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School of PUBLIC HEALTH & COMMUNITY MEDICINE

Literature review

The contribution of primary and community health services

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Contents

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Executive summary

The purpose of this report is to a) review the extent and nature of the contribution made by a strengthened and well integrated primary and community health care system, and b) the contribution of primary and community health care services (P&CHS) in addressing three current issues that are the subjects of much primary health care reform both internationally and within Australia, namely:

- providing alternatives to hospitalisation;
- providing care for people with chronic and complex conditions in collaboration with more specialised health services; and
- population health and prevention.

This review has involved a analysis of published intervention studies, including where possible meta-analyses and systematic reviews as well as articles on single studies, supplemented by key opinion pieces, literature reviews as well as policy documents and reports from Australia and other selected countries. The report starts with a summary of major developments in Australia and elsewhere followed by a working definition of primary care, primary health care and community health services. The next section presents the evidence for strengthened and well integrated primary and community health services, why this is important and what are issues that impede development within NSW, the contributions made by types of services and practitioners and the models and approaches that strengthen P&CHS. This is followed by sections that address the contribution of P&CHS in addressing the three current issues, using a similar format.

Major findings

Generic primary and community health care services

There is compelling international evidence from the work of Starfield and her colleagues that primary care has an independent effect on improving health status and reducing health inequalities and that countries with well developed primary care systems have healthier populations and reduced health care costs.

This literature review found that primary care services have been shown to improve clinical, functional and self reported outcomes (especially brief interventions for depression and risk factors for chronic diseases) and improve access to primary health services (notably where primary care practitioners are co-located or where primary health care nurses are located in areas of no/few GPs.

Comprehensive primary health care services, including generalist community health centres and school-based health centres, have the most impact in improving access to services for disadvantaged and vulnerable groups, and providing cost effective high quality of care mainly for the prevention, early intervention and management of chronic disease. Structures and mechanisms within primary health care services that support multidisciplinary care (within and between P&CHS), comprehensive approaches, a health versus disease orientation and proactive ongoing care all contribute to these achievements. Much of the success relies on a well integrated P&CHS system that is adaptive and flexible and has the capacity to respond to changing needs and emerging models of care.

The aim of models that strengthen the links amongst primary care and primary health care providers and services are generally to improve coordination and continuity of care for people with chronic and complex conditions and particular population sub groups, (e.g. children and adolescents, and/or disadvantaged and vulnerable groups who have or are at risk of developing complex health problems). These models include formal or informal structures to promote multidisciplinary teamwork such as:

- *Networks/voluntary alliances*: early stage of development.
- *Regional/local level intermediary organisations*: early stage of development.
- *Community health centres/school-based health centre:* long standing model contributing to improved access, utilisation & quality of care & client satisfaction.
- *Co-location models*: improved information sharing, better communication & collaboration, more timely & appropriate referrals.

The other major model focuses on changing provider roles, commonly enhancing/substituting the roles of nurses in the context of a declining GP workforce. These approaches are effective in improving access to primary health care services and quality of care, and both patients and providers are satisfied with the arrangements.

Shifting care from hospitals to the community

In recent years an increasing array of models and programs that shift care from hospitals to community-based settings have been developed. The three major approaches are:

- *Preventing acute care* (e.g. through active follow up).
- *Managing the transition between hospital and community care* (e.g. early supported discharge programs).
- *Community-based alternatives to hospitalisation* (e.g. Hospital In The Home [HITH]).

Primary care, community health services and community-care services are all playing an important role in these initiatives through providing clinical care as well as ongoing support and education for clients and their carers. The early evidence suggests that these programs can reduce length of hospital stay, avert hospital admissions/readmissions and that clients and their carers are well satisfied with their care, provided they are well supported. The types of support they require include family support by a multidisciplinary team; nursing support from nurse experienced in the specialist area; hospital outreach, including specialist nursing and allied health care; long term management by community nurses; and home care. This support is also dependent on availability and capacity of carers to provide care and support in the home.

Important success factors for these programs include implementing evidence-based and multidisciplinary care (involving both generalist and specialist services); collaboration between providers, especially involving GPs; incorporating self-management strategies; and clinical leadership and governance. For HITH models, joint responsibility between hospital and community staff maybe an important element in ensuring good continuity of care.

The interface between generalist and specialist community-based services

This interface is particularly important for the ongoing management of people with chronic conditions as most of their care is provided in these settings. Initiatives to improve integration across generalist/specialist services have been well researched and there is sunbstantial evidence that multifaceted organisational and education interventions contribute to improved access to and quality of care, enhanced client satisfaction and improved health. The major contribution of primary and community health services includes their roles in multidisciplinary assessment, ongoing care by GPs, providing short focused interventions, filtering access to more specialised services, case management, patient education and identifying and responding to previously unmet health needs.

Models to integrate generalist and specialist services range from relatively informal to more informal approaches and include:

- *Consultation/liaison*: well used in mental health involving GPs and specialist mental health services/providers.
- *Shared care*: more formalised arrangement where care is defined by protocols and well used for mental health and diabetes. Like the previous model, GPs have overall management role.
- *Specialist outreach*: used where there are shortages of specialist services, typically in rural/remote areas.
- *Co-location:* of generalist and specialist workers to improve access and referrals.
- *Networks:* voluntary alliances of generalist/specialist providers, where focus is on providing integrated services for specific population sub groups.

Population health role of P&CHS

While primary care services play an important role in prevention and early intervention for individuals and increasingly for their practice populations, comprehensive primary and community health services extend this role to a focus on local communities, in collaboration with other sectors, organisations and community groups.

The areas where P&CHS can make the most significant impact in population health is prevention and early intervention in the early years of life, early intervention for common risk factors (especially smoking, nutrition/diet, physical activity) and their contribution to community-wide interventions, especially CVD prevention programs and childhood injury prevention.

The evidence consistently supports the use of multi-faceted interventions over time and critical success factors increasingly appear to be using approaches that build the capacity of individuals and communities through the engagement of local communities as key partners in community-level interventions. Core roles for P&CHS that contribute to improved population health outcomes include:

- Home visiting
- Screening
- Pro-active preventive health care
- Brief counseling/motivational interviewing
- Health education, including health literacy
- Providing ongoing social support.

A number of important themes emerged about the capacity required within P&CHS and issues to be addressed in order for the achievements of P&CHS to be realised in the 4 areas that have been the focus of this literature review. These relate to the P&CHS workforce, organisational structures to supported multidisciplinary care and integrated ways of working, communication systems, funding and resources and finally governance and leadership

Workforce: The foremost issue is the availability and development of a P&CHS workforce with access to ongoing education, training and support to develop and implement new skills and competencies and ways of working. This requires an integrated rather than single profession approach. An integrated approach enables the challenges associated with a diminishing primary health care workforce and increasing workloads to be addressed in the development of models to strengthen multi-disciplinary care. It is clear that enhancing the roles of nurses in clinical areas and maintaining the role of nurses and allied health practitioners in individual/family focused prevention, health education and support will continue to be important.

Organisational structures: Collaborative structures that support both horizontal integration across the range of P&CHS and vertical integration between P&CHS and more specialised health services are required to sustain and support collaborative ways of working. This review has described a number of models that operate at different levels, but a common requirement of these structures is that there are some sort of agreements or protocols that outline and clarify the functions, roles and responsibilities of the various players.

Communication systems: Effective referral and communication mechanisms within P&CHS and across the primary/community and secondary care interface are essential for providing high quality and continuity of care over time. These include systems that enhance the flow of information and communication across and between services and amongst multidisciplinary care teams as well as clear care protocols. The important role of information systems in enhancing communication systems is fundamental and remains an ongoing challenge in an environment characterised by a diverse range of P&CHS providers and organisations.

Funding/resources: Incentives/funding models that enable relationships to be built and to support collaboration are crucial in the context of fee-for-service general practice which acts as a disincentive and major barrier to change. The availability of/access to 24-hour care and adequate equipment and resources to support home-based care are important prerequisites for the involvement of P&CHS in shifted models of care.

Leadership/governance: Last, but not least is the importance that leadership contributes to a strengthened and well integrated P&CHS system, especially in the context of a fragmented system in which there are many players. United and visible leadership can help bring about the cultural change required for changing practices and roles and emerging models of care that can threaten established ways of working. Related to this is the importance of multi-disciplinary governance to support integrated approaches that include a range of primary health care professionals.

1. Introduction

1.1 Introduction and purpose of paper

Over the last decade or so there has been increasing interest in the role of primary health care, understanding where it makes the most effective contribution to improving health and reducing health inequalities, and strengthening its capacity within health systems.

The purpose of this report is to review the extent and nature of the contribution made by a strengthened and well integrated primary and community health care system, and the contribution of primary and community health care services (P&CHS) in addressing three current issues that are the subjects of much primary health care reform both internationally and within Australia:

- providing alternatives to hospitalisation;
- providing care for people with chronic and complex conditions in collaboration with more specialised health services; and
- population health and prevention.

A summary of international and Australian primary health care developments provides the context and backdrop for this literature review and its relevance for NSW.

1.2 International & Australian developments

"There is hardly any health system reform in developed countries in the past five years which has not given PHC higher relative importance…. It is clear that PHC continues to be a fundamental component of health policy, and of health systems, in most of the world."[1]

International developments

In response to the growing evidence-base for the contribution of primary care to improving health, reducing costs and health inequalities coupled with common challenges being faced, a number of countries have embarked on major primary care and primary health care reforms. In particular, similar challenges being experienced are:

- Problems with inequitable access to primary care services (a mixture of geographical mal-distribution of services and financial impediments) and correspondingly greater use of emergency services.

- Inappropriate use of hospital services for ambulatory care sensitive conditions (ACSCs), i.e. conditions that can be treated in community rather than hospital settings.
- A lack of integration of primary care services with other parts of the health system, resulting in poorly coordinated and duplicated care.

Despite the differing health system structures and funding systems (which have implications for how the reforms are implemented), there are a number of common themes and developments being pursued in Canada, New Zealand and the United Kingdom including:

- Defining a core range of primary care services for defined populations, including essential services.
- Improving 24/7 access to essential primary care services, for example walk in clinics in the United Kingdom.
- Greater focus on planning for and delivering services for geographically defined populations (especially in New Zealand and the UK).
- Emphasis on prevention, promotion and management of chronic disease (most countries).
- Use of multidisciplinary approaches (but multidisciplinary team development beyond GPs and primary health care nurses remains an implementation challenge).
- Development of regional level organisational structures and networks that bring together general practitioners and other primary care/primary health care providers for the provision of more integrated care for defined populations (for example Primary Care Trusts [PCTs] in the United Kingdom and Primary Health Organisations [PHOs] in New Zealand.
- Increasing use of mixed funding models that include capitation in addition to fee-for-service (FFS) components.
- Significant funding to support implementation of reforms in all three countries.

What's striking in both New Zealand and the UK, but not in Canada, or for that matter in Australia, is that primary health care is central to health system reforms in these countries.

A common thread across the reforms is the centrality of general practice and encouragement and support of the willing and efforts to achieve consensus, whilst not allowing opposition to stop the effort.

What is also clear from these developments is that the inclusion of publically funded community health services in the reforms has been a later consideration. In the UK, district health nurses and health visitors were included in the second round of reforms with the establishment of PCGs; and in New Zealand they remain a parallel structure as part of district health boards. In Canada, there is no clear national direction and at a provincial level, some reforms involve a focus on

community health services and other have a focus on family physicians; it is not clear the extent to which any reforms are focusing on integration between the 2 systems.

Other key elements of the reform processes and obstacles to implementation have been identified from a recent review of Finland, the Netherlands, United Kingdom, New Zealand, Australia, USA and summarised in the box below [2] .

Positive attributes of implementation of international reform processes:

- Decisive direction with incremental steps; main objective set in place within 1-2 years
- On-going refinement as required, with most major refinements occurring within 5-10 years
- Pilots not always required, used judiciously for refinements
- GP support: support and encouragement of the willing and efforts to achieve consensus, but opposition not allowed to stop effort
- Tolerance for pluralism: new options, plus maintain current models in parallel either ongoing or for limited time period
- Targeted funding/incentives to support elements of new approaches/models (eg reward prevention and health promotion) & behaviours (eg improved practices, support for multidisciplinary teams (MDT), purchase computers, software and training)
- Support for autonomy and influence of new models, with less micro management by government

Obstacles and barriers to successful implementation

- Political indecision, backing off, direction changes can result in mixed messages about direction of change, delays, reduced momentum, timidity in moving forward
- Temptation to micro-manage
- Powerful interest groups: resistance, intense lobbying, politicisation of reform, professional tensions – most powerful provider group is GPs in influencing PHC reforms

Australian developments

Australia has also been reforming its primary and community health care systems at Commonwealth and State level. The focus of Commonwealth reforms has been on general practice. The thrust of these reforms has been enhancing the capacity of general practice and strengthening their collaboration with other health service providers (both primary health care and specialised/acute services) through a mixture of:

- Financial incentives.
- Program funding, grants, and workforce initiatives designed to improve access to GPs and other primary health care practitioners.
- Building practice capacity and quality through the establishment of 123 divisions of general practice, providing practice support and education (including IM/IT), accreditation and other quality improvement programs.

- Strengthening research capacity and the evidence-base through the research program (PHCRED) and the establishment of the national PHC research institute (APHCRI).

Initiatives designed to overcome Commonwealth/State funding fragmentation have involved a mixture of funds pooling, regional planning and better care coordination. Initiatives have also focused on improving prevention and management of chronic disease in general practice.

However, as many observers have professed, the lack of a national primary health care policy or strategic framework continues to impede the development of a national and comprehensive approach to primary health care [3, 4].

Most States and Territories have or are currently developing primary/community health policies that outline the principles, scope, core functions, key priority areas and future directions. Common priority areas include a focus on population health, balancing investments in prevention/promotion/early intervention, and the management of chronic and complex conditions, addressing the social determinants of health and reducing health inequalities, strengthening community capacity and engagement and building organisation and system capacity.

Organisational reforms have focused on enhancing horizontal integration across the range of State and Commonwealth funded primary health care services (through for example primary health care network models designed to improve service coordination) and vertical integration between primary health care and specialist/acute services to prevent avoidable use of hospitals through partnerships between hospitals and community-based health services.

1.3 The scope of primary and community health care

Primary and community health services (P&CHS) play a pivotal role in the health system. Together they are the first point of contact for the majority of the population and the setting where most health care takes place both directly, or in the case of people with more complex conditions, in shared care arrangements with more specialised services.

There is considerable debate over the definitions of and relationships between primary care, primary health care and community health services. For the purposes of this paper the following descriptions are used.

Primary care is often used interchangeably with primary medical care as its focus is on individual clinical services provided predominantly by GPs, as well as by practice nurses, primary/community health care nurses, early childhood nurses and community pharmacists.

Primary health care (PHC) incorporates primary care, but has a broader focus through providing a comprehensive range of generalist services by multidisciplinary teams that include not only GPs and nurses but also allied health professionals and other health workers such as

multicultural health workers and Indigenous health workers, health education/promotion and community development workers.

Community health services may share a number of characteristics of primary care and primary health care services, as well as provide more specialised community based health services for defined target groups for example post acute care, mental health, drug and alcohol, sexual assault.

1.4 Structure of report

The report commences with an executive summary of the major findings, followed by this introduction which includes the purpose and sets the context for the literature review and a section on the methodology which outlines the scope and sources of information. The findings section is divided into four parts. The first part presents the evidence for strengthened and well integrated primary and community health services, why this is important and what are issues that impede development within NSW, the contributions made by types of services and practitioners, and the models and approaches that strengthen P&CHS.

This is followed by sections, using a similar structure, that address the contribution of P&CHS in addressing three current issues:

- providing alternatives to hospitalisation;
- providing care for people with chronic and complex conditions in collaboration with more specialised health services; and
- population health and prevention.

Each part ends with a summary of the key points or major issues and a final conclusion section summarises the evidence and in what areas as well as what is impairing developments and major issues to be addressed. The report concludes with an abbreviations section and an annotated bibliography of selected references used in this report.

2. Methodology

A variety of sources have contributed to this literature review. A Medline search confined to 1999-2004 was undertaken using key words such as primary health, primary health care, community health services/centres, community health nursing. Related terms included effectiveness, efficiency, accessibility, continuity, models, teamwork, outcomes, evaluation, cost, funding, structure, integration, networks, comprehensive and prevention. This was supplemented by literature obtained and reviewed from a previous Medline search from 1995-2001 using similar terms plus family support services, early-childhood intervention, advance practice community health nursing. Where possible there was a focus on meta-analyses and systematic reviews and outcomes, including patient related outcomes, patient satisfaction, access to and utilisation of services and quality of care.

This information was supplemented by key opinion pieces and literature reviews as well as by policy documents and reports obtained from government web pages, including Australia, Canada New Zealand and the United Kingdom, as well as from key informants.

Much, but not all of the literature referenced in the report, has been summarised in an annotated bibliography which is included as an appendix.

3. Findings

While there is a growing evidence base to support the role of primary care, there is considerably less evidence on the effectiveness of primary health care and community health services. There are a number of contributing factors. As indicated in the previous section, community health services have not been a major feature of primary care reforms. Research and development has predominantly focused on primary care and building the research capacity within general practice, which has resulted in a growing evidence-base in primary care. Moreover much of the cross-country comparative research has focused on primary care systems.

The complexity of primary health care and community health, with its focus on improving health and well-being of communities and an emphasis on the social determinants of health, has a large impact on the development of valid and reliable measurement tools. While indicators of mortality and morbidity are fairly well established, measurements of positive health and well-being still present a challenge. Not withstanding these cautions, the following sections present the findings from the literature on the contribution of primary and community health services and where available the evidence on their effectiveness.

3.1 Strengthen & integrate primary and community health care

Why is this important?

- The essential role of primary health care as being the first point of contact with the health system and the setting in which most of the care is provided for most people over time is clear from the data on health service utilisation.
- GPs provide on average 5.2 consultations per person per year nationally [5]. NSW MBS and non-inpatient data shows that P&CHS provide in excess of 108.5 million occasions of services per year. These figures contrast with public hospital activity, where on average each year 1.3 million people are admitted to hospitals, and more then 22 million occasions of service are provided [6].

What are the issues?

- The primary and community health care sector within Australia is characterised by a diverse range of providers and services, differing funding mechanisms, organisational and management structures and professional cultures and backgrounds. These issues impact on the capacity of the sector to work in integrated ways to provide comprehensive primary health care services to local communities and maximise the effectiveness of these services.

- As the major provider of primary care, GPs are an important gateway to other services; and whilst the proportion is decreasing, just over 23% in NSW in 2002 still operated as solo practitioners [7]. Good links between general practice and other primary and community health care practitioners/services provide GPs with support and access to multidisciplinary approaches and other services and enhances quality and appropriate care. While there have been Commonwealth government programs to support this, there is little integration of these initiatives with community health services.
- Other problems which are hindering the development of a more integrated primary healthcare system include:
  - The differing Commonwealth and State priorities and directions for primary health care.
  - The vertical disease orientation of many programs and associated reporting and accountability requirements which works against an integrated and generalist approach at the local level.
  - Lack of structures at national, state, regional and local levels to integrate primary health care planning and implementation.
  - Incompatible information systems that impede service coordination and timely information exchange.
  - The multiple funding and payment systems that are operating and limited incentives for integration.
  - The lack of an inclusive primary health care leadership at all levels in the system, compounded by the lack of a national primary health care policy or strategic framework which limits the development of a shared vision.

What is the evidence in support of a strong primary & community health care system?

The contribution that a well functioning and effective primary health care system can make to improving the health of the population and reducing health inequalities is supported by large scale country-level evidence. Primary care has been shown to have an independent effect on improving health status and reducing health inequalities [8, 9]. Other research shows that primary care may mitigate the adverse effect of income inequality on health status [10-12]. Furthermore, countries with strong primary care infrastructure have lower costs and generally healthier populations [10, 11].

Primary care systems and practice characteristics that are thought to contribute to improved population health include:

- geographic regulation of providers and facilities whereby resources are distributed according to need;

- patient enrolment or registration schemes which enable patient-focused care over time;
- coordinated use of other health services through the information sharing between primary care and other levels;
- family/community orientation whereby patients are treated within their larger social context which involves community engagement [9].

Empirical evidence and expert opinion also suggests that *integrated primary health care models* have the greatest impact on effectiveness, productivity, continuity, equity, and quality of care with *primary care models* having the greatest impact on improving access to and responsiveness of services for individuals. In the integrated primary health care model, the aim is to improve the health of geographically defined populations by providing a comprehensive range of medical, health, social and community services through both horizontal and vertical integration with other parts of the health system. [13].

In addition to the macro-level evidence for primary care and to a lesser extent for primary health care, there is also a growing body of evidence that supports the contribution of types of P&CHS services and practitioners, the roles they play and integrated ways of working, to achievements in the following areas:

Improved access to and referral within primary health care services

- GPs co-located in community health centres [14]; school-based health centres [15, 16] and generalist community health centres [17] have all been found to improve access, especially for high risk populations including socio-economically disadvantaged and vulnerable groups.
- Nurse run services also improve access to primary care services in the absence of readily available GPs, for example in rural areas [18, 19].
- Co-location of GPs and primary health care nurses can improve referrals from GPs to nurses [20] and co-location of health and social services in the UK has also improved referrals between these teams [21] and reduced the time-period between referral and assessment [22].

Improved patient satisfaction

- Evaluations of community health centres in Canada have consistently found a higher level of consumer satisfaction than for services delivered through hospitals and other institutions, cited in [23].
- A number of studies have also found that patients are well satisfied with the care provided by practice nurses, as an alternative to GPs [24-26].

Improved clinical, functional and self reported outcomes

- Short term counseling has been found to be significantly more effective than usual GP care in short term reduction of depression and anxiety symptoms [27].

- Practice nurses have been shown to be effective in a number of areas of prevention and treatment including systematic health checks for people with learning disabilities [28], brief risk factor interventions [29], problem solving treatment for depressive disorders [30] and patient education and management strategies for asthma [31].

Improved quality of care

- The evidence is most apparent in relation to chronic conditions, where large studies have demonstrated that implementing structured and collaborative care using health oriented approaches (as opposed to disease focused care) in community health services have improved the quality of care [32, 33].
- The role of nurses in group GP practices has a positive impact on quality of care for diabetes, asthma, and cancer screening as well as for patient education. Evidence also supports practice nurses in these roles rather than outreach nurses from hospitals [34].
- Higher quality of care provided by doctors who work in community health centres as compared to those who work in the private sector has also been demonstrated in Canadian settings cited in [23]. GPs working in Victorian community health centres demonstrated a capacity to meet complex primary health care needs, of especially disadvantaged populations [14].
- The structural features and mechanisms of community health centres that foster continuity of care (i.e. one-stop shop and promoting ongoing, long term relationships between patients and providers) are associated with increased levels of preventative care and overall ambulatory care among children and adolescents [35].
- Nurses/allied health professionals undertaking home assessment of older people as part of the Australian Enhanced Primary Care (EPC) package also provide an opportunity for more comprehensive assessment of home safety and medications than do practice based assessments which are preferred by GPs due to time restrictions [36]. This evidence suggests that in addition to improving access to care, replacement models can also improve the quality of care.
- Effective teams enhance quality of care. Antenatal care provided by community-based multidisciplinary teams achieved better outcomes and client satisfaction compared with traditional care provided by GPs, hospital and hospital-based multidisciplinary teams [37]. Teamwork and a team environment in primary care settings have also been found to be associated with better processes of care for patients with diabetes (Stevenson K et al 2001), and better continuity of care, access to care and patient satisfaction (Campbell SM et al 2001) both cited in [38]. However, the determinants of effective teams remain unclear and what research that is available is largely qualitative and focuses on the process of teamwork [39, 40].

Reduced costs/health service utilisation

- Economic evaluations of 12 studies of different approaches to community-based care for people with chronic conditions found that comprehensive proactive community health services to people with chronic conditions is less expensive than proving focused, on-demand and piecemeal services, and patients with co-existing risk factors benefit most and at lower cost [33].
- Nurse-run primary health care clinics for socio-economically disadvantaged populations cost less than care provided by physicians at a local community health clinic, general clinics and emergency rooms [41]. However, another study has found that health service costs of nurse practitioners and GPs were similar, with the significantly longer consultation times for nurse practitioners balancing out the lower salaries [42].

Models/approaches that strengthen primary & community health care

Common themes that run through international PHC reform processes relating to PHC models include:

- Creating multi-disciplinary teams.
- Extending the range of skills and competencies of PHC team members [1].

Creating multidisciplinary teams

While teamwork is often an integral aspect of interventions, it is poorly defined and this makes it difficult to assess its effectiveness. For example, teamwork is applied to situations where a number of individuals from various disciplines are involved in a project, but who work independently (and sometimes even at cross purposes) as well as to a coordinated team effort [40]. Another common perspective involves bringing together a team of community-based nurses from different nursing disciplines within a PHC setting [39].

A large review of interdisciplinary collaboration involving more than 150 CHCs in Quebec found only modest achievements, despite interdisciplinary collaboration being a central objective that has been pursued for more than 25 years [43]. They found that interdisciplinary collaboration was closely linked to work group internal dynamics including values and beliefs, and that conflicts over these can undermine shared beliefs and limit collaboration. Staff were inclined to revert to traditional professional models when their professional jurisdiction was threatened.

An important observation was that interdisciplinary collaboration is contingent upon the nature of the health problem being addressed. For example, the ongoing management for clients with chronic health problems creates a favourable environment for collaboration; whereas, acute and time limited episodes of care lead to more stand alone professional interventions.

A UK study which involved 528 members of primary health care teams found that team processes (i.e. shared objectives, participation, quality emphasis and support for innovation) were the best predictors of overall effectiveness, rather than team structures (i.e. team size, tenure, fund holding status) [44].

Networks/voluntary alliances:
Primary Health Care Networks are characterised as voluntary alliances of primary and community health service providers who come together in a formal partnership to provide services at the local level. They commonly have a focus on populations groups with chronic and complex conditions and other subgroups in the population who would benefit from more collaborative and coordinated approaches.

Primary Care Partnerships
The evaluation of the first phase of the Victorian Primary Care Partnership strategy found strong evidence that the strategy is having a positive impact, particularly in the areas of relationship building, health promotion, service coordination and GP engagement [45]

Primary Care Trusts (PCTs)/ Primary Health Organisation (PHOs)
These are regional/local level organisational structures that are positioned between Government and GPs/other providers at the service delivery level and are responsible for providing a comprehensive range of prevention, health maintenance and restorative health services for enrolled populations under a capitation-based funding model. In both cases, multidisciplinary governance is required as are opportunities for consumers and local communities to have input into decision-making. Providers who are contracted to provide services include GPs, nurses and allied health workers, and in the UK public health practitioners and social services.

In both countries they are in a relatively early stage of development and are still evolving.

Community health centres
Community health centres are found in Canada, New Zealand and the USA where they are a small but important part of the health system and provide accessible and comprehensive primary health care services usually for disadvantaged populations.

Canadian Community Health Centres
Evaluations have focused on their cost-effectiveness and the range and quality of services provided & have consistently found:
- **higher levels of consumer satisfaction than for services delivered through hospitals and other institutions;**
- **a high public awareness**
- **higher quality care provided by doctors as compared to those in the private sector, cited in [23].**

School-based health centres (SBHCs)

SBHCs were originally established in the 1970s to provide health care to underserved adolescent populations. In practice, most SBHCs fulfil many functions of a primary care provider, serving as first contact, providing continuous care, and ensuring coordination through referrals and linkages to other sources of care [15].

School based health centres

Have been found to be particularly strong in improving the use of services by minority youth and males, thus reducing the use of EDs as a source of care for adolescent males. Adolescents using the SBHCs were also more likely to attend for mental health visits [16].

Co-location models

Co-location refers to arrangements where staff from different professional backgrounds work from a single base. They maybe co-located on a full time, part time or on a small number of sessions per month and may take on a number of varied roles [46].

Co-location of health & social services

In the UK their impact has included:

- **improved information sharing and understanding of the different professional roles, responsibilities and organisational frameworks within which social and primary health services are delivered;**
- **better communication and collaboration between practice based nurses and social workers;**
- **more timely and appropriate referrals from primary health care to social services, and feedback on the outcomes [21].**

Changing provider roles

In this model direct provision of primary care by one practitioner, usually a GP, is substituted for or enhanced by provision from another provider such as a nurse, social worker, psychologist or pharmacist. Substitution and enhancement models are becoming increasingly important in the context of declining GP workforce and the development of new models of care.

From the findings in section 3.1, the evidence suggests that replacement or enhancement of roles can:

- **improve the quality of care (continuity of care, information and knowledge, improve symptoms and physical and psychosocial functioning);**
- **improve access to primary health care services (through 1st contact assessment and referral, short term care, holistic on-going care and access to multidisciplinary networks);**
- **improve patient and provider satisfaction.**

There are a number of important considerations in the development of substitution models and to a lesser extent, enhancement models. These are the need for education and training to ensure non-medical practitioners gain and maintain the required advanced practice skills; the importance of structured care protocols and care pathways to support quality, coordination and continuity of

care; the regulatory environment, including prescribing rights of non-medical providers; and lastly but by no means least, professional attitudes and morale issues.

Major points/issues

P&CHS provide quality of care, achieve good outcomes at low cost and consumers are satisfied with the services. The focus of community health centres, with a comprehensive primary health care orientation, on vulnerable and disadvantaged groups with complex health needs in the context of FFS general practice (which acts as an access barrier for these groups), is validated by the evidence. Much of the achievements of P&CHS rely on a well integrated system that is adaptive and flexible and has the capacity to respond to changing needs and emerging models of care.

The aim of models that strengthen the links amongst primary health care providers and services are generally to improve coordination and continuity of care for especially people with chronic and complex conditions and particular population sub groups, (e.g. children and adolescents, disadvantaged and vulnerable groups who have or who are at risk of developing complex health problems).

Whilst models that strengthen the relationships between various aspects of P&CHS operate at different levels, there are common organisational elements to get right and issues to be addressed in order for the achievements of P&CHS to be realised:

- Well trained workforce, with access to ongoing education, training and support to develop and implement new skills and competencies and ways of working.
- Maintaining the role of nurses and allied health practitioners in individual/family focused prevention, health education and support.
- Clarity within teams of the roles, responsibilities and functions of each team member in relation to patient care, assisted by the availability of care pathways and protocols for major chronic conditions.
- Incentives/funding models that enable relationships to be built and to support collaboration.
- Visible leadership to bring about cultural changes.
- The importance of multi-disciplinary governance.
- Addressing the challenges associated with diminishing workforce and increasing workloads in the development of models to strengthen multi-disciplinary care.

3.2 Shifting care from hospitals to the community

Why is this important?

- Poor coordination of services across this interface contributes to adverse events, preventable admissions and poorer consumer outcomes. In response to this and also as a way of managing hospital demand, there has been a rapid expansion in an array of ambulatory care and community-based services [47].

What are the issues?

- Hospitals are becoming places for short term high dependency care and specialised services, however, they are experiencing increasing problems with the movement of patients through emergency departments [48]. A substantial number of people attending emergency departments have conditions that could be better managed within primary & community health services.
- While the rate of avoidable hospital admissions has fallen over the last decade, hospitalisations for ambulatory care sensitive conditions (ACSCs) accounted for 6.2% of all admissions in 1999-2000. These rates are consistently lower for the highest SES group than for the lowest SES group and are higher for remote and very remote residents [49].

What is the contribution of primary and community health services?

A major focus of a number of initiatives in Australia and internationally has been on:

- preventing acute care (e.g. through active follow up);
- managing the transition between hospital and community care (e.g. early supported discharge programs); and
- community-based alternatives to hospitalisation (e.g. Hospital In The Home [HITH]).

The models and programs vary considerably in their funding models and organisational arrangements. The lack of agreed definitions has made it difficult to compare across and within models in the literature. The term ‘ambulatory care’ is a generic term that applies to a variety of models across the above categories and hence has not been used.

Preventing acute care

This includes the provision of rapid access home-based services to avoid admission to hospitals. These programs have a mix of social and economic objectives: to improve the quality of care and reduce hospital admissions and associated costs. It is not always clear from the literature who provides services - it tends to be a mixture of hospital outreach with some community health

involvement. Findings indicate consumer and carer satisfaction [50, 51], but the cost effectiveness of these programs remains to be seen. For example, evidence suggests that these programs increase community nursing and allied health activity, but this is not always included in the evaluation of costs, nor is the significant unpaid care provided by carers.

The early results from the Victorian Hospital Demand Strategy projects aimed at hospital prevention through either care coordination or disease management/case management models found:

- *For care coordination in emergency departments (EDs)*: decreased length of stay and averted admissions, as well as high patient and staff satisfaction.
- *For disease management/case management models*: reductions in presentations to EDs, re-admissions and length of stay. Important success factors have included the use of evidence-base management, multidisciplinary care, collaboration with other providers, especially GPs and the provision of education and support to patients and their carers [52].

The NSW Chronic Care Program

Has achieved hospital sector savings through avoiding emergency department presentations and hospital admissions. For specific conditions, the achievements have included:

- **reduced length of stay for COPD,**
- **decline in unplanned hospital admissions for heart failure,**
- **reduction in admissions for asthma, and**
- **reduction in avoidable emergency department presentations, hospital admissions & readmissions for cancer.**

Critical factors for effective implementation of the programs include links with GPs, multidisciplinary team work approaches, clinical leadership and governance, a focus on self management strategies and access to rehabilitation programs [53].

Early supported discharge interventions/post acute care

There is a range of models and approaches being developed and used. In Australia they come under the generic term of 'post acute care'.

A Cochrane review evaluated randomised control studies (RCTs) on the costs and effects of early supported discharge services compared with conventional services for reducing hospital length of stay (LOS) for acute stroke patients. Outcome data was available only on 4 trials, including an Adelaide study. While these services can bring about reduced LOS, there was inconclusive evidence on the impact on patient and carer outcomes, patient and carer preferences and resource implications [54].

Other studies [55-60] have found the following:

- reduced length of stay, although less than was anticipated;

- reduced readmissions in some studies but not in others;
- cost savings;
- greater patient satisfaction;
- timely preventive care.

The supported elements of early discharge programs were considered instrumental in achieving the outcomes. These supported elements were considered important components to maximise self care and ability and confidence to cope. The types of support included family support by a multidisciplinary team; nursing support from nurse experienced in the specialist area; hospital outreach, including specialist nursing and allied health care; long term management by community nurses; and home care. To this might be added the availability and capacity of carers to provide care and support in the home. The absence of a family carer has been found to be an independent predictive factor in delaying hospital discharge of elderly people [61].

The early findings on NSW ComPacks, (designed to manage hospital demand through the assembly of community care packages to meet clinical and support needs of each patient for a defined time period), indicate there have been successes in:

- **reducing length of stay and cost benefits, especially for people hospitalised for over 3 weeks and rehabilitation groups,**
- **improved access to community-based services through improved referrals,**
- **improved safe discharge home for people with multiple needs, including mobility, dementia, falls management and pain management[1].**

Community-based alternatives to hospital admission

A variety of models has been operating in Australia that provide acute care services in a patient's usual place of residence. These models can be described as replacement models and are best typified by the range of Hospital in the Home (HITH) models. While ownership and management of community-based acute care programs can be organised through hospital or community health services, the hospital outreach model predominates. The empirical evidence suggests that HITH can deliver care at similar or lower costs than in hospitals; however, most studies do not consider the impact on total health system costs [62]. The models have different strengths and weaknesses, and are highly dependent on demand (i.e. patient and local community factors) and supply (i.e. health system) factors. The level of acceptance by clinicians, particularly hospital clinicians, is seen as a critical success factor [62].

Mental health is one area where over the last 30 years or so there has been a major shift from hospital based to community-based care. A systematic review of 91 studies found that regular home visits and social care were associated with reduced hospitalisation [63]. Psychiatrists

[1] NSW Health internal report: ComPacks Benefit Analysis, June 2004

surveyed as part of this review considered support for carers to be essential in the provision of home-based care, however few services have protocols for meeting the needs of carers.

While opinions vary about whether acute care in community settings is best carried out by hospital outreach or community health staff [64], there is little empirical evidence supporting these opinions. Reasons for these differences may stem from different funding sources for hospital and community health workers and from a lack of personal and social contacts together with cultural differences that arise from being part of one group [65]. While not a HITH model, the active follow up program developed and implemented at St George Hospital, Sydney *"grappled with the inherent conflict of interest between the aims of the hospital (acute care services) and those of community service (support and maintenance)."*[66].

Major points/ Issues

In recent years an increasing array of models and programs that shift care from hospital to community-based settings have been developed. While the evidence-base is still emerging the early evidence suggests that these programs can reduce length of hospital stay, avert hospital admissions/readmissions and that clients and their carers are well satisfied with their care, provided they are well supported.

Generally models of shifted care involve a key person from the hospital or community assuming responsibility for continuing care needs by acting as a coordinator. There may be disadvantages in hospital outreach services that are developed in isolation from community services. It assumes that skills are not available in the community, where other factors may be limiting elements. For example, community nurses not being given the opportunity to widen their expertise and develop new skills; hospital nurses not necessarily being familiar with the skills involved in home nursing, or locally available resources; patients may experience an abrupt transition of care to the P&CHS team with corresponding lack of communication once they are discharged from the outreach care [65]. These issues suggest that that joint responsibility between hospital and community staff is an important element in ensuring good continuity of care [67].

Capacity within primary health care to respond to initiatives aimed at improving the interface with hospitals includes having a supporting policy framework and a well-developed infrastructure [68]. This includes:

- developing a workforce with an appropriate mix of both generalist and specialist knowledge and clinical skills;
- effective referral and communication mechanisms within primary health care and across the primary and secondary care interface;
- clear care protocols and well understood lines of communication amongst the multidisciplinary care team; and
- adequate resources including equipment and resources to support home-based care.

3.3 The interface between generalist and specialist community-based services

Why is this interface important?

- Chronic conditions make an estimated 70% contribution to the burden of disease in Australia [69] and many of these conditions include a potentially modifiable behavioural component.
- As the bulk of care for patients with chronic conditions is provided in primary care, generalist training and expertise in the provision of ongoing care and management as well as high levels of competency in behavioural change strategies and self management support are central.

What are the issues?

- Patients with multiple co-morbidities can receive disjointed care from a range of specialist services and it is not always clear how the different care pathways fit together in a coordinated fashion. Nor is it clear who has over all responsibility for patient management.
- There are many challenges posed by the number of disparate, unlinked and stand alone systems currently operating for timely, integrated and coordinated care across the generalist/specialist interface.
- The shortages and mal-distribution of specialists and specialist services are pressing issues, especially in rural and remote areas. Priority is given to those people with more serious conditions and means that most of the care of people with chronic conditions is provided in primary & community health care settings.
- While primary & community health care services require the support and expertise of specialists, this is not always a clearly defined role of, and priority for, specialist services. There is currently little attention paid in planning for specialised services to incorporate the roles and functions of primary & community health care services, and the capacity and infrastructure required to support this.

What is the contribution of primary and community health services?

A review of the literature on nursing care of patients with chronic conditions found that the generalist/specialist orientation of the country's health system was reflected in the focus of integrated initiatives [70]. In primary care oriented countries (such as Ireland and the UK) there was the tendency to meet specialised needs in primary care settings and for nurses to play a central role, for example primary care led HITH, PHC liaison nurses for admission and discharge processes, integrated care delivered by primary care, supported by specialist services. Conversely, in countries that are relatively more oriented towards secondary health care (e.g. USA), specialised health needs tend to be addressed through specialised services.

Cutting across the specialist/generalist interface is the emerging focus on the need for systematic approaches to care for chronic diseases. The main messages from a Cochrane review of 41 studies of interventions for patients with Type 2 diabetes suggest that systematic approaches that involve professional, plus organisational interventions, including an enhanced nurse role and patient education seem to be important in improving both process and outcomes of care [71].

A review by Rothman and Wagner [72] on the role of primary care in chronic illness management provides a timely contribution on the challenges faced in strengthening the role of primary care in systematic chronic disease programs. They found that short consultations and a focus on defining the problem and initiating treatment still dominate the work of primary care physicians, resulting in *"poorly connected string of episodes determined by patient problems."*

From a number of systematic reviews and RCTs of interventions designed to improve integration, the evidence is that multifaceted organisational and education interventions are more likely (than single strategies) to contribute to:

- improved access to care (both to primary and to specialist health care),
- improved quality of care,
- enhanced patient satisfaction, and
- improved health outcomes (less symptoms and functional impairments and better quality of life) [71, 73-75].

The contribution played by primary and community health service providers to the achievement of these outcomes is through the following roles:

- multidisciplinary assessment and facilitating access to GPs for ongoing care [76, 77];
- providing short focused interventions and filtering access to more specialised services [78];
- case management, where primary care nurses in particular and also other professionals, (for example psychologists), take on an enhanced role for which they receive additional training [71, 73, 75];
- patient education [76] and prescribing information role of pharmacists [73];
- identifying and responding to previously unmet health needs [77, 78].

Models that enhance the generalist/specialist interface

A number of models have developed over the years to integrate generalist and specialist services. These include the following:

Consultation/liaison models where specialist services provide advice/support to mainly GPs, to enhance their quality of patient care. In this model, specialist services may provide some direct patient care through specialist consultations, but the GP retains ongoing management role. This model is particularly well used in mental health. It is the least formal integration model.

Shared care models which are more formalised arrangement than the previous model. Both primary care and specialised services have clearly defined roles in relation to patient management, usually defined by protocols such as care pathways. Like the previous model, the GP has the overall management role. This model is used extensively in diabetes and also mental health and aims to improve quality and continuity of care

Consultation/Liaison in Primary Care Psychiatry (CLIPP). [77]
Combination of consultation/liaison & shared care. GP retains overall management of patient. Mental health services maintain patient registration and tracking system & provide expert advice & support to GP.
Results: Improved patient satisfaction, self reported improvements in physical health, identification & treatment for newly identified health problems.
Success factors: Relationships established through consultation/liaison supported shared care.

Specialist-outreach models commonly used where there are shortages of specialised services, especially in rural and remote areas and aim to improve access to specialised care as well as health outcomes. These models range from 'shifted outpatient' styles (which improve access) to being part of more complex multifaceted interventions involving collaboration with primary health care (which are associated with improved health outcomes) [74].

Specialist outreach service (SOS) operating in the Top End of the NT for remote indigenous communities [79]. The SOS provides visiting specialist services to remote Indigenous communities on a sessional basis & patients are referred by a visiting or locally based GP.
Results: The annual number of consultations with people from remote communities has increased over fourfold since the introduction of outreach.
Success factors for a sustainable SOS to a remote area include: Adequately resourced and staffed PC base; & that the specialists work as part of a MDT centred in PC & are accountable to the referring PC practitioners and local communities.

Co-location models: where primary and specialist providers are co-located in a facility either on a full/part time or sessional basis, and their employment remains independent from the practice. These models aim to improve access and referrals between primary care and specialist services.

Co-location of a multidisciplinary primary care clinic within a detox centre (RCT). [76]
Role of the PC team (PCT) Involved undertaking a single, comprehensive MD assessment, providing patient education, actively linking patients with GPs for follow up & ongoing care.
Results: Significantly improved access to primary care for patients without a regular GP. The PCT provided a 'reachable moment'
Success factors: Training of all PCT members in motivational interviewing; role of the social worker in case management & actively facilitating access to a GP.

Network models: This model can be characterised as voluntary alliances of specialist and generalist providers who come together in a formal partnership to provide integrated services at the local level for specific groups in the population. They can also involve other human service agencies in addition to health related services.

Multi-agency network of child & adolescent mental health services. [78].
Network involved health, education, social services & the voluntary sector. The addition of a MD primary mental health team in between generalist primary health care and specialised mental health services, responsible for short focused family interventions.
Results: Improved access to care for previously unmet need. More appropriate referrals to specialised services through 'filter' role of primary mental health workers (PMHW)
Success factors: Specialist training of PMHW who work in the community directly with children and families. Development of regional multi-agency strategy & local delivery plans. Joint funding

Key points/issues

Multifaceted organisational and education interventions contribute to improved access to and quality of health care, enhanced client satisfaction and improved health. The major contribution of primary and community health services includes their roles in multidisciplinary assessment, ongoing care by GPs, providing short focused interventions, filtering access to more specialised services, case management, patient education and identifying and responding to previously unmet health needs. A number of organisational requirements to support more integrated generalist/specialist models of care and service provision can be identified:

Organisational structures

- Collaborative structures that support integration, e.g. networks, formal agreements that outline the roles and responsibilities of the various providers/provider organisations.
- Multidisciplinary primary health care teams, with clarity about roles and functions.

Communication systems:

- Care protocols.

- Systems that enhance the flow of information & communication between generalist and specialist services.

Resources

- Adequately resourced and staffed primary care base in rural and remote areas.
- Availability of 24-hour care.

Workforce

- Training & education of primary care workforce to undertake more specialised functions, motivational interviewing.
- Enhanced role of nurses in particular in case management.

Information systems

- Interconnectivity between systems across the generalist/specialist interface.
- Recall systems to enhance pro-active and timely care

3.4 Population health role of primary and community health care services

Why is this role important

- It has been estimated that 3/4 of the mortality rate reductions relate to conditions preventable from primary and secondary prevention strategies [6]. The net benefits of programs designed to reduce smoking, improve nutrition, encourage immunisation, improve road safety and prevent HIV/AIDS have been demonstrated in Australia. Benefits include reductions in the incidence of disease, increased longevity and improved quality of life and reduced health care expenditure [80].
- Primary and community health services play an important role in implementing priority population health strategies such as immunisation and responding to community-based outbreaks of infectious diseases as well as health promotion, early detection and intervention programs for individuals and local communities [81].
- Primary and community health services play an important role in liaising with population health services regarding local health issues and trends in presentations which may be early warning signs of public health issues.

What are the issues

- The proportion of the health budget allocated to prevention remains small. In NSW, 2.7% of the overall health budget in 1999/2000 was allocated to prevention [6].
- This is compounded by diversion of resources away from community health into general health services as noted in the IPART review, especially the disease end of the spectrum [6].
- While there have been a number of national initiatives aimed at strengthening the interface between general practice and population health, and to better integrate population health activities into general practice; there has been little emphasis on or investment in strengthening the interface between population health and community health services.
- There has been a lack of clarity about the relationship between population health and community health services and the role of community health. This has been compounded by the focus on the role of community health services in reducing hospital demand that has taken precedence with the result that broader population health functions and community level interventions, particularly in metropolitan areas, have received less attention. Yet this is in the context of population health requiring a robust and well functioning primary and community health care system to implement population health initiatives.

What is the contribution of primary and community health services?

Early years of life

The supporting evidence is most clearly demonstrated in the early years of life with interventions delivered through primary health services designed to promote optimal development and other prevention initiatives including immunisation.

Proactive universal and targeted approaches which involve multi-faceted approaches including:

- home visiting,
- timely preventive care,
- parental social support, and
- availability of prevention and health promotion resource materials,

produce sustained positive effects on child development. In particular, interventions aimed enhancing positive contacts and interactions between parents and the child (through parental skill development) and strengthening the confidence and self efficacy of parents are also found to improve child development outcomes [59, 82, 83].

The effectiveness of post natal and early childhood home visiting services has been the subject of a number of studies and systematic reviews. In a review of seventy seven studies [84], over 50% of the home nursing was provided by primary healthcare nurses. While the intervention locations always included the home, they also could include phone contact and clinic, community, hospital, health centre, school and office locations and were sometimes part of multi-pronged approaches. The most common interventions were counselling and teaching followed by case management and assessment. A number of positive impacts were demonstrated in relation to physical health, mental health and development, social health, health habits, knowledge and service utilisation. Interventions had more impact on high risk clients (defined as unmarried, low income or teen mothers) than on those at moderate or low risk. This was also the findings from RCTS of nurse home-visiting programs targeting low SES and unmarried teenage mothers who were at high risk for negative health and socioeconomic outcomes (Olds 1997 cited in [85]. The long term effects included significant reductions in subsequent pregnancies, use of welfare, child abuse and neglect and maternal criminal behaviour. Important success factors included targeting an appropriate risk population and undertaking multiple visits over time that are sufficiently intense and comprehensive.

The increasing rates of childhood immunisation within Australia is evidence that collaborative, well planned, targeted and multifaceted prevention programs with a significant primary health care component (as embodied in the National Immunisation Program) are effective. Since the program's inception in 1997, rates of immunisation for children aged one year have risen from a baseline of just under 75% in 1997 to 90.5% coverage in 2003 [86]

Early intervention for risk factors of chronic disease

The importance of early detection and early intervention for risk factors of chronic disease is well known, and strategies include a mixture of preventive medication, regular monitoring of physiological signs and symptoms, and modification of behavioural risk factors. Research suggests that risk factors can be modified or prevented by adopting lifestyle behavior changes related to diet, exercise and physical activity [87-89].

For example, a primary health care program involving risk assessments, patient education and counselling by nurses was effective in reducing blood pressure, cholesterol and smoking levels over the 2-year trial period [90]. Nurse run health screening clinics targeting homeless people have also been found to be an effective approach to disease prevention in this 'at risk' population [91]. There is also evidence that nurses working in community health services are effective in reducing CVD risk, particularly in vulnerable and disadvantaged groups, who are traditionally underserved by mainstream health services. Proactive early identification, treatment, follow up of clients with hypertension and multidisciplinary care were all aspects that contributed to program effectiveness [92]. Multidisciplinary CVD prevention counselling has also been found to positively influence lifestyle changes that translate into reductions in several CVD physiological risk factors [93]. Other reviews also support the use of multifaceted interventions over time for achieving long term effects in reducing CVD risk, in this case interventions to promote physical activity [94].

A review of the evidence of the efficacy of dietary behavioural interventions found that, not surprisingly, interventions were generally more successful amongst 'at risk' rather than general populations. Whilst behavioural interventions are generally successful, the two components that show most promise are goal setting and use of small groups [95]. Given that fruit and vegetable intake is inversely related to socioeconomic position, this has implications for targeting P&CHS interventions. Indeed a RCT to measure the effect of brief behavioural counselling in a primary care setting (implemented by research nurses) found that unless positive measures were taken to recruit participants from low incomes, the majority of participants would have come from more affluent backgrounds, despite the practice being located in a deprived ethnically mixed inner city area. The intervention used included two short counselling sessions, based on the 'stages of change' model, plus the provision of written information and this resulted in marked increases over a 12 month period in reported fruit and vegetable consumption, corroborated by selected biomarkers [29].

The assessment of a person's preparedness for change is an important factor in the effectiveness of brief interventions. In the above study over 50% of the participants were classified as being ready for change. The evidence for P&CHS interventions is also clearest in relation to smokers who are ready and motivated to quit where brief advice by doctors coupled with follow-up support can result in a small percentage of smokers quitting and not relapsing for one year [96].

There is still considerable debate about the long term efficacy of behaviour change outside controlled trials and evidence that for disadvantaged and vulnerable groups in particular, providing social support in addition to advice is more effective than providing advice alone [97]. Indeed, further investigations of the role of supportive environments was a recommendation from a systematic review on providing physical activity advice in routine primary care consultations, which found that advice alone was not effective [98]. A recent literature review on the effectiveness of community health workers, whose role focuses on difficult to reach populations, usually low income ethnic minority groups, in health promotion and disease prevention points to the difficulties in determining effectiveness outside well designed (and funded) studies. Swider found that whilst community health workers increased access to care for disadvantaged groups, there were few studies, with mostly inconclusive results, that reported on behavioural changes, improved health literacy or improved health status. The authors conclude that while the role of community health workers show promise, overly high expectations, lack of clear focus and lack of documentation can limit their effectiveness [99].

Community-wide interventions

An important role of primary and community health services is their participation in community-wide prevention and health promotion initiatives in collaboration with other organisations and services and local communities. These initiatives can be seen as an important complement to the more individual focused primary and secondary prevention interventions.

Long term community-based cardio vascular disease (CVD) prevention programs which involve multiple, widespread and coordinated population and individual strategies can substantially promote a health shift in a high risk rural population, and indeed socially less-privileged groups can experience the most benefit [100].

What's notable about this and other community-wide CVD prevention programs is that they involve intersectoral approaches and active community engagement, with primary and community health services taking a major role in screening, counseling/education and information provision.

These type of interventions have also been found to be effective in controlling scabies, where regular re-screening and follow-up visits by health workers as well as community involvement and empowerment were critical success factors in sustaining the improvements [101]. Similar programs which involve target group engagement and multiple strategies have been shown to have some effect in preventing smoking uptake in young people [102].

However, there has been a lack of consistent impacts from community prevention interventions for young people, which has prompted a call for bridging the gap between prevention science and practice as a way of stimulating the development of more effective interventions and a focus on building professional, organisational and systems capacity for community prevention interventions and strengthening provider accountability [103].

Childhood injury prevention is another area where the effectiveness of long term community-based approaches using several prevention strategies has been demonstrated to significantly reduce traffic injury rates in children [104]. A systematic review of the evidence concluded that multiple interventions involving many agencies, implemented over a long period of time, the use of local injury surveillance data and tailoring initiatives to the needs of local communities can allow injury prevention messages to be repeated in different forms and contexts and can begin to develop a culture of safety in a community [105]. Similarly, community development strategies, which focus on community ownership and participation over the long haul can be important for increasing safety awareness within communities [106] and building a groundswell of community support.

Community-based interventions which have as central focus partnership approaches and community ownership are also important for sustaining outcomes. These were critical success factors in a successful health and nutrition program in a remote Aboriginal community where there were lasting improvements (over a 3-year period) in dietary intake of fruit, vegetables and wholegrain bread and reductions in sugar consumption [107].

Key points

The areas where P&CHS can make the most significant impact in population health is prevention and early intervention in the early years, early intervention for common risk factors and their contribution to community-wide interventions. The evidence consistently supports the use of multi-faceted interventions over time and a critical success factor increasingly appears to be the engagement of local communities as key partners in community-level interventions. Core roles for P&CHS that contribute to improved population health outcomes include:

- Strengthening capacity through community development approaches
- Screening
- Preventive health care
- Brief counseling/motivational interviewing (using stage of change approaches)
- Health education & health literacy
- Providing ongoing social support.

4. Conclusion

A robust and well functioning primary and community health care system makes an important contribution to improving population health, reducing health inequalities and reducing overall health costs. Areas where P&CHS make the most impact are in improving access to services, providing high quality of care and clinical, functional and self reported outcomes.

This review of the literature indicates that P&CHS have been adaptable and responsive to emerging needs in the development of new models of care that address changing patterns of health and illness and new ways of working, especially the enhanced role of nurses in the context of a declining GP workforce. The focus of international and Australian reforms indicates that general practice remains a central player and contributor to the gains and achievements, but in collaboration with other primary health care and more specialist providers, other health and welfare agencies and in partnership with local communities.

The implementation of multifaceted approaches over time, for which the evidence is clear in relation to prevention, early intervention and management of chronic disease and for improving especially the health and wellbeing of disadvantaged groups, requires a well integrated P&CHS system with a focus on providing a comprehensive range of services across the continuum of care.

There are important messages in relation to the organisational capacity of P&CHS to achieve the outcomes:

- The need for collaborative structures as well as communication and information systems to support integration.
- Defining essential primary and community care services and ensuring 24-hour availability, especially in rural areas.
- Maintaining the role of nurses and allied health practitioners in individual/family focused prevention, health education and support.
- Strengthen and support multidisciplinary teamwork, especially in relation to chronic disease.
- Incentives/funding models that enable relationships to be built and to support collaboration.
- Visible leadership to bring about cultural changes.
- The importance of multi-disciplinary governance.
- Addressing the challenges associated with diminishing workforce and increasing workloads in the development of models to strengthen multi-disciplinary care.

Areas where further research is still required include the effectiveness of network models to improve service coordination and also understanding more about the specific aspects of multidisciplinary teamwork that contribute to improved outcomes and effective models in the Australian context.

5. Abbreviations

Abbreviation	Full name
24/7	24hrs, 7 days per week
ACSCs	Ambulatory Care Sensitive Conditions
APHCRI	Australian Primary Health Care Research Institute
CHCs	Community Health Centres
CLIPP	Consultation Liaison in Primary Care Psychiatry
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular disease
Detox	Detoxification
EPC	Enhanced Primary Care
FFS	Fee-For-Service
GPs	General Practitioners
HITH	Hospital-In-The-Home
IPART	Independent Pricing and Regulatory Tribunal
LOS	Length of Stay
MBS	Medical Benefits Scheme
NT	Northern Territory
P&CHS	Primary and Community Health Services
PCNs	Primary Care Networks
PCT	Primary Care Trust
PCTs	Primary Care Trusts
PHC	Primary Health Care
PHCRED	Primary Health Care Research, Evaluation & Development program
PHOs	Primary Health Organisations
PMHW	Primary Mental Health Worker
RCT	Randomised Control Trial
SBHCs	School Based Health Centres
SOS	Specialist Outreach Service

6. Annotated bibliography

6.1 Stronger PHC & integration

Multidisciplinary Teamwork

Reference	What they did	What they found	PHC themes/issues
▪ Grumbach, & Bodenheimer (2004) US ▪ Effectiveness: patient outcomes, access	▪ Critically examines the functions and roles of two effective primary health care teams, as PHCTs are being advocated as the way forward by the Institute of Medicine.	▪ The PHCTs described exemplify the 5 elements of team building (cohesive team work) suggested in the literature: ▪ - Clear goals with measurable outcomes, including patient satisfaction. ▪ - Clinical and administrative systems ▪ - Division of labour (clarity of roles) ▪ - Training ▪ - Communication structures and processes	▪ Configuring team personnel is not just a matter of substitution (eg nurses for doctors) for economic benefit. ▪ While research suggests that multidisciplinary clinical teams produce clinical outcomes superior to those achieved by "usual care" arrangements (with many of these studies evaluating the addition of nurses, social workers, psychologists and clinical pharmacists to teams), few of them have examined team models for the varied problems that predominate in primary care practice such as the quality of personnel on one team vs another and the resources available to one team vs another. ▪ Need to consider optimal team size; too few or too many team members reduce effectiveness.
▪ Poulton & West (1999) UK ▪ Effectiveness: efficiency, patient-centred care	▪ Collected data from 528 members of 68 primary health care teams in the UK to examine the extent to which shared team objectives, participation, quality emphasis and support	▪ There were no significant relationships between team structure variables (team size, tenure, fund holding status) and the 4 measures of effectiveness. ▪ Team processes (shared objectives, participation, quality	▪ Findings suggest that teams which are more participative and collaborative are more likely to achieve a patient-centred service, to work together as a team and be more efficient. ▪ Clarity of and commitment to team objectives is the key in predicting the overall effectiveness of the primary

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
	for innovation are correlated with and predict four indices of effectiveness over a six month period.	emphasis and support for innovation) were the best predictors of overall effectiveness.	health care team. ▪
▪ Ram, Jones, Fay (2001) ▪ Effectiveness: efficiency, continuity	▪ Cochrane systematic review of 23 studies to determine the effectiveness of pro-active, organised asthma care via primary care based asthma clinics. Despite their proliferation in the UK over the last 10 years, there is little published on the effectiveness of primary care based asthma clinics on health outcomes.	▪ Only 1 RCT conducted in 8 general practices in South Australia with 195 adult patients met the inclusion criteria. Each general practice ran a 3 hour nurse-led asthma clinic session per week that included education and management strategies and ended with a consultation by the GP.	▪ The one trial that met inclusion criteria produced evidence of benefit of asthma clinics in terms of a reduction in the number of patients who experienced waking at night and a rise in peak flow meter prescriptions. However, the authors noted that there was a need for further good quality trails in order to fully assess the effectiveness of primary based asthma clinics.
▪ Richards, Carley et al (2000) UK ▪ Effectiveness: patient satisfaction	▪ Reviews the literature on workload in primary care, attitudes to delegation, inter-professional relationships and team working, as care delivered to patients in primary care in the UK has been undergoing continuous change as a consequence of NHS reforms	▪ Increased workload in the primary care sector (GPs and nurses), delegation within the PHCT, and delegation to other health care professionals. Cooperation and collaboration within PHCTs is generally cited as the key to effective teamwork.	▪ The requirement for multi-professional health care teams is integrated care with core values of shared decision making and mutual respect and where ownership of care rests with the whole team.
▪ Sicotte, D'Amour, & Moreault (2002) Canada ▪ Effectiveness: responsiveness, continuity	▪ Examined the interdisciplinary collaboration within more than 150 CHCs in Quebec ▪	▪ Only modest results achieved especially as interdisciplinary collaboration is a central objective that has been pursued for more than 25 years. ▪ Interdisciplinary model in which professionals share goals, make	▪ Interdisciplinary collaboration closely linked to work group internal dynamics including values and beliefs, where conflicts over these can undermine shared beliefs & limit collaboration ▪ NB of administrative formalisation (ie functions & processes) initiatives to enhance collaboration and

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
		collective decisions and share responsibilities and tasks.	counter the traditional professional framework ▪ Professionals inclined to revert to traditional professional model when professional jurisdiction is threatened. ▪ Interdisciplinary collaboration contingent upon the nature of the health problems; eg ongoing nature management for clients with chronic health problems creates a favourable environment; conversely, acute and time limited episodes of care lead to more stand alone professional interventions. ▪ So reinforces the idea that teamwork for what, why and when; rather than ideal model that stands on its own.

School-based health centres

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
▪ Brindis, Klein et al (2003) US ▪ Effectiveness: access, cost	▪ Surveyed 806 SBHCs operating in US in 1998. SBHCs were originally established in the 1970s to provide health care to underserved adolescent population. ▪ Authors believe that in practice, most of SBHCs fulfil many functions of a primary care provider, serving as first contact, providing continuous	▪ There has been a shift of centres from inner city to rural communities; most substantial change was level of offered mental health services. Over ½ do not participate in classroom-based health education or health promotion and risk reduction activities. The spectrum of physical health services delivered resembles services provided in other primary care practice settings. With further funding could	▪ Most sites (92%) used a combination of physicians, physician assistants, and nurse practitioners to provide physical health services. ▪ Mental health professionals were part of the clinical team in 57% of centres. ▪ Other support staff included health aides, administrative assistants, health centre directors, health educators, social work staff and nutritionists. ▪ Less than 5% of centres had dental health professionals.

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
	care, and ensuring coordination through referrals and linkages to other sources of care.	be expanded to meet needs of families for convenience, coordination and satisfaction.	
▪ Juszczak, Melinkovich, & Kaplan (2003) US ▪ Effectiveness: access	▪ Examined the differences in low-income adolescents' utilisation of health, mental health and urgent care services on the basis of access to and use of school-based health centres (SBHCs) compared with a community health centre network (CHN).	▪ SBHCs in the study were particularly strong in improving use of services by minority youth and males. ▪ Adolescents were 21 times more likely to attend for mental health visits at SBHCs than at CHN facilities. ▪ Both reproductive health and acute care were more frequently accessed in CHN facilities.	▪ Adolescents who never used the SBHC were four times more likely to access emergency care. ▪ Health care maintenance and assessment visits were low at both sites but are a particular concern for SBHCs which frequently use their ability to provide health promotion, prevention and maintenance services as a selling point for the model.

Co-location

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
▪ Brown, Tucker, Domokos (2003) UK ▪ Effectiveness: continuity, process	▪ Evaluated two integrated co-located health and social care teams established in a rural county to meet the needs of older people and their carers. The teams consisted of social workers, S/W assistants, OTs, OT assistants, & district nurses located in GPs office.	▪ The integrated health and social care teams did not result in a greater proportion of older people living independently in the community. ▪ The speed of response from referral to assessment was quicker in the integrated teams.	▪ As patients from the integrated teams are self referring more and are assessed more quickly, this may indicate that the one-stop approach is having an impact on the process of service delivery.

Comprehensive models

Reference	What they did	What they found	PHC themes/issues
▪ Browne, Roberts et al (1999) Canada ▪ Effectiveness: cost, patient outcomes	▪ Reviewed 12 studies (5 historic cohort & 7 RTs) conducted in community-settings in Southern Ontario designed to quantify the well-being and expenditure outcomes associated with different approaches to community-based care of clients, with selected chronic conditions within a national system of health insurance.	▪ Equal or better outcomes, in each study using health oriented, proactive community-based care, compared to disease/symptom oriented care.	▪ It is as or more effective and as or less expensive to offer complete, proactive, community health services to persons living with chronic circumstance than to provide focused, on-demand, piecemeal services.
▪ O'Malley & Forrest (1996) US ▪ Effectiveness: continuity	▪ Assessed how continuity of care influences receipt of preventative care and overall levels of ambulatory care among children and adolescents in community health clinics. CHCs promote use of preventative and primary care and reduce reliance on emergency rooms and hospital clinics.	▪ Both continuity of care with the CHC and with a specific clinician were associated with increased levels of preventative care and overall ambulatory care. Continuity of care was associated with nearly a two-fold increase in the odds of receiving age-appropriate preventative care.	▪ Emphasis on the structural features of community health clinics, such as those mechanisms that foster continuity (i.e., localising all types of ambulatory care at a single site and promoting ongoing, long-term relationships between patients and providers), may help bridge the gap in receipt of age-appropriate well-child care that financial reform alone has not yet accomplished.

Enhanced roles/Replacement/Substitution

Reference	What they did	What they found	PHC themes/issues
▪ Bower & Sibbald (2000) ▪ Effectiveness: cost, efficiency, outcomes	▪ Cochrane review to assess the effects of on-site mental health workers on the clinical behaviour of primary care providers (GPs). Twenty nine studies from the UK, 6 from the US, 1 each from Australia, N.Z. and West Germany.	▪ Replacement model, where primary care provider refers the patient to the MHW (counsellor, psychologist, nurse, psychiatrist or social worker), who assumes responsibility for care (used in 26 studies). ▪ Some evidence that the replacement model MHWs achieved significant short-term reductions in PCP psychotropic prescribing and referrals to mental health specialists.	
▪ Bower, Rowland, Hardy (2003) UK ▪ Effectiveness: Cost, PS	▪ Systematic review and meta-analysis. Included 7 trials comparing generalist counselling with usual general practitioner care, described as an unstandardised mix of medication, support and referral to specialist services for common mental disorders.	▪ The overall finding of the review was that counselling was significantly more effective than usual GP care in reducing symptoms of anxiety and depression in the short-term (4-8 sessions). ▪ Six trials compared patient satisfaction with 5 reporting higher levels of satisfaction, although satisfaction is not necessarily related to outcome. ▪ Cost data for four trials was included.	▪
▪ Hunter, Ventura, Kearns (1999) US ▪ Effectiveness: cost, quality of care and patient	▪ Compared the costs of providing primary health services (assessment & treatment, education, health promotion) to the homeless in Buffalo, NY through a nurse-	▪ The Nursing Centre & another nurse-managed clinic for the Homeless had the lowest costs per visit. The other services were physician oriented and more costly.	▪ Nurse-managed clinics meet the health care needs of a population that might not otherwise receive care.

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
outcomes.	managed centre with comparable providers (ie in emergency rooms and community health clinics.)		
▪ Macduff, West & Harvey (2001) UK ▪ Effectiveness: accessibility, cost ▪ Evidence level: 5	▪ Developed and evaluated a nurse-led telemedicine (video-link) service over a six-month period which linked people aged over 65 living in small rural village with town-based GP. ▪ A nurse-led drop in clinic was held for screening access to video-link consultation with GP. Care pathways included: a) nurse treatment/ advice; b) video-link with GP; c) face-to-face consult with GP	▪ Of 173 GP consultations, 53% were held at surgery; 30% were home visits; 17% were video links ▪ All involved in the nurse-led telemedicine service viewed it favourably and patients said they would use it again. ▪ GPs reported that it saved them time ▪ Particularly useful for leg ulcers and wound infections ▪ Enhanced 3-way communication between patient, nurse and GP, intermediary role of nurse, & multidisciplinary approach	▪ Implications for practice: ▪ Telemedicine consultations can save time, expense and inconvenience of travelling. ▪ A telemedicine service is advantageous for people with decreased mobility. ▪ A nurse-led service can help to reduce GP consultations. ▪ Training & support of nurses & GPs in use of technology important
▪ Olmsted & DeMint (1997) US ▪ Effectiveness: access ▪ Evidence level: 5	▪ Reported on the operation of 'NurseFirst', a primary care centre staffed by nurse practitioners & medical assistants in a rural area (pop.10,000), due to shortage of primary care physicians. ▪ Centre located on hospital property, but stand alone clinic ▪ Medicare/Medicaid reimbursement of 80% of	▪ Improved access to primary care services ▪ Reduction in number of patients using the ED for non-urgent care, seeking PC treatment outside the community, or failing to seek treatment at all.	▪ Access to physicians for advice & direction on clinical issues important pre-requisite & for which they are reimbursed ▪ Education and cooperation of physicians important to overcome perception of competition. ▪ Physician perception of improved quality of care for patients using service

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
	physician FFS rates		
▪ Temmink, Francke et al (2000) ▪ Effectiveness: cost	▪ Literature review of substitution related innovations in the nursing care of chronic patients in Ireland, UK, Canada, Netherlands, US and Sweden.	▪ Substitution, ie advanced nursing practice fund in countries with primary care orientation. Findings of quasi-experimental research studies indicative of improvements in quality of care, patient & provider satisfaction, knowledge and physical & psychosocial functioning. ▪ But unclear if affects health service utilisation or costs. ▪ Countries like Ireland and the UK focus relatively more on generalist primary health care. Countries which are relatively more oriented towards specialist secondary health care are the USA, Sweden and Canada.	 Figure 1 Health care orientation matrix.

6.2 Generalist/specialist interface

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
▪ D'Amour et al (2003) Canada ▪ Effectiveness: access, continuity, appropriateness	▪ Examined the effectiveness of a shift in responsibility for post-natal follow-up from hospitals to community health centres in Montreal Quebec. ▪ Shortened LOS has been found to have no negative affects on either health of baby or mother, provide they	▪ Poor integration of services between agencies with outcomes of reduced accessibility, continuity of care and appropriateness of the source of care. ▪ While most mothers did receive a telephone call, 56.5% did not receive a visit from the nurse. Furthermore, less than 10% of mothers were telephoned within the	▪ One of the objectives of the ambulatory shift is to progress from using costly resources to less costly ones which are closer to the needs of the population. ▪ A duplication of services occurred for almost 45% of the surveyed mothers. ▪ Quebec's health system is decentralised on a regional basis with 9 hospitals and 29CHCs; the large size of the network makes service integration difficult. ▪ Explanatory factors: 4 dimensions strategic dimension

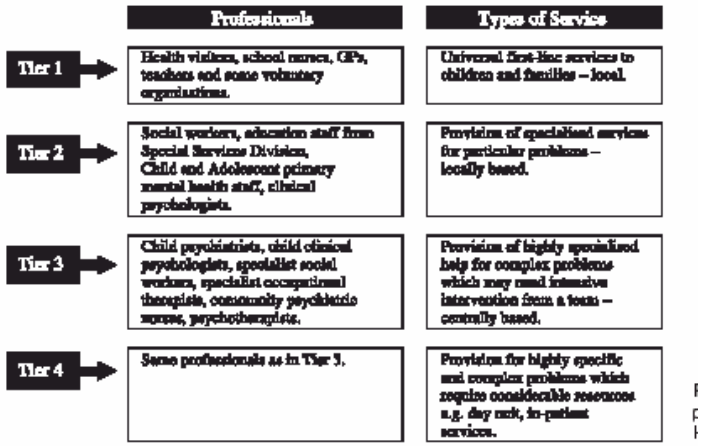
▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
	receive adequate follow up.	recommended timeframe and of those who received a home visit, only 18.3% were visited within the recommended timeframe. ▪ Moreover, there was a duplication of services for almost 45% of clients, who also received a telephone call from the hospital and attended a routine hospital follow up appointment.	(weak regional leadership, no guidelines for the regional organisation of perinatal services); the structural dimension, including the size of the network; technological dimension, transmission of information (lack of IT connectivity & timeliness of information transfer) ; cultural dimension, relationships built on trust (hospital staff having ltd understanding of competencies/nature of role of CHN).
▪ Gilbody, Whitty et al (2003) ▪ Effectiveness: cost, patient outcomes	▪ A systematic review of 36 studies, including 29 RCTs, mostly conducted in the US. The studies were of a range of educational and organizational interventions targeted at the management of depression in primary care.	▪ Simple educational strategies or the passive dissemination of guidelines to improve the recognition and management of depression have minimal effect on the care of depression. ▪ Strategies effective in improving patient outcome incorporated clinician education, enhanced role of the PC nurse and consultation-liaison strategies.	▪ Effective strategies included: ▪ Collaborative (shared) care & patient education (improved tx adherence, patient recovery) ▪ Stepped collaborative (enhanced) care, for those not responding to usual care (enhanced medication adherence, ▪ Quality improvement (complex package of care: org & education interventions) (improved med'n adherence) ▪ Case Management (using PC nurses: either as low intensity brief pat education & med'n counselling to core component of a complex strategy) ▪ Pharmacist-provided prescribing information and patient education.
▪ Godber E, Robinson R, Steiner A (1997)	▪ Economic evaluation of initiatives designed to shift care from 2ary to primary care ▪ Reviews the literature on cost effectiveness of initiatives to shift care		

Reference	What they did	What they found	PHC themes/issues
▪ Gruen, Weeramanthri, & Ballie (2002) Aus ▪ Effectiveness: sustainability, cost, access	▪ A process evaluation of a specialist outreach service (SOS) operating in the Top End of the NT for remote indigenous communities with populations of up to 2000 people. The SOS pays an F/T OB/GYN, P/T ophthalmologist, 5 general surgeons and an ENT from Royal Darwin Hospital, and an F/T coordinator and Admin. Asst.	▪ The annual number of consultations with people from remote communities has increased over fourfold since the introduction of outreach. ▪ Corresponding increases have not been observed in those specialities without outreach. ▪ The average cost per consultation was less through outreach ($277) than it would have been bringing the same patients to the outpatient clinic in Darwin ($450).	▪ Authors believe that ideally specialist outreach services should be funded separately; employ an organisational structure that can be integrated with the specialist and primary care sectors, and are responsive to the needs of both. ▪ Requirements for a sustainable specialist outreach to a remote are include: specialist base considerations, PC considerations, the outreach service itself and the nature of the outreach visits, PC considerations include adequately resourced and staffed PC base; & that the specialists work as part of a MDT centred in PC & are accountable to the referring Pc practitioners and local communities.
▪ Gruen et al (2003) ▪ Effectiveness: efficiency, appropriateness of care, access, cost	▪ Cochrane Review of 73 outreach interventions to assess their effectiveness on access, quality, health outcomes, patient satisfaction, use of services and cost. UK (28), Australia (12), US (11), Canada (7), South Africa (4), East Africa (3), Israel (3), Zimbabwe, Holland, Norway, Ecuador, & Hong Kong (1 each).	▪ Most comparative studies came from urban non-disadvantaged populations in developed countries. ▪ Simple 'shifted outpatients' styles of specialist outreach were shown to improve access, but there was no evidence of impact on health outcomes. ▪ Specialist outreach as part of more complex multifaceted interventions involving collaboration with primary care, education or other services were associated with improved health outcomes, more efficient and guideline-consistent care, and less use of inpatient services.	▪ None of the UK studies suggested that outreach in non-disadvantaged settings provides any significant benefit in health improvements or the effectiveness of healthcare delivery. ▪ Tailoring specialist services, including specialist outreach, will depend on an intimate understanding of local contexts.

Reference	What they did	What they found	PHC themes/issues
▪ Meadows, G. (1998) Aus ▪ Effectiveness: cost	▪ Reports on the establishment of the Consultation Liaison in Primary Care Psychiatry (CLIPP) service model mental health service ▪ Combination of consultation/ liaison model and shared care ▪ Staff include Psych nurse case mgr, Psychologist, Psychiatrist	▪ CLIPP is a useful model for improving collaboration between GPs and psychiatric services. ▪ C/L involves a Psychiatrist visiting practice for consults on any patients referred by GPs. Continuing care remains with GP ▪ Shared Care involves patients referred to GPs via the CLIPP team by mental health service. GP assumes primary responsibility for patient	▪ The strengths of the relationships established through consultation-liaison links have been harnessed in support of effective shared care to present a cost effective case which is more convincing than for a consultation-liaison service alone. ▪ Patient registration & tracking system is maintained by the mental health services & supports GP in maintaining continuity of care ▪ Patients satisfied with care and self reported improvement in physical health. GP notes show newly identified physical health problems were treated. ▪ Impediments to transfer of care to GPs is drug costs (provided free to patients in mental health service, but cost through PBS for GPs)
▪ Renders et al (2000) ▪ Effectiveness: patient outcomes ▪ ▪ Level 1: Systematic review	▪ Cochrane systematic review of 41 studies involving 48,000 patients to compare the effects of different interventions with usual care to improve the management of Type 2 diabetes. Most studies were located in community settings (27), 11 in outpatient settings and 3 studies in a combination of settings, where the control group received conventional care in an outpatient setting and the new approach in a community setting. ▪ Some studies were professional interventions, others were organisational	▪ Clinician behaviour focused: Post graduate education, plus other professional interventions eg reminders, audit & feedback, educational outreach visits or a combination of these improved diabetes care. Effect on patient outcomes less clear. ▪ Changers to organisation of practice (ie practice teams ▪ Information systems enhancements, eg Changes in medical record systems (inc structured recall through central computerised tracking systems or follow up by nurses both improved process outcomes ▪ The addition of patient education or	▪ Systematic approaches that involve professional, plus organisational interventions, including an enhanced nurse role, and patient education seem to be important in improving both process and outcomes of care.

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
	interventions and others involved both. ▪ All studies involved multifaceted interventions.	a more enhanced nurse role to the intervention seems to be NB in improving patient outcomes.	
▪ Rothman & Wagner (2003)	▪ Review of evidence on role of PC in chronic illness management	▪ Short consultations still the dominant form, with defining the problem & initiating treatment – resulting in "poorly connected string of episodes determined by patient problems."	▪ High quality CDM involves: skilled & confident patients, appropriate treatments, mutually understood care plan, follow up. Requiring longitudinal & preventive orientation, MDT approach. ▪ Implications of MDT approaches on training & education of team members, also role and function clarification.
▪ Samet, Friedmann, & Saitz (2001) US ▪ ▪ Effectiveness: patient outcomes, cost	▪ Outlined the potential benefits of integrating primary care, mental health, and substance abuse services from the perspectives of medical and mental health providers, addiction clinicians, patients and society.	▪ Two models have been proposed. ▪ Co-location model where substance abuse treatment, primary medical care and mental health services are accessible at a single site. ▪ Distributive model where the sites providing care can be linked by more effective systems to refer patients between sites.	▪ Centralised models have reported favourable results for alcoholism treatment, problem drinkers, addiction, and HIV-related care. ▪ Successful referral is the central task of the distributive model, usually using case management. The advantage of the model is that it makes use of existing services.
▪ Samet, Larsen et al (2003) US ▪ Effectiveness: ▪ Access ▪ ▪	▪ RCT with 470 patients undergoing detoxification from alcohol, heroin or cocaine who had no regular primary care physician. Designed to test a mixed integrative-distributive approach using a MD primary care linkage clinic co-located in the detox (integrative) unit & facilitated referral to an off-	▪ The on-site PC clinic performed a single comp MD assessment, education & arranged follow up with GP for ongoing care (so active facilitation role). ▪ Significantly improved linkage of those patients attending the clinic to primary care. ▪ However, no significant differences between controls and intervention	▪ Having a MD PC clinic co-located with detox unit provided "a reachable moment" ▪ MD PC team active in facilitating access to PC post discharge – Social worker in the team assumed case mgt role facilitating access to PC. ▪ All MD team members were trained in motivational interviewing

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
	site PC clinic (distributive).	group re related health outcomes (eg medical, addiction & HIV risk behaviour)	
▪ Sellors, et al (2003) Canada ▪ Effectiveness: ▪ cost	▪ A RCT in 24 family practices in Ontario of specially trained community pharmacists who acted as consultants to primary care and their elderly patients to see if the intervention resulted in a reduction of daily units of medication taken.	▪ After 5 months, the average numbers of daily prescription and over the counter medication units was similar in the intervention and control groups.	▪ While the intervention did not have a significant effect on patient outcomes, physicians were receptive to the recommendations to resolve drug-related problems, suggesting that collaboration between physicians and pharmacists is feasible.
▪ Unutzer, Katon et al (2002) US ▪ Effectiveness: PS, cost ▪ Level 1 RCT (multicenter trial)	▪ Multicenter RCT with 1801 patients aged 60 years or older with major depression to determine the effectiveness of collaborative intervention in PC (IMPACT) the Improving Mood-Promoting Access to Collaborative Treatment (IMPACT) compared to usual care. Collaboration model: ▪ - Collaboration between PCPs & specialists on problem; ▪ - Development of Tx plan with patient ▪ Pro-active follow up & outcomes monitoring by care mgr ▪ - Targeted use of specialist	▪ At 12 months, 45% of intervention patients had a 50% or greater reduction in depressive symptoms from baseline compared with 19% of usual care participants (significant). ▪ Reported less health related functional impairments & greater overall QAL (suggesting benefits on health beyond reducing depressive symptoms ▪ Process of care: ▪ Intervention patients significantly more likely to receive antidepressants/psychotherapy & also reported greater satisfaction with care ▪ Differences between controls and intervention group increased over 12 months	▪ IMPACT program shown to be effective, whereas treatment using screening and health care practitioner feedback and education has not resulted in consistent improvements in depression. ▪ Average cost of providing intervention was $553 compared to annual Medicare spending of $5506 per enrollee in 1998. ▪ Care mgrs (either nurse/psychologist) received additional training as a depression clinical specialist

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
	consults ▪ - Protocols for stepped care		
▪ Worrall-Davies, Cottrell & Benson (2004) UK ▪ Effectiveness: continuity, responsiveness	▪ Evaluated a new network model of Child and Adolescent Mental Health Service in Leeds that addressed Tier 2 needs. This is a model of multiagency work, as well as multidisciplinary, where there is a network of services provided by health education, social services and the voluntary sector.	▪ Model satisfies previously unmet need and was providing short focussed interventions to families. ▪ Referral and timely assessment &intervention of clients at Tier 2 level freed up Tier 3 staff to concentrate on complex, chronic problems. ▪ So Tier 2 filter role for access to Tier 3.	

6.3 Shifting care to the community

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
▪ Burns et al (2001) ▪ Effectiveness: cost	▪ Systematic literature review of 91 studies (56 RCTs and 35 non-RCTs), to investigate the effectiveness of home treatment for mental health problems in terms of hospitalisation and cost-effectiveness. Fifty-five	▪ Home treatment reduces days spent in hospital compared with inpatient treatment. ▪ There is evidence that visiting patients at home regularly and taking responsibility for both health and social care reduce days in	▪ Only 22 of the 91 studies were found to have cost analyses and the evidence in favour of home treatment in general was largely inconclusive.

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
	studies were from the US and 21 from the UK.	hospital.	
▪ Clar, Waugh & Thomas (2003) ▪ Effectiveness: cost, patient outcomes	▪ Cochrane review of 6 (from 91) studies to assess the effects of routine hospital admission compared to out-patient or home-based management in children newly diagnosed with type 1 diabetes on metabolic control, wellbeing and self efficacy of the patient and her/his family. ▪ Some clinicians believe that hospital admission in children who are not acutely ill at diagnosis encourages dependence on hospital support.	▪ The one high quality trial identified suggested that home-based management of children may lead to slightly improved long term metabolic control at 2 and 3 years follow-up. ▪ No differences between comparison groups were found in any of the psychosocial and behavioural variables assessed or in rates of acute diabetic complications within 2 years. ▪ Parental costs were found to be decreased, while system costs were found to be increased, leaving social costs virtually unchanged.	▪ The authors conclude that on the whole, the data seem to suggest that out-patient/home management of Type 1 diabetes in children at diagnosis does not lead to any disadvantages in terms of metabolic control, acute diabetic complications and hospitalisations, psychosocial variables and behaviour, or total costs.
▪ Lim, Lambert & Gray (2003) Aus ▪ Effectiveness: cost, responsiveness	▪ RCT to evaluate the benefits of coordinating community services through the Post-Acute (PAC) program in 598 patients aged 65+ after discharge from hospital. With this program, PAC coordinators have a separate budget enabling them to purchase therapeutic services and supportive services for patients in the immediate post-discharge period.	▪ In the six-month follow-up period, there were no significant differences between the PAC and control groups in unplanned readmissions but PAC patients used significantly fewer hospital bed-days in this period. ▪ Total costs were lower in the PAC group.	

Reference	What they did	What they found	PHC themes/issues
▪ Temmink, Francke et al (2000) ▪ Effectiveness: cost	▪ Literature review of substitution related innovations in the nursing care of chronic patients in Ireland, UK, Canada, Netherlands, US and Sweden. ▪ Countries like Ireland and the UK focus relatively more on generalist primary health care. Countries which are relatively more oriented towards specialist secondary health care are the USA, Sweden and Canada.	▪ Substitution-related initiative ie HITH found no differences between HITH & std hospital care with respect to quality of care; but HITH not found to reduce health care service utilisation or costs. ▪ Integrated care settings: 3 types: ▪ - Combination of hospital & PC professionals (eg quick response teams) ▪ - Care delivered by PCP during admission to & discharge from hospital (eg liaison nursing) ▪ - Integrated care delivered by PCP supported by hospital/specialist.	▪ Focus on chronic care patients in integrated care innovations ▪ In PC oriented countries tendency to meet specialised needs in PC settings; PC oriented countries are anticipating specialist needs of patients by implementing HITH & innovations in which advance nursing practice plays a central role. ▪ Overall results of integrated care settings suggestive of decrease in costs & hospital admissions, may have positive affect on patient physical functioning and relatives' QAL ▪ Close collaboration within health services & between range of health & social services ▪ Good information flows & communication ▪ 24-hr on call coverage available ▪ Care protocols
▪ Victor et al (2000) ▪ UK ▪ Effectiveness: appropriateness	▪ Evaluated the relative contribution of various factors to the delayed discharge of 456 patients aged 75> from hospital.	▪ Three factors independently predicted delay in discharge: ▪ Absence of family carer ▪ Entry to a nursing/residential home ▪ Discharge assessment team staffing; the nurse-coordinated team had the fewest referrals to multidisciplinary assessments and the longest delays.	▪ The successful discharge of an older person may involve the integration of diverse elements of health and social care services.

6.4 Prevention

Reference	What they did	What they found	PHC themes/issues
Johnson SB & Millstein SG (2003)	Literature review of prevention opportunities in health care settings, including the evidence for home visiting services	Examples of effective behaviorally based prevention programs, their cost effectiveness and challenges in prevention activities in health care settings	The long term effects included significant reductions in subsequent pregnancies, use of welfare, child abuse and neglect and maternal criminal behaviour and important success factors included targeting an appropriate risk population and undertaking multiple visits over time that are sufficiently intense and comprehensive
Lawlor & Hanratty (2001) Effectiveness: availability	A systematic review of 8 trials, with 4747 participants, to determine the effect of advice given in routine primary care consultations on levels of physical activity. Six studies were from the US and two from Australia. All advice was provided by physicians.	Four of the six trials that presented short term (up to 8 weeks) results found advice to be effective at increasing activity. Only one of the four trials with long term follow-up (4-12 months) found a sustained effect.	From the available evidence it appears that opportunistic advice in routine primary care consultations is not an effective means of producing sustained increases in physical activity. However, the authors describe much of available evidence as being of poor quality. What is needed is further investigation of supportive environments that may help sustain the short-term effect of advice.
Lee et al (1995) Aus Effectiveness: Cost, sustainability	Compared the operation of a nutrition program in the remote Aboriginal community of Minjilang (pop. 150) on Croker Island, 240km NE of Darwin with a 2nd community of about 300, to assess its long term effect. The program was technically supported from outside, but controlled by the community.	The program produced lasting improvements in dietary intake of fruit, vegetables and wholegrain bread and nutrients (including folate, ascorbic acid and thiamine). Sugar intake fell in both communities before the program, but the additional decrease in sugar consumption during the program at Minjilang rebounded	The intervention project was initiated by the people of Minjilang and, although an effective partnership between the community members and those providing technical support was critical to success, the ownership of the program remained firmly within the community.

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
		in the next year.	
▪ MacLeod J, Nelson G (2000)	▪ Meta-analysis of programs for promotion of family wellness & prevention of child mistreatment	▪ Proactive interventions (eg universal & targeted interventions, involving inc home visiting, multiple components [parent education], social support, media) sustained effects	
▪ Minkovitz, Hughart (2003) US ▪ Effectiveness: ▪ Efficiency, responsiveness.	▪ Evaluated the impact of a proactive, multifaceted prevention & early intervention program on quality of early childhood care & parenting practices compared to usual care with 5565 families. The program incorporated nurses, nurse practitioners, early childhood educators, and social workers with training and experience in childhood development into 15 paediatric practices. Services included well child care, home visits in 1st 3 years, telephone line to address parent's concerns, written material re prevention/health promotion, parent support groups, & links to community resources via referrals	▪ Participating paediatric practices showed significant improvements in effectiveness, patient-centeredness, timeliness and efficiency of care: ▪ Parental satisfaction was marked, more timely preventive care received, including on time immunisation, improved parenting practices	▪ Healthy Steps did not influence hospitalizations or overall ED use as expected, despite increased receipt of timely preventative services. Result may be due to normal practice hours and the age of the children. ▪ However, these universal, practice-based interventions did enhance quality of care for families of young children.
▪ Regalado & Halfon (2001) ▪ Effectiveness: ▪ Continuity, appropriateness	▪ Systematic literature review of 47 articles to examine the evidence base for primary care services promoting optimal development of typically developing children aged birth to 3 years. Primary care services were grouped into 4 categories: assessment, education,	▪ In general, study results support the efficacy of: ▪ - Primary care parent educational efforts toward promoting optimal parent-child interaction (parental skills development, strengthening self efficacy);	▪ Authors note although the evidence base for developmental services has expanded in recent years, it is still composed primarily of efficacy studies that demonstrate the validity of interventions or procedures in controlled situations. Therefore, they can only note the potential of these services for effectiveness in actual practice.

Reference	What they did	What they found	PHC themes/issues
	intervention and care coordination.	- Office interventions such as counselling for the management of excessive infant crying and sleep problems.	
Simpson et al (2003) NZ Effectiveness: participation	Reports on two pilot community injury prevention project (CIPPs) designed to reduce the incidence of childhood injury. Established in small communities (Pop<10 000) in NZ, based on the WHO safe community model. Process evaluation focussed on developing & implementation the projects	Strategies that contributed to increased safety awareness were community development strategies.	Critical to the development of the CIPPs were community capacity and the context in which the projects were operating (i.e. think globally, act locally).
Towner & Dowswell (2002) Effectiveness; sustainability	Systematic review of 10 evaluated community-based injury prevention programmes. Six of the 10 programmes were based on the WHO Safe communities' model and were conducted in Scandinavia, Australia and NZ. Of the other 4, 3 were in the US and 1 in Greece.	There is increasing evidence of the effectiveness of community-based approaches in injury prevention. Important elements were: - Long-tem strategy - Effective focused leadership - Multi-agency collaboration - Tailoring to the needs of the local community - The use of local injury surveillance - Time to coordinate existing and develop new local networks.	Authors note that in systematic reviews of effective injury prevention, most evaluated studies described relate to single countermeasures, such as the promotion of bicycle helmets or child safety seats. They believe that the use of multiple interventions, such as those used in the 10 reviewed studies, implemented over a period of time can allow injury prevention messages to be repeated in different forms and contexts and can begin to develop a culture of safety in a community.
Weinhall, Helton	Evaluated a Swedish community intervention program for the	Predicted coronary heart disease mortality was reduced by 36% in	The authors conclude that a long-term community-based CVD prevention program which combines

▪ Reference	▪ What they did	▪ What they found	▪ PHC themes/issues
et al (2001) ▪	prevention of cardiovascular disease, comparing mortality in an intervention area (Norsjo) with that in a reference area. The prevention work in Norsjo was accomplished within the framework of existing community organizations and with almost no additional financial support.	the intervention area.	population and individual strategies can substantially promote a health shift in CVD risk in a high risk rural population.
▪ Ytterstad, B. (2003) ▪	▪ Evaluated the outcome of the Harstad Injury Prevention Study in Norway, a community-based program for reducing traffic injury rates, using a neighbouring town as a reference.	▪ A significant 59% reduction of traffic injury rates for children over an 8 year period.	▪ Researcher believes that a community-based program for reducing traffic injuries in children is effective, in the long-term, when several prevention strategies are implemented.

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