

Matching health needs of refugee children with services: how big is the gap?

Abstract

Objectives: To document the health needs of refugee children accessing comprehensive refugee health services in New South Wales (NSW), to match needs with available services and establish gaps in services.

Methods: We collated clinical data on all children aged under 14 years attending the three refugee specific clinics seeing children in NSW in 2005. We compared these data to the number of refugee children settling in NSW in 2005.

Results: NSW received 1,557 refugee children (<14 years) in 2005. Around one in five (n=331) was seen in a refugee specific clinic. Most were asymptomatic. Of those tested, 25% had anaemia, 27% were serology positive for schistosomiasis, 16% had evidence of current or recent malaria, 25% were tuberculin skin test positive, 69% were hepatitis B non-immune and 20% had low vitamin D levels. Most children needed catch up immunisation. Other problems included chronic health, developmental and behavioural problems. Screening tests varied across sites. Follow up was problematic for most.

Conclusions: A small proportion of refugee children arriving in NSW have access to comprehensive screening and assessment, in spite of significant health needs. There is variation in screening practices, and follow up is poor. There is a high pick up rate for diseases of personal and public health significance.

Implications: There is a strong moral and public health imperative to provide appropriately resourced, culturally competent and comprehensive health care to optimise refugee children's wellbeing.

Key words: Refugee health, screening, comprehensive health assessments, health needs of refugee children.

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Shanti Raman

Faculty of Medicine, University of New South Wales, Western Clinical School, Liverpool Hospital, New South Wales

Nicholas Wood

The Children's Hospital at Westmead, New South Wales

Murray Webber

School of Medicine and Public Health, The University of Newcastle, New South Wales

Kellie-Ann Taylor

The University of Newcastle Medical School, New South Wales

David Isaacs

Department of Infectious Diseases, The Children's Hospital at Westmead, New South Wales

Children and young people make up a significant proportion of the refugee population and are arguably the most vulnerable. In 2005, children and young people (<20 years of age), made up just over half of the refugee intake in Australia.¹ Several national and international studies have documented the physical, social and psychological health problems in refugee children and young people; these include high rates of preventable conditions.²⁻⁵ These problems are the result of and are compounded by poverty, civil strife, poor infrastructure and poor access to services. The health needs of refugee children are often complex and unfamiliar to Australian clinicians.

Australia is one of around 15 countries with a dedicated migration program for refugees. Legally refugees are defined as 'people who are outside their country of nationality or their usual country of residence and who are unable or unwilling to return or

to seek the protection of that country due to a well-founded fear of being persecuted for reasons of race, religion, nationality, political opinion, membership of a particular social group, and among other things, are not war criminals or people who have committed serious non-political crimes.⁶ Refugees enter Australia as permanent residents and are therefore entitled to full Medicare benefits. On the other hand, an asylum seeker is 'a person who has left their country of origin, has applied for recognition as a refugee in another country, and is awaiting a decision on their application'.⁷ In 2004, the annual quota for refugees settling permanently in Australia increased to 13,000.⁸ New South Wales (NSW) accepts about one-third of this intake, and most settle in metropolitan Sydney. The regional focus of the humanitarian resettlement program has changed over the past few decades, such that the focus has shifted from South East Asia and Europe in the 1980s and 1990s, to the

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Correspondence to:

Shanti Raman, Senior Lecturer, Faculty of Medicine, University of New South Wales, Western Clinical School, Liverpool Hospital. Level 3, Health Services Building, Liverpool Hospital, Liverpool, NSW 2170. Fax: (02) 9828 4800; e-mail: s.raman@unsw.edu.au

Middle East and Africa.⁹ In 2005, 70% of new refugees came from African countries.¹ It is worth noting that many refugee children, particularly those from Africa have lived the majority of their lives in refugee camps in their country of first asylum.

Despite complex health needs in refugee children and young people, service delivery in Australia is fragmented and there are many barriers to providing the most effective health care.^{10,11} In response to the increasing number of refugees with significant health needs settling in NSW, various refugee specific services have been developed over the past few years. The NSW Refugee Health Service (RHS) runs assessment clinics in greater Western Sydney, where more than 80% of refugees settle. These are run by a general practitioner and nurse, and use a primary health care approach. In Newcastle, the Hunter New England Area Health Service began an outpatient service in May 2004 to comprehensively screen and treat refugee families in the Hunter region. A specialised refugee children's clinic based at The Children's Hospital at Westmead, called Health Assessment for Refugee Kids (HARK), commenced in May 2005. The latter two clinics use a range of multi-disciplinary personnel, including Infectious Diseases physicians, nurses, social workers, multicultural health workers; due to their positioning in tertiary hospitals there is easy access to pathology, radiology, pharmacy and referral to specialist services. All three services have different models of care, different staffing and varied availability of resources. A key similarity was the notion of short-term assessment and care, with the view to integrating into mainstream primary health care services locally.

Table 1: Children under 14 years attending Refugee Clinics in 2005 (NSW).

	NSW RHS Clinic	Newcastle Clinic	HARK Clinic
Number	122	103	106
Mean Age	7.5 years ^a	7 years	8 years
Gender	M=F ^a	58% male	46% male
Region of Origin	Africa or Middle East	99% Africa	86% Africa

Note: a) On available clinic information

Table 2: Percentage of refugee children <14 years seen in Refugee Clinics in NSW who received routine tests in 2005.

Tests	NSW RHS Clinic (N=122)	Newcastle Refugee Clinic (N=103)	HARK Clinic ^a (N=106)
Full blood count (FBC)	46%	90%	96%
Ferritin serum level	0%	0%	87%
Schistosomiasis serology	44%	87%	91%
Hepatitis B serology	49%	86%	95%
Malaria blood film	27%	71%	91%
Measles/Rubella serology	26%	0%	0%
Vitamin D serum level	34%	0%	93%
Parathyroid Hormone level	0%	0%	93%
Mantoux test	0%	0%	92%
HIV serology	0%	59%	91%
Syphilis serology	4%	13%	81%

Note: a) Data from HARK are only over an eight month period as the clinic was established in May 2005

Our aims were to identify the number of refugee children accessing specific refugee health services through the three main clinics (RHS, Newcastle and HARK) in NSW in 2005. We wanted to determine their health needs when assessed and to compare the number of refugee children who had been comprehensively assessed with the total number of newly arrived refugee children in that year, thereby identifying gaps in services. Clinical information gathered was already collected for regular audit purposes, no new information was requested, and no personal identifying information was sought. We did not apply for ethics approval.

Methods

Epidemiologic and clinical data were collated for all children under 14 years attending the three refugee specific clinics in NSW in 2005. Information sought was on tests done, test results, clinic diagnoses, and treatment outcomes for all clinic attendees. We compared the number of children seen to the number of recently arrived refugee children in NSW in 2005 (information provided by the Department of Immigration and Citizenship).

Results

In 2005, NSW received 1,557 refugee children (<14 years). Through 2005, a total of 331 children under 14 years attended refugee specific clinics. The mean age of the children seen was 7.5 years, and 51% were male (see Table 1). The region of origin was mainly Africa for the Newcastle and HARK clinics, and Africa or the Middle East for the RHS clinic. Countries of origin included Sudan, Liberia, Burundi, Sierra Leone, Afghanistan, Iran, Iraq, Congo, Ivory Coast, Ethiopia, Peru and Nepal. Most children seen in the clinics were asymptomatic, the majority (90%) of those with known dates of arrival, had arrived within the past 12 months.

Table 2 shows the percentage of children seen in the three clinics who received routine screening tests. Tests varied across sites. Table 3 shows the percentage of children screened who had positive

Table 3: Percentage of refugee children screened in 2005 with significant results.

Tests	NSW RHS Clinic %	Newcastle Refugee Clinic %	HARK Clinic* %	Combined %
FBC (anaemic)	21	28	25	25
Schistosomiasis	22	36	24	27
Hep B non immune	55	70	81	69
Malaria	15	23	9	16
Measles/Rubella non immune	19	none tested	none tested	19 ^a
Low Vitamin D level	10	none tested	30	20
Mantoux >10mm	none tested	none tested	25	25 ^a
Mantoux +ve and CXR positive for TB	none tested	none tested	5	5 ^a
Low serum ferritin	none tested	none tested	15	15 ^a

Notes: Data from HARK are only over an eight-month period as the clinic was established in May 2005

a) Of those tested.

test results. None of the children tested was positive for human immunodeficiency virus (HIV) or syphilis. Tuberculin skin testing by Mantoux test was performed only at the HARK clinic; 25% of children tested had a Mantoux test >10 mm in diameter. Chest X-rays were performed on all children with positive Mantoux results and five children were diagnosed with tuberculosis, all five were under 11 years of age and all were referred to the local chest clinic for directly observed therapy with anti-tuberculous medications. Other clinical problems documented included haematological (e.g. sickle cell anaemia), skin lesions (including fungal and bacterial infections, cutaneous leishmaniasis), surgical conditions (rectal prolapse, umbilical hernias), nocturnal enuresis, dental problems (caries, abscesses), hearing deficit, developmental delay, growth problems, emotional/behavioural problems, school problems and other settlement issues. Management included therapy for malaria, schistosomiasis, tuberculosis, fungal infections, gastroenterological parasites, iron deficiency and vitamin D deficiency, providing catch up immunisation and referral. Follow-up information was not available for most children.

Discussion

Several studies have documented the significant health needs of refugee children.¹⁻⁴ Our study, in keeping with national and international studies, confirms that newly arriving refugee children have significant health needs. These include diseases of public health significance such as tuberculosis, malaria and deficient immunisations. Our study is the first to attempt to quantify the number of refugee children comprehensively assessed in a population. Given that NSW received more than 1,500 refugee children in 2005, about a fifth of this population were comprehensively assessed in the public setting.

The three sites providing refugee specific services in NSW varied in their referral and screening procedures; models of assessment and care also varied. Some of this variation is likely due to the population attending these services; those attending HARK and Newcastle clinics were predominantly of African background, while the population attending RHS clinics were mixed Middle Eastern and African background. Other reasons include lack of easy access to services such as tuberculin skin testing and, at the time, lack of consensus guidelines for assessment of refugees. Barriers to accessing appropriate care for refugee populations have been described and include parents putting a low priority for health in favour of settling children in education, language and cultural difficulties, transport problems, the diversity of options and lack of co-ordination between services.^{10,12,13} From our study, a further barrier to appropriate assessment could be distance from or poor access to a refugee specific service.

Of the one in five refugee children seen in a refugee specific clinic in NSW in our study, most were asymptomatic. In spite of this, we identified a high rate of diseases of personal and public health significance. A high proportion of the children seen in these clinics were not comprehensively screened – where they were screened, there was a high proportion identified as problematic

and in need of follow-up. For example, 70% of children in the Newcastle cohort had at least one significant abnormality on pathology screening requiring treatment. This group was not screened for vitamin D deficiency or latent tuberculosis infection which would have increased this percentage. The five children diagnosed with pulmonary tuberculosis, were all from the HARK clinic, which was the only site doing routine Mantoux testing. These children were also all under 11 years of age; raising the question of what routine screening and comprehensive assessment is adequate for all refugee children. Less than half of the children seen in the NSW RHS clinics had blood tests; this may have been done by general practitioners (GPs) prior to the clinic visit, or suggested as a follow-up for GPs. We do not have information on this. We would argue that none of the models of care for refugee children operating in NSW in 2005 were comprehensive, given that follow-up for most was poor and testing ad hoc.

Many of the health problems identified were easily treated. There are a few published studies of infectious disease prevalence in refugee clinic populations in Australia.^{1,3,4} A collation of all the refugee clinic data in Australia reveals rates of tuberculin skin test positivity between 3% and 63%, positive *Schistosoma* serology between 5% and 38%, other faecal parasites between 17% and 41% and hepatitis B surface antigen positivity between 3% and 16%.¹⁴ Our study adds further weight to calls for targeted, comprehensive health assessments for refugee children and young people. The recently released Royal Australasian College of Physicians (RACP) policy statement on the health of refugee children and young people strongly advocates for publicly funded comprehensive health assessment for all refugee children arriving in Australia.¹⁵ We know that pre-departure, children under 11 years receive limited health screening for visa applications.^{4,16} Investing in children's health has been shown to produce sound economic benefits,¹⁷ and there is good evidence that immunisation represents a cost saving to the health service in Australia.¹⁸

The HARK Clinic became fully operational only in May 2005, so around 30 more children might have been assessed in the whole year through that clinic. Two other small refugee specific services have since been set up, using different models of care, one in Coffs Harbour and one in Wollongong (M. Smith, personal communication). Even with these enhancements, the services are well short of being able to provide coverage for the current refugee intake which, in contrast to smaller States and Territories, disperses across a large geographic area. It is likely that some of the refugee children were seen by GPs, while some refugee youth would have had limited health checks and immunisation provided through their high schools. A study of refugee young people attending special English classes in western Sydney found that 40% had their own GP, but most still required catch up immunisation, suggesting that General Practice may not be the ideal location for preventive health care for this population with significant health and social needs.¹⁹

There is ongoing discussion and debate about the ideal model of health and support services for refugee populations who have resettled in developed countries.²⁰ A federally funded approach to

encourage GP assessments of refugees included the introduction of refugee health assessment Medicare items (714 & 716) on 1 May 2006. This has had a limited impact with only 694 consultations over the first two years being provided for children aged 0-14 years in NSW.²¹ Consultation and screening of refugee families is time consuming and complex, nearly always requires interpreters, cultural awareness and sensitivity, and lengthy explanation to parents about the results of screening tests and about treatment prescribed. This is logistically difficult to achieve in busy general practices. The purpose of our study was not to critically examine models of health service delivery; rather we examined the outcomes of existing clinics in real time.

Decisions about the best model of care will depend on a range of factors, including population numbers, geographic dispersal, existing infrastructure, political aspects and funding. For NSW there is no one model that would suit all settings; a mix of service models is likely to be needed to suit the mix of population and the area of settlement. Based on our experience and research, we would recommend multiple dedicated refugee clinics appropriately funded and staffed by NSW Health, with enough flexibility in the model to respond to the population mix. This is not dissimilar to the model of service provision for Aboriginal populations both in the rural and urban setting. While acknowledging the pressing needs of refugee children and young people; we are also mindful of the health and settlement needs of adult refugees. A family-focused model is likely to be most convenient for refugee families, however it is often difficult to provide in hospital settings. The RACP policy document on the health of refugee children has a detailed discussion of various models of care that could provide comprehensive screening and assessment for refugee children.^{15,20} As with the three clinics we described in our study, all current dedicated refugee services in Australia and New Zealand offer short- to medium-term care with the aim of integrating refugees into mainstream primary health care.

In NSW, with a significant proportion of the national humanitarian intake, funding for and organisation of clinical health services for refugees has had a somewhat ad hoc, ground-up approach with the burden shouldered by one small refugee health service and several individual Area Health Services. Since 2005, we acknowledge that there have been enhancements, both to existing clinics as well as new initiatives. There have been several recent initiatives to address some of the public health infectious diseases issues in refugees. For example, there has been a significant extension of immediate pre-departure screening and treatment of African refugees implemented by the Department of Immigration and Citizenship (formerly known Department of Immigration and Multicultural Affairs).¹⁶ Where available, this includes MMR vaccination for refugees less than 30 years of age and empirical deworming treatment. Falciparum malaria antigen testing and treatment was also introduced leading to a marked reduction in post-arrival malaria cases, although a small number of reported cases of malaria are still occurring.²² Additionally, in the past 12 months there have been a number of guidelines published in the area of refugee health care, including the Australasian Society

for Infectious Diseases (ASID) guidelines, and the Victorian primary health care guidelines.^{15,23} While these will not address the limitations of varying service delivery models, they may lead to more consistency in testing and therefore provide better data to inform planning.

Implications

Australia's newly arriving refugee children and young people have significant health needs. Most of the identified health issues can be prevented or treated effectively. There is a major gap in service provision, with current capacity of health care inadequate to service needs. Our study findings show that almost 80% of newly arriving refugee children do not get comprehensive health screening; suggesting that there is an overwhelming need to increase the coverage of on-arrival health screening and treatment of refugee children in NSW. On public health and early intervention principles we argue as others have done before, that it would be best practice to provide comprehensive screening and assessment for all newly arriving refugee children and young people settling in NSW and reiterate the RACP policy recommendation that such services be publicly funded.^{15,24} There is a strong moral and public health imperative to provide appropriately resourced, culturally competent and comprehensive health care to optimise these children's wellbeing. This is not just to minimise the spread of disease but to ensure an equitable approach for a target group that is especially vulnerable.

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References

1. Department of Immigration and Citizenship [living in Australia page on the Internet]. Canberra (AUST): Commonwealth of Australia; 2009 [cited 2009 Feb 5]. *Settlement Reporting Facility*. Available from: <http://www.immi.gov.au/living-in-australia/delivering-assistance/settlement-reporting-facility/>
2. Rice JE, Skull SA, Pearce C, Mulholland N, Davie G, Carapetis JR. Screening for intestinal parasites in recently arrived children from East Africa. *J Paediatr Child Health*. 2003;39:456-9.
3. Geltman PL, Radin M, Zhang Z, Cochran J, Meyers AF. Growth status and related medical conditions among refugee children in Massachusetts, 1995–98. *Am J Public Health*. 2001;91:1800–5.
4. Tiong ACD, Patel MS, Gardiner J, Ryan R, Linton KS, Walker KA, et al. Health issues in newly arrived African refugees attending general practice clinics in Melbourne. *Med J Aust*. 2006;185:602-6.
5. Davidson N, Skull S, Chaney G, Frydenberg A, Isaacs D, Kelly P, et al. Comprehensive health assessment for newly arrived refugee children in Australia. *J Paediatr Child Health*. 2004;40:562-8.
6. United Nations Refugee Agency Regional Office. *Convention and Protocol Relating to the Status of Refugees* [report on the Internet]. Canberra (AUST): UNHCR; 1996 [cited 2009 Feb 6]. Available from: <http://www.unhcr.org.au/pdfs/convention.pdf>
7. United Nations Refugee Agency Regional Office [definitions and obligations page on the Internet]. Canberra (AUST): UNHCR; 2009 [cited 2009 Feb 6]. *Basic Definitions*. Available from: <http://www.unhcr.org.au/basicdef.shtml>
8. Department of Immigration and Multicultural and Indigenous. *Refugee and Humanitarian Issues: Australia's Response* [report on the Internet]. Canberra (AUST): Commonwealth of Australia; 2005 June [cited 2007 Oct 23]. Available from: http://www.immi.gov.au/refugee/_pdf/refhumiss-fullv2.pdf
9. Department of Immigration and Citizenship [media page on the Internet]. Canberra (AUST): Commonwealth of Australia; 2009 [cited 2008 Apr 15]. *Fact Sheet 60 - Australia's Refugee and Humanitarian Program*. Available from: <http://www.immi.gov.au/media/fact-sheets/60refugee.htm#i>
10. Davidson N, Skull S, Burgner D, Kelly P, Raman S, Silove D, et al. An issue of access: delivering equitable health care for newly arrived refugee children in Australia. *J Paediatr Child Health*. 2004;40:569–75.
11. Smith MM. Refugees in Australia: changing faces, changing needs (editorial). *Med J Aust*. 2006;185:587-8.
12. Sheikh-Mohammed M, MacIntyre CR, Wood NJ, Leask J, Isaacs D. Barriers to access health care for newly resettled sub-Saharan refugees in Australia. *Med J Aust*. 2006;185:594-7.
13. Finney Lamb C, Smith M. Problems refugees face when accessing health services. *N S W Public Health Bull*. 2002;13:161-3.
14. Paxton G. Immunisation and ID Issues in Refugee Health Workshop. *Proceedings of the Royal Australasian College of Physicians 2008 Congress*; 2008 May 11-15; Adelaide, Australia.
15. Zwi K, Raman S, Burgner D, Faniran S, Voss L, Blick B, et al. Towards better health for refugee children and young people in Australia and New Zealand: The Royal Australasian College of Physicians perspective. *J Paediatr Child Health*. 2007;43:522-6.
16. Humanitarian Business Process Section. *Health Screening Protocols for Refugee and Special Humanitarian Program Entrants to Australia from East and West Africa*. Canberra (AUST): Commonwealth Department of Immigration and Multicultural Affairs; 2006. Version 1.4. p. 1-10.
17. Belli PC, Bustreo F, Preker A. Investing in children's health: what are the economic benefits? *Bull World Health Organ*. 2005;83:777-84.
18. Applied Economics. *Returns in Investment in Public Health: An Epidemiological and Economic Analysis*. Canberra (AUST): Population Health Division, Commonwealth Department of Health and Aged Care; 2003.
19. Thomas P, Milne B, Raman S, Shah S. Refugee youth--immunisation status and GP attendance. *Aust Fam Physician*. 2007;36:568 -70.
20. Finney-Lamb C, Cunningham M. Dichotomy or decision-making: Specialization and mainstreaming in health service design for refugees. In: Allotey P, (editor). *The Health of Refugees - Public Health Perspectives from Crisis to Settlement*. Melbourne (AUST): Oxford University Press; 2003. p. 123-38.
21. Medicare Australia Statistics [for health professionals page on the Internet]. Canberra (AUST): Medicare Australia; 2009 [cited 2008 June 6] *Medicare Item Reports*. Available from: https://www.medicareaustralia.gov.au/statistics/mbs_item.shtml
22. Cherian S, Fagan JM, Thambiran A, Geddes J, Burgner D. Severe Plasmodium falciparum malaria in refugee children despite reported pre-departure antimalarial treatment. *Med J Aust*. 2006;185:611.
23. Australasian Society for Infectious Diseases. *Diagnosis, Management and Prevention of Infections in Recently Arrived Refugees*. Sydney (AUST): Dreamweaver Publishing; 2009.
24. Martin JA, Mak DB. Changing faces: a review of infectious disease screening of refugees by the Migrant Health Unit, Western Australia in 2003 and 2004. *Med J Aust*. 2006;185:607–10.26.