Care Provision to Prevent Chronic Disease by Community Mental Health Clinicians

Kate M. Bartlem, BPsyc (Hons I), Jennifer A. Bowman, PhD, Megan Freund, PhD, Paula M. Wye, PhD, Kathleen M. McElwaine, BPsyc (Hons I), Luke Wolfenden, PhD, Elizabeth M. Campbell, PhD, Karen E. Gillham, MSocSc, John H. Wiggers, PhD

Background: People with a mental illness have higher prevalence of behavioral risks for chronic disease than the general population. Despite recommendations regarding the provision of preventive care by mental health services, limited research has examined the extent to which such care is provided.

Purpose: To examine mental health clinician provision of care for preventable chronic disease risks, and whether such care was associated with the availability of practice support strategies.

Methods: A cross-sectional survey was undertaken of 151 community mental health clinicians in New South Wales, Australia regarding the provision of three elements of preventive care (i.e., assessment, brief advice, and referral/follow-up) for four health risk behaviors (i.e., tobacco smoking, inadequate fruit and vegetable consumption, harmful alcohol consumption, and inadequate physical activity). Clinicians reported the availability of 16 strategies to support such care delivery. Data were collected in 2010 and analyzed in 2012–2013.

Results: Preventive care provision varied by both care element and risk behavior. Optimal care (each care element provided to at least 80% of clients for all health behaviors) was provided by few clinicians: assessment (8.6%), brief advice (24.5%), and referral/follow-up (9.9%). Less than half of clinicians reported more than four support strategies were available (44.4%). The availability of five or more strategies was associated with increased optimal preventive care.

Conclusions: The provision of preventive care focused on chronic disease prevention in community mental health services is suboptimal. Interventions to increase the routine provision of such care should involve increasing the availability of evidence-based strategies to support care provision.
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Introduction

A greater prevalence of health risk behaviors among people with a mental illness, including smoking, inadequate nutrition, harmful alcohol consumption, and inadequate physical activity,[1–7] contributes to an increased burden of disease relative to the general population.[8–10] Although addressing the physical health needs of mental health consumers is an increasingly recognized priority in policy,[11–15] the limited evidence suggests that the provision of preventive care by mental health clinicians is suboptimal. For example, estimates of the prevalence of assessment of health risk behaviors by medical and nursing staff have ranged from 5% to 19%.[16] With regard to the provision of brief advice, estimates have ranged from 4% to 42%,[17–19] suggesting suboptimal care provision for these care elements. Similarly, in a recent Australian survey of service managers of all community mental health services in the state of New South Wales (NSW), Australia,[20] only 14% reported providing "most" smokers with referral to a free, government-funded telephone cessation service. The majority of such studies have focused on either the provision of smoking-cessation care,[20–26] care provision

From Population Health (Bartlem, Freund, Wye, McElwaine, Wolfenden, Campbell, Gillham, Wiggers), Hunter New England Local Health District, Wallsend Health Services, Wallsend; School of Psychology (Bartlem, Bowman, Wye), Faculty of Science and Information Technology, School of Medicine and Public Health (Freund, Wye, McElwaine, Wolfenden, Campbell, Wiggers), Faculty of Health and Medicine, The University of Newcastle, Callaghan; and Hunter Medical Research Institute (Bartlem, Bowman, Freund, Wye, McElwaine, Wolfenden, Campbell, Gillham, Wiggers), New Lambton Heights, New South Wales, Australia

Address correspondence to: Kate M. Bartlem, BPsyc (Hons I), Wallsend Health Services, Locked Bag 10, Wallsend, New South Wales, Australia 2287. E-mail: kate.bartlem@hnehealth.nsw.gov.au.

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by a single type of provider,[18,19,27] or provision of single elements of preventive care (either assessment, advice, or referral/follow-up),[16–18,27] with no study reporting the prevalence of all such preventive care elements for multiple health risk behaviors.

Practice support strategies, such as clinician training, educational resources, care delivery audit and feedback, prompts and reminders, and leadership support, are effective in addressing organizational barriers to preventive care provision in general health settings.[28–32] Research examining the prevalence or association of such practice support strategies for preventive care delivery in mental health services is limited.[20] In one Australian study regarding the provision of smoking-cessation care,[20] the portion of community mental health service managers reporting the availability of strategies to support the provision of such care ranged from 4% for the availability of processes to monitor/audit smoking-cessation care, to 65% for the availability of forms to assess/record smoking status. The availability of the latter practice support strategy was positively associated with the provision of smoking-cessation care. No studies have explored the availability of practice support strategies and their association with the provision of preventive care addressing multiple health risk behaviors by community mental health services.

The current study reports: (1) clinician-reported provision of three elements of preventive care (i.e., assessment, brief advice, and referral/follow-up) for four behavioral health risk factors (i.e., smoking, inadequate fruit and vegetable consumption, harmful alcohol consumption, and inadequate physical activity); (2) clinician-reported availability of strategies to support the provision of such preventive care; and (3) possible associations between the availability of such strategies and preventive care provision.

Methods

Design and Setting

A cross-sectional survey was undertaken in all public community mental health services within one local health district in NSW Australia. The health district provides services to a population of approximately 850,000 people and covers a geographic area of 140,000 square kilometers, including metropolitan, regional, rural, and remote communities. The district has a policy requiring the provision of preventive care for behavioral health risks by all community mental health clinicians to all community mental health service clients.[33]

Ethical approval to conduct the study was obtained from the Hunter New England Human Research Ethics Committee (approval no. 09/06/17/4.03) and the University of Newcastle Human Research Ethics Committee (approval no. H-2010-1116). Data were collected in 2010 and analyzed in 2012–2013.

Participants and Recruitment

All community mental health services in the local health district providing care to adult clients were included in the study (n=19). The services provide general community mental health care, older person's community mental health care, and specialized mental health services, including psychiatric rehabilitation and early diagnosis, neuropsychiatry, comorbid substance use, eating disorder, and borderline personality disorder programs.

The community mental health services are staffed by multidisciplinary teams, including nurses, psychiatrists, and allied health practitioners. Clinical staff members of the services were eligible to participate if they were employed for at least 3 months and had seen at least ten adult clients in face-to-face appointments during the previous 2 months. All such staff were identified through an electronic records system and mailed a study information letter outlining the purpose of the study, and informing them an interviewer would contact them within the next 4 weeks. Contact details of study personnel were provided for further information or questions regarding the study.

Data Collection

Eligible clinicians were telephoned at their community mental health service during work hours and asked to participate in a 20-minute computer-assisted telephone interview, a method that has been previously used to assess preventive care delivery in other health settings.[34–37] Clinicians were told that the purpose of the study was to obtain an estimate of the current level of preventive care delivery and inform strategies to enhance such care. The interview items were developed based on a recommended model of preventive care provision[38,39] and items used in a previous survey of preventive care in community health services.[37] The surveys were pilot tested with community health clinicians and subsequently administered by trained interviewers.

Measures

Gender, professional discipline, Aboriginality, remoteness of service (based on postcode),[40] and service type (e.g., general community mental health, older person's community mental health, specialized community mental health) were obtained from an electronic records system. During the computer-assisted telephone interview, participants were asked their age, years in their current discipline, and employment status.

The provision of preventive care by clinicians has been recommended to follow the "5As model,"[41] with an abbreviated model of "2As and R" (i.e., assess, advise, and refer) being suggested to accommodate clinicians' competing priorities and time limitations.[38,39] The following items were administered sequentially, in a standard order (fruit and vegetable intake, physical activity levels, smoking status, and alcohol consumption), and grouped in terms of behavioral risk (e.g., physical activity questions were grouped together across the care elements). Clinicians were instructed that they would be asked to estimate the portion of new adult clients to whom they had provided preventive care in the previous 2 months.

Participants were asked to estimate the portion (*1%–100%*, *don't know*) of all new adult clients during the past 2 months for whom they assessed fruit and vegetable intake, physical activity

levels, smoking status, and alcohol consumption. For example, *Over the past 2 months, what portion of new adult clients did you ask about their fruit and vegetable intake?*

Participants were asked to estimate the portion (*1%—100%*, *don't know*) of clients assessed as being at risk during the past 2 months that they advised to: eat more fruit or vegetables, increase their physical activity levels, quit smoking or use nicotine replacement therapy or other medications to help them quit smoking, and reduce their alcohol consumption. For example, *Of your clients who were doing inadequate levels of physical activity, what portion did you advise to increase their physical activity levels?*

Participants were asked to estimate the portion (*1%—100%*, *don't know*) of clients assessed as being at risk during the past 2 months that they: spoke to about free telephone-based support services (Get Healthy Information and Coaching Service for inadequate nutrition and physical activity and Quitline for smoking; no equivalent service was available for reducing alcohol consumption), arranged a referral to either of the helplines, advised they speak to their general practitioner or Aboriginal Medical Service, or advised another form of follow-up support (e.g., dietitians, community exercise groups, drug/alcohol services). For example, *Of your clients who were doing inadequate levels of physical activity, what portion did you speak to about the Get Healthy support service?* Finally, participants were asked to report on the availability of 16 preventive care practice support strategies in their service (*yes*, *no*, *don't know*) (Table 1).[28–32]

Statistical Analysis

Statistical analysis was conducted with SPSS, version 17.0. Descriptive statistics were used to examine clinician and service characteristics, provision of preventive care, and clinician-reported availability of practice support strategies. Pearson chi-squared analyses were used to compare participants and eligible non-consenters regarding gender, Aboriginality, discipline, remoteness of service, and service type.

Referral variables were combined to create an "any referral/follow-up" variable for each risk behavior that included: having spoken about the telephone helpline, arranged a referral to the telephone helpline, advised to speak to a general practitioner/Aboriginal Medical Service, or advised to use any other support.

The portion of clinicians who reported providing assessment, brief advice, and each type of referral/follow-up for each of the risk behaviors were categorized according to the following portions: 0%, 1%—49%, 50%—79%, or 80%—100% of clients (Table 2). Clinicians who responded *don't know* were categorized as providing care to 0% of clients.

For each element of care (assessment, brief advice, and any referral/follow-up), variables were calculated to examine "optimal" care provision, defined as providing care to 80% or more of clients for all behaviors combined.[37,42] The overall number of practice support strategies available to clinicians was calculated. Clinicians who responded *don't know* were classified as not having that support available.

Pearson chi-squared analyses were initially conducted to examine the association between the availability of individual practice support strategies, as well as the overall number of practice support strategies available (zero to four versus five or more) and each outcome variable (optimal assessment, optimal brief advice, and optimal referral/follow-up). Variables found to be associated in such analyses at $p < 0.25$[43,44] were entered into

Table 1. Clinician reported availability of preventive care practice support strategies

Support strategy	Available, *n* (%)
Leadership	
Nominated staff member to support preventive care	22 (14.6)
Aware of health district's policy	99 (65.6)
Training	
Preventive care training	35 (23.2)
Printed educational materials	
Fax referral forms	28 (18.5)
Guidelines on how to comply with policy	37 (24.5)
Hardcopy resource pack (of relevant forms and client handouts)	33 (21.9)
Tailored client handout	28 (18.5)
List of referral services	78 (51.7)
Generic client handouts	72 (47.7)
Audit and feedback	
Feedback on level of care provided in service	18 (11.9)
Reminders and prompts	
Real time reminders of best practice	28 (18.5)
Prompts in electronic medical records to assess	50 (33.1)
Place in electronic medical records to record	34 (22.5)
Screening tool in electronic medical records	48 (31.8)
Automated production of referral letter to GP	48 (31.8)
Paper screening tool to assess away from computer	52 (34.4)
No. of practice supports available	
0	11 (7.3)
1—2	34 (22.5)
3—4	39 (25.8)
5—6	30 (19.9)
7—8	18 (11.9)
9—10	7 (4.6)
11—16	12 (7.9)

GP, general practitioner.

Table 2. Clinician estimates of preventive care provision

Preventive care provision	0% (of clients provided to), *n* (%)	1%—49% (of clients provided to), *n* (%)	50%—79% (of clients provided to), *n* (%)	80%—100% (of clients provided to), *n* (%)
Assessment				
Smoking	12 (7.9%)	6 (4.0)	12 (7.9)	121 (80.1)
Nutrition	51 (33.8)	50 (33.1)	30 (19.9)	20 (13.2)
Alcohol	3 (2.0)	8 (5.3)	5 (3.3)	135 (89.4)
Physical activity	5 (3.3)	21 (13.9)	35 (23.2)	90 (59.6)
All behaviors	0[a]	—[b]	—[b]	13 (8.6)
Advice				
Smoking	48 (31.8)	16 (10.6)	10 (6.6)	77 (51.0)
Advice to use NRT	52 (34.4)	23 (15.2)	17 (11.3)	59 (39.1)
Advice: smoking/NRT	34 (22.5)	—[c]	—[c]	88 (58.3)
Nutrition	60 (39.7)	11 (7.3)	10 (6.6)	70 (46.3)
Alcohol	21 (13.9)	6 (4.0)	3 (2.0)	121 (80.1)
Physical activity	15 (9.9)	10 (6.6)	14 (9.3)	112 (74.2)
All behaviors[c]	4 (2.6)[a]	—[b]	—[b]	38 (25.2)
Referral/follow-up				
Talk about helpline				
Smoking	76 (50.3)	33 (21.9)	19 (12.6)	23 (15.2)
Nutrition	129 (85.4)	10 (6.6)	6 (4.0)	6 (4.0)
Alcohol	NA	NA	NA	NA
Physical activity	126 (83.4)	12 (7.9)	7 (4.6)	6 (4.0)
All behaviors	69 (45.7)[a]	—[b]	—[b]	2 (1.3)
Arrange with helpline				
Smoking	140 (92.7)	9 (6.0)	2 (1.3)	0
Nutrition	147 (97.4)	3 (2.0)	1 (0.7)	0
Alcohol	NA	NA	NA	NA
Physical activity	146 (96.7)	2 (1.3)	2 (1.3)	1 (0.7)
All behaviors	136 (90.1)[a]	—[b]	—[b]	0 (0.0)
Advised to talk to GP				
Smoking	52 (34.4)	32 (21.2)	27 (17.9)	40 (26.5)
Nutrition	103 (68.2)	15 (9.9)	14 (9.3)	19 (12.6)
Alcohol	62 (41.1)	24 (15.9)	24 (15.9)	41 (27.2)
Physical activity	84 (55.6)	22 (14.6)	18 (11.9)	27 (17.9)
All behaviors	31 (20.5)[a]	—[b]	—[b]	7 (4.6)
Advised other referral				
Smoking	66 (43.7)	27 (17.9)	24 (15.9)	34 (22.5)
Nutrition	73 (48.3)	29 (19.2)	25 (16.6)	24 (15.9)

(continued on next page)

Table 2. Clinician estimates of preventive care provision *(continued)*

Preventive care provision	0% (of clients provided to), *n* (%)	1%–49% (of clients provided to), *n* (%)	50%–79% (of clients provided to), *n* (%)	80%–100% (of clients provided to), *n* (%)
Alcohol	27 (17.9)	18 (11.9)	25 (16.6)	81 (53.6)
Physical activity	32 (21.2)	39 (25.8)	35 (23.2)	45 (29.8)
All behaviors	6 (4.0)[a]	—[b]	—[b]	7 (4.6)
Advised any referral/follow-up option[d]				
Smoking	34 (22.5)	—[b]	—[b]	60 (39.7)
Nutrition	67 (44.4)	—[b]	—[b]	34 (22.5)
Alcohol	22 (14.6)	—[b]	—[b]	92 (60.9)
Physical activity	26 (17.2)	—[b]	—[b]	61 (40.4)
All behaviors	6 (4.0)[a]	—[b]	—[b]	15 (9.9)

[a]Clinician provided 0% of clients with care for all four behaviors.
[b]Nonsensical data calculation.
[c]Smoking variable included in the calculation of brief advice for all behaviors includes advice to quit smoking and/or advice to use nicotine-replacement therapy.
[d]Any referral/follow-up includes talking about or arranging referral to helpline, or advising to talk to their general practitioner, or advising other referral/follow-up option.
GP, general practitioner; NA, not available; NRT, nicotine-replacement therapy.

logistic regression models for each outcome. A backward stepwise process was undertaken until all variables in the model remained significant ($p<0.05$). Each logistic regression model adjusted for professional discipline, remoteness of service, years in professional discipline, age, and gender. Because of the small number of staff and the relatively high number of services, the logistic regression models did not adjust for clustering. Examination of the intraclass correlations indicated little to no between-cluster variance, with none significantly different from zero, confirming that adjustment was not necessary (Table 3, footnote a).

Results

Of the 195 clinicians employed, 170 were identified as eligible. Of these, 5 were noncontactable and 151 (89%) completed the interview. There were no significant differences in gender, Aboriginality, discipline, remoteness, or service type between consenters and nonconsenters. The majority of participants were employed on a full-time basis (71.5%), not of Aboriginal or Torres Strait Islander origin (97.4%), and had more than 10 years of

Table 3. Association between practice support strategies and optimal care provision for all behaviors combined[a]

Outcome	Predictor	B	SE	OR	95% CI	df	*p*-value
Assessment	**Practice support strategies available,**[b] ***n***						
	0–4	—	—	—	—	—	ref
	5–16	2.09	0.83	8.06	(1.57, 41.30)	1	**0.012**
	Hardcopy resource pack availability						
Advice	Not available	—	—	—	—	—	ref
	Available	1.19	0.47	3.30	(1.33, 8.23)	1	**0.010**
	Practice support strategies available,[b] ***n***						
Referral	0–4	—	—	—	—	—	ref
	5–16	2.41	0.84	11.15	(2.15, 57.76)	1	**0.004**

Note: Boldface indicates statistical significance ($p<0.05$).
[a]Logistic regression models adjusted for the following clinician characteristics: professional discipline, remoteness of service, years in professional discipline, age, and gender. Logistic regression models did not adjust for clustering as intraclass correlations indicated little to no between-cluster variance: assessment 6.6×10^{-19}; advice: 0.16, 95% CI=−0.30, −0.49; referral 1.3×10^{-18}.
[b]Number of practice support strategies available was dichotomized: 0–4 strategies available versus 5–16 strategies available.

Table 4. Description of sample

Characteristic	*n* (%)
Age (years)[a]	
20–29	17 (11.3)
30–49	68 (45.3)
50+	65 (43.3)
Female	88 (58.3)
Aboriginal and/or Torres Strait Islander origin	4 (2.6)
Full-time employment	108 (71.5)
>10 Years in discipline	99 (65.6)
Remoteness of service	
Major city	109 (72.2)
Rural/remote	42 (27.8)
Service type	
Generalist community mental health	86 (57.0)
Specialized community mental health[b]	52 (34.4)
Older persons community mental health	13 (8.6)
PROFESSIONAL DISCIPLINE	
Nursing	64 (42.4)
Mental health nurse	16 (10.6)
Nurse (generalist)	48 (31.8)
Allied health	54 (35.8)
Psychologist	20 (13.2)
Occupational therapist	11 (7.3)
Social worker	13 (8.6)
Other allied Health	10 (6.6)
Medical practitioner	33 (21.9)
Psychiatrist	24 (15.9)
Other medical practitioner	9 (6.0)

[a]One missing response.
[b]Includes rehabilitation teams (*n*=24); early diagnosis support teams (*n*=5); parent and infant teams (*n*=3); neuropsychiatry teams (*n*=4); comorbid substance use and mental health teams (*n*=5); and specialist service for eating disorders and borderline personality disorder (*n*=11).

experience in their professional discipline (65.6%). The most frequently reported professional discipline was nursing (42.4%) (Table 4).

The portion of clinicians providing assessment to 80% or more of clients ranged from 13.2% (inadequate fruit and vegetable consumption) to 89.4% (harmful alcohol consumption), with 8.6% providing optimal assessment (assessment for all four risk behaviors for 80% or more of clients) (Table 2). The portion of clinicians providing brief advice to 80% or more of at-risk clients ranged from 46.3% (inadequate fruit and vegetable consumption) to 80.1% (harmful alcohol consumption), with 25.2% providing optimal brief advice (Table 2). The portion of clinicians providing any type of referral/follow-up to 80% or more of at risk clients ranged from 22.5% (inadequate fruit and vegetable consumption) to 60.9% (harmful alcohol consumption), with 9.9% of clinicians providing referral/follow-up at an optimal level (Table 2). The total number of practice support strategies available to clinicians ranged from zero to 14 (mean=4.7) (Table 1).

The availability of five or more practice support strategies was associated with both optimal assessment and optimal referral. Optimal assessment and referral were eight times (OR=8.06, p=0.012) and 11 times (OR=11.15, p=0.004), respectively, more likely to be provided when five or more support resources were available. Optimal brief advice was three times more likely to be provided when a hardcopy resource pack was available (OR=3.30, p=0.010) (Table 3).

Discussion

This study is the first to examine the provision of multiple elements of preventive care for multiple key health risk behaviors by community mental health clinicians, and to assess the association between the availability of practice support strategies and the provision of such care. The study identified variable, but suboptimal provision of preventive care across both the health risk behaviors and care elements, particularly for inadequate nutrition and referral/follow-up care. The availability of practice support strategies is low, with a greater number of such strategies and the availability of a hardcopy resource pack being positively associated with optimal care provision for some care elements.

The finding of variable and suboptimal provision of preventive care is consistent with previous research regarding the provision of smoking-cessation care within mental health services,[19,20,24,26] and extends such a finding to the provision of care regarding inadequate nutrition, harmful alcohol consumption, and inadequate physical activity. The higher provision of some care elements for harmful alcohol consumption and smoking may reflect a greater familiarity of mental health clinicians with such care, given the recognized comorbidity between substance use and mental illness[45–47] and the more-established treatment guidelines for smoking and alcohol consumption.[38,48–51]

The observed prevalence of assessment and brief advice in the current study reflects previous reports of moderate levels of assessment, brief advice, or counseling

in community and inpatient mental health services across the four behaviors.[16–20,23,25,27] Similarly, the low rates of referral are consistent with previous findings regarding smoking-cessation care[20,24,26] and care for nutrition[52] in these settings. The latter findings contrast with the particular importance of referral and follow-up care in ensuring successful change in health risk behaviors.[48,53,54] The low levels of referral found in this study may be related to a number of possible barriers, including difficulties for clients in accessing a general practitioner or primary care physician[55–57]; poor communication between mental health services, primary care, and other referral services[58,59]; clinician perceptions that clients would not be responsive to behavior change[58–61]; and a perceived lack of referral options.[58,61–63]

Despite such perceptions, evidence-based and readily accessible referral options (free government services) are available for clinician referral regarding smoking cessation (www.icanquit.com.au/further-resources/quitline) and inadequate nutrition and physical activity (www.gethealthynsw.com.au). Such telephone helplines have been demonstrated to be effective for the general population,[64–68] and for people with a mental illness with regard to quitting smoking.[69–72] Strategies found to be successful in increasing clinician provision of referrals to such services in general healthcare settings have included financial incentives,[73] performance feedback,[73–75] clinician training,[75] electronic prompts,[76] and electronic referral processes.[76] However, no research has examined whether these findings extend to increasing referrals by mental health clinicians.

The availability of practice support strategies to assist the delivery of preventive care was found to be limited in this study. The importance of such support strategies in facilitating the provision of preventive care is reinforced by the finding that the provision of optimal assessment and referral is 8 and 11 times more likely, respectively, when five or more support strategies are available. Although increasing the availability of individual support strategies may have some impact on preventive care delivery, a multifactorial approach that addresses multiple barriers is likely to be required to produce sustainable changes in clinician behavior within mental health services.[77,78] Research has yet to examine such an approach in mental health services. These strategies may be particularly pertinent given the historic lack of integration between care provision for physical and mental health care issues, such that physical health is generally not considered core business for mental health services.[79] Considering this history, a significant shift in culture and work practices is likely required for preventive care to be optimally delivered in such settings.[52]

Limitations

Although the study sample consists of all community mental health clinicians from a variety of service types in metropolitan, regional, and rural locations, the generalizability of study findings may be limited by the inclusion of only one district health service with a mandatory policy regarding preventive care provision. Further, the current study does not examine potential differences in estimated care provision and the reported availability of practice support strategies across professional disciplines, which may be an important avenue for future research. Finally, there was no direct observation of care or chart audits to confirm the self-reported findings.

Conclusions

Increasing the provision of preventive care that addresses the physical health risks of mental health service clients is an increasingly recognized step to redressing the chronic disease morbidity and mortality disparities experienced by such clients. In order to produce sustainable increases in the provision of such preventive care by mental health services, interventions to increase the availability of practice support strategies may be integral to generating a change in workplace practice and culture regarding the provision of preventive care. Future research should examine the effectiveness of such an approach in increasing the delivery of preventive care in mental health services.

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