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**45-TO-49 YEAR OLD CHRONIC DISEASE PREVENTION
HEALTH CHECKS IN GENERAL PRACTICE: UTILISATION,
ACCEPTABILITY & EFFECTIVENESS**

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BACKGROUND

In 2001, 53% of the Australian adult population had two or three, and 16% had four or more, vascular risk factors.¹ The 2003–04 BEACH (Bettering the Evaluation and Care of Health) report found that 34.5% of general practice encounters were with patients who were overweight, 22% with those who were obese, 26.7% with those who drank alcohol at risky levels and 21.9% with those who smoked.² Although there is evidence that General Practitioners (GPs) can be effective in addressing these risk factors in general practice, few encounters involved risk-factor intervention, signifying an important gap between opportunity and practice.³

In response to development of a national framework for implementation of behavioural risk factor interventions in general practice⁴, the NSW GP Smoking Nutrition and Physical activity (SNAP) trial was conducted in two Divisions of General Practice with their associated Area Health Services. The evaluation demonstrated that a multi-strategy approach involving practice visits, training, resource provision and linkages with referral services could bring about changes to the organisation of general practice and the reported assessment and delivery of behavioural interventions.⁵ The trial has generated a number of resources, and has assisted in the development of the RACGP SNAP guide⁶ and Lifescripts, a subsequent lifestyle prescription program, which was implemented through Divisions of General Practice.⁷ It has also provided a number of tools which have been used by Divisions of General Practice in assessing need and evaluating the impact of their programs. One of the particular issues identified in the NSW SNAP trial was the importance of the availability of pathways to referral services. However, patient level data was not collected in this previous study and the demand on referral services was not able to be quantified.

Early in 2006, the Council of Australian Governments in its Plan for Better Health for All Australians⁸ identified the importance of promoting healthy lifestyles, which includes addressing issues across alcohol use, nutrition, smoking and physical activity. It has proposed that this be achieved through supporting the early detection of lifestyle risks and chronic disease via a Well Person's Health Check in general practice. The health check is for people aged 45-to-49 years with one or more identifiable risks that lead to chronic disease which support lifestyle and risk modification through referral to services that assist people wanting to make changes to their lifestyle. The first MBS item specifically targeting chronic disease prevention, the 45-to-49 year old health check, was launched in Australian general practice on 1 November 2006. (Appendix A)

There is evidence that brief lifestyle intervention can be effective^{9 10 11} and that it can be implemented in general practice.¹² Planned health assessments (periodic health assessments) in middle-aged adults have been demonstrated to improve the detection of SNAP behavioural risk factors, screening for cervical and colo-rectal cancer, and detection of hyperlipidaemia in general practice.^{13 14 15} This may be facilitated by involvement of practice nurses.^{16 17 18} However, the impact of an integrated health check has not been demonstrated, especially as part of a comprehensive health check in Australian general practice.

RESEARCH AIMS

This research project examined the implementation of behavioural risk factor assessment and management in the 45-to-49 year old health check. The study evaluated the impact on patient self-reported lifestyle behaviour, comparing the change in lifestyle behaviour of general practice patients aged 45-to-49 at risk of chronic disease before, and three months after, being recalled for a health check by their general practitioner. The study also explored the support required by general practice and other services to provide a lifestyle intervention for patients, and the utilisation and acceptability of the item.

This study will inform implementation of policy from the Council of Australian Governments on a preventive health check in general practice for people age of 45-to-49 years. The findings of this study have the potential to make an important contribution to the development of the 45-to-49 year old health check and knowledge of the capacity required to implement lifestyle modification.

The objectives of the study were to:

1. Identify the systems and other support (including referral options) required by clinicians to implement risk factor management through recalling patients aged 45-to-49 years with one or more risk factors for chronic disease to attend a health check
2. Evaluate the impact of the health check and an intervention to support it on clinician management and referrals generated
3. Evaluate clinician practices and attitudes in conducting the health check
4. Evaluate the self reported change in patient behavioural risk factors three months after this intervention
5. Evaluate the acceptability of the health check to clinicians and patients

METHOD

POWER CALCULATION

We aimed to recruit eight general practices and 25 patients from each practice (200 patients). If 80% of these attended for screening, and there is 10% loss to follow up over three months, 144 would be left.

Power calculations were based on the hypothesis that a health check, at age 45-to-49, results in a significant change in smoking, nutrition, alcohol consumption or physical activity behaviours. Estimates of the prevalence of risk factors are based on previous research.^{19 20} Assuming a $\beta= 0.8$ and $\alpha= 0.05$ and the proportion of patients who:

- Eat insufficient portions of fruit and vegetables is 60%, the sample size has sufficient power to detect a 15% change
- Smoke is 22%, the sample size has sufficient power to detect a 12% change
- Consume at risk levels of alcohol is 30%, the sample size has sufficient power to detect a 15% change
- Are sedentary is 55%, the sample size has sufficient power to detect a 15% change

RECRUITMENT

RECRUITMENT OF DIVISIONS OF GENERAL PRACTICE

St George, Central Sydney and Southeast Sydney Divisions of General Practice were invited to take part in the research and Central Sydney and Southeast Sydney Divisions agreed to participate. Letters of support for the research were produced by each of the participating Divisions, and Division CEOs were invited to take part in the research study's committee. The Division was asked to employ a part-time project invention officer for five months which was paid for by the study.

RECRUITMENT OF GENERAL PRACTICES

Each of the two Divisions was asked to recruit four practices to participate in the study. The Divisions were supplied with letters for their eligible general practices, which provided brief information about the project and outlined the benefits of involvement. A short description of the study was also provided for recruitment through the Division monthly newsletter.

General practices were eligible to participate if they used computer-based medical records, were not currently involved in other research, and were located within the boundaries of the participating Divisions of General Practice. Practices were identified from databases held at the Divisions of General Practice and invited to participate in the study via a letter from the Division. Interested practices could fax the project co-ordinator at UNSW or contact via phone to receive more information about the study and enrol. Verbal confirmation of participation was gained from the Principal GP prior to the first practice visit. All GPs and practice staff in participating practices were invited to take part in the study. All recruited practices then received the intervention to promote preventive care in the practice through the use of the 45-to-49 year old health check item.

RECRUITMENT OF PATIENTS

After the practice intervention was complete, patients were recruited into the study from participating practices, with the aim of recruiting 25 patients per practice. Fifty patients in the age range who had attended in the past year were identified from each practice's electronic medical records and were invited to participate. Based on an initial low response to the study, an additional thirty patients were invited.

Once the list of patients was created at each practice, an Excel macro was run to remove duplicates and randomly select the desired number of patients. The practice GPs were then asked to remove patients from the list who:

- Had current severe illness or personal circumstances which are of overriding concern
- Had already had a 45-to-49 year old health check
- Were deceased
- Were no longer a patient of the practice
- Had diabetes or cardiovascular disease
- Were unlikely to be able to complete the questionnaires without substantial assistance because of significant cognitive impairment (e.g. brain injury).

Patients who did not speak English were included in the study as they may have had a family member or friend who could assist with reading the information sheet and completing the survey. Details regarding sex and postcode were collected for patients excluded from the study. A flowchart of patient recruitment and data collection is located in Appendix B.

All patients on the final list were sent a letter from the practice, signed by their GP, advising that the practice was participating in the research study and that the patient had been randomly selected to take part. An information sheet from UNSW was included, as well as the consent forms, the surveys and a stamped envelope addressed to the project co-ordinator. Patients were asked to read the information, sign the consent forms, complete the questionnaires, return them to the university, and phone their practice to arrange a health check consultation.

DATA COLLECTION

Table 1: Primary data sources for research objectives

Research Objectives	Data sources
Identify support needed by clinicians	Clinician interview, Division officer post-intervention interview
Evaluate impact of health check on workload	Clinician interview
Evaluate clinician practice re: health check	Clinician Interview, Clinician survey
Evaluate clinician attitudes regarding conducting the health check	Clinician Interview, Clinician survey
Evaluate change in behavioural risk factors	Patient survey
Evaluate acceptability of health check to clinicians	Clinician Interview
Evaluate acceptability of health check to patients	Patient survey

PRACTICE AND CLINICIAN DATA

Data collection involved a demographics survey for each practice to complete, a pre and post survey for each clinician to complete, and an interview with each clinician after the intervention.

The instruments used were the following:

Practice Details Form (Appendix C) – This form was for the practice to complete prior to practice visits by the co-ordinator. Details obtained were to inform the researcher and intervention officer prior to visiting the practice.

Clinician Survey (Appendix D) - This consisted of the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ) and SNAP Interventions Survey

*Preventive Medicine Attitudes and Activities Questionnaire*²¹ – This is a validated quantitative tool used to assess practices and attitudes regarding cardiovascular disease preventive care. It has three subscales — CVD prevention behaviours, CVD prevention perceived importance, and CVD prevention perceived effectiveness.

SNAP Interventions Survey – This brief survey was integrated into the PMAAQ scale and was developed by the project to assess the frequency of 5A's interventions for SNAP risk factors in people at risk of chronic disease as well as capture items related to alcohol not covered by the PMAAQ.

Practice Staff Post-intervention Interview (Appendix E) – This semi-structured interview schedule was developed by the project to assess GP and nurse acceptability of and personal experience with the 45-to-49 year old health check in general practice, and to identify factors which acted as facilitators or barriers to implementation and patient behaviour change.

PATIENT DATA

Preventive Care in General Practice Survey (Appendix F) – This instrument used validated questions based on the NSW Health Survey which was completed by patients, and identified:

- Practice attendance in the previous three months, reported practice assessment and management of SNAP risk factors, and acceptability of the health check
- Attendance at other services to manage SNAP risk factors including those as a result of referral from the practice or self-referral
- Fruit and vegetable intake, alcohol consumption, the incidence of smoking and physical activity, and if the patient was currently or had recently attempted to make changes to decrease the SNAP risk factors.

Additionally the patient survey included demographic questions regarding education, gender, home ownership, country of birth, language primarily spoken at home and marital status. From the patients' postcode the socioeconomic status of the area in which the patient lived was determined using by using the SEIFA index (Australian Bureau of Statistics Index of Relative Socioeconomic Disadvantage 2001)²²

DATA ANALYSES

QUANTITATIVE DATA

Provider data

Descriptive analysis only was performed on the clinician survey due to the small numbers involved (GP=13, nurses=1).

Patient data

Data comparing patient responses before and after the intervention was analysed on an intention-to-treat basis, thus all patients who consented to participate and completed both surveys were included in the results, although some of these patients may not have completed their health check. Data on readiness to change and behaviour change was analysed in relation to patients with each relevant risk factor. Thus readiness to change or change in smoking status was expressed as proportion of those who smoked. Changes in behaviour were identified through self report of having made changes, and through differences between levels of behaviour reported before and after the intervention.

Non parametric statistical tests were performed on categorical data, with the Wilcoxon Sign test used for pre and post measures on the same individuals and Chi Square for examining two or more groups within the data set. Paired t-test was used to analyse the individual reported weights of patients, as this was normally distributed continuous data. Quantitative data analyses were supported with the statistical program SPSS v15²³. Intercluster correlation coefficients for key hypotheses were calculated. There were no significant cluster effects identified in variables associated with the key hypotheses, and therefore single level analysis was used to analyse this data.

QUALITATIVE DATA

The interview data were coded based on recurrent themes. Codes were reviewed for duplication and clarity, and edited accordingly. Throughout the analysis, emergent themes were added to the coding framework to ensure completeness. The coding was developed and crosschecked by a second researcher. Qualitative analysis was supported with the computer software program QSR NVIVO7²⁴. The qualitative data was re-analysed, and additional interviews were conducted, for a separate sub-study on the factors affecting GP decision making within the health check. The results of this sub-study are presented in Appendix G.

ETHICS

The study methods received approval from the University of New South Wales Human Research Ethics Committee.

INTERVENTION

BACKGROUND

This research study involved an intervention for the practices and patients. The intervention for practices, referred to as the study intervention was undertaken by the Division project officer. The intervention for patients was the health check which was undertaken by the practice clinicians.

The aim of the study intervention was to provide support that allowed practices to implement ideal systems and processes to perform a 45-to-49 year old preventive care check for patients at risk of chronic disease. This support was intended to reflect the scope of usual Division practice support activity.

DEVELOPMENT

The study's Division project officer was employed to work in both Divisions; planning and delivering the intervention for all of the study practices. The goals of the intervention were to support the following areas:

Clinician skills

- Clinical staff knowledge about the health check item and its use
- Clinician awareness and use of motivational interviewing/stages of change to provide appropriate brief interventions during the health check
- Clinical staff awareness of 5A's and opportunities for intervention

Information Technology and Information Management

- All members of the team have access to patients' clinical records where appropriate, and record 5 A's
- Patients requiring follow up with the GP are either recalled to the practice by a systematic method, or are provided with their next appointment at the time of consultation
- A systematic approach to maintaining patient registers
- Comprehensive recording of SNAP risk factors and interventions in a searchable electronic format

Practice support systems

- Maintaining an up-to-date directory of linkages with health professionals or organisations for SNAP-related referrals, and a systematic approach for updating this
- A systematic approach to providing patient education and resources (paper or electronic)
- Identification of the potential for expansion of the roles and responsibilities of non-GP staff to support prevention and strategies to do this.
- Practice billing systems which include the 45-to-49 year old health check.

The support needs of the practices were assessed during an initial meeting with the practice. In order to provide the most appropriate support, existing resources (including guidelines and training) were identified for use in the intervention.

ELEMENTS OF INTERVENTION

The intervention was developed by the project's Intervention Committee and the Division project officer. Practices received the following support as part of the health check intervention:

- A resource guide to the health check MBS item
- Health check template for medical software (Appendix H)
- Training in Lifescrpts lifestyle assessment and prescription program⁷
- Training workshop on the health check and motivational interviewing techniques to modify behavioural risk factors
- Guidelines on prevention in general practice²⁵ and SNAP risk factors²⁶
- Waiting room posters advertising the health check
- Local referral resource directory
- Assistance with planning execution of item in multidisciplinary teams
- Foreign language patient education sheets where applicable
- Phone support and practice visit support where needed

The intervention was then implemented by the Division project officer over the three month intervention period. The project officer recorded what support was provided to each of the clinicians and took part in an interview for the study at the end of the intervention.

During this time each practice had between two and four practice visits from the intervention officers, with half of the study practices receiving two visits.

RESULTS

CHARACTERISTICS OF PARTICIPANTS

CLINICIANS

Fourteen clinicians from eight general practices participated in the study. All took part in an interview, and twelve of them completed the Clinician Survey. All practices completed the practice details form.

There were thirteen GPs and one practice nurse, of whom eight were females and six were males. They had been working in general practice for a mean of 18 years however, two were GP registrars who had been in general practice for only three weeks. Two-thirds of the clinicians were over age 45. Six were from practices with four or more GPs, three were from practices with two or three GPs, and four were from solo practices. Three of the practices generally charged a \$50 co-payment for all adult consultations if the patient did not hold a health care card. Of these practices one charged the \$50 for the health check, while the other two bulk-billed the health check visit but kept the co-payment for other visits associated with the health check.

When clinicians are quoted in this report, a letter code for each individual is included at the end of the quote. The one nurse participant is not identified separately in order to maintain confidentiality. In Appendix I, each clinician's letter code is listed along with his or her gender, practice size, bulk-billing arrangements, and the socioeconomic area in which the practice is located. Also included is an averaged score for the degree to which each clinician rates SNAP risk factors as a work priority, frequency of SNAP referral, and perceived effectiveness at changing lifestyle risk factors.

PATIENTS

Of the 547 patients who were invited to participate in the study, 150 responded to the first survey and reminder (27.4%). An additional 32 patients were then lost at post-intervention follow up, leaving 118 patients in the study (21.6% of all patients invited). The characteristics of the 118 patients who completed baseline and follow-up data, as well as the same characteristics for people of all ages living in the same area, are presented in Figure 1. Most notably the study sample had a higher proportion of married and employed people than the general region. Of the eight participating practices, each practice had between eight and 25 patients participating in the study. More invitations to participate in the study were sent out to female patients, resulting in a higher proportion of females in the sample. However, females were no more likely than males to choose to participate in the study. Because non-participants did not consent to the study, other demographic data is not available to examine responders versus non responders.

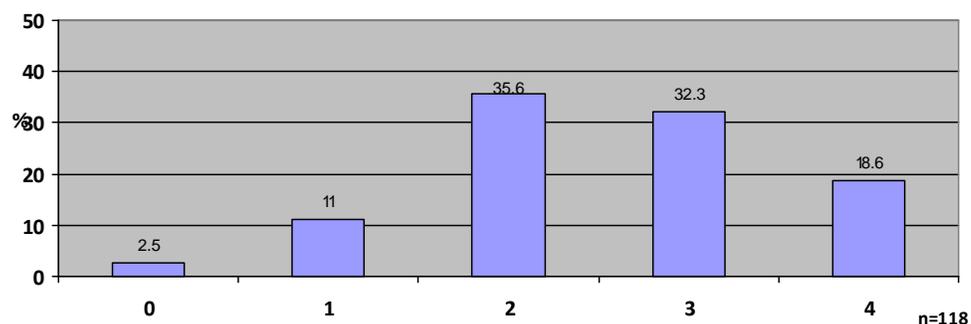
As participants were included on the intention to treat principle, some patients involved in the study may not have attended for a health check or may have attended for the first visit but failed to return for follow-up in which the item may have been charged. According to practice billing records, 77% of the patients who participated in the study had had the item billed.

Table 2: Characteristics of participants

	Central Sydney Statistical Division Census 2005 ²⁷	Health Check Study data (n=118)
Males	51.3%	43.6%
Overseas born	35.7%	47.0%
Married	35.0%	71.2%
Employed Full or Part time	35.0%	80.7%
Home owner or purchaser	64.2%	65.8%
Educational attainment: Year 12 or HSC or higher	55.4%	63.3%

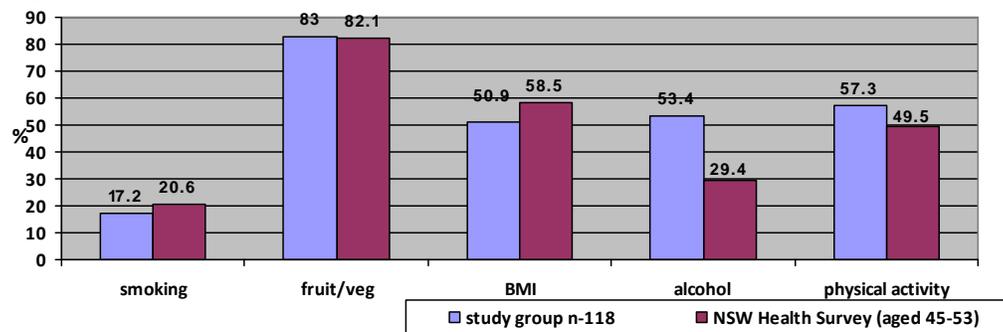
While patients were called in based only on their age, all patients who presented as a result of the recall had some identifiable risk factor, and 97.5% had at least one of the SNAP risk factors. The majority of patients had two or more of the risk factors of insufficient fruit and vegetable intake, insufficient physical activity, smoking, at-risk alcohol consumption and being overweight or obese (Figure 1).

Figure 1: Number of SNAP risk factors found at baseline



Of the study participants 17.1% were smokers, 83.6% had insufficient fruit and vegetable intake, 50.9% were overweight or obese, 53.4% were at risk with regard to alcohol use, and 57.3% had insufficient physical activity. These are comparable with NSW Health Survey data for people aged 45-54 except for alcohol, where a different definition was used to define at-risk drinking in the NSW Health Survey²⁸ (Figure 2).

Figure 2: Presence of risk factors in participating patients vs. NSW Health Survey



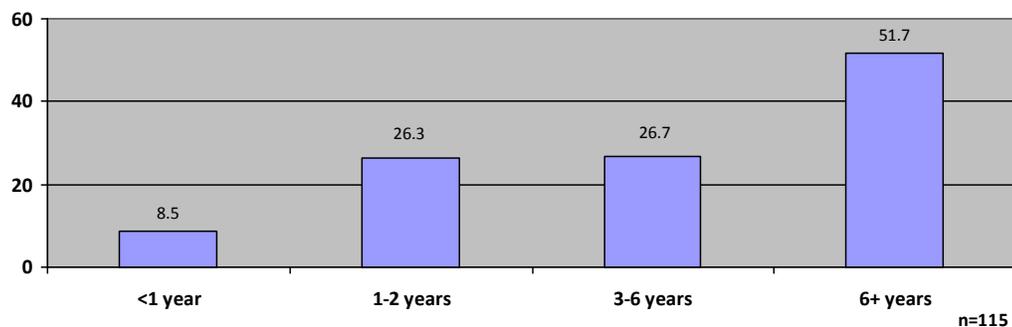
Some lifestyle risk factors were associated with patient demographics. These are reported in Table 3.

Table 3: Demographics associated with Lifestyle risk factors (n=118)

Risk factor	Associated with	X ² and p value
Insufficient fruit and vegetables	Living in low socioeconomic status (SES) area	$\chi=7.017$, $p=.008$
Insufficient physical activity	Living in a low SES area	$\chi=4.582$, $p=.032$
Overweight or obese	Being male	$\chi=13.194$, $p<.001$
Smoking	Unemployed	$\chi=14.680$, $p<.001$
	Not married or defacto	$\chi=15.374$, $p<.001$
At-risk alcohol use (including non-drinkers in sample)	Australian born	$\chi=6.186$, $p=.013$
	English speaking at home	$\chi=20.962$, $p<.001$
	Tertiary educated	$\chi=7.035$, $p=.008$
	Married or defacto	$\chi=5.698$, $p=.017$
	Living in a high SES area	$\chi=12.370$, $p<.001$
At-risk alcohol use (non-drinkers excluded from sample)	English speaking at home	$\chi=13.768$, $p<.001$

Just over half of the participating patients had been attending the practice for more than six years (Figure 3).

Figure 3: Length of time participants had been patients of the practice



CLINICIAN PERCEPTIONS OF PARTICIPATING PATIENTS

Prior to the health check, clinicians were uncertain who would present for the health check, but some thought that females may be more likely to present, in addition to the worried well. After the health check clinicians reported no gender bias, but indicated that it was the more motivated patients who had responded, with some reporting that those who responded also had fewer risk factors.

I thought we would have an overwhelming response and interestingly the response was far better in the people who were already in good health...Those who did not want to do it at that time they said that they'd come in later or they were short of time and that they knew what already needs to be done. That they were a bit shy or embarrassed about their already poor practice. Dr D

But of those that chose to go ahead with [the health check], by and large they were the ones that already knew they should be doing these things...so the impression I got was that those that needed it most ...are the ones that aren't going to come anywhere near us. Dr N

There were one or two that certainly were nudged into having something done who patently needed a fairly significant change in lifestyle and my memory of at least a couple who worked very hard...so in sense it's highlighted some people who desperately needed intervention. Dr I

Summary: Characteristics of Participants

Clinicians

- 13 GPs and 1 practice nurse
- 8 females and 6 males
- Worked in general practice an average of 18 years

Patients

- 21.6% of all patients invited completed pre and post surveys
- Males and females were equally likely to participate
- 97.5% had at least one SNAP risk factor; most had two or more
- Presence of patient risk factors were similar to those for NSW
- Those presenting were more motivated to change lifestyle

DELIVERY OF HEALTH CHECK

RESOURCES USED FOR SUPPORT

Template

A computer template was developed by the Divisions network to act as a guide for assessment and intervention for the health check. In addition the template was designed to auto-populate if assessment data was already stored in the patient's electronic record. The template was requested by all GPs except one who had designed their own template, and another who used predominantly paper records. Almost all GPs reported always using the template during the health check, although two reported that although they used it as a guide, they recorded assessment and intervention on paper records. Two GPs had technical difficulties in getting the template to link up with their data, and multiple visits were required by the Division intervention officer to assist.

Lifescrpts

Prior to the study, none of the 14 clinicians had been trained in or used Lifescrpts resources. The Division project officer provided one-on-one training in Lifescrpts to all of the practices, and more than half of the clinicians reported using Lifescrpts regularly within the health checks. All clinicians who utilised the resources reported finding them useful in their practice.

Some GPs used Lifescrpts only for assessment, some only for intervention, and some used them for a combination of both. This was generally done in an ad hoc manner, with GPs citing forgetting to use the resource as a barrier to use. In the practice which had a nurse, assessment with the use of Lifescrpts was systematically provided, and the nurse included appropriate intervention prescriptions in the file for the GP to consider using.

I'd use a lot more of the assessment tools than the prescription tools...It's just about trying to have a reasonably efficient timeframe in terms of offering advice to people, but I mean I rarely send people out the door without something written down on a piece of paper because experience tells me that if you don't reinforce the information you're giving people, by the time they've gotten to the front door they've forgotten it. So that's where the lifestyle scripts are good. Dr I

I think that the Lifescrpts were really good and I do actually intend to use them for other patients, outside of that age group. Dr K

I haven't used them but I know that they're there. I must say that I ad libbed it myself rather than use it formally...I'd like to be able to use it, yeah. Dr H

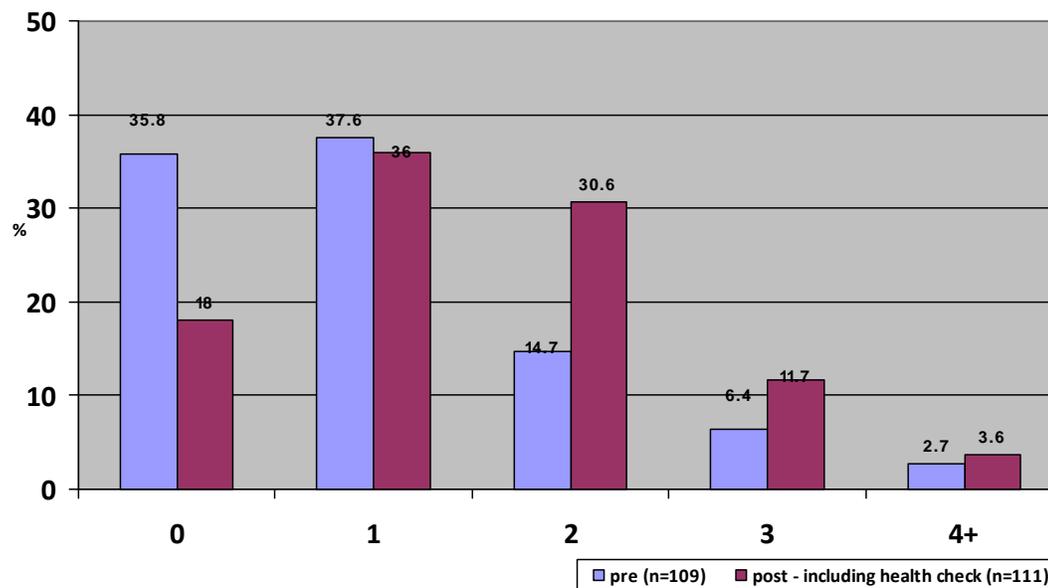
Other resources

Guidelines were provided to clinicians to support the assessment and management of lifestyle risk factors and general preventive care. These guidelines were not mentioned by any of the clinicians as having been utilised in providing the health check. Additionally several practices requested waiting room posters advertising the health check. These posters appeared to have minimal impact in prompting patients to request a health check.

STRUCTURE OF HEALTH CHECK

General Practitioners used different numbers of visits to complete the health check, with all but one finding that it generally took more than one visit to complete all of the necessary assessment and intervention. The majority of patients who had reported visiting their GP in the previous three months recalled having made one or two visits both before and the three months including and following the health check (Figure 4). For all patients the mean number of visits in the three months prior to baseline was 1.15, and at the point of the health check and the following three months the mean number of visits was 1.55.

Figure 4: Number of visits participants had made to the GP in the previous 3 months



The health check involved the same steps for most clinicians; assessing the risk factors, ordering required blood tests, reviewing test results, and providing an intervention as necessary. The blood tests were the primary reason for the health check taking more than one appointment. Some clinicians also considered that patients with complex or multiple risk factors needed more time – and therefore an additional appointment. Intervention was often provided before test results were received, and in some practices normal test results were reported back to patients over the phone. Practices in lower socioeconomic areas operated primarily on a walk-in basis, and generally charged the item 717 at the first visit, making this as comprehensive as possible in case the patient did not return for subsequent visits. In one practice in an area of high socioeconomic status the health check item was charged at the second visit. This practice found several patients did not attend the second visit and so were unable to claim the item 717 for those patients.

A GP from a practice in a high SES area described the format of the health check for his patients:

It takes three appointments, first of all the initial appointment you're really just discussing what is going to happen and taking a brief history and taking their blood pressure so you can repeat that...the second visit is to take the blood test 'cause we do them ourselves here...most of the emphasis is in the last visit (when the item 717 is charged). Dr A

This was in contrast to the way a GP in a practice in a low SES areas conducted the checks.

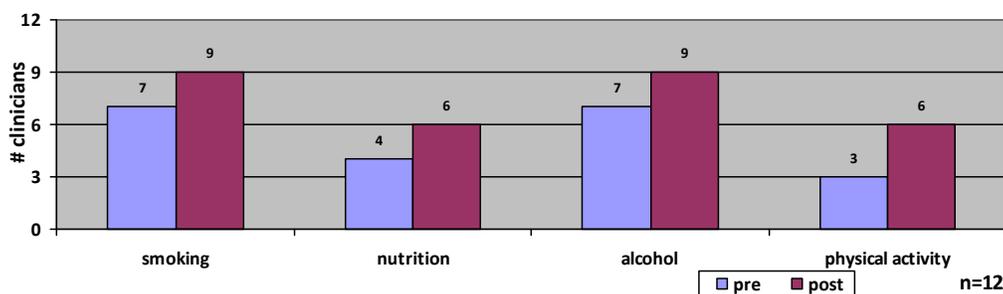
[the health check is conducted in] one appointment...because if I split it up I can't be assured that they would turn up and it would lose its impact...Preventive health care doesn't seem to worry much to patients so it has to be done in the one consult I think. Dr D

CONTENT OF HEALTH CHECK

Assessment

After the intervention half or more of all clinicians reported asking about the SNAP risk factors "often" or "always" (Figure 5).

Figure 5: Number of clinicians who reported asking about SNAP risk factors "often" or "very often" when seeing a new patient or doing a health assessment



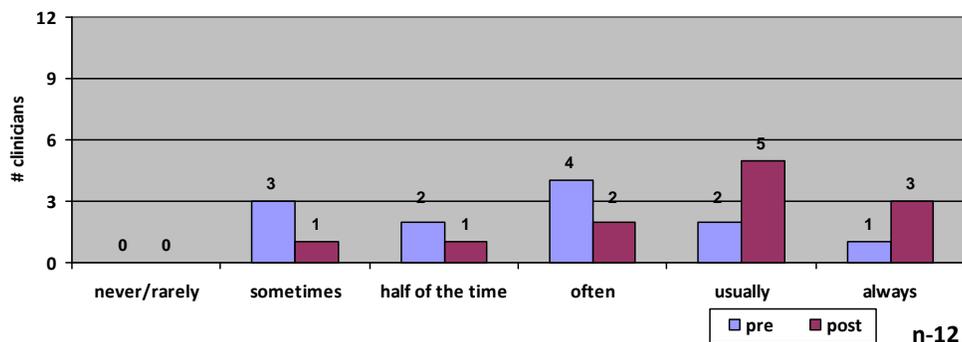
Screening in the health check often focused on physiological assessment by the GPs, with less emphasis on behavioural risk factors.

I mean it [alcohol consumption] probably comes up in discussion because I'll check their liver function tests and stuff like that but I don't make it my business to sit down with every patient I'm screening and go into a detailed alcohol consumptions history. Dr I

In the practice that had a nurse, she performed a structured assessment using Lifescripts, took blood samples where needed, and performed the physiological assessments, all of which totalled approximately 40 minutes.

The intervention provided to the clinicians included training in motivational interviewing, of which one component is assessment of patients' stages of change. This assessment was noted to increase after they had undergone the training, although stayed at low levels (Figure 6).

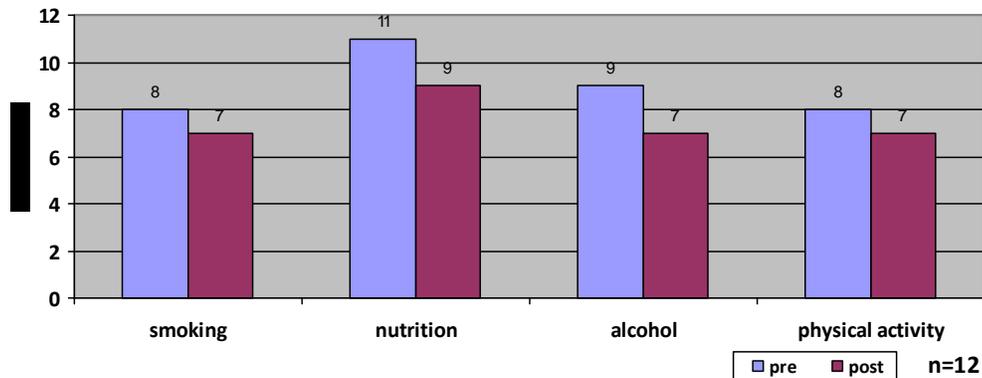
Figure 6: Frequency clinicians assessed readiness to change when seeing a new patient or doing a health assessment



... when you went to the workshop you thought "oh, I'm going to do all this, I'm going to do all this, I'm going to check all these patients" but when it comes to doing it, it's a different story...Because of time, because of people don't want it, because of many reasons. Dr E

GPs reported their training needs in risk factor assessment before and after the intervention (Figure 7), and these decreased slightly.

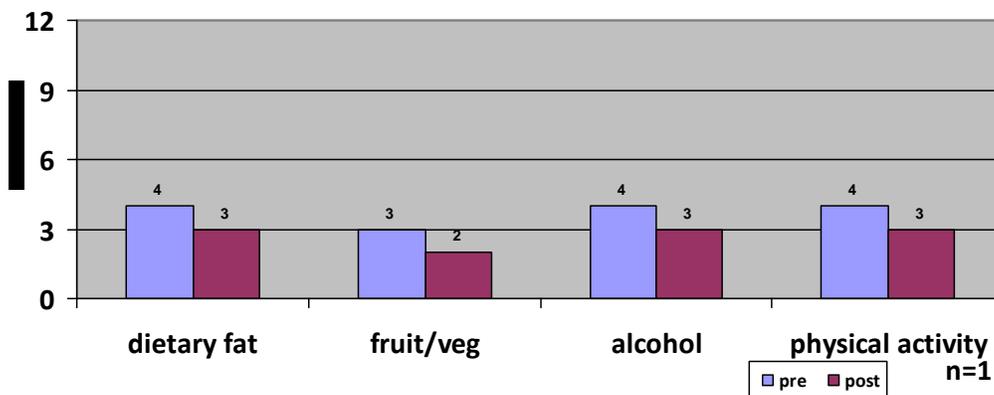
Figure 7: Clinicians who wanted further training in assessing the SNAP risk factors



Management

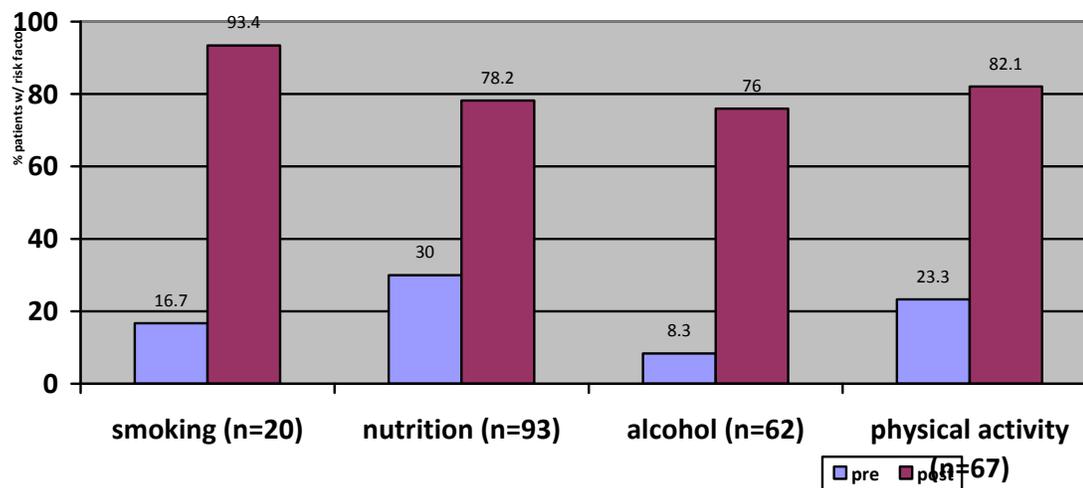
Reported management of lifestyle risk factor behaviour focused primarily on giving advice. Levels of advice provided did not vary between the risk factors (Figure 8).

Figure 8: Number of clinicians who report giving advice about SNAP risk factors "often" or "always" when seeing a new patients or doing a health assessment



There was a substantial increase in the information and advice that patients reported receiving with regard to each of the risk factors after the intervention (smoking $p=.01$, nutrition $p<.000$, alcohol $p=<.000$, nutrition $p<.000$) (Figure 9).

Figure 9: Patients with risk factor who reported having received information or advice on risk factor from the practice



Some clinicians used the Lifescripts resources to assist with management by providing personalised lifestyle prescriptions. Despite good intentions to use this aspect of motivational interviewing, it was acknowledged by some GPs to be difficult to put into practice.

...now you can address some of the risk factors and assess somebody's willingness to make changes in their lifestyle and with the particular point they're up to so you know whether or not you're wasting your time by going ranting and raving and never seeing them again, or whether in fact you're better off to ask the question, make the statement and if they're not ready to move on then be prepared to address that at a later stage. Dr N

The interviews revealed there was a strong sense that GPs were more comfortable with assessment than management. Intervening in the lifestyle risk factors was challenging for clinicians, particularly when it went beyond providing advice. The Division project officer also noted this preference for assessment through his contact in supporting the clinicians, and stated in interview:

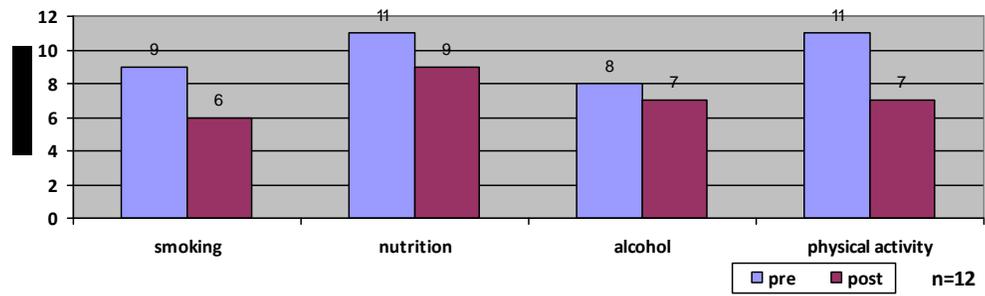
GPs focus more on the assessment than management. Providing advice to patients they are good at, but engaging patients in an intervention they seem reluctant to do. I get the feeling that a lot of GPs leave it up to the patient but the GP can have more influence if they want to. Division project officer

Additionally as screening occurs prior to management it was stated to be easier to complete because often it can be done mainly in the first visit. Management, on the other hand, was indicated by many GPs as preferably requiring at least one additional visit.

When seeing patients who already had low levels of risk, GPs used this as an opportunity to reinforce the healthy lifestyle choices made by the patient.

General Practitioners reported their training needs in risk factor assessment before and after the intervention (Figure 10). Overall the interest in receiving more training in the SNAP guidelines was high.

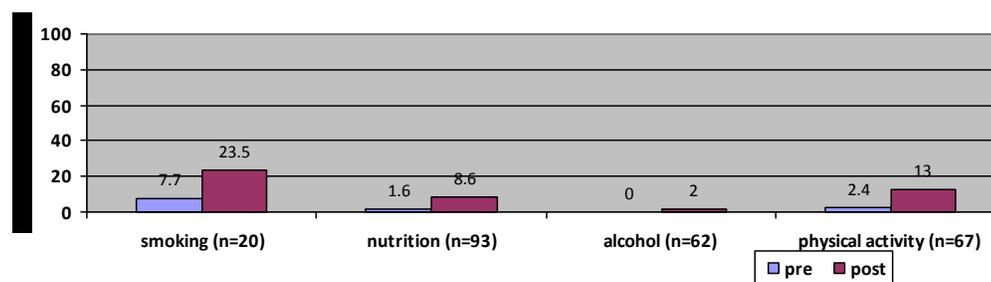
Figure 10: Clinicians who wanted further training in SNAP risk factor management



Referral

There were few referrals for primary prevention prior to the health check, and this increased only slightly when the health checks were implemented (Figure 11).

Figure 11: Referral of patients with risk factors to other services before and after the health check



The number of GPs who reported referring patients to smoking cessation programs often rose from one to three. Patient-centred reasons for not referring were a perceived lack of patient motivation and cost.

If I'm going to refer them and if they are not quite motivated and then it's going to fail and they would have spent money as well and then they would be turned off next time to even talk to the doctor because they will be referred. Dr D

Other clinicians felt that referral was generally not necessary for this group of patients unless there were complicating factors and/or chronic disease.

Okay, if the patient has high cholesterol or hypertensive and perhaps is overweight we'll discuss their diet and that sort of things and I would ask them if they would like to see a dietician. Dr A

...but if you've got someone who just likes to smoke and drink and eats meat pies for lunch and doesn't actually have a chronic disease, then he doesn't qualify for a care plan and he's now going to be wanting to or required to pay for a dietician. It's their choice. I would be happy to discuss it but my understanding is the patients are reluctant to pay for anything let alone a service like a dietician. Dr N

My philosophy is in-house as far as possible on any medical condition I'm not a high referral source for things that don't, in my view, need to be referred if it's only a second person saying what I'm already saying I think it's a waste of people's time and money by and large...it's not in keeping with my practice philosophy to make referrals simply because the referral agency exists. Dr F

One GP used referrals where she felt that she was not effective in assisting patients.

I don't think I'm the best person to deal with smoking and I send them to Quitline. I tell them if they need advice or they need medication from me I'll give it to them but I'm not a very good counsellor with smoking. I think it frustrates me the most. Dr J

General Practitioners from practices in higher SES area that did use private referrals described the benefit of having a multidisciplinary approach to lifestyle change.

It was fairly obvious that they need to tackle their problem in a number of different ways and having talked to the exercise physiologist there, they don't provide a complete solution but they at least get people motivated and get the concept of this is a multi-faceted approach to solving a problem...cost is always an issue but again it depends on where your practice is. Dr I

Unlike older age groups and those with chronic disease, these 45-to-49 year olds were likely to be employed and were often busy with work commitments.

...If someone is working then won't have the time to go during the week and many of these practitioners are not available on weekends obviously. Dr L

Follow up visits

Follow up visits were used in some practices where lifestyle interventions had been put in place. However, the overall rate of follow up was low, reflecting the passive approach to managing preventive care taken by most clinicians.

They didn't come for follow-ups. I suppose I didn't stress for the follow-up either. Dr E

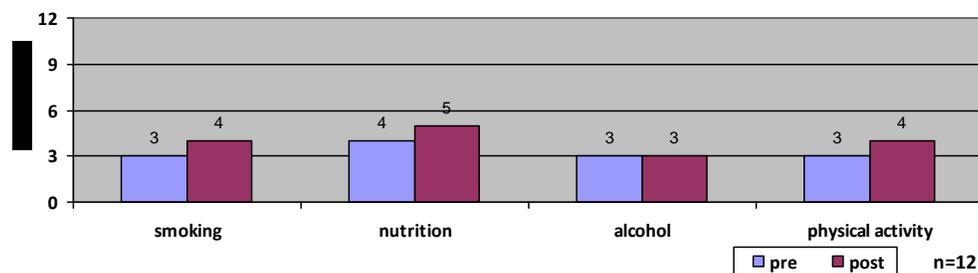
Half of them returned and half didn't. Typically as we would expect. Dr D

Some GPs used follow-up more frequently.

Yeah, well with the ones that are smoking and drinking I always tend to make a follow-up appointment because you're organising a quit day 'til I see them, say two or three days after the quit date, or at least we'll speak on the phone. So probably I mean I saw all of them as a follow-up or at least I spoke to them on the phone but specifically probably for about 60%. Dr K

Overall, active follow-up was not frequently carried out as part of the health check (Figure 12).

Figure 12: Clinicians who reported asking patients to return for follow-up "often" or "always" as part of SNAP risk factor management



Summary: Delivery of Health Check

Resources

- Computer templates for the health check, Lifescripts and Motivational Interviewing training were useful
- Guidelines provided and referral directory overall not utilised

Structure

- GPs preferred between 1 and 3 visits to complete the health check
- Lower SES practices aimed to complete in one visit due to low return

Content

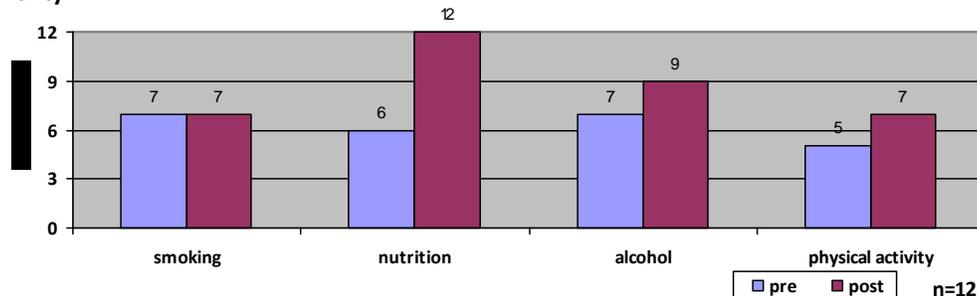
- Screening focused on physiological risk in some cases more than lifestyle risk
- After the health check there was an increase in information and advice that patients reported receiving on risk factors (as compared to normal consultation)
- Referral rates increased but remained low
- Follow-up appointments after health checks were not often arranged

CLINICIAN ATTITUDES

ORIENTATION TO PREVENTIVE CARE

Prior to the intervention, there was little difference in the priority clinicians assigned to different risk factors. After the intervention there was a small increase in the number of clinicians reporting alcohol and physical activity as "high" or "very high" work priorities (Figure 13).

Figure 13: Clinicians who rated managing SNAP risk factors as "high" or "very high" work priority



When averaged for all risk factors, approximately half of the GPs indicated SNAP risk factors as a high priority for their work both before and after the intervention.

Although not all clinicians viewed prevention as a high work priority, most expressed a belief that preventive care was part of their role and responsibility.

I would say if someone is practising good medicine (they) would do it anyway because that's part of the job of the GP. Dr L

And some enjoyed particular aspects of prevention, and gave more priority to these.

Well, diet and exercise, I really like trying to have people lose weight. In fact I get them back and have a longer consultation with them for the weight and diet issue. Dr J

However, even clinicians who viewed prevention as a high priority provided a more passive approach to preventive care management, with less aggressive intervention and follow-up than for acute situations. This is evidenced by the following statement which was made by a GP who reported prevention as a high work priority.

I mean [prevention is] important but it's not like we're dealing with an ongoing health complaint on God forbid cancer or a heart disease where if they didn't do something and they didn't turn up for their next appointment that things are likely to go wrong because this is of an ongoing impact. Dr D

PERCEPTIONS OF SUCCESSFUL OUTCOMES

General Practitioners offered different definitions of success for addressing SNAP factors. Some rated success in terms of their patients achieving incremental behavioural changes, while others implied that success meant attaining low risk status as defined in the guidelines.

These differences are demonstrated by the following quotes:

I cannot expect him to be 25 BMI. It's never going to be possible ... if he changes just a few things and he maintains his weight or it doesn't increase more that would be my success or if he manages to lose even 5kg... Dr D

...losing 50 kilos in weight or they're starting to exercise when they haven't done anything for 20 years and those are the people who benefit. Dr I

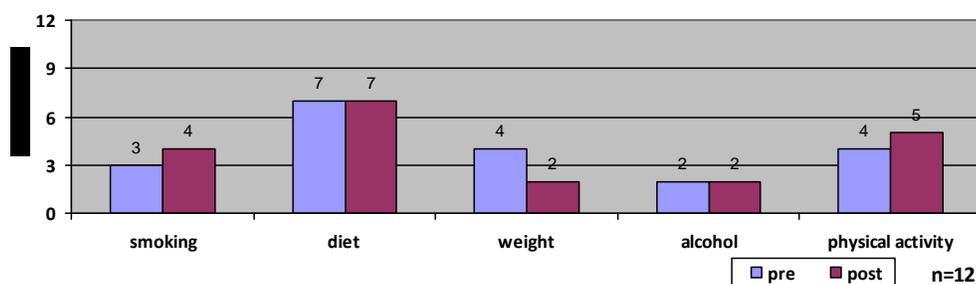
The first GP also viewed success as maintaining a good doctor-patient relationship:

...and [if he] keeps a rapport with me and keeps coming back to get his blood pressure checked ... then I think we've done him something... Dr D

BELIEF IN EFFECTIVENESS

Clinicians felt that they were more effective at changing diet than changing other factors, with just over half of the clinicians reporting they were at least moderately effective in promoting dietary modification (Figure 14). Perceived effectiveness in changing weight, smoking and alcohol remained lower with a third or fewer clinicians reporting at least moderate effectiveness.

Figure 14: Clinicians who reported feeling "moderately effective" or "very effective" in changing patient behaviour for the SNAP risk factors



Certain GPs had interest areas which they found easier to address and in which they deemed themselves to be more effective, and also acknowledged there are other professionals who may be more effective at providing intervention for particular risk factors.

I'm not very good with smoking, I have to admit. So I tell them to call the Quitline and I didn't ask any of them to come back to see me for that purpose, but mainly cholesterol, nutritional issues, diet and weight. Dr J

CLINICIAN AS MOTIVATOR

The concept of patient motivation was widely discussed in the interviews. This tended to relate more to the patient's level of motivation on presentation, rather than what the clinician could do to motivate the patient. Overall, clinicians focused interventions on patients who were already motivated to change, although some also sought to be a motivating influence.

The patients who were not motivated I think found some motivation; in fact I've seen some of them afterwards. Dr J

I always try but it is the example of the horse, you can drag the horse to the water but you can't make the horse drink. Dr L

Whether GPs see their role as motivators appears linked to their perceived effectiveness in changing behaviour as well as to their confidence in intervening with risk factors.

We are not here as saints to – I mean we need to move on with our time and there are some ten other patients for one unmotivated patient who we can help. Dr D

One GP who reported low effectiveness in changing behaviour but high confidence in managing risk factors stated:

I think I've discharged my duty once I've informed (them) that they own such an issue and invited them to deal with it further with me at their pleasure. Dr F

A GP who reported both low effectiveness in changing behaviour and low confidence in managing the risk factors stated:

Basically you can only educate and it's up to the individual. Dr E

Several GPs suggested that motivation was tied to the amount of education their patients had, as distinct from SES.

I think education was a big factor in their perception of their health. The more literate and more educated groups seemed to take things more seriously and were motivated to do something about it. Dr D

Summary: Clinician Attitudes

Work priority and orientation to preventive care

- SNAP risk factors are a moderate to high work priority
- Prevention is part of the GP's role, but not to the same degree as acute care

Perceptions of successful outcomes

- Variation between maintaining relationship with patient, patient making small changes, and patient changing lifestyle to meet guidelines

Belief in effectiveness

- Just over half of GPs felt at least moderately successful at changing diet, but less effective with changing activity, weight, smoking and alcohol

Clinician as motivator

- Overall interventions focused on already motivated patients
- View of role as motivator appears related to belief in effectiveness

IMPACT ON PREVENTIVE CARE PROVIDED

There were different views on whether the health check increased the amount of preventive care that clinicians provided. GPs working in practices which they described as having a focus on prevention reported that the health check item made them restructure the way they delivered preventive care. While they thought that it did not increase the amount of preventive care they provided, this might be different in practices which were not as oriented towards prevention.

*Well I like to think...that the health check itself hasn't really caused a radical change in how we practice....I mean I'm just as happy to have a long consultation with someone and I suppose as a potential revenue raising exercise it's of marginal benefit and as far as I'm concerned it's just another item number.
Dr I*

This same clinician who regularly used long consultations for preventive care acknowledged that the item and the associated support had redirected his focus towards a more comprehensive risk factor approach. As a result he had increased his screening for alcohol.

I'll be perfectly honest. My knowledge of my patients drinking habits is less than it should be compared with other areas of other parameters ...I probably ask them but I don't necessarily make it my business. So if there's one area I've learnt about probably is more about taking an alcohol history. Dr I

Other clinicians responded that having extended time and compensation to address prevention resulted in its increased viability and occurrence.

It allows us to take the time to consider all the factors. It is a really time consuming task and without the remuneration it's just not viable. Dr G

Yes, being able to address the issues separately as a separate consultation I think is very worthwhile and you can get far more into the issues than you can when you see someone who's in the right age group and they've come in for something else and you can briefly address those issues and perhaps give them a form for a blood test...it's good for providing extra time...it doesn't make a difference to the patient perhaps but it makes a difference to us financially. Dr A

The health check was also seen as an opportunity to deal with behavioural risk factors in an environment where patients expect to be asked about their lifestyle, thus removing some barriers to assessment and intervention.

I don't raise, I mean in a normal consult, I don't raise all of these risk factor issues with them so I can't really compare but during the health checks they were quite acceptable. Dr G

Another view was that the health check prepared patients for more health assessment and intervention which will be necessary for them in the future with increasing age; they might not yet have had much of this sort of contact with the practice previously.

It gets them all prepared for the screening process and what they're in for, for the next few decades so yeah I think it's a very good thing. Dr A

Use of patient recall for health checks also served to remind the GP to undertake preventive management.

*I would say that it reminds the patient and me because at the age of 45, 49 you wouldn't think seriously about doing any of those things unless they come with the complaint of blood pressure, cholesterol or something or people who come regularly for checkups and you wouldn't think of. So I think in a way it's helpful.
Dr E*

Summary: Impact on Amount of Preventive Care Provided

- Variation in views included that the health check:
 - restructures care that is already provided (in practices involved in prevention)
 - allows more time for GPs in busy practice to focus on prevention
 - provides financial incentive or compensation for prevention
 - provides an environment where patients expect GPs to address lifestyle
 - reminds the GP to undertake preventive management

COMMENTS ON HEALTH CHECK ITEM

The structure and requirements for the Item 717 which drew the most comment from clinicians were one-off nature of the health check and the restricted age range. Many health checks took more than one visit to complete, and many GPs would have preferred being able to use the item more than once, preferably yearly. Some of the practices which were in higher socioeconomic status areas and had a strong preventive focus were already providing some of their patients with yearly examinations. They felt that this frequency of examination was appropriate for their patients and also suitable from a clinician perspective.

The fact that the majority of health checks required more than one visit did not cause a financial problem for the practices because they charged the additional consultations at normal rates. It was, however, acknowledged by many GPs that full assessment and intervention preferably requires more than one visit, although the nature and description of the health check item may imply otherwise.

But with any interventions, it often takes two or three times to discuss with them to quit smoking or discuss the sort of change in lifestyle factors and it's well documented that there's an interest or not really wanting to know about it and being ready to make a change and to actually make your interventions appropriate for when that person's ready to make those changes. So yeah, I don't know how the 717s are going to actually achieve that. Dr N

I think follow-up is important because they don't necessarily come back and if they come back they've got to pay so that's not good so if there could be a follow-up item number like for review. Dr M

Many GPs thought that the age range was too restrictive, with the majority wanting an extension into the fifties. This would allow for further screening and intervention for patients aged 50 and older with the inclusion of more age specific tests such as bowel cancer screening. There was also some interest in a more broad prevention program that could target all adults.

I think it's the wrong target group. It's not picking up people at the early stages of preventable disease i.e. in their late teens to 30...and it's not picking up the people who are actually in the immediate risk for illness from age 50 onwards, in particular in relation to all patients for preventive colorectal cancer screening. Dr F

Since the item can only be used once on any patient, Medicare recommends in the item descriptor (Appendix A) that GPs ring Medicare with the patient present to ensure that the item has not been previously delivered to that patient. The only case in which GPs reported this happening was in the practice with a nurse, with the phone call being made by the nurse on the first visit. GPs expressed reluctance to phone Medicare as previous experiences had demonstrated this could be a time consuming process. Additionally, the study was conducted in the first six months of the item's existence, decreasing the chances that a patient had already undergone a 45-to-49 year old health check.

GPs differed in their reactions to the potential of having a claim rejected because it had been charged previously.

If they expect us to bill appropriately and comply with their regulations then they have to supply us with eligibility for an individual patient on enquiry and PKI encrypted billing software type online enquiry is an entirely rational reasonable and more appropriate way of doing that. Dr F

I did the health check and if they have done with another doctor, I don't get paid and that's alright. Dr E

It would be a significant problem if you saw a 45 year old or 46 year old and said by the way, we can do a health check. Come in tomorrow or come in next week with your blood test results.... I'll give you some lifestyle counselling and then to find that for all our efforts, Medicare has rejected our 717. I probably haven't thought about that but that probably would mean I would never do another 717 again. Dr N

Summary: Health Check Item

A variety of issues with the health check item were raised including:

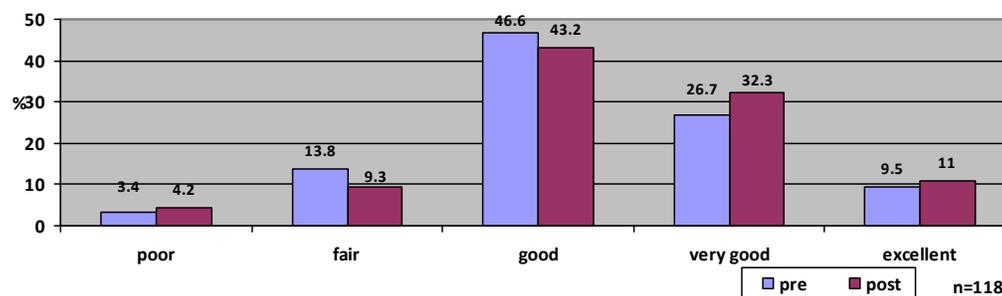
- Increase age range to allow for more cancer screening
- Make item annual instead of one-off
- The health check often takes more than one visit
- It is difficult and takes too long to contact Medicare to determine if a patient has had a prior check

IMPACT ON PATIENTS

OVERALL HEALTH STATUS

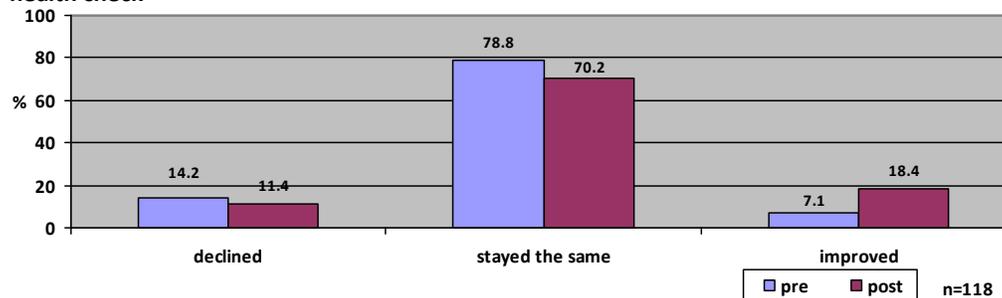
Patients reported their overall health status at baseline and three months after the health check (Figure 15). A higher proportion of patients reported their health as “very good” or “excellent” after the health check ($z=-2.000$, $p=.046$).

Figure 15: Patients' general health rating before and 3 months after the health check



Patients were more likely to report a positive change in their overall health status after the intervention than before ($z=-2.456$, $p=.014$, Figure 16).

Figure 16: Patients' reported direction of health status change before and 3 months after the health check

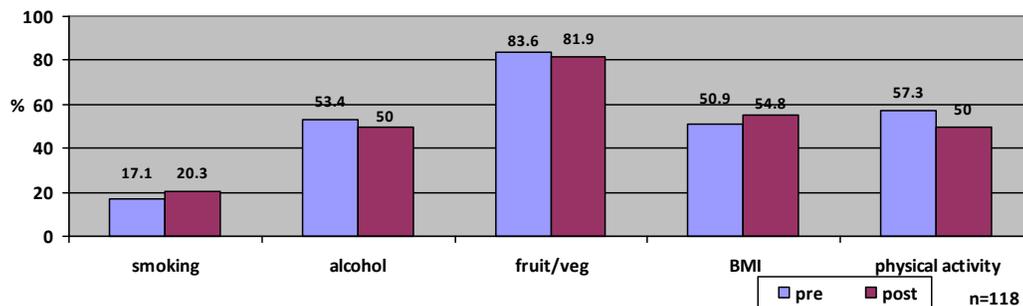


CHANGE IN RISK FACTOR STATUS

The proportion of patients who were at risk did not change significantly for any of the risk factors (Figure 17). When the total number of risk factors per patient was calculated for pre and post health checks, there was no significant difference in the total number of risk factors (with an average of 2.5 risk factors at baseline and 2.6 risk factors three months after the intervention).

The baseline sample size of current smokers was 16.7%, (20 patients). This sample was too small to expect to see any changes with regard to behaviour.

Figure 17: Patients with SNAP risk factors before and 3 months after the health check



Patients were asked if overall during the past three months they had decreased their fat intake or increased their fruit and vegetable intake. In addition they were asked to report the average number of fruit and of vegetables that they normally ate each day. Patients were more likely to report after the intervention that they had decreased their fat intake ($z=-2.611$, $p=.009$). However, there was no statistically significant difference with regard to increasing fruit and vegetable intake for those patients with insufficient intake.

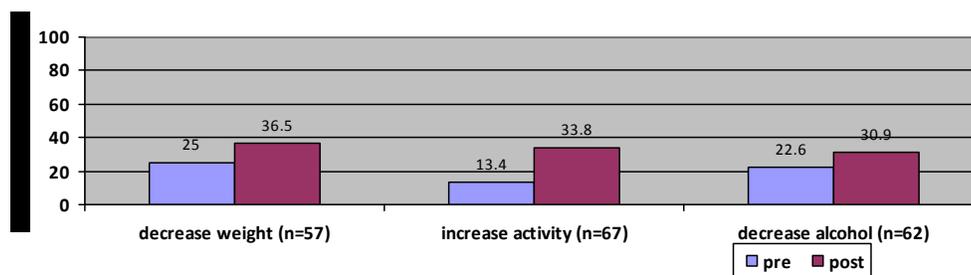
The average total reported numbers of fruit and vegetable servings per day was 4.4 for patients prior to the health check and 4.6 after the health check; this difference which was not statistically significant. Actual fat intake was not measured, as there was no reliable self report measurement for this.

Patients were asked if overall during the past three months their weight, activity or alcohol consumption increased, decreased or stayed the same. In addition they were asked to report their weight, amount of weekly moderate and vigorous physical activity, and frequency and amount of alcohol consumed.

For patients who were overweight or obese there was a significant increase in the proportion who reported losing weight three months after the health check as compared to baseline ($z=-2.257$, $p=.024$).

Of those who were physically inactive, a higher proportion reported increasing their physical activity after the intervention ($z=-2.758$, $p=.006$). Although more patients reported having decreased their alcohol intake after the health check, this difference was not significant. (Figure 18).

Figure 18: Patient change in weight, activity and alcohol in the three months before and 3 months after the health check



Analyses were conducted to examine the actual reported behaviours between pre and post intervention. The average weight pre intervention was 74.60 kilograms and post intervention was 74.31, which was not a statistically significant difference.

The total physical activity score improved for more patients with insufficient activity after the health check ($z=-4.365$, $p<.001$), and total alcohol score ($z=-2.774$, $p=.006$) and risk level for patients (low, moderate or high) ($z= -3.983$, $p<.001$) improved for people with at-risk drinking levels.

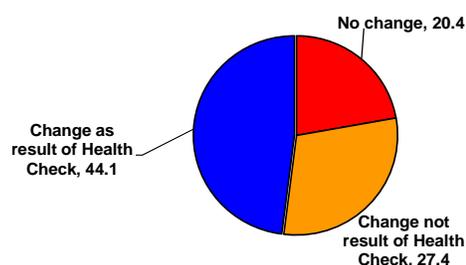
IMPACT ON READINESS TO CHANGE

The stage of change for patients with the particular risk factor improved after the health check for both fruit/vegetable intake ($z=-2.306$, $p=.001$) and physical activity ($z=-3.196$, $p<.021$). It was also found that men were more likely than women to improve their readiness to change with regard to increasing fruit and vegetables ($x=6.677$, $p=.010$). The trends for smoking, fat intake, and alcohol were not significant.

PATIENT REPORTED OVERALL IMPACT

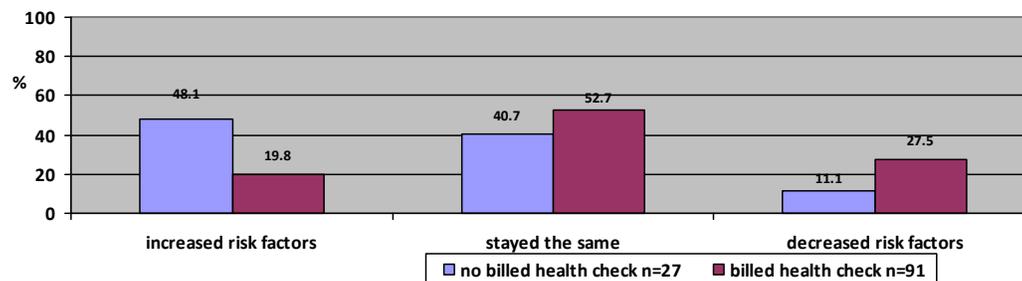
After the intervention, 44.1% of participating patients stated that they had made a lifestyle change as a direct result of the health check, 20.4% stated that they did not make any lifestyle changes, and 27.4% said that they made changes, but not as a result of the health check (Figure 19). Having made changes that were attributable to the health check was not related to gender, language spoken at home, overseas birth, home ownership education attainment, or marital status.

Figure 19: Reported change in lifestyle



Although the sample was analysed by intention to treat, practices were able to provide billing records to indicate which patients had the item 717 billed to Medicare. Some of the patients who were not on the practice's billing lists may have started the health check but not returned for the visit in which the item would have been billed, or the claim may have been rejected by Medicare. Within the sample, 77% of patients had completed the health check. When this group was analysed in comparison to those who participated but did not complete the health check, it was found that patients who completed it were more likely to decrease their total risk factor level or to maintain their current risk factor level than those who did not have one ($x=9.328$, $p=.009$, Figure 20).

Figure 20: Direction of change in the overall number of risk factors for participating patients who did and did not have the Item 717 billed



Overall patient acceptance of the health check was high, with 91.4% of patients indicating that they would recommend other people aged 45-to-49 attend their practice for a health check.

Summary: Impact on Patients

- Overall patient reported health status improved after the health check
- Patients reported an overall decrease in weight and fat intake and overall increase in physical activity
- There was an increase in reported times engaged in moderate and vigorous physical activity
- Patients improved in stage of readiness to increase physical activity and fruit and vegetable intake after the health check
- 44.1% of patients reported making a lifestyle change as a direct result of the health check
- 91.4% of patients would recommend health check to other people their age

CONTINUED USE OF HEALTH CHECK

While all of the GPs planned on using the health check in the future, none of them planned to recall patients by letter to invite them to have the health check. Although GPs acknowledged that mailed invitations for the health check had attracted some patients for preventive care whom they otherwise would not have seen, they chose to proceed with the item opportunistically. GPs believed that recall by letter was too difficult or too time consuming for practice staff, some practices did not have existing recall systems in place, and problems were also envisaged in keeping track of who had been called in already.

... it will be opportunistically initially because patients drifting in and out... it's too difficult to manage recurrent recalls and working out whom you have recalled, whom you haven't recalled and so on. Dr F

Will definitely [will use the health check] and I have used it in the past for people who haven't been in the study. Dr A

I think it's a good thing and I'll keep using it. Dr K

Additionally the capacity for the practice to manage the patients that would present as a result of the recalls was raised.

It's not that we're adverse to using a computer database to draw patients in to have things done, but I guess if we were short of business we probably would do it, but we have enough to do without seeking out patients. Dr I

In a few instances GPs reported that patients were requesting the health check after being recommended to attend by friends or family. This was however, not the normal course of action, which for the future will generally rely on GPs initiating the health check with patients after they have attended the practice for another health issue. Some GPs suggested that direct advertising to the public could increase the uptake and sustainability of the item.

With regard to workload, GPs were generally satisfied with the number of health checks that they had done during the study however, there was concern about how many could be done sustainably on top of normal workload.

I never did more than once a week - I don't have the time. It's very difficult, perhaps two a week would be the most...how many of these long consultations can you fit in a week when you have all these sick patients who need medical attention because they're sick? Dr J

Summary: Continued Use of the Health Check

- Although posted patient invitations to have a health check was viewed positively, all of the clinicians intended to only use opportunistic invitation in the future
- Most of the GPs indicated they would likely use the item in the future

DISCUSSION

CLINICIAN PRACTICES AND ATTITUDES

As part of the health check many GPs increased the amount of preventive care that they provided with regard to advice and some referrals. Some GPs in practices with a strong prevention focus did not feel that the item necessarily increased the overall prevention provided, although it did provide a different structure which may have helped with comprehensiveness. For others it made pro-active preventive care a viable option for them to pursue with their patients.

Clinician attitudes are likely to have a big impact on whether GPs use the health check item and to what degree they screen for and manage risk factors. We found that clinician attitudes about their own effectiveness at changing patients' behaviour and confidence in managing the risk factors vary, and that these influenced their management practices. These also influenced their view on whether referral is an appropriate avenue for chronic disease prevention. While education programs tend to focus on skill-building, which GPs indicate they do require, attitudes towards prevention in general and particular aspects of risk factor management such as patient education, referral and follow-up, should not be neglected.

Clinician practices reflect the patient-presentation focused system in which they work. Addressing lifestyle risk factors requires GPs to operate within a different framework, with increased negotiation, greater attention to patient motivation, fewer opportunities for pharmacological intervention, and acceptance of a lower frequency of success than they might expect in management of acute conditions.

REFERRAL

Referral for this group of patients was infrequent, particularly when compared to the frequency of advice provided by GPs to manage risk factors, which is similar to findings of other recent studies.^{29 30 31}

Capacity for referral of patients who are at risk of, but do not have, chronic disease is generally low. Previous research has found that this at-risk group of patients is not well-served by the same referral pathways (such as public hospital services or community exercise) used by GPs for people with chronic disease, who are generally older, in poorer health and have care plans which provide access to subsidised private referral.³² The development of lower cost alternatives for GPs to refer patients with behavioural risk factors would address some of the existing barriers with regard to GP confidence in referring. In a previous diabetes prevention trial this was overcome by creating a Division-brokered referral service, with which GPs were familiar and confident.³⁴ It is clear from this study of the health check however, that many of the GPs were doubtful about the effectiveness of referral for prevention of chronic disease, preferring to manage the risk factors within the practice. This could be addressed by further research in the most effective use of referral and by improving GPs understanding of the role of allied health intervention in preventing chronic disease.

Health checks also have the potential to create extra work for referral services. This did not happen in this study, due to the low number of referrals generated. However, this could become a problem if the health checks become widely used, or if other interventions occur which encourage greater use of referral services.

ACCEPTABILITY OF THE SNAP/HEALTH CHECK

Views on the health check varied between clinicians, but overall it was seen as acceptable and useful for the prevention of chronic disease. Acceptability was high for patients who attended, but the participation rate was less than a quarter of invited patients. Unfortunately the reasons patients had for not attending were not known.

CHANGES IN PATIENT BEHAVIOURAL RISK FACTORS

While the health check intervention did result in a change in lifestyle behaviours, these were generally not large enough to move people from being 'at risk' to 'not at risk'. There were, however, changes in the specific behaviours, most notably for physical activity. Patients also improved in their readiness to change lifestyle risk factors.

While our previous work on implementation of SNAP in Australian general practice had demonstrated improvements in self reported quality of preventive care, this is the first study to indicate that an integrated approach to SNAP in general practice can modify patient behaviour. It is broadly consistent with previous research suggesting the value of physical activity prescription in general practice where this is supplemented with patient education.³³

To date there has been inconsistent evidence of the impact of health checks on self reported changes in behavioural risk factors. For example, Dowell et al reported no difference in the proportion of patients that stopped smoking or modified alcohol, physical activity or weight in those who attended compared to those who did not attend for a health check in a United Kingdom practice.³⁴ The OXCHECK study reported changes in self reported fat intake, physical activity but not smoking or alcohol.³⁵

SUSTAINABILITY AND SUPPORTS

The health check was delivered by all of the clinicians to patients recalled by the study for a health check, as well as to patients identified opportunistically. After receiving support and training from the Division, GPs utilised the Lifescripts resources and increased the frequency with which they identified patients' readiness to change behavioural risk factors.

Prior to the intervention, none of the fourteen clinicians had been trained in using Lifescripts, despite the Divisions having staff trained in Lifescripts dissemination. The positive response to the resources from the GPs in this study may have been partly due to the resources being introduced while the GPs were focused on the health check and thus when the resources and skills were immediately applicable.

Patient resources in different languages provided as part of the study were an important resource for some of the participating practices. In addition to handouts, referral groups which are linguistically and culturally appropriate may increase the capacity of prevention to be carried out in this setting.

At the conclusion of the study, no practices planned to use systematic recall to invite patients to attend the practice for a health check. For some practices this preference for an opportunistic approach was due to a lack of an existing recall system or the capacity of the staff to undertake these tasks. Support to improve practices' information management systems can be provided through Divisions, with recall systems being a capacity issue that practices have been more prepared to address than other capacity factors.³⁶

IMPACT ON GP WORKLOAD

At the conclusion of the study most clinicians were not particularly concerned about the impact of the health check on their workload. Since they planned to deliver health checks opportunistically, they would be able to control the impact. This was, however, a self-selected group who had some level of interest in preventive work, and in many cases were already assessing and managing behavioural risk factors as part of other consultations. The burden was also limited by the low response rate to the patient recall.

The experience may well be different with other clinicians who are less involved in risk-factor management. It may also be more difficult in practices without appointment systems, which may find it difficult to conduct longer consultations for the health check, particularly at busy times.

Regarding using the health check in the future (opportunistically or by systematic recall), practices with closed books and full appointment schedules may be less motivated to call patients into the practice for preventive care as a matter of priority, and may be less able to offer them opportunistically. While none of the practices in the study plan to use recall, this method is relevant to future support for the health check because it does not rely on the GP remembering to offer the health check and may reach patients who do not often present to the practice.

One way of managing any extra workload within the practice is to involve a practice nurse in the health checks. This will need to be carefully planned, particularly where nurses have not yet previously been involved in risk factor or chronic disease management. Involving other practice staff creates the opportunity to develop a multidisciplinary health check, with practice staff undertaking the roles for which they are most suited.

LIMITATIONS

The limitations of this study include its size: it involved fourteen clinicians in eight practices in two urban Divisions, and had a lower than expected response from patients. This limits the extent to which the findings can be generalised, particularly to rural settings. Since data other than gender is not available for patients who did not participate, it is not known if there are demographic differences in responders and non-responders.

This study design used a before and after design, and thus we were unable to compare findings to control practices not receiving the intervention. The study was also limited by a short follow-up period of three months. Study measures relied on self-report from practitioners on the implementation of the health checks and patient report on care received and their risk behaviours, all of which may be subject to social desirability bias. The sample size of patients participating in data collection both before and after the health checks was 118. This was sufficient to detect a change of more than 15% in the behavioural risk factors. Thus it is possible that smaller changes may have occurred but were not detected.

IMPLICATIONS FOR POLICY

CHANGES TO ITEM 717

OLDER AGE GROUPS

The age range for the health checks could be extended to allow them for older age groups. This could potentially improve the effectiveness of the item for screening for cancer as well as diabetes. However, this emphasis on physiological screening may reduce the emphasis on the assessment and management of the SNAP risk factors as GPs will be completing more tasks in a similar amount of time.

STREAMLINED CONTACT WITH MEDICARE

The current requirement for GPs to phone Medicare in order to establish if the patient has had a previous health check was described by GPs as quite cumbersome and time consuming. As the project was conducted during the first six months that the item was in place, phone calls to confirm the patient's status were rarely made. This is expected to become more of an issue as the item is completed with more people. This was considered a burden to undertake, and if the claim was rejected, some GPs would revert to using long consultations in place of Item 717. Immediate online secure confirmation could potentially address this issue. Allowing streamlined arrangements for GPs to confirm if a patient has had item previously may improve the GP uptake of item.

REQUIREMENT TO HAVE AT LEAST ONE RISK FACTOR

The Australian Institute of Health and Welfare estimates that 94% of males and 89% of females aged between 45 and 54 will have at least one identifiable risk factor for cardiovascular disease.³⁷ If patients attend the practice for a health check and are found to not have a risk factor, a normal consultation can be charged. Support materials for the health check suggest using the recall letter for patients to self-screen and determine if they have one identifiable risk factor. As the screening process of the health check may identify the patients' first risk factor, it appears that encouraging GPs to call in all patients in the age range would better achieve the goals of the item, as patients who do not know that they are at-risk may self-select out of the process, potentially neglecting to have risk factors identified. In this particular study all of the patients who consented and presented for their health check had an identifiable risk factor for chronic disease, and based on patient self-report 97.5% had at least one of the SNAP risk factors. Given the high rates of risk factors in people aged 45-to-49, this requirement may do little to exclude those who might benefit less from the health check, while preventing GPs from conducting recalls.

CO-PAYMENTS

Practice co-payments have the potential to affect the use of this item, particularly in areas of low bulk billing and lack of choice of practice. If practices conduct the health check over one or multiple visits and charge a co-payment, this may impact on the completion of health checks. In rural areas, where practices are more likely to have a co-payment and where there is decreased practice choice, this issue may present itself more acutely. As co-payments may discourage the use of health checks (including health check visits, or lead-in or follow-up appointments) as well as reducing access to the item, completion rates and the equity of the program, it is suggested that the potential impact of co-payments on health checks be further examined.

INTEGRATION OF 717

The 45-to-49 year old health check risks being under-utilised if it is not integrated with and into other prevention and chronic disease strategies, particularly with new items being introduced each year.

It is suggested that the health check item and related subsequent preventive items be well integrated with other prevention and chronic disease management initiatives to increase the likelihood of its use and sustainability.

ENHANCING EFFECTIVENESS

INTENSIVE SUSTAINED INTERVENTION

Intensive and sustained support could allow GPs to enhance their effectiveness in changing patient behaviour. This support includes training in screening and management as well as tools such as motivational interviewing training and resources such as Lifescripts. This ongoing support will allow GPs to provide continuing and sustainable risk factor management for patients.

DEVELOPMENT OF PRACTICE NURSE ROLE

While some practices that have nurses will have the capacity for nurse involvement in the 45-to-49 year old health checks, other practices may require support to do this, including the further general development of the practice nurse role. This may include training for nurses in risk-factor screening and management, motivational interviewing and Lifescripts, as well as the development of business cases for nurse involvement in chronic disease prevention. Divisions may be able to provide individual practice support to assist with planning the logistics of a multidisciplinary health check. There is scope for further developing and supporting the role of the practice nurse in preventive care.

ENHANCING REFERRAL

ACCESS TO AND COST OF ALLIED HEALTH SERVICES

In order to enhance use of allied health referral, access to and cost of these programs, particularly aimed at patients who do not have chronic disease, should be addressed. In particular appropriate diet and physical activity programs could be the most useful.

GENERAL PRACTITIONER ATTITUDE AND AWARENESS OF ALLIED HEALTH

In order to enhance the use of allied health referrals for prevention, GP attitudes regarding the effectiveness of referral for preventing chronic disease will need to be addressed. A greater awareness of the potential role of allied health in support of chronic disease prevention could increase GP use of allied health referrals for prevention. The use of these services, particularly exercise physiologists, to support risk factor management is relatively unfamiliar in general practice.

PRACTICE CAPACITY

The capacity of practices to utilise referral systems can be addressed through additional support to increase information systems as well as focus on the roles of staff in the practice. In particular the role of the practice nurse in facilitating referral should be considered.

LIFESCRIPTS

The response from GPs to the Lifescripts resource was positive. Continued promotion of these resources, particularly in conjunction with specific clinical tasks such as the health check, and supporting the use of item numbers, may improve the capacity of clinicians to address lifestyle risk factors. Development of the resources should continue, and in particular the development of the electronic version.

SUPPORT/FACILITATION

There is a key role for Divisions to support referral, recall, training in motivational interviewing, record keeping and capacity building within practices. In addition, there is a role for them to directly support the health check by assisting practices in the use of the electronic template and meeting specific risk factor management training needs.

SOCIAL MARKETING

Public promotion of the item 717 to raise awareness of the health check, particularly in culturally and linguistically diverse and low SES groups, may increase uptake and equity of the application of the item, particularly since use of systematic recall is likely to be low. This may also relieve some of the burden on practices with regard to identifying and inviting patients to attend the practice. Additionally social marketing may encourage use of the item with patients who are already motivated to make a change, which is the group GPs are more confident with and perceive themselves as more effective in assisting.

- Use of allied health and other referral services: The use of these services to support risk factor management is relatively unfamiliar. Issues which merit attention include cost, access, and GP awareness of their potential role
- Practice capacity: Many practices still need support to set up effective systems to support preventive care, including referral and patient recall mechanisms, as well as strengthening the role of practice nurses for these systems
- Use of Lifescrpts: There is scope for continued promotion of the use of Lifescrpts, particularly in conjunction with health checks
- Role of Divisions: There is a key role for Divisions to support referral, recall, training in motivational interviewing, record keeping and capacity building within practices
- Promoting the item to the community: Direct social marketing of the item 717 to raise awareness of the health check, particularly in CALD and low SES groups, may increase uptake and improve equity

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