After the study both GPs and PNs were less

likely to disagree with having the experience to provide nutrition counselling, suggesting that Lifescripts© was able to provide some experience. While Lifescripts© appeared to have positive factors, provision of Lifescripts© was still low, suggesting that other influencing factors existed.

Less favourable impacts on GP and PN provision of nutrition advice were also observed in this research. After Lifescripts© training, GPs and PNs still believed they required additional information to effectively provide nutrition advice, although responses were weaker. PN comments that accompanied this response indicated that more nutrition information would be beneficial and enable them to keep up to date. Hopefully the belief that they required more information was GPs and PNs acknowledging their limitations in providing nutrition advice, and recognising the importance of continuing professional development in this area. GPs and PNs ideally should have felt equipped to provide basic nutrition advice after Lifescripts© training.

While PNs agreed that they had a good understanding of Lifescripts©, GPs were less likely to have reported this. A lack of understanding of Lifescripts© was a barrier to their use, despite training and manuals outlining what they are and how they should be used. This highlights practitioners' lack of time to spend understanding Lifescripts©. Dietetics professionals reported a poor understanding of Lifescripts©. However, it is expected that their understanding of them would be lower than GPs and PNs. Ideally dietetics professionals working in GP surgeries may be more familiar with them; however, this was not the case.

While Lifescripts© resulted in slight improvements in GPs' perception of their confidence and skills in providing nutrition advice, PNs' belief in their skills and confidence did not improve. It is unclear why this occurred, and may reflect a skewing of the data with the small sample size. At follow-up, Intervention GPs remained neutral in their belief that they have the knowledge to provide nutrition counselling. PNs' were more likely than GPs to believe that have the knowledge, which further increased at follow-up. However, when asked whether Lifescripts© had improved their nutrition knowledge, GPs were more likely than PNs to agree. This discrepancy may be due to the small sample size. While Patient Questionnaire Participants were

favourable towards Lifescripts©, with all finding them helpful, bias is likely. Lifescripts© appear to be especially useful for those ready to make changes.

Lifescripts© were designed to overcome many of the barriers associated with delivering lifestyle advice in the general practice setting. However, barriers were still reported by GP and PN Participants, restricting the provision of Lifescripts©. The inability to implement Lifescripts© was reported as a reason they were not beneficial. While theoretically Lifescripts© were designed to be a 'one-minute message', this was not found to be true, with the most common reported barrier to both GPs and PNs using them being time. Lifescripts© taking too much time to implement was also perceived by dietetics professionals as a reason why they would not be effective.

Lifescripts© training and implementation resulted in GPs being more likely to report they did not have adequate time, while no change was seen for PNs. GPs reported to spend less time discussing nutrition with patients compared to baseline, while the number of PNs who reported to spending 10-20 minutes increased. This may be because Lifescripts© is marketed as a 'one-minute message', and while both GPs and PNs indicated that this was difficult, GPs may have been attempting the shorter more frequent message. The length of time reported by some PNs may have increased as their awareness of nutrition increased. A 'one-minute message' relies on a low level of practitioner interaction; however, it was the contact with the practitioner that was reported by many patients to be valued. It made the patients accountable to someone, and allowed them to believe that someone had an interest in them. Therefore, interaction with GPs or PNs appears to be the main driver for change.

Being too busy or competing priorities is always going to be a barrier due to the nature of general practice. GPs are motivated to respond to patients' concerns in a consultation rather than initiate preventive services, as patients expect GPs to focus on presenting problems (Kottke, Brekke, & Solberg, 1993). Discussing prevention with patients who are attending for other important issues is not a priority to most GPs. Longer consultation times were suggested as a way to overcome the time barrier. However, this is not realistic. The time issue associated with using Lifescripts© was suggested to be assisted by providing review appointments to follow up the problem.

However, this still requires a great deal of both patient and practitioner time. More training was also suggested, however theoretically, the GP could read the Lifescripts© manuals.

Other barriers to using Lifescripts© were a lack or reimbursement, the level of detail they include, forgetting to use them, or a perception that patients would not be interested. As the GP workload is highly influenced by activities that attract rebates, lack of reimbursement will also discourage them from being used. The issue of lack of reimbursement for Lifescripts© may be overcome by using them within health checks that attract rebates. Achieving an appropriate level of detail on Lifescripts© is problematic, with some participants feeling that other resources contained a more appropriate level of detail. However, this may reflect an inappropriate use of Lifescripts©, such as the need for detailed diabetes advice. Participants reported already using tools which assessed lifestyle areas, highlighting repetition of tools in the general practice setting. Dietetics professionals also believed that a barrier to the use of Lifescripts© was that the advice provided is too brief/simplified and not individualised. Forgetting to use the Lifescripts© resources was a barrier that was not overcome by presenting the Lifescripts© Study Packages in a decorative box with a colourful Lifescripts© label to encourage display in a prominent location. Getting into the habit of using Lifescripts© was suggested as a way to overcome the barriers for using Lifescripts©; however, this is easier said than done. The practitioner's perception that patients would not be interested, along with patients' lack of interest or failure to return the assessment forms also prevented Lifescripts© from being used.

Overall, dietetics professionals did not believe Lifescripts© would be effective in general practice. Survey Participants were concerned that they would potentially replace referral to dietetics professional, with this being one of the main barriers identified. While these results show that Lifescripts© did not encourage referral, it is unclear if referral decreased as GP and PNs' provision of nutrition advice via Lifescripts© increased.

While the majority of Patients had made changes by the time they completed the questionnaire, most had considered making changes prior to receiving Lifescripts©. It

is unlikely that this is representative of general practice patients. While they were already planning to change, having the GP or PN discuss the changes with them provided the motivation and prompted them to action. Potentially, they were provided with Lifescripts© because the GP/PN realised they were ready for change. Therefore, it must be questioned whether Lifescripts© are appropriate for those not already motivated. As most Telephone Interview Participants did not remember which scripts they had been given off the top of their head, this suggests that the Lifescripts© were not that memorable/effective. It is unclear if Telephone Interview Patients could not remember the name of the Lifescript they were given, or if they couldn't remember advice they were provided with. Barriers to behaviour change for patients were also identified. For patients to be able to overcome these barriers they must be made aware of the potential barrier and develop strategies to deal with them, which may not be achieved by a simple script.

The scoping document for Lifescripts© stated that unless the barriers that exist to providing prevention activity in general practice are addressed, Lifescripts© will have a limited appeal (Murphy, Davidson, & Market Access Consulting & Research, 2004). While Lifescripts© did address many of these barriers, many of the fundamental barriers could not be overcome, limiting the effectiveness of the initiative.

6.5.1Limitations

As discussed previously, the poor recruitment and low participant numbers for GPs, PNs and Patients is a limitation of these studies. While these findings are unlikely to be representative, they provide insight into the area of the provision of nutrition advice by GPs and PNs, including the use of Lifescripts©.

GPs and PNs indicated the proportion of patients who received nutrition advice of those who they perceived required it. A limitation of this is that the reported amount may not reflect the actual amount provided as participants only provided an estimate, which is hard to accurately guess and this may have been affected by perception more so than reality.

Patients who were favourable to behaviour change and Lifescripts© may have been more likely to accept the Lifescripts© and study packages, and agree to participate in the study. Therefore, Patient responses towards Lifescripts© are potentially biased.

6.6 Conclusion

GPs and PNs have a role in the delivery of nutrition advice in general practice. They are the first point of contact in the health system and have access to the majority of the population. GPs were more likely than PNs to believe that providing nutrition counselling was part of their role; however, their perceived knowledge, skills, experience and confidence did not reflect this. Dietetics professionals believed GPs have a role in providing nutrition advice as they have access to patients and are trusted by them, however, PNs require additional training before they provide nutrition advice. Nevertheless, only basic advice was recommended, accompanied by referral to a dietetics professional for individualised in-depth advice. Barriers such as: lack of time, knowledge, experience, confidence, interest, appropriate resources and funding, impact on provision of nutrition advice. These need to be accounted for when developing interventions for GPs and PNs.

While Lifescripts© were designed to improve the delivery of nutrition advice in general practice, this research suggests that the benefits may not be as significant as desired. At baseline, GP and dietetics professionals' awareness of Lifescripts© was poor, and while PNs were familiar with Lifescripts©, they were not being implemented. Implementation during the study period was minimal. While GPs and PNs were positive towards several aspects of Lifescripts©, a lack of awareness and understanding of them, time, and patient interest were all barriers. Lifescripts© were not perceived to be the 'one-minute message' they were designed to be. Lifescripts© intervention appeared to have more impact on GPs' opinions of factor related to their provision of nutrition advice compared to PNs, with increases in GPs' belief in their skills, confidence and experience to provide nutrition counselling as well as having appropriate resources. Dietetics professionals were supportive of Lifescripts© as a

form of initial nutrition advice; however, they believed Lifescripts© were not sufficiently detailed or individualised and may replace referral.

Chapter 7

Implementation of nutrition advice by dietetics professionals

Publications

Mitchell, L.J., Capra, S, & MacDonald-Wicks, L. (2009). Structural change in Medicare funding – Impact on the dietetics workforce. Nutrition & Dietetics, 66(3), 170-175.

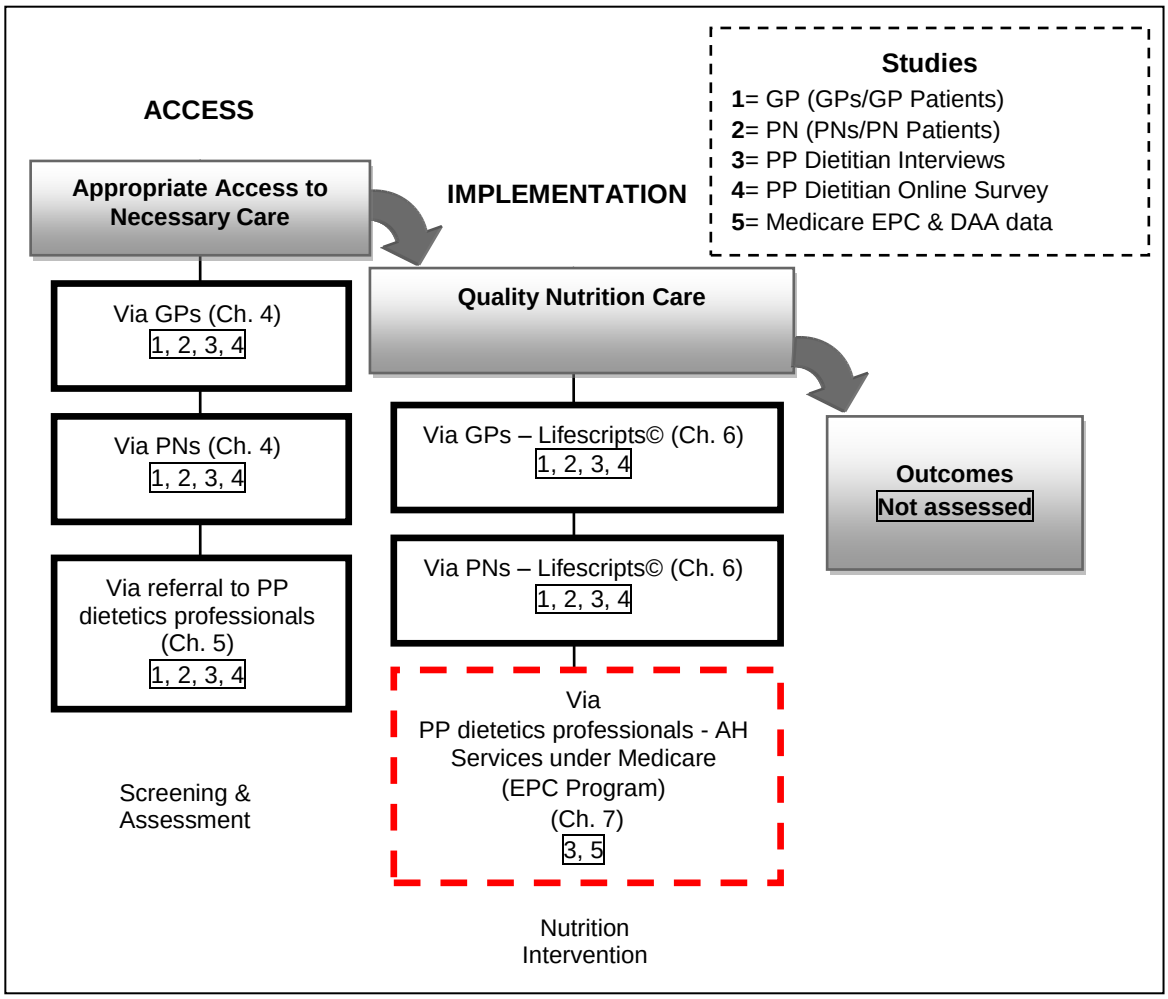


Figure 7-1 Cascade model for improving the delivery of nutrition advice in the general practice setting (Adapted from: Splett (1996) 'The cascade of events leading to evidence on the effectiveness and cost-effectiveness of nutrition interventions')

Note: General Practitioner (GP); Practice Nurse (PN); Private Practice (PP); Dietitians Association of Australia (DAA); Enhanced Primary Care (EPC); Allied Health (AH).

7.1 Introduction

The purpose this chapter is to assess the provision of nutrition advice by PP dietetics professionals via the EPC Program. It evaluates trends in Medicare EPC and DAA membership data as well as GPs and PP dietetics professionals' views and use of the EPC Program.

A key avenue through which PP dietetics professionals are able to provide nutrition advice in the general practice setting is via the Medicare EPC Program. 'Individual Allied Health Services under Medicare' were first introduced in July 2004, allowing patients with a complex chronic condition access to rebates for up to five services provided by AHPs per year (Pratt, 2004). Prior to this, private AH consultations were not funded through Medicare.

With the increasing rate of chronic illness it is important that AHP are utilised and a multidisciplinary approach is achieved (Productivity Commission, 2005; Senate Select Committee on Medicare Secretariat, 2003). This will ease GPs' workloads, while patients receive care from specialised services, potentially leading to reduced health care costs long-term (Productivity Commission, 2005; Senate Select Committee on Medicare Secretariat, 2004). The care planning process encourages and facilitates referral; with patients appreciating improved access to AHPs through lower cost consultations (Shortus, et al., 2007) and AHPs benefitting from increased clients (Cant & Aroni, 2007). While funding for AH consultations through the EPC Program is a major advancement for healthcare, barriers have been identified which impact on uptake by dietetics professionals and patients (Cant & Aroni, 2007, 2008; Foster, et al., 2008). These must be considered and overcome to encourage participation of the EPC Program.

'Allied Health Group Services under Medicare' for patients with type 2 diabetes is another avenue through which general practice patients may receive nutrition advice. This service was introduced in May 2007, providing group education from dietetics professionals, exercise physiologist and diabetes educators (Department of Health and

Ageing, 2007a). This thesis focuses on individual services and therefore, will only briefly touch on group services.

For dietetics professionals to be eligible to provide Medicare services they must be Accredited Practicing Dietitians (APDs) and registered with Medicare. This status is granted by the DAA, the national association of dietetics, to qualified dietetics professionals who are engaged in continuing professional development (Dietitians Association of Australia, 2009a).

7.2 Aims & Hypotheses

This chapter aims to evaluate:

1. Trends in Medicare EPC and DAA membership data including: DAA PP workforce data, AH and dietetics professional EPC consultations and EPC consultations per provider; and
2. PP dietetics professionals' participation in and opinions of the EPC Program, including the number of patients seen per week and consultations normally allocated, impact on business, barriers to referral and number of people seeing a dietetics professional, EPC consultations length and cost, views on bulk billing, perceived benefits of the EPC Program and suggested improvements.

It is hypothesised that:

1. The introduction of rebates for dietetic services for people with a chronic disease resulted in an increase in service provision, clients accessed and the number of PP dietetics professionals and full-time equivalents; and
2. Dietetics professionals from a DGP providing a high number of EPC consultations based on division population and PP dietetics professional FTEs will have different characteristics and more positive opinions than those providing a low number.

7.3 Methods

A full description of the methods can be seen in Chapter 3; including:

- PP Dietetics professional Telephone Interviews (Section 3.5);
- Medicare Allied Health Enhanced Primary Care data (Section 3.7); and
- Dietitians Association of Australia membership data (Section 3.8).

7.4 Results

7.4.1 Comparison of Medicare EPC and DAA membership data

7.4.1.1 DAA private practice workforce

An overview of the number of DAA working members in Australia between 2004 and 2007 is provided in Figure 7-1. The number of DAA members reporting to work in PP, as well as the per cent of total membership is also presented. Between 2004 and 2007 DAA members who self-reported working in PP increased, from 512 in 2004 (28.0% of total DAA membership) to 772 in 2007 (32.2%; p=0.0032) (Figure 7-2).

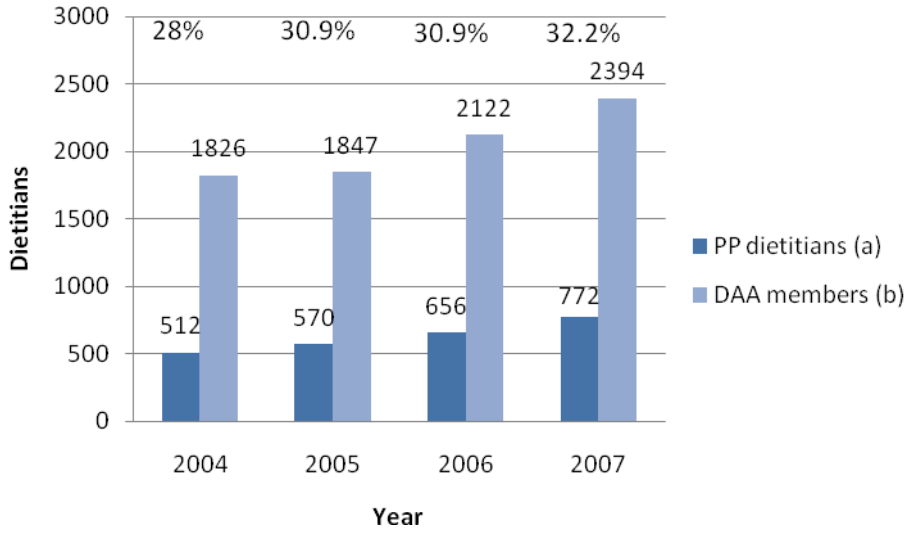


Figure 7-2 Total and private practice (PP) Dietitians Association of Australia (DAA) members based on DAA Membership data 2004-2007

[a] DAA members working in PP in Australia
[b] DAA members working in Australia

Table 7-1 and 7-2 provides a breakdown of the number and FTEs of DAA members in each work category between 2004 and 2007; the per cent increase between years is also shown. DAA dietetics professionals working in PP increased by 51% between 2004 and 2007; below the median increase of 86% for all DAA work area categories (Table 7-1). However, as DAA work area categories were expanded in 2005, there were large artificial increases in some work categories. Therefore, the 35% increase in PP members between 2005 and 2007 may be a more accurate reflection, being similar to the median increase of all work categories during this time of 36%. PP dietetics professional FTEs increased by 66% during 2004-2007 (158 to 263); identical to the median change for all work categories (Table 7-2). The change in FTEs during 2005-2007 was 43% (median 36%).

Table 7-1 Number of dietetics professionals by Dietitians Association of Australia work categories and percentage change between 2004-2007 and 2005-2007

	2004 n	2005 n	2006 n	2007 n	% change 2004-07	% change 2005-07
Community nutrition	258	300	279	341	⇧ 32%	⇧14%
Food service[a]	7	82	93	109	⇧1457%[a]	⇧33%
Government department/Non-government organisations	81	175	241	263	⇧ 225%	⇧50%
Industry (including consultants)/Marketing/Public Relations	88	128	147	175	⇧ 99%	⇧37%
Inpatient/Outpatient facility (including public, private, aged care, psychiatric)[a]	1042	798	912	1023	⇩ 2%	⇧28%
Mixed practice (including sole/rural practitioner)[b]	N/A	72	89	101	N/A[b]	⇧40%
Public health	154	123	130	162	⇧ 5%	⇧32%
Private practice/Consultancy[c]	512	570	656	772	⇧ 51%	⇧35%
Research/Education	114	186	239	279	⇧ 145%	⇧50%
Do not work in nutrition and/or dietetics	49	48	89	91	⇧ 86%	⇧90%

[a] In 2004 category 'food service' was 'food service institution'; therefore those working in foodservice in hospitals would have been included in 'inpatient/outpatient facility'
[b] Category was not introduced till 2005
[c] Excluding industry

Table 7-2 Dietetics professional FTEs by Dietitians Association of Australia work categories and percentage change between 2004-2007 and 2005-2007

	2004	2005	2006	2007	% change 2004-07	% change 2005-07
Community nutrition	167.1	157.5	154.5	193.5	⇧ 16%	⇧23%
Food service[a]	2.7	24.0	28.5	29.7	⇧990%	⇧24%
Government department/Non-government organisations	61.6	121.9	165.3	181.8	⇧195%	⇧49%
Industry (including consultants)/Marketing/Public Relations	74.3	92.8	99.6	118.7	⇧ 60%	⇧28%
Inpatient/Outpatient facility (including public, private, aged care, psychiatric)[a]	707.5	533.3	618.0	689.3	⇩ 3%	⇧29%
Mixed practice (including sole/rural practitioner)[b]	N/A	48.4	61.5	70.6	N/A	⇧46%
Public health	95.1	71.8	79.9	98.3	⇧ 3%	⇧37%
Private practice/Consultancy[c]	158.3	183.3	223.9	262.6	⇧ 66%	⇧43%
Research/Education	66.2	101.5	126.4	137.5	⇧108%	⇧36%
Do not work in nutrition and/or dietetics	32.4	30.4	52.4	56.0	⇧ 73%	⇧84%

Note: FTEs based on 40 hours of work per week.
[a] In 2004 category 'food service' was 'food service institution'; therefore those working in foodservice in hospitals would have been included in 'inpatient/outpatient facility'
[b] Category was not introduced till 2005
[c] Excluding industry

PP was the primary work category for 286 (56.0%) of dietetics professionals working in PP in 2004, increasing to 340 (59.6%) in 2005. While the numbers continued to grow, reaching 458 in 2007, the per cent was maintained (2006: 59.0%; 2007: 59.3%) (Figure 7-3). Between 2004 and 2007, approximately 43% of PP dietetics professionals worked only in PP (43.0%, 45.6%, 42.8% and 42.7% respectively).

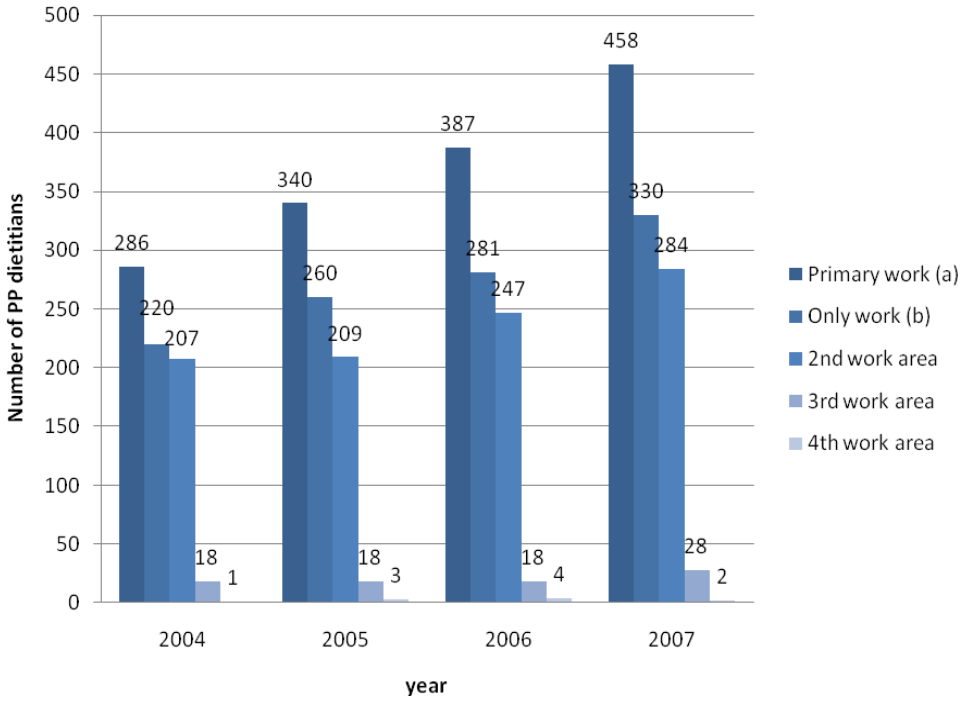


Figure 7-3 Private practice (PP) for Dietitians Association of Australia members as primary (including only), second, third or fourth work category, 2004-2007

[(a)] Working more hours in PP than any other work category. Includes PP as sole work.
[(b)] Working solely in PP.
Note:

- 'Only work' not counted in totals as already included in 'primary work';
- No significant differences in percentages of work areas between years;
- Total PP dietetics professionals each year: 2004 (512); 2005 (570); 2006 (656); 2007(772);
- Primary work category percentages: 2004 (56.0%); 2005 (59.6%); 2006 (59.0%); 2007 (59.3%); and
- Only work category percentages: 2004 (43.0%); 2005 (45.6%); 2006 (42.8%); 2007 (42.7%).

No significant differences were seen in the hours worked in PP between 2004 and 2007 (Figure 7-4). Approximately half of dietetics professionals worked fewer than eight hours a week in PP, with an additional 27-30% worked 9-19 hours; 7-8% worked 40 hours or more.

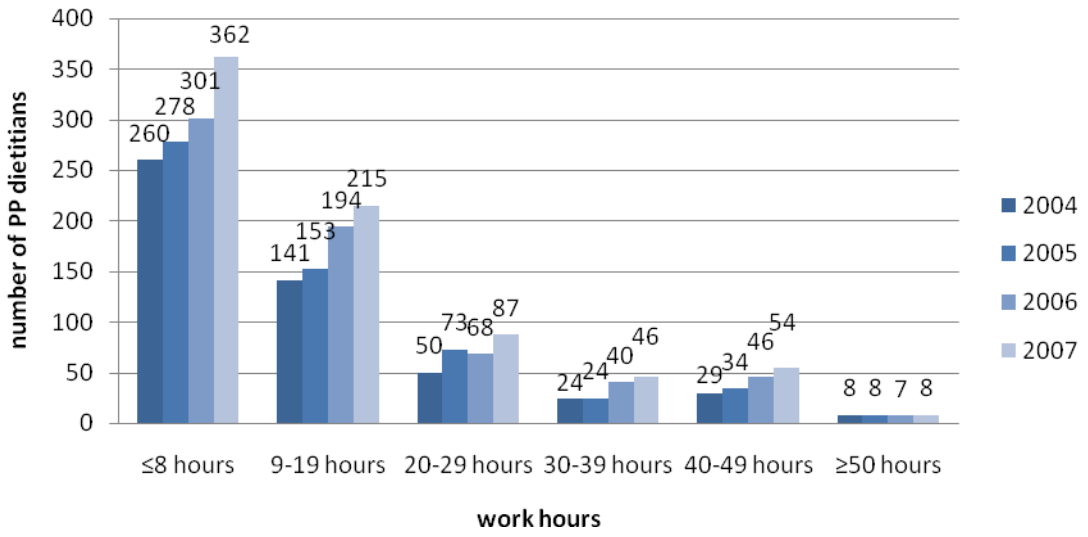


Figure 7-4 Self-reported weekly work hours in private practice (PP) of Dietitians Association of Australia members, 2004-2007

Note: total PP dietetics professionals each year: 2004 (512); 2005 (570); 2006 (656); 2007(772).

Summary

DAA PP membership has increased since 2004, at a similar rate to other DAA work categories. Dietetics professionals tended to do PP on a part-time basis, with three-quarters working less than 20 hours per week in this area. More than half of PP members also worked outside of PP.

7.4.1.2 Allied Health EPC consultations

The number of EPC consultations conducted by each AH profession as well as the percent of total EPC consultations is summarised in Table 7-3. The uptake of AH EPC consultations rapidly increased in the initial years of the EPC Program, with a doubling between 2004-05 and 2005-06 (214%), from 251,203 to 532,398 (Medicare Australia, 2009) (Table 7-3). While recent growth has not been as dramatic, an increase of 41% has been achieved for the previous two years. Physiotherapists had the most claimed EPC consultations in all years except 2008-09, decreasing from 43.1% of the total in 2004-05 to 33.1% in 2008-09. Podiatrists claimed the second highest number of EPC consultations, overtaking physiotherapists in 2008-09 with 40.3%. Dietetics professionals were third, with 17.6%, 13.7%, 11% and 8.7% respectively. Exercise physiologists experienced large increases in consultations since their rebates were

introduced in January 2006, with 0.7% of the total consultations in 2005-06, increasing to 3.0% in 2008-09 ($p<0.0001$). The percent claimed by diabetes educators, speech pathologists and occupational therapists has gradually increased ($p<0.001$). The percent claimed by psychologists significantly dropped between 2006-07 and 2007-08, from 5.2% to 0.6%. Aboriginal health workers, audiologists, mental health workers, occupational therapists, osteopaths and dental assessments, treatments and services each contributed 1% or less of the total (data included under 'other').

Table 7-3 Number and distribution of Enhanced Primary Care (EPC) consultations for each Allied Health Profession during 2004-05 to 2008-09[d]

	2004-05		2005-06			2006-07			2007-08			2008-09		
	n	(%)[g]	n	(%)[g]		n	(%)[g]		n	(%)[g]		n	(%)[g]	
Physiotherapy	108,267	(43.1)	202,465	(38.0)	[a]	326,832	(34.8)	[a]	463,695	(34.9)		621,836	(33.1)	[a]
Podiatry	51,243	(20.4)	149,516	(28.1)	[a]	310,023	(33.0)	[a]	491,257	(37.0)	[a]	757,814	(40.3)	[a]
Dietetics	44,089	(17.6)	72,827	(13.7)	[a]	102,764	(11.0)	[a]	124,111	(9.4)	[a]	163,969	(8.7)	[a]
Psychology	23,092	(9.2)	45,541	(8.5)	[a]	49,190	(5.2)	[a]	7,788	(0.6)	[a]	6,591	(0.4)	[a]
Speech pathology	3,051	(1.2)	11,371	(2.1)	[a]	27,287	(2.9)	[a]	53,505	(4.0)	[a]	77,164	(4.1)	[c]
Exercise Physiology	[f]0	(0.0)	3,929	(0.7)	[a]	29,369	(3.1)	[a]	44,111	(3.3)	[a]	55,535	(3.0)	[a]
Diabetes educator	735	(0.3)	7,781	(1.5)	[a]	15,993	(1.7)	[a]	25,570	(1.9)	[a]	38,576	(2.1)	[a]
Occupational Therapy	1,510	(0.6)	4,928	(0.9)	[a]	9,136	(1.0)	[b]	14,985	(1.1)	[a]	20,455	(1.1)	[b]
Mental health	748	(0.3)	2,730	(0.5)	[a]	3,903	(0.4)	[a]	2,400	(0.2)	[a]	2,322	(0.1)	[a]
Other [h]	18,468	(7.4)	35,239	(6.6)	[a]	63,856	(6.8)	[a]	99,941	(7.5)	[a]	13,6251	(7.2)	[a]
Total	**251,203**		**536,327**			**93,8353**			**1,327,363**			**1,880,513**		

[a] Significant difference from previous years at p<0.0001
[b] Significant difference from previous years at p<0.001
[c] Significant difference from previous years at p<0.02
[d] Data accessed from the Medicare Website (Medicare Australia, 2009) EPC consultations based on the date the service was processed by Medicare Australia.
[e] Provider statistics purchased from Medicare for 2004-05 to 2006-07
[f] Exercise physiology was introduced in January 2006
[g] Percent of total EPC consultations
[h] 'Other' includes Chiropractic, Osteopathy, Dental Treatment, Dental assessment, Dental Service, Audiology and Aboriginal health

7.4.1.3 Dietetics professional EPC consultations

The number of EPC consultations for dietetic services increased by 32.6% in their first year (2004-05 to 2005-06), and 29.8% in their second (2005-06 to 2006-07) (Table 7-4). Growth slowed to 16.0% by 2007-08, however this is accentuated as reporting changed from date of service to date of processing at this time. Between 2007-08 and 2008-09 a 24.3% increase was observed.

Table 7-4 Number of dietetic Enhanced Primary Care (EPC) consultations and per cent change from previous year, 2004-05 to 2008-09

	n	Increase from previous year (%)
2004-05	49,284	-
2005-06	73,192	(32.6%)
2006-07	104,215	(29.8%)
2007-08	124,111	(16.0%)
2008-09	163,969	(24.3%)

Note:

- 2004-05 to 2006-07 based on data purchased from Medicare on the number of EPC consultations per month; and
- 2007-08 and 2008-09 based data from Medicare website of date processed (Medicare Australia, 2009).

Figure 7-5 graphs the number of dietetics professional EPC consultations claimed between July 2004 and June 2009. Clear seasonal fluctuations were seen in the number of dietetics EPC consultations, with decreases during the December/January period. Downturns also consistently occurred in April.

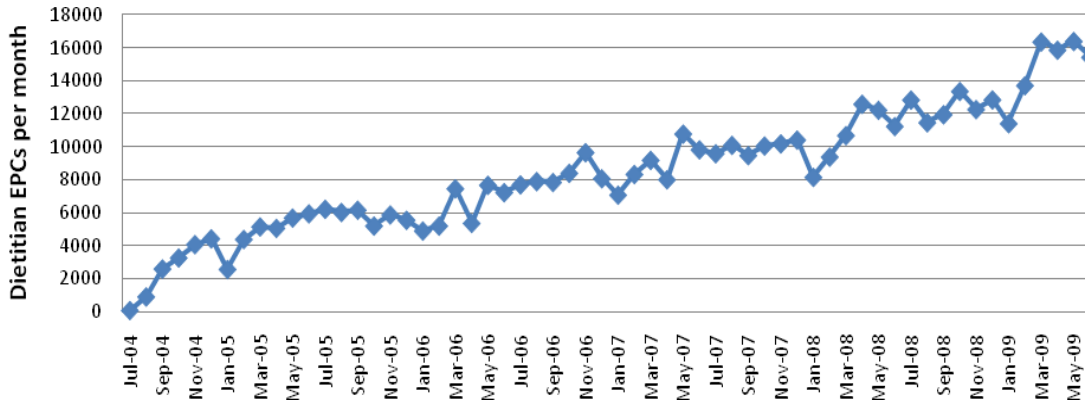


Figure 7-5 Number of dietetics professional Enhanced Primary Care (EPC) consultations per month, July 2004 - June 2009

Note: data from Medicare website of date processed (Medicare Australia, 2009).

The number and percent of EPC consultations conducted in each state is outlined in Table 7-5. The most populated states claimed the most EPC consultations; with NSW claiming substantially more than other states. EPC consultations increased each year for all states except the ACT, which dropped slightly in 2006-07 and Tasmania, which dipped in 2005-06. The Northern Territory claimed only a minor percentage of total EPC consultations (0.0%-0.2%).

Table 7-5 Number and percentage of dietetics professional Enhanced Primary Care (EPC) consultations, by state, 2004-05 to 2008-09

	2004-05		2005-06			2006-07			2007-08[c]			2008-09		
	n	(%)[a]	n	(%)[a]		n	(%)[a]		n	(%)[a]		n	(%)[a]	
NSW	26,415	(53.6)	33,485	(45.7)	[b]	42,508	(40.8)	[b]	49,955	(40.3)	[d]	67,714	(41.3)	[b]
VIC	7,106	(14.4)	13,847	(18.9)	[b]	24,152	(23.2)	[b]	29,161	(23.5)		36,863	(22.5)	[b]
QLD	9,103	(18.5)	15,464	(21.1)	[b]	22,135	(21.2)		25,619	(20.6)	[c]	35,030	(21.4)	[b]
WA	3,074	(6.2)	5,452	(7.4)	[b]	8,510	(8.2)	[b]	10,302	(8.3)		12,217	(7.5)	[b]
SA	3,018	(6.1)	4,187	(5.7)	[b]	5,980	(5.7)		7,396	(6.0)	[d]	10,007	(6.1)	
ACT	120	(0.2)	459	(0.6)	[b]	439	(0.4)	[b]	557	(0.4)		623	(0.4)	[c]
TAS	442	(0.9)	284	(0.4)	[b]	457	(0.4)		950	(0.8)	[b]	1,181	(0.7)	
NT	6	(0.0)	14	(0.0)		34	(0.0)		171	(0.1)	[b]	334	(0.2)	[b]
Total	49,284	(100)	73,192	(100)		104,215	(100.0)		124,111	(100.0)		163,969	(100.0)	

[a] Percentage of total dietetics professional EPC consultations in each state
[b] Change in percentage since previous year is significant (p<0.0001)
[c] Change in percentage since previous year is significant (p<0.01)
[d] Change in percentage since previous year is significant (p<0.05)

Note:

- 2004-05 to 2006-07 based on data purchased from Medicare on the number of EPC consultations per month; and
- 2007-08 and 2008-09 based data from Medicare website of date processed (Medicare Australia, 2009).

7.4.1.4 EPC consultations per provider

The number of AHPs providing EPC services between 2004-05 and 2006-07, as well as the percentage of total AHPs providing these services is summarised in Table 7-6. Physiotherapy had the greatest number of AHPs providing EPC services; with 38.0%, 34.8% and 33.0% of the total number of professionals during the three respective years. Psychologists represented 13.3%-15.4% of the AHPs providing EPC services; 11.1%-14.2% were podiatrists. Dietetics professionals had the seventh highest number of practitioners providing EPC services in all three years (4.4%-4.7%).

Table 7-6 Number of Allied Health Professionals (AHPs) making at least one Enhanced Primary Care (EPC) claim for each AH Profession during 2004-05 to 2006-07

	2004-05		2005-06			2006-07		
	n	(%)[e]	n	(%)[e]		n	(%)[e]	
Physiotherapy	3958	(38.0)	4870	(34.8)	[a]	5778	(33.0)	[c]
Psychology	1386	(13.3)	2157	(15.4)	[a]	2566	(14.6)	
Podiatry	1484	(14.2)	1754	(12.5)	[b]	1952	(11.1)	[b]
Chiropractic	859	(8.2)	1250	(8.9)		1717	(9.8)	[c]
Dental assessment	613	(5.9)	697	(5.0)	[b]	872	(5.0)	
Speech pathology	324	(3.1)	631	(4.5)	[a]	958	(5.5)	[b]
Dietetics	493	(4.7)	630	(4.5)		777	(4.4)	
Dental treatment	517	(5.0)	616	(4.4)	[c]	783	(4.5)	
Osteopathy	393	(3.8)	560	(4.0)		752	(4.3)	
Occupational Therapy	202	(1.9)	348	(2.5)	[c]	526	(3.0)	[c]
Mental health	95	(0.9)	196	(1.4)	[b]	247	(1.4)	
Exercise Physiology	0 [d]	(0.0)	134	(1.0)	[a]	337	(1.9)	[a]
Diabetes educator	41	(0.4)	75	(0.5)		114	(0.7)	
Audiology	40	(0.4)	58	(0.4)		79	(0.5)	
Dental service	15	(0.1)	19	(0.1)		28	(0.2)	
Aboriginal health	4	(0.0)	2	(0.0)		3	(0.0)	
TOTAL	10 424	(100.0)	13 997	(100.0)		17489	(100.0)	

[a] Significant difference from previous years at p<0.0001
[b] Significant difference from previous years at p<0.001
[c] Significant difference from previous years at p<0.05
[d] Exercise physiology was introduced in January 2006
[e] % total AHPs

Dietetics had the most EPC consultations claimed per provider during both the 2004-05 and 2005-06 periods, with 89.4 and 115.6 respectively (Table 7-7). By 2006-07, despite dietetics professional consultations increasing to 132.3 per provider, this was surpassed by podiatrists and diabetes educators. Diabetes educators, podiatrists, exercise physiologists and dietetics professionals experienced the greatest increases in the number of consultations per provider. Aboriginal health and psychology were the only professions to see a decline in the number per provider.

Table 7-7 Number of Enhanced Primary Care (EPC) consultations per provider for each allied health profession during 2004-05 to 2006-07

	2004-05	2005-06	2006-07
Dietetics	89.4	115.6	132.3
Podiatry	34.5	85.2	158.8
Diabetes educator	17.9	103.7	140.3
Exercise Physiology	[(a)]0	29.3	87.1
Physiotherapy	27.4	41.6	56.6
Speech pathology	9.4	18.0	28.5
Osteopathy	11.5	17.6	23.2
Chiropractic	12.3	15.6	22.1
Psychology	16.7	21.1	19.2
Occupational Therapy	7.5	14.2	17.4
Mental health	7.9	13.9	15.8
Audiology	4.2	5.5	6.2
Aboriginal health	10.0	3.5	1.7
Dental treatment	3.4	4.1	-
Dental assessment	2.3	3.6	-
Dental service	1.1	2.2	-

[(a)] Exercise physiology was introduced in January 2006

Summary

Uptake of AH EPC services was high, with continued growth in the number of consultations. Physiotherapy provided the highest number of EPC consultations, followed by podiatry then dietetics. While the number of dietetics EPC consultations continued to rise, the proportion of total consultations decreased over time. During the first two years of the EPC Program dietetics had the most consultations claimed per provider.

7.4.2 Implementation of nutrition advice via EPC dietetic services – dietetics professionals' views and practices

7.4.2.1 Participation in the EPC Program

The majority (94%) of Interview Participants provided EPC services (Figure 7-6), with no significant differences between H-EPC and L-EPC. Reasons provided by the three dietetics professionals not participating were that they did not see those type of patients (n=2), providing either sports groups or operating from specialist referral; or saw issues with the system (n=2). One Interview Participant indicated that they have

‘made active decision not to offer it because the paperwork is so horrendous as well as the remuneration being so poor‘(Interview 7).

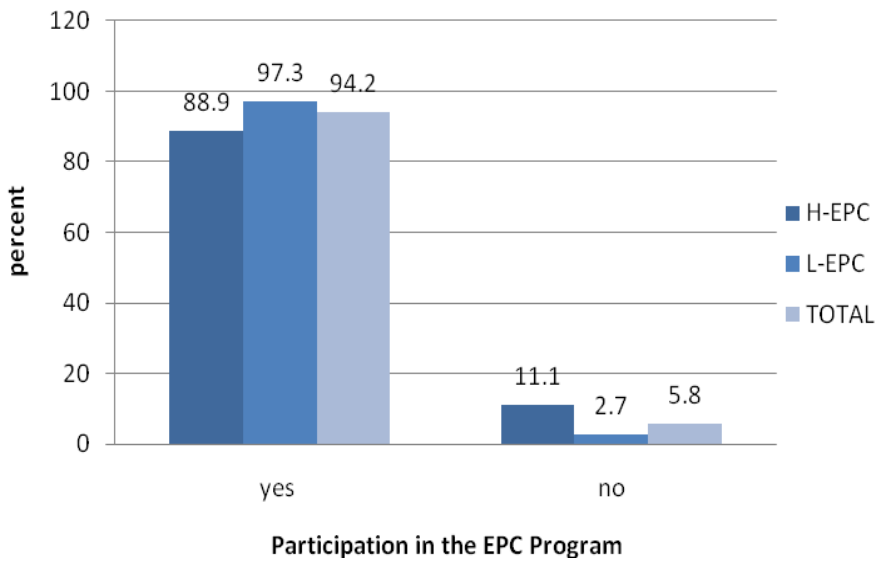


Figure 7-6 Participation in the Enhanced Primary Care (EPC) Program by Interview Participants

Note:
- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE; and
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE.

7.4.2.2 Medicare EPC patients seen per week

Interview Participants reported an average of 19.8 patients per week, which did not differ between H-EPC and L-EPC (19.1 vs. 19.4). Participants from H-EPC divisions reported an estimated average of 10.2 EPC patients per week (54.4% of total patients), compared to 6.1 for L-EPC Participants (31.4% of total patients). The majority of Interview Participants (67.3%) saw <10 EPC patients per week, with another 24.5% seeing 10-19 EPC patients (Figure 7-7). L-EPC Participants more often saw 0-9 EPC patients per week (77.8% vs. 50.0%; p=0.045).

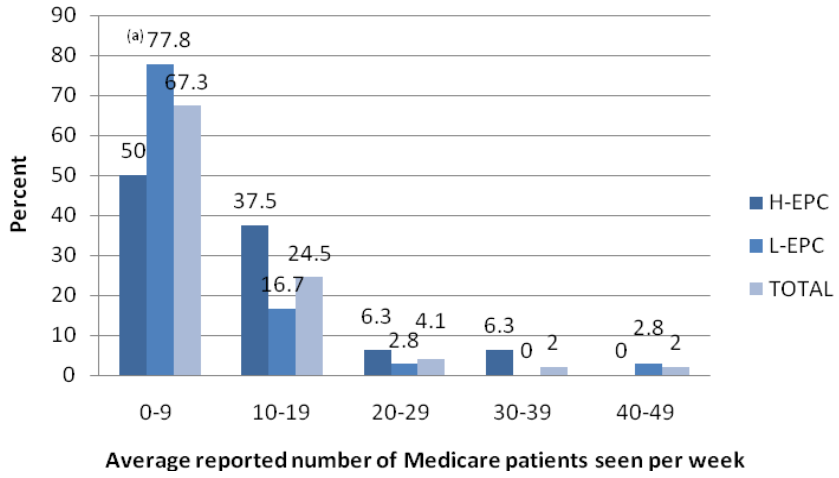


Figure 7-7 Average number of Medicare Enhanced Primary Care (EPC) patients seen per week by Interview Participants

(a) Significant difference between H-EPC and L-EPC Interview Participants (p≤0.05)
Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE; and
- n=3 Interview Participants indicated 'N/A' as did not provide Medicare services.

When the percentage of estimated EPC patients is calculated from total reported patients per week, the reliance on the Medicare initiative can be seen. Of the 50 Interview Participants reporting to currently see clients, 36% estimated that Medicare EPC patients represented less than 20% of total patients; 22% reported 21-40% of total patients; 16% estimated 41-60% of total patients. One-quarter (26%) reported that Medicare EPC patients represented more than 60% of total patients, including 4% that only saw EPC patients, 4% estimating 90%-99% and 6% 80-89%.

7.4.2.3 Number of EPC consultations normally allocated

Just under half of Interview Participants (47.9%) reported that they were most often allocated 3-5 EPC consultations per patient, with 20.8% of these usually being all five (Figure 7-8). An additional 29.2% were usually allocated 1-3 visits, with 10.4% of these 1-2 and 18.8% 2-3. Overall, 22.9% of Interview Participants reported that there was no predominant number of EPC consultations normally allocated, varying with the condition and GP. While more L-EPC Participants reported being normally allocated 3-

5 EPC consultations, this failed to gain significance (p=0.0511). More variability in the number normally allocated was reported in H-EPC (50.0% vs. 17.0%; p=0.015).

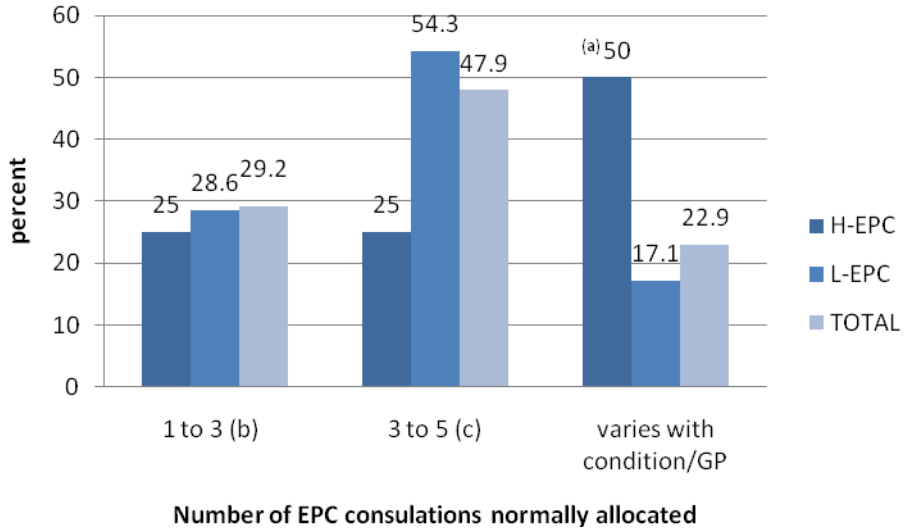


Figure 7-8 Interview Participants' reported number of Enhanced Primary Care (EPC) consultations usually allocated per patient per year

(a) Significant difference between H-EPC and L-EPC Participants (p≤0.05)
(b) 1-3 includes: 1-2, 2, 2-3
(c) 3-5 includes: 3, 4, 3-5, 4-5, 5
Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE; and
- n=4 Interview Participants indicated 'N/A' as n=3 did not provide Medicare services, and n=1 had not started receiving referrals.

Summary

Interview Participants saw an average of 20 patients per week, including six Medicare patients. H-EPC Participants reported more variability in the number of EPC consultations normally allocated per patient.

7.4.2.4 Impact of EPC Program on clientele

Dietetics professionals' perception as to whether the Medicare EPC Program had expanded their clientele is outlined in Table 7-8. The majority of Interview Participants believed that the Medicare EPC plans had expanded their clientele (77.0%), including 5.8% who believed clientele had been slightly expanded (Table 7-8). The EPC Program was not felt to have expanded clientele by 15.4% of Interview Participants, with an

additional 3.8% stating that they were still seeing the same number of patients overall as they were at capacity. Similar results were seen for H-EPC and L-EPC Participants.

Table 7-8 Interview Participants' perception as to whether the Medicare Enhanced Primary Care (EPC) plans expanded clientele

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Yes	14	(77.8)	26	(70.3)	37	(71.2)
Slightly	0	(0.0)	3	(8.1)	3	(5.8)
No	3	(16.7)	5	(13.5)	8	(15.4)
At capacity	0	(0.0)	2	(5.4)	2	(3.8)
Unsure	1	(5.6)	1	(2.7)	2	(3.8)
TOTAL	18	(100.0)	37	(100.0)	52	(100.0)

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE; and
- No significant differences between H-EPC and L-EPC Interview Participants

Reasons PP dietetics professionals believed the EPC did or did not expand clientele are provided in Table 7-9. Clientele was believed to be expanded by the EPC Program as more people were referred and/or attended (46.2%), more could afford to come (30.8%) and EPC patients were the majority of clientele (13.5%). H-EPC were more likely to report that the EPC Program expanded clientele due to building relationships with GPs (11.0% vs. 0.0%; p=0.039). Not participating in the EPC Program was the main reason provided for why the Program had not expanded clientele (5.8%).

Table 7-9 Reasons why Interview Participants' believed the Enhanced Primary Care (EPC) Program did/ did not expand clientele

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
Expanded clientele	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
More people referred/attend	7	(38.9)	20	(54.1)	24	(46.2)
More can afford to come	5	(27.8)	12	(32.4)	16	(30.8)
Majority of patients	4	(22.2)	4	(10.8)	7	(13.5)
Especially in certain clinics	1	(5.6)	4	(10.8)	4	(7.7)
Slightly	0	(0.0)	3	(8.1)	3	(5.8)
More visits per patient	0	(0.0)	3	(8.1)	3	(5.8)
More GPs referring	0	(0.0)	2	(5.4)	2	(3.8)
Building relationships with GPs	2	(11.1)	0	[(a)](0.0)	2	(3.8)
Did not expand clientele	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
Not participating in program	2	(11.1)	1	(2.7)	3	(5.8)
Would be referred anyway/referred without EPC despite eligibility	0	(0.0)	2	(5.4)	2	(3.8)
Seeing maximum number or clients possible	0	(0.0)	2	(5.4)	2	(3.8)

[(a)] Significant difference between H-EPC and L-EPC Interview Participants ($p \leq 0.05$)

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE;
- The following reasons for why it had expanded clientele were each provided by n=1: demonstrate effectiveness; busy; less barriers; no extra comment; referral rather than recommendation; would not have increased to the same extent.
- The following reasons for why it had not expanded clientele were each provided by n=1: specialist referral; GPs do not use them adequately; not referred with EPC even though eligible; not business that wanted; and
- No significant differences between H-EPC and L-EPC Interview Participants.

A variety of reasons were provided for why Interview Participants believed that the EPC Program had expanded clientele. The Program had not only increased EPC referrals, but also general referrals:

> In two ways, one because we see more people referred under Medicare, but two is that we've been able to demonstrate to GPs what we can do, so the private referrals come through as well. So it is not just the EPC increase, it's all referrals. (Interview 3)

Interview Participants also believed the EPC Program increased patients' ability and willingness to see a dietetics professional:

> I divide the market into four quadrants, one side is those with private health insurance, so the other side is those without, and there are those willing to pay for a dietetics professional and those who are not. What Medicare is addressing is all of those people who are unwilling to pay for a dietetics professional, which is half of the market, and there are those people who would be willing but are not privately insured will tend to come more often. So those people with private health insurance

> and would be willing to pay would probably have come anyway. So there's three quarters of the potential patients who are far more accessible because of Medicare. (Interview 14)

Interview Participants also found that patients' attend more visits as a result of having an EPC plan:

> It gives clients a clear idea of how many visits are anticipated. For someone who may have previously only come for one or two, if their EPC says five then there is a better chance that they are going to come for five. (Interview 24)

> What may have grown is people who come in to us for EPC appointments and then realised the benefits of dietetics professionals...and paying for appointments after that. (Interview 18)

However other Interview Participants found that patients are not willing to pay for additional services once they have used their Medicare funded visits:

> I have found that because most of the people that use it wouldn't normally access dietetics professional, once their visits are up for the year that's it... You do get ones that want to come back, but they have to wait the rest of the year before they can come back again (Interview 8)

Table 7-10 outlines Interview Participants' views on the impact of the Medicare EPC Program on the number of patients seeing a dietetics professional. The majority of Participants believed that the Medicare EPC Program had increased the number of people seeing a dietetics professional (90.0%), including 10.0% who felt that while it had overall, a personal increase had not been seen. No significant differences were observed between H-EPC and L-EPC Interview Participants.

Table 7-10 Interview Participants' perception as to whether the Enhanced Primary Care (EPC) Program increased patients seeing a dietetics professional

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Yes	16	(94.1)	27	(75.0)	40	(80.0)
Yes overall but not personally	0	(0.0)	5	(13.9)	5	(10.0)
Not personally	0	(0.0	2	(5.6)	2	(4.0)
No	0	(0.0)	1	(2.8)	1	(2.0)
Unsure	1	(5.9)	1	(2.8)	2	(4.0)
TOTAL	[(a)]17	(100.0)	[(a)]36	(100.0)	[(a)]50	(100.0)

[(a)] n=1 H-EPC and n=1 L-EPC Participants indicated 'N/A' as they did not provide Medicare services

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE; and
- No significant differences between H-EPC and L-EPC Interview Participants.

Table 7-11 indicates reasons provided by Interview Participants for why they felt the Medicare EPC Program had expanded the number of people seeing a dietetics professional. Increased accessibility to people due to decreased costs (48.0%) was the main barrier reported, followed by seeing more clients (16.0%) and receiving more referrals from GPs (12.0%). Ten percent reported having seen data showing an increase. While 16.0% of Interview Participants indicated that the EPC Program had not personally increased the number of patients seen, many still believed that there has been an increase overall.

No significant differences were observed between H-EPC and L-EPC Interview Participants for reasons why the EPC Program increased the number of patients seeing a dietetics professional (Table 7-11). L-EPC Participants were more likely to report no personal increase was experienced (22.2% vs. 0%; p=0.035).

Table 7-11 Reasons why Interview Participants believed the Medicare Enhanced Primary Care (EPC) Program has/has not increased the number of people seeing a dietetics professional

	H-EPC Interview Participants (n=17)[a]		L-EPC Interview Participants (n=36)[a]		Total Interview Participants (n=50)[a]	
Has increased number seeing a dietetics professional	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
More accessible due to cost	9	(52.9)	16	(44.4)	24	(48.0)
Seeing more patients/people not normally seen	4	(23.5)	6	(16.2)	8	(16.0)
More referrals	3	(17.6)	3	(8.3)	6	(12.0)
Seen data	0	(0.0)	5	(13.9)	5	(10.0)
Increased awareness of dietetics professionals/conditions to refer	2	(11.8)	2	(5.6)	4	(8.0)
Other dietetics professionals see more	0	(0.0)	2	(5.6)	2	(4.0)
Encourages more visits	0	(0.0)	2	(5.6)	2	(4.0)
Has not increased number seeing a dietetics professional						
Not personally	0	(0.0)	8	[b](22.2)	8	(16.0)

[a] 1 H-EPC and 1 L-EPC Interview Participants indicated 'N/A' as did not provide Medicare services
[b] Significant difference between H-EPC and L-EPC Interview Participants (p≤0.05)

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE;
- The following reasons for why it has increased were each provided by n=1: many chronic conditions require dietary advice; more dietetics professionals are providing the service; for certain conditions; more likely to attend as seen quicker privately;
- The following reasons for why it has increased were each provided by n=1: poor awareness amongst general public; many people would be referred anyway; has accessible public system in area.

Summary

The majority of Interview Participants believed more people were seeing a dietetics professional as a result of the EPC Program (77.0%), mainly as the service being more accessible due to cost.

7.4.2.5 Length of EPC consultations

The majority of Interview Participants provide the same length consultations for EPC and non-EPC patients (75.5%), while 14.3% provide a shorter initial appointment for EPC patients, and 10.2% provide the option of a shorter initial appointment at a reduced rate (Table 7-12). No significant differences in the length of EPC consultations were seen between H-EPC and L-EPC.

Table 7-12 Differences in length of Enhanced Primary Care (EPC) consultations compared to normal reported by Interview Participants

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Same length	12	(75.0)	28	(77.8)	37	(75.5)
Shorter initial	3	(18.8)	4	(11.1)	7	(14.3)
Shorter option if bulk billed/reduced rate	1	(6.3)	4	(11.1)	5	(10.2)
TOTAL	[(a)]16	(100.0)	[(a)]36	(100.0)	[(a)]49	(100.0)

[(a)] 2 H-EPC and 1 L-EPC Participants indicated N/A as did not provide Medicare services

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE; and
- No significant differences between H-EPC and L-EPC.

7.4.2.6 Cost of EPC consultations

The average initial EPC consultation was $75.40 ($27.55 gap; gap range $0-$82), review $52.80 ($4.95 gap; gap range $0-$17) (reported by 15 H-EPC, 36 L-EPC). When multiple prices provided, costs was based on average of prices for 60 minute initial; bulk billed and those which were lower than the bulk billed rate were recorded at the then current rate of $47.85). The average rate charged for initials was higher for L-EPC Participants for both initial ($77.90 vs. $68.90) and review consultations ($53.20 vs. $51.05).

Approximately half (55.1%) of all Interview Participants charged EPC patients the same as they normally charged for an initial consultation, with a quarter bulk billing, and 10.2% charging a reduced rate (Table 7-13). No significant differences occurred between H-EPC and L-EPC Participants.

Table 7-13 Differences in cost of initial Enhanced Primary Care (EPC) consultations compared to normal reported by Interview Participants

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Same cost	9	(56.3)	20	(55.6)	27	(55.1)
Varies	2	(12.5)	1	(2.8)	3	(6.1)
Bulk bill	5	(31.3)	9	(25.0)	13	(26.5)
Reduced	0	(0.0)	5	(13.9)	5	(10.2)
TOTAL	[(a)]16	(100.0)	[(a)]36	(100.0)	[(a)]49	(100.0)

[(a)] 2 H-EPC and 1 L-EPC Participants indicated 'N/A' as did not provide Medicare services

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE;
- No significant differences between H-EPC and L-EPC; and
- The option of cheaper if shorter was provided by n=1.

Table 7-14 outlines the rate charged by Interview Participants for review EPC consultations. Fifty per cent of all Interview Participants charged the same cost for review consultations as they would normally, with an additional 28.8% bulk billing. While 9.6% charged more for EPC consultations than they would normally, this was attributed to: increased reporting requirements (n=2; 4.1%), normally charging less for the review than the rebate (n=2; 4.1%) or believing that it was good for patients to pay something (n=1; 2.0%). L-EPC Participants were more likely to charge the same cost than H-EPC Participants (63.9% vs. 31.3%; p=0.029), while H-EPC Participants more often charged more (25.0% vs. 2.8%; p=0.012).

Table 7-14 Differences in cost of review Enhanced Primary Care (EPC) consultations compared to normal reported by Interview Participants

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Same cost	5	(31.3)	23	[(a)](63.9)	26	(50.0)
Varies	2	(12.5)	1	(2.8)	3	(5.8)
Bulk bill	5	(31.3)	11	(30.6)	15	(28.8)
More (good for patients to pay/review normally less than rebate)	4	(25.0)	1	[(a)](2.8)	5	(9.6)
TOTAL	[(b)]16	(100.0)	[(b)]36	(100.0)	[(b)]49	(100.0)

[(a)] Significant difference between H-EPC and L-EPC Interview Participants (p≤0.05)

[(b)] n=2 H-EPC and n=1 L-EPC Participants indicated 'N/A' as did not provide Medicare services

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE; and
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE.

Summary

Three-quarters of Interview Participants provided the same length consultations for EPC and non-EPC patients, while just over half charged the same. L-EPC Participants charged more on average for both initial and review appointments, being more likely to charge the same rate as for non-EPC patients.

7.4.2.7 Bulk billing EPC patients

Interview Participants' bulk billing practices are summarised in Table 7-15. Bulk billing was not performed by 57.1% of Participants, while 28.6% regularly bulk billed. L-EPC Participants were more likely to not bulk bill (69.4% vs. 37.5%; p=0.03), while H-EPC Participants more often bulked bill and charged a gap (12.5% vs. 0.0%; p=0.03).

Table 7-15 Interview Participants' reported bulk billing practices for Enhanced Primary Care (EPC) patients

	H-EPC Interview Participants		L-EPC Interview Participants		Total Interview Participants	
	n	(%)	n	(%)	n	(%)
Does not bulk bill	6	(37.5)	25	[a](69.4)	28	(57.1)
Bulk bills	6	(37.5)	9	(25.0)	14	(28.6)
Bulk bills some	2	(12.5)	2	(5.6)	4	(8.2)
Bulk bills and charges gap	2	(12.5)	0	[a](0.0)	3	(6.1)
TOTAL	[b]16	(100.0)	[b]36	(100.0)	[b]49	(100.0)

[a] Significant difference between H-EPC and L-EPC Interview Participants (p≤0.05)
[b] n=2 H-EPC and n=1 L-EPC Participants indicated 'N/A' as did not provide Medicare services
Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE; and
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE.

Overall, more Interview Participants provided reasons against bulk billing (n=40) than in favour of it (n=23). The most common reasons for bulk billing were that it: increased access to more clients (16.0%), was beneficial for client (14.0%) and was convenient for the practitioner (12.0%) (Table 7-16). Participants believed bulk billing was able to access more clients as it 'is the only way most people will actually see a dietetics professional' (Interview 13). This is especially relevant to low SES clients: 'In lower SES areas if was not bulk billing I wouldn't be reaching half the patients that I am' (Interview 6). Many Interview Participants reported to only bulk bill certain patients who particularly required this service: 'I think that we need to be providing it, but

there are...limitations, and I think pensioners and health care holders are the priority (Interview 3).

It was reported to be better for practitioners in that it was 'easier than trying to collect money from patients' (Interview 19). Interview Participants also believed it was easier for patients and encouraged GP referral:

> I prefer it, because makes it easier for the doctors to refer... But I just feel that if patients pay and then they go to Medicare to claim and they can't, the care plan is not in place correctly then.. then they have to go back to their doctor and they all have to do that individually and I just find it is easier for me to negotiate that with the doctors then sending patients back to them. (Interview 46)

While bulk billing does attract a lower payment per consultations, some Interview Participants used the increased clientele to increase overall revenue:

> Taken practice decision to bulk bill all EPC patients, irrespective of circumstances... If I can expand the total number of people...and have a full appointment book, then EPC rebates become cost effective. (Interview 14)

Shorter consultations were also used as a means of making bulk billing cost effective:

> So I think even if they are shortened consult and they take away one or two things each consult its better than them taking away nothing which would have happened if I didn't bulk bill. (Interview 6)

Table 7-16 Interview Participants' reported reasons in favour of bulk billing Enhanced Primary Care (EPC) patients

	H-EPC Interview Participants (n=17)		L-EPC Interview Participants (n=36)		Total Interview Participants (n=50)	
	n	(%)	n	(%)	n	(%)
Access more clients	3	(17.6)	6	(16.7)	8	(16.0)
Beneficial for client	4	(23.5)	4	(11.1)	7	(14.0)
Easier than getting money off clients/convenient for practitioner	3	(17.6)	3	(8.3)	6	(12.0)
Happy making less money (no rent/community service/secondary job/new to PP)	2	(11.8)	2	(5.6)	4	(8.0)
Provide in certain circumstances	2	(11.8)	2	(5.6)	3	(6.0)
Fine for review but not initial	1	(5.9)	2	(5.6)	3	(6.0)
Provide shorter consults (better than nothing)	2	(11.8)	1	(2.8)	3	(6.0)
Those with EPC plans usually can't afford to pay	0	(0.0)	2	(5.6)	2	(4.0)

Note:
- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE;
- Requirement of some practices was provided by n=1;
- No significant differences between H-EPC and L-EPC; and
- n=1 H-EPC and n=1 L-EPC Participants indicated 'N/A' as did not provide Medicare services.

The reasons Interview Participants were opposed to bulk billing are outlined in Table 7-17. The main reasons for not bulk billing were: that it is not financially viable (for initial consultation) (32.0%), issues with getting money from Medicare (24.0%) and increased administration time (22.0%). This is discussed in the following quotes:

> Financially I don't see how it's viable for them… if you have to pay rent, if you then have to chase up HIC to get paid it then involves extra time, I don't see how people accept [it]. (Interview 23)

> Medicare can take months to pay me, but I know that my client can walk straight into the Medicare office and get their rebate on the same day. So it is not good for cash flow. There's a risk of rejection if the doctor hasn't submitted the plan yet, and that something that is beyond my control. So I prefer that aspect to be between the patient and the doctor, not the patient and me. (Interview 24)

Interview Participants also commented that a free service may be less valued by patients: 'If patients are getting it for free ...there's no personal investment there to make one work. There's going to a much higher risk of people not showing up' (Interview 23). 'I also like the patients to go to a bit of an effort. I like the demonstration of motivation that requires them to make their payments then go to Medicare' (Interview 24). While shorter EPC consultations are more cost effective, they may decrease the quality of the service:

> I question what you can do in a 30 minute consult, how much rapport can you build, how much information, even if you get them to keep a food record, even if you're using Medical Director…I really do wonder how … effective dietetics professionals are. (Interview 23)

Many Interview Participants believed that the benefits of the Medicare rebate were sufficient, and patients did not require a free service. They reported that this did not appear to be an issue for most patients:

> Don't think that's what EPC Program is all about. I think it's about providing a service where patients can get a reasonable rebate, but providing a service that will get them along to see a dietetics professional, where they might not otherwise come...I've really not in all this time had a problem ..and even if they haven't known, they haven't really objected... I've explained...that the Medicare fee does not cover the long consultations, and most people are happy about that.. (Interview 11)

L-EPC Participants were more likely to provide reasons against bulk billing than in favour of it (n=29 vs. n=14) compared to H-EPC Participants (n=13 vs. n=11). H-EPC Participants more often did not bulk bill as it was more difficult for practitioner (11.8% vs. 0.0%; p=0.039). No significant differences were observed for H-EPC and L-EPC for reasons for bulk billing.

Table 7-17 Interview Participants' reported reasons against bulk billing Enhanced Primary Care (EPC) patients

	H-EPC Interview Participants (n=17)		L-EPC Interview Participants (n=36)		Total Interview Participants (n=50)	
	n	(%)	n	(%)	n	(%)
Not financially viable (for initial consult)	4	(23.5)	12	(33.3)	16	(32.0)
Issues with getting money back from Medicare	3	(17.6)	9	(25.0)	12	(24.0)
Increase admin time/require admin support	6	(35.3)	6	(16.7)	11	(22.0)
Good for patients to have to outlay money (increased motivation/appreciation/attendance)	3	(17.6)	6	(16.7)	8	(16.0)
Shorter consults decrease quality/difficult	2	(11.8)	5	(13.9)	7	(14.0)
No complaints from clients about not bulk billing	1	(5.9)	3	(8.3)	3	(6.0)
Patients can get rebate immediately	0	(0.0)	3	(8.3)	3	(6.0)
More difficult for practitioner	2	(11.8)	0	[(a)](0.0)	2	(4.0)
Not necessary for those who can afford to pay	1	(5.9)	1	(2.8)	2	(4.0)

[(a)] Significant difference between H-EPC and L-EPC Interview Participants (p≤0.05)

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE;
- n=1 H-EPC and n=1 L-EPC Participants indicated 'N/A' as did not provide Medicare services; and
- The following reasons were each provided by n=1: can't charge a gap; not providing a lesser service; other professions get higher rebates; the EPC Program is to make consultations more affordable not free; service not normally bulk billed/keeps professional; no profession should bulk bill.

Summary

Less than one-third of Interview Participants regularly bulk billed. Those who bulk billed did so as it allowed access to more clients, was beneficial for clients and was easier for practitioners than getting money off clients. Those who did not support bulk billing indicated that it was not financially viable, practitioners had issues receiving rebates from Medicare and it required increased administration time. H-EPC Participants were more likely to bulk bill.

7.4.2.8 EPC consultations as an opportunity to build business

Interview Participants' opinions as to whether EPC consultations were an opportunity to build their business is presented in Table 7-18. More than half of all Interview Participants saw the EPC Program as an opportunity to build their business (56.9%), with an additional 7.8% reporting that it was potentially an opportunity. Fourteen

percent were not trying to build their business, 11.8% did not view it as an opportunity, and a further 9.8% believed it increased referrals but not income. No significant differences were observed between H-EPC and L-EPC Participants.

Table 7-18 Interview Participants' beliefs as to whether Medicare Enhanced Primary Care (EPC) Program is an opportunity to build business

	H-EPC Interview Participants		L-EPC Interview Participants		TOTAL Interview Participants	
	n	(%)	n	(%)	n	(%)
Yes	13	(72.2)	19	(52.8)	29	(56.9)
Potentially	0	(0.0)	4	(11.1)	4	(7.8)
Increase referrals but not income	1	(5.6)	4	(11.1)	5	(9.8)
Not building business	2	(11.1)	4	(11.1)	6	(11.8)
No	2	(11.1)	5	(13.9)	7	(13.7)
TOTAL	18	(100.0)	36	(100.0)	51	(100.0)

Note:
- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE; and
- No significant differences between H-EPC and L-EPC Participants.

Interview Participants reported that the EPC Program provided the 'opportunity to build business because you can see more clients than what you previously would' (Interview 23). It was also viewed as an opportunity to market their services to GPs:

> What we hope is that the exposure to the general public as well as to the GPs is that they will see that there is a service and dietetics professionals can do a lot more than they actually realised and there can be more referrals down the track. So it is more like an investment. (Interview 3)

Reasons indicated for why the Program did not provide an opportunity to build business was that their clients would be referred irrespective of EPC eligibility or that they 'deliberately work those limited number of hours' (Interview 17). Others believed 'there would be more business but there wouldn't particularly be more dollars' (Interview 13).

> We can see probably three Medicare people for same income as one private patient. So we might be seeing more people, but from a business point of view it's probably not bringing in any more income. (Interview 3)

7.4.2.9 Perceived benefits of the EPC Program

Table 7-19 outlines Interview Participants thoughts on whether providing the Medicare EPC service was beneficial. The majority of Participants believed providing EPC

services were beneficial (84.3%), while 9.8% believed it was beneficial but only as a starting point. No significant differences were observed in the perceived benefits of the EPC Program between H-EPC and L-EPC Participants.

Table 7-19 Interview Participants' beliefs as to whether Medicare Enhanced Primary Care (EPC) Program is beneficial

	H-EPC Interview Participants		L-EPC Interview Participants		TOTAL Interview Participants	
	n	(%)	n	(%)	n	(%)
Yes	16	(88.9)	30	(83.3)	43	(84.3)
Yes - starting point	0	(0.0)	5	(13.9)	5	(9.8)
Yes and no	2	(11.1)	1	(2.8)	3	(5.9)
TOTAL	18	(100.0)	[(a)]36	(100.0)	[(a)]51	(100.0)

[(a)] n=1 L-EPC Participant indicated 'N/A' as did not provide Medicare services

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE; and
- No significant differences between H-EPC and L-EPC.

Table 7-20 shows that the greatest perceived benefits of the EPC Program were:

- Increased accessibility (50.0%);
- Financially for clients (38.5%), especially low SES clients/those without private health insurance (PHI) (15.4%); and
- Increased business for dietetics professionals (19.2%).

The reasons why providing the Medicare EPC service was not perceived to be beneficial were insufficient rebate (7.7%) and limited visits (5.8%) (data not in table). Individual Interview Participants suggested that the EPC Program was not beneficial due to the increased paperwork, less valuing of the service by clients, or that it was not beneficial for the clients they see. No significant differences were observed between H-EPC and L-EPC Participants.

Table 7-20 Reasons reported by Interview Participants for why the Medicare Enhanced Primary Care (EPC) Program is perceived to be beneficial

	H-EPC Interview Participants		L-EPC Interview Participants		TOTAL Interview Participants	
	H-EPC		L-EPC		TOTAL	
	n	(%)	n	(%)	n	(%)
Increases accessibility	9	(50.0)	19	(51.4)	26	(50.0)
Financially for clients	7	(38.9)	14	(37.8)	20	(38.5)
Increases business for dietetics professionals	4	(22.2)	7	(18.9)	10	(19.2)
Benefits low SES clients/those without heath insurance	2	(11.1)	6	(16.2)	8	(15.4)
Starting point	0	(0.0)	5	(13.5)	5	(9.6)
For clients (not specified why)	1	(5.6)	3	(8.1)	4	(7.7)
Increasing awareness of role of dietetics professional/nutrition	0	(0.0)	4	(10.8)	4	(7.7)
Benefit GPs (servicing their patients better)	1	(5.6)	1	(2.7)	2	(3.8)
Not beneficial to dietetics professional but need to provide service	1	(5.6)	1	(2.7)	2	(3.8)
Increases referral (GP think about referral)	0	(0.0)	2	(5.4)	2	(3.8)
Encourages multidisciplinary care (provides opportunity for dietetics professional to refer to other allied health)	2	(11.1)	1	(2.7)	2	(3.8)
Beneficial to everyone who has gone into using it	2	(11.1)	1	(2.7)	2	(3.8)

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE;
- No significant differences between H-EPC and L-EPC Interview Participants; and
- The following were each provided by n=1: something is better than nothing; more practitioners so decreased waiting times; encourages more visits.

Summary

The greatest perceived benefits of the EPC Program were the increased accessibility and reduced cost for patients as well as the increased business for dietetics professionals.

7.4.2.9.1 Allied Health Group Services under Medicare for patients with type 2 diabetes

While interview questions were not specific to the Medicare group diabetes services, many dietetics professionals discussed these. Issues identified with the group services included:

- Inadequate rebate for the effort required;
- Inadequate number of patients attending;
- Difficulty charging between other AHPs;
- Other more qualified practitioners running groups in area/sufficient group services in health system;
- No room for group education in current locations; and
- The requirement for substantial preparation.

Reasons dietetics professionals noted for providing the group services were that they were a 'value add' to their service as well as another way of marketing to GPs and building their business. A few Interview Participants were planning on conducting groups in the future, with others questioning the financial viability:

> The groups really needs a lot of work...I don't have group rooms so I need to hire them… Unless I charge a fee and I guess a lot of the other practitioners in my area have chosen not to charge a fee but to bulk bill for groups. So at the moment I'm just participating in someone else's group because it's not financially viable for me to put the time into planning a group at all. I just want to arrive, do the talk, and leave; and even then it does not really cover my cost. (Interview 24)

7.4.2.10 Suggested improvements to the Medicare EPC Program

Suggested improvements to the Medicare EPC Program provided by Interview Participants are included in Table 7-21. The most common improvement was more visits (51.9%):

> Additional visits would be a fabulous thing. Many patients do need more than they get. Occasionally if somebody has multiple health conditions their doctors will divide those five visits between three practitioners, so you may only get one or two, which does not give you much of an

> opportunity to make a difference as a dietetics professional, depending what the problem is. (Interview 24)

Less paperwork was recommended by 42.3%:

> All of the paperwork that is required...perhaps making a little less pressure on GPs. They are already... under pressure... and ...understaffed...so making it easier on them is going to make it easier on us as well. (Interview 32)

Increasing the rebate, especially for the initial consultation, was the third most common suggestion by Interview Participants (40.4%):

> [It] would be good if Medicare would give you more money. If you are bulk billing then you don't get the full amount that you would normally for a consult. (Interview 2)

Many Interview Participants indicated that it would be beneficial for Medicare to provide compensation for other activities associated with providing EPC services:

> Rebates for dietetics professionals to actually communicate in person with doctors. The doctors get a fee for participating in a meeting, but the allied health professionals do not, which does not recognise the value of our time. (Interview 24)

While many improvements were suggested by dietetics professionals, others thought it was working well in its current form:

> I think the way it is running at the moment is fine. When I say it's barely viable I understand as well that being paid by the government I don't see that it should be a big money making exercise. I think it should be something that does give people the opportunity that wouldn't be able to afford it otherwise, but I don't think it should be a big business opportunity for health practitioners. I think it needs to cover cost of course with maybe a slight incentive. (Interview 18)

Table 7-21 Suggested improvements to the Enhanced Primary Care (EPC) Program by Interview Participants

	H-EPC Interview Participants		L-EPC Interview Participants		TOTAL Interview Participants	
	n	(%)	n	(%)	n	(%)
More visits (depending on condition/individual)	7	(38.9)	21	(56.8)	27	(51.9)
Less paperwork (overall)	7	(38.9)	15	(40.5)	22	(42.3)
Increase rebate (especially Initial)	8	(44.4)	14	(37.8)	21	(40.4)
Educate GPs (EPCs/dietetics professionals/eligible conditions)	4	(22.2)	9	(24.3)	13	(25.0)
Less paperwork for GP	2	(11.1)	8	(21.6)	10	(19.2)
Easier processing of claim/bulk billing	4	(22.2)	5	(13.5)	9	(17.3)
Less paperwork for dietetics professional	4	(22.2)	4	(10.8)	8	(15.4)
Not just GP referral	0	(0.0)	4	(10.8)	4	(7.7)
Rebates for related activities	0	(0.0)	3	(8.1)	3	(5.8)
Easier tracking of visits pt has used	1	(5.6)	1	(2.7)	2	(3.8)
More conditions covered	1	(5.6)	1	(2.7)	2	(3.8)
Groups need improvement	0	(0.0)	2	(5.4)	2	(3.8)
Differing rebate depending on location/experience	1	(5.6)	3	(8.1)	2	(3.8)

Note:

- H-EPC = divisions conducting a high number of EPC consultations per population and PP dietetics professional FTE;
- L-EPC = divisions conducting a low number of EPC consultations per population and PP dietetics professional FTE;
- No significant differences between H-EPC and L-EPC; and
- The following were each provided by n=1: reduced expectation to be bulk bill; improved patient awareness of Medicare the EPC Program; decrease minimum time for reviews from 20 minutes to 15; not having AH to have to approve care plan.

7.5 Discussion

The purpose of this chapter was to assess the provision of nutrition advice by PP dietetics professionals via the EPC Program. Evaluating PP dietetics professionals' views and use of the EPC Program provides insight into the Program's perceived effectiveness, as well as its potential to improve the delivery of nutrition advice in the general practice setting. Participation in the EPC Program by dietetics professionals was high, with 94% of Interview Participants indicating involvement; similar to that reported by Cant and Aroni (2008). When practitioners who are the only private dietetics professional available in their area choose not to participate, access to dietetics services is restricted as this avenue for GP referral is blocked. While desire not to participate may be influenced by barriers in the system, often it is a result of the service not being relevant to the practitioner's clientele.

EPC services expanded the clientele of the majority of Interview Participants, resulting in increased GP referrals, clients and overall hours. This is supported by the literature (Cant & Aroni, 2007; Shortus, et al., 2007). Dietetics professionals reported that a major benefit of the EPC Program is the improved accessibility of dietetics professionals due to the reduced costs. Shortus *et al.* (2007) identifies that the improved access to AHPs for patients through the EPC Program actually encouraged GPs to initiate care plans and AH referrals, where previously they would not have bothered to refer. The EPC Program also encourages multidisciplinary care, which is a benefit identified by study Interview Participants and the literature (Shortus, et al., 2007). Shortus also indicated that GPs were able to gain an increased understanding of the skills of AHPs via the care planning process. Interview Participants reported to use the care plans as a marketing opportunity to GPs, ideally gaining both EPC and private referrals. For those desiring an increase in practice, the EPC Program is an ideal opportunity of dietetics professionals to market their services to GPs. However, it is understandable that practitioners who are working at capacity would not be as interested in tapping into the Medicare market.

The majority of Interview Participants did not report seeing a high number of EPC patients per week; however, this may be more reflective of the small number of patients seen overall for many dietetics professionals due to the part-time workloads. Interview Participants reported similar percentages of EPC patients to total patients to that identified by Cant and Aroni (2008);<20% (36% vs. 35% respectively); 21-40% (22% vs. 16% respectively); 41-60% (16% vs. 14% respectively);and >60% (26% vs. 35% respectively). Cant and Aroni (2008) indicated that 14.3% of participants reported Medicare patients to constitute most of their patients, identical to the 14% of Interview Participants reporting >80%. This suggests that Interview Participants are reflective of others in PP and that the proportion of dietetics professionals' clientele derived from the EPC program is evenly distributed.

The availability of more EPC consultations per patient was the main improvement to the EPC Program suggested by dietetics professionals in this study. As a maximum of five Medicare consultations per patient per year needs to be shared between each AHP requiring input, additional visits are particularly beneficial for complex patients requiring intervention from multiple AHPs. One in five dietetics professionals reported that they were usually allocated all five EPC consultations, with fewer than half most often allocated 3-5. To make this Program cost effective for dietetics professionals charging lower rates for initial appointments, it is beneficial to be allocated as many of the five visits as possible. Dietetics professionals also felt that the limited visits do not provide adequate opportunity to help patients. These beliefs are supported by the literature (Cant & Aroni, 2007, 2008; Foster, et al., 2008; Harris, et al., 2009). Foster *et al.* (2008) believes that sharing these five visits between AHPs does not allow sufficient time for adequate assessment, treatment and evaluation and is not likely to be able to deliver care consistent with clinical guidelines, compromising clinical care. Effective client/professional relationships may also take more than one or two sessions to establish (Cant & Aroni, 2007). Recommendations by Cant and Aroni (2008) are that the annual maximum number of dietetic visits should increase to at least five, with the opportunity of more if required. They also highlight the need for research to determine the number of consultations required for best practice care for common chronic disease conditions. Harris *et al.* (2009) recommended that the number of visits be graded

according to condition severity. In their briefing paper to the Federal Government, Allied Health Professions Australia (2007) suggested that more visits should be possible if required, following the 6+6+6 formula used in Mental Health.

While many Interview Participants reported that the EPC Program overcomes the cost barrier of consulting a dietetics professional, it was also indicated that cost is still a barrier, as not all practitioners bulk bill. While the reduced cost may be enough to encourage some patients to see a dietetics professional, other patients are not able to pay even a minimal gap, or they are not willing to pay for the consultation and be reimbursed. There was large variety in out-of-pocket expenses for patients. However, practitioners that charged the largest gap payment were usually more experienced or were providing specialist services. It should be expected that those with experience would charge higher rates. However, service inequality is experienced if patients must pay large gaps because no other service is available.

Approximately half of Interview Participants charged the same fee for both initial and review appointments for both EPC and non-EPC consultations. Just over one-quarter bulk billed initial and review consultations, with another 10% of Participants charging EPC initial consultations a reduced rate. This was to reduce the out-of-pocket cost for clients and make their service more accessible. No dietetics professionals reported to charge a reduced rate for review EPC consultations, conversely, 10% charged more than usual. This higher review rate was attributed to the rebate being higher than their usual review fee, the increased reporting requirements, or believing that it is good for clients to pay something. The rebate amount was closer to the fee charged by Interview Participants and participants in the study by Cant and Aroni (2008). Currently, the EPC rebate is the same for initial and review appointments, despite the differing time required. This makes the rebate more profitable for review appointments and indicates why dietetics professionals would prefer multiple visits allocated or the initial rebate increased.

Interview Participants indicated the current EPC rebate is substantially less than the fee normally charged by most dietetics professionals for initial consultations. The belief that the Medicare rebate for EPC consultations is inadequate is also supported by the

literature (Allied Health Professions Australia, 2007; Cant & Aroni, 2008; Foster, et al., 2008). The literature has suggested that there should be different rebates for initial and review consultations, to allow for longer initial consultations in line with current practice (Allied Health Professions Australia, 2007; Cant & Aroni, 2008). Increasing the initial rebate will make the Program more financially viable for practitioners who bulk bill or lower the gap payment for patients claiming their rebate from Medicare, without practitioners having to shorten their appointments. This will also make care more equitable between SES groups (Foster, et al., 2008).

It is also felt that the rebate does not account for many of the activities associated with the EPC Program, including participation in case conferences and letters back to the GP. This is supported by the literature (Allied Health Professions Australia, 2007; Cant & Aroni, 2008; Foster, et al., 2008). There is currently inequality between GP and dietetics professional payments, with GP payments for completing the referral higher than those for dietetics professionals conducting the consultation, with GPs being remunerated for administrative tasks while dietetics professionals were not (Cant & Aroni, 2008). Cant and Aroni (2008) recommend that the scheduled fee payment should account for time spent consulting with other professionals. Allied Health Professions Australia (2007) believe that case management and case conferences should be remunerated. It was also argued that dietetics should receive a higher rebate than 'hands-on' professions due to the time required for counselling, and that this should be in-line with the higher rebate of mental health items (Cant & Aroni, 2008). Dietetics professionals have an important role in counselling in chronic disease which requires additional time.

Bulk billing was conducted regularly by one-quarter of Interview Participants, with just over half never bulk billing. This is similar to the literature indicating that one-third of participants bulk billed initial and review visits (Cant & Aroni, 2007), with 42% never having bulk billed (Cant & Aroni, 2008). The most common reasons for bulk billing were: to access more clients, that it is beneficial for clients, and it is easier than getting money off clients. This is a novel finding not previously reported in the literature. Research supports the participants' main reasons for not bulk billing,

including not being financially viable (for initial consult), issues with getting money from Medicare and increased administration time (Cant & Aroni, 2007, 2008). Unfortunately, due to these barriers associated with bulk-billing, very few dietetics professionals viewed it as a profitable business opportunity, thus preventing many from bulk billing.

Many dietetics professionals reported they would prefer patients to pay for the consultation and collect their own rebate, as patients can receive it on the same day, while practitioners have to wait sometimes lengthy periods of time. This was also addressed in the literature (Cant & Aroni, 2008). Interview Participants and the literature report problems receiving rebates if patients were not eligible or forms had been completed incorrectly (Cant & Aroni, 2007, 2008). Cant and Aroni (2008) found that 59% of dietetics professionals had to bill patients themselves, making the extra work required for bulk billing difficult. They reported practitioners may be more willing to bulk bill if they were allowed to charge a gap fee. Dietetics professionals also felt that it was good for patients to have to outlay money as they would have greater motivation and more likely to attend their appointment. Cant and Aroni (2007) commented on the increased valuing of a service that patients had to pay for, with increased effort to follow the recommended changes. Conversely, this article highlighted a gap payment meant patients had to want to attend, potentially limiting the uptake of referrals. Interview Participants did not offer comment in this area, however 4% reported a benefit of bulk billing was that those with care plans usually cannot afford to pay.

It was expected that Participants would be more willing to bulk bill review appointments compared to initials due to the standardised rebate being more profitable for the shorter time-frame. However, it appears patients were merely charged a lower rate, presumably for the above reasons. This is also reported by Cant and Aroni (2008). A few willing dietetics professionals provided a bulk billing service to the community; however, the vast majority of dietetics professionals could not afford to bulk bill. For bulk billing to be profitable, consultations must be kept short, patient numbers high, and overheads low. It is likely that if Medicare rebates were

more reflective of current dietetic billing rates, especially for initial consultations, and receiving rebates streamlined for practitioners, many more dietetics professionals would be willing to offer a bulk billing service, thus improving access to patients and addressing the issue of equitable access to care for all in the community. Cant and Aroni (2008) highlight the importance of overcoming the barriers to bulk billing to enable better private dietetic access for all. This is especially important in low SES areas where chronic disease levels are higher and people have less disposable income to spend on dietetic services.

The majority of Interview Participants provided a similar length consultation for EPC and non-EPC patients. To overcome the inadequate rebate, and to keep the out-of-pocket expenses for the patient at a minimum, some Participants offered a shorter bulk billed/ reduced fee appointment. However, there were conflicting opinions as to whether these shorter consults were advantageous or not. Those opposing shorter consults believed it was not possible to provide a quality service in this timeframe; those supporting it believed that obtaining some advice was better than nothing if gap payments prevented patients from attending. Occasionally practitioners offering shorter consults provided the initial consult over two sessions; however, with the limited number of visits it is difficult for the patient to get enough out of it. The literature also questioned the ability to provide a quality service in reduced time (Cant & Aroni, 2007). Cant and Aroni (2008) recommended that the Medicare schedule includes both long and short consultations, allowing at least 50 minutes for initial appointments and additional time which is necessary for more complex conditions.

Reduced paperwork was the second most common suggestion for improvement to the EPC Program by dietetics professionals. This included less paperwork for both GPs and dietetics professionals. It was felt that the lengthy paperwork for the GPs discouraged referrals as GPs have limited time. Allied Health Professions Australia (2007) have recommended that referral to AHPs should be easier with less paperwork. Many Interview Participants viewed the reporting requirements back to GPs through patient feedback letters to be excessive, however, in November 2005 this was reduced from a letter required after each consultation (Department of Health and Ageing, 2004)

to only the first and last visits (Department of Health and Ageing, 2005c). The 'paperwork' associated with bulk billing can be tedious, with room for errors preventing practitioners from being paid. It was suggested by Cant and Aroni (2008) that the use of E-referral and E-reporting will aid communication and sharing of information between GPs/PNs and dietetics professionals. Previously, GPs had to submit their paperwork for the required Chronic Disease Management (CDM) care planning items before the AH services could be claimed; however, this was not the case after 1 January 2009 (Department of Health and Ageing, 2009a). This improvement has streamlined the claiming process for dietetics professionals, decreasing the risk of not receiving reimbursement.

The literature has also recommended that to improve the EPC Program the number of eligible conditions should be expanded where there is sufficient evidence for treatment of those conditions (Allied Health Professions Australia, 2007). However, this was not supported by the Interview Participants in the current study.

When considering the barriers and suggested improvements for the Medicare EPC Program it must be noted that this Program was designed to decrease cost to the health system and improve patient care, not make more business for dietetics professionals. Therefore, it should be expected that not all aspects of the EPC Program are ideal for dietetics professionals. Nevertheless, the EPC Program is continually being reviewed and improved, with many of the processes being streamlined.

It was initially proposed that dietetics professionals' opinions of the EPC Program would vary between H-EPC and L-EPC groups, accounting for the differing levels of provision of this service. Few differences were reported with no reported difference clearly accounting for the variability in uptake and utilisation of EPC consultations. True to the definition of H-EPC, Participants reported a higher number of EPC patients per week, despite both groups reporting the same number of total patient consults on average per week.

L-EPC Participants were less likely to have altered their service for EPC patients, while H-EPC Participants were able to more appropriately target their services to this market due to it being greater proportion of their clientele. L-EPC Participants more often

charged the same cost and did not bulk bill, therefore reporting a higher cost for initial and review consultations. Compared to H-EPC Participants, L-EPC Participants were more likely to have provided reasons against bulk billing than in favour of it. This may be due to dietetics professionals from H-EPC divisions having received more support from DGP or colleagues in setting up a system that works to bulk bill, or it may have been expected by more GPs in these divisions. Alternatively, if other dietetics professionals in the area were bulk billing, then it may have be accepted in order to stay competitive. However, there were not strong trends between divisions. H-EPC Participants were more likely to have reported not bulk billing due to the difficulty faced by practitioners. This may as a result of difficulties personally faced by H-EPC Participants, as they were more likely to bulk bill. Despite Medicare specifying that if bulk billing a gap cannot be charged, some H-EPC Participants did so. This resulted in significantly higher rates of bulk billing and then charging a gap, charging increased rates for review consultations, and charging a higher rate for review EPC consultations compared to non-EPC consultations in H-EPC Participants.

The main other differences that occurred between H-EPC and L-EPC Participants tended to be in the reasons given for particular opinions, and therefore were often not clinically relevant. H-EPC Participants were more likely to report positive outcomes such as a belief that the EPC Program expanded clientele due to building relationships with GPs. L-EPC Participants were more likely to believe that it did not result in an overall increase in patients seeing a dietetics professional based on their own experience.

L-EPC Participants were more likely to have reported being allocated more EPC consultations per patient than H-EPC Participants (3-5 out of the potential 5). However, this is because H-EPC Participants reported more variability with GPs/conditions, and were less likely to be able to provide an estimation for the average number of EPCs usually allocated. Alternatively, if the main driver of the higher consultations in H-EPC divisions is GPs who are better referrers, then they may be referring to more AHPs via the EPC Program, thus consultations were shared.

This research was unable to identify other factors which may have influenced a higher provision of Medicare EPC consultations in H-EPC divisions. Research by Cant and Aroni (2008) showed no significant link between satisfaction with the Medicare EPC Program and hours of work, category of practice or years since graduating (Cant & Aroni, 2008). However, they were able to show that an increased satisfaction with the EPC Program in dietetics professionals who worked in a group practice with either dietetics professionals or other AHPs, rather than with GPs.

The effectiveness of the EPC Program, as an avenue to improve the delivery of nutrition advice in the general practice setting, can also be evaluated by investigating trends in Medicare EPC data since the Program was introduced in 2004. Ascertaining the potential impact of the EPC Program on the dietetics profession, specifically in DAA membership data, is useful in evaluating the benefit of the EPC Program in terms of access to nutrition intervention by PP dietetics professionals. Comparing the number of EPC consultations and providers for dietetics to other AHP is useful in assessing the impact and ascertaining why some professions have utilised this opportunity more than others.

EPC AH consultations have increased dramatically since their introduction in July 2004. It is expected that this trend of increasing EPC consultations will continue as GPs, AHPs and patients become more familiar with the services that are available. While EPC consultations increased each year for all professions except one, the percentage of total consultations changed, indicating the market share that each profession held. This reflects how each profession performed relative to others.

Compared to many other health professions, dietetics did not have a large number of EPC providers. Therefore, in claiming the third highest number of EPC consultations, dietetics achieved the highest number per provider in the first two years of the Program. This suggests that dietetics professionals initially engaged in the Medicare changes and used this opportunity to some advantage. However, by 2006-07 dietetics professionals dropped from the highest number of EPCs per provider to the third highest, with podiatrists and diabetes educators achieving a greater number per provider. Diabetes is one of the main chronic diseases for which patients are eligible for

this Program. This may provide an explanation as to why podiatrists, diabetes educators and dietetics professionals conducted the most EPC consultations per provider, and podiatrists and dietetics professionals conducted the second and third highest number of consultations overall. While diabetes educators as a group did not provide a large number of EPC consultations, their output was second highest per provider in 2005-06 and 2006-07. The opportunity for diabetes educators was recognised by the Australian Diabetes Educators Association, with the August 2007 supplement of the Australian Diabetes Educators magazine being dedicated to PP (Australian Diabetes Educators Association, 2007). This supplement had a strong emphasis on utilising Medicare EPC items as an income source for those working in PP. Support and training from professional associations may possibly encourage health professionals to be more confident and willing to see patients under the Medicare scheme.

DAA membership during this time revealed an increase in both overall membership (1826 in 2004 to 2394 in 2007) as well as PP dietetics professionals (512 in 2004 to 772 in 2007). The increase in the number and percentage of PP dietetics professionals since 2004 suggests that opportunity in this area of dietetics is increasing; however, this trend in increasing numbers is reflected in all DAA membership, and the anticipated sharp increase in PP relative to other work areas was not realised. The increase in membership numbers may be due to an increased number of graduands rather than a change in the workforce environment. If this is the case and new graduates are starting in PP there is potential need for University courses to be providing graduates with PP skills.

Between 2004 and 2007 there was a 50% increase in the number of PP dietetics professionals ($p=0.003$). The introduction of Medicare funding via the EPC Program and the dramatic increase in the number of EPC consultations provided by dietetics professionals may account for some of the 66% increase in PP FTEs over the four years. A small portion of this may be accounted for by patients who had previously accessed free dietetics services through the public system may have been more willing to see a private dietetics professional when a rebate/bulk billing was available. Australian

Health Insurance Association (2008, unpublished data) also indicates there were decreases in PHI dietetic claims during this time. While there were increases in the amount of PHI dietetics claims up to June 2004 (2001-02 to 2002-03: 7.7%; 2002-03 to 2003-04: 14.2%), after the introduction of Medicare AH rebates in July 2004, PHI claims on dietetic services reduced (2003-04 to 2004-05: -6.7%). After this initial decrease it stabilised (2004-05 to 2007-08: 1.9%). This suggests that in the first year of the Program, many patients who had previously accessed a dietetics professional using their PHI took advantage of the often higher rebates available via the EPC Program. Therefore, the high number of EPC dietetics consultations provided in 2004-05 is not directly reflective of the number of patients who gained access to dietetics professionals. As PHI dietetic services were stable in subsequent years, the increase in dietetics EPC consultations indicates that overall patient access to nutrition advice via dietetics professionals increased.

The Medicare EPC also impacted other AH professions differently. Despite the decrease from 2004-05 to 2006-07 in the percentage of EPC consultations claimed by physiotherapists, they maintained the highest number of EPC consultations overall. This may be due to the large number of physiotherapist size of the profession and their dominance in the private sector, as well as their role in the treatment of many chronic diseases (Australian Bureau of Statistics, 2008). Their higher percentage initially may be due to being better known or more accessible at the commencement of the EPC Program, and while the number of consultations provided increased, their percentage of total AH consultations dropped as other professions increased their engagement. However, by 2007-08, the fourth year Medicare funding for AH consultations, podiatry overtook physiotherapy as the highest provider of EPC consultations. By 2008-09 they claimed more than 40% of the total EPC market, doubling in four years. This indicates the success of podiatrists to capitalise on the opportunity presented by Medicare rebates, providing services that are seen to be beneficial by the diabetic patients accessing their services and the GPs who are referring them.

The perceived need for a service may influence the number of EPC consultations allocated to a profession, as with the limitation of five EPC services per calendar year

GPs must prioritise patients' complex care needs. Educating GPs regarding the role of dietetics professionals in chronic disease management is critical in maximising dietetics allocation. However it is not always feasible for GPs to involve the required professions if Medicare registered individuals are not accessible. As rebates for all AH EPC services are the same, the perceived adequacy of the rebate by practitioners may influence interest in providing the service. The decline in psychology EPC consultations may be due to the availability of Medicare rebates for allied mental health services (Department of Health and Ageing, 2008), which provide higher rebates and more visits per patient. Professions desiring an increase in the private sector are more likely to seek the Medicare market. Research into these areas is required to assess their impact on the change in work patterns.

Examination of the DAA membership data indicates that those dietetics professionals working in PP are predominantly doing so in conjunction with other work, and this may limit their ability to take advantage of this opportunity to grow their businesses. However, those dietetics professionals who act in an entrepreneurial way or who are wishing to grow their PP business may be in a better position to act on this structural change and utilise this opportunity. It may be that the profession needs to offer a training course on how to set up in business and utilise EPC opportunity so it is profitable for practitioners. Cant and Aroni (2008) believe that DGP should be supporting AHP providing chronic disease care through Medicare with education and training to improve practice. They recommended that dietetics professionals working with chronic disease in the private sector may benefit from training in a business model for primary care. Individual practitioners generally incorporate the Medicare service into their often part-time work, in an ad-hoc way, and therefore, developing systems and models to better utilise the Medicare opportunity may be more effective (Cant & Aroni, 2008). Additionally, AHPs would benefit from training in how to best network with general practice to improve relationships and increase referrals, making the most of the Medicare opportunity.

When the Medicare group items for type 2 diabetes were introduced in May 2007 it was considered a great achievement for dietetics. However it appears that the

provision of group services is lower than expected due to the barriers in implementing, including inadequate rebates. Cant and Aroni (2008) found that only 8% of participants were currently offering group Medicare services, with an additional 8% planning to do so. They noted barriers which were supported by Interview Participants, including a lack of: financial viability, a suitable venue, referrals from GPs, multi-disciplinary team members and a suitable program already developed, or time to conduct additional activities.

7.5.1Limitations

Medicare data can be reported either based on the date of service or the date of the processing of the claim. EPC data purchased from Medicare is based on the date of delivery, while data obtained from the Medicare website (Medicare Australia, 2009) are based on the dates the claims are processed. It is not likely that this would alter the values to any real extent. It must be noted that the decreases in dietetics services which occur in January each year (see Figure 7-5) could be attributed to decrease in the services provided in December, or less processing of the claims in January due to the holiday period.

DAA membership data are self-reported and accurate on the day collected, as people may join at any time throughout the year. To reduce this variability in results, membership data were collected at similar time points each year.

As mentioned in Chapter 5, the small participant numbers for Interview Participants and uneven group size may have masked more significant differences between H-EPC and L-EPC groups.

7.6 Conclusions

Medicare funding for patients with chronic disease under the EPC system has provided a structural and funding stimulus for the AH workforce. Uptake of the EPC Program has been positive, with large increases in dietetics EPC consultations each year. While dietetics professionals claimed the highest number of EPC consultations per provider in the first two years and experienced an increase in the number of PP

dietetics professionals, growth was not as high as anticipated, with the percentage of total EPC consultations provided by dietetics decreasing. These data suggest that this opportunity for dietetics professionals is substantial, but the failure to continue rapid growth suggests that it would be worthwhile for more professional development and preparation in business and entrepreneurship for practitioners.

The EPC Program overcomes or offsets the cost barrier of seeing a dietetics professional and therefore improves access and expands clientele. Dietetics professionals have utilised this opportunity to expand their services. However, there is the potential for further utilisation. This is reliant on dietetics professionals desiring an increase in their business, as many dietetics professionals are working at capacity. Satisfaction with the EPC Program and hence uptake may be improved through the availability of more consultations per patient per year, an increased rebate, particularly for the initial consultations and less paperwork. While bulk billing improves the accessibility of dietetics services, it is not profitable enough for many practitioners at the current rebate, thus limiting it as a driver of change.

The Medicare EPC Program is a key avenue for PP dietetics professionals to provide nutrition interventions in general practice. Emphasis should be placed on increasing GP referral and utilisation of this opportunity for their patients, as well as overcoming the identified issues with the EPC Program.

Chapter 8

Final Discussion

Effective delivery of nutrition advice in the general practice setting is essential in maximising the health of the general population. Optimal delivery from a variety of avenues, including GPs, PNs and PP dietetics professionals is beneficial to ensure general practice patients have access to the necessary nutrition advice. However it is also essential that advice is evidenced based and implemented within the constraints of the general practice setting. Successfully ensuring adequate access and effective implementation of nutrition advice will impact on patient behaviour and therefore health outcomes. Once issues of access and effective implementation are addressed then outcomes can be monitored and from this meaningful effectiveness ascertained. The cascade model (see Section 2.4) can be seen as a useful way of evaluating the delivery of nutrition advice. Using this model, barriers to access and implementation can be established in order to improve patient outcomes.

From this research it is clear that GPs, PNs and dietetics professionals all have a role in the delivery of nutrition advice in general practice. It is recommended in the literature that GPs and PNs should be identifying nutrition related risk factors and conditions, raising nutrition awareness amongst patients and providing basic advice (American Dietetic Association, 1998; Brauer, et al., 2006; Brotons, et al., 2003; Macario, et al., 1998; Pomeroy & Worsley, 2009b). Patients with complex conditions or those requiring detailed or individualised advice then need to be referred to dietetics professionals for appropriate intervention (American Dietetic Association, 1998; Brauer, et al., 2006; Brotons, et al., 2003; Macario, et al., 1998; Pomeroy & Worsley, 2009b). Finally, GPs and PNs need to follow up with the patient, reinforcing the nutrition messages provided by themselves and dietetics professionals at subsequent visits (American Dietetic Association, 1998; Brauer, et al., 2006; Brotons, et al., 2003; Macario, et al., 1998; Pomeroy & Worsley, 2009b). This three pronged approach, incorporating GPs, PNs and dietetics professionals is proposed as the most effective means of delivering nutrition advice in the general practice setting; utilising the roles and strengths of all three health professionals.

GPs are the first point of contact in the health system, with access to the majority of the population (Britt, et al., 2005). Evidence suggests that advice from GPs is effective as GPs are perceived to be experts and are trusted and listened to (Hiddink, et al., 1997a; Macario, et al., 1998; Tan, et al., 2006; Truswell, et al., 2003; van Dillen, et al., 2006; Wiesemann, 1997). Therefore the roles of GPs in providing nutrition advice cannot be ignored. They have a role in identifying nutrition related risk factors and conditions in their patients, and using their authority to raise patients' awareness of the importance of nutrition in prevention and treatment.

The role of PNs in the general practice setting is expanding, with PNs conducting more patient advice and counselling (Britt, et al., 2007). PNs are persuasive with patients (Harrison, et al., 2002; Phillips, et al., 2009), have effective interpersonal skills (Atkin & Lunt, 1996; Phillips, et al., 2009), and perceive themselves to be effective in providing lifestyle counselling (Steptoe, et al., 1999). This research shows the benefit of PNs in is their approachability, understanding and ability to make patients feel comfortable, as well as longer consultation times with patients (Atkin & Lunt, 1996; Harrison, et al., 2002; Phillips, et al., 2009). Therefore PNs have a role in the provision of basic scripted nutrition advice, after training in the provision of that advice. Their role in using guidelines (Harrison, et al., 2002; Phillips, et al., 2009) and conducting preventive care (Atkin & Lunt, 1996; Raftery, et al., 2005; Steptoe, et al., 1999) and health assessments should be capitalised on in the delivery of nutrition assessments and advice. There is also a role for referral to dietitians for individualised care and the provision of complex nutrition advice.

Dietetics professionals are the nutrition experts, have extensive nutrition training and experience, and are able to provide in-depth, personalised nutrition education and behavioural counselling (American Dietetic Association, 1998; Hiddink, et al., 1997a; Macario, et al., 1998; Talip, et al., 2003; van Dillen, et al., 2006; Waisman & Sauve, 1990). While their role is evident, it will be enhanced if GPs and PNs are involved in the process. If nutrition is on the agenda of GPs and PNs, then referrals will increase as more general practice patients pursue specialised advice. However, it is important that advice by GPs and PNs does not cross into the domain of dietetics professionals, and

that referral is provided for patients requiring detailed, individualised nutrition advice. Nevertheless, not all patients require, or request referral to dietetics professionals, and it is important for these patients to be provided with appropriate nutrition advice from their GP and PN. Therefore, dietetics professionals should not believe that it is unacceptable for any other health professional to raise nutrition issues. While there have been concerns that GPs and PNs are providing inaccurate information, ultimately, improved nutrition awareness will be beneficial. The relationship building that may come as a result of the increased referral will allow the capacity to improve the nutrition advice provided.

In spite of recommendations for the role of GPs and PNs in the delivery of nutrition advice, research shows the provision of nutrition advice is not adequate (Boulton & Williams, 1983; Brotons, et al., 2003; Galuska, et al., 1999; Holund, et al., 1997; Levine, et al., 1993; Maiburg & Hiddink, 1999; McArtor, et al., 1992; Orleans, et al., 1985; Tan, et al., 2006; van Dillen, et al., 2005; Witt, et al., 2006). There are barriers to the provision of nutrition advice which need to be identified and overcome when developing interventions for GPs and PNs. The poor response rates and the difficulty recruiting GPs and PNs into these studies provides further evidence that as a whole they are not keen to participate in activities that add complexity in their already busy schedules. This is supported in the literature (Asch, et al., 2000; Down, et al., 2009; Franke, et al., 2008; Goodyear-Smith, et al., 2009; Hummers-Pradier, et al., 2008; Mapstone, et al., 2007).

Lifescripts© were designed to facilitate GPs to provide nutrition advice within the short timeframe of a consultation, supplying brief assessments and advice based on patients' responses. This places GPs' authority behind nutrition messages without relying on a high degree of nutrition knowledge. This research shows that Lifescripts© increased GP and PNs' perceived experience in providing nutrition advice. Patient Participants' opinion of Lifescripts© were favourable, believing they provided the motivation and accountability for behaviour change.

Lifescripts© were developed in an evidence based framework and should have been an effective intervention to increase the delivery of nutrition advice in general practice.

However, in spite of their benefits, too many barriers exist for their effective implementation. Lifescripts©' evidence base pertained to their content, not their mode of delivery or implementation. While general practice is the ideal location for preventive activities, ultimately GPs' main focus is treating patients' presenting problems. Awareness of Lifescripts© was poor, however, even when GPs were aware of them provision was low. The difficult recruiting GPs, PNs and patients into these studies may indicate a lack of interest by GPs, PNs and general practice patients in Lifescripts©.

Despite ideally being a 'one-minute message', the time required to implement Lifescripts© was a barrier. Patients desire more than a 'one-minute message', with discussion of Lifescripts© and support from GPs and PNs reported to be the main benefit. Lifescripts©' standardised messages are suited to health checks, however, nutrition advice may be better implemented if specific to a condition/risk factor, thus linked to the consultation reason and a reimbursable Medicare item number. In themselves, Lifescripts© do not currently attract a rebate. GPs and PNs still felt they needed more information after training and the use of Lifescripts©. This highlights the need for a decision tree with scripted nutrition advice, so that a more realistic level of training and knowledge are attained.

Lifescripts© did not substantially change GPs and PNs' views and practices, and therefore do not appear to be efficacious or represent the best value for money. Unfortunately, a significant cost of Lifescripts© was in their development and distribution, rather than ongoing use. Ideally initiatives such as this should go through further testing or market research to prove their effectiveness prior to spending large amounts of money. Implementing new information in general practice often fails because too much time is placed on developing the information rather than implementing it (Conroy & Shannon, 1995; Grol, 1992). The dissemination and implementation of resources is integral, as is appropriate evaluation (Conroy & Shannon, 1995; Grol, 1992).

While Lifescripts© are not the most effective means of improving the delivery of nutrition advice in general practice, if they are going to be used to increase nutrition

advice then strategies should be utilised to improve implementation and outcomes. The importance of the 'one-minute message' needs to be emphasised to GPs, otherwise Lifescripts© will not be realistically implemented. Initiation of Lifescripts© by PNs with follow up from GPs utilises GPs' credibility while limiting their time commitment. Linking Lifescripts© to a Medicare item number will also provide an incentive for GPs and PNs to implement them, however the reimbursement would need to reflect the 1-minute nature of Lifescripts©. Including Lifescripts© in decision trees for specific conditions would also be beneficial. Alternatively, Lifescripts© could be used within the 'super clinic' model where patients are likely to expect whole of person care. Relying on the Lifescripts© waiting room flyer for initiation by interested patients may also be useful. However, this places the emphasis more on the patient than GP.

The Medicare EPC Program, 'Allied Health Services under Medicare', was designed to improve access and affordability of AH services. This research shows that the EPC Program has increased the number of general practice patients receiving nutrition advice, with large increases in the number of EPC dietetics consultations between 2004-05 and 2008-09, and reports by dietetic professionals of increased clientele. This supports the hypothesis that the introduction of rebates for dietetic services for people with a chronic disease will have resulted in an increase in service provision, clients accessed and the number of PP dietetic professionals and FTEs. The Program raises awareness of the importance of nutrition and prompts referral to dietetics professionals via structured pathways and GP reimbursement. It also utilises the role of PNs in completing care plans. Support for this Program can also be encouraged by dietetics professionals, who can actively promote it to GPs. Through rebates for dietetic consultations, it overcomes or offsets the cost barrier of seeing a dietetics professional, thus improving access.

While many barriers have been identified with this program, ultimately it is advancement for AH and has increased the number of general practice patients receiving nutrition advice (Cant & Aroni, 2007; Shortus, et al., 2007). The distinguishing differences between Lifescripts© and the EPC Program are reimbursement, relevance

to specific conditions rather than health promotion and the requirement of multidisciplinary care. This supports the hypothesis that the Medicare EPC Program is a more effective vehicle in delivering nutrition advice in general practice than Lifescripts. The delivery of nutrition advice via the Medicare EPC Program will be further improved if a greater number of consultations were permitted per patient per year, remuneration was increased lowering gap payments or improving financial viability for dietetics professionals, and expanding the conditions for which advice can be provided. These suggestions are supported by the literature (Allied Health Professions Australia, 2007; Cant & Aroni, 2007, 2008; Foster, et al., 2008; Harris, et al., 2009; Shortus, et al., 2007).

The hypothesis that PNs will be more effective than GPs in delivering nutrition advice to patients via Lifescripts due to their role in preventive health did not prove to be true. This research indicates that to maximise the strengths of both GPs and PNs in providing advice, it would be beneficial for GPs to raise the importance of nutrition with a patient and then refer the patient to the PN for more detailed discussion. This allows the PN to spend more time with the patient but adds the GP's authority to the recommendations. PNs then need to be providing scripted nutrition advice with the use of decision trees for pre-identified conditions along with educational resources to support the provision of advice. The use of decision trees by PNs are ideal as PNs have been shown to be better at following guidelines than GPs (Harrison, et al., 2002).This will overcome the barriers for PNs of lack of knowledge and confidence, with substantially less training than would be otherwise required. This will also increase accuracy of advice so patients are not being mislead but are receiving a greater appreciation and awareness of the role and importance of nutrition. Training must stress their role in providing basic advice and the types of conditions that require more detailed advice by dietetics professionals. Nutrition advice applied to specific conditions that are commonly treated with in the practice will ensure nutrition is included as part of the standardised process for treating that condition. Due to the competing priorities, implementation of nutrition advice is ensured if it is a mandatory part of the best practice process. This scripted nutrition advice and decision trees need to fit within reimbursable item numbers for PNs, thus overcoming the barrier of

reimbursement. The decision tree and nutrition education resources to support the implementation of the nutrition advice need to be evidenced based and developed by dietetics professionals. The implementation of such a program should be considered in the planning, with emphasis on impact and outcome evaluation.

Time was reported as a major barrier; while theoretically the use of scripted nutrition advice and decision trees should be more time effective, this research shows that patients look to PNs for support and find them more approachable, thus discussion or counselling may occur. If this is factored into the treatment process for specific conditions, and completed as part of a reimbursable item number, it may be more effective. Combining nutrition advice with other non-nutrition related care in one decision tree will reduce PN burden and encourage use. These decision trees will make it clear when patients need to be referred to dietetics professionals for detailed, individualised advice. Establishing clear referral processes, along with good relationships and effective collaboration between GPs, PNs and dietetics professionals will aid this. On-site dietetic services may also encourage referral and overcome some barriers.

The roles of GPs, PNs and dietetics professionals do not need to be altered. Encouraging the delivery of nutrition advice by GPs and PNs is not advocating for detailed nutrition counselling, thus taking on the role of dietetics professionals. There is insufficient time and expertise in the current roles and responsibilities of GP and PN. For nutrition related activities to be realistically included in standardised practice in the GP setting, it is necessary to recognise the current roles of health professionals and advocate for activities that fit within these roles.

Therefore, effective delivery of nutrition advice in the general practice setting relies on a multidisciplinary team approach. Both GPs and PNs need to be raising awareness of the importance of nutrition, providing brief advice and referring to dietetics professionals as the nutrition experts for in-depth, individualised advice. To encourage this, GPs and PNs require adequate training on the provision of scripted nutrition advice, as well as an expansion of the EPC Medicare budget. Time and money need to

be directed towards initiatives that have been shown to be effective in improving the delivery of nutrition advice.

8.1 Future directions

This research indicates that there are a variety of activities that could be conducted to improve the delivery of nutrition advice in primary health care. While this thesis is looking at systems and the implementation of Lifescripts© and AH EPC services, it is also important to consider patient outcomes. Without effective access to, and implementation of, nutrition advice, improved patient outcomes will not be possible. Thus, improving access to, and implementation of, nutrition advice means measuring patient outcome becomes meaningful. At present, no research has been conducted looking at the impact of Medicare EPC Program on patient outcomes. While it may be assumed that improved access to AH services will improve patient outcomes, this should be evaluated. In particular, the impact of the limited visits currently available via the EPC Program needs to be evaluated. Patients' opinions of the EPC Program have also not been evaluated in the literature. This could provide valuable insights into the Program.

To assist the provision of nutrition advice by GPs and PNs, nutrition related decision trees need to be developed by dietetics professionals for use by PNs. These should include scripted nutrition advice for specific nutrition related conditions that are encountered by PNs. Resources need to be developed that can be used by PNs to accompany the scripted advice provided by PNs. These must be evidenced based, with appropriate process and outcome evaluations conducted.

8.2 Conclusion

It is important that every general practice patient has access to appropriate, evidence based and effective nutrition advice. General practice is the first point of access for managing the health of the general population. It is clear that good nutrition is essential in improving health and reducing disease risk. Therefore, GPs, PNs and dietetics professionals all have key roles in the provision of this advice in order to

improve patient outcomes. Ideally if GPs and PNs are encouraged to become familiar with the conditions or risk factors requiring nutrition intervention, provide basic advice and refer when required, with strategies developed to aid this, then the number of general practice patients receiving advice will be maximised.

As hypothesised, the Medicare EPC Program appears to be more effective in delivering nutrition advice than Lifescripts©, and resulted in an increase in dietetic service provision, clients accessed and the number of PP dietetics professionals and FTEs. However, no clear differences between H-EPC and L-EPC dietetics professionals were able to account for H-EPC Participants' higher provision of EPC services. Contrary to hypotheses, Lifescripts© training was not able to substantially improve GPs and PNs' use of Lifescripts©, or their nutrition knowledge and confidence. Additionally, PNs did not appear to be more effective than GPs in delivering nutrition advice via Lifescripts©.

If access to nutrition advice is not possible and if effective nutrition interventions are not developed and evaluated, then it is unclear that patient outcomes will be improved. Without appropriate access and implementation of nutrition advice then simply measuring patient outcomes could well be meaningless.

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Appendices

Publications arising from this thesis

Mitchell, L. J., Capra, S., & MacDonald-Wicks, L. (2009). Structural change in Medicare funding – Impact on the dietetics workforce. *Nutrition & Dietetics, 66*(3), 170-175.

Mitchell, L. J. (2007). CDE Impact Revealed in Medicare EPC Data. *Australian Diabetes Educator, 10*(Supp 1), 6.

Mitchell, L.J., MacDonald-Wicks, L., & Capra, S. (2010). Improving the delivery of nutrition advice in General Practice. Nutrition & Dietetics, 67(1), S9 (Abstract from 2010 DAA National Conference).

Mitchell, L.J., MacDonald-Wicks, L., & Capra, S. (2010). Increasing referrals through enhanced relationships. Nutrition & Dietetics, 67(1), S49 (Abstract from 2010 DAA National Conference).

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VIEWPOINT

Structural change in Medicare funding: Impact on the dietetics workforce

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Abstract

Aim: To review the dietetic workforce profile and share of Enhanced Primary Care claims in the context of the Strengthening Medicare support for allied health services.

Methods: Dietitians Association of Australia membership data from 2004 to 2007 were analysed to assess changes in the number and work hours of private practice dietitians. Medicare data for 2004–2005 to 2006–2007 were reviewed regarding uptake and distribution of allied health consultations.

Results: The number of allied health Enhanced Primary Care consultations doubled between 2004–2005 and 2005–2006, with similar increases in 2006–2007. Physiotherapists claimed most, followed by podiatrists, then dietitians. Dietitians claimed most consultations per provider in 2004–2005 and 2005–2006, surpassed by podiatrists and diabetes educators in 2006–2007. The number and full-time equivalents of private practice dietitians increased since 2004. Almost one-third of members were engaged in private practice work by 2007. Approximately half of these worked eight hours or fewer per week in this setting over the period surveyed (45.9–50.8%).

Conclusions: Medicare funding for allied health has provided structural change and presents an opportunity for growth in the private sector of dietetics. While the number and full-time equivalents of private practice dietitians increased since 2004, the anticipated sharp increase relative to other work areas was not seen. Dietetics had a high uptake of Medicare consultations per provider and consultations increased each year; however, the declining share of total consultations demonstrates that dietitians are not using the opportunity presented by Medicare to the same degree as some allied health professions.

Key words: allied health, dietetic practice, dietitian workforce, Enhanced Primary Care, Medicare, private practice.

INTRODUCTION

Medicare Australia is the health insurance system that provides eligible Australians with 'affordable, accessible and high-quality health care'.[1] Medicare superseded Medibank in 1984[1] and since has undergone many revisions, one of which was the 'Strengthening Medicare' package, which aimed to improve access and affordability of medical services provided out of hospital.[2] 'Allied health services under Medicare' were introduced in July 2004, making patients with a complex chronic condition and a general practitioner (GP)-administered Enhanced Primary Care (EPC) plan eligible for rebates from Medicare for services supplied by registered health professionals.[1,3] Patients are eligible for a maximum of five allied health services per calendar year.[1,3]

The introduction of Medicare funding for consultations with allied health professionals was a structural change to the healthcare system that may act as an impetus to modify health practice to a greater extent than that which could come from individual health professionals or clients. The suggestion is that changing the availability of funding for consultations with health professionals will result in an increase in the demand for such consultations. This may lead to a rise in the number of providers in private practice (PP), as consultations can only be reimbursed for practitioners working in the private sector.

Funding and access issues present potential barriers to GPs referring their patients to health professionals when they perceive the need.[4,5] Providing Medicare rebates for allied health professionals in primary care should reduce demand placed on already strained GP services, while patients will have access to more appropriate health care, potentially leading to a lower overall cost to the heath care system.[4,5]

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New opportunities in PP have meant that it has become a more established context for practice.[6] To participate in the EPC program dietitians must be Accredited Practicing Dietitians (APDs). APD status is granted by the Dietitians Association of Australia (DAA) to qualified dietitians who are engaged in continuing professional development.

This paper aims to identify if those professions usually found in PP would be in a better position to capitalise on the opportunity provided by the 'Strengthening Medicare' package. By evaluating the number of EPC consultations provided per professional, the aim is to identify the spread of EPC consultations through health professions, and identify opportunities for growth or development. Therefore, Medicare and dietetic workforce data were examined in order to identify if this structural change brought about by the change to Medicare funding has impacted on the dietetic profession. It is hypothesised that the structural change to Medicare funding would result in a sharp increase in the number of private practitioners and/or hours worked. This paper does not attempt to explore dietitians', GPs', health professionals' or patients' views of the EPC initiative as this has been reported elsewhere.[7–9]

METHODS

Medicare EPC plan data

Data on the number of dietitian EPC consultations conducted each month as well as the number of allied health practitioners providing EPC consultations were obtained from Medicare for three periods – 2004–2005, 2005–2006 and 2006–2007. Provider data were based on the number of providers delivering services, accounting for practitioners who have more than one provider number. Dietitian EPC data were reported at the Division of General Practice level. Total EPC consultations conducted for each allied health profession was accessed via the Medicare Australia website.[10]

DAA membership data

De-identified DAA membership data were extracted at the end of each year from 2004 to 2007. Each year, members report on their average weekly hours in each listed work setting. Postcodes were used to identify the Division of General Practice in which members were located. Data were then reviewed to identify trends between DAA membership and Medicare EPC consultations. Annual membership data were statistically analysed to identify significance of changes in the number and work hours of PP dietitians in Australia over the four-year period. PP dietitian full-time equivalents (FTEs) were calculated based on 40 hours/week. Those members who indicated their greatest number of hours were in PP, including dietitians who work solely in PP, were considered to be primarily working in PP. Only data from APDs were used. Students, those not currently working, associates, retirees and overseas workers were excluded. As dietitians must be APDs in order to participate in the EPC program, it was assumed that DAA membership data included all Medicare providers.

Ethics approval

Data extraction was approved by Medicare Australia's External Request Evaluation Committee, reference number 2006/00845.

Data analysis

Data analysis was conducted using Microsoft Excel 2003 and Intercooled Stata 9.1.[11] Chi-squared tests were used to determine statistical significance of differences between categorical variables at the conventional 5% level.

RESULTS

DAA Provate Practice workforce

Between 2004 and 2007 DAA members who self-reported working in PP increased, from 512 in 2004 (28% of total DAA membership) to 772 in 2007 (32.2%) ($P = 0.0032$) (Figure 1). This 51% increase in PP members between 2004 and 2007 was below the median increase of 86% for all DAA work area categories. However, as DAA work area categories were expanded in 2005, there were large artificial increases in some work categories. Therefore, the increase in PP members between 2005 and 2007 of 35% is a more accurate reflection and is similar to the median increase of all work categories of 36% (Table 1).

PP dietitian FTEs increased by 66% during 2004–2007 (158–263) (Table 2). This was the median change for all work categories. The change in FTEs during 2005–2007 was 43% (median = 36%).

PP was the primary work category for 56% of dietitians working in PP in 2004, increasing to around 60% in 2005,

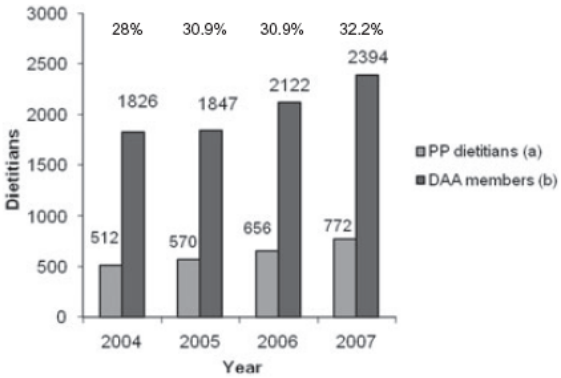

Figure 1 Total and private practice (PP) Dietitians Association of Australia (DAA) members, 2004–2007. (a) DAA members working in PP in Australia. (b) DAA members working in Australia.

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Table 1 Number of dietitians by Dietitians Association of Australia work categories and percentage change between 2004–2007 and 2005–2007

	2004 n	*2005* n	*2006* n	*2007* n	*2004–2007 change (%)*	*2005–2007 change (%)*
Community nutrition	258	300	279	341	⇑32	⇑14
Food service[a]	7	82	93	109	⇑1457	⇑33
Government department/non-government organisations	81	175	241	263	⇑225	⇑50
Industry (including consultants)/marketing/public relations	88	128	147	175	⇑99	⇑37
Inpatient/outpatient facility (including public, private, aged care, psychiatric)[a]	1042	798	912	1023	⇓2	⇑28
Mixed practice (including sole/rural practitioner)	n/a	72	89	101	n/a	⇑40
Public health	154	123	130	162	⇑5	⇑32
Private practice/consultancy	512	570	656	772	⇑51	⇑35
Research/education	114	186	239	279	⇑145	⇑50
Do not work in nutrition and/or dietetics	49	48	89	91	⇑86	⇑90

[a] In 2004 category was 'food service institution'; therefore, those working in foodservice in hospitals would have been included in those categories.
Categories changed slightly between 2004 and 2005, which may account for more changes between these years.

Table 2 Dietitian full-time equivalents by Dietitians Association of Australia work categories and percentage change between 2004–2007 and 2005–2007

	2004 n	*2005* n	*2006* n	*2007* n	*2004–2007 change (%)*	*2005–2007 change (%)*
Community nutrition	167.1	157.5	154.5	193.5	⇑16	⇑23
Food service[a]	2.7	24.0	28.5	29.7	⇑990	⇑24
Government department/non-government organisations	61.6	121.9	165.3	181.8	⇑195	⇑49
Industry (including consultants)/marketing/ public relations	74.3	92.8	99.6	118.7	⇑6	⇑28
Inpatient/outpatient facility (including public, private, aged care, psychiatric)[a]	707.5	533.3	618.0	689.3	⇓3	⇑29
Mixed practice (including sole/rural practitioner)	n/a	48.4	61.5	70.6	n/a	⇑46
Public health	95.1	71.8	79.9	98.3	⇑3	⇑37
Private practice/consultancy	158.3	183.3	223.9	262.6	⇑66	⇑43
Research/education	66.2	101.5	126.4	137.5	⇑108	⇑36
Do not work in nutrition and/or dietetics	32.4	30.4	52.4	56.0	⇑73	⇑84

[a] In 2004 category was 'food service institution'; therefore, those working in foodservice in hospitals would have been included in those categories.
Full-time equivalents based on 40 hours of work per week.

which was maintained in 2006 and 2007 (Table 3). Between 2004 and 2007, approximately 43% of PP dietitians worked only in PP. No significant differences were seen in the hours worked in PP during this time (Table 4). Approximately half of dietitians worked fewer than eight hours a week in PP, and 7–8% worked 40 hours or more.

Allied health EPC consultations

Between 2004–2005 and 2005–2006 the number of EPC consultations claimed for all allied health more than doubled (211%), from 251 203 to 532 398 (Table 5).[10] In 2006–2007 EPC consultations increased by 175%, totalling 938 353 occasions of service. Physiotherapists had the most claimed EPC consultations overall, with 43.1% of the total in 2004–2005, 38% in 2005–2006 and 34.8% in 2006–2007. Podiatrists followed, with 20.4%, 28.1% and 33%, respectively. Dietitians were third, with 17.6%, 13.7% and 11%, respectively. Exercise physiologists experienced large increases in consultations since their rebates were introduced in January 2006, with 0.7% of the total consultations in 2005–2006, increasing to 3.1% in 2006–2007 ($P < 0.0001$). The per cent claimed by diabetes educators, speech pathologists and occupational therapists has gradually increased, while the per cent claimed by psychologists decreased ($P < 0.001$). Aboriginal health workers, audiologists, mental health workers, occupational therapists, osteopaths and dental assessments, treatments and services each contributed 1% or less of the total (data included under 'other'). Total consultations increased between 2004–2005 and 2006–2007 for all professions except Aboriginal health workers.

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Table 3 Private practice (PP) for Dietitians Association of Australia members as context of practice 2004–2007

	2004		2005		2006		2007	
Context	n	(%)	n	(%)	n	(%)	n	(%)
Primary work[a]	286	(55.9)	340	(59.6)	387	(59.0)	458	(59.3)
Sole work[b]	220	(43.0)	260	(45.6)	281	(42.8)	330	(42.7)
2nd work	207	(40.4)	209	(36.7)	247	(37.7)	284	(36.8)
3rd work	18	(3.5)	18	(3.2)	18	(2.7)	28	(3.6)
4th work	1	(0.2)	3	(0.5)	4	(0.6)	2	(0.3)
Total PP dietitians[c]	512	(100.0)	570	(100.0)	656	(100.0)	772	(100.0)

[a] Working more hours in PP than any other work category. Includes PP as sole work.
[b] Working solely in PP.
[c] Excludes sole work as already counted in primary.

Table 4 Self-reported work hours in private practice of Dietitians Association of Aus members, 2004–2007

	2004		2005		2006		2007	
	n	(%)	n	(%)	n	(%)	n	(%)
≤8 hours	260	(50.8)	278	(48.8)	301	(45.9)	362	(46.9)
9–19 hours	141	(27.5)	153	(26.8)	194	(29.6)	215	(27.8)
20–29 hours	50	(9.8)	73	(12.8)	68	(10.4)	87	(11.3)
30–39 hours	24	(4.7)	24	(4.2)	40	(6.1)	46	(6.0)
40–49 hours	29	(5.7)	34	(6.0)	46	(7.0)	54	(7.0)
≥50 hours	8	(1.6)	8	(1.4)	7	(1.1)	8	(1.0)
Total	512	(100.0)	570	(100.0)	656	(100.0)	772	(100.0)

Table 5 Number and distribution of Enhanced Primary Care (EPC) consultations for each allied health profession during 2004–2005 to 2006–2007

		2004–2005		2005–2006		2006–2007	
		n	(%)[c]	n	(%)[c]	n	(%)[c]
Physiotherapy	No. of EPC[a]	108 267	(43.1)	202 465	(38.0)*	326 832	(34.8)*
	EPC/provider	27.4		41.6		56.6	
Podiatry	No. of EPC	51 243	(20.4)	149 516	(28.1)*	310 023	(33.0)*
	EPC/provider	34.5		85.2		158.8	
Dietetics	No. of EPC	44 089	(17.6)	72 827	(13.7)*	102 764	(11.0)*
	EPC/provider	89.4		115.6		132.3	
Psychology	No. of EPC	23 092	(9.2)	45 541	(8.5)*	49 190	(5.2)*
	EPC/provider	16.7		21.1		19.2	
Exercise physiology	No. of EPC	0[b]	(0.0)	3 929	(0.7)*	29 369	(3.1)*
	EPC/provider	0		29.3		87.1	
Speech pathology	No. of EPC	3 051	(1.2)	11 371	(2.1)*	27 287	(2.9)*
	EPC/provider	9.4		18		28.5	
Diabetes educator	No. of EPC	735	(0.3)	7 781	(1.5)*	15 993	(1.7)*
	EPC/provider	17.9		103.7		140.3	
Occupational Therapy	No. of EPC	1 510	(0.6)	4 928	(0.9)*	9 136	(1.0)**
	EPC/provider	7.5		14.2		17.4	
Mental health	No. of EPC	748	(0.3)	2 730	(0.5)*	3 903	(0.4)*
	EPC/provider	7.9		13.9		15.8	
Other	No. of EPC	18 468	(7.4)	35 239	(6.6)*	63 856	(6.8)*
Total	No. of EPC	251 203		536 327		938 353	

[a] Data accessed from the Medicare Website.[10] EPCs based on the date the service were processed by Medicare Australia.
[b] Exercise physiology was introduced in January 2006.
[c] Per cent of total EPC consultations.
* $P < 0.0001$, ** $P < 0.001$.
Allied health professions are in order of highest number of EPC consultations to lowest during 2006–2007. *P* values refer to change in percentage of total EPC consultations per profession divided by total EPC consultations overall between each year. 'Other' includes chiropractic, osteopathy, dental treatment, dental assessment, dental service, audiology and aboriginal health.

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Dietitian EPC consultations

The number of EPC consultations for dietetic services increased by 65% between 2004–2005, when they were first introduced, and 2005–2006 ($P < 0.0001$) (Table 5). Between 2005–2006 and 2006–2007 they increased by 41% ($P < 0.0001$). The most populated states had the most claims.

EPC consultations per provider

Dietetics had the most EPC consultations claimed per provider in both 2004–2005 and 2005–2006 periods, with 89.4 and 115.6, respectively (Table 5). By 2006–2007, despite dietitian consultations increasing to 132.3 per provider, this was surpassed by podiatrists and diabetes educators. Diabetes educators, podiatrists, exercise physiologists and dietitians experienced the greatest increases in the number of consultations per provider. Aboriginal health and psychology were the only professions to see a decline in the number per provider.

DISCUSSION

DAA PP workforce

The increase in the number and percentage of PP dietitians since 2004 suggests that opportunity in this area of dietetics is increasing; however, this trend is reflected in all DAA membership and the anticipated sharp increase relative to other work areas was not seen. The increase in membership numbers may be due to more graduates rather than a change in the workforce environment. If this is the case and new graduates are starting in PP, there is potential need for university courses to be providing graduates with PP skills.

Between 2004 and 2007 there was a 50% increase in the number of PP dietitians ($P = 0.003$). The increase in the number of EPC consultations provided by dietitians may account for some of the 66% increase in PP FTEs over the four years. However, data from the Australian Health Insurance Association (unpublished data, 2008) indicate that there were decreases in private health insurance (PHI) dietetic claims during this time. While there were increases in the amount of PHI dietetics claims up to June 2004 (2001–2002 to 2002–2003: 7.7%; 2002–2003 to 2003–2004: 14.2%), after the introduction of Medicare allied health rebates in July 2004 PHI claims on dietetic services reduced (2003–2004 to 2004–2005: −6.7%). After this initial decrease it stabilised (2004–2005 to 2007–2008: 1.9%).

Examination of the data indicates that those dietitians working in PP are predominantly doing so in conjunction with other work, and this may limit their ability to take advantage of this opportunity to grow their businesses. However, those dietitians who act in an entrepreneurial way or who are wishing to grow their PP business may be in a better position to act on this structural change and use this opportunity.

Allied health EPC consultations

It is expected that this trend of increasing EPC consultations will continue as GPs, allied health providers and patients become more familiar with the services that are available. While EPC consultations increased each year for all professions except one, the percentage of total consultations changed, indicating the market share that each profession held. This reflects how each profession performed relative to others.

Compared with many other health professions, dietetics did not have a large number of EPC providers. Therefore, in claiming the third highest number of EPC consultations, dietetics achieved the highest number per provider in the first two years of the initiative. This suggests that dietitians initially engaged in the Medicare changes and used this opportunity to some advantage. However, by 2006–2007 dietitians dropped from the highest number of EPCs per provider to the third highest, with podiatrists and diabetes educators achieving a greater number per provider. Diabetes is one of the main chronic diseases for which patients are eligible for this initiative. This may provide an explanation as to why podiatrists, diabetes educators and dietitians conducted the most EPC consultations per provider, and podiatrists and dietitians conducted the second and third highest numbers of consultations overall. While diabetes educators as a group did not provide a large number of EPC consultations, their output was second highest per provider in 2005–2006 and 2006–2007. The opportunity for diabetes educators was recognised by its profession, with the August 2007 supplement of the *Australian Diabetes Educators* magazine being dedicated to PP.[12] This supplement had a strong emphasis on using Medicare EPC items as an income source for those working in PP. Support and training from professional associations may possibly encourage health professionals to be more confident and willing to see patients under the Medicare scheme.

Despite the decrease from 2004–2005 to 2006–2007 in the percentage of EPC consultations claimed by physiotherapists, they have maintained the highest number of EPC consultations overall. This may be due to the large size of the profession and their dominance in the private sector, as well as their role in the treatment of many chronic diseases. Their higher percentage initially may be due to being better known or more accessible at the commencement of the initiative, and while the number of consultations provided increased, their percentage of total allied health consultations dropped as other professions increased their engagement.

The perceived need for a service may influence the number of EPC consultations allocated to a profession, as with the limitation of five EPC services per calendar year GPs must prioritise patients' complex care needs. Educating GPs regarding the role of dietitians in chronic disease management is critical in maximising dietetics allocation. However, it is not always feasible for GPs to involve the required professions if Medicare-registered individuals are not accessible. As rebates for all allied health EPC services are the same, the perceived adequacy of the rebate by practitioners may influence interest

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in providing the service. The decline in psychology EPC consultations may be due to the availability of Medicare rebates for allied mental health services,[3] which provide higher rebates and more visits per patient. Professions desiring an increase in the private sector are more likely to seek the Medicare market. Research into these areas is required to assess their impact on the change in work patterns.

Limitations to data

Membership data are self-reported and are accurate on the day collected, as people may join at any time throughout the year. To reduce this variability the membership data were collected at similar time points each year. EPC data from the Medicare website[10] are based on the dates the claims are processed rather than delivered, while dietitian EPC data purchased from Medicare is based on the date of delivery; however, it is not likely that this would alter the values to any real extent.

CONCLUSION

The introduction of Medicare funding for patients with chronic disease under the EPC system has provided a structural and funding stimulus for the allied health workforce. Uptake of this initiative has been positive, with a doubling of allied health EPC consultations each year since 2004–2005. While dietitians claimed the highest number of EPC consultations per provider in the first two years and experienced an increase in the number of PP dietitians, growth was not as high as anticipated, with the percentage of total EPC consultations provided by dietetics decreasing. These data suggest that this opportunity for dietitians is substantial, but the failure to continue rapid growth suggests that it would be worthwhile for more professional development and preparation in business and entrepreneurship for practitioners.

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CDE Impact Revealed in Medicare EPC Data

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Lana Mitchell, a PhD Candidate in Nutrition and Dietetics in the School of Health Sciences at the University of Newcastle, is currently completing her PhD on drivers of change in the provision of nutrition services in the private sector. This research provides insights into what is happening in the delivery of allied health services under the Allied Health and Dental Care Initiative introduced in July 2004. Mitchell provides an insight into the research she has been conducting, which forms part of her PhD.

Overall, allied health EPC consultations more than doubled between 2004/05, when they were first introduced, and 2005/06 (Table 3). It is expected this trend will continue, and the number of EPC consultations claimed will increase over time as GPs, allied health providers and patients become more familiar with the services available. Physiotherapists had the greatest share of EPC consultations overall, followed by podiatrists and dietitians. While diabetes educators only claimed 0.3% of the total EPC consultations in 2004/05, this increased five-fold in 2005/06 up to 1.5%.

While allied health professions largely based in the private sector, such as physiotherapy and podiatry, conducted more EPCs overall, this was lower than expected when assessed in terms of the number of EPCs per provider. In comparison to many other allied health professions, there are not a large number of CDEs in private practice. Therefore, despite only claiming 1.5% of EPCs in 2005/06, CDEs achieved the second highest number of EPCs per provider at 103.7. Similarly, dietitians had the highest number of claims per provider in both 2004/05 and 2005/06, with 89.4 and 115.6 respectively. This suggests that CDEs and dietitians have utilised the opportunity presented by the Medicare changes.

With a focus on chronic disease it is no wonder that dietetics, podiatry and diabetes education claim the most EPC consultations per provider. While all three have shown growth in the number of EPC consultations in the second year, the proportion of the overall total increased substantially for podiatry, and slightly less for diabetes education. Dietetics however showed a decreased proportion of total claims, as did physiotherapy.

While allied health providers outside of physiotherapy, podiatry, dietetics and diabetes education constitute 47.6% of EPC providers, they only contribute to 19.3% of the claims.

The Medicare data is also supported by Dietitians Association of Australia (DAA) membership data. In 2005 there was a significant increase in the number and proportion of dietitians working in private practice. This rapid shift within one year is consistent with structural change. The introduction of Medicare funding has created more job opportunities for dietitians.

While the effect of Medicare on diabetes educators has not been studied in detail, it is likely diabetes educators have the potential to utilise the Medicare opportunity in a similar way to dietitians, thus increasing the number of practitioners working in the private sector.

In order to increase the number of EPCs utilised by a profession, it is important for the profession to market itself to GPs. It is also essential there are sufficient private providers to which the GPs can refer.

Dietitians have utilised the opportunity provided by Medicare funding, evidenced by an increase in private practice dietitians, a greater proportion of dietitians working primarily in private practice, as well as dietitians claiming the highest number of EPC consultations per provider. Medicare funding has also positively impacted other allied health professions, reflected by the doubling of allied health EPCs in the second year of the initiative.

On current projections, the 2006/07 EPC data is likely to reveal further significant gains in CDE numbers providing EPC services, taking advantage of the funding opportunity presented by Medicare Australia.

Table 3 Number and distribution of Enhanced Primary Care (EPC) claims and providers for each allied health profession during 2004/05 and 2005/06

		2004/05		2005/06		change % (a)	P value (b)
Physiotherapy	No. of EPC (%)	108267	(43.1)	202465	(38.0)	5.1%	0.0000
	No. of providers (%)	3958	(38.0)	4870	(34.8)	3.2%	0.0000
	EPC/provider	27.4		41.6			
Podiatry	No. of EPC (%)	51243	(20.4)	149516	(28.1)	7.7%	0.0000
	No. of providers (%)	1484	(14.2)	1754	(12.5)	1.7%	0.0001
	EPC/provider	34.5		85.2			
Dietetics	No. of EPC (%)	44089	(17.6)	72827	(13.7)	3.9%	0.0000
	No. of providers (%)	493	(4.7)	630	(4.5)	0.2%	0.3991
	EPC/provider	89.4		115.6			
Diabetes educator	No. of EPC (%)	735	(0.3)	7781	(1.5)	1.2%	0.0000
	No. of providers (%)	41	(0.4)	75	(0.5)	0.1%	0.1091
	EPC/provider	17.9		103.7			
Other	No. of EPC	46869	(18.7)	103738	(19.3)		
	No. of providers	4451	(42.7)	6668	(47.6)		
TOTAL	No. of EPC	251203		536327			
	No. of providers	10 424		13 997			

(a) Change in percentage of number of EPC claimants per allied health profession to total number of allied health workers making EPC claims between 2004/05 and 2005/06.

(b) p values refer to change in percentage of total EPCs between 2004/05 and 2005/06

(c) EPCs based on the date the service was processed by Medicare Australia.

Data source: Medicare Australia, 2004/05 &2005/06 and Dietitians Association of Australia annual membership statistics, 2003-2006.

Mitchell, L. J., MacDonald-Wicks, L. & Capra, S., (2010). Improving the deivliery of nutrition advice in General Practice. *Nutrition & Dietetics, 67*(Supp 1), S9.

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Concurrent Session F1
General Dietetic Practice

USE OF ANTHROPOMETRY IN DIETETIC PRACTICE: INCONSISTENT WITH PRACTICE GUIDELINES AND AN UNDER-UTILISED TOOL

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[1]*Nutrition and Dietetics, Monash University, Clayton, Vic 3168, Australia*
[2]*The Alfred, Prahran, Vic 3181, Australia*

Anthropometry is an important component of dietetic practice, recommended by all DAA practice guidelines. Little is known of how anthropometric measurements are employed by dietitians. This study examines how Victorian dietitians use anthropometry and seeks to identify enablers and barriers.

An online cross-sectional survey of 151 Victorian dietitians examined anthropometric measurements used and reported confidence levels, knowledge of techniques and perceived barriers and enablers to practice. Chi-squared tests, Fisher's exact tests and odds ratios were used to compare practices.

Most respondents (93%) considered anthropometry an important tool. Weight and height were commonly used. However, other measurements including circumferences and skinfold thicknesses (SFTs) were taken infrequently. Factors facilitating use of anthropometry were prior experience, further training, client mobility and support from senior colleagues. Respondents with additional anthropometry training were 15-times more likely to measure SFTs and mid-upper-arm circumference ($P < 0.0001$). Those receiving support from seniors were more likely to measure height ($P = 0.005$) and weight ($P = 0.022$). Reported barriers included out-of-date training, lack of time, confidence or equipment access. Respondents qualified for >2 years were more likely to report outdated skills ($P = 0.004$). Most respondents (73%) expressed interest in further training.

Clear gaps exist between best and actual practice in anthropometry, which may have clinical consequences, including under-recognition of body composition alterations that may have implications for nutritional care. Many reported barriers to the practice of anthropometry are surmountable. Findings suggest training and more supportive, well-resourced systems may facilitate alignment of practice with guidelines.

Funding Source: Monash University Vacation Scholarship.

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NUTRITION INTERVENTION RESEARCH IN COMMUNITY PHARMACY: A SYSTEMATIC REVIEW OF THE LITERATURE USING AN ANALYTICAL FRAMEWORK

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The community pharmacy is an accessible, conveniently located and widely respected health care destination. As such it presents significant opportunities for settings based intervention through which to promote optimal nutrition amongst the community, in particular to pregnant women and new mothers. This systematic review of intervention research conducted in the community pharmacy setting, relating specifically to nutrition promotion was undertaken. Health databases (PubMed Central, Medline, Ovid Fulltext) were searched systematically Reference lists were also searched for relevant articles. Abstracts were reviewed for inclusion according to defined criteria. The analytical framework developed was used to deconstruct and analyse interventions from a public health nutrition perspective. Data abstracted from the studies included and related to: 1) problem analysis, 2) determinants, 3) target group 4) objectives, 5) intervention/strategy mix, 6) Theoretical assumptions/logic 7) level of prevention 8) evaluation method and results 9) context effects and 10) sustainability/cost implications. The results of this review identified a lack of published studies set in community pharmacies focusing specifically on nutrition promotion. Interventions which included nutrition promotion as one aspect of the strategy mix appeared unsustainable. All studies included in this review focussed primarily on secondary prevention. Despite an apparent opportunity within the community pharmacy setting to undertake nutrition promotion relative to primary prevention, there is a dearth of published intervention studies providing intelligence to guide intervention planning. This study highlights the need for settings based intervention studies which focus on evaluating primary prevention in community pharmacy relating to nutrition.

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IMPROVING THE DELIVERY OF NUTRITION ADVICE IN GENERAL PRACTICE

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General practice setting is ideal for delivering nutrition advice; however, barriers exist. A variety of strategies have been implemented to improve delivery, including Lifescripts© and 'Allied Health Services under Medicare'. It is unclear what the most effective means of delivering nutrition advice in this setting are.

Delivery of nutrition advice was evaluated in a Lifescripts© implementation study, using General Practitioners (GPs) ($n = 4$), practice nurses ($n = 13$), and patients ($n = 13$). Private practice dietitians' opinions were assessed using telephone interviews ($n = 52$), and an online survey ($n = 90$).

GPs, practice nurses and dietitians have key roles in providing nutrition advice in general practice. GPs are gatekeepers, believe nutrition is part of their role, and are trusted by patients. Practice nurses are approachable and supportive; however additional nutrition training is required.

While Lifescripts© are evidence based and should theoretically be effective, many barriers such as time and lack of reimbursement exist. Poor recruitment despite multiple recruitment strategies highlights difficulty of interventions in general practice. 'Allied Health Services under Medicare' appears to be effective, providing motivation for referral via structured pathways and reimbursement, utilises support from PNs, raises nutrition awareness via goal setting followed by expert nutrition advice.

Initiatives to improve delivery of nutrition advice need to involve GPs, practice nurses and dietitians; have clear pathways for the provision of advice/referral; be reimbursable; and condition specific. GPs should raise nutrition awareness with patients, while practice nurses provide scripted nutrition advice using decision trees. Dietitian referral provides access to in-depth, personalised advice.

Funding Source: APA scholarship.

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DOSE ADJUSTMENT FOR NORMAL EATING (DAFNE) OUTCOMES IN A RURAL SETTING

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Dose Adjustment For Normal Eating (DAFNE) is an evidence-based group education and self-management program for adults with type 1 diabetes. The 5-day course provides participants with the skills required to implement flexible insulin-dose adjustments in response to their individual carbohydrate intake and lifestyle. After more than 30 years of success in Europe, DAFNE was introduced in Australia in 2005. Gippsland Southern Health Service has conducted DAFNE courses since 2007.

Mitchell, L. J., MacDonald-Wicks, L. & Capra, S., (2010). Increaseing referrals through enhanced relationships. *Nutrition & Dietetics, 67*(Supp 1), S49.

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explored whether or not Farmers' Markets (FM) differed from retail outlets in the price, availability, variety and quality of a basket of FV, and whether these outcome variables were associated with socio-economic position (SEP).

Cross-sectional information on price, availability, variety and quality for a range of 15 fruits and 18 vegetables were collected from five FMs, five Supermarkets and five Independent FV Retailers in South-East Queensland and composed into scores for a Fruit (FB), Vegetable (VB) and combined FV Baskets (CB).

Low socioeconomic areas were advantaged in terms of price. The FB, VB and CB were 3.9%, 17.4% and 17.9% cheaper, respectively, compared to the highest socioeconomic area. However, lower socioeconomic areas were disadvantaged in terms of availability, variety and quality. Farmers' Markets were cheapest for the FB only and FB availability was significantly higher for Supermarkets than FMs. Supermarkets had greater variety (significantly higher for the VB compared to FMs). Quality was better at Farmer's Markets for the VB and the CB but the advantage was not significant.

Whilst prices were cheaper in low socioeconomic areas, the availability, variety and quality of fruit and vegetables were assessed to be poorer. This may contribute to socioeconomic inequalities in fruit and vegetable consumption. In addition, whilst Farmers' Markets may at times provide access to cheaper and higher quality fresh FV, they may not always offer a price, availability, variety or quality advantage over conventional retail streams.

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USUAL NUTRITION CARE IN ELDERLY HIP FRACTURE PATIENTS: A SOUTH AUSTRALIAN PERSPECTIVE

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Hip fracture patients are recognised as being a patient group with a high prevalence of nutritional inadequacy. The aim of this study was to determine the frequency nutritional issues are identified by health care staff across 4 facilities (including acute and rehabilitation in public and private settings) and the usual nutritional care being provided to this patient group over 6 months following the injury. 52 acute and 45 rehabilitation patients admitted from the community and without serious health problems or cognitive dysfunction were analysed (mean age ± SD: 82 ± 6 years). Dietetic input was low across all settings; acute, rehabilitation and community. Only 12 patients were seen by a dietitian during their hospital admission and only 2 were seen by a dietitian in the community. Despite the low frequency of dietetic input, there was vast evidence of nutritional problems from documentation in medical records. 64/97 experienced nausea and 55/97 experienced loss of appetite. Weight loss was also common, mean ± SD = 5.0 ± 3.2% total body weight in the 6 months following injury. Poor follow up in the community is especially concerning given the government health care reforms pushing for increased health care outside of acute and residential care facilities. There needs to be an increased awareness in the acute and rehabilitation settings of the high level of nutrition risk factors even in this relatively 'healthy' group. Guidelines, pathways and resources for establishing continuity of care and monitoring of nutritional status on discharge would benefit this patient group.

Funding Source: NHMRC Project Grant (2007–2009)

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INCREASING REFERRALS THROUGH ENHANCED RELATIONSHIPS

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[1]*University of Newcastle, Callaghan, NSW 2308 Australia*
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Effective collaboration between General Practitioners (GPs) and dietitians is essential for the provision of better nutrition advice to patients in need; GPs are the first point of contact for patients and dietitians are the nutrition experts. What practices do dietitians use to cultivate these relationships and encourage referral?

We invited 236 private practice dietitians from 18 Divisions of General Practice to participate in a telephone interview regarding nutrition advice in general practice. Fifty-two dietitians (22%), representing 14 divisions participated. Personal introduction (48%) and introductory letters (37%) were the most frequently used strategies to initially develop relationships with GPs. Feedback about patients was the most common method of maintaining relationships (77%). Referral was facilitated by providing paper referral forms (37%), electronic referral forms (19%) and contact details (19%). Meeting with GPs (42%) and provision of good feedback on patients (39%) were identified as the as the most effective activities in building relationships and increasing referrals. The major factors believed to influence GP referral to dietitians included: cost (27%), belief in value of dietitians/diet therapy (25%), relationships with dietitians (25%), knowledge of service (23%), patient outcomes (23%) and ease of referral (21%). 58% of dietitians practiced in GP surgeries, with advantages including increased referrals (33%), easier communication (25%), and greater visibility (23%).

We conclude that there are clear practices which are believed by dietitians to enhance relationships with GPs, including personal contact and good feedback.

Funding Source: APA Scholarship

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FOOD AND NUTRITION IN VICTORIA IN WORLD WAR TWO

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There were significantly increased demands on agriculture, food processing and distribution in wartime Victoria, especially after the entry of Japan in late 1941.

Overseas technological expertise was sought and obtained to help upgrade canning facilities, for example, to help ensure adequate food availability for Allied military forces (notably Australian and American) and for export, especially to the besieged United Kingdom.

Civilian food rationing in Australia became universal and gradually more stringent, as the war progressed. Food production struggled with various factors, including drought, equipment and manpower shortages, to meet the competing demands of the civilian, military and export markets.

This poster will explore the often complex relationships between food production, food processing and nutrition in wartime Victoria, a story in which dietitians performed a number of roles.

Contact author: Derek Moore – derekm51@aol.com

Mitchell, L. J., Capra, S., & MacDonald-Wicks, L. (2007). Strucutral change through Medicare funding – What does it mean for dietetics? *Nutrition & Dietetics, 64*(Supp 1), S28.

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THE CHANGING FACE OF RENAL NUTRITION – ARE WE READY TO KEEP UP?

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Renal disease is recognised as a chronic condition of major importance to the health of the Australian population. Renal medicine has seen major advances in the past 10–15 years, particularly in the area of renal pharmaceuticals and dialysis modalities. The influence of these factors on nutrition of renal patients has been significant and positive. For example new scenarios such as obesity and pregnancy in dialysis patients are becoming more prevalent (ANZDATA Registry 29th Annual Report, 2006), challenging the nutritional knowledge and practice of renal dietitians. Evidenced based practice guidelines exist (Nutr Diet 2006;63:S35–S45), however much of the older renal nutrition literature needs to be challenged in the face of improved anaemia management, dialysis prescription and medications more recently. Although many renal dietitians in clinical practice recognise these issues, in Australia there is no organised clinical practice education, support or expert recognition compared to other members of the renal multidisciplinary team or compared to renal dietitians overseas. Furthermore the limited renal nutrition component of most Australian university dietetics course curriculums does not prepare graduate dietitians to work in renal nutrition. To be recognised as specialists by non-dietitians within the multi-disciplinary team we must first recognise renal nutrition and renal dietitians as a speciality within our own profession. A career path for renal dietitians that is supported by documented competencies, post-graduate education & specialist recognition is desperately needed. The formation of a competency based national renal dietitians practice group to initiate, coordinate and support these processes is imperative and could be a model for specialist recognition in other areas of dietetics practice. The requirements, challenges and progress of the formation of a competency based renal dietitians practice group will be discussed.

STRUCTURAL CHANGE THROUGH MEDICARE FUNDING – WHAT DOES IT MEAN FOR DIETETICS?

LANA MITCHELL, SANDRA CAPRA, LESLEY MACDONALD-WICKS
University of Newcastle, Callaghan, NSW 2308 Australia

In July 2004, the 'allied health and dental care initiative' was introduced to Medicare, allowing patients with chronic disease treated under an Enhanced Primary Care (EPC) plan to be eligible for rebates for allied health services. DAA membership data from 2003 to 2006 was analysed, as well as Medicare EPC data for 2004/05 and 2005/06. Between 2004/05 and 2005/06 the number of allied health EPCs doubled (251,203 to 536,327). Physiotherapists claimed most, followed by podiatry, then dietetics. While the total increased in 2005/06, the proportion for dietetics dropped (17.6% vs. 13.7%; $p < 0.0001$). Dietitians had most EPCs per provider, with 89.4 in 2004/05, and 115.6 in 2005/06; followed by diabetes educators, podiatry, and physiotherapy. Rural areas experienced more growth in dietitian EPCs (14.3% vs. 17.2% of total; $p < 0.0001$). Between 2003 and 2006, the number of private practice (PP) dietitians and full-time equivalents (FTEs) increased, with 186, 220, 510 and 656 PP dietitians respectively, equating to 75, 92, 160 and 224 FTEs. By 2005, nearly one third of working members of DAA conducted PP work. Dietitians working principally in PP increased, (62% by 2005), and those working only in PP almost doubled between 2004 and 2005, reaching 46.7% ($p \leq 0.0001$). Half of PP dietitians worked 8 hours or fewer per week in PP. Results show that more dietitians are making use of Medicare funding and are conducting PP work, with significant change in the proportion between 2004 and 2005 ($p < 0.001$). We conclude that Medicare funding for allied health has provided structural change and an impetus for PP dietetics.

Funding source: APA scholarship.

MILITARY DIETETICS – PAST, PRESENT AND FUTURE

DEREK MOORE
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This paper discusses the role of dietitians in the Australian military and the opportunities for expansion of this role. Modern dietetics has its origins in the United States of America during World War One, when large numbers of potential recruits to the armed forces were rejected due to malnutrition. Australia's first military dietitians contributed to the national effort in World War Two, notably in military hospitals, where they were responsible for the management of the food services and all clinical dietetic care. In recent years, dietitians have contributed to the health of military personnel in a variety of ways, including nutrition research, clinical advice to individuals, nutrition education plus Reserve project consultancy and teaching. The future holds many challenges. Current roles such as nutrition research, including optimal feeding during deployment, clinical dietetic functions and Reserve tasking need to continue. More Reserve dietitians would allow a greater range of roles to be performed. Acute care dietitians could participate in humanitarian assistance roles, for example. There would be a requirement for dietitians to advise on influenza-specific menus for military personnel, in the event of an influenza pandemic. As normal meal production and service may not be possible, involvement of Reserve dietitians in contingency planning for such emergencies and their management will be important.

POST-NATAL LIFESTYLE INTERVENTIONS IN AUSTRALIAN WOMEN WITH GESTATIONAL DIABETES – ARE WE DOING ENOUGH TO REDUCE THE FUTURE RISK OF TYPE 2 DIABETES?

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Gestational diabetes mellitus (GDM) affects up to 9% of Australian women during pregnancy and increases future type 2 diabetes (T2D) risk. Recent research demonstrates the role of intensive lifestyle interventions in prevention of T2D and a GDM diagnosis provides an opportunity to intervene early in a high-risk group. To determine the post-natal follow-up received by Australian women with a history of GDM, but unknown current diabetes status, a postal survey was administered to 4098 women registered with the National Diabetes Services Scheme. Thirteen hundred and eighty (1380) completed surveys were returned (34% response rate). Respondents mean age (±SD) was 35.2 ± 5.1 years. During their first GDM pregnancy the majority (71%) of women had diet-controlled GDM and 26% required insulin with 42% of respondents reported seeing a dietitian only once, with 15% not receiving any dietetic intervention. While 59% reported receiving information about reducing future risk of T2D, only 16% received this

GP Study

GP Information Statement

GP Consent Form

GP Questionnaire #1

GP Questionnaire #2

GP Questionnaire #3

Prof Sandra Capra, AM
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Information Statement for the Research Project: Impact of Lifestyle Prescriptions on GP provision of nutrition advice and referral to dietitians

You are invited to take part in the research project identified above which is being conducted by Lana Mitchell who is undertaking the research as part of her PhD. The Chief Investigator is Prof Sandra Capra, from the School of Health Sciences at the University of Newcastle. Dr Lesley MacDonald-Wicks, from the Discipline of Nutrition and Dietetics at the University of Newcastle, and Prof Dimity Pond from the Discipline of General Practice at the University of Newcastle, are Co-Investigators.

Why is the research being done?

- The purpose of the project is to identify trends in the nutrition counselling and referral practices of General Practitioners (GPs), thereby determining factors that are conducive to the provision of nutrition advice and referral to dietitians. This will allow us to ascertain what measures can be implemented in order to make providing nutrition advice and referring to a dietitian easier. The study will also assess the impact that training in the use of Lifescripts can have on these factors.
- 'Lifestyle Prescriptions', otherwise known as Lifescripts are a recently launched Commonwealth initiative, using general practitioners to deliver a variety of health messages in a "prescription" format. Lifescripts exist for smoking, nutrition, alcohol, physical activity and weight management.

Who can participate in the research?

- GPs from Hunter Urban Division of General Practice (DGP), Hunter Rural DGP and Central Coast DGP are invited to participate.
- GPs from practices that have atypical patient groups are not eligible to participate.

What choice do you have?

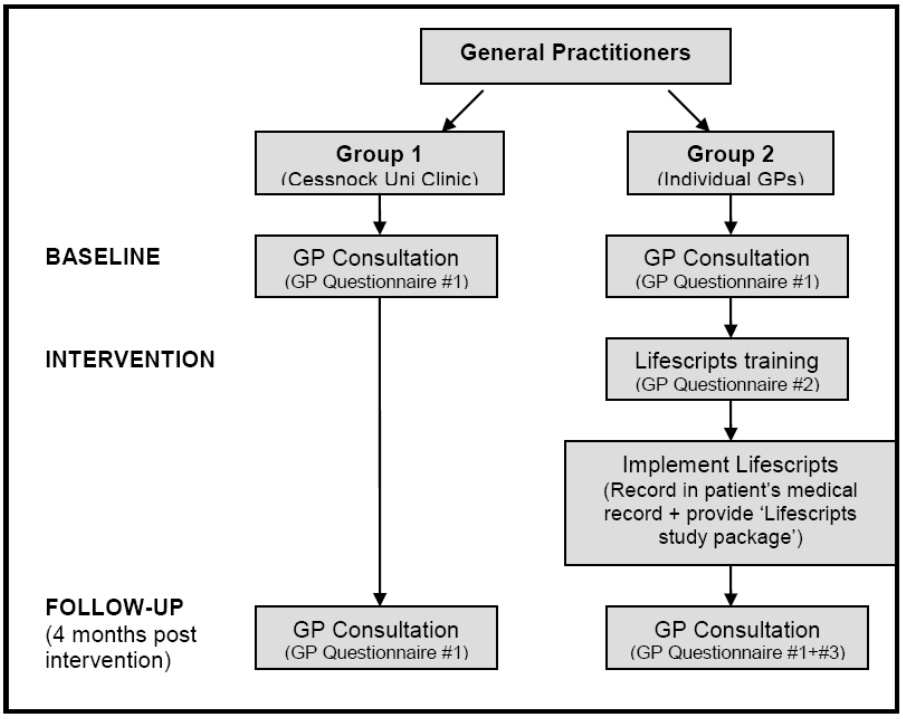
- Participation in this research is entirely your choice. Only those GPs who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you in any way.
- If you do decide to participate, you may withdraw from the project at any time without giving a reason. If you withdraw from the study you may also choose to withdraw any individual data.

What would you be asked to do?

Individual GPs participating in the study will be required to:

1. Complete baseline and follow-up questionnaires during two separate paid consultation times. These are expected to take 10-15 minutes each.
2. Participate in a one hour Lifescripts training session.
3. Provide a 'Lifescripts study package' to all patients receiving Lifescripts ≥18 years of age. This will include an information statement and questionnaire.
4. Record in the medical notes which Lifescript/s the patient was given.

Overview of research design



BASELINE & FOLLOW-UP QUESTIONNAIRES

- Recruitment will take place in March/ April 2007 with baseline questionnaires conducted shortly after this.
- Follow-up questionnaires will be conducted approximately four months after Lifescripts training has occurred, allowing GPs the opportunity to implement Lifescripts in their practice. At this time an additional questionnaire will be filled out by those who received Lifescripts training.
- Lana Mitchell will administer the questionnaires which will be conducted during a booked consultation time at the GP's practice.
- Participants will receive the usual fee for their time.

LIFESCRIPTS TRAINING

- Participants in Group 2 will receive training in the use of Lifescripts. This is likely to be an evening event but this will depend on preference. Training is expected to take approximately one hour and will be conducted by the researchers.
- For GPs who are unable to make it to the group education session, a condensed training will be provided in an extended consultation time.
- An additional questionnaire will also be conducted at this time on the GP's thoughts towards the Lifescripts training. This will only take a few minutes of the GP's time.

LIFESCRIPTS IMPLEMENTATION

- GPs will then provide Lifescripts to patients as they see appropriate.
- The researchers are also interested in identifying patients' thoughts of Lifescripts. Therefore, when a patient receives a Lifescript, the type of Lifescript/s they received should be recorded in the patient's medical notes in an easily searchable section. The patient should then be provided with a 'Lifescripts study package', which includes an information statement and questionnaire.

***What are the risks and benefits of participating*?**

- GPs in Group 2 will receive training in the use of Lifescripts, which we expect will be useful in providing advice to their patients.
- As questionnaires will be conducted during a consultation at the practice, GPs will receive their usual fee for their time.
- No risks to participating in this study have been identified

Why is the research being conducted?

- This research will reveal factors that are conducive to providing nutrition advice in the general practice setting. This will allow more effective targeting of nutrition delivery.
- The Commonwealth Government provided substantial funding for the development of Lifescripts and therefore it will be advantageous to identify the effectiveness of this initiative.
- Assessing GP opinions of Lifescripts will identify whether Lifescripts should be encouraged in all general practices.

How will your privacy be protected?

- GP questionnaires will be recorded along with the GP ID number.
- All results will be reported at the group level with all data being presented in de-identified format.
- A master list linking GPs with their ID number will be only accessible by the researchers conducting the questionnaires.
- Hard copy of the data will be kept in a lockable cabinet in a locked office. Electronic data will be stored in a password protected computer. All data will be kept in de-identified format, with the master identification documents stored in a different location.

How will the information collected be used?

- The results will be used to show trends in nutrition behaviours and factors that are conducive to the provision of nutrition advice and referral to dietitians. This will allow us to ascertain what can be done to make providing nutrition advice and referring to a dietitian easier. The study will also assess the impact that training in the use of 'Lifescripts' can have on these factors.
- Results will be presented in scientific journals and at conferences, and will be included in the thesis of Lana Mitchell for her PhD. Individual participants and practices will not be identified in these presentations or publications.
- Results of the study will be available to participating GPs upon request at the completion of the study and analysis of results. This will be in a standard de-identified format and based at the group level.

***What do you need to do to participate*?**

- Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, please contact Lana Mitchell (PhD Candidate) on 49 21 8673 or Sandra Capra (Chief Investigator) on 49 21 5642.
- If you would like to participate, please complete the attached consent form and return it in the reply paid envelope provided.
- You will then be contacted by the researchers to organise an appointment for the baseline interview.

Thank you for considering this invitation.

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-253-0706
Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, telephone 02 49 21 6333, email Human-Ethics@newcastle.edu.au.)

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Consent for the Research Project: Impact of Lifestyle Prescriptions on GP provision of nutrition advice and referral to dietitians

I agree to participate in the above research project and provide my consent freely by signing this form.

I understand that:

- The project will be conducted as described in the Information Statement, a copy of which I have retained.
- I can withdraw from the project at any time and do not have to provide any reason for withdrawing.
- My personal information will remain confidential to the researchers.

I consent to:

1. Participate in two questionnaires which will be conducted during separate booked consultation times. These are expected to take 10-15 minutes each.
2. Attend training on Lifescripts, and conduct an additional questionnaire at this time on my thoughts towards the Lifescripts training.
3. Provide a 'Lifescripts study package' to all patients receiving Lifescripts. This will include an information statement and questionnaire.
4. Record in the medical notes which Lifescript/s the patient was given.

I have read and understood the information sheet.

All my questions have been answered to my satisfaction.

Print Name: ……...…….....

Signature: …… Date: ……

Practice Name: ……

Practice Address: ……

Telephone number: ……..... Fax number: ……

Email: …… …… Number of GPs in your practice: ……

Please return the completed form in the reply paid envelope provided.

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-253-0706

Version 3, 09/03/2007

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Impact of Lifestyle Prescriptions on GP provision of nutrition advice and referral to Dietitians

GP QUESTIONNAIRE #1

GP ID number: _____ Date: _____

Baseline / Follow-up

Your participation in our study is greatly appreciated, and we value your responses.

The purpose of the project is to identify trends in the nutrition counselling and referral behaviours of GPs, thereby determining factors that are conducive to the provision of nutrition advice and referral to dietitians. This will allow us to ascertain what we can do to make providing nutrition advice and referring to a dietitian easier.

Throughout this questionnaire nutrition related problems are referred to. These comprise of a range of conditions including overweight and obesity, CVD, hypertension, diabetes, anemia, osteoporosis, undernutrition, allergy, pregnancy or breastfeeding, and unintentional weight loss or gain.

The questionnaire is expected to take approximately 10 minutes.
Please circle the most appropriate response, and expand when requested.
If you have any questions regarding how it should be completed, please do not hesitate to ask.

Thank you

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Version 3, 09/03/2007

1. Have you moved Practice in the last 6 months?

   Yes *No*

2. Have you attended any further training in nutrition during the previous year

   Yes *No* *[If no go to question 4]*

3. Do you believe this has changed your nutrition counselling practices and attitudes

   Yes *No*

4. I believe that dietary assessment and counselling is a role of GPs

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

5. I have the knowledge to provide nutrition counselling

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

6. I have the skills to provide nutrition counselling

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

7. I have the confidence to provide nutrition counselling

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

8. I have the experience to provide nutrition counselling

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

9. I believe that nutrition counselling will lead to changes in patient dietary behaviour

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

10. I believe that diet changes influence patient health outcomes

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

11. I find I have enough time to provide nutrition advice

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

12. I have appropriate resources available to me to allow me to provide nutrition advice

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

13. I use available resources to provide nutrition advice

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

14. I use reminders in medical notes to prompt me to provide appropriate nutrition advice

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

Version 3, 09/03/2007

15. I require more nutrition information to effectively provide nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

16. How important is adequate reimbursement in influencing your decision to counsel

No importance *low importance* *neutral* *high importance* *very high importance*

17. How important is time in influencing your decision to counsel

No importance *low importance* *neutral* *high importance* *very high importance*

18. How important is having education material available in influencing your decision to counsel

No importance *low importance* *neutral* *high importance* *very high importance*

[Lifescripts are a recently launched Commonwealth initiative focused towards the areas of: nutrition, weight management, alcohol, smoking and physical activity. The following questions aim to assess your thoughts towards these]

19. Have you heard of Lifescripts?

Yes *No* *[If no go to question 24]*

20. I have a good understanding of Lifescripts

strongly disagree *disagree* *neutral* *agree* *strongly agree*

21. When did you first hear about Lifescripts? _____

_____

22. How did you find out about them? _____

_____

23. Has your practice has begun implementing Lifescripts, if so, in what ways? _____

_____

_____

_____

[Medicare allows for the management of patients with chronic diseases through their Team Care Arrangements within Enhanced Primary Care (EPC) plans. The following questions aim to assess your thoughts towards these]

24. I believe EPC Team Care Arrangements make it easier to refer to a dietitian

strongly disagree *disagree* *neutral* *agree* *strongly agree*

*why:*_____

_____

Version 3, 09/03/2007

25. I believe EPC Team Care Arrangements have streamlined the process of referral

strongly disagree *disagree* *neutral* *agree* *strongly agree*

*why:*_____

_____

26. I believe EPC Team Care Arrangements overcome many barriers to referral

strongly disagree *disagree* *neutral* *agree* *strongly agree*

*why:*_____

_____

27. What support do you require to make paperwork easier for setting up EPC Team Care Arrangements? _____

_____

_____

_____

[The following questions aim to gain some insight into your referral to dietitians]

28. I regularly refer patients to a dietitian

strongly disagree *disagree* *neutral* *agree* *strongly agree*

29. About how often do you refer: 1 dietitian referral every _____day/week

1 dietitian referral every _____ patients

30. What proportion of these patients would be through a EPC: _____

_____

31. Do you have a regular dietitian to whom you refer patients to?

Yes *No*

32. Having a dietitian within the practice would make it easier to refer?

strongly disagree *disagree* *neutral* *agree* *strongly agree*

[For the next few questions please think about the patients you saw last week.]

33. What proportion of the patients you saw last week do you perceive required nutrition advice?

_____

_____

Version 3, 09/03/2007

34. What proportion of these patients received nutrition advice? _____

_____

35. What proportion of patients did you provide with nutrition resources? _____

_____

36. What form did the advice take in the main? [*please tick the most appropriate]*

- ☐ *Verbal advice only*
- ☐ *Written advice only*
- ☐ *Verbal and written advice*

37. When nutrition was discussed, how much time did you spend talking about nutrition on average?

☐ *< 30 seconds* ☐ *< 1min* ☐ *1-5min* ☐ *>5 min*

END OF QUESTIONNAIRE

THANK YOU FOR YOUR PARTICIPATION

PLEASE RETURN IN THE REPLY PAID ENVELOPE PROVIDED

*Question 5-9, 16-18 used by kind permission of Lisa Nicholas, PhD, University of Newcastle

Version 3, 09/03/2007

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Impact of Lifestyle Prescriptions on GP provision of nutrition advice and referral to Dietitians

GP QUESTIONNAIRE #2

GP ID number: _____ Date: _____

This questionnaire will allow us to identify your thoughts on the Lifescripts training.

Please complete this questionnaire at the completion of your Lifescripts training.

This questionnaire is expected to take approximately 10 minutes.
Please circle the most appropriate response, and expand when requested.
If you have any questions regarding how it should be completed, please do not hesitate to ask.

PLEASE COMPLETE AND HAND TO THE LIFESCRIPTS TRAINER
AT THE END OF THE SESSION

Thank you

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Version 1, 30/06/2006

1. I think Lifescripts will be beneficial to my practice

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

2. I don't think my patients will benefit from Lifescripts

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

3. Lifescripts are self-explanatory

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

4. I did not find the training to be a productive use of my time

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

5. I found the Lifescripts training beneficial

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

6. I feel confident to be able to implement Lifescripts in my practice with no further training

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

7. How could the training be improved? _____

_____

_____

_____

8. What were the most useful aspects of the training? _____

_____

_____

_____

END OF QUESTIONNAIRE

THANK YOU FOR YOUR PARTICIPATION

PLEASE HAND TO THE LIFESCRIPTS TRAINER BEFORE YOU LEAVE

Version 1, 30/06/2006

The UNIVERSITY of NEWCASTLE
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Impact of Lifestyle Prescriptions on GP provision of nutrition advice and referral to Dietitians

GP QUESTIONNAIRE #3

GP ID number: _____ Date: _____

Follow-up

This questionnaire is for those GPs who participated in the Lifescripts training.
It will allow us to identify how Lifescripts have impacted on your nutrition related practices.

The questionnaire is expected to take approximately 5 minutes.
Please circle the most appropriate response, and expand when requested.
If you have any questions regarding how it should be completed, please do not hesitate to ask.

Thank you

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Version 1, 30/06/2006

1. I believe Lifescripts are effective

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

   *why:*_____

2. Lifescripts have been beneficial to my practice

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

   *why:*_____

3. I don't think my patients have benefited from Lifescripts

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

4. I find Lifescripts easy to use

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

5. Lifescripts have improved my nutrition knowledge

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

6. The use of Lifescripts makes providing nutrition advice easier

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

7. Lifescripts have increased my confidence in providing nutrition advice

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

8. I require more nutrition information to effectively provide nutrition advice

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

9. I am not confident to effectively use Lifescripts to provide nutrition advice

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

10. Lifescripts have increased my awareness of the types of patients I should refer to a dietitian

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

11. Using Lifescripts has meant that I have referred to a dietitian more often

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

12. I would find it beneficial to have a dietitian promoting Lifescripts

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

Version 1, 30/06/2006

13. I am currently using Lifescripts in my practice

    Yes *no*

    If yes, how: _____

    _____

    _____

    _____

14. How many 'nutrition' or 'weight management' Lifescripts would you give per week, on average?

    Nutrition: _____

    Weight management: _____

15. When would you be most likely to provide a patient with a 'nutrition' or 'weight management Lifescript? _____

    _____

    _____

16. Are there any barriers to the effective use of Lifescripts?

    _____

    _____

    _____

    _____

17. How could these barriers be overcome?

    _____

    _____

    _____

    _____

18. I am planning on using Lifescripts in my practice in the future

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

    Why/ why not: _____

    _____

    _____

    _____

END OF QUESTIONNAIRE

THANK YOU FOR YOUR PARTICIPATION

PLEASE RETURN IN THE REPLY PAID ENVELOPE PROVIDED

Version 1, 30/06/2006

PN Study

PN Information Statement

PN Consent Form

PN Questionnaire #1

PN Questionnaire #2

GP Questionnaire #3

Planned Implementation

Lifescripts© Distribution Form

Information Statement for the Research Project:
Effectiveness of Lifestyle Prescriptions in the general practice setting

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Want to find out how to use Lifescripts in your practice?

Dear Practice Nurse,

You are invited to take part in the research project identified above which is being conducted by Lana Mitchell who is undertaking the research as part of her PhD. The Chief Investigator is Prof Sandra Capra, from the School of Health Sciences at the University of Newcastle. Dr Lesley MacDonald-Wicks, from the Discipline of Nutrition and Dietetics at the University of Newcastle, and Prof Dimity Pond from the Discipline of General Practice at the University of Newcastle, are Co-Investigators.

Why is the research being done?

- The purpose of the project is to identify the most practical and effective way of implementing Lifescripts in the general practice setting. Lifescripts, or Lifestyle Prescriptions, are a recently launched Commonwealth initiative, using General Practitioners (GPs) to deliver a variety of health messages in a "prescription" format. However, it is likely that Practice Nurses are in a better position to implement Lifescripts. Therefore it is important to identify whether Practice Nurses are a viable alternative and should be the focus of future health promotion projects.
- We are also interested in the nutrition counselling and referral practices of Practice Nurses in order to determine factors that are conducive to the provision of nutrition advice and referral to dietitians. This will allow us to ascertain what measures can be implemented in order to make providing nutrition advice and referring to dietitians easier. The study will also assess the impact that training in the use of Lifescripts can have on these factors.

Who can participate in the research?

- Practice Nurses from the Hunter Urban Division of General Practice (HUDGP) are invited to participate.
- Only Practice Nurses from practices where a GP is not involved in the study may participate.

What choice do you have?

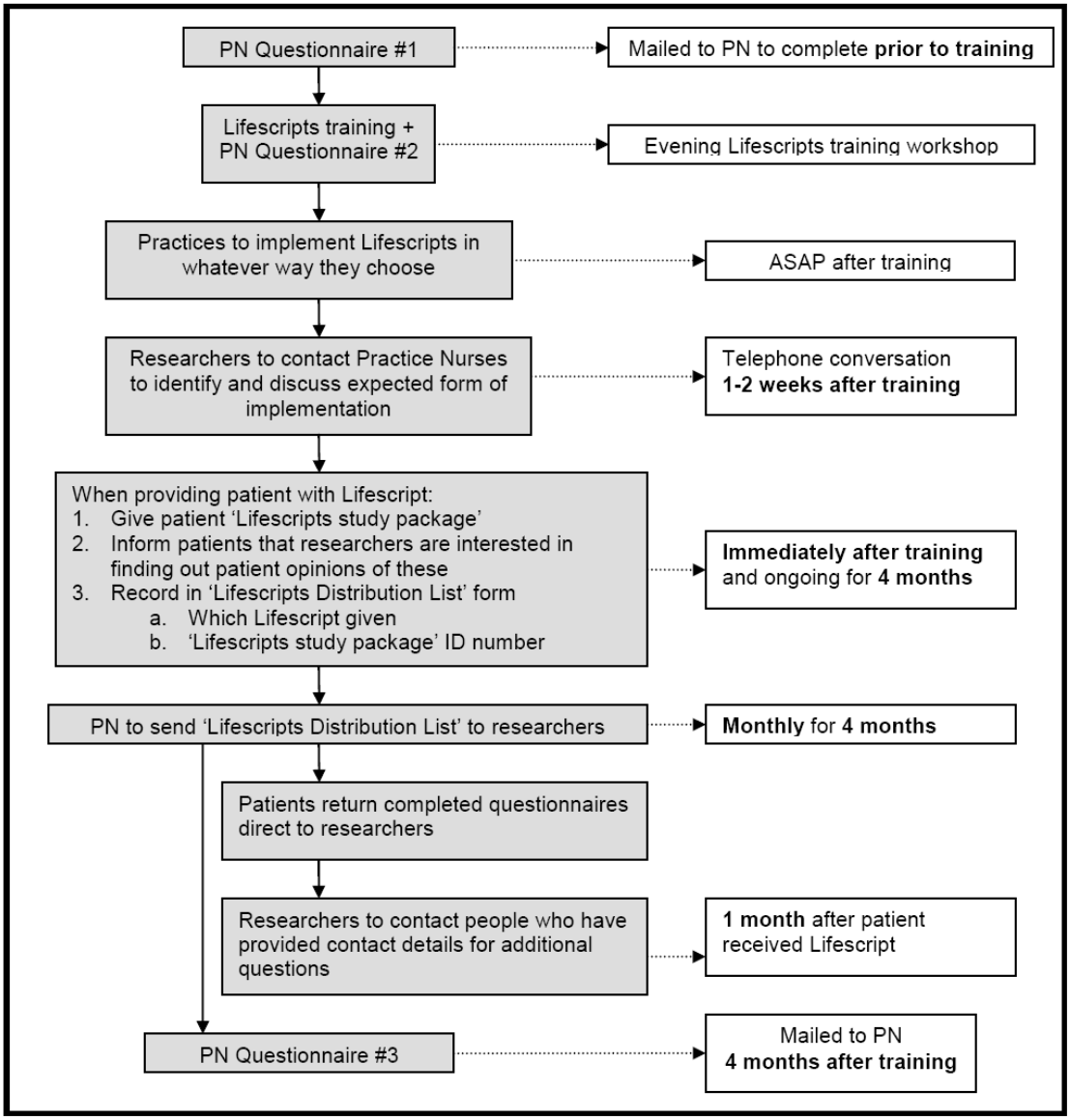
- Participation in this research is entirely your choice. Only those Practice Nurses who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you in any way.
- If you do decide to participate, you may withdraw from the project at any time without giving a reason. If you withdraw from the study you may also choose to withdraw any individual data.

What would you be asked to do?

Individual Practice Nurses participating in the study will be required to:

1. Complete three questionnaires throughout study period;
2. Attend a Lifescripts training workshop;
3. Give patients ≥18 years of age a 'Lifescripts study package' when providing a Lifescript, and record the package ID number along with type of Lifescript/s provided;
4. Provide researchers with a list of Lifescripts provided along with the date and package ID number.

Overview of research design



When consent is obtained, you will be mailed a questionnaire to fill out and either return in the reply paid envelope provided or bring along to the training workshop. This questionnaire will assess your views of Lifescripts, current implementation, thoughts towards providing nutrition advice, as well as your current provision of nutrition advice and referral to dietitians.

You will then be invited to attend the training workshop which will be held in the evening with dinner provided. If you are unable to attend the workshop alternate arrangements will be made. Training will include: what Lifescripts are, how to use them, and possible ways for them to be implemented within a practice. Further information about the study will also be provided and it will again be explained what is expected of you. This will be provided by the researchers. At the end of workshop you will complete another questionnaire providing feedback on your views of the training.

One to two weeks after the workshop you will be contacted to identify how you think your practice will implement Lifescripts, and the expected date of implementation.

When a patient receives a Lifescript they need to be given a 'Lifescripts study package' which includes an information statement and questionnaire. The information statement will outline what the research involves and assure the patient that they are not obligated to participate. You will then need to record on the 'Lifescripts distribution form' that they received a Lifescript, which Lifescript/s they received and the ID number of the package they received. Please note we are not asking you to record the patient's name. It is essential that this information gets documented for each patient. This will allow the number of Lifescripts distributed to be recorded.

Each month after the implementation date the practices will be asked to send 'Lifescripts distribution form' to the researchers. This will be done monthly for 4 months. Reply paid envelopes will be provided for this purpose.

At the end of the study period you will be asked to complete another questionnaire. This is to find out how Lifescripts worked from your perspective.

***What are the risks and benefits of participating*?**

- Practice Nurses will receive training in the use of Lifescripts, which will assist in implementing them in your practice to assess patient's lifestyle risk factors and provide advice.
- No risks to the participants have been identified.

Why is the research being conducted?

- Lifescripts were initially developed to be implemented by GPs; however it appears that Practice Nurses may be better positioned to implement them. Therefore it is important to identify the most practical and effective way of implementing Lifescripts in the general practice setting.
- The Commonwealth Government provided substantial funding for the development of Lifescripts and therefore it will be advantageous to identify the effectiveness of this initiative.
- It is important to identify barriers that exist to implementing Lifescripts in order to assist in their uptake.
- Identifying factors that are conducive to providing nutrition advice in the practice setting will allow more effective targeting of nutrition delivery.

How will your privacy be protected?

- You will be provided with an ID number that will be recorded on all materials.
- All results will be reported in de-identified format.
- A master list linking Practice Nurses with their ID number will be only accessible by the researchers conducting the questionnaires.

- Hard copy of the data will be kept in a lockable cabinet in a locked office. Electronic data will be stored in a password protected computer. All data will be kept in de-identified format, with the master identification documents stored in a different location.

How will the information collected be used?

- The results will be used to propose the most effective way of implementing Lifescripts in the general practice setting. They will also add to the understanding of delivery of preventive activities and assist in future efforts to improve the provision of nutrition and other lifestyle advice to the general population.
- The study will also provide insight into patients' opinions of Lifescripts and receiving lifestyle advice from their general practice.
- Results will be presented in scientific journals and at conferences, and will be included in the thesis of Lana Mitchell for her PhD. Individual participants and practices will not be identified in these presentations or publications.
- Results of the study will be available to participating Practices at the completion of the study and analysis of results. This will be in a standard de-identified format.

What do you need to do to participate?

- Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, please contact Lana Mitchell (PhD Candidate) on 49 21 8673 or Prof Sandra Capra (Chief Investigator) on 49 21 5642.
- If you would like to participate, please complete the attached consent form and return it in the reply paid envelope provided.
- You will then be mailed a questionnaire to complete and contacted by the researchers to inform you of the training details.

Thank you for considering this invitation.

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond

Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks

Lecturer in Nutrition and Dietetics

Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-403-0407.
Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, telephone 02 49 21 6333, email Human-Ethics@newcastle.edu.au.

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Consent for the Research Project (Practice Nurse): Effectiveness of Lifestyle Prescriptions in the General Practice Setting

I agree to participate in the above research project and provide my consent freely by signing this form.

I understand that:

- The project will be conducted as described in the Information Statement, a copy of which I have retained.
- I can withdraw from the project at any time and do not have to provide any reason for withdrawing.
- My personal information will remain confidential to the researchers.

I consent to:

1. Complete three questionnaires throughout study period
2. Attend a Lifescripts training workshop
3. Give patients a 'Lifescripts study package' when providing a Lifescript, and record the package ID number along with type of Lifescript/s provided
4. Provide researchers with a list of Lifescripts provided along with the date and package ID number

I have read and understood the information sheet.

All my questions have been answered to my satisfaction.

Print Name: ……...…….....

Signature: …… Date: ……

Practice Name: ……

Practice Address: ……

Number of GPs in your practice: …… Number of practice nurses: ……

Telephone number: ……..... Fax number: ……

Email: …… …… Preferred contact: email / telephone

Days worked: (please circle) Mon Tue Wed Thurs Fri

Preferred Contact time: (please circle) AM PM

Please return the completed form in the reply paid envelope provided.

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-403-0407.

Version 1, 09/03/2007

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Effectiveness of Lifestyle Prescriptions in the general practice setting

PRACTICE NURSE QUESTIONNAIRE #1

PN ID number: _____ Date: _____

Your participation in our study is greatly appreciated, and we value your responses.

The purpose of the project is to establish the most practical and effective way of implementing Lifestyle Prescriptions in the general practice setting, and to identify what can be done to assist in its implementation. We are also interested in the nutrition counselling and referral practices of practice nurses in order to determine factors that are conducive to the provision of nutrition advice and referral to dietitians. This will allow us to ascertain what measures can be implemented in order to make providing nutrition advice and referring to a dietitian easier.

The questionnaire is expected to take approximately 10 minutes.
Please circle or tick the most appropriate response, and expand when requested.
If you have any questions regarding how it should be completed,
please do not hesitate to contact Lana Mitchell (PhD Candidate) on 49 21 8673.

Thank you

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Version 1, 09/03/2007

[Lifestyle Prescriptions, otherwise known as Lifescripts, are a recently launched Commonwealth initiative focused towards the areas of: nutrition, weight management, alcohol, smoking and physical activity. The following questions aim to assess your thoughts towards these]

1. Have you heard of Lifescripts?

   Yes *No* *[If no go to question 8]*

2. I have a good understanding of Lifescripts

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

3. When did you first hear about Lifescripts? _____

   _____

4. How did you find out about them? _____

   _____

5. What stage is your practice up to with implementing Lifescripts? *[please tick the most appropriate]*

   ☐ Implemented them

   ☐ Partially implemented them

   ☐ Planning to implement them

   ☐ Not planning to implement

6. If your practice has begun implementing Lifescripts, what are you currently doing? _____

   _____

   _____

   _____

   _____

7. What are the barriers to implementing Lifescripts in your practice?

   For you? _____

   _____

   _____

   _____

   _____

   For GPs? _____

   _____

   _____

   _____

   _____

Version 1, 09/03/2007

[The following questions aim to assess your views and practices on nutrition counselling]

8. Have you attended any further training in nutrition during the previous year

   Yes *No* *[If no go to question 10]*

9. Do you believe this has changed your nutrition counselling practices and attitudes

   Yes *No*

10. I believe that dietary assessment and counselling is a role of practice nurses

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

11. I have the knowledge to provide nutrition counselling

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

12. I have the skills to provide nutrition counselling

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

13. I have the confidence to provide nutrition counselling

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

14. I have the experience to provide nutrition counselling

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

15. I believe that nutrition counselling will lead to changes in patient dietary behaviour

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

16. I believe that diet changes influence a patient's health outcomes

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

17. I find I have enough time to provide nutrition advice

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

18. I have appropriate resources available to me to allow me to provide nutrition advice

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

19. I use available resources to provide nutrition advice

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

20. I use reminders in medical notes to prompt GPs to provide nutrition advice

    strongly disagree *disagree* *neutral* *agree* *strongly agree*

Version 1, 09/03/2007

21. I require more nutrition information to effectively provide nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

22. How important is adequate reimbursement in influencing your decision to counsel

No importance *low importance* *neutral* *high importance* *very high importance*

23. How important is time in influencing your decision to counsel

No importance *low importance* *neutral* *high importance* *very high importance*

24. How important is having education material available in influencing your decision to counsel

No importance *low importance* *neutral* *high importance* *very high importance*

[Medicare allows for the management of patients with chronic diseases through their Team Care Arrangements within Enhanced Primary Care (EPC) plans. The following questions aim to assess your thoughts towards these]

25. What support do you provide to the GPs in your practice in completing the forms for EPC Team Care Arrangements? _____

_____

_____

_____

_____

26. How often is referral to a dietitian provided for patients with an EPC? _____

_____

_____

27. Is the referral usually initiated by yourself or the GP? _____

[The following questions aim to gain some insight into your referral to dietitians]

28. Do you refer patients to a dietitian without an EPC?

Yes *No* *[if no, go to question 31]*

29. If yes, how often does this occur? _____

30. If yes, is the GP involved with the referral?

Yes *No*

Version 1, 09/03/2007

31. Does your practice have a regular dietitian to whom they refer patients?

Yes *No*

32. If yes, are they located within your practice?

Yes *No*

33. Having a dietitian within the practice would make it easier to refer?

strongly disagree *disagree* *neutral* *agree* *strongly agree*

What are the barriers to referring to a dietitian? _____

_____

_____

_____

[For the next few questions please think about the patients you saw last week.]

34. What proportion of the patients you saw last week would you think required nutrition advice?

_____

_____

35. What proportion of these patients did you provided nutrition advice to? _____

_____

_____

36. What form did the advice take in the main? *[please tick the most appropriate]*

- ☐ *Verbal advice only*
- ☐ *Written advice only*
- ☐ *Verbal and written advice*

37. When nutrition was discussed, how much time did you spend talking about nutrition on average?

☐ *< 1min* ☐ *1-5min* ☐ *5-10 min* ☐ *10-20 min* ☐ *>20 min*

38. Do you believe you have adequate support for providing nutrition advice to patients?

Yes *No* *Unsure*

Why? _____

_____

_____

_____

_____

Version 1, 09/03/2007

39. What specific conditions would prompt you to provide nutrition advice to patients? _____
_____
_____
_____
_____

END OF QUESTIONNAIRE

THANK YOU FOR YOUR PARTICIPATION

PLEASE RETURN TO THE RESEARCHER IN REPLY PAID ENVELOPE PROVIDED

*Questions 11-15, 22-24 used by kind permission of Lisa Nicholas, PhD, University of Newcastle

Version 1, 09/03/2007

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Effectiveness of Lifestyle Prescriptions in the General Practice setting

PRACTICE NURSE QUESTIONNAIRE #2

PN ID number: _____ Date: _____

This questionnaire will allow us to identify your thoughts on the Lifescripts training.

Please complete this questionnaire at the completion of your Lifescripts training.

This questionnaire is expected to take approximately 5 minutes.
Please circle or tick the most appropriate response, and expand when requested.
If you have any questions regarding how it should be completed, please do not hesitate to ask.

PLEASE COMPLETE AND HAND TO THE LIFESCRIPTS TRAINER
AT THE END OF THE SESSION

Thank you

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
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Version 1, 09/03/2007

[Please circle the most appropriate response]

1. I think Lifescripts will be beneficial to my practice

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

2. Lifescripts are self-explanatory

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

3. I feel confident to be able to implement Lifescripts in my practice with no further training

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

4. Written materials on Lifescripts would be as useful as a workshop

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

5. I don't think my patients will benefit from Lifescripts

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

6. I found the training to be a productive use of my time

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

[Please tick the most appropriate response on each line]

7. Duration of training	☐ too short	☐ good duration	☐ too long
8. Amount of content	☐ too brief	☐ good amount	☐ too much
9. Detail of content	☐ too little	☐ adequate detail	☐ too detailed
10. Practical examples	☐ too little	☐ adequate	☐ too many

11. How could the training be improved? _____

_____

_____

_____

_____

_____

12. Is there a different form for this information that would be as useful as the workshop? _____

_____

_____

_____

Version 1, 09/03/2007

13. What were the most useful aspects of the training? _____

_____

_____

_____

_____

_____

14. What were the least useful aspects of the training? _____

_____

_____

_____

_____

_____

END OF QUESTIONNAIRE

THANK YOU FOR YOUR PARTICIPATION

PLEASE HAND TO THE LIFESCRIPTS TRAINER BEFORE YOU LEAVE

Version 1, 09/03/2007

The UNIVERSITY of NEWCASTLE
AUSTRALIA

Prof Sandra Capra, AM
PhD, AdvAPD, FDAA

Professor and Head,
School of Health Sciences

Faculty of Health
University Drive, Callaghan
NSW 2308 Australia
Phone: +61 2 4921 5642
Fax: +61 2 4921 6984
Email: Sandra.Capra@newcastle.edu.au

Effectiveness of Lifestyle Prescriptions in the General Practice setting

PRACTICE NURSE QUESTIONNAIRE #3

PN ID number: _____ Date: _____

Your participation in our study is greatly appreciated, and we value your responses.

The purpose of the project is to identify the most practical and effective way of implementing Lifescripts in the general practice setting and what can be done to assist in its implementation. We are also interested in the nutrition counselling and referral practices of practice nurses in order to determine factors that are conducive to the provision of nutrition advice and referral to dietitians. This will allow us to ascertain what measures can be implemented in order to make providing nutrition advice and referring to a dietitian easier.

The questionnaire is expected to take approximately 15 minutes.
Please circle the most appropriate response, and expand when requested.
If you have any questions regarding how it should be completed,
please do not hesitate to contact Lana Mitchell (PhD Candidate) on 49 21 8673.

Thank you

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Version 1, 09/03/2007

[The following questions aim to assess your thoughts towards Lifescripts]

1. I have a good understanding of Lifescripts

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

2. In what ways has your practice implemented Lifescripts? _____

   _____
   _____
   _____
   _____
   _____
   _____
   _____

3. I believe Lifescripts are effective

   strongly disagree *disagree* *neutral* *agree* *strongly agree*

   *why:*_____
   _____
   _____
   _____

4. What are the barriers to implementing Lifescripts in your practice?

   For you? _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

   For GPs? _____
   _____
   _____
   _____
   _____
   _____
   _____

Version 1, 09/03/2007

5. How could these barriers be overcome? _____

_____

_____

_____

_____

6. Lifescripts have been beneficial to my practice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

*Why:*_____

_____

_____

7. I find Lifescripts easy to use

strongly disagree *disagree* *neutral* *agree* *strongly agree*

8. Lifescripts have improved my nutrition knowledge

strongly disagree *disagree* *neutral* *agree* *strongly agree*

9. The use of Lifescripts makes providing nutrition advice easier

strongly disagree *disagree* *neutral* *agree* *strongly agree*

10. Lifescripts have increased my confidence in providing nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

11. I require more nutrition information to effectively provide nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

12. I am not confident to effectively use Lifescripts to provide nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

13. I don't think my patients have benefited from Lifescripts

strongly disagree *disagree* *neutral* *agree* *strongly agree*

14. Lifescripts have increased my awareness of the types of patients I should refer to a dietitian

strongly disagree *disagree* *neutral* *agree* *strongly agree*

15. Using Lifescripts has meant that I have referred to a dietitian more often

strongly disagree *disagree* *neutral* *agree* *strongly agree*

16. I would find it beneficial to have a dietitian promoting Lifescripts

strongly disagree *disagree* *neutral* *agree* *strongly agree*

Version 1, 09/03/2007

17. How many 'nutrition' or 'weight management' Lifescripts would you give per week, on average

Nutrition: _____

Weight management: _____

18. I am planning on using Lifescripts in my practice in the future

strongly disagree *disagree* *neutral* *agree* *strongly agree*

Why/ why not: _____

_____

_____

_____

[The following questions aim to assess your views and practices on nutrition counselling]

19. Have you attended any further training in nutrition during the previous year

Yes *No* *[If no go to question 22]*

20. Do you believe this has changed your nutrition counselling practices and attitudes

Yes *No*

21. I believe that dietary assessment and counselling is a role of practice nurses

strongly disagree *disagree* *neutral* *agree* *strongly agree*

22. I have the knowledge to provide nutrition counselling

strongly disagree *disagree* *neutral* *agree* *strongly agree*

23. I have the skills to provide nutrition counselling

strongly disagree *disagree* *neutral* *agree* *strongly agree*

24. I have the confidence to provide nutrition counselling

strongly disagree *disagree* *neutral* *agree* *strongly agree*

25. I have the experience to provide nutrition counselling

strongly disagree *disagree* *neutral* *agree* *strongly agree*

26. I believe that nutrition counselling will lead to changes in patient dietary behaviour

strongly disagree *disagree* *neutral* *agree* *strongly agree*

Version 1, 09/03/2007

27. I believe that diet changes influence a patient's health outcomes

strongly disagree *disagree* *neutral* *agree* *strongly agree*

28. I find I have enough time to provide nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

29. I have appropriate resources available to me to allow me to provide nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

30. I use available resources to provide nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

31. I use reminders in medical notes to prompt GPs to provide nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

32. I require more nutrition information to effectively provide nutrition advice

strongly disagree *disagree* *neutral* *agree* *strongly agree*

33. How important is adequate reimbursement in influencing your decision to counsel

No importance *low importance* *neutral* *high importance* *very high importance*

34. How important is time in influencing your decision to counsel

No importance *low importance* *neutral* *high importance* *very high importance*

35. How important is having education material available in influencing your decision to counsel

No importance *low importance* *neutral* *high importance* *very high importance*

[Medicare allows for the management of patients with chronic diseases through their Team Care Arrangements within Enhanced Primary Care (EPC) plans. The following questions aim to assess your thoughts towards these]

36. What support do you provide to the GPs in your practice in completing the forms for EPC Team Care Arrangements? _____

_____

_____

37. How often is referral to a dietitian provided for patients with an EPC? _____

_____

_____

38. Is the referral usually initiated by yourself or the GP? _____

Version 1, 09/03/2007

[The following questions aim to gain some insight into your referral to dietitians]

39. Do you refer patients to a dietitian without an EPC?

Yes *No* *[if no, go to question 42]*

40. If yes, how often does this occur? _____

41. If yes, is the GP involved with the referral?

Yes *No*

42. Does your practice have a regular dietitian to whom they refer patients?

Yes *No*

43. If yes, are they located within your practice?

Yes *No*

44. Having a dietitian within the practice would make it easier to refer?

strongly disagree *disagree* *neutral* *agree* *strongly agree*

45. What are the barriers to referring to a dietitian? _____

_____

_____

_____

_____

[For the next few questions please think about the patients you saw last week.]

46. What proportion of the patients you saw last week would you think required nutrition advice?

_____

_____

47. What proportion of these patients did you provided nutrition advice to? _____

_____

_____

48. What form did the advice take in the main? [*please tick the most appropriate]*

- ☐ *Verbal advice only*
- ☐ *Written advice only*
- ☐ *Verbal and written advice*

Version 1, 09/03/2007

49. When nutrition was discussed, how much time did you spend talking about nutrition on average?

☐ *< 1min* ☐ *1-5min* ☐ *5-10 min* ☐ *10-20 min* ☐ *>20 min*

50. Do you believe you have adequate support for providing nutrition advice to patients?

Yes *No* *Unsure*

Why? _____

_____

_____

_____

_____

51. What specific conditions would prompt you to provide nutrition advice to patients? _____

_____

_____

_____

_____

END OF QUESTIONNAIRE

THANK YOU FOR YOUR PARTICIPATION

PLEASE RETURN TO THE RESEARCHER IN REPLY PAID ENVELOPE PROVIDED

*Questions 22-26, 33-35 used by kind permission of Lisa Nicholas, PhD, University of Newcastle

Version 1, 09/03/2007

Implementation of Lifescripts in my practice

Practice nurse: _____

Practice: _____

- ❑ Resources in waiting area
  - ❑ Posters
  - ❑ Flyers
  - ❑ Patient checklist

- ❑ Respond to patient interest in Lifescripts
  - ❑ GP will respond to patient request during that visit
  - ❑ PN will respond to patient request during that visit
  - ❑ Patient to book separate consultation with PN to discuss Lifescripts
  - ❑ Patient to book separate consultation with GP to discuss Lifescripts

- ❑ PN to use Lifescripts with patients already seeing
  - ❑ Use with patients when doing health assessments & plans
    - ❑ ATSI adult health checks (MBS item 710)
    - ❑ 45 - 49 Health Checks (MBS item 717)
    - ❑ Over 75 Health Assessments (MBS item 700)
    - ❑ Diabetes Annual Cycle of Care
    - ❑ GP Management Plans (MBS item 721)
    - ❑ Mental health
    - ❑ Other: _____
  - ❑ Integrate into current educations
  - ❑ Use when relevant to the presenting complaint
  - ❑ Alert GPs of patients needing referral to allied health professionals

- ❑ PN to use Medical record summary stickers/ electronic prompts
  - ❑ To prompt GP to reinforce Lifescripts messages
  - ❑ Remind PN to follow-up with patient

- ❑ PN to send out reminders for patients due for health checks/assessments
  - ❑ Include Lifescripts assessment tools

- ❑ GPs will be involved in prescribing Lifescripts
  - ❑ GP will use Lifescripts with patients as appropriate
  - ❑ GP will refer patients to see PN for Lifescripts as required
    - ❑ Verbally
    - ❑ Using Medical record summary stickers / electronic prompts
  - ❑ GPs to refer to allied health professionals for more intensive counselling

- ❑ _____
  _____

- ❑ _____
  _____

Lifescripts Distribution Form

PN ID number:_____

Date	Lifescripts package ID number	Lifescript/s given	Context
13/6/07	*PN 101-01*	*Weight management + physical activity*	*45-49 Health check*

Contact: Lana Mitchell
Phone: 49 21 8673 Fax: 49 21 7053
Lana.Mitchell@newcastle.edu.au

The UNIVERSITY of NEWCASTLE AUSTRALIA

Version 2, 25/07/07

Patient Study

Patient Information Statement via GPs

Patient Information Statement via PNs

Patient Telephone Interview Consent Form

Patient Questionnaire (via GPs)

Patient Questionnaire (via PNs)

Patient Telephone Interview

Information Statement for the Research Project:
Effectiveness of Lifestyle Prescriptions in the general practice setting

Prof Sandra Capra, AM
PhD, AdvAPD, FDAA

Professor and Head,
School of Health Sciences

Faculty of Health
University Drive, Callaghan
NSW 2308 Australia
Phone: +61 2 4921 5642
Fax: +61 2 4921 6984
Email: Sandra.Capra@newcastle.edu.au

Dear Sir/Madam,

You have just visited your General Practitioner (GP) and been given a 'Lifestyle Prescription', also known as a 'Lifescript'. Researchers from the University of Newcastle are interested in finding out your thoughts of Lifescripts and so invite you to participate in the study identified above.

The study is being conducted by Lana Mitchell who is undertaking the research as part of her PhD. The Chief Investigator is Prof Sandra Capra, from the School of Health Sciences at the University of Newcastle. Dr Lesley MacDonald-Wicks, from the Discipline of Nutrition and Dietetics at the University of Newcastle, and Prof Dimity Pond from the Discipline of General Practice at the University of Newcastle, are Co-Investigators.

Why is the research being done?

- We are evaluating the effectiveness of Lifescripts and wish to identify patients' opinions of these tools.
- Lifescripts are designed to allow GPs to deliver a variety of health messages in a "prescription" format. Lifescripts exist for smoking, nutrition, alcohol, physical activity and weight management.

Who can participate in the research?

- Any person ≥18 years of age who has received a Lifescript from their GP.

What choice do you have?

- Participation in this research is entirely your choice. You will not be disadvantaged in any way if you do not wish to participate.
- If you do decide to complete the attached questionnaire, you are not obligated to consent to further contact with the researchers.

What would you be asked to do?

- If you consent to participate in this study please complete the attached questionnaire and return it in the reply paid envelope provided. The questionnaire is expected to take about 10 minutes of your time.

- If you are happy to answer additional questions about your experience with Lifescripts please provide your contact details at the end of the questionnaire. You will then be contacted by the researchers to do a telephone interview.

***What are the risks and benefits of participating*?**

- By participating in this research you will able to discuss your experience and opinions of the Lifescript/s you received from your GP.
- There are no risks in participating in this research.

Why is the research being conducted?

- The researchers are interested in identifying patient's opinions of these resources and the process by which Lifescripts are received. This will allow the process and tools to be improved for future use in the general practice setting.
- The Commonwealth Government provided substantial funding for the development of Lifescripts, and therefore it will be advantageous to identify the effectiveness of this initiative.

How will your privacy be protected?

- Individual patients will not be identifiable by their responses unless you choose to provide your contact details.
- Your GP will not be informed of your individual responses.
- All results will be reported at the group level with all data being presented in de-identified format.
- Hard copy of the data will be kept in a lockable cabinet in a locked office. Electronic data will be stored in a password protected computer for at least five years. All data will be kept in de-identified format, with the master identification documents stored in a different location.

How will the information collected be used?

- The results will be used to show patients opinions of Lifescripts resources and the process by which they were received by patients. It will also show the effectiveness of these tools in helping to improve health outcomes.
- Results will be presented in scientific journals and at conferences, and will be included in the thesis of Lana Mitchell for her PhD. Individual participants will not be identified in these presentations or publications.
- Results of the study will be available to participants upon request at the completion of the study and analysis of results.

What do you need to do to participate?

- Please read this Information Statement and be sure you understand its contents. If there is anything you do not understand, or you have questions, please contact Lana Mitchell (PhD Candidate) on 49 21 8673 or Prof Sandra Capra (Chief Investigator) on 49 21 5642.
- Then you need to fill out the attached questionnaire and return it in the reply paid envelope provided.

Additional telephone interview

- The researchers are interested in gathering additional information of your experience and views of Lifescripts and therefore invite you to participate in a telephone interview. This is expected to take approximately 10-15 minutes, depending on your responses. If you agree to being contacted by the researchers please fill out the enclosed consent form and return it, along with your completed questionnaire, in the reply paid envelope provided. You will then be contacted by the researchers to identify a suitable time to conduct a telephone interview.

Thank you for considering this invitation.

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-253-0706 Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, telephone 02 49 21 6333, email Human-Ethics@newcastle.edu.au.)

Information Statement for the Research Project:
Effectiveness of Lifestyle Prescriptions in the general practice setting

Prof Sandra Capra, AM
PhD, AdvAPD, FDAA

Professor and Head,
School of Health Sciences

Faculty of Health
University Drive, Callaghan
NSW 2308 Australia
Phone: +61 2 4921 5642
Fax: +61 2 4921 6984
Email: Sandra.Capra@newcastle.edu.au

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- By participating in this research you will able to discuss your experience and opinions of the Lifescript/s you received from your GP or Practice Nurse.
- There are no risks in participating in this research.

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How will your privacy be protected?

- Individual patients will not be identifiable by their responses unless you choose to provide your contact details.
- Your general practice will not be informed of your individual responses.
- All results will be reported at the group level with all data being presented in de-identified format.
- Hard copy of the data will be kept in a lockable cabinet in a locked office. Electronic data will be stored in a password protected computer for at least five years. All data will be kept in de-identified format, with the master identification documents stored in a different location.

How will the information collected be used?

- The results will be used to show patients opinions of Lifescripts resources and the process by which they were received by patients. It will also show the effectiveness of these tools in helping to improve health outcomes.
- Results will be presented in scientific journals and at conferences, and will be included in the thesis of Lana Mitchell for her PhD. Individual participants will not be identified in these presentations or publications.
- Results of the study will be available to participants upon request at the completion of the study and analysis of results.

What do you need to do to participate?

- Please read this Information Statement and be sure you understand its contents. If there is anything you do not understand, or you have questions, please contact Lana Mitchell (PhD Candidate) on 49 21 8673 or Prof Sandra Capra (Chief Investigator) on 49 21 5642.
- Then you need to fill out the attached questionnaire and return it in the reply paid envelope provided.

Additional telephone interview

- The researchers are interested in gathering additional information of your experience and views of Lifescripts and therefore invite you to participate in a telephone interview. This is expected to take approximately 10-15 minutes, depending on your responses. If you agree to being contacted by the researchers please fill out the enclosed consent form and return it, along with your completed questionnaire, in the reply paid envelope provided. You will then be contacted by the researchers to identify a suitable time to conduct a telephone interview.

Thank you for considering this invitation.

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Complaints about this research

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Prof Sandra Capra, AM
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Email: Sandra.Capra@newcastle.edu.au

Consent for the Research Project (Telephone interview): Effectiveness of Lifestyle Prescriptions in the General Practice Setting

I agree to participate in the above research project and provide my consent freely by signing this form.

I understand that:

- The project will be conducted as described in the Information Statement, a copy of which I have retained.
- I will be contacted by the researchers to conduct a telephone interview. This is expected to take approximately 10-15 minutes.
- I can withdraw from the project at any time and do not have to provide any reason for withdrawing.
- My personal information will remain confidential to the researchers.

I consent to:

1. Participate in a telephone interview with the researchers to provide additional insight into my experience of Lifescripts.

I have read and understood the information sheet.
I have had the opportunity to have questions answered to my satisfaction

Print Name: ……...…….....

Signature: ……..

Date: …….

Telephone number: …….....

Preferred Contact time: (please circle) morning afternoon evening no preference

Please return the completed form in the reply paid envelope provided, along with your completed questionnaire

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-253-0706

Version 2, 22/03/2007

The UNIVERSITY of NEWCASTLE
AUSTRALIA

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Fax: +61 2 4921 6984
Email: Sandra.Capra@newcastle.edu.au

Effectiveness of Lifestyle Prescriptions in the General Practice setting

PATIENT QUESTIONNAIRE

Patient ID number: _____ Date: _____

Your participation in our study is greatly appreciated, and we value your responses.

You have been given a Lifescript by your GP and the purpose of the project is to identify what you thought of the Lifescript and your experience of receiving it. This will allow us to assess the effectiveness of Lifescripts and determine the most effective way of using these tools.

The questionnaire is expected to take approximately 10 minutes.
Please circle the most appropriate response, and expand when requested.

Thank you

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Version 2, 22/03/2007

1. Gender: *[please circle]*

   Male *Female*

2. What date did you receive the Lifescript/s from your GP? / / 2007

   dd / mm / year

3. Which Lifescript/s were you given? *[please tick all that apply]*

   ☐ *Smoking* ☐ *Nutrition* ☐ *Alcohol* ☐ *Physical activity* ☐ *Weight management*

4. Were you given specific recommendations?

   [i.e. did the Lifescript prescription that you were given have any boxes ticked]

   Yes *No* *Unsure* *[If no or unsure, go to question 6]*

5. If so, can you provide details? _____

   _____

   _____

   _____

6. How did you get the Lifescripts material? *[please tick the most appropriate]*

   ☐ I asked for it

   ☐ I picked it up in the waiting room

   ☐ The GP gave it to me

   ☐ The Practice Nurse gave it to me

   ☐ The GP asked the Practice Nurse to give it to me

   ☐ Unsure

   ☐ Other: _____

7. Who discussed the Lifescripts material with you? *[please tick the most appropriate]*

   ☐ GP

   ☐ Practice Nurse

   ☐ Both GP and Practice Nurse

   ☐ It wasn't discussed, only handed to me

   ☐ Other: _____

8. How did Lifescripts come up in your conversation with the GP or Practice Nurse?

   _____

   _____

   _____

Version 2, 22/03/2007

9. What did you think of the Lifescripts? *[please tick all that apply]*

- ☐ Practical
- ☐ Useful
- ☐ Didn't teach me anything new
- ☐ Too much detail
- ☐ Relevant
- ☐ Encouraged me to make changes
- ☐ Easy to read
- ☐ Easy to understand
- ☐ Not relevant to me
- ☐ Information was too basic
- ☐ nice colour
- ☐ good size
- ☐ other_____

10. Did you find the Lifescript/s helpful? *Yes* *No* *Uncertain*

11. Can you share with us your reasons why? _____

_____

_____

_____

_____

12. What would have made the script more helpful? _____

_____

_____

_____

_____

13. Have you made any changes suggested by the Lifescript/s?

Yes *Not yet but plan to* *No*

14. If yes, can you share with us what you have done or what you plan to do? _____

_____

_____

_____

_____

15. What may be barriers for you to change what you currently do? _____

_____

_____

_____

Version 2, 22/03/2007

16. Are you planning to go back and see your GP about the Lifescripts?

    Yes *No* *Unsure*

17. Do you need additional information to be able to make a change?

    Yes *No* *Unsure*

18. Do you need additional support to be able to make a change?

    Yes *No* *Unsure*

19. Would you be prepared to see a specialist? (i.e. dietitian, physio, or counsellor)

    Yes *No* *Unsure*

20. Had you considered making any changes prior to receiving a Lifescript?

    Yes *No*

21. Would you be more likely to change your behaviour if it was recommended by your GP rather than Practice Nurse?

    Yes *No*

22. Can you expand on this? _____

    _____

    _____

    _____

    _____

23. I rate my health as:

    Excellent *Very good* *Good* *Okay* *Fair* *Poor* *Extremely poor*

24. Age group:

    18-24 *25-34* *35-44* *45-49* *50-59* *60-69* *70+*

25. Is there anything else you would like to share about Lifescripts in general? _____

    _____

    _____

    _____

    _____

Version 2, 22/03/2007

[If you received a NUTRITION or WEIGHT MANAGEMENT script we would be pleased if you could answer the following questions]

26. What is your approximate weight? _____ Kg *OR* _____stone _____ lbs

27. What is your approximate height? _____cm *OR* _____ feet _____ inches

28. Have you lost or gained weight since you were given the Lifescripts?
    Lost weight *Stable* *Gained weight* *Not sure*

29. If your weight has changed, approximately how much has it changed by? _____

30. The GP mentioned that it would be beneficial for me to see a dietitian
    Yes *No* *Unsure*

31. I was referred to see a dietitian
    Yes *No*

32. I have been to see a dietitian after receiving the Lifescript
    Yes *No* *Not yet but plan to*

[The following statements are strength of agreement. Please circle the most appropriate response]

33. Seeing a dietitian would be beneficial for weight loss
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

34. Seeing a dietitian is expensive
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

35. Seeing a physiotherapist would be beneficial for weight loss
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

36. I would have liked the GP to refer me to a dietitian
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

37. I would have seen a dietitian if I was referred by the GP
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

38. I would find a dietitian helpful

strongly disagree *disagree* *neutral* *agree* *strongly agree*

39. I would be more likely to visit a dietitian if referred by my GP

strongly disagree *disagree* *neutral* *agree* *strongly agree*

40. I know that people with a chronic disease can see a dietitian and physio under the Medicare system

strongly disagree *disagree* *neutral* *agree* *strongly agree*

41. Seeing a dietitian is a waste of time

strongly disagree *disagree* *neutral* *agree* *strongly agree*

END OF QUESTIONNAIRE

THANK YOU FOR YOUR PARTICIPATION

Please return to the researchers in the reply paid envelope provided. If you agree to participate in a telephone interview to allow the researchers to gain additional insight into your experience of Lifescripts, please send the completed consent form along with your questionnaire.

Version 2, 22/03/2007

The UNIVERSITY of NEWCASTLE
AUSTRALIA

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Effectiveness of Lifestyle Prescriptions in the General Practice setting

PATIENT QUESTIONNAIRE

Patient ID number: _____ Date: _____

Your participation in our study is greatly appreciated, and we value your responses.

You have been given a Lifescript by your Practice Nurse and the purpose of the project is to identify what you thought of the Lifescript and your experience of receiving it. This will allow us to assess the effectiveness of Lifescripts and determine the most effective way of using these tools.

The questionnaire is expected to take approximately 10 minutes.
Please circle the most appropriate response, and expand when requested.

Thank you

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Prof Dimity Pond
Head, Discipline of General Practice

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Version 2, 11/04/2007

1. Gender: *[please circle]*

   Male *Female*

2. What date did you receive the Lifescript/s from your Practice Nurse? / / 2007

   dd / mm / year

3. Which Lifescript/s were you given? *[please tick all that apply]*

   ☐ *Smoking* ☐ *Nutrition* ☐ *Alcohol* ☐ *Physical activity* ☐ *Weight management*

4. Were you given specific recommendations?

   [i.e. did the Lifescript prescription that you were given have any boxes ticked]

   Yes *No* *Unsure* *[If no or unsure, go to question 6]*

5. If so, can you provide details? _____

   _____

   _____

   _____

6. How did you get the Lifescripts material? *[please tick the most appropriate]*

   ☐ I asked for it

   ☐ I picked it up in the waiting room

   ☐ The GP gave it to me

   ☐ The Practice Nurse gave it to me

   ☐ The GP asked the Practice Nurse to give it to me

   ☐ Unsure

   ☐ Other: _____

7. Who discussed the Lifescripts material with you? *[please tick the most appropriate]*

   ☐ GP

   ☐ Practice Nurse

   ☐ Both GP and Practice Nurse

   ☐ It wasn't discussed, only handed to me

   ☐ Other: _____

8. How did Lifescripts come up in your conversation with the GP or Practice Nurse?

   _____

   _____

   _____

Version 2, 11/04/2007

9. What did you think of the Lifescripts? *[please tick all that apply]*

- ☐ Practical
- ☐ Useful
- ☐ Didn't teach me anything new
- ☐ Too much detail
- ☐ Relevant
- ☐ Encouraged me to make changes
- ☐ Easy to read
- ☐ Easy to understand
- ☐ Not relevant to me
- ☐ Information was too basic
- ☐ nice colour
- ☐ good size
- ☐ other_____

10. Did you find the Lifescript/s helpful? *Yes* *No* *Uncertain*

11. Can you share with us your reasons why? _____

_____

_____

_____

_____

12. What would have made the script more helpful? _____

_____

_____

_____

_____

13. Have you made any changes suggested by the Lifescript/s?

Yes *Not yet but plan to* *No*

14. If yes, can you share with us what you have done or what you plan to do? _____

_____

_____

_____

_____

15. What may be barriers for you to change what you currently do? _____

_____

_____

_____

Version 2, 11/04/2007

16. Are you planning to go back and see your GP or Practice Nurse about the Lifescripts?
    Yes *No* *Unsure*

17. Do you need additional information to be able to make a change?
    Yes *No* *Unsure*

18. Do you need additional support to be able to make a change?
    Yes *No* *Unsure*

19. Would you be prepared to see a specialist? (i.e. dietitian, physio, or counsellor)
    Yes *No* *Unsure*

20. Had you considered making any changes prior to receiving a Lifescript?
    Yes *No*

21. Would you be more likely to change your behaviour if it was recommended by your GP rather than Practice Nurse?
    Yes *No*

22. Can you expand on this? _____
    _____
    _____
    _____
    _____

23. I rate my health as:
    Excellent *Very good* *Good* *Okay* *Fair* *Poor* *Extremely poor*

24. Age group:
    18-24 *25-34* *35-44* *45-49* *50-59* *60-69* *70+*

25. Is there anything else you would like to share about Lifescripts in general? _____
    _____
    _____
    _____
    _____

Version 2, 11/04/2007

[If you received a NUTRITION or WEIGHT MANAGEMENT script we would be pleased if you could answer the following questions]

26. What is your approximate weight? _____ Kg *OR* _____stone _____ lbs

27. What is your approximate height? _____cm *OR* _____ feet _____ inches

28. Have you lost or gained weight since you were given the Lifescripts?
    Lost weight *Stable* *Gained weight* *Not sure*

29. If your weight has changed, approximately how much has it changed by? _____

30. The GP/ Practice Nurse mentioned that it would be beneficial for me to see a dietitian
    Yes *No* *Unsure*

31. I was referred to see a dietitian
    Yes *No*

32. I have been to see a dietitian after receiving the Lifescript
    Yes *No* *Not yet but plan to*

[The following statements are strength of agreement. Please circle the most appropriate response]

33. Seeing a dietitian would be beneficial for weight loss
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

34. Seeing a dietitian is expensive
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

35. Seeing a physiotherapist would be beneficial for weight loss
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

36. I would have liked the GP to refer me to a dietitian
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

37. I would have seen a dietitian if I was referred by the GP
    strongly disagree *disagree* *neutral* *agree* *strongly agree*

Version 2, 11/04/2007

38. I would find a dietitian helpful

strongly disagree *disagree* *neutral* *agree* *strongly agree*

39. I would be more likely to visit a dietitian if referred by my GP

strongly disagree *disagree* *neutral* *agree* *strongly agree*

40. I know that people with a chronic disease can see a dietitian and physio under the Medicare system

strongly disagree *disagree* *neutral* *agree* *strongly agree*

41. Seeing a dietitian is a waste of time

strongly disagree *disagree* *neutral* *agree* *strongly agree*

END OF QUESTIONNAIRE

THANK YOU FOR YOUR PARTICIPATION

Please return to the researchers in the reply paid envelope provided. If you agree to participate in a telephone interview to allow the researchers to gain additional insight into your experience of Lifescripts, please send the completed consent form along with your questionnaire.

Version 2, 11/04/2007

The UNIVERSITY of NEWCASTLE
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Effectiveness of Lifestyle Prescriptions in the General Practice setting

PATIENT TELEPHONE INTERVIEW

Patient ID number: _____ Date: _____

Hi, my name is Lana Mitchell and I'm from the University of Newcastle. I would like to speak to _____

Hi _____, my name is Lana Mitchell and I'm from the University of Newcastle. I am ringing regarding a questionnaire that you recently completed on Lifescripts. Along with your questionnaire you completed a consent form to participate in a telephone interview to gather more information on your experience of Lifescripts. Are you still happy to answer these extra questions about Lifescripts?

Is now an ok time to answer a few questions or is there a better time in which I can call you back?

These questions hope to gain insight into your experience of receiving a Lifescript and assess how effective they were in leading to behaviour change.

It is expected that this will take approximately 10-15 minutes of your time depending on your responses.

Version 2, 22/03/2007

Now I want to start by confirming some details with you

1. When did you receive the Lifescript? _____

2. Can you recall which script you were given?
   Smoking *nutrition* *alcohol* *physical activity* *weight management*

3. Was this provided by your GP or practice nurse?
   GP *Practice Nurse*

The following questions are about the Lifescript that you were given

4. Now that you've had the Lifescript/s for a few weeks how do you now feel about the information?
   - ☐ Same as before
   - ☐ Practical
   - ☐ Useful
   - ☐ Didn't teach me anything new
   - ☐ Too much detail
   - ☐ Relevant
   - ☐ Encouraged me to make changes
   - ☐ Easy to read
   - ☐ Easy to understand
   - ☐ Not relevant to me
   - ☐ Information was too basic
   - ☐ other_____

5. Did you have specific recommendations provided?
   (**Prompt:** were any of the boxes on the Lifescript ticked?)
   Yes *No* *can't remember*

6. **If yes,** do you feel that it helped to have specific recommendations?
   If no/ unsure, do you feel that it would have helped to have specific recommendations?
   Yes *No* *Unsure*

7. Can you expand on this?

If yes,

- ☐ Targeted to me
- ☐ Encouraged me to make recommended changes
- ☐ More useful
- ☐ More relevant
- ☐ More useful detail
- ☐ Identified goals
- ☐ easier
- ☐ 0ther: _____

_____

If no,

- ☐ Not targeted at me
- ☐ Options not those I would have chosen
- ☐ Not enough practical examples
- ☐ Couldn't apply
- ☐ More practical tips required
- ☐ Needed more support
- ☐ Too much detail
- ☐ too specific
- ☐ prefer to chose own from the list
- ☐ 0ther: _____

_____

8. What would have made the script more helpful?

☐ practical examples	*more*	*less*
☐ Detail	*more*	*less*
☐ Specificity	*more*	*less*
☐ Further explanation		
☐ Further support		
☐ More relevant		

- ☐ Other: _____

_____

Version 2, 22/03/2007

This next section is likely to take just under 5 minutes, are you happy to keep going? Now that a little more time has passed since you answered the questionnaire I want to revisit some of the questions.

9. Have you made any changes suggested by the Lifescript/s?
   Yes *No* *(if no, go to question 12)*

10. If yes, can you describe these changes?
    - ☐ Exercise: _____
    - ☐ Eating: _____
      _____
    - ☐ Smoking: *quit / reduced / phoned quite line* _____
      _____
    - ☐ Alcohol: *reduced* _____
    - ☐ Other: _____
      _____

11. What encouraged you to make these changes?
    - ☐ Already planed to do
    - ☐ Being told need to change
    - ☐ Prompted to change through Lifescripts
    - ☐ _____
      _____
      _____

12. Do you think there were any barriers to making changes? *Yes* *No*
    Can you expand on these?
    - ☐ Time
    - ☐ Money
    - ☐ Effort
    - ☐ Family commitments
    - ☐ Lack of support/ help
    - ☐ Need more information
    - ☐ Poor health
    - ☐ Other: _____
      _____
      _____

Version 2, 22/03/2007

[last question if did not receive NUTRTION or WEIGHT MANAGEMENT Lifescripts. If received *NUTRTION or WEIGHT MANAGEMENT Lifescript go to question 14*]

That was the last question. Before I let you go do you have any additional comments or things you would like to add?

13. Additional comments: _____

_____

_____

_____

_____

Thank you so much for your time.
I really appreciate the insight you were able to provide

The following questions are for people who received a NUTRTION or WEIGHT MANAGEMENT Lifescript. They are likely to take about 5 minutes. Are you still happy to continue?

14. Can you tell me what your approximate weight is? _____

15. What is your approximate height? _____

16. Have you lost or gained weight since you were given the Lifescripts?
    (**Prompt:** do your clothes feel like they have become tighter or loser)
    Lost weight *Stable* *Gained weight* *Don't know*

17. If your weight has changed, approximately how much has it changed by? _____

18. Did the GP/practice nurse mentioned that it would be beneficial for you to see a dietitian
    Yes *No* *Unsure*

19. If yes, did the GP refer you to see a dietitian
    Yes *No* *N/A*

20. Have been to see a dietitian as a result of receiving the Lifescript?
    Yes *No* *Not yet but plan to*

Version 2, 22/03/2007

The following statements are strength of agreement. I am going to read out a series of statements and I want you to choose one of the following:

strongly disagree disagree neutral agree strongly agree

21. Seeing a dietitian would be beneficial for weight loss

strongly disagree disagree neutral agree strongly agree

22. Seeing a dietitian is expensive

strongly disagree disagree neutral agree strongly agree

23. Seeing a physiotherapist would be beneficial for weight loss

strongly disagree disagree neutral agree strongly agree

24. I would have liked the GP to refer me to a dietitian

strongly disagree disagree neutral agree strongly agree

25. I would have seen a dietitian if I was referred by the GP

strongly disagree disagree neutral agree strongly agree

26. I would find a dietitian helpful

strongly disagree disagree neutral agree strongly agree

27. I would be more likely to visit a dietitian if referred by my GP

strongly disagree disagree neutral agree strongly agree

28. I know that people with a chronic disease can see a dietitian and physio under the Medicare system

strongly disagree disagree neutral agree strongly agree

29. Seeing a dietitian is a waste of time

strongly disagree disagree neutral agree strongly agree

That was the last question. Before I let you go do you have any additional comments or things you would like to add?

30. Additional comments: _____

_____

_____

_____

_____

Thank you so much for your time.
I really appreciate the insight you were able to provide

Version 2, 22/03/2007

Lifescripts© Resources

Weight Management Assessment

Weight Management Prescription

Nutrition Assessment

Nutrition Prescription

Alcohol Assessment

Alcohol Prescription

Physical Activity Assessment

Physical Activity Prescription

Smoking Assessment

Smoking Prescription

Weight Management Assessment - (Commonwealth of Australia, 2005a); used with permission

WEIGHT MANAGEMENT

Weight management assessment

Information for patients
The aim of this questionnaire is to assess whether your health and well-being might benefit from a prescription for healthy weight.

Please circle the options that apply to you.

Are you pregnant or breastfeeding?	Yes	No
Do you have diabetes and use insulin or oral medication for diabetes?	Yes	No
1. Are you currently gaining weight without trying to?	Yes	No
2. Have you gained more than 10 kg weight since your late teens or early twenties?	Yes	No

3. How many times have you tried to lose weight since you were in your late teens or early twenties?

A. Never
B. 1–3 times
C. 4 times or more
D. I am always trying to lose weight

4. How interested are you in managing your weight in the long term?

A. Not interested
B. Quite interested
C. Very interested

5. Medical conditions
Your doctor may ask about other medical conditions like high blood pressure, high cholesterol, diabetes or a pre-diabetes condition.

_____
_____
_____

WEIGHT MANAGEMENT

Lifescripts
Advice for Healthy Living

WEIGHT MANAGEMENT

Interpreting the questionnaire

Note:

All responses need to be considered with respect to other risk factors for chronic disease and comorbidities.
Consider referral to an accredited practising dietitian for patients who are pregnant, breastfeeding or have diabetes treated with insulin or oral hypoglycaemic medications.

Questions 1–2

Yes to either question indicates that the person is suitable for a prescription for healthy weight.

Question 3

Options C or D indicate that the person may need individualised assessment and counselling by an accredited practising dietitian (see Additional strategies, below).

Question 4

Options *Quite interested* or *Very interested* indicate that the person is suitable for a prescription for healthy weight. (See Additional strategies, below).

All patients

Explain the benefits of weight management and preventing further weight gain
- Assess other relevant risk factors (e.g. blood pressure, lipids) and mental health
- Provide written information
- Review progress and risk factors every 2–6 weeks
- Consider additional strategies if sufficient weight loss has not been achieved after 3–6 months

Patients who need more help

- Offer brochures, healthy meal plans and recipes
- Refer to other services e.g. community-based weight management or exercise groups, individualised nutrition and weight consultation by an accredited practising dietitian, assessment by physiotherapist or clinical psychologist.

Additional strategies

- Consider eligibility for incentives such as Enhanced Primary Care items
- Specialist referral
- Medication or specialist assessment for other interventions (e.g. gastric banding surgery)

WEIGHT MANAGEMENT

Australian Government
Department of Health and Ageing

Weight Management Prescription - (Commonwealth of Australia, 2005b); used with permission

WEIGHT MANAGEMENT

Your prescription for healthy weight

Date: _____ Date of birth: _____

Patient's name: _____ Male / Female: _____

weight: _____ Height: _____ BMI: _____

Waist measurement: _____ Healthy waist measurement – less than 94 cm for men or 80 cm for women

This advice will help you maintain your health, manage your weight, increase your energy and help with some medical conditions.

Aim to reduce your body weight by 5–10% of your current weight (e.g. if you weigh 100 kg now, aim for 90–95 kg)

- ☐ Eat smaller servings. Try using a smaller plate
- ☐ Eat less high-fat foods (e.g. pies, pastries, processed meats, potato chips, high-fat snack foods)
- ☐ Avoid eating foods that contain a lot of energy (kilojoules/calories) even when you eat only a small amount (e.g. cakes, biscuits, high-fat snack foods). Instead, eat foods that are low in energy and contain a lot of nutrients (e.g. fruit, vegetables)
- ☐ Try to have regular meals. Listen to your appetite, and eat only when you are hungry Don't eat when you are bored – only when hungry
- ☐ Limit the time you spend snacking while watching television
- ☐ Try to include at least _____ minutes of walking into your daily routine
- ☐ A physical activity prescription has been written for you

I would like to review your progress every _____ weeks.

Follow-up is an important part of weight management, to continuously help you to make these changes to your lifestyle.

To assist you to achieve and maintain a healthy weight, I refer you to:

- ☐ _____ for a full assessment
- ☐ _____ for more advice and support

WEIGHT MANAGEMENT

I would like you to return for review every _____ weeks.

Doctor's signature: _____

Lifescripts

Advice for Healthy Living

WEIGHT MANAGEMENT

General guidelines

Losing weight will help to improve your vitality and quality of life

- Being overweight or obese can substantially increase your risk of developing health problems such as high blood pressure and high blood cholesterol, which can lead to heart disease, stroke, type 2 diabetes and joint problems.
- Many factors can contribute to weight gain. The aim is to find ways to shift the balance of energy input (food) versus energy expenditure (physical activity). You **will** lose weight when you are using up more energy than you are consuming.
- The keys to healthy weight are choosing healthy eating options consistently and increasing physical activity.

Useful tips for a healthy weight

- Make one of the suggested changes to your food and drinks each week.
- Be prepared to deal with setbacks that interrupt your goals. The key is to treat setbacks as temporary, and to get going again as soon as possible.
- The changes you make must be choices that you can enjoy and maintain for life.
- Weight loss of 0.5–1.0 kg per week is achievable, but even if you are only losing 1 kg per month you will still achieve significant weight loss (6–12 kg) over a year.

Tips to reduce energy intake (kilojoules)

- Eat plenty of vegetables, including salads, cooked vegetables, legumes (e.g. baked beans, kidney beans, lentils).
- Aim for at least 5 serves of vegetables each day. Try adding some at every meal and snack.
- Aim to eat at least 2 pieces of fruit each day.
- Choose low-fat dairy products (e.g. low-fat milk, low-fat yoghurt).
- Choose lean meats and trim the fat off meat. Limit processed meats (e.g. sausages, delicatessen meats like salami).
- Try to limit high-fat take-away foods (e.g. pies, pastries, pizza, hamburgers, fried rice, creamy pasta dishes, shop-bought hot chips) to once a week.
- Avoid sweetened drinks. Drink diet varieties or low-fat milk instead.
- Have regular meals and plan ahead.
- Limit your alcohol intake.

WEIGHT MANAGEMENT

Making changes to your lifestyle takes both time and effort. If this advice does not work for you or you need more help, talk to your doctor. You may need referral to an accredited practising dietitian, psychologist or education and support program.

Australian Government

Department of Health and Ageing

Nutrition Assessment - (Commonwealth of Australia, 2005a); used with permission

NUTRITION

Nutrition assessment

Information for patients

Your doctor would like to assess your current eating patterns. The aim is to see whether there are any changes that could improve your health.

Please circle **one** option for each question.

Part 1

Are you pregnant or breastfeeding?	Yes	No
Have you lost weight recently without trying to?	Yes	No
Do you have diabetes and use insulin or take oral medication for your diabetes?	Yes	No
Do you have anaemia caused by iron deficiency?	Yes	No
Do you have osteoporosis?	Yes	No
Is it difficult for you to shop and cook for yourself?	Yes	No

Part 2

Do you choose low-fat dairy products?	Yes	No
Do you eat vegetables every day (fresh, frozen or canned)?	Yes	No
Do you eat pies, pastries, fried foods or take-away meals more than once a week?	Yes	No
Do you drink soft drinks, cordials, sports drinks or fruit juice on most days of the week?	Yes	No

Lifescripts

Advice for Healthy Living

NUTRITION

Interpreting the questionnaire

Part 1

Yes to any question indicates that full dietary assessment and dietary counselling may be required. Arrange referral to an accredited practising dietitian.

Part 2

No to either of the first two questions or Yes to either of the last two questions indicates that the person may benefit from a prescription for healthy eating.

All patients

- Provide advice or written information on healthy eating options
- Refer patients to further information:
  The Dietitians Association of Australia (www.daa.asn.au)
  Find an Accredited Practising Dietitian 1800 812 942
  Nutrition Australia (www.nutritionaustralia.org)

Patients who may benefit from a prescription for healthy eating

Ask whether the patient would like more nutrition advice. If yes:

- Offer a prescription for healthy eating
- Offer referral to an accredited practising dietitian

Patients who cannot shop and cook for themselves may need referral to other support services, where available.

Australian Government
Department of Health and Ageing

Nutrition Prescription - (Commonwealth of Australia, 2005b); used with permission

NUTRITION

Your prescription for healthy eating

Date: _____ Date of birth: _____

Patient's name: _____

Eating well will help you maintain your health, manage your weight, increase your vitality and help with some medical conditions.

☐ Eat plenty of vegetables – aim to eat:
_____ serves of vegetables each day
_____ serves of fruit each day

(Recommended daily amount for adults = **5 serves vegetables + 2 serves fruit.** A serve of vegetables is equivalent to 1/2 cup cooked vegetables e.g. broccoli, carrot, stir-fry or mixed vegetables or 1 cup of salad)

☐ Limit take-away and convenience foods high in saturated fats to once a week or less (examples on back)

Choose options with less saturated fat

☐ Low-fat dairy products
☐ *low-fat milk* ☐ *reduced-fat cheese* ☐ *low-fat yoghurt* ☐ *other*

☐ Lean meats
☐ *trim visible fat from meat* ☐ *limit fried or crumbed meat*

Drink plenty of water

☐ Aim for 8 glasses every day
☐ Drink water instead of fruit juice, sweetened soft drinks, cordials or sports drinks

(Recommended daily fluid intake for adults = **6–8 glasses** = approximately 2 litres. Water is best, but low-fat milk or low-energy soft drink may be suitable)

To assist you with healthy eating, I refer you to:

_____

_____

I would like you to return for review in _____ weeks.

Doctor's signature: _____

Lifescripts
Advice for Healthy Living

NUTRITION

General guidelines

Healthy eating can help lower your risk of heart disease, high blood pressure, stroke, diabetes and some cancers. Maintaining a healthy diet will help to improve vitality and energy levels throughout life.

Tips to increase vegetable and fruit intake

- Include a variety of vegetables every day (e.g. salads, vegetable soups, cooked vegetables).
- Eat vegetables and fruit at breakfast (e.g. baked beans, tomatoes or mushrooms on whole-grain toast, add fruit to breakfast cereals).
- Buy vegetables in season – they are often cheaper.
- Frozen or canned vegetables are an alternative to fresh vegetables. They are quick and easy to prepare.

Tips to reduce your saturated fat intake

- Limit take-away and snack foods that are high in saturated fat (e.g. hot chips, fried rice, pizza, creamy pasta, potato crisps).
- Limit pies and pastries. Eat fresh sandwiches instead.
- Limit shop-bought cakes and biscuits. Eat low-fat yoghurt, raisin bread, and fruit instead, or bake cakes and biscuits at home using polyunsaturated or mono-unsaturated margarine and oils.
- Avoid sausages and processed delicatessen meats (e.g. Devon, salami). Eat lean meats instead (e.g. lean ham, turkey, chicken).
- Trim the fat from meat and trim the skin from chicken.
- Use low-fat cooking methods (e.g. grilling, stir-frying, steaming, microwaving) instead of frying or roasting food.

Tips to increase your water intake

- Keep a bottle of water with you so you can avoid buying other drinks.
- Drink water instead of soft drink, cordials, sports drinks or fruit juice.
- Serve water at meal times.

Australian Government
Department of Health and Ageing

Smoking Assessment - (Commonwealth of Australia, 2005a); used with permission

SMOKING

Smoking assessment

SMOKING

Information for patients
Your doctor would like to record your smoking history and assess your current cigarette use. The aim is to determine what type of quit program or treatment will work best for you, to help you achieve a smoke-free lifestyle.

1. Do you smoke?

- ☐ **Yes** ➡ How many cigarettes do you smoke a day now? _____
- ☐ **No**, but I used to smoke ➡ When did you quit? (month)_____(year)_____
- ☐ **No**, never smoked

2. How keen are you to stop smoking?
Circle the number that best matches your current attitude, from 0 (not at all keen) to 7 (very keen)

not at all keen to quit							very keen to quit	
0	1	2	3	4	5	6	7	Score ☐

3. If you decided to stop smoking right now, how confident of success would you be?
Circle the number that best matches your current attitude, from 0 (not at all confident) to 7 (very confident)

not at all confident							very confident	
0	1	2	3	4	5	6	7	Score ☐

4. When you wake up each day, how soon do you smoke your first cigarette?
Tick one box

- ☐ more than 60 minutes 0
- ☐ 31–60 minutes 1
- ☐ 5–30 minutes 2
- ☐ less than 5 minutes 3

Score ☐

5. How many cigarettes do you smoke on a typical day?

- ☐ 10 or less 0
- ☐ 11–20 1
- ☐ 21–30 2
- ☐ more than 30 3

Score ☐

Total ☐

Lifescripts
Advice for Healthy Living

SMOKING

SMOKING

Scoring

Question 2. Interest in quitting

0–3 Ask: *What would need to happen to make you more keen to quit – say, to make you give an answer of 6 or 7 instead of 3?*

Help patient explore costs and benefits of smoking, offer help if wants to quit in future, recheck interest in quitting at next appointment. Give Quit book.

4–7 Ask: *Why do you want to quit? Why did you choose 6 or 7 and not 2 or 3?*
Confirm patient's interest in quitting, find out when plans to quit, set quit date. Offer prescription for smoking cessation. Give Quit book.

Question 3. Confidence in quitting

0–3 Ask: *What would be the hardest thing about quitting? What made it difficult to quit last time you tried? What would need to happen to increase your confidence to 6 or 7?*

Explore and tackle barriers (e.g. withdrawal, stress reduction, weight control). May need more intensive help and encouragement. Identify support e.g. partner. Refer to Quitline.

4–7 Encourage and warn about setbacks and how to cope with them. Advise about programs and services that help others quit. Refer to Quitline.

Questions 4–5 (combined score). Probability of nicotine addiction or dependence

0–3 Very low or low – advise good chance of success if attempt to quit. Assess psychological dependence.
4–6 Moderate to very high – recommend nicotine replacement therapy or prescribe bupropion.

- Encourage all to tackle addiction, habit and psychological aspects of smoking
- Assess mental health and medication. Monitor as required

Ex-smokers

- Affirm the person's decision and achievement
- Mark record to follow up: 12 months after quitting there is still a 20–30% chance of relapse

Current smokers

- Explore motivation to quit, barriers and confidence to quit, individual's strategies for coping and dealing with negative emotions
- Provide clear non-judgemental advice to quit: set a quit date (if ready), offer Quit book, refer to Quitline using fax referral
- Give practical help and advice:
  - Advise overcome habit by delaying cigarette or substituting with another action (drink water, try deep breathing, do something else)
  - Recommend nicotine replacement therapy or prescribe bupropion if dependent
- Make a follow-up appointment

See *Smoking cessation guidelines for Australian general practice* (www.quitnow.info.au).

Australian Government
Department of Health and Ageing

Smoking Prescription - (Commonwealth of Australia, 2005b); used with permission

SMOKING

Your prescription for a smoke-free life

Date: _____ Date of birth: _____

Patient's name: _____

Your smoking assessment

- ☐ Occasional smoker
- ☐ Moderate smoker
- ☐ Heavy smoker

Addiction or dependence

You are probably / possibly / probably not addicted to nicotine or dependent on nicotine.

(Doctor to cross out those that do not apply)

Smokers who are addicted or dependent may need special help to quit.

Quitting smoking will improve your health and well-being.

To help you quit, I recommend:

- ☐ nicotine replacement therapy: _____
  Instructions: _____
- ☐ bupropion (Zyban). Please follow the instructions on the packet.
- ☐ referral to Quitline 13 QUIT (13 7848)
- ☐ Quit book
- ☐ other

Quitting will be especially beneficial because of your:

- ☐ high blood pressure
- ☐ diabetes
- ☐ heart disease
- ☐ family history of heart problems
- ☐ high cholesterol
- ☐ chronic bronchitis/chest infections
- ☐ vascular disease e.g. aneurysm, stroke
- ☐ asthma
- ☐ stomach ulcer or duodenal ulcer
- ☐ sinus problems
- ☐ forthcoming surgery
- ☐ child's/children's health
- ☐ gum disease/dental health
- ☐ impaired immune system
- ☐ delayed wound healing
- ☐ sexual difficulties
- ☐ back pain/disc prolapse
- ☐ osteoporosis
- ☐ other _____

I would like you to return for review in _____ weeks.

Doctor's signature: _____

Lifescripts

Advice for Healthy Living

SMOKING

General guidelines

Should I get help or try to quit on my own?
Quitting smoking is tough, and professional help from your doctor and/or a support program will strongly improve your chance of succeeding.

Stopping smoking is like training for a triathlon. To succeed, you need to tackle all three areas:

1. **Withdrawal from nicotine**

   Medication – either nicotine replacement (e.g. patches, lozenges or gum) or bupropion (Zyban) – can be very effective in overcoming addiction to the nicotine in cigarettes.

2. **Breaking the habit**

   The Quit program and book will give you lots of practical tips.

3. **Dealing with the psychological aspects of smoking**

   For many people, smoking has become like a friend or part of your life. You may rely on nicotine to help you deal with emotions, but you can learn to cope effectively without smoking.

If you need more help following the advice in this script, ask your GP or practice nurse. Getting some help is not a sign of weakness.

What helps?

- Using Quitline
- Talking to your GP about difficulties you are experiencing
- Using some form of medication to help you with nicotine withdrawal
- Finding someone to support you (couples who quit together improve their chance of succeeding)
- Making sure you have a plan tackling all three areas listed above

Make a list of what you like and dislike about smoking, to help you understand what the decision to quit means to you:

	Like	Dislike
Smoking		
Quitting		

For more help, call Quitline 13 QUIT (13 7848)

Australian Government
Department of Health and Ageing

Physical Activity Assessment - (Commonwealth of Australia, 2005a); used with permission

PHYSICAL ACTIVITY

Physical activity assessment

Information for patients

Your doctor would like to assess how active you are. The aim is to find out how many times per week you normally do moderate-intensity physical activity for 30 minutes, or vigorous physical activity for 20 minutes.

- Three 10-minute sessions (or two 15-minute sessions) count as one 30-minute session.

Please circle **one** option for each question.

1. How many times a week do you usually do 20 minutes or more of vigorous-intensity physical activity that makes you sweat or puff and pant? (e.g. heavy lifting, digging, jogging, aerobics or fast bicycling)

0 1 2 3 4 5 6 7+ **Score** ☐

2. How many times a week do you usually do 30 minutes or more of walking? (e.g. walking from place to place for exercise or recreation)

0 1 2 3 4 5 6 7+ **Score** ☐

3. How many times a week do you usually do 30 minutes or more of other moderate-intensity physical activity that increases your heart rate or makes you breathe harder than normal? (e.g. carrying light loads, bicycling at a regular pace or doubles tennis)

0 1 2 3 4 5 6 7+ **Score** ☐

Total ☐

Lifescripts
Advice for Healthy Living

PHYSICAL ACTIVITY

Total score

The number circled is the score for each question (7+ is counted as a score of 7).

Score	Interpretation
0 – 1	Low physical activity
2 – 4	Nearly there – almost enough for health benefits
> 5	Active – sufficient physical activity for health benefits, as recommended in the National Physical Activity Guidelines (at least 2.5 hours of moderate-intensity activity per week)

Note

Check for contraindications to moderate-intensity exercise: unstable angina, chest discomfort or shortness of breath on low-intensity activity, uncontrolled heart failure, severe aortic stenosis, uncontrolled hypertension, acute infection or fever, resting tachycardia (>100 beats per minute), recent complicated acute myocardial infarction (<3 months), uncontrolled diabetes.

This scoring system provides one quick and simple method for assessing physical activity. Your own knowledge of the patient will also be valuable in assessing physical activity levels and giving advice.

All patients

- Explain health benefits of recommended physical activity levels (even 10 minute bouts accumulated throughout the day can be beneficial)
- Provide written information

Low physical activity

- Assess factors that are preventing the person from doing more activity
- Ask if the patient is interested in increasing physical activity levels. If yes:
  - help the person think of ways of becoming more active that suit his or her lifestyle, preferences and routines
  - help set realistic goals (even 10-minute bouts can be beneficial) and increase incrementally
  - consider writing an individualised prescription for physical activity

Nearly there

- Assess factors that are preventing the person from doing more activity
- Assess the person's willingness to increase activity, and give practical suggestions on how to increase the number or duration of activities

Active

- Encourage the patient to keep up healthy levels of activity

Australian Government
Department of Health and Ageing

PHYSICAL ACTIVITY

Your prescription for an active lifestyle

Date: _____ Date of birth: _____

Patient's name: _____

Your activity assessment

- ☐ Low – your activity level is not high enough to promote health
- ☐ Nearly there – your activity level is not quite high enough to maximise health benefits

Regular activity improves energy and vitality.

For your health and well-being, I recommend:

☐ Walking (briskly enough to notice a moderate increase in breathing or pulse) and/or:

- ☐ swimming
- ☐ gentle exercise classes
- ☐ dancing
- ☐ gardening
- ☐ strength training
- ☐ tennis
- ☐ tai chi
- ☐ other: _____

How much:

- ☐ 10 minutes
- ☐ 15–30 minutes
- ☐ 30 minutes or more
- ☐ other: _____

How often:

- ☐ 1–2 times per week
- ☐ 3–4 times per week
- ☐ 5 or more times per week

This activity will be especially beneficial because of your:

- ☐ weight concerns
- ☐ heart disease
- ☐ depression/anxiety
- ☐ high blood pressure
- ☐ high cholesterol
- ☐ stress
- ☐ diabetes
- ☐ arthritis
- ☐ other: _____

To assist you to be more active, I also refer you to:

_____

_____

I would like you to return for review in _____ weeks.

Doctor's signature: _____

Lifescripts

Advice for Healthy Living

PHYSICAL ACTIVITY

General guidelines

Try to be active every day in as many ways as possible. Put together at least 30 minutes of moderate-intensity physical activity on most days of the week.
You can combine short sessions of 10 minutes each (same activity or different activities) to a total of 30 minutes per day.

Low-intensity physical activity: causes no noticeable increase in breathing or heart rate (e.g. slow walking)
Moderate-intensity physical activity: causes slight but noticeable increase in breathing and heart rate, may cause light sweating (e.g. brisk walking)
Vigorous physical activity: causes hard breathing or puffing and panting (e.g. high-intensity fitness class)

How to get started

- Choose a time of day that suits you and doesn't make you alter your routine much.
- Find an activity that you enjoy.
- Set a goal and work toward it, starting with short-term and realistic goals. Reward yourself when you have reached one of your goals.
- Be prepared to deal with setbacks that interrupt your activities.
- Recruit a friend or join a group activity. Some people find it easier to stay active in a social environment.
- Talk to your GP. Regular follow-up by someone you trust can help you stay active.

Caution

Do not start moderate-intensity physical activity if you have any of these conditions:

- Unstable angina
- Chest discomfort and shortness of breath when you do low-intensity activity
- Uncontrolled heart failure
- Severe aortic stenosis
- Uncontrolled hypertension
- Infection or fever
- Heart rate more than 100 beats per minute when you are not exercising
- Complicated myocardial infarction (heart attack) within the past 3 months
- Uncontrolled diabetes.

Stop the activity if you experience any of these:

- Chest tightness, discomfort or pain
- Dizziness or light-headedness
- Difficulty breathing
- Nausea
- Leg pain or ache
- Palpitations (feeling of pounding or racing heart).

If you have diabetes: stop the activity if you experience shakiness, tingling lips, hunger, weakness or palpitations.

Australian Government
Department of Health and Ageing

ALCOHOL

Alcohol use assessment

Information for patients
Your doctor would like to assess how the amount of alcohol you drink may be affecting your health and well-being. The aim of this survey is find out how your use of alcohol compares with the recommended low-risk levels.

1 standard drink
= 1 middy/pot of full strength beer (285 mL)
= 1 small glass of wine (100 mL)
= 1 glass of port/sherry (60 mL)
= 1 single nip of spirits (30 mL)
= 1 schooner/pint of light beer (425 mL)

ALCOHOL

Please circle **one** option for each question.

1. How often do you have a drink containing alcohol?

Never	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week
(0)	(1)	(2)	(3)	(4)

2. How many standard drinks do you have on a typical day when you are drinking?

1 or 2	3 or 4	5 or 6	7 to 9	10 or more
(0)	(1)	(2)	(3)	(4)

3. How often do you have 6 or more drinks on one occasion?

Never	Less than monthly	Monthly	Weekly	Daily or almost daily
(0)	(1)	(2)	(3)	(4)

AUDIT-C adapted from Bush K, et al. *Arch Intern Med* 1998; 158: 1789–1795.

Lifescripts
Advice for Healthy Living

ALCOHOL

Scoring and interpreting AUDIT-C

Add the scores (shown in brackets) for each of the three questions for a total score out of 12.

Women		Men	
0–3	Low-risk drinking	0–3	Low-risk drinking
4–5	Risk depends on other factors*	4–6	Risk depends on other factors*
≥ 6	Risky or high-risk drinking	≥ 7	Risky or high-risk drinking

* May indicate risky drinking if other risk factors present (chronic medical conditions, heart disease, medications that interact with alcohol, mental health problems, over 65 years).

ALCOHOL

All patients
- Explain risk level associated with current alcohol consumption
- Provide written information

Low-risk drinking
- Reinforce health benefits and advise the patient to continue limiting his or her drinking to this low-risk level

Risky or high-risk drinking
- Perform complete AUDIT (refer to treatment guidelines, below)
- Discuss potential effects of current drinking levels, including health concerns
- Ask the patient how he or she feels about cutting down. If yes to cutting down:
  – ask how confident he or she is about succeeding
  – ask if he or she would like some assistance

If you suspect alcohol dependency
- Offer treatment or referral (see Useful resources, below)

Useful resources
National Health and Research Medical Council. *Australian alcohol guidelines. Health risks and benefits.* Canberra; NHMRC, 2003. (Available at www.alcoholguidelines.gov.au/resources.htm)
Shand F, Gates J. *Treating alcohol problems. Guidelines for general practitioners.* Canberra; Commonwealth Department of Health and Ageing, 2003. (Available at www.health.gov.au)

Australian Government
Department of Health and Ageing

Alcohol Prescription - (Commonwealth of Australia, 2005b); used with permission

ALCOHOL

Your prescription for low-risk alcohol use

Date: _____ Date of birth: _____

Patient's name: _____ Male / Female: _____

Your current alcohol use

- ☐ Risky – your level of drinking could be a risk to your health and well-being. Consider cutting down your alcohol intake.
- ☐ High risk – your level of drinking is harmful to your health and well-being. I advise you to cut down your alcohol intake.

Doctor's prescription for safer levels of alcohol consumption

- ☐ Aim to have no more than _____ standard drinks per day, and a total of no more than _____ standard drinks per week.
- ☐ Try to include _____ alcohol-free days per week.
- ☐ Complete the drink diary for 2 weeks and bring it to your next appointment.
- ☐ Read the booklet *Alcohol and your health*.

Reducing your alcohol intake will help you to feel healthier and will be especially beneficial because of your:

- ☐ depression / anxiety
- ☐ work-related problems
- ☐ relationship issues
- ☐ risk of accidents
- ☐ weight gain
- ☐ heart burn
- ☐ high blood pressure
- ☐ heart problems
- ☐ other _____

To assist you in managing your alcohol use, I refer you to:

_____

_____

_____

I would like you to return for review in _____ weeks.

Doctor's signature: _____

Lifescripts

Advice for Healthy Living

ALCOHOL

General guidelines

What is a standard drink?

Note

- Serves of wine at most restaurants and bars are equivalent to almost 2 standard drinks
- Two cans (375 mL) of full-strength beer = 3 standard drinks

Ways you can lessen the risks to your health

- Aim for one or two alcohol-free days each week
- Men: aim for no more than 4 standard drinks per day on average, and no more than 6 standard drinks on any one day
- Women: aim for no more than 2 standard drinks per day on average, and no more than 4 standard drinks on any one day

Tips for low-risk drinking

- Sip drinks, don't gulp. Put your glass down between mouthfuls
- Alternate alcoholic and non-alcoholic drinks
- If you are thirsty, have a soft drink or water first
- Avoid snacking on salty foods that make you thirsty
- Ensure there are plenty of non-alcoholic or low-alcoholic drinks available at social gatherings
- Avoid drinking on an empty stomach – food helps slow down the rate of alcohol absorption into your body
- Avoid drinking in rounds or keeping up with others. If necessary, buy the first round then opt out and buy your own drinks from then on
- Plan to shorten your drinking time – begin later and go home earlier
- Say no to top-ups. This makes it easier to count your drinks.
- Have ready-made answers for when you are pressured to drink more than you want:

No thanks – I'm driving
No thanks – I have to get up early in the morning
No thanks – I've had enough
No thanks – I'm on a training program
No thanks – I'm taking medication

Australian Government
Department of Health and Ageing

PP dietetics professionals Telephone Interviews

Email Invitation for pilot testing Telephone Interview

Email Invitation for participants in the Telephone Interview

Mail Invitation for participants in the Telephone Interview

Telephone Interview information statement

Telephone Interview consent form

Telephone Interview questions - copy used by researcher

Telephone Interview questions – copy sent to participants

Prof Sandra Capra, AM
PhD, AdvAPD, FDAA

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THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

Dear Private Practice Dietitian,

Researchers from the University of Newcastle are seeking your assistance in piloting a telephone interview. The interview aims to gain your opinion of: the Medicare EPC initiative, the delivery of nutrition advice in the general practice setting, your current activities in private practice, as well as your relationships with GPs in your area. This is expected to take approximately 20 minutes.

For more information on the project please see the attached information statement and list of questions. If you are interested in assisting us in this please contact Lana Mitchell on Lana.Mitchell@newcastle.edu.au or 49218673 to organise a suitable time to conduct the interview.

Any assistance you are able to provide would be greatly appreciated.

Lana Mitchell

PhD Candidate

Email invitation script sent to participant group

Subject: Your views on the Medicare EPC initiative

Dear Private Practice Dietitian,

The Division of General Practice in which you are located has been identified as either a high or low provider of Medicare Dietitian Enhanced Primary Care (EPC) consultations. As a result, researchers from the University of Newcastle are seeking to conduct a telephone interview with you regarding your opinion of: the Medicare EPC initiative, the delivery of nutrition advice in the general practice setting, your current activities in private practice, as well as your relationships with GPs in your area.

The telephone interview is expected to take approximately 20 minutes. Participants will go in the draw to win one of three $100 vouchers for 'Great Ideas in Nutrition'.

If you are interested in participating, please read the attached information statement, complete the consent form and email it to Lana.Mitchell@newcastle.edu.au, indicating your preferred contact phone number and suitable times and days of the week for the telephone interview to be carried out.

Thank you for considering this invitation.

THE RESEARCH TEAM

Prof Sandra Capra, AM
Conjoint Professor, School of Health Sciences

Lana Mitchell
PhD Candidate

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Prof Sandra Capra, AM
PhD, AdvAPD, FDAA

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Dear Private Practice Dietitian,

The Division of General Practice in which you are located has been identified as either a high or low provider of Medicare Dietitian Enhanced Primary Care (EPC) consultations. As a result, researchers from the University of Newcastle are seeking to conduct a telephone interview with you regarding your opinion of: the Medicare EPC initiative, the delivery of nutrition advice in the general practice setting, your current activities in private practice, as well as your relationships with GPs in your area.

The telephone interview is expected to take approximately 20 minutes. Participants will go in the draw to win one of three $100 vouchers for 'Great Ideas in Nutrition'.

If you are interested in participating, please read the attached information statement, complete the consent form and return it in the reply paid envelope provided.

Thank you for considering this invitation.

THE RESEARCH TEAM

Prof Sandra Capra, AM
Conjoint Professor, School of Health Sciences

Lana Mitchell
PhD Candidate

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Version 1, 21/2/2008 ~ Page 1 of 1

Prof Sandra Capra, AM
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Information Statement for the Research Project:
Dietitians' provision and views of the Medicare Enhanced Primary Care initiative

Are you a high or low provider of Medicare EPC consultations?

Dear Private Practice Dietitian,

You are invited to take part in the research project identified above which is being conducted by Lana Mitchell who is undertaking the research as part of her PhD. The Chief Investigator is Prof Sandra Capra, from the School of Health Sciences at the University of Newcastle. Dr Lesley MacDonald-Wicks, from the Discipline of Nutrition and Dietetics at the University of Newcastle, is a co-investigator.

Why is the research being done?

- The Medicare 'Allied Health and Dental Care Initiative' was introduced by the Commonwealth Government in 2004 with the aim of improving the delivery of services to people with chronic conditions, thus reducing the long term cost to the health system.
- However uptake of this initiative has varied between Divisions of General Practice (DGP) and the aim of this research is to determine factors that influence the provision of Enhanced Primary Care (EPC) consultations by dietitians.

Who can participate in the research?

- Private practice dietitians working in Divisions that have either a high or low uptake of the EPC consultations are invited to participate.
- Your contact details were obtained from the DAA 'Find an APD' website through a division and location search. However all private practice dietitians working in your division are eligible to participate.

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

What choice do you have?

- Participation in this research is entirely your choice. Only those dietitians who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you in any way.
- If you do decide to participate, you may withdraw from the project at any time without giving a reason. If you withdraw from the study you may also choose to withdraw any individual data.

What would you be asked to do?

- Participants are asked to participate in a telephone interview which aims to gain insight into your opinion of the Medicare EPC initiative, the delivery of nutrition advice in the general practice setting, as well as your current activities in private practice, and relationships with GPs.
- This is expected to take approximately 25 minutes.
- The telephone interviews will be recorded, however if desired you will be able to review the recording and/or transcripts to edit or erase your contribution.
- You will be emailed or faxed a list of questions prior to the interview so you will have time to consider your responses.
- Participants will go in the draw to win one of three $100 book vouchers for 'Great Ideas in Nutrition'. The winners will be randomly selected at the completion of the study and notified within two days.

***What are the risks and benefits of participating*?**

- No risks to participating in this study have been identified.
- Participants may benefit from discovering what other dietitians are doing to maximise the Medicare opportunity in order to build their practice.

How will your privacy be protected?

- Interview responses will be recorded along with a participant ID number.
- All results will be reported at the group level with all data being presented in de-identified format.
- A master list linking dietitians with their ID number will be only accessible by the researchers conducting the interviews.
- Hard copy of the data will be kept in a lockable cabinet in a locked office. Electronic data will be stored in a password protected computer. All data will be kept in de-identified format, with the master identification documents stored in a different location. Data will be stored for a minimum of five years.

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

How will the information collected be used?

- The results will be used to reveal factors that encourage and prevent the provision of EPC consultations by dietitians. This will allow us to ascertain what can be done to make participating in this initiative easier and more appealing for dietitians.
- Results will be presented in scientific journals and at conferences, and will be included in the thesis of Lana Mitchell for her PhD. Individual participants will not be identified in these presentations or publications.
- Results of the study will be available to participating dietitians upon request at the completion of the study and analysis of results. This will be in a standard de-identified format and based at the group level.

What do you need to do to participate?

- Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, please contact Lana Mitchell (PhD Candidate) on 49 21 8673 / Lana.Mitchell@newcastle.edu.au, or Sandra Capra (Chief Investigator) on Sandra.Capra@newcastle.edu.au
- If you would like to participate, please complete the attached consent form and return it in the reply paid envelope provided, or email it to Lana.Mitchell@newcastle.edu.au, indicating your preferred contact phone number and the most suitable time day/week to complete the telephone interview. No signature is required for emailed consent forms.
- You will then be contacted by the researchers to organise an appropriate time for the interview.

Thank you for considering this invitation.

THE RESEARCH TEAM

Prof Sandra Capra, AM
Conjoint Professor, School of Health Sciences

Lana Mitchell
PhD Candidate

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2008-0070 Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, telephone 02 49 21 6333, email Human-Ethics@newcastle.edu.au.)

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

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Consent for the Research Project:

Dietitians' provision and views of the Medicare Enhanced Primary Care Initiative

I agree to participate in the above research project and provide my consent freely by signing this form.

I understand that:

- The project will be conducted as described in the Information Statement, a copy of which I have retained.
- I can withdraw from the project at any time and do not have to provide any reason for withdrawing.
- My personal information will remain confidential to the researchers.

I consent to:

1. Participate in a telephone interview about my opinions and use of Medicare Enhanced Primary Care Plans, the delivery of nutrition advice in the general practice setting, my current activities in private practice, and relationships with GPs.

I have read and understood the information sheet.

All my questions have been answered to my satisfaction.

Print Name: ……..... Date: ……..……

Signature: (*not required if returning via email*)……..…….....…..……

Division/s of General Practice: .....……

Practice Address: ……

Telephone number: …….....….....……

Email: …….....…..…….....

Preferred contact day/ time: .....

Please return the completed form in the reply paid envelope provided
or email to Lana.Mitchell@newcastle.edu.au

THE RESEARCH TEAM

Prof Sandra Capra, AM
Prof and Head, School of Health Sciences

Lana Mitchell
PhD Candidate

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2008-0070

Version 2, 20/3/2008

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

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Email: Sandra.Capra@newcastle.edu.au

Dietitian's provision and views of the Medicare Enhanced Primary Care Initiative

DIETITIAN TELEPHONE INTERVIEW

Dietitian ID number: _____ Date: _____

Hi, my name is Lana Mitchell and I'm from the University of Newcastle. I would like to speak to _____

Hi _____, my name is Lana Mitchell and I'm from the University of Newcastle. I am ringing regarding a telephone interview you have recently consented to participate in regarding Medicare Enhanced Primary Care plans.

Is now an ok time to answer a few questions or is there a better time in which I can call you back?

This interview aims to gain insight into your opinion of the Medicare Enhanced Primary Care initiative, the delivery of nutrition advice in the general practice setting, your current activities in private practice, as well as your relationships with GPs in your area.

It is expected that this will take approximately 20 minutes of your time depending on your responses. Do you have a copy of the questions I sent you?

THE RESEARCH TEAM

Prof Sandra Capra, AM
Conjoint Professor, School of Health Sciences

Lana Mitchell
PhD Candidate

Dr Lesley MacDonald-Wicks
Lecturer in Nutrition and Dietetics

[Please answer the following questions which aim to gain insight into your personal and work characteristics]

1. How many hours per week on average do you work in private practice? _____
2. How long have you worked in private practice? _____
3. In what year did you obtain your dietetics qualifications? _____
4. What age group do you fit into?

   20-30 *30-40* *40-50* *50-60* *60+*

4b. [*don't ask this question*] Gender: *Male* *Female*

5. How many dietitians work in your practice, including yourself:

   Number: _____ FTEs: _____

6. Is it your own business or do you work for someone else? ☐ *own* ☐ *work for someone else*
7. Do you see patients within a GP surgery, in your own office or at another location?

   ☐ *GP surgery* ☐ *own office* ☐ *home office* ☐ *with other AHP* ☐ *home visits*

   ☐ *Other:* _____

8. How many patients do you see per week on average? _____

[Currently not every patient in the general practice setting who would benefit from nutrition advice is receiving it. The following questions aim to identify your thoughts on strategies to increase the delivery of nutrition advice]

9. Do you believe GPs have a role in providing nutrition advice?

   Not at all basic advice only yes it is definitely their role *other:* _____

   Why do you think that is? _____

   _____

   _____

10. Of the GPs you work with, do you believe the majority of them are providing nutrition advice?

    no *very few* *most* *other:* _____

    Why do you think that is? _____

    _____

    _____

11. Do you believe nutrition advice provided by the GP is effective?

    Yes *no* *unsure* *other:* _____

    Are you able to expand on that? _____

    _____

    _____

12. Of the GPs you work with, do you believe the majority of them are aware of the key conditions that would benefit from nutrition advice?

    Yes *no* *unsure* *other:* _____

13. What conditions do GPs commonly refer for? _____

    _____

14. What do you see as the barriers to GPs providing nutrition advice?

[prompt: what are the things that you think prevent GPs from providing advice.... for example patient lack of interest]

	prompted
☐ Patient's lack of interest	☐
☐ Lack of knowledge/ training	☐
☐ Time/ too busy	☐
☐ Not interested / can't be bothered	☐
☐ Lack of reimbursement	☐
☐ Lack of resources	☐

☐ Other: _____

_____

_____

15. What do you believe are the factors that would prompt GPs to provide nutrition advice during a consultation?

[prompt: what would encourage GPs to provide nutrition advice..... for example patients requesting advice]

	prompted
☐ Patient requesting advice	☐
☐ Patient presents with nutrition related condition	☐
☐ Personal/ GP interest in nutrition	☐
☐ Appropriate nutrition resources	☐
☐ Reimbursement	☐
☐ Time available with patient	☐
☐ GP's belief that diet change would make a difference	☐

☐ Other: _____

_____

_____

16. What do you see are potential ways of increasing the number of patients receiving nutrition advice?

[prompt: what could be done to make it more likely that patients will receive nutrition advice from either GPs or other health professionals..... for example increased GP nutrition education/training] prompted

- ☐ Increased GP nutrition education/training ☐
- ☐ Refer to a dietitian ☐
- ☐ Create TCA/EPC for patient ☐
- ☐ Provide reimbursement for GPs providing advice ☐
- ☐ Have practice nurses provide advice ☐
- ☐ Appropriate resources ☐
- ☐ Group education sessions ☐
- ☐ Concise nutrition related best practice guidelines for GPs ☐
- ☐ Providing reimbursement for nutrition advice ☐
- ☐ Other: _____

_____

_____

17. What do you believe are the factors that influence GP's referral to dietitians?

[prompt: what are factors that either encourage or discourage them from referring..... for example knowing who to refer to] prompted

- ☐ Knowing who to refer to ☐
- ☐ Ease of referral ☐
- ☐ Relationships with dietitians ☐
- ☐ Location of dietitian – i.e. on site or nearby ☐
- ☐ Can't be bothered ☐
- ☐ lack of time ☐
- ☐ Belief in effectiveness of intervention ☐
- ☐ GPs experiencing positive/negative patient outcomes ☐
- ☐ GPs level of interest in nutrition ☐
- ☐ Cost to patient ☐
- ☐ Patient's willingness to see a dietitian ☐
- ☐ Other: _____

_____

_____

18. Do you believe that being located within the GP's practice would make it easier for them to refer?

    Yes *no* *unsure* *other:* _____

    Why do you think that is? _____

    _____

19. What do you see are advantages and disadvantages of the different practice locations? _____

    _____

    _____

    _____

[In many practices there are nurses, known as practice nurses who conduct various tasks including health assessments and patient counselling]

20. Do you believe practice nurses have adequate nutrition training and knowledge to provide brief advice?

    Yes *no* *unsure* *other:* _____

    Why do you think that is? _____

    _____

    _____

21. Do you believe that with adequate training, practice nurses have a role in providing brief nutrition advice?

    Yes *no* *unsure* *other:* _____

    Why do you think that is? _____

    _____

    _____

[Medicare allows for the management of patients with chronic diseases through their Team Care Arrangements within Enhanced Primary Care (EPC) plans. The following questions aim to assess your thoughts towards these]

22. Do you provide EPC services? (if no, go to question 25)

    Yes *No*

23. How many Medicare EPC patients do you see a week on average? _____

24. Have the Medicare EPC plans expanded your clientele?

    Yes *no* *unsure* *other:* _____

25. How many of the five Medicare EPC visits per patient do you normally get allocated? _____

26. Do you believe EPC Team Care Arrangements make it easier for GPs to refer to a dietitian?

    Yes *no* *unsure* *other:* _____

    Why do you think that is? _____

    _____

    _____

27. Do you believe EPC Team Care Arrangements overcome barriers to referral to a dietitian?

    Yes *no* *unsure* *other:* _____

    Why do you think that is? _____

    _____

28. Do you believe the Medicare EPC initiative has increased the number of people seeing a dietitian?

    Yes *no* *unsure* *other:* _____

    Why do you think that is: _____

    _____

29. Do you provide the same service to EPC patients as you do non-EPC patients?

    Yes *no* *other:* _____

    How are they different? *(Prompt: in terms of consultation length or cost)*

    Consultation length: _____

    Cost: _____

    Other: _____

    _____

30. How much do you charge EPC patients?

    Initial: $_____ Follow-up/review: $_____

31. What are your views on bulk billing EPC patients?

☐ Do bulk bill ☐ Don't bulk bill

☐ Positive ☐ Negative

☐ Increases number of patients willing to attend

☐ GP requests this/ tells people it will be free

☐ Not possible to make enough money

☐ Patients wouldn't value service

☐ Problems with Medicare paying

☐ Other:_____

_____

_____

32. Do you see Medicare EPC rebates as an opportunity to build your business?

Yes *no* *unsure*

Are you able to expand on that? _____

_____

_____

_____

_____

33. In what ways, if any, have you utilised the Medicare opportunity? _____

_____

_____

_____

_____

_____

34. Do you feel providing the Medicare EPC service is beneficial?

Yes *no* *unsure* *[pt versus self]*

Are you able to expand on that? _____

_____

_____

_____

35. In what ways could the Medicare EPC initiative be improved? _____

_____

_____

_____

[The following questions aim to explore your relationships with GPs in your area]

36. Overall, how would you rate your relationship with the GPs in your area?
    - ☐ Good ☐ poor ☐ frequent contact
    - ☐ GP respects and values dietitians
    - ☐ other: _____

37. How did you initially form relationships with the GPs in your area?
    - ☐ Mail out ☐ Telephone calls ☐ Meeting
    - ☐ Introduced at an event/ function
    - ☐ Provided lunch and spoke at practice lunch meeting
    - ☐ I work in the same office as the GP
    - ☐ The practice I work at had already established a relationship
    - ☐ other: _____

38. How have you maintained these relationships?
    - ☐ Mail out ☐ Telephone calls ☐ Meeting
    - ☐ Patient progress letters ☐ contact at an event/ function
    - ☐ Contact within the practice
    - ☐ Other: _____

39. In what ways, if any, have you made referral easier for GPs?
    - ☐ Brochures to hand to patients ☐ Referral pads ☐ Business cards
    - ☐ Co-located in practice ☐ offered discounts/ specials/ vouchers
    - ☐ Provided outline of how to refer ☐ provided list of types of patients seen
    - ☐ other: _____

40. What do you believe has been the most effective activity/s in building relationships with GPs and increasing referrals? _____
_____
_____
_____

That was the last question. Before I let you go do you have any additional comments or things you would like to add?

41. Additional comments: _____
_____
_____
_____

Thank you so much for your time.
I really appreciate the insight you were able to provide

Prof Sandra Capra, AM
PhD, AdvAPD, FDAA

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School of Health Sciences

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Dietitian's provision and views of the Medicare Enhanced Primary Care Initiative

TELEPHONE INTERVIEW QUESTIONS

[Please answer the following questions which aim to gain insight into your personal and work characteristics]

1. How many hours per week on average do you work in private practice?
2. How long have you worked in private practice?
3. In what year did you obtain your dietetics qualifications?
4. What age group do you fit into? *20-30, 30-40, 40-50, 50-60, 60+*
5. How many dietitians work in your practice, including yourself? *(Number, FTEs)*
6. Is it your own business or do you work for someone else?
7. Do you see patients within a GP surgery, in your own office or at another location?
8. How many patients do you see per week on average?

[Currently not every patient in the general practice setting who would benefit from nutrition advice is receiving it. The following questions aim to identify your thoughts on strategies to increase the delivery of nutrition advice]

9. Do you believe GPs have a role in providing nutrition advice?
10. Of the GPs you work with, do you believe the majority of them are providing nutrition advice?
11. Do you believe nutrition advice provided by the GP is effective?
12. Of the GPs you work with, do you believe the majority of them are aware of the key conditions that would benefit from nutrition advice?
13. What conditions do GPs commonly refer for?
14. What do you see as the barriers to GPs providing nutrition advice?
15. What do you believe are the factors that would prompt GPs to provide nutrition advice during a consultation?
16. What do you see are potential ways of increasing the number of patients receiving nutrition advice?
17. What do you believe are the factors that influence GP's referral to dietitians?
18. Do you believe that being located within the GP's practice would make it easier for them to refer?

19. What do you see are advantages and disadvantages of the different practice locations?
    (GP surgery, own office, home office, home visits etc)

[In many practices there are nurses, known as practice nurses who conduct various tasks including health assessments and patient counselling]

20. Do you believe practice nurses have adequate nutrition training and knowledge to provide brief advice?
21. Do you believe that with adequate training, practice nurses have a role in providing brief nutrition advice?

[Medicare allows for the management of patients with chronic diseases through their Team Care Arrangements within Enhanced Primary Care (EPC) plans. The following questions aim to assess your thoughts towards these]

22. Do you provide EPC services?
23. How many Medicare EPC patients do you see a week on average?
24. How many Medicare EPC patients do you see a week on average?
25. Have the Medicare EPC plans expanded your clientele?
26. Do you believe EPC Team Care Arrangements make it easier for GPs to refer to a dietitian?
27. Do you believe EPC Team Care Arrangements overcome barriers to referral to a dietitian?
28. Do you believe the Medicare EPC initiative has increased the number of people seeing a dietitian?
29. Do you provide the same service to EPC patients as you do non-EPC patients? *(in terms of consultation length or cost)*
30. How much do you charge EPC patients? *(Initial/ Review)*
31. What are your views on bulk billing EPC patients?
32. Do you see Medicare EPC rebates as an opportunity to build your business?
33. In what ways, if any, have you utilised the Medicare opportunity?
34. Do you feel providing the Medicare EPC service is beneficial?
35. In what ways could the Medicare EPC initiative be improved?

[The following questions aim to explore your relationships with GPs in your area]

36. Overall, how would you rate your relationship with the GPs in your area?
37. How did you initially form relationships with the GPs in your area?
38. How have you maintained these relationships?
39. In what ways, if any, have you made referral easier for GPs?
40. What do you believe has been the most effective activity/s in building relationships with GPs and increasing referrals?

Thank you so much for your time. I really appreciate the insight you were able to provide

PP dietetics professionals Online Survey

Email Invitation for Online Survey via the DAA weekly email

Online Survey

Online Survey for Private Practitioners: Nutrition Advice in General Practice Research into the most effective way of delivering nutrition advice in the general practice setting is currently being undertaken by researchers from the University of Newcastle. If you are a private practitioner and are interested in participating please go to

http://www.surveymonkey.com/s.aspx?sm=v_2fM1Wz3pGjsIcnQUOldMUg_3d_3d

Participants will be eligible to go in a draw to win a $100 book voucher for 'Great Ideas in Nutrition'. For more information please contact Caitlin West,

Caitlin.west@studentmail.newcastle.edu.au, (02) 4921 8673.

Delivery of nutrition advice in the general practice setting

1. Information Statement

Dr Lesley MacDonald-Wicks
PhD, APD
School of Health Sciences
Faculty of Health
University Drive, Callaghan
NSW 2308 Australia
Phone: (02) 49 21 6646
Fax: (02) 49 21 7053
Email: Lesley.Wicks@newcastle.edu.au

As a private practice dietitian in Australia, you are invited to participate in this research which is being conducted by Caitlin West as part of her Nutrition & Dietetics Honours project. The Chief Investigator is Dr Lesley MacDonald-Wicks, and the Co-Investigator is Lana Mitchell, from the School of Health Sciences at the University of Newcastle.

Researchers are interested in finding out your thoughts on the delivery of nutrition advice in the general practice setting, in particular the use of 'Lifescripts' (DoHA). 'Lifescripts' are designed by the Commonwealth Government as a resource to allow GPs to deliver a variety of health messages in a "prescription" format. 'Lifescripts' exist for smoking, nutrition, alcohol, physical activity and weight management.

You are invited to participate in this study, which is being conducted by the researchers from the University of Newcastle, Caitlin West (honours student), Lana Mitchell (PhD candidate), and Dr Lesley MacDonald Wicks, Faculty of Health.

Why is the research being conducted?
• To improve the delivery of nutrition advice in the general practice setting.
• To evaluate the effectiveness of 'Lifescripts' and identify dietitian's awareness of and thoughts towards the use of these tools.

Who can participate in the research?
• All private practice dietitians in Australia.

What choice do you have?
• Participation in this research is entirely your choice. Whether or not you decide to participate, your decision will not disadvantage you. If you do decide to participate, you may withdraw from the project at any time easily and anonymously without giving a reason .

What would you be asked to do?
• If you consent to participate please complete the online survey below made up of 31 questions, which is expected to take approximately 15 minutes.

What are the risks and benefits of participating?
• There are no risks in participating in this research.
• While you may not benefit directly from this project, as a private practice dietitian results as to the most effective way of delivering nutrition advice in the general practice setting may be of interest to you.

Delivery of nutrition advice in the general practice setting

How will your privacy be protected?
• The online survey is anonymous and it will not be possible to identify you from your answers.
• Hard copy of the data will be kept in a lockable cabinet in a locked office while electronic data will be stored in a password protected computer, for a minimum of five years. After the completion of the research the master identification document will be destroyed.

How will the information collected be used?
• Results will be included in the Honours project of Caitlin West, as well as the thesis of Lana Mitchell for her PhD. Individual participants will not be identified in these presentations or publications. However, you will be able to request results at the completion of the study.

What do you need to do to participate?
• Please read this Information Statement and be sure you understand its contents. If there is anything you do not understand, or you have questions, please contact Caitlin West (Honours student) on 02 49 218673 or Caitlin.west@studentmail.newcastle.edu.au or contact Dr Lesley MacDonald Wicks (Chief Investigator) on 02 49 216646 or Lesley.Wicks@newcastle.edu.au
• If you would like to participate, please proceed to the survey. This will be taken as your informed consent to participate.

Thank you for considering this invitation.

THE RESEARCH TEAM

Dr Lesley MacDonald Wicks
Lecturer in Nutrition and Dietetics

Lana Mitchell
PhD Candidate

Caitlin West
Honours student (Nutrition and Dietetics)

Complaints about this research
This project has been approved by the University's Human Research Ethics Committee, Approval No. H-----
Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, telephone 02 49 21 6333, email Human-Ethics@newcastle.edu.au.

Version 1; date 13/2/08

Delivery of nutrition advice in the general practice setting

2. Demographic Data

Please answer the following questions for the purpose of gaining demographic data

1. How many hours per week on average do you work in private practice?

2. How long have you worked in private practice?

Years

Months

3. In what year did you obtain your dietetics qualifications?

4. What age group do you fit into?

- ◯ 20-30
- ◯ 30-40
- ◯ 40-50
- ◯ 50-60
- ◯ 60+

5. Gender

- ◯ Female
- ◯ Male

6. How many dietitians work in your practice, including yourself?

Number

FTEs

7. Is it your own business or do you work for someone else? (please mark all that apply)

- ☐ Self employed
- ☐ Work for someone else

Delivery of nutrition advice in the general practice setting

8. Where is your practice based? (please mark all that apply)

- [ ] GP surgery
- [ ] Own office
- [ ] Co-located with other health professionals
- [ ] Home office
- [ ] Home visits
- [ ] Other (please specify)

9. How many patients do you see per week on average?

Delivery of nutrition advice in the general practice setting

3. Role of the GP in delivering nutrition advice

Currently not every patient in the general practice setting who would benefit from nutrition advice is receiving it. The following questions aim to identify your thoughts on strategies to increase the delivery of nutrition advice

10. Do you believe GPs have a role in providing nutrition advice?

- ◯ Yes
- ◯ No

Why do you think that this is?

11. Of the GPs you work with, do you believe the majority of them are providing nutrition advice?

- ◯ Yes
- ◯ No
- ◯ Other (please specify)

12. Do you believe nutrition advice that is provided by the GP is effective?

◯ Ineffective ◯ Somewhat effective ◯ Neutral ◯ Mostly effective ◯ Very effective

13. Of the GPs you work with, do you believe the majority of them are aware of the key conditions that would benefit from nutrition advice?

- ◯ Yes
- ◯ No

Delivery of nutrition advice in the general practice setting

14. What conditions do GPs commonly refer for? (please mark all that apply)

- [ ] Gastrointestinal disorders
- [ ] Weight management
- [ ] Allergy
- [ ] Coeliac disease
- [ ] Diabetes
- [ ] High blood pressure
- [ ] High cholesterol
- [ ] Other (please specify)

15. What do you see as the main barriers to GPs providing nutrition advice? (please tick those most relevant)

- [ ] Lack of time / too busy
- [ ] View nutrition as unimportant
- [ ] GP not interested / can't be bothered
- [ ] Lack of counselling or motivational interviewing skills
- [ ] Lack of resources
- [ ] Lack of nutrition knowledge
- [ ] Patient's lack of interest
- [ ] Lack of reimbursement
- [ ] Lack of confidence in delivering nutrition advice
- [ ] Other (please specify)

Delivery of nutrition advice in the general practice setting

16. What do you believe are the factors that would prompt GPs to provide nutrition advice? (please tick those most relevant)

- [ ] GP's confidence in providing nutrition advice
- [ ] Reimbursement
- [ ] Appropriate nutrition resources
- [ ] GPs belief that giving nutrition advice would result in an improvement in patients eating habits
- [ ] Patient requesting advice
- [ ] Skills in behaviour change technques (such as motivational interviewing)
- [ ] GP's belief that diet change would make a difference
- [ ] Patient presents with nutrition related condition
- [ ] Time available with patient
- [ ] GP's interest in nutrition
- [ ] Adequate nutrition knowledge
- [ ] Other (please specify)

17. What do you believe are the most effective ways of increasing the delivery of nutrition advice to patients in general practice? (please tick those most relevant)

- [ ] Referral to a dietitian via an Enhanced Primary Care Plan
- [ ] GP training in behaviour change techniques
- [ ] Appropriate resources eg. patient education materials
- [ ] Patient group education sessions
- [ ] Concise nutrition related best practice guidelines for GPs
- [ ] Have practice nurses provide nutrition advice
- [ ] Refer to a dietitian
- [ ] Providing reimbursement for nutrition advice
- [ ] Increased GP nutrition education/training
- [ ] Other (please specify)

Delivery of nutrition advice in the general practice setting

18. What do you believe are the factors that influence GP's referral to dietitians? (please tick those most relevant)

- [ ] Patients' willingness to see a dieititan
- [ ] Time constraints
- [ ] Relationships with dietitians
- [ ] GP's experiencing positive/negative patient outcomes
- [ ] Belief in effectiveness of nutrition intervention
- [ ] Availability of medicare items (eg Enhanced Primary Care plan)
- [ ] Cost to patient
- [ ] Location of dietitian – i.e. on site or nearby
- [ ] GP's level of interest in nutrition
- [ ] Knowing who to refer too
- [ ] Ease of referral
- [ ] Other (please specify)

Delivery of nutrition advice in the general practice setting

4. Role of Practice Nurse in delivering nutrition advice

In many practices there are nurses, known as practice nurses who conduct various tasks including health assessments and patient counselling

19. Do you believe practice nurses have adequate nutrition training to provide brief advice?

- ◯ Yes
- ◯ No
- ◯ Other (please specify)

20. Do you believe practice nurses have adequate nutrition knowledge to provide brief advice?

- ◯ Yes
- ◯ No
- ◯ Other (please specify)

21. Do you believe that with adequate training, practice nurses have a role in providing brief nutrition advice?

- ◯ Yes
- ◯ No
- ◯ Other (please specify)

Delivery of nutrition advice in the general practice setting

5. Lifescripts

'Lifescripts' are a recently launched Commonwealth initiative focused towards the areas of: nutrition, weight management, alcohol, smoking and physical activity. The following questions aim to assess your thoughts towards 'Lifescripts'

22. Have you heard of 'Lifescripts'?

- ◯ Yes
- ◯ No (please go to question 25)

23. When did you first hear about 'Lifescripts'?

Month, year

Months ago

Weeks ago

24. How did you find out about them?

25. My current understanding of 'Lifescripts' is:

◯ Extremely poor ◯ Poor ◯ Average ◯ Good ◯ Excellent

Please look at the attached weight management 'Lifescript' and answer the following questions. Each 'Lifescript' includes 2 double sided components: the assessment and the prescription for the patient to take with them.

'Lifescript' Assessment form

Delivery of nutrition advice in the general practice setting

WEIGHT MANAGEMENT

Weight management assessment

Information for patients
The aim of this questionnaire is to assess whether your health and well-being might benefit from a prescription for healthy weight.

Please circle the options that apply to you.

Are you pregnant or breastfeeding?	Yes	No
Do you have diabetes and use insulin or oral medication for diabetes?	Yes	No
1. Are you currently gaining weight without trying to?	Yes	No
2. Have you gained more than 10 kg weight since your late teens or early twenties?	Yes	No

3. How many times have you tried to lose weight since you were in your late teens or early twenties?

A. Never
B. 1–3 times
C. 4 times or more
D. I am always trying to lose weight

4. How interested are you in managing your weight in the long term?

A. Not interested
B. Quite interested
C. Very interested

5. Medical conditions
Your doctor may ask about other medical conditions like high blood pressure, high cholesterol, diabetes or a pre-diabetes condition.

_____
_____
_____

WEIGHT MANAGEMENT

Lifescripts
Advice for Healthy Living

WEIGHT MANAGEMENT

Interpreting the questionnaire

Note:

All responses need to be considered with respect to other risk factors for chronic disease and comorbidities.
Consider referral to an accredited practising dietitian for patients who are pregnant, breastfeeding or have diabetes treated with insulin or oral hypoglycaemic medications.

Questions 1–2

Yes to either question indicates that the person is suitable for a prescription for healthy weight.

Question 3

Options C or D indicate that the person may need individualised assessment and counselling by an accredited practising dietitian (see Additional strategies, below).

Question 4

Options *Quite interested* or *Very interested* indicate that the person is suitable for a prescription for healthy weight. (See Additional strategies, below).

All patients

Explain the benefits of weight management and preventing further weight gain
- Assess other relevant risk factors (e.g. blood pressure, lipids) and mental health
- Provide written information
- Review progress and risk factors every 2–6 weeks
- Consider additional strategies if sufficient weight loss has not been achieved after 3–6 months

Patients who need more help

- Offer brochures, healthy meal plans and recipes
- Refer to other services e.g. community-based weight management or exercise groups, individualised nutrition and weight consultation by an accredited practising dietitian, assessment by physiotherapist or clinical psychologist.

Additional strategies

- Consider eligibility for incentives such as Enhanced Primary Care items
- Specialist referral
- Medication or specialist assessment for other interventions (e.g. gastric banding surgery)

WEIGHT MANAGEMENT

Australian Government

Delivery of nutrition advice in the general practice setting

'Lifescript' Prescription form

WEIGHT MANAGEMENT

Your prescription for healthy weight

Date: _____ Date of birth: _____

Patient's name: _____ Male / Female: _____

weight: _____ Height: _____ BMI: _____

Waist measurement: _____ Healthy waist measurement = less than 94 cm for men or 80 cm for women

This advice will help you maintain your health, manage your weight, increase your energy and help with some medical conditions.

Aim to reduce your body weight by 5–10% of your current weight (e.g. if you weigh 100 kg now, aim for 90–95 kg)

- ☐ Eat smaller servings. Try using a smaller plate
- ☐ Eat less high-fat foods (e.g. pies, pastries, processed meats, potato chips, high-fat snack foods)
- ☐ Avoid eating foods that contain a lot of energy (kilojoules/calories) even when you eat only a small amount (e.g. cakes, biscuits, high-fat snack foods). Instead, eat foods that are low in energy and contain a lot of nutrients (e.g. fruit, vegetables)
- ☐ Try to have regular meals. Listen to your appetite, and eat only when you are hungry Don't eat when you are bored – only when hungry
- ☐ Limit the time you spend snacking while watching television
- ☐ Try to include at least _____ minutes of walking into your daily routine
- ☐ A physical activity prescription has been written for you

I would like to review your progress every_____weeks.

Follow-up is an important part of weight management, to continuously help you to make these changes to your lifestyle.

To assist you to achieve and maintain a healthy weight, I refer you to:

- ☐ _____ for a full assessment
- ☐ _____ for more advice and support

I would like you to return for review every _____ weeks.

Doctor's signature: _____

WEIGHT MANAGEMENT

WEIGHT MANAGEMENT

General guidelines

Losing weight will help to improve your vitality and quality of life

- Being overweight or obese can substantially increase your risk of developing health problems such as high blood pressure and high blood cholesterol, which can lead to heart disease, stroke, type 2 diabetes and joint problems.
- Many factors can contribute to weight gain. The aim is to find ways to shift the balance of energy input (food) versus energy expenditure (physical activity). You will lose weight when you are using up more energy than you are consuming.
- The keys to healthy weight are choosing healthy eating options consistently and increasing physical activity.

Useful tips for a healthy weight

- Make one of the suggested changes to your food and drinks each week.
- Be prepared to deal with setbacks that interrupt your goals. The key is to treat setbacks as temporary, and to get going again as soon as possible.
- The changes you make must be choices that you can enjoy and maintain for life.
- Weight loss of 0.5–1.0 kg per week is achievable, but even if you are only losing 1 kg per month you will still achieve significant weight loss (6–12 kg) over a year.

Tips to reduce energy intake (kilojoules)

- Eat plenty of vegetables, including salads, cooked vegetables, legumes (e.g. baked beans, kidney beans, lentils).
- Aim for at least 5 serves of vegetables each day. Try adding some at every meal and snack.
- Aim to eat at least 2 pieces of fruit each day.
- Choose low-fat dairy products (e.g. low-fat milk, low-fat yoghurt).
- Choose lean meats and trim the fat off meat. Limit processed meats (e.g. sausages, delicatessen meats like salami).
- Try to limit high-fat take-away foods (e.g. pies, pastries, pizza, hamburgers, fried rice, creamy pasta dishes, shop-bought hot chips) to once a week.
- Avoid sweetened drinks. Drink diet varieties or low-fat milk instead.
- Have regular meals and plan ahead.
- Limit your alcohol intake.

Making changes to your lifestyle takes both time and effort. If this advice does not work for you or you need more help, talk to your doctor. You may need referral to an accredited practising dietitian, psychologist or education and support program.

WEIGHT MANAGEMENT

Delivery of nutrition advice in the general practice setting

'Lifescripts' exist for nutrition, weight management, alcohol, smoking and physical activity

26. How would you rate the Weight Management Lifescript assessment and prescription from "excellent to poor"?

	Excellent	Good	Average	Poor
Content (quality of information)	○	○	○	○
Content (depth of information)	○	○	○	○
Layout	○	○	○	○
Usefulness for patients	○	○	○	○
Usefulness for GPs	○	○	○	○
Usefulness for Practice nurses	○	○	○	○

27. 'Lifescripts' are designed to provide a quick assessment and recommendations on a variety of lifestyle areas. Do you think it would be beneficial for you to use the physical activity, smoking or alcohol scripts with your patients?

○ Yes
○ No

Please clarify

28. Considering all 'Lifescripts' are similarly designed, do you think 'Lifescripts' would be effective in the general practice setting?

○ Yes
○ No
○ Unsure

Why do you think this is?

Delivery of nutrition advice in the general practice setting

29. What might be some of the benefits of GPs or Practice Nurses using 'Lifescripts' with their patients?

- [ ] Improved health outcomes
- [ ] Simple to use
- [ ] Standardised advice
- [ ] Prompts health professional
- [ ] Quick and easy
- [ ] Increases delivery of lifestyle advice
- [ ] Patient has information to take home
- [ ] Other (please specify)

30. What might be some of the disadvantages of GPs or Practice Nurses using 'Lifescripts' with their patients?

- [ ] Replaces referrals to dietitians
- [ ] Increase to workload
- [ ] Time to implement
- [ ] Advice provided is too brief
- [ ] Other (please specify)

31. If you have any other comments you would like to add please discuss below

FINISH

Thankyou for your time. Your insight is greatly appreaciated.

32. If you would like to go in the draw to win a $100 book voucher for 'Great Ideas in Nutrition' please include your name and contact details below.

Name

Email or Phone number

GP and PN questionnaire results presented in Likert scale

Table 4-1 Intervention GPs' views on factors that influence their provision of dietary advice at baseline and follow-up

	Baseline (n=4)							Follow-up (n=4)						
How important is … in influencing your decision to counsel	**VHI**	**HI**	**N**	**LI**	**VLI**	**Mean**	**Median**	**VHI**	**HI**	**N**	**LI**	**VLI**	**Mean**	**Median**
adequate reimbursement	1	1	1	1		3.5	3.5	1		3			3.5	3
time	1	3				4.3	4	1	2	1			4	4
having education material available	1	3				4.3	4	2	2				4.5	4.5

Note: very high importance=5; high importance=4; neutral=3; low importance=2; very low importance=1GP provision of nutrition advice – dietetics professionals' views

Table 4-6 PN Study Participants' views on factors that influence their provision of dietary advice at baseline and follow-up

	PN participants													
	Baseline (n=12)							Follow-up (n=10)						
How important is.... in influencing your decision to counsel?	**VHI**	**HI**	**N**	**LI**	**VLI**	**Mean**	**Median**	**VHI**	**HI**	**N**	**LI**	**VLI**	**Mean**	**Median**
adequate reimbursement		2	8	1	1	2.9	3.0	1	3	3	2	1	3.1	3.0
time	2	8	2			4.0	4.0	7	3				4.7	5.0
having education material available	4	8				4.3	4.0	5	3	1	1		4.2	4.5

Note: very high importance=5; high importance=4; neutral=3; low importance=2; very low importance=1

Table 5-4 Intervention GPs' views on referral to dietetics professionals at baseline and follow-up

	Intervention													
	Baseline (n=4)							Follow-up (n=4)						
	SA	A	N	D	SD	Mean	Median	SA	A	N	D	SD	Mean	Median
I regularly refer patients to a dietetics professional	1	1		2		3.3	3.0		2	1	1		3.3	3.5
Having a dietetics professional within the practice would make it easier to refer	2	1	1			4.3	4.5	1	3				4.3	4.0
Lifescripts© have increased my awareness of the types of patients I should refer to a dietetics professional						-	-		1	2	1		3.0	3.0
Using Lifescripts© has meant that I have referred to a dietetics professional more often						-	-		1		3		2.5	2.0

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

Table 5-4 Control GPs' views on referral to dietetics professionals at baseline and follow-up

	Control															
	Baseline (n=6)								Follow-up (n=3)							
	SA	A	N	D	SD	Missing	Mean	Median	SA	A	N	D	SD	Missing	Mean	Median
I regularly refer patients to a dietetics professional	1	4				1	[(a)]4.2	4.0		2		1			3.3	4.0
Having a dietetics professional within the practice would make it easier to refer	4	1			1		4.2	5.0	1	1				1	[(a)]4.5	4.5

[(a)] Data missing for n=1 participant

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

Table 5-7 GP Study Participants' views on the impact of the Enhanced Primary Care (EPC) Program at baseline (n=10)

I believe EPC Team Care Arrangements.....	SA	A	N	D	SD	Mean	Median
make it easier to refer to a dietetics professional	4	4	2			4.2	4.0
have streamlined the process of referral	2	4	1	2	1	3.4	4.0
overcome many barriers to referral	2	2	4	1	1	3.3	3.0

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

Table 5-13 PN Study Participants' responses to questionnaires relating to Lifescripts© at follow-up

	PN Participants (n=10)						
	SA	A	N	D	SD	Mean	Median
Lifescripts have increased my awareness of the types of patients I should refer to a dietitian		1	6	3		2.8	3
Using Lifescripts has meant that I have referred to a dietitian more often		2	3	4	1	2.6	2.5

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

Table 5-28 Views of dietetics professionals and referral by Patient Study Participants receiving nutrition or weight management scripts

	GP patients (n=3)[a]						PN patients (n=7)					
	SA	**A**	**N**	**D**	**SD**	**mean**	**SA**	**A**	**N**	**D**	**SD**	**mean**
I would find a dietitian helpful	0	1	2	0	0	3.3	1	1	1	4	0	2.9
Seeing a dietitian is a waste of time	0	0	2	1	0	2.0	0	0	2	4	1	2.1
Seeing a dietitian would be beneficial for weight loss	0	2	1	0	0	3.7	1	4	1	1	0	3.7
Seeing a dietitian is expensive	0	2	1	0	0	3.7	0	4	2	1	0	3.4
I know that people with a chronic disease can see a dietitian and physio under the Medicare system [b]	0	0	2	0	0	[b]3.0	0	2	5	0	0	3.3
I would have liked the GP to refer me to a dietitian	0	0	2	1	0	2.7	0	1	1	5	0	2.1
I would have seen a dietitian if I was referred by the GP	0	2	0	1	0	3.3	0	4	1	2	0	3.3
I would be more likely to visit a dietitian if referred by my GP	0	2	1	0	0	3.7	0	3	3	1	0	3.3

[a] n=1 GP patient missing data for entire Section
[b] n=1 GP patient missing data for this question
Note: Strongly agree = 5; agree = 4; neutral=3; disagree=2; strongly disagree=1

Table 6-1 Intervention GPs' views on dietary advice at baseline and follow-up

	Intervention GPs												
	Baseline (n=4)							Follow-up (n=4)					
	SA	A	N	D	SD	mean	Median	SA	A	N	D	SD	Mean	Median
I believe that dietary assessment and counselling is a role of GPs /PNs	2	2				4.5	4.5	2	2				4.5	4.5
I have the knowledge to provide nutrition counselling			3	1		2.8	3.0		2		2		3.0	3.0
I have the skills to provide nutrition counselling		1	1	2		2.8	2.5		2		2		3.0	3.0
I have the confidence to provide nutrition counselling			2	2		2.5	2.5		2		2		3.0	3.0
I have the experience to provide nutrition counselling			2	2		2.5	2.5		2		2		3.0	3.0
I believe that nutrition counselling will lead to changes in patient dietary behaviour		4				4.0	4.0		4				4.0	4.0
I believe that diet changes influence patient health outcomes	3	1				4.8	5.0	2	2				4.5	4.5
I find I have enough time to provide nutrition advice		1	1	2		2.8	2.5			1	3		2.3	2.0
I have appropriate resources available to me to allow me to provide nutrition advice				4		2.0	2.0		3		1		3.5	4.0
I use available resources to provide nutrition advice		3	1			3.8	4.0		3		1		3.5	4.0
I use reminders in medical notes to prompt me to provide appropriate nutrition advice		2	1	1		3.3	3.5		2		2		3.0	3.0
I require more nutrition information to effectively provide nutrition advice	2	2				4.5	4.5		3		1		3.5	4.0

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

[(a)] 1 control GP had follow-up results but no baseline

Table 6-7 PN Study Participants' views on dietary advice at baseline and follow-up

	Baseline (n=12)							Follow-up (n=10)							
	SA	**A**	**N**	**D**	**SD**	**Mean**	**Median**	**SA**	**A**	**N**	**D**	**SD**	**M**	**Mean**	**Median**
I believe that dietary assessment and counselling is a role of PNs	2	8	1	1		3.9	4	1	1	2			6	3.8	3.5
I have the knowledge to provide nutrition counselling		5	5	2		3.3	3.5		6	4	0			3.6	4.0
I have the skills to provide nutrition counselling		6	4	2		3.3	3.5		3	7	0			3.3	3.0
I have the confidence to provide nutrition counselling		8	3	1		3.5	4	1	3	4	1		1	3.4	3.5
I have the experience to provide nutrition counselling		5	2	4	1	2.9	3.5	1	3	4	2			3.3	3.5
I believe that nutrition counselling will lead to changes in patient dietary behaviour	4	5	2	1		4.0	4	4	5	1				4.3	4.0
I believe that diet changes influence patient health outcomes	10	2				4.8	5	6	4					4.4	4.5
I find I have enough time to provide nutrition advice		3	3	6		2.8	2.5		2	4	3	1	-	2.7	2.5
I have appropriate resources available to me to allow me to provide nutrition advice		2	6	4		2.8	3.0		4	3	2		1	3.2	3.0
I use available resources to provide nutrition advice		10	1	1		3.8	4.0		10					4.0	4.0
I use reminders in medical notes to prompt me to provide appropriate nutrition advice		3	3	5	1	2.7	2.5		4	1	5			2.9	2.5
I require more nutrition information to effectively provide nutrition advice	6	6				4.5	4.5	3	3	3			.	4.0	4.0

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

Table 6-12 Intervention GPs' opinions of Lifescripts© at follow-up (n=4)

	GP participants (n=4)						
	SA	**A**	**N**	**D**	**SD**	**Mean**	**Median**
I have a good understanding of Lifescripts		2	1	1		3.3	3.5
I believe Lifescripts are effective		2	1	1		3.3	3.5
Lifescripts have been beneficial to my practice		2	2			3.5	3.5
I don't think my patients have benefited from Lifescripts			2	1	1	2.3	2.5
I find Lifescripts easy to use		3		1		3.5	4
Lifescripts have improved my nutrition knowledge		3		1		3.5	4
The use of Lifescripts makes providing nutrition advice easier		3		1		3.5	4
Lifescripts have increased my confidence in providing nutrition advice		2	1	1		3.3	3.5
I require more nutrition information to effectively provide nutrition advice	1	1		2		3.3	3
I am not confident to effectively use Lifescripts to provide nutrition advice		1	1	2		2.8	2.5
I would find it beneficial to have a dietitian promoting Lifescripts		2	2			3.5	3.5
I am planning on using Lifescripts in my practice in the future		3		1		3.5	4

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

Table 6-15 PN Study Participants' responses to questionnaires relating to Lifescripts© at follow-up

	PN Participants (n=10)							
	SA	**A**	**N**	**D**	**SD**	**M**	**Mean**	**Median**
I have a good understanding of Lifescripts	3	5	1	1			4.0	4
I believe Lifescripts are effective		5	5				3.5	3.5
Lifescripts have been beneficial to my practice		5	3	1		1	3.4	3.5
I don't think my patients have benefited from Lifescripts			5	5			2.5	2.5
I find Lifescripts easy to use	1	6	3				3.8	4
Lifescripts have improved my nutrition knowledge		4	5	1			3.3	3
The use of Lifescripts makes providing nutrition advice easier	1	7	2				3.9	4
Lifescripts have increased my confidence in providing nutrition advice		7	3				3.7	4
I require more nutrition information to effectively provide nutrition advice	3	3	3	1			3.8	4
I am not confident to effectively use Lifescripts to provide nutrition advice		3	2	4	1		2.7	2.5
I would find it beneficial to have a dietitian promoting Lifescripts		5	3	2			3.3	3.5
I am planning on using Lifescripts in my practice in the future		7	2		1		3.5	4

Note: strongly agree=5; agree=4; neutral=3; disagree=2; strongly disagree=1

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