The role of Australian primary health care in the prevention of chronic disease

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Abstract

Primary health care has an important role in assessing, preventing and managing smoking, hazardous drinking, poor diet and physical inactivity. The 5As (ask, assess, advise/agree, assist and arrange) provide a framework for analysing the steps involved in preventive care and in defining the optimal roles of providers and services at the practice level. There is evidence for the effectiveness of interventions provided by practice nurses, allied health providers and group programs. However these providers are currently under-utilised in preventive care and more effective teamwork within and between primary health care services is needed. Information systems including e-health records, decision support and web tools and resources facilitate a systematic approach to preventive care. Despite evidence of how to prevent chronic disease in primary health care, there remain gaps in preventive care in practice and inequities in access to preventive care by disadvantaged population groups. The role of Medicare Locals is to facilitate practice change, as well as to develop partnerships with state health services, local government and non-government organisations to coordinate and broker new preventive services and programs and to integrate clinical and population health approaches to prevention. Reforms to funding, workforce, patient enrolment, and primary care organisation and structure remain important to the implementation and maintenance of preventive activities in primary health care.

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1. AIMS

In 2008 a paper was prepared for the National Preventative Health Task Force on the role of primary health care in preventing the onset of chronic disease, with a particular focus on the lifestyle risk factors of obesity, tobacco and alcohol. This identified a number of options for the future including resources to support brief interventions, financial incentives for preventive care, health risk assessment, a network of referral services, addressing the needs of socially disadvantaged groups, the role of Divisions of General Practice, patient registration, and further research. This is an update of the 2008 paper. During the intervening four years there have been developments in the role of nursing and allied health and the creation of new primary health organisations ‘Medicare Locals’ which bring together a broader range of health professional and community interests.

The specific research questions which this paper attempts to answer are:

- What is the evidence for effective primary health care interventions to address the behavioural risk factors?
- What inequities exist and what is the evidence for effective primary health care interventions to address them?
- How can the evidence for the prevention of chronic disease be translated into practice, and how might Medicare Locals facilitate the uptake of evidence, including effective team approaches to preventive care?

2. INTRODUCTION

There is a rising prevalence of chronic disease globally [1]. Although there has been a decrease in preventable deaths from chronic cardiovascular and respiratory diseases, the prevalence of chronic diseases such as diabetes is increasing associated with the ageing of the population and worsening of some of the risk factors for chronic diseases [2]. This places an increasing demand on health services as well as contributing a major social and economic burden to society [3].

The risk factors for chronic disease include overweight and obesity, physical inactivity, poor diet, smoking and excessive alcohol consumption. Smoking is the only risk factor with a favourable trend, decreasing over the past two decades. Risky alcohol consumption, poor diet and obesity are all increasing [4]. The median body mass index of adults increased from of 25.7 in 1995 to 26.3 in 2007–08 with an increase in the proportion who were obese from 19% to 25%. There was little overall change in physical activity. The quality of the diet deteriorated with the age-standardised proportion who consumed less than the recommended serves of vegetables increasing from 88% to 93% in men, and from 84% to 90% in women from 2004-5 to 2007-8 [4]. Health risks operate across the lifecycle to cumulatively increase the prevalence of chronic disease [5]. Thus the increasing rates of insufficient physical activity, risk alcohol consumption and poor diet in those aged 12-17 years from 2004-5 to 2007-8 are likely to be translated in increased prevalence of chronic disease decades into the future.

Both chronic diseases and their risk factors are in turn influenced by the social and economic determinants of health [6]. These shape the physical and social environment in which people are born, develop, live, work and age. The social determinants of health are mostly responsible for health inequities - the unfair and avoidable differences in health status and the social gradient between those who have higher and lower incomes, education and social status. For example there is evidence of a social gradient in the prevalence of cardiovascular diseases and diabetes according to both education and income. There are also social gradients, in the prevalence of smoking, risky alcohol consumption and obesity, with education and income [7] (see Figure 1).
These inequities need to be addressed by a mix of strategies including population and public health interventions to address the social determinants of ill health. Primary health care also provides an opportunity to address some of these problems. This is because of its high population reach (with more than 88% of the population visiting a general practitioner at least once a year for example [8]) and acceptance by patients of the role of primary health care providers in preventive care [9, 10]. Patients with the physiological and behavioural risk factors for chronic conditions frequently present in general practice, providing an opportunity for primary prevention [11]. In 2007-08, 59% of general practice encounters were with patients who were overweight or obese, 26% with those who drank alcohol at risky levels and 17% with those who smoked daily [11].

3. THEORETICAL FRAMEWORKS FOR UNDERSTANDING PREVENTION IN PRIMARY HEALTH CARE

A key framework for understanding the way in which prevention is implemented in primary health care is the 5As [12, 13]. This includes the following actions by health care providers:-

- Ask: systematic identification
- Assess: multiple risk, readiness to change, health literacy
- Advise/Agree: tailored information, motivational interviewing, goal setting
- Assist: referral to intensive interventions
- Arrange: follow up, maintenance

The 5As has been widely adopted internationally in addressing the behavioural risk factors (Figure 2) [14, 15]. It provides a framework for organising interventions across the behavioural and physiological risk factors and for the involvement of different providers and services within a patient-centred model of care.
Figure 2: The 5As for behavioural risk factors in Australian general practice.

The 5As has been used as a framework for the recommendations of the Royal Australian College of General Practitioners Guidelines for Preventive Care for the past four editions [16]. It has also been incorporated into several other Australian guidelines including the recent National Health and Medical Research Council Guidelines for Management of Overweight and Obesity in Adults, Adolescents and Children. These multiple guidelines provide consistent advice. Their recommendations have been synthesised into standards of care for preventing chronic disease as part of a national research project aiming to put preventive evidence into practice (The PEP Study). The standards of care (Figure 3) are intended to provide a quick reference point for primary health care providers on the patients targets, how often they ought to be assessed and how to work with patients to reach these targets. Synthesising the guidelines recommendations is seen as an important step to facilitating the uptake of guidelines in primary health care.

Figure 3: Behavioural risk factors and guideline recommendations across the 5As
Behavioural risk factors for chronic disease occur in context of peoples’ lives and circumstances. The social ecology of health provides an important concept for preventive care because it highlights the multiple influences on patients and providers behaviour. These influences can operate at the individual, family, community, organisational level and beyond. The social ecology of the patient can either support and maintain change or act as barrier to it [17]. The influences include:

- individual material and psychological factors;
- interpersonal ties, roles and responsibilities, social norms;
- work organisation and access to health care; and
- neighborhood factors including the availability of food and a sense of belonging to the community.

The psychological and organisational context of the practitioner (attitudes, norms, routines, interprofessional and inter-organisational relationships) creates capacity for, or prevents the implementation of best practice preventive care (Figure 4) [18].

The social ecology model is useful because it identifies the influences on behaviour. However, further work is required to understand how to capitalise on the positive influences to support preventive care and mitigate against the negative influences.
4. EVIDENCE BASED MANAGEMENT OF RISK FACTORS

The Standards of Care in Figure 3 provide an overview of the 5As for behavioural risk factors. In this section the evidence behind these recommendations are described in greater detail.

4.1 Assessment

The recommendations for the assessment of individual risk factors are outlined in Figure 5. These are usually assessed in clinical practice in order to inform decisions about risk, diagnosis and management.

**Figure 5: Recommendations for assessment of individual risk factors**

**Smoking:** Smoking status should be assessed for every patient over 10 years of age ideally at each consultation [19].

**Nutrition:** Every 2 years patients should be asked about number of portions of fruit and vegetables and amount of saturated fat eaten per day [16].

**Alcohol:** Every 2-4 years, patients should be asked about the quantity and frequency of alcohol intake aged 15 years and over [20].

**Physical activity:** Every 2 years, patients should be asked about the current level and frequency of physical activity [16]

**Weight:** Every 2 years, patients’ body mass index (BMI = Weight in Kg/Height in metres$^2$) and waist circumference should be measured [21]. For children and adolescents BMI percentile charts should be used to monitor growth.

**Blood pressure:** Blood pressure should be measured in all adults from 18 years of age at least every two years [16].

**Cholesterol:** Adults should have their fasting blood lipids assessed starting at 45 years of age, every five years [16].

Other factors that may modify the approach include the patient’s readiness to change and health literacy. There are five basic stages of patients readiness to make changes in their lifestyle:— pre-contemplation, contemplation, determination (ready), action and maintenance during which the person has differing levels of motivation or readiness to change [22, 23]. Stage of change can be assessed for each of the lifestyle behaviours and weight. This allows health professionals to tailor their advice, which has been demonstrated to be effective in supporting change in lifestyle behaviours [24].

Low socioeconomic groups often suffer poor health literacy which impedes their capacity to adopt and follow preventive care [25-27]. In Australia less than a third of people without a school qualification achieved adequate health literacy levels [28]. Health literacy is the “cognitive and social skills which determine the motivation and the ability of individuals to gain access to, understand, and use information in ways which promote and maintain good health” [29]. Assessment of health literacy helps to tailor appropriate messages and approaches [30]. A simple screening tool has been developed to assess health literacy in clinical practice (See Figure 6).

**Figure 6: Brief Health Literacy Screening Questions [31]**

A. How often do you need to have someone help you read health information materials?
B. How often do you have problems learning about your medical condition because it is difficult to understand written health information materials?
C. How confident are you filling-in medical forms by yourself?
It is important to identify which patients have lower health literacy levels, because patients with low health literacy are less likely to receive preventive care [25]. Patients with low health literacy are less likely to ask questions and providers often incorrectly assume that these patients are not interested in their health care [32]. Primary health care providers can better support patients with low health literacy by, for example, limiting advice to between three and five key points, being specific and repeating key points, drawing pictures, using illustrations or demonstrating with models, and confirming patients understand what they need to know [33].

A large number of clinical practice guidelines emphasise the value of multiple risk assessment in primary health care. Two risk assessments are recommended in Australia:

- **Absolute Cardiovascular Risk assessment** – which should be performed for all adults aged 45 years and older (from 35 years for Aboriginal and Torres Straits Islander people) every two years. This assesses the risk of a cardiovascular event over the next 5 years. Calculation uses information on the patient’s age, sex, smoking status, total and HDL cholesterol, systolic blood pressure and if the patient is known to have diabetes or left ventricular hypertrophy [34]. This is used to support patient education and decision making about management.

- **The Australian Type 2 Diabetes Risk Assessment Tool (AUSDRISK)** – which should be performed every three years on patients 40 years or older (from 18 years for Aboriginal and Torres Straits Islander people) [35]. This assesses the risk of developing type 2 diabetes over five years based on the patients age, sex, ethnicity, family history, past history, smoking, diet, physical activity, BMI and waist circumference. This is also used as a screening tool for decisions about further investigations and interventions to prevent diabetes (in those who are high risk but not yet diagnosed as having diabetes).

The increasing number and complexity of preventive assessments and interventions has resulted in calls for health checks which allows more comprehensive assessments and interventions than is possible opportunistically when patients present for other conditions [36]. These have been demonstrated to improve the frequency of the assessment and management of behavioural risk factors in primary care [37]. Our own research in 2007 on the 45-49 year health check demonstrated that health checks were acceptable to GPs and patients and increased the frequency of preventive assessments and brief advice but not referral or health outcomes [38, 39]. Furthermore there was some evidence that the uptake of health checks by low socioeconomic groups may be the same as, or better than for high socio-economic groups [40]. However a recent systematic review has shown little impact of health checks on health outcomes [41]. This examined a very heterogeneous group of health checks (defined as screening general populations for more than one disease or risk factor in more than one organ system). This suggests that health checks should be focused – offering specific evidence based preventive interventions for at risk population groups.

Practice nurses have an important role in conducting part or all of the health checks in general practice [42, 43]. These roles may include identifying patients for health checks, assessing their risk factors and combined risk score (such as AUSDRISK score), providing motivational counseling, education and negotiating behavioural goals, and arranging referral and follow up. In Australia in 2009 health checks occurred in 7.6% of encounters with a practice nurse [44] indicating that there is scope for a greater role.
4.2 Brief interventions in primary health care: Advise/Agree
Advice should be tailored to readiness to change and health literacy. Where patients are unsure, motivational interviewing should be offered to help them to decide to act to improve their lifestyle behaviours.

Smoking cessation
All patients who smoke, regardless of the amount they smoke, should be offered smoking cessation advice [19, 45]. Brief counselling interventions and pharmaco-therapies delivered in primary care are effective in increasing smoking cessation [46, 47]. At an individual patient level, primary care providers can influence smoking rates by systematically providing opportunistic advice and offering support to all attending patients who smoke.

Alcohol
Brief advice to patients with at risk levels of drinking in general practice has been demonstrated to reduce alcohol consumption by about 6 standard drinks per week [48-50].

Physical activity
All adults should be advised to participate in 30 minutes of moderate activity on most, preferably all, days of the week (at least 2.5 hours per week). This has been demonstrated to confer cardiovascular health improvements independently from the impact on weight [51]. Brief interventions to promote physical activity have been shown to be effective in some studies [52, 53].

Diet
Brief lifestyle advice should be given to reduce saturated fat, and sodium and increase fruit and vegetable portions (2+5 portions) as these are associated with lower risk of cardiovascular disease and diabetes. Brief advice can improve dietary choices[54].

Weight
Patients who are overweight or obese should be offered individual lifestyle education. Goals should be negotiated and achievable. Weight loss of 5% of body weight can confer significant benefits in terms of prevention of chronic disease [21]. This may be achieved with a lifestyle program which aims for a 600Kcal or 2500 KJ energy deficit and increased physical activity (increasing to 60 minutes of moderate intensity five days per week) supported by behavioural counselling. However on their own, brief interventions are unlikely to be able to achieve and maintain weight loss in obese patients [55]. More extensive interventions (involving three or more sessions) by practice nurses have achieved sustained weight loss [56, 57]. In children interventions which combine counselling, education, written resources, support and motivation have been effective [58].

Multiple risk factor approaches
Some trials have been conducted of providing standard exercise and nutrition information in general practice followed by individual or group education and counselling sessions among high risk or obese general practice patients [59, 60]. However there has been insufficient evidence of impact on physiological risk factors such as blood pressure or lipids [61].
Especially for diet, physical activity, weight, and multiple risk factors there is increasing evidence that brief interventions in general practice are important and valuable, but insufficient to achieve and maintain behaviours and physiological changes [62]. Referral programs need to be of sufficient intensity (usually at least six sessions over several months) to be effective and sustainable. An essential component of all these are that they are integrated with primary health care providers involved in initial assessment and long term follow up. If they are not integrated then referral rates are likely to be low and long term maintenance poor.

These can be delivered in a number of ways including by:

- group and individual programs;
- phone or internet;
- different professionals including practice nurses, dieticians, exercise physiologists and psychologists, health educators and peer educators; and
- different organisations (health, non-health, private and public).

**Group and individual programs**

Both group and individual programs have been successful in assisting patients to achieve changes in diet, physical activity and weight. However there is some evidence that group programs may be more effective in patients from low socioeconomic backgrounds or with low health literacy and may assist in the maintenance of behaviour change [63]. Further research is required to identify which delivery method is most effective for different populations and geographical locations.

**Different providers**

A number of studies support an effective role for practice nurses in risk assessments, patient education and counselling for blood pressure, cholesterol, smoking, diet, physical activity and reducing CVD risk [56, 64]. In 2009, a randomised trial in the Netherlands investigated the effectiveness of practice nurses as substitutes for GPs in CVD risk management after one year follow up [65]. The study compared GP preventive care to practice nurse preventive care by examining changes to patient risk factors for CVD. The study found that practice nurses achieved results equal to GPs. Interventions by nurses or educators are more likely to report efficacy in changing patient levels of physical activity than other health professionals [66, 67]. Interventions by practice nurses, allied health (dieticians, exercise physiologists), medical assistants and psychologists have all demonstrated effectiveness in weight control programs [56, 68-71]. Education provided by dieticians is likely to achieve greater changes in diet behaviours than by other providers [68]. However this needs to be combined with long term support in general practice to ensure that it is incorporated into overall management of other risk factors. There is some evidence that multicultural health workers can be effective in delivering preventive education [72].

**Private and public providers**

There is evidence for cost effectiveness of referral of patients to some private weight reduction programs in comparison with intensive interventions by GPs [73]. However cost and other access issues may be significant barriers to low income patients taking up referral [74].

**Internet and phone delivery**

An increasing number of support programs delivered by phone, web, text and social media have been developed to provide support for changes in the behavioural risk factors. Phone counselling has been
shown to support changes to and maintenance of diet and physical activity behaviours [75, 76]. An effect of internet and web based interventions on behaviour change has been demonstrated but less so when maintenance was the goal [77]. However one study comparing in person and internet delivered weight loss support in primary care showed both methods achieved and sustained weight loss at 24 months [78].

4.4 Arrange
Maintenance of behaviour change is the major goal of long term monitoring and support. There has been emphasis on relapse prevention strategies in relation to alcohol and smoking [79, 80]. Maintenance of weight loss is a major challenge because most patients regain weight lost within one year following an intervention [81]. Trials that appear to be more successful in achieving and sustaining weight loss have been those which provide a longer duration intervention which involves face to face contact [82].

5. TRANSLATION OF EVIDENCE INTO AUSTRALIAN PRIMARY HEALTH CARE PRACTICE

There are implementation gaps in relation to evidence based preventive practice targeting the behavioural risk factors in Australian primary health care. These include gaps in: assessment, advice, referral, and maintenance.

5.1 Evidence to practice gaps in access to preventive interventions
There are high levels of assessment of the behavioural and physiological risk factors in primary health care. These tend to be high for blood pressure, weight and smoking and lower for waist circumference, diet and physical activity [83]. However the frequency of multiple risk factor assessment using cardiovascular risk calculators or the AUSDRISK questionnaire is much lower. Previous research has focused on the initial implementation and short-term use of cardiovascular absolute risk (CVAR) assessment by Australian GPs, and found variable evidence of uptake [84-87]. Most GPs use CVAR assessment in their practice primarily to motivate patients to change their behaviour and adhere to management rather than to inform their own decisions about pharmacotherapy or referral. Time and practice capacity are barriers to its greater use. Patients who sustained changes to their behaviour following CVAR assessment had internalised the benefits to their health and received support from family and friends. Those who relapsed attributed this to their own lack of motivation and extrinsic factors [88]. Only one study has been conducted on the usage rate of AUSDRISK by general practitioners (GPs) in clinical practice finding that only 36% were aware of AUSDRISK [89].

Overall, advice on prevention or nutrition and weight occurred in only 1.2% of general practice encounters in 2009 [44]. In terms of single risk factor assessment, about half of those assessed to be at risk are offered brief advice or management by GPs and other primary health care professionals (with higher rates for smoking) [18]. Barriers to offering advice include lack of provider skills in behaviour change techniques, negative attitudes (about their effectiveness), normative expectations of patients and other providers and factors operating in the environment of the practice including time, funding, availability of support [39]. These have been analysed using the Theory of Planned Behaviour as a framework in our previous research (Figure 7) [39, 90, 91].
Only small proportions of patients who are at risk of chronic disease are referred to and attend other providers or services for more intensive interventions. These represent less than 10% of those identified to be at risk and motivated to change their behaviour (Figure 8). Factors influencing referral include being assessed as “ready for change”, coordinating the referral process and reducing access barriers such as cost [92]. The low rate of referral by GPs has been found in other studies in Australian general practice [93, 94]. At-risk patients who do not yet have chronic disease are not well-serviced by the referral pathways (such as public hospital services or private allied health providers) used by GPs for people with chronic disease, (who are generally older, in poorer health and may be eligible for access to subsidised private referral). Many GPs express doubts about the effectiveness of referral options, preferring to manage the risk factors within the practice despite the difficulty in doing this. There are also practical difficulties in communication between general practice and the other services, waiting lists for public allied health services, delays in entry into group programs, the availability at suitable times and places and some reluctance on the part of patients to be referred especially to group programs.

While there have been improvements in the number of patients whose behavioural risk factors are assessed, large gaps between guideline recommendations and practice remain for providing advice and referral for at-risk patients.
Figure 8: Proportion of patients receiving assessment advice or referral; Health Improvement in Practice study, 2009

5.2 Inequities
Inequities in access to preventive care mean that these gaps in preventive care are not equally distributed across different population groups. Although disadvantaged populations experience significantly greater mortality and morbidity relative to advantaged individuals, they may be less likely to receive appropriate preventive care [95]. General practices in socio-economically disadvantaged areas tend to have fewer long consultations with their patients which provide opportunities for planned preventive care [96, 97]. Patients with poor educational attainment and health literacy are more likely to report chronic illness, but less likely to visit their GP for preventive care [98]. As a result reductions in health risks such as smoking, have occurred to a greater extent advantaged than disadvantaged populations [99]. Despite inequities in the distribution of risk factors such as obesity, rural people and those from low educational backgrounds are less likely to be referred from primary health care for interventions [92].

Aboriginal Australians are at greater risk of chronic disease and have high rates of obesity, smoking, hazardous alcohol consumption and poor diet [100]. However there is evidence that they miss opportunities for preventive care [101]. Although annual health checks for Aboriginal people are funded under Medicare and there is a package of incentives to support better chronic disease prevention [102], in mainstream primary health care there are low rates of identification of Aboriginality and uptake of annual health checks and Closing The Gap initiatives in general practice. Aboriginal Community Controlled Health Services mainly provide primary health care and some specialist care to many Aboriginal communities across Australia. Aboriginal Community Controlled Health Services take a holistic and culturally appropriate approach to patient care [103] and tend to utilise a greater number of allied health professionals including, but not limited to Aboriginal Health Workers, in the care of their patients.

Refugees struggle with high rates of long term illness often complicated by psychological problems, poor health literacy and poor knowledge of the Australian health care system. There is only 49% uptake of Medicare funded health assessments among new arrivals [104]. Many asylum seekers have no access to primary care [105]. Missed opportunities for prevention and early intervention leader to a greater burden of chronic disease in later life.
These inequities are associated with factors operating at the patient, local community, provider, practice and systems levels. Structural, organisational and patient factors all play a role in explaining these gaps in preventive care in general practices in disadvantaged communities [106] including access to general practice, time available for consultations, competing demands on work time, and higher GP stress. GPs may charge co-payments for preventive care visits which are likely to restrict access to preventive care particularly for low income people in areas with restricted choice of practice such as rural and remote areas. Figure 9 illustrates the barriers to preventive care in primary health care in disadvantaged communities.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Practitioner/Practice</th>
<th>Local health system</th>
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<tbody>
<tr>
<td>Language, culture and literacy</td>
<td>Workload – demand on GPs, GP time</td>
<td>Access to referral programs – cost transport, location, availability, waiting time, delay in entry into programs, coordination of entry/referral</td>
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<tr>
<td>Openness of patients to disclosure of risk factors and barriers</td>
<td>GP attitude to effectiveness of referral services</td>
<td>Waiting time for public services</td>
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<td>Knowledge and attitudes to health</td>
<td>Access to GP – bulk billing</td>
<td>Workforce availability of nurses and health educators</td>
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<td>Priority given to health vs. other priorities</td>
<td>Funding for nurses to do prevention – GP based funding</td>
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<td>Social factors – family stress, unemployment</td>
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<td>Co-morbidity – depression and other physical conditions</td>
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Figure 9: Barriers to Preventive Care in Disadvantaged Practices [107]

6. FACILITATING IMPROVEMENT

Strategies that can be applied to address these translation gaps and inequities operate at the following levels: practice organisation, primary care organisations, greater integration between clinical and community based programs and broader health system policies and strategies.

6.1 Practice organisation – how is care organised at the practice level?

The optimal model of care involves providing both opportunistic preventive care for all patients together with planned preventive health checks at particular life stages and for higher risk populations for whom intensive assessment is justified. In balancing between these needs, we need to consider both the feasibility and effectiveness in practice [108]. For example highly targeted approaches to planned care for an infrequent but high risk group of patients may be difficult to implement because they are too difficult to incorporate into practice routines. On the other hand universal planned preventive care may have low cost effectiveness.

The organisation of care across the 5As needs to be underpinned by practice systems including the roles of staff members, information and business management systems, and linkages with other services and providers [109]. Decision support systems have been integrated into e-health record systems in general practice providing prompts for preventive care and tools for health risk assessment. The introduction of e-health records and decision support systems have been associated with improvements in preventive care [110]. There is however variability in the inclusion of specific fields for particular risk assessments (such diet or physical activity) or preventive interventions in e-health records which reduces their effectiveness.
The development of teamwork both within primary health care services (including between clinical and non-clinical staff) and between services is critically important to the effectiveness of interventions to address the behavioural risk factors [111-113]. The expansion of the number and roles of practice nurses provides an opportunity for this to be developed within the practice. Creating teamwork across providers who are in different locations and organisations is more difficult [114]. The development of a range of models of integrated services including the “GP-Superclinics” provides a structural basis for this to occur [115]. However these represent only a very small percentage of primary health services in Australia and there is a need for strategies which develop teamwork and integrated preventive care within the majority of primary health care services.

There is limited evidence for how effective intra-professional teamwork can occur for preventive care in primary health care settings. Observational research in Canada found that the physical layout of clinical space and the organisation of clinical practice influenced the approach to and the effectiveness of teamwork [116]. A qualitative study of 121 primary health care professionals explored the different types of communication used within primary health care teams. The study found that communication occurs through formal (e.g. regular team meetings, computer-assisted communication) and informal (opportunistic, hallway conversations) processes. Informal communication was seen as the most common form of information sharing and was the preferred approach for patient care issues. The study found that the approachability, availability and the proximity of team members can influence effective team communication. Remuneration for attendance at team meetings was seen as a way of increasing attendance at team meetings [117]. Further research is required to understand how to facilitate effective intra-professional team work within organisations, and across primary health care and outside allied and community health service and providers.

### 6.2 Primary care organisations – potential and actual roles

Since their inception, Divisions of General Practice (Divisions) were seen as potential vehicles for facilitating improved preventive care and addressing health inequalities [94, 118, 119]. Over the past decade, most of the effort on prevention by Divisions has focused on supporting general practices to improve their preventive care. In a feasibility study, Divisions were supported to take multi-strategy approaches involving practice visits, training, resource provision and linkages with referral services. This brought about changes to the organisation of the general practices involved and their reported frequency assessment and delivery of behavioural interventions [94, 120].

Divisions have been involved in a number of programs to improve the quality of preventive care in general practice. The National Primary Care Collaboratives have worked with Divisions to provide an intensive model for quality improvement at the practice level. An approach to outreach facilitation has been developed and applied intensively by the National Prescribing Service (NPS) facilitators based in the Divisions (with the focus primarily on medication management) [121]. Facilitation needs to be flexibly applied to enhance clinical preventive service delivery which is tailored to meet the varying needs of practices and their patient populations based on clinical audit [111]. This approach is being developed in our Preventive Evidence into Practice (PEP) partnership project in Australia [122], and is the focus of programs being implemented in Ontario Canada and the US [123-125].

The provision of referral services for prevention by Divisions has been variably successful. In many Divisions, lifestyle management programs aiming to prevent diabetes were established [126]. However these suffered from generally low referral rates from practices. The reasons for this were complex and included the criteria for referral. Similar programs have been more successful especially where the referral criteria were broader, the programs more flexible and where referral was facilitated at the practice level [92, 120]. It is important that lifestyle programs are suitably accredited both to help ensure that they are effective and to help to address GP concerns about their effectiveness [127].
The newly established Medicare Locals have a wider remit to not only facilitate practice improvement in preventive care through the development of staff practice capacity and information systems but also to develop more integrated service networks and population health [128]. These provide a basis for improving the integration between general practice, private allied health, state community health services and Aboriginal Community Controlled Health Services. Their initial tasks include identifying the health needs of local areas and developing plans for locally-focused and responsive services and programs (including health promotion and preventive health programs). The latter may include preventive programs that are brokered through coordinators or Internet or phone based services which are jointly owned and operated.

**Lessons from overseas**

Health improvement was a major focus of the activities of Primary Care Trusts in England. These developed capabilities to undertake their role in health improvement and to address poverty/deprivation as priorities. For example they commissioned physical activity referral programs, smoking cessation programs, local strategies for overweight and obesity [129]. This involved them working closely with public health observatories to assess needs and develop plans. However they faced significant capacity constraints due to their size [130] and recent reforms have transferred responsibility for health improvement to clinical commissioning groups and local government.

Similar expectation were raised for primary health organisations in New Zealand especially in addressing the preventive health needs of Maori and Pacific Island populations who suffer the greatest burden of disease. Their approach includes strategies to make “mainstream services and programs” more accessible for disadvantaged groups as well as targeted programs including outreach services [131]. Some funding has been provided through the primary health organisations to general practice for preventive care services provided and increased access by disadvantaged group. In planning these the primary health organisations have worked closely with the District Health Boards who have provided data and epidemiological expertise.

**6.3 Integration between clinical and community based and public health programs**

To be effective, clinically based interventions need to be linked to community based programs and resources accessible to disadvantaged communities. The clustering of risk factors suggests a different approach from current approaches to single lifestyle behaviours is required [99]. This needs to be facilitated at the local level, using a socio-ecological approach [17] to identify appropriate partners at individual, organisational, community and state levels that provide more tailored interventions for particular populations [15]. It is widely recognised that addressing health inequality in Australia requires action to address social determinants of health at all levels of the health sector in collaboration with government, business, civil society groups and the community [132].

The Centers for Disease Control and Prevention program WISEWOMAN successfully developed partnerships between clinical services and non-government organisations (such as the heart and stroke foundations), local government and local community organisations including church groups in the delivery of preventive programs [133]. This has allowed much greater reach for programs and helped to ensure their sustainability beyond the initial funding period. It also allowed greater use of technology supported coaching and counseling interventions for diet, physical activity and weight control [134]. These programs had to be registered and licensed to ensure quality and fidelity with the aims of the program.

In the past, Divisions developed local partnerships with state health, local government, non-government and community organisations and Aboriginal organisations to support preventive health especially for diabetes prevention, self-management and physical activity [135]. These have been
largely voluntary partnerships with Divisions taking a brokering role in facilitating referral from general practice and in some cases funding services.

Figure 10: Proportion of Divisions of General Practice with prevention programs involving collaboration with other organisations, Annual Survey of Divisions 2010-11 [136]

Without the development of integrated services and programs, primary health care and public health in Australia are unlikely to be able to address the fundamental challenges they both face in preventing chronic disease and reducing health inequities. This involves collaborative planning with state Local Health Districts and integrating the delivery of prevention programs. It is expected that Medicare Locals will be able to develop partnerships with state, local government and non-government organisations to address the social determinants of health as well as health promotion programs. However although there is good will, there are as yet no mechanisms for the development of truly integrated and jointly owned programs. The recent COAG National Primary Health Care Strategic Framework provides an opportunity for this to be negotiated between Commonwealth and State funded services and organisations.

6.4 Health system strategies

Workforce:
The introduction of practice nurses has been a major strategy for addressing the capacity constraints in general practice especially in under-served areas. In Australia, 60% of practices employ at least one practice nurse. There is an increasing number of encounters involving a practice nurse — the proportion more than doubled from 4.2% in 2005–06 to 9.0% in 2008–09 [44]. This is likely to be an underestimate of their contribution because these figures are based on Medicare Claim Data and much of the practice nurse’s role might not be claimed through Medicare. Practice nurse skills in chronic disease prevention and management have been demonstrated to be under-utilised [137]. A third of practice nurses report spending half of their time conducting health checks and other preventive activities. However, over 80% want to be more involved and receive more training [138]. While the role of practice nurses is expanding, there is potential for a far greater role in the prevention of chronic disease.
Prevention of chronic disease requires the involvement of a broad multidisciplinary team including allied health workers who are able to provide more intensive but accessible interventions. However there are major disparities in the distribution of allied health workers especially in remote, rural and low socio-economic areas and little evidence that these are narrowing [139]. While information technology (including the use of NBN enabled tele-health and web based programs) may help mitigate these workforce shortages, continuing effort will be needed to expand the allied health workforce in these areas.

**Information systems:**
The use of information systems is being increasingly recognised as important in strategies to address the lifestyle risk factors in primary health care. There are effective roles for the use of information technology within each of the elements of the 5As including identification of risk and reminder systems, assessment of risk, provision of patient information and education, and continuing support including peer support [140]. The computerisation of general practice, development tools for audit and decision support and introduction of the Patient Controlled Electronic Health Record provide a good basis for this [141]. However levels of computerisation in community and allied health services are lower and there is much work to be done in adapting the various systems at practice levels and in local networks to be able to comprehensively address the behavioural risk factors across the 5As.

**Patient enrolment**
Patient enrolment with a primary care practice or organisation provides a basis for shared responsibility between patients and practices for preventive care as well as a basis for funding of this care. This would also allow practices to know the population they are responsible for providing care to, and therefore assist in anticipatory care including recall [142]. Although a trial is being conducted on diabetes, this does not cover primary prevention. This continues to be an area which needs further development especially for high risk patients.

**Financing:**
Funding needs to encourage both integration and improved quality of preventive care. Most Medicare funding in Australia rewards occasions of service. Relatively few mechanisms exist to reward team based care, population coverage or equity of access, and these factors need to be addressed without further increasing the fragmentation and complexity which is already a serious problem for providers. Further there is only very limited evidence that particular funding mechanisms improve the frequency and quality of preventive care [140, 143]. In Australia, there is some evidence that incentives the Practice Incentive Program (PIP) provide may have contributed to improvements in anticipatory care of diabetes [144, 145]. Thus a flexible mix of funding mechanisms may be desirable for preventive care in primary health care. These mechanisms might include funding for preventive care provided by nursing and allied health providers, that rewards population coverage of preventive care and encourages joint programs involving providers in general practice, private allied health, Aboriginal health and state funded community services. This may include funding through Medicare Locals.

**Equity**
There are numerous threats to equity of access to preventive care. Aboriginal Australians suffer significantly worse health status at the same time as having less access to health services [146]. Rural populations also are at higher risk of chronic diseases but have less access to primary care services [147]. Refugees struggle with high rates of long term illness often complicated by psychological problems, poor health literacy and poor knowledge of the Australian health care system. Efforts to address these inequities in primary health care have included enhanced universal programs (such as more frequent health checks under Medicare) as well targeted programs for specific groups (such as nicotine replacement therapy for disadvantaged groups, nutrition and physical activity education and support programs for Aboriginal and other disadvantaged groups, and training for health professionals
to provide culturally appropriate care). The latter are usually delivered locally but need to complement universal programs.

**Other systems issues**
The 2008 discussion paper highlighted a series of options for policy and practice. A number of these have been discussed above. Others are outlined below:-

Health risk assessment: The uptake and use of these tools (such as the CVD absolute risk assessment and AUSDRISK) is still low especially in support of clinical decision making. The development of management guidelines (in addition to those for assessment) will help. However much more promotion and facilitation of their use will be required including their incorporation into health record systems.

Lifescripts: Lifescripts remain relevant to lifestyle interventions in primary health care. Although electronic templates have been provided for the five most frequently used IT systems in general practice, they are still not fully integrated allowing data to be imported and exported from the record. It will be important that these and other information resources are integrated into the PCEHR.

Performance Indicators: The development of performance indicators for primary health care focused on the behavioural risk factors should remain on the agenda of the National Health Performance Authority. Draft indicators for general practice have been developed by the RACGP. However these should capture interventions across the 5As – not only assessment.

**7. RESEARCH AGENDA**

There continue to be gaps in our knowledge about preventive care in primary health care. These include gaps in knowledge about the most effective interventions in families with young children and adolescents, interventions for disadvantaged patients with low health literacy and how to maintain behaviour change especially in relation to diet, physical activity and weight. At the local level, there is need for further research into how effective partnerships can be developed to deliver preventive care and to link clinical care with population health initiatives. At the system level there is need for further research to evaluate the effectiveness of funding and financing models and ways to develop integrated preventive care between providers, patient enrolment, the optimal use of information technology including decision support and Patient Centred Electronic Health Record (PCEHR) to support joined up preventive care and how to provide equity of access to preventive care.

Further research is required to better understand the skills and contributions of a multidisciplinary team for preventive activities in primary health care. Thus while the important role of practice nurses is not in doubt, further work is required to identify how GPs and practice nurses might work together, and with allied health professionals to prevent chronic disease. Further research needs to examine:

- which allied health professionals ought to be involved in preventive care for different groups of patients;
- the specific skills and expertise required by GPs, practice nurses and allied health professionals in preventing chronic disease;
- how the skills and knowledge of these different professional groups complement and reinforce one another as part of a distributed preventive health team; and
- how effectively clinical decisions are made in a team environment and how to facilitate mutual understanding among team members.

Research is also needed to inform the role of Medicare Locals both in developing population health plans and partnerships to achieve these and in supporting practices to improve their preventive care.
8. CONCLUSIONS

In this paper we have demonstrated that primary health care can be effective in the prevention and management of the behavioural risk factors. Assessing chronic disease risk, readiness to change and health literacy are important in tailoring interventions to the needs of patients and providing care which is most effective and equitable. However there is still more work to be done in translating this into practice.

Over the last two decades the focus in primary health care has been changing from acute care to the prevention and management of chronic disease. This has required changes to the organisation of primary health care practices and the involvement of a greater number of team members. As the nature of care changes, and as teams grow in scope and size, and engage with providers outside the practice, communication becomes more complex [148-150]. Further research is required to identify which allied health professionals ought to be involved in preventive care for different populations and how the organisation of the practice can best support the roles of practices nurses and allied health providers. In essence, the effective and comprehensive implementation of the 5As requires highly functioning teams that communicate well and tailor their care to patient needs. However, we are still developing strategies to facilitate the development of effective team-work both within the practice and between different services.

Primary health care providers such as GPs and practice nurses have a particularly important role in the identifying, assessing at risk patients and offering brief interventions and long term follow up. However this is often insufficient and more intensive education and support are required from a range of providers and services including community based programs. Prevention requires the organisation of care within the practice as well as across different organisations. Facilitating this is an important role for Medicare Locals and needs to be incorporated into their population health planning. There is also a need for them to forge partnerships with state health services, local government and non-government organisations to achieve their goals.

The transition towards a more equitable and accessible primary health care system is a key plank of health reform. The establishment of Medicare Locals provides an opportunity for many of the barriers to prevention in primary health care to be identified and local strategies to be developed to address them. These need to be combined with further system level changes to funding, workforce and information systems to be most effective.
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