

Implementation of a SNAP intervention in two divisions of general practice: a feasibility study

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Smoking, poor nutrition, risky alcohol consumption and decreased physical activity are major contributors to the burden of chronic disease in Australia.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 certain interventions have been shown to be effective in addressing these risk factors in general practice,^{3–6} few encounters involved risk-factor intervention, signifying an important gap between opportunity and practice.^{7,8}

In 2003, the Australian Government developed a strategic framework for addressing smoking, nutrition, alcohol and physical activity (“SNAP”)⁹ in general practice. The 2002–03 *Annual survey of divisions of general practice* showed that more than half the divisions of general practice (DGPs) had programs focused on one or more of the SNAP risk factors.¹⁰ However, although there are national programs for chronic diseases such as diabetes, no specific national SNAP initiative has been established and there have been no published studies of its implementation in Australia.

In 2003 and 2004, NSW Health funded a feasibility study on the SNAP approach to behavioural risk factor management in one urban and one rural DGP. The objectives were:

- to test the feasibility and cost of a DGP program to support practices to systematically provide behavioural interventions for patients with SNAP risk factors in general practice;
- to determine any change in the capacity and self-reported care provided by general practices; and
- to identify lessons for other DGPs and for implementing the SNAP framework.

Methods

The study was conducted in Sutherland (an urban DGP) and Hastings Macleay (a rural DGP). The DGPs worked together with their local area health services (AHSS) to plan the intervention in each division. There was also support from local government (such as a physical activity program in the urban division) and non-government organisations, especially the National Heart Foundation of Australia.

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ABSTRACT

- “SNAP” is a model for the general practice management of four common behavioural risk factors: smoking, nutrition, alcohol and physical activity. The SNAP program was developed for the Australian Government in 2002.
- In 2003 and 2004, a feasibility study was conducted in one urban and one rural division of general practice (DGP) in NSW, in partnership with their local area health services.
- Information technology support and referral directories were developed, based on an initial needs assessment, SNAP guidelines, a clinical summary chart, patient education materials, and general practitioner and staff training.
- GPs reported that the SNAP approach fitted general practice consultations well. After its implementation, they were more confident in using motivational interviewing and SNAP interventions and referred more frequently.
- The impact and sustainability of the SNAP program were limited by a lack of effective practice teamwork, poor linkages with referral services, and the lack of a business model to support SNAP in the practices.
- DGPs could play an important role in providing practice visits and resources to improve communication, education and collaboration to support SNAP programs.

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The intervention

Each DGP developed local referral directories, compiled the best available patient education materials, and provided information technology recall and reminder training for practice staff. Clinical resources included SNAP guidelines, a “5As”¹¹ clinical summary chart (Box 1), educational resources, and training sessions on SNAP and motivational interviewing (with actors playing at-risk patients with whom general practitioners could practise their skills).¹² DGP project officers also visited all practices at least three times to provide individually tailored support for organisational changes and systems to support SNAP activities. Training and resources were also available to all GPs in the DGPs.

Practice participants

Project officers approached 100 practices, of which 21 agreed to participate in the evaluation (10 urban and 11 rural practices). This included two solo practices, nine with 1–5 GPs, and 10 with five or more GPs. A practice manager was employed at 18 practices and practice nurses in 16 (most part-time). All participants were provided with information sheets and signed consent forms.

Measures¹²

Practice capacity

SNAP practice capacity measures were developed and piloted in two practices. These were administered to GPs and practice staff by

1 The SNAP* "5As"**Ask**

- Identify patients with risk factors

Assess

- Assess level of each of the SNAP* risk factors and their relevance to the individual in terms of health
- Assess patient's readiness to change/motivation

Then, depending on the priorities set by the general practitioner and patient together for one or more of the individual risk factors:

Advise

- Provide written information
- Offer brief advice and motivational interviewing[†]

Assist

- Prescribe pharmacotherapies
- Provide support for self-monitoring

Arrange

- Refer patient to special services
- Arrange social support groups
- Offer phone information/counselling services
- Arrange follow-up with the GP

* Smoking, nutrition, alcohol and physical activity.⁹ † Counselling based on "readiness to change", which works with patient ambivalence to help create motivation for change in behaviour. ♦

DGP project officers before and after implementing the SNAP framework. These assessed capacity for implementing SNAP at the practice level, including systems for recording and monitoring SNAP risk factors, the use of recall or reminders, the system for maintaining patient education materials, referral service information and linkages, and staff communication and teamwork.

Self-reported knowledge and practices

A self-completed questionnaire was piloted in two practices and administered to 21 GPs before and after SNAP implementation. Questions included self-ratings (expressed as "high", "moderate" or "low") of their skill and knowledge in assessing and offering interventions for patients with SNAP risk factors, assessing "readiness to change",¹³ and conducting motivational interviewing and patient education. GPs were also questioned on their management of patients who were smokers, overweight or at-risk drinkers.

Practice interviews

After implementation of the SNAP program, nine general practices (four in each division and one Aboriginal Medical Service) participated in in-depth qualitative interviews conducted by an independent interviewer (SS). These covered topics such as how well the SNAP approach fitted in with clinical practice, factors affecting SNAP implementation, changes to practice staff roles and organisation, the usefulness of resources and DGP support, impact of the program on the practice, and sustainability of the program.

Project staff interviews

At the conclusion of the program, DGP and AHS project officers were interviewed about the implementation, barriers and facilitators, including how effectively they were able to collaborate in the program.

Costing

Costing was based only on expenses incurred by the DGPs, as this was of most relevance in planning the extension of the program to other divisions. Practice costs were not able to be estimated.

Ethics approval

The study was approved by the University of New South Wales Human Research Ethics Committee.

Results**Intervention costs**

The DGPs provided the full intervention to 21 practices and motivational interviewing training to 42 additional GPs. Intervention costs to each DGP averaged \$34 537, mainly comprising part-time project officer salaries and training costs.

Impact on GPs

Before the intervention, GPs' self-rated skills and knowledge in assessing and offering interventions to help patients reduce smoking and increase physical activity were already fairly high. The greatest improvements after the SNAP program was implemented were in GPs' assessment of nutrition and alcohol problems and in their skills in motivational interviewing, patient education, and assessing readiness to change (Box 2).

GPs were asked about their management of recent patients who smoked, were overweight or were at-risk drinkers. Before the program, 16 GPs reported offering nicotine replacement therapy for patients who smoked, but only 4 provided educational materials and 7 offered referral to the QUITLINE (the latter numbers increased to 7 and 9, respectively, after the program). As part of their management of overweight patients, 17 GPs reported prescribing physical activity and 17 reported referring them to a dietitian. However, only 7 offered educational materials (improving to 10 after the program). Before the program, 13 GPs reported referring patients who were at-risk drinkers to alcohol counsellors, but only 3 GPs reported providing educational materials (improving to 6 after the program).

The in-depth interviews in nine practices revealed that most of the GPs had incorporated the SNAP framework into their existing management of patients with chronic diseases such as hypertension and diabetes — especially with regard to assessing height, weight, body mass index, smoking and alcohol consumption. This was especially true for people with diabetes, for whom such assessment was part of the annual cycle of care, and for patients having a care plan. Some GPs said that the "5As" approach was particularly useful because it prompted them to ask about SNAP risk factors, even when the patient presented for different reasons. In the Aboriginal Medical Service, there was a more proactive approach that involved reviewing records, active recall, outreach and informal systems, such as personal contact through relatives, friends and the community.

Impact on general practice organisation and capacity

SNAP risk factor recording and electronic file management was maintained in 18 of the 21 practices. Recording was least frequent for physical activity, and this did not change significantly after the intervention. Although 13 practices had recall systems, none was used for SNAP. After implementing the SNAP program, eight

2 General practitioners' self-rated knowledge and skills* before and after implementing the SNAP[†] program (n = 21)

	Number (%) of GPs rating themselves at each level					
	Before intervention			After intervention		
	High	Moderate	Low	High	Moderate	Low
Assessment and management of the risk factors						
Smoking	7 (33%)	14 (67%)	0	9 (43%)	12 (57%)	0
Nutrition	3 (14%)	15 (72%)	3 (14%)	12 (57%)	8 (38%)	1 (5%)
Alcohol	5 (24%)	14 (67%)	2 (9%)	9 (43%)	11 (52%)	1 (5%)
Physical activity	9 (43%)	11 (52%)	1 (5%)	12 (57%)	9 (43%)	0
Behaviour change						
Assessing stages of change	3 (14%)	12 (57%)	6 (29%)	3 (14%)	17 (81%)	1 (5%)
Motivational interviewing	2 (10%)	11 (52%)	8 (38%)	3 (14%)	16 (76%)	2 (10%)
Patient Education	3 (14%)	15 (72%)	3 (14%)	10 (48%)	9 (43%)	2 (10%)

* Expressed as "high", "moderate" or "low". † Smoking, nutrition, alcohol and physical activity.⁹ ◆

practices had commenced recalling patients for SNAP risk factor interventions.

While 16 practices had SNAP materials on display in waiting rooms, only two of the 10 urban practices had educational materials on alcohol. The proportion of practices with display materials on physical activity increased after the intervention, as did the proportion with a designated staff member to coordinate patient education materials.

Some SNAP referral services were available to all practices, but nutrition referral services tended to be private or fee-based in rural areas. Aboriginal Medical Service referrals were predominantly internal. Access to physical activity referral services improved in the urban division but deteriorated in the rural division, due to the departure of an exercise physiologist during the implementation period.

Barriers to SNAP implementation

Participants in the in-depth interviews reported difficulty making the organisational changes required to incorporate SNAP into the practice as a whole (quotes in the following text are from GPs).

The practice staff are very busy here, so it is difficult to convince them to undertake more work. That's just the way it is. The GPs have to be interested in these issues to take them up. So maybe we can tackle it later on, and so could the government.

One of the DGPs reported that this problem related, in part, to the lack of practice meetings, case management conferences, effective communication and teamwork. GPs were the ones predominantly involved in implementing SNAP, with administrative staff adopting an important role in follow-up and referrals. Although there was an opportunity to involve practice nurses in the SNAP program, especially in the rural division, there were in fact few changes to nursing staff roles. This was largely because of

competing demands from other activities for which they were specifically funded (eg, immunisation, wound care and health assessments).

Other barriers included a lack of time and heavy workloads. The SNAP intervention required proactive planning. In each consultation, GP time was required to assess and record SNAP risk factors, undertake motivational interviewing and advise treatment, particularly for overweight and nutrition problems. Staff time was also required to arrange referrals, follow-up, recall and reminders.

I'm hugely overworked as it is, I've had to try and find a time to incorporate this into my practice.

The absence of specific funding required that the SNAP intervention had to fit in or compete with the patient's presenting problem in the consultation. Although long consultations are better remunerated, payment is not commensurate with the increased time. No additional staff costs are covered.

In addition, patient motivation associated with stress, depression and physical illness affected the priority that patients placed on changing behaviour. In patients with these types of problems, GPs offered medication, structured problem-solving or referral. GPs said they feel satisfied and rewarded when people make changes, but frustrated when they do not.

Access to referral services was sometimes problematic for patients in terms of cost, transport and waiting lists, unless they had private health cover. There was only limited access to public nutrition services and to counselling for at-risk alcohol drinkers (with services focused on the more dependent and complicated cases). As noted by one of the DGPs, despite efforts at liaison with referral agencies, problems with communication and feedback remained.

You refer someone there and you never hear back — you don't know what's happened.

Facilitators of SNAP implementation

GPs who had previously conducted SNAP interventions found participation and ensuing DGP support gave them encouragement and confidence to sustain SNAP management. Many GPs also reported that the motivational interviewing workshop was helpful.

I found the workshops pretty useful, to give me some actual skills ... especially the role plays, and I found that very useful.

All GPs felt that, overall, the SNAP interventions reinforced their clinical skills and had a positive impact on their patients.

The partnership between DGPs and AHSs

In interviews with DGP and AHS staff, both stressed the importance of the memorandum of understanding between them, the establishment of local planning committees and the commitment of staff time to the successful implementation of the program. However, this partnership was not at the most senior levels of the AHSs, and this affected the development and planning of more effective referral pathways — especially for dietetic and drug and alcohol services, which were less developed than those for physical activity.

Discussion and key lessons learned

Our study demonstrated the feasibility of local implementation of the SNAP model through DGPs. In this sense, the implementation was a case study in the complexity of primary health care service

3 Key facilitators and barriers in implementing the SNAP* program		
	Facilitators	Inhibitors
Patient factors	Acceptance of the role of GPs in the SNAP program	Low patient motivation and comorbidity Poor communication between GPs and other services
Practice factors	SNAP a “good fit” in clinical encounters Motivational interviewing and SNAP training Support and practice visits from DGPs	Lack of practice meetings and teamwork Lack of a business model and funding incentives Limited availability of referral services Lack of time and heavy workload
DGP factors	Partnership with AHS “Good fit” with other DGP programs (especially chronic disease programs)	Lack of staff continuity Lack of continuing specific funding

AHS = area health service. DGP = division of general practice. GP = general practitioner. * Smoking, nutrition, alcohol and physical activity.⁹ ♦

development within the current Australian system. The additional involvement of local government, non-government organisations and community groups in the program suggests scope for wider community involvement in SNAP programs.

Our study did not evaluate the impact on patients or control for other possible confounding factors, such as the impact of other changes to general practice funding. Although specific interventions have been shown to have an impact on patient behaviour, further evaluation is needed of the impact of an integrated SNAP approach on the quality of care received by patients and on health outcomes. Nevertheless, our study has more clearly defined the key barriers to and enablers of implementation of such a program (Box 3).

At the practice level, GPs acknowledged a good fit between SNAP interventions and clinical practice, enabling them to incorporate SNAP principles by targeting specific groups of patients or specific risk factors. However, barriers to sustainability of such programs included a shortage of time within consultations, which are predominantly focused on patients’ presenting problems. The role of practice staff in SNAP management was limited, with changes more easily introduced among administrative staff than practice nurses, who often had other directly funded responsibilities such as immunisation or wound care. Divisions identified a need to strengthen practice communication and teamwork and expressed the view that these were critically important to the sustainability of SNAP interventions and systems.

Some of the barriers to implementation may be addressed by facilitating organisational change within and between practices, especially the development of teamwork and linkages. This needs to be a specific focus of DGPs, which should incorporate these principles into education, practice accreditation and quality improvement programs. GPs valued DGP practice visits to address individual practice problems. The SNAP program was more

sustainable where it was integrated with existing division chronic disease management, continuing professional development and practice support activities. The partnership with AHSs was important, but lack of high-level commitment frustrated attempts to improve referral to services for nutrition, drug and alcohol problems. DGPs may need to develop or take on a greater role as brokers of services or service availability.

The lack of a business and funding model was a major obstacle to implementing and sustaining the SNAP approach, both at practice and division levels. At practice level, new incentives are not necessarily required, although current incentives for chronic disease need to be extended to the *prevention* of these conditions and need to extend the role of practice nurses and allied health professionals. The cost of relatively brief preventive interventions may be offset by lower “downstream” costs, including hospitalisation. Further research is needed on the costs to both practices and patients.

A primary aim was to examine how the study model could be transferred to other DGPs, making allowance for their capacity. At the most basic level, a DGP could link SNAP programs into continuing professional development and chronic disease programs; incorporate SNAP monitoring, recall and reminder training into information technology training; and promote SNAP guidelines. With greater input of their own resources, DGPs could develop and update referral directories, provide patient education materials and support practice information systems. Finally, DGPs could devote part-time staff and resources to improve communication from referral services, educate nurses and allied health professionals in SNAP roles, collaborate with local services to promote SNAP programs and develop referral services and support groups, and conduct practice visits to address SNAP issues and facilitate practice teamwork. The Australian Government has recently developed a “Lifestyle prescriptions” program, in part based on the experience of our study.¹⁴ However, more support is needed both at division and practice level.

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Competing interests

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References

- Mathers C, Vos T, Stevenson C. The burden of disease and injury in Australia. Canberra: Australian Institute of Health and Welfare, 1999. (AIHW Cat. No. PHE 17.)
- Britt H, Miller G, Knox S, et al. General practice activity in Australia 2003–04. Canberra: Australian Institute of Health and Welfare, 2004. (AIHW Cat. No. GEP-16.)
- Ashenden R, Silagy C, Weller D. A systematic review of the effectiveness of promoting lifestyle change in general practice. *Fam Pract* 1997; 14: 160-176.

- 4 Steptoe A, Perkins-Porras L, McKay C, et al. Behavioural counselling to increase consumption of fruit and vegetables in low-income adults: randomised trial. *BMJ* 2003; 326: 855-857.
- 5 Whitlock E, Polen M, Green C, et al. Behavioural counselling interventions in primary care to reduce risky/harmful alcohol use by adults: a summary of the evidence for the US Preventive Services Task Force. *Ann Intern Med* 2004; 140: 557-568.
- 6 Smith BJ, Bauman AE, Bull FC, et al. Promoting physical activity in general practice: a controlled trial of written advice and information materials. *Br J Sports Med* 2000; 34: 262-267.
- 7 Young JM, Ward JE. Implementing guidelines for smoking cessation advice in Australian general practice: opinions, current practices, readiness to change and perceived barriers. *Fam Pract* 2001; 18: 14-20.
- 8 Steven ID, Thomas SA, Eckerman E, et al. The provision of preventive care by general practitioners measured by patient completed questionnaires. *J Qual Clin Pract* 1999; 19: 195-201.
- 9 Smoking, nutrition, alcohol, physical activity (SNAP) framework for general practice. Canberra: Australian Government Department of Health and Ageing, 2001. Available at: <http://www.health.gov.au/internet/wcms/Publishing.nsf/Content/health-pubhlth-about-gp-snap-cnt.htm> (accessed Oct 2005).
- 10 Kalucy E, Hann K, Whaites L. Divisions: a matter of balance. Results of the 2002–2003 annual survey of divisions of general practice. Adelaide: Primary Health Care Research and Information Service, Department of General Practice, Flinders University and Australian Government Department of Health and Ageing, 2004. Available at: http://phcris.org.au/resources/divisions/ASD_mainframe.html#report_03 (accessed Oct 2005).
- 11 Smoking cessation. Clinical practice guideline No. 18. Rockville, Md: US Department of Health and Human Services, 1996.
- 12 Centre for General Practice Integration Studies. Smoking, nutrition, alcohol and physical activity program (SNAP). Available at: <http://www.commed.unsw.edu.au/cgpis/snap.htm> (accessed Oct 2005).
- 13 Prochaska J, Di Clemente C. Towards a comprehensive model of change. In: Miller W, Heather N, editors. Treating addictive behaviours: processes of change. New York: Plenum, 1986.
- 14 Lifestyle prescriptions. Canberra: Australian Government Department of Health and Ageing, 2005. Available at: <http://www.seniors.gov.au/internet/wcms/Publishing.nsf/Content/health-pubhlth-strateg-lifescrpts-index.htm> (accessed Sep 2005).

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