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Improving implementation of the 5As of obesity management in general practice

Centre for Obesity
Management and
Prevention Research
Excellence in Primary
Health Care

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Abbreviations

5As	Ask and Assess, Advise, Assist & Arrange approach
BMI	Body mass index (weight in kilograms divided by height in metres squared)
GP	General Practitioner
MBS	Medicare Benefits Schedule
NHMRC	National Health and Medical Research Council
PBS	Pharmaceutical Benefits Scheme
PEP	Preventive Evidence into Practice
PHC	Primary Health Care
PHN	Primary Health Network
PN	Practice Nurse
SEIFA	Socio-Economic Indexes for Areas
UK	United Kingdom

Background

OBESITY IN AUSTRALIA

The prevalence of obesity has increased in developed and developing countries and has become a global health issue.¹ In Australia, in 2014-15, 62% of the adult population was overweight or obese (34% and 28% respectively),² a substantial increase from 9% in 1989-90.^{3,4} Obesity is a major contributor to the burden of disease,⁵ as well as a financial burden,⁶ for the health system. This situation raises concerns about the future health of the population and the burden on the healthcare system.

THE ROLE OF GENERAL PRACTICE

Addressing obesity requires a multi-faceted approach from a range of sectors, including public health, urban planning and education.^{7,8} One of the key sectors that can help in the prevention and management of obesity is the primary health care (PHC) system,⁹ which has an accepted role in health promotion and the prevention and management of chronic conditions.¹⁰ Within the PHC system, general practice is ideally placed to be a major contributor to the prevention and management of obesity because

- > Over 80% of the Australian population reports that they have seen a general practitioner (GP) at least once in the previous year,¹¹ and 62% of general practice patients in Australia are overweight (34%) or obese (28%).¹²
- > The increasing employment of registered and enrolled nurses in general practices and other PHC services adds to the resources available for obesity prevention and management in PHC settings.¹³
- > Obese patients want their GPs to put their weight problems on the agenda.^{14,15}
- > There is evidence that GPs are able to refer obese patients for treatments and interventions that are effective. These include bariatric surgery, pharmacotherapy and behavioural interventions for lifestyle change.¹⁶⁻¹⁹

IMPLEMENTATION OF OBESITY MANAGEMENT GUIDELINES – THE 5AS

The NHMRC has published evidence-based clinical guidelines for the management of obesity in Australia (Guidelines).¹⁶ The Guidelines were staged according to the 5As approach: Ask & Assess, Advise, Assist & Arrange.²⁰ That is

- > **ASK & ASSESS:** current lifestyle behaviours and body mass index (BMI), comorbidities and other factors related to health risk.
- > **ADVISE:** promote the benefits of a healthy lifestyle and explain the benefits of weight management.
- > **ASSIST:** develop and agree (between provider and patient) on a weight management program that includes lifestyle interventions tailored to the individual (e.g. based on the severity of the obesity, risk factors, comorbidities), attainable goals for diet, physical activity and weight, and plan for review and monitoring.
- > **ARRANGE:** regular follow-up visits, referral as required (e.g. to a dietitian, exercise physiologist or psychologist) and support for long-term weight management.

There is evidence that implementing all of the steps of the 5As in obesity management strengthens patient motivation to lose weight, to eat better and exercise regularly.²¹ Yet, despite this evidence and the dissemination of the Guidelines, the 5As are not being effectively implemented within Australian general practices. Research in Australia and elsewhere has consistently shown that the 5As are not routinely practised and that the further along the sequence one looks, the less likely it is to be practised.^{15,22-25} Indeed the rule of halves tends to apply, with less than half of at-risk patients being fully assessed, a quarter receiving advice, a sixth being referred to specialised services and an eighth attending a referral service.^{15,22,23,25}

Factors relating to PHC providers that have been found to contribute to poor implementation of the 5As Guidelines include their

- > beliefs about patients lacking motivation^{26,27}
- > negative attitudes towards obese people (stigma)^{28,29}
- > perceived external control factors (time, cost, availability and practice capacity),³⁰ and
- > lack of knowledge about obesity and treatment options.^{31,32}

THE STUDIES IN THIS REPORT

A number of previous studies have been conducted to gain knowledge about changing the behaviour of PHC providers in relation to promoting weight reduction in obese patients,³³ These have included studies on an electronic linkage system to automate patient referrals,³⁴ the creation of a community health educator referral liaison officer,³⁵ and professional training and organisational shared-care interventions.³⁶ Despite the information gained from such research, there remains a gap in knowledge about how to change the behaviour of health professionals to promote weight reduction in obese patients.

We conducted three studies that aimed to help address this knowledge gap and answer specific questions about weight management in general practice. The studies and their questions were

1. The Costs Study: What is the cost-effectiveness of increasing assessment of obesity and other risk factors for chronic disease?
2. The Referral Study: What are the barriers to the referral of obese patients to specialist services for GPs?
3. The Practice Nurse Study: How feasible is it for practice nurses (PNs) in Australia to deliver a structured weight management program that had been developed and shown to be effective in the UK (the Counterweight Program)?

This report provides a brief overview of the background, methods and results of each study. All studies obtained appropriate ethical approvals. The implications of the program of research are then discussed in the final section of this report. The Referral Study has been published,³⁷ and papers on the other two studies have been submitted. Readers who would like more information than provided in this report can view those papers as they become available.

Study 1: The cost of increased risk factor assessment

BACKGROUND

As noted above, assessment of weight and related risk factors is part of the 5As approach to the management of obesity as recommended by the NHMRC Guidelines.¹⁶ An increase in such assessments could result in increased downstream costs for the health system. This could occur if the increased assessments triggered an increased use of services funded by the Medicare Benefits Schedule (MBS) and an increased use of medications funded by the Pharmaceutical Benefits Scheme (PBS). The Costs Study investigated these downstream costs to the health system of increasing assessment of weight and risk factors by general practices.

Data from a completed intervention study titled the Preventive Evidence into Practice (PEP) trial was used.³⁸ The PEP intervention aimed to improve the implementation of the 5As Guidelines – particularly the ‘Assess’ step - for the prevention of chronic vascular disease in general practice. The outcomes of PEP were tested by a cluster randomised controlled trial in 30 general practices in South Australia, Victoria, New South Wales and Queensland. Participating general practices received a practice-level intervention that included staff training, resources to link practices with local community preventive programs, a medical record audit providing feedback to the practices as to the quality of their preventive care, and a series of facilitation visits to the practice by a trained facilitator. The control group continued with usual care. The PEP study identified that the intervention increased the assessment and recording of risk factors, including improved recording of waist circumference,³⁹ and referral to a lifestyle modification program.⁴⁰

The aim of the Costs Study was to identify any difference between patients from the PEP intervention and control groups in the 12 months following the delivery of the PEP intervention in

- > costs to the MBS and PBS, and
- > costs to the MBS and PBS plus intervention costs.

METHOD

Patients who completed the 12-month survey in the PEP trial were sent a letter by the research team inviting them to take part in the Costs Study. These patients were asked for consent to access their administrative health care data held by Medicare Australia for the period of 1 July 2012 to 30 June 2013.

For 393 consenting patients, data from the PEP study were linked with administrative health care data held by Medicare Australia. Economic analyses were conducted on the resulting dataset. These analyses evaluated not only the costs of delivering the intervention, but also the difference in MBS and PBS costs between the intervention and control groups.

MBS and PBS records for the 12 month period following the implementation of the PEP intervention were used to calculate each patients’ costs to the health system. From the MBS dataset, the costs of GP and PN visits and allied health services were used. From the PBS dataset, all medications for the management of chronic diseases, relevant to the PEP intervention, were selected, including arthritis, diabetes, heart conditions, hypertension and high cholesterol.

The PEP intervention costs included the costs of training, travel and salaries for the facilitators; and the costs of workshops for GPs and PNs at the intervention practices. The cost per patient of the PEP intervention was calculated as the cost of the intervention (\$53,687) divided by the number of patients identified in the PEP medical record audit of intervention practices (n=13,815).

The average total costs per patient were calculated as the sum of the MBS costs and PBS costs with and without the intervention cost.

Regression analyses adjusting for clustering by practice were used to examine the differences in costs between intervention and control groups. The cost differences were calculated by subtracting the control group's average costs from the PEP group's average costs so that a positive result would mean that PEP patients cost more and a negative result meant that the control patients cost more. Models for the analyses were built separately for each cost outcome. The analyses were done with and without adjustment for patient variables

- > The unadjusted analyses did not adjust for patient variables.
- > The adjusted analyses for total costs included the following patient variables: age; gender; born in Australia; Socio-Economic Indexes for Areas (SEIFA) tertile; insufficient intake of fruit and vegetables per day; physical quality of life (SF12 physical component score), mental quality of life (SF12 mental component score); the number of visits to the general practice in the previous three months; and whether the patient recalled having received preventive advice from their GP on cardiovascular risk factors in the three months prior to the baseline survey.
- > The adjusted analyses for GP and PN visit costs included the following patient variables in addition to those listed for total costs: BMI and insufficient physical activity.

RESULTS

The cost of the PEP intervention was \$3.89 per eligible patient in the intervention practices. There was no intervention cost for the control group.

The group mean costs were not significantly different between the intervention and control groups (see Table 1) ($p > .05$). This result persisted whether or not the intervention costs were included and with or without adjustment for patient variables.

Table 1: Differences in per patient costs (AUD) between intervention and control groups during the 12 months after the PEP intervention

	Control group Mean (SD)	Intervention group Mean (SD)	Unadjusted difference* (95% CI)	Adjusted difference* (95% CI)
MBS costs				
GP & PN visits	305 (314)	282 (265)	-23 (-115 to 69)	-16 (-71 to 39)
AHP visits	49 (176)	24 (109)	-25 (-58 to 8)	—
PBS costs				
Relevant medications	114 (279)	72 (199)	-42 (-121 to 37)	—
Total costs				
MBS+ PBS	468 (546)	377 (425)	-90 (-261 to 80)	-79 (-183 to 25)
MBS+PBS+PEP	468 (546)	381 (425)	-87 (-257 to 84)	-79 (-185 to 27)

**Difference is calculated as the intervention costs minus control costs.
— indicates where an adjusted model could not be built.*

DISCUSSION

The PEP intervention was effective at increasing the assessment and recording of weight and other behavioural risk factors. This could have increased health care costs, while changes in health outcomes were unlikely to produce cost savings in that timespan. The economic analyses showed that the intervention was inexpensive (\$3.89 per patient) and that the increased recording did not increase costs to the MBS and PBS from intervention patients relative to the control patients in the 12 month period studied.

As part of the PEP study eligibility criteria, patients in the PEP study had not yet developed chronic diseases, such as cardiovascular disease or diabetes. They were, however, at high risk of doing so due to their dietary intake, physical activity and BMI. Increasing the recording of risk factors is the first step to implementation of the 5As to improve both weight management and prevent the development of chronic diseases in this patient group.

The study's limitations include the assumption that the sample of participants in the Cost Study adequately represents the patients identified in the practice audit that demonstrated changes in risk factor recording. It is also possible that the study was not adequately powered to detect a difference in costs.

Study 2: Barriers to referral

BACKGROUND

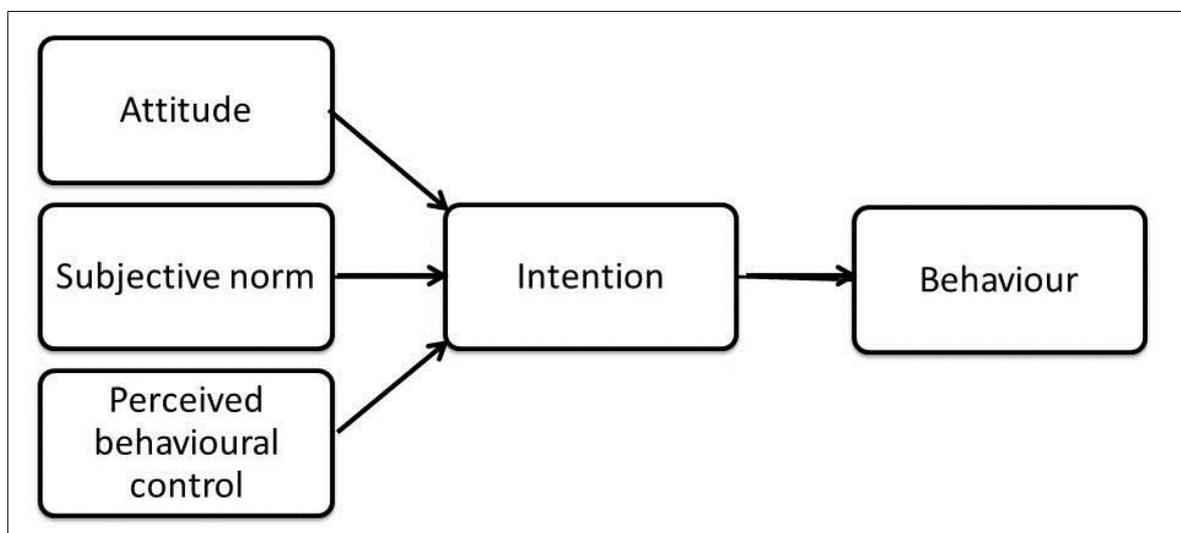
GPs are limited in what they can do to assist obese patients. The reasons for this include the tight consultation times and their limited training in diet, physical activity and behaviour change. Consequently, referral to other services and programs that can provide advice and education on lifestyle change is an important part of GPs' role in obesity management.

Lifestyle interventions could focus on diet, physical activity and/or behaviour change (e.g. controlling triggers to overeat and relapse prevention). The Guidelines also recommend consideration of referral to bariatric surgery for adults with BMI > 40 kg/m² or adults with BMI > 35 kg/m² and comorbidities that might improve with weight loss. Numerous studies have shown that bariatric surgery is a cost-effective weight loss intervention.⁴¹

Referrals for both lifestyle interventions and bariatric surgery are recommended as part of the Guidelines' 'Assist' stage. However, as noted above, obese patients are rarely referred to either.

There is a lack of research into GPs' decisions and intentions to refer obese patients for lifestyle programs or surgery. This qualitative study aimed to describe the factors that influence GPs' intention to refer their obese patients on to specialised services. The study used the theory of planned behaviour (see Figure 1).⁴² We hypothesised that GPs' decisions to refer would be influenced by their behavioural intentions and that the primary determinants of these intentions would be influenced by attitudes, subjective norms and perceived behavioural control.

Figure 1: The theory of planned behaviour



METHODS

Study aims

The aim of the Referral Study was to describe the factors influencing GPs' referral intentions for their patients with obesity by investigating

- > the patient, provider and system factors influencing GPs' decision-making process about whether to refer patients with a BMI >30, when and to whom, and

- > the medical, surgical and allied health referral pathways available to GPs in managing these patients, especially disadvantaged or low-income patients and GPs' perceptions of the outcomes from these.

Study design

This was a qualitative study involving semi-structured interviews with GPs from four geographically different urban and rural areas in NSW.

Recruitment

GPs were recruited with the help of Medicare Locals - organisations that planned, coordinated and supported PHC services across Australia between 2011 and 2015, and have now been replaced by Primary Health Networks (PHNs). Four Medicare Locals were asked to invite GPs, with the aim of obtaining ten participants per Medicare Local, stratified by practice type (single, group, hospital, with or without a nurse or other supportive staff) and ethnicity to provide a diversity of GPs.

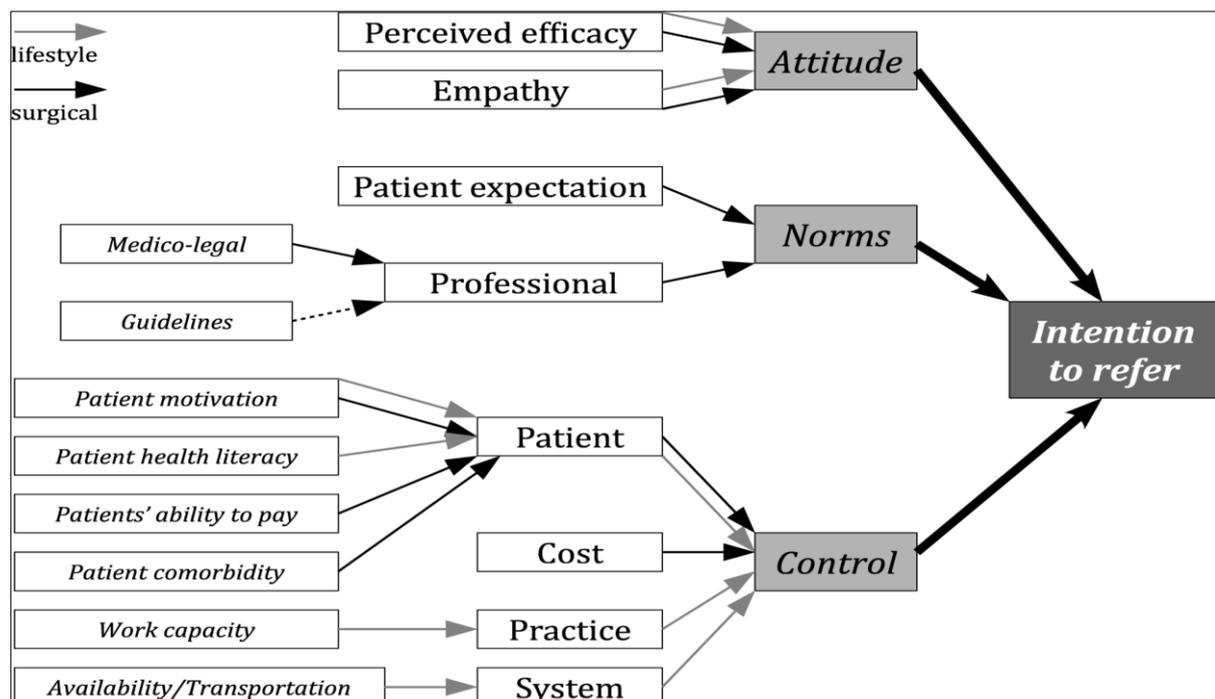
Data collection and analysis

Interviews of approximately 30 minutes were conducted with GPs either face-to-face or, if this was not possible, by telephone. The interviews were recorded and transcribed for analysis.

RESULTS

A total of 28 GPs took part in the study. The reported referral rates to bariatric surgery ranged from zero to ten patients in the previous 12 months. Referrals to lifestyle interventions were more common. The factors that influenced intentions to refer patients for lifestyle interventions or bariatric surgery are illustrated in Figure 2 and described below.

Figure 2: Factors influencing referral (36)



Referral to lifestyle interventions

GPs' intentions to refer to lifestyle interventions were mostly influenced by their own attitudes, patient and external factors. Attitudes were shaped by their belief in the likely effectiveness of the referred intervention and largely based on anecdotal feedback from the patients they had previously referred.

Most of them go and say, "I didn't really learn anything I didn't already know." [Rural GP]

A few GPs mentioned that their personal experience in weight loss influenced their empathy with patients and their approach to referral.

There appeared to have been little direct communication between the GPs and the referral services or providers.

If people go to the public system, it's a black hole... They just disappear and we don't even know if they [have attended] there or what the outcomes are. [Rural GP]

Patient factors included the patients' apparent motivation, health literacy, ability to pay, and comorbidity.

I want lots of people with a BMI over 30 to go somewhere, but most are not really interested or motivated to change. [Rural GP]

Availability, accessibility and cost of lifestyle services were also shown to be factors influencing GPs' decision.

The problem is in this area, 90% of patients are Vietnamese and their English is of course not perfect so access to a dietician who speaks Vietnamese. [Urban GP]

The Guidelines were not reported as an influence on referral to lifestyle interventions.

Referrals to surgery

The GPs interviewed for this study had a wide range of attitudes towards bariatric surgery. At one end, GPs had doubts about its effectiveness and concerns about the cost and risks associated with it. At the other, GPs thought of it as a successful intervention and the only option for those patients requiring major weight loss. This latter group tended to have had positive feedback from patients about surgery and/or to have believed the surgeons were trustworthy and had a competent multidisciplinary team.

In contrast to referrals to lifestyle interventions, most referrals to bariatric surgery were influenced by patients' expectations or requests. Some GPs regarded patients' demand as a sign that they were motivated and financially ready. However, some GPs were concerned that patients requesting surgery thought of it as an 'easy option'.

External factors influencing GPs' referral for bariatric surgery included

- > guidelines from professional bodies;
- > medico-legal considerations; and
- > cost and availability – all GPs reported that surgery was almost totally unavailable in public hospitals.

There was no strong link between referral and the remoteness of areas or the availability of surgical referral services.

Study 3: Feasibility of a nurse-led intervention

BACKGROUND

As noted in the above section on the Referral Study, there are limited lifestyle interventions to which general practices can refer patients who need support to lose weight. Evidence suggests that expanding the role of PNs in weight management activities may provide a cost-effective method for intervening in overweight and obesity.^{43,44} Previous research has shown that

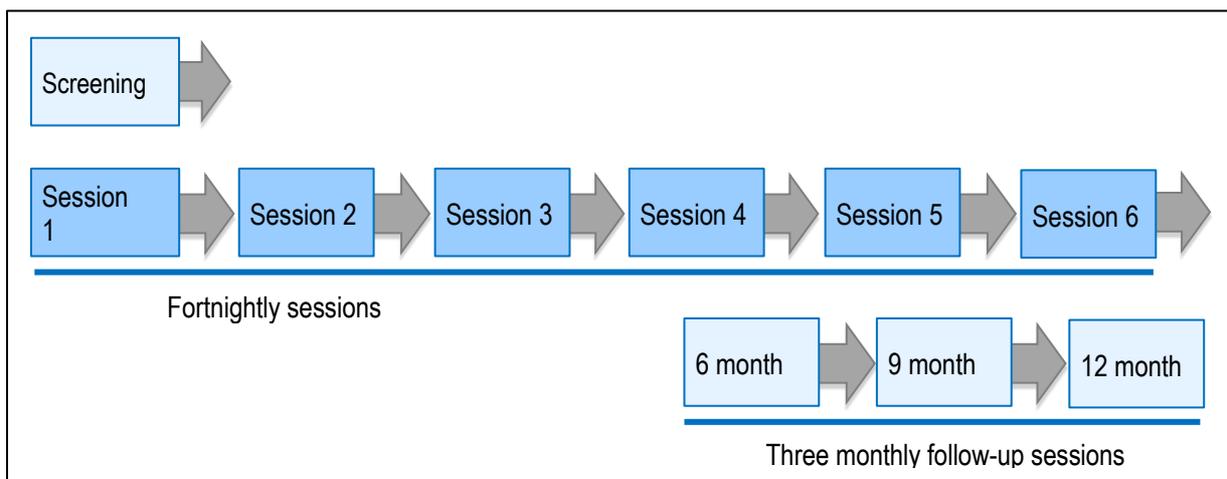
- > High levels of PN involvement in the management of obese patients has been associated with lower costs and better outcomes than low levels of PN involvement – resulting in more patients losing weight, and larger mean reductions in BMI.⁴⁴
- > Interventions delivered by PNs are as effective as interventions delivered by other health professionals in affecting positive changes in diet, physical activity and weight outcomes.⁴⁵
- > PNs have more time than GPs to provide long-term and personalised weight management advice and guidance.⁴⁶

However, under current MBS funding arrangements the involvement of PNs in preventive care activities, like weight management, are not appropriately funded.⁴³ This, thus, limits the amount of PN time that can be allocated to weight management interventions. Furthermore, PNs need training and resources to take a more active role in implementing a weight management program.⁴⁷

The Practice Nurse Study trialled the feasibility of training and supporting PNs to implement a PN-led weight management program in Australia. The intervention program used in the study was the Counterweight Program.

The Counterweight Program is a PN-led program for managing adult obesity that was co-developed by seven British universities. It provides a structured, evidence-based model for obesity management that can be delivered by PNs as part of routine clinical care.^{48,49} The program includes six sessions over three months with PNs, followed by three follow-up visits (see Figure 3).

Figure 3: Counterweight Program structure



The Counterweight Program was chosen because,

- > Its program goal aligns with the NHMRC 5As Guidelines. That is: it aims for a weight reduction of 5%, which is a realistic treatment goal that can produce clinically important health benefits and addresses nutrition, physical activity and the psychological aspects of behaviour change.⁵⁰
- > It is an evidence-based program. The development of the program drew on theory and evidence for weight management and behaviour change.^{48,51} The evaluation of the program in areas of high disadvantage has demonstrated clinically valuable weight loss, such as 3kg at 12 months for those who remained in the program.^{49,52}
- > Significant resources have already been invested in the program's materials for patients and PNs, which were considered appropriate to the Australian context with minor changes. Changes included referencing Australian guidelines on diet, physical activity and alcohol consumption and changing some examples of foods, food names and measurements. Online training for nurses was available and had already been used in Canada.
- > It has been rolled out across England (2000), Scotland (2006) and Canada (2012) suggesting that a roll out across Australia could be possible.⁴⁹
- > The fees were reasonable. The costs at July 2016 are presented in Table 2. These are less than the costs during the study period as the Counterweight training costs have significantly reduced since then.

Table 2: Costs associated with the Counterweight Program (as at 1 July 2016)

Counterweight Program component	Cost (BPD)	Cost (AUD)
Annual licence fee (per region)	£500	\$900
PN resource materials (including training manual & quick reference flip chart) [#]	£50	\$90
Online training sessions per trainee		
<input type="checkbox"/> if 1-4 trainees are enrolled	£360	\$640
<input type="checkbox"/> if 5 or more trainees are enrolled	£200	\$354
Patient resource materials* [#]	£8 each	\$14 each

**The folder with inserts used in the feasibility study has been changed to four A5 booklets.*

[#]Costs for the nurse and patient resource materials do not include international shipping. Local printing of patient resources is possible with adjustment of the licence fee.

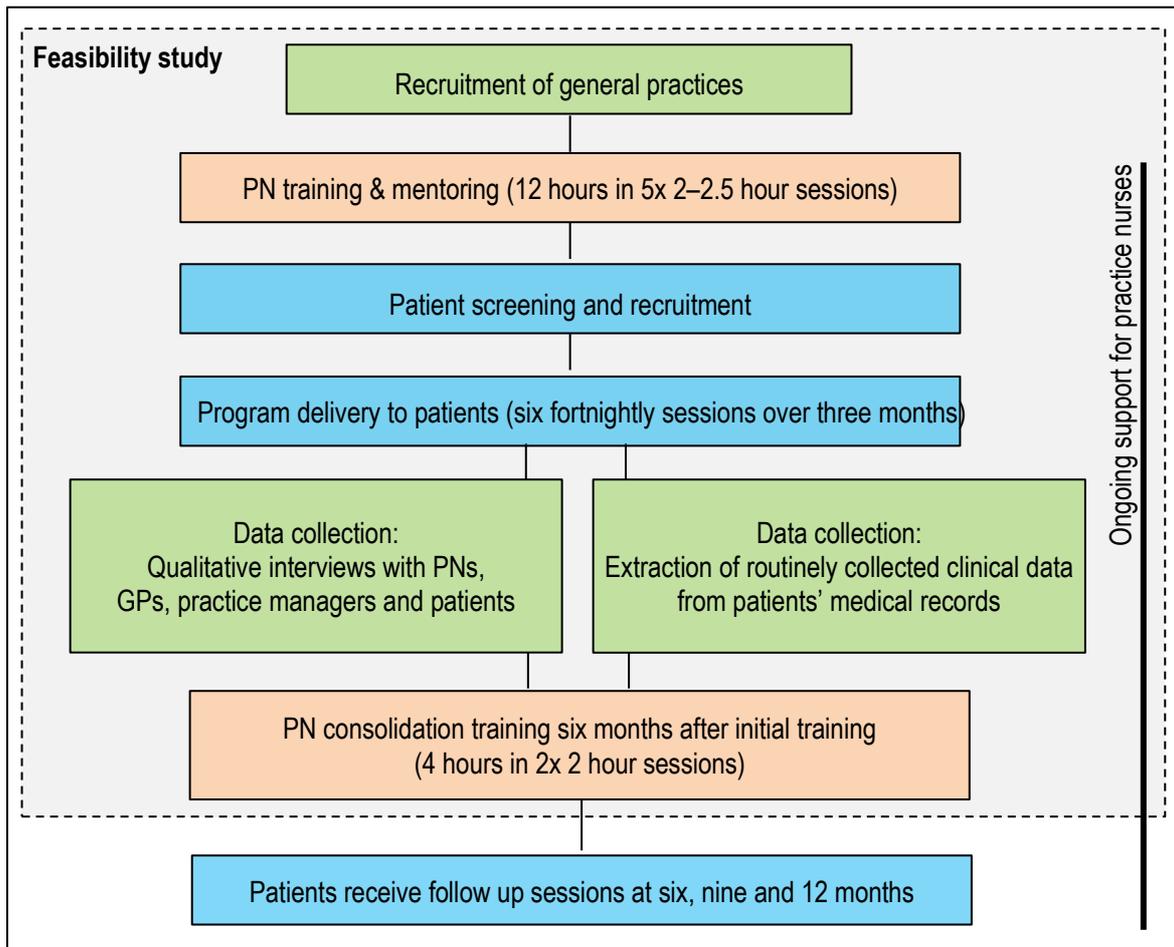
The aims of the feasibility study were to identify:

- > the perceived value, acceptability and feasibility of the Counterweight Program to Australian PNs, GPs and practice managers;
- > the barriers and enablers to delivering the Counterweight Program within Australian general practice;
- > the refinements to the Counterweight Program required before wider dissemination within Australia; and
- > the refinements required to the study methods to inform the protocol for a large-scale randomised trial.

METHOD

The Counterweight Program was implemented in three South Australian general practices and qualitative and quantitative methods were used to evaluate the program and its processes. The study was conducted from September 2014 to September 2015. The key stages of the study are illustrated in Figure 4.

Figure 4: Key stages of the feasibility study for the implementation of the Counterweight Program



Recruitment of practices and patients

To be eligible, general practices needed to be using electronic medical records and employ two or more PNs who were willing to be trained to deliver the Counterweight Program. Practices were reimbursed to offset participation costs. Three general practices were rapidly recruited to the study through a short presentation at an educational event held by the Northern Adelaide Medicare Local.

Patients were recruited with BMI greater than 25kg/m² and assessed as ready to make weight-related behaviour changes. To be eligible, patients needed to meet the following criteria,

- > over 18 years of age
- > had three visits to the general practice in the previous 12 months

- > no significant weight loss in the previous 12 months, and
- > able to understand and communicate in English, as resource materials were only available in English.

The sample included 65 patients with a mean weight of 100kg, 82% were female, 72% resided in an area of low socioeconomic status and 55% had two or more comorbidities of interest.

Program costs and practice payments

The costs of the Counterweight Program (licensing, training, nurse and patient resources), outlined in Table 2, were covered by the research project. The Northern Adelaide Medicare Local allowed one of their staff members to provide some local support to participating practices. This involved assistance during patient recruitment and data collection.

To offset the cost of participating in the study, practices received a reimbursement of \$3900. This included \$1100 to offset any inconvenience caused by the collection of data and \$1800 to cover PNs' salaries during training sessions. Additional payments were provided for each Counterweight session delivered to participating patients. Sessions of approximately 30 minutes had a payment of \$25 and sessions of 20 minutes were paid \$20. The qualitative evaluation asked practice staff (managers, GPs and PNs) about the amount of funding needed to make the program acceptable and appealing to the practices.

Counterweight training and materials

Six PNs attended 12 hours of interactive, online training and mentoring (five sessions of 2 to 2.5 hours). Six months later the nurses attended another four hours of training to build on their experience of the program. The training was run by a Counterweight dietitian located in the UK. Nurses could get further support when they needed it by emailing or phoning the Counterweight dietitian. The nurses were given a training manual and a quick reference guide to help with delivering the program.

Patients were given an A5 folder with inserts given out at each appointment.

Data collection

Patients gave permission to collect information from their medical records. This included their age, gender, medical conditions, attendance at Counterweight sessions, and measurements of their weight and height. Qualitative semi-structured interviews were conducted with the six PNs trained in the Counterweight Program, five GPs, all three practice managers and 18 patients.

RESULTS

Having PNs deliver the Counterweight Program allowed practices to offer a structured weight management program without placing an additional workload on the GPs.

Practice staff recognised that many of their patients had a high BMI and as GPs often had limited time to provide weight management advice to patients, a program, like the Counterweight Program, delivered by PNs was a practical option. Practice staff reported that the program fitted into the practice with minimal disruption.

...it just slotted into the practice. [Practice manager]

One GP pointed to the "fine line between criticism and advice" suggesting that offering such a program helped patients remain receptive to the information, rather than feeling lectured by the GP.

Feedback from PNs

The online training, with its interactive and supportive classroom environment, was well received by the nurses. The convenience of the online training was emphasised, particularly by those who would normally need to travel long distances to attend training events. Early morning or late evening sessions were scheduled to accommodate the differences in time zones between the UK and Australia. This timing was “not ideal” but manageable. Scheduling sessions during work hours would have also been challenging.

PNs reported that the quick reference flip book and patient folders were very useful in guiding them through the program delivery. They thought that the patient folders were easy for patients to understand and a useful resource for patients to refer back to.

I thought the inserts were quite engaging and as I said easy to read and understand with the patients. That's the main thing that stood out for me. I didn't really have to explain much to the patients. They didn't come back and say, I didn't understand this bit when I read that. [Nurse]

Extended one-to-one time with patients during Counterweight sessions allowed PNs to become aware of deeper issues that were impacting on patients' lives and the extent to which life events were impacting on patients' health and capacity to manage their weight. This meant that these issues could be flagged for the GP and that patients could be referred for further support.

Nurses identified the need for a recall register and time to follow-up with patients who missed Counterweight appointments. Patients also spoke of the benefit of follow-up telephone calls from the PN following lapses in program attendance.

Feedback from patients

Patients who were interviewed provided very positive feedback on the program. They described how the Counterweight Program created a safe space for them to explore their weight, learn about weight management and make changes towards a healthier lifestyle. The program's broad definitions of success, the non-judgmental and non-prescriptive approach, and the delivery of the program in the familiar and trusted setting of a general practice helped to create this safe space.

Patients found the program to be non-prescriptive and definitely “not a diet”. They appreciated being offered information, guidelines and suggestions on how to shift towards a healthier lifestyle. Working with the nurse to problem-solve barriers helped them come up with solutions to their challenges rather than be told what they should or should not do. There was also a sense of having a champion on their side, someone cheering them on and acknowledging their achievements.

...they ask – they don't actually say, “You shouldn't do this”. But they get you to question yourself and you give them the answer.” [Patient]

Some patients reported that the sense of accountability and motivation created by the regular, fortnightly visits were an important driver of their behaviour change. They described how the accountability helped them to pause and reflect when tempted by less healthy foods.

Also knowing that there's someone that's going to be monitoring me. In the long-term, it's like maybe I shouldn't get that. Maybe I should have something healthier. [Patient]

Having the program delivered in general practice made it comfortable, trustworthy, accessible, and convenient for patients. Patients felt they could trust the education provided

because it was delivered by the general practice staff. Also, not having to travel to another location for the appointments was highly valued.

No major issues with the program were identified by the patients. However, many patients who left the program early did not agree to be interviewed. Conflicting commitments, such as increasing hours at work, changed work schedules, or needing to care for family members, were offered as reasons for leaving before completion. Patients who completed the six fortnightly sessions reported missing support from PNs once the fortnightly visits ceased.

Program completion and change in weight

Out 65 patients, 75% completed the six fortnightly sessions. After three months in the program, patients who had stayed the course had lost an average of 4.6kg (SD: 4.0, range: -18.4 to 2.0kg) and reduced their BMI by an average of 1.7 points (SD: 1.4, range: -7.1 to 0.6). Additionally, 94% had reduced their weight and 39% achieved a weight reduction of 5% or more.

The Counterweight Program's suitability to an Australian setting

Research staff, PNs and patients considered the Counterweight Program and resource materials to be appropriate to the Australian context with some minor changes.

Discussion

OVERVIEW OF RESULTS

The Costs Study

- > The PEP trial demonstrated that facilitating improvement in the frequency of assessment of weight and behavioural risk factors in general practice was relatively inexpensive and did not lead to increased costs to MBS or PBS.
- > These findings support the guideline recommendations to increase the frequency of assessment of smoking, nutrition, alcohol, physical activity and weight risk factors in general practice as the first step towards managing them across the NHMRC's 5As Guidelines.

The Referral Study

- > There were differences between GPs' reported referral behaviour for lifestyle and surgical interventions.
- > GPs were concerned about the effectiveness of lifestyle interventions, based on limited anecdotal feedback from patients previously referred. A perceived lack of patient motivation (sometimes conflated with low health literacy) was a common barrier to referral to lifestyle interventions.
- > GPs' attitudes towards bariatric surgery varied, with more positive views of this option based on positive feedback from patients. Some concern about patients viewing surgery as an 'easy option' was expressed. Intervention cost was a particular issue for bariatric surgery, which was reportedly unavailable in the public health system.

The Practice Nurse Study

- > The key findings of the feasibility study of a nurse-led intervention in general practice suggest that PNs can deliver a structured weight management program and provide a potentially important health service option for obesity management.
- > The Counterweight Program fitted into general practices with minimal disruption and practice staff members were keen to see it become part of standard care. Patients described how the Counterweight Program created a sense of accountability and a safe space for them to learn about weight management, explore barriers and make lifestyle changes.
- > The first three months of the program were completed by 75% of enrolled patients. For patients who completed the program, 39% had reduced their weight by 5% or more, with a mean weight loss of 4.6kg (SD: 4.0, Range: -18.4 to 2.0).
- > Fixed costs of providing the Counterweight Program at the time of the feasibility study (August 2014) included licensing (\$850) and nurse training and support costs (\$2000 per nurse, including nurse materials and a \$900 payment to practices to cover nurses' salary during the training sessions). Variable costs included the costs of the Counterweight's patient materials and practice payments per nurse session delivered. Training costs have reduced since the feasibility study (Table 2).
- > The cost per patient included the cost of reimbursing practices for each session delivered and the patient resources. This cost will vary according to the number of patients seen by each trained nurse, but over the 65 patients included in the feasibility study, the cost per patient was around \$340. Outside of the feasibility study, the cost per patient will continue to decrease with every additional patient enrolled.

- > Finding adequate funding for the program is the biggest challenge to ongoing delivery in the feasibility study practices.

IMPLICATIONS FOR POLICY/PRACTICE

Cost-effectiveness of increasing risk factor assessment in general practice

A key element of Australian government strategies to prevent chronic disease involves the assessment and early management of chronic disease risk factors, such as overweight and obesity. There is a concern, however, that policies and interventions aimed at increasing the assessment of risk factors will lead to increased downstream health costs due to more frequent health service use and costly interventions. The PEP intervention involved clinical audit, practice facilitation and linking practices to referral services and was designed to be delivered by PHNs. This improved the assessment of chronic disease risk factors, such as weight and waist circumference. The economic evaluation demonstrated that this was not at the expense of increased MBS or associated PBS. Given its importance in chronic disease prevention, the findings suggest that PHNs should adopt similar interventions to improve the assessment of risk factors for chronic disease within their region as a key element of their implementation of patient-centred medical homes and neighbourhoods policies.

Barriers to referral

Better communication and information on the outcomes of referrals to the local health system need to be provided to GPs. This qualitative study found that GPs' attitudes and practices were most strongly influenced by their previous anecdotal experience and patient factors, which suggest a failure of local systems of feedback from referral services to GPs. Greater efforts are needed to integrate general practice and the referral services and programs. This would better support GPs' decision-making processes. Referral patterns could be improved by PHNs establishing local referral and reporting pathways, as for example Sydney HealthPathways (see <https://sydney.healthpathways.org.au>).

More training on the NHMRC Guidelines needs to be provided to GPs and PNs. An online course for primary health nurses has been developed by the COMPaRE-PHC and is freely available from APNA or the COMPaRE-PHC website. Conflating motivation with health literacy is a common problem, suggesting the need for training in assessing health literacy and communicating appropriately with patients with low health literacy.⁵³

Cost is a significant barrier to referral for bariatric surgery. This is a concern, particularly given the cost-effectiveness of bariatric surgery.⁴¹ This significant barrier could be overcome by increasing the funding to make this option more available, in particular to low-income patients.

Feasibility of a nurse-led intervention in general practice

The role of PNs in prevention is still being defined and developed. The Counterweight Program was developed in the UK in 2000. It is a program for managing adult obesity delivered by PNs over six fortnightly sessions. The Australian pilot study demonstrated that the training could be delivered effectively to nurses via webinar and that it was feasible for nurses to deliver the program as part of their role in general practice. While further research is still needed to demonstrate its cost-effectiveness, the findings, so far, have implications for policy regarding the role and funding for practice nursing in weight management as there is currently no adequate funding mechanism for nurses to provide such service. It also has implications for the delivery of education and training to PNs by professional bodies (such as the APNA) and PHNs. This is important as nurses may not be available for unpaid attendance at out-of-hours education sessions, such as are currently provided by PHNs.

Overall

This set of three studies on the implementation of the NHMRC Guidelines shows that much needs to be done to improve their implementation. Earlier research shows that compliance is low across all the five stages. No single intervention will address all of the barriers to implementation. However, action is necessary because of the importance of obesity to the nation's burden of disease,^{5,54} the economic costs of obesity,^{6,55} and the cost-effectiveness of obesity interventions.^{56,57}

LIMITATIONS OF THE RESEARCH

The research reported here did not address all of the issues associated with the implementation of the guidelines for obesity. The research was also confined to general practices in metropolitan and rural NSW, Brisbane and Adelaide, and thus the findings may not be generalisable to other areas (for example remote areas). The Practice Nurse Study was only a pilot study and, thus, further research is needed to confirm the cost-effectiveness of the Counterweight Program in Australian general practice settings.

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