



Initiatives to integrate primary and acute health care, including ambulatory care services

Authors

Petra T Bywood

Eleanor Jackson-Bowers

Sandy Muecke

By: Primary Health Care Research & Information Service
(PHC RIS)

March 2011



Initiatives to integrate primary and acute health care, including ambulatory care services

© Primary Health Care Research Information Service 2011

ISBN 978-0-9808191-4-4

March 2011

Suggested Citation:

Bywood PT, Jackson-Bowers E, Muecke S. (2011). *Initiatives to integrate primary and acute health care, including ambulatory care services. PHC RIS Policy Issue Review*. Adelaide: Primary Health Care Research & Information Service.



Expert Review

This Policy Issue Review has been reviewed by Associate Professor Gawaine Powell Davies, UNSW Research Centre for Primary health Care and Equity. Associate Professor Powell Davies has extensive expertise in the area of integrated primary health care in Australia, having conducted a number of reviews and research projects and evaluated several national programs related to health services integration and primary health care.



Table of Contents

1	Summary	1
1.1	Statement of the Issue	1
1.2	Summary of key messages.....	1
1.2.1	Key strategies of integrated care	1
1.2.2	Key initiatives of integrated care.....	3
1.2.3	Key factors to improve patients' experience of integrated services.....	4
1.2.4	Main challenges for integrated services.....	5
1.2.5	Caveats and limitations in the literature.....	5
1.2.6	What next?.....	6
2	Report	7
3	Introduction	7
4	What is integrated care?.....	8
4.1	Clarification of terms	8
4.1.1	Rationale for integration.....	9
4.1.2	Ways to integrate health care services.....	10
4.2	Care transitions across boundaries	11
4.3	Key stakeholders in integrated care	11
4.4	The Australian Context	12
5	The Patient Experience.....	13
5.1	The Patient's Journey	14
5.1.1	What can go wrong?	16
5.1.2	Does integrated care improve patients' outcomes.....	16
5.2	Strategies to improve patients' journeys.....	17
6	Patients' outcomes and experience of integrated care strategies.....	18
6.1	Communication and support for providers and patients.....	21
6.1.1	Continuing Medical Education (CME)	21
6.1.2	Case conferencing	22
6.1.3	Patient education, health literacy and self-management	22
6.1.4	Reminders and prompts	24
6.1.5	Patient-held records.....	24
6.2	Structural arrangements to support coordination (integration)	25
6.2.1	Multidisciplinary teams.....	25
6.2.2	Care plans.....	27
6.2.3	Case management.....	27
6.2.4	Shared information systems and decision-making	28
6.2.5	Co-location.....	29
6.2.6	Shared care.....	31
6.2.7	Discharge planning	32
6.2.8	Referral systems	34
6.2.9	Rural health /Visiting specialists	35
6.2.10	Hospital in the Home (HITH)	36
6.3	Telemedicine and telehealth	36
6.3.1	Telephone and Internet patient information services.....	38
6.3.2	Electronic referral (e-transfer).....	39
6.3.3	Telehealth consultations (e-Consultations)	40
6.3.4	Telemonitoring.....	41
7	Patients' outcomes and experience of integrated care initiatives	41
7.1.1	Coordinated care trials	42



7.1.2	Chronic Care Model (CCM)	43
7.1.3	Mental Health Integration Program (MHIP)	44
7.1.4	Managed Clinical Networks	46
7.1.5	Lean Practice	47
7.1.6	Hospital Admissions Risk Programme (HARP)	48
7.1.7	Pre-hospital practitioner model	49
7.1.8	GP/Facility Clinical Handover Project (NSW)	50
7.1.9	Integration initiatives for the elderly	51
7.2	Divisions of General Practice (DGP)	53
7.2.1	Better Outcomes in Mental Health Care Initiative- Access to Allied Psychological Services (ATAPS)	54
7.2.2	Enhanced Primary Care (EPC) program	54
7.2.3	Primary Care Partnerships (PCPs)	55
7.2.4	More Allied Health Services (MAHS) programs	56
7.2.5	Australian Better Health Initiative (ABHI)	56
7.2.6	National Primary Care Collaboratives Program (NPCCP)	56
7.2.7	Primary Care Amplification Model (PCAM)- 'Beacon' practice	57
7.2.8	GP Super Clinics	58
7.3	Additional initiatives in the Australian context	58
7.4	Overseas models	59
7.4.1	Kaiser Permanente and Veterans Health Administration– USA	59
7.4.2	Patient-Centred Medical Home (PCMH) – USA	61
7.4.3	Integrated inpatient health care (IHC) - Germany	62
7.4.4	Integrated care pilots – UK	62
7.4.5	Primary care networks (PCN) – Canada	64
7.4.6	Southcentral Foundation (SCF) Nuka model of care – Alaska	65
8	References	66
9	Appendix	83
9.1	Methods	83
9.2	Limitations of the review	84
9.2.1	Integrated care – use of terms	84
9.2.2	Quality of evidence	84
9.3	Individual strategies and initiatives related to structures, strengthening relationships and systems to support collaboration	85
9.4	Stepped Care Protocol	88
9.5	Chronic Care Model (CCM)	88

Tables

Table 1–1	Strategies to integrate health care services and summary of patient outcomes and experience	2
Table 1–2	Initiatives to integrate health care services and summary of patient outcomes and experience	3
Table 5–1	Health outcomes for chronically ill patients in integrated care	16
Table 6–1	Types of integrated care strategies and proportions of studies reporting positive outcomes for patients	19
Table 6–2	Strategies that provide structure to support integrated care	20
Table 6–3	Summarised findings of systematic reviews on effectiveness of strategies to inform, educate, and involve patients in their treatment ⁶⁸	23



Table 6–4	Initiatives using multidisciplinary teams for asthma care and strategies to support integrated care	26
Table 6–5	Criteria for enhanced referral and an integrated care model	34
Table 7–1	Main components of Mental Health Integration Projects ¹⁸²	45
Table 7–2	Summary of key messages from the Mental Health Integration Program	46
Table 7–3	Other Australian integration initiatives	58
Table 7–4	Summary of strategies and achievements in focus areas.....	63
Table 7–5	Examples of strategies implemented in some PCNs	64
Table 9–1	Search strategy	83
Table 9–2	Individual strategies and initiatives that related to broad types of strategies	85
Table 9–3	Summary of key strategies, tools and activities embedded in multifaceted initiatives.....	86
Table 9–4	Stepped Care Protocol for depression.....	88

Figures

Figure 4–1	Illustration of the level and intensity of interactions between health care organisations (1-3) in cooperation, coordination and full integration frameworks	9
Figure 5–1	The ‘Kaiser Triangle’ shows different levels of chronic care ⁵²	15
Figure 7–1	Two models of integrated service delivery ¹⁹⁷	52
Figure 9–1	The Chronic Care Model (CCM) ¹⁷⁷	89

1 Summary

1.1 Statement of the Issue

This Policy Issue Review examined information regarding “Initiatives to integrate primary and acute health care, including ambulatory services”.

The main research questions for this review are:

- ⇒ What types of initiatives have been implemented in Australia (or elsewhere) to integrate primary and acute health care?
- ⇒ How have these initiatives impacted on patients’ health outcomes and patients’ experience of their pathway through the health system?

1.2 Summary of key messages

Most people, at some time in their lives, will require health care services from multiple health care providers, whether it is for short-term unexpected ill health, long-term chronic conditions or comorbidities that cross disciplines (eg. substance-related conditions and mental health). Integration of health services is particularly important for patients with chronic and complex conditions as they must frequently negotiate a path through different health care sectors, including primary, acute and ambulatory care services, as well as the public and private health jurisdictions. Standardised pathways for the more common chronic conditions may be needed to enable seamless transitions and avoid negative outcomes that may result from delays, duplications and errors in a system that operates as multiple independent organisations.

A variety of strategies, programs, tools and multifaceted initiatives have been implemented to facilitate the integration of health care services between different providers and organisations across the continuum of health care. A number of studies have evaluated the effectiveness of these strategies and initiatives in terms of improving the efficiency of integrated care. Some studies have also examined the impact of integration strategies on patient health outcomes or their experience of integrated care. This review provides a summary of patients’ outcomes, views and experiences reported in available systematic reviews and primary studies that evaluated the effectiveness of integrated care strategies and initiatives.

1.2.1 Key strategies of integrated care

While there was considerable heterogeneity in the literature (eg. target population, condition, setting, measures, study design/quality, intervention), there were a number of strategies and initiatives that were associated with positive outcomes for patients. Overall, the types of strategies and initiatives that were identified as most effective for improving patients’ health outcomes were likely to be multifaceted and those that included⁵:

1 Communication and support for providers and patients: Effective communication between all stakeholders, including the patient, their general practitioner (GP) and other health care providers in different organisations and health care sectors, is a fundamental element of integrated care. Effective strategies to integrate care involved tools to enhance communication and foster collaborative relationships between providers and patients.

2 Structural arrangements to support integration: Information exchange and coordinating care for patients within and between different health care services is facilitated by strong, well-supported and efficient communication systems and protocols. Sharing information only works if there is an established infrastructure to do so. Several structural arrangements to support integration had positive outcomes for patients.

These categories were not mutually exclusive and some initiatives used elements of both approaches. Telemedicine and telehealth strategies include elements of both categories. Examples of strategies using these approaches and their impact on patient outcomes are summarised in **Table 1–1**, using a framework devised by Powell Davies et al. (2006).

Table 1–1 Strategies to integrate health care services and summary of patient outcomes and experience

Strategy	Patient outcomes and experience
<i>Communication and support for patients and providers</i>	
Continuing Medical Education (CME)	Small improvements in patient outcomes when CME was interactive, conducted in small groups and focused on a specific problem
Case conference	Reduced inappropriate medications Increased patient and caregiver awareness of relevant services Improved identification and resolution of problems Reduced primary care visits Improved function and independence
Patient education, health literacy & self-management support	Health literacy increased patients' understanding of their condition Decision-making aids increased patients' knowledge, improved their experience and led to more appropriate use of health services Self-management coaching increased patients' knowledge, improved their experience, led to more appropriate use of health services and improved health behaviours and functional status
Reminders (patients &/or providers)	Improved patients' health status, medication compliance and use of services
Patient-held records	High level of acceptance by patients Evidence of benefit to patients' health is unclear
<i>Structural arrangements to support coordinated care (integration)</i>	
Multidisciplinary teams/multidisciplinary care	Improved patients' control of symptoms and pain Increased patients' satisfaction with care Reduced mortality and dependency in stroke patients Reduced mortality and hospital readmissions in heart failure patients Reduced clinical symptoms for terminally ill patients
Care planning	Improved clinical outcomes
Case management	Improved clinical outcomes, quality of life and functional status Reduced hospitalisations
Shared information systems and decision-making	Evidence of benefit to patients of electronic health records alone is unclear. Some positive outcomes in centralised systems (see Kaiser Permanente and Veterans Administration below, Table 1–2) A three-way phone communication system between patient, GP and allied health professional increased patients' perception of empowerment and participation in their own care
Co-location of services	Patients were satisfied with the convenience, immediacy of services and easier access to consultations No significant improvement in patient health outcomes
Shared care	Mixed outcomes for patients: Some improvements in medication prescribing No improvements in health outcomes, hospitalisations or satisfaction with care Patients in the 'Sharing Health Care Initiative' gained more confidence in patient-provider communications and experienced less hurried, more personal consultations
Discharge planning and post-acute	Reduced rates of hospital readmissions

care	Improved quality of life in elderly chronic heart failure patients Advanced-practice nurse coordinators reduced hospital readmissions, deaths and overall costs
Referral systems	Patient experience was not readily assessed as patients were rarely aware of the coordinated care relationships underlying referral systems
Rural health/visiting specialists (outreach)	Outreach visits improved access to specialist care for patients in rural/remote communities Outreach visits were cost-effective
Hospital in the Home	Patients were satisfied with the service No significant differences in health outcomes compared to usual hospital care
Telemedicine and telehealth	
Telephone and internet information systems	Mixed results: Studies that reported positive benefits were typically poor in quality
Electronic referrals	Some positive benefits for patients are emerging in new technologies
Telehealth consultations	
Telemonitoring	

1.2.2 Key initiatives of integrated care

Several multifaceted initiatives have used combinations of integration strategies to target specific conditions or populations. **Table 1–2** summarises examples of such initiatives and their impact on patients' outcomes and experiences.

Table 1–2 Initiatives to integrate health care services and summary of patient outcomes and experience

Initiatives	Patient outcomes and experience
Coordinated Care Trials	Patients appreciated the assistance of a single contact person to help navigate the health care system
Chronic care model	Mixed outcomes depending on specific conditions Improved physiological measures for diabetes patients Improved symptoms, hospitalisations and quality of life for congestive heart failure patients Reduced hospitalisations and length of hospital stay for patients with chronic obstructive pulmonary disease
Mental Health Integration Project	Mixed health outcomes for patients Overall high level of patient satisfaction with the program Patients perceived improved continuity of care
Managed Clinical Networks	Patient outcomes or experience not available
Lean Practice	Patient outcomes or experience not available
Hospital Admissions Risk Program	Reduced emergency department attendances, admissions and days in hospital Improved functional independence, quality of life and satisfaction with better communication with providers
Pre-hospital practitioner model	Increased survival Fewer hospitalisations More efficient treatment and referral Increased patient satisfaction
GP/Facility Clinical Handover project	Mixed outcomes for patients Overall satisfaction with continuity of care
Initiatives for the elderly	
Transitional Care Model	Reduced hospital readmissions and emergency department visits

IMPACT program	<p>Improved physical health, functional status and quality of life</p> <p>Enhanced patient and caregiver satisfaction</p> <p>Reduced severity of depression</p> <p>Increased compliance with depression medication</p> <p>Improved satisfaction with care and quality of life</p>
<i>Divisions of General Practice</i>	
Better Outcomes in Mental Health	<p>Overall weak findings</p> <p>Trend towards improvements in patients' psychological health and wellbeing</p>
Enhanced Primary Care Program	<p>Overall weak findings</p> <p>Patients appreciated getting rebates, having referrals organised, and the convenience of co-location with other services</p> <p>Use of multidisciplinary care plans improved patients' metabolic control and reduced cardiovascular risk factors</p>
Primary Care Partnerships	<p>Patients perceived improved patient-provider interactions; increased opportunity to discuss their condition, participate in decision-making and receive information</p> <p>Patients appreciated the ease of referrals to relevant services</p>
More Allied Health Services (MAHS) programs	Patient outcomes or experience not available
Australian Better Health Initiative	Evaluation is underway. Data on patient outcomes and experience is unavailable
National Primary Care Collaboratives Program	<p>Improvements in appropriate medication</p> <p>Reduced blood pressure in patients with coronary heart disease or diabetes</p> <p>Improved HbA1c and cholesterol levels in patients with diabetes</p>
Primary Care Amplification Model (PCAM) – 'Beacon practice'	<p>Increased attendance by Indigenous population</p> <p>Increased satisfaction with services (more culturally appropriate)</p> <p>Reduction in blood sugar levels in Indigenous patients with diabetes</p>
<i>Overseas models</i>	
Kaiser Permanente and Veterans Health Administration (US)	<p>Improved clinical outcomes across a range of conditions</p> <p>Increased patient satisfaction with care</p>
Patient-centred medical home (US)	<p>Mixed effects</p> <p>No significant improvements in quality of life or patient satisfaction</p>
Integrated inpatient health care (Germany)	<p>No significant improvements in quality of life or patient satisfaction</p> <p>Reduced length of hospital stay</p> <p>Reduced waiting times for rehabilitation</p>
Integrated care pilots (UK)	Evaluation is underway. Data on patient outcomes and experience is unavailable
Primary care networks (Canada)	Evaluation is underway. Data on patient outcomes and experience is unavailable
Southcentral Foundation Nuka model of care (Alaska)	<p>Weak evidence – lacks independent evaluation</p> <p>Reductions in urgent care and emergency department attendances</p> <p>Reduction in hospital days and hospital admissions for children with asthma</p> <p>Improved access to same-day service</p> <p>Patients reported satisfaction with overall care</p>

Summaries of the key elements in many of the strategies and initiatives are provided in **Table 9–2** and **Table 9–3** in the Appendix.

1.2.3 Key factors to improve patients' experience of integrated services

Evidence suggests that several factors need to be considered for improving patients' experiences of integrated services, including:

⇒ Good quality communication between providers and patients



- ⇒ Flexibility to negotiate blurred and changing boundaries.⁶ A 'one size fits all' approach ignores the critical aspects of local context – ie. health care needs for specific populations are too complex to fit such an approach
- ⇒ Designated person with responsibility to coordinate appropriate services
- ⇒ Consultation with local community – ie. community empowerment
- ⇒ Patient self-management, education, health literacy – ie. patient empowerment.

1.2.4 Main challenges for integrated services

You can integrate all of the services for some of the people, some of the services for all of the people, but you can't integrate all of the services for all of the people⁷

Integrated care is made more difficult within the Australian health care system due to a number of factors, including⁸:

- 1** Split responsibilities for primary health care across jurisdictions, which results in inconsistencies in policy and organisational structures across the sector
- 2** Incompatible systems of funding and accountability, including: private/public; large/small organisations; federal/state; different professional cultures across sectors
- 3** Difficulties with access to coordinated multidisciplinary care due to weak connections between some health sectors (eg. general practice and community health).

Other potential challenges include⁶:

- ⇒ Role overlap and conflict
- ⇒ Duplication or fragmentation of efforts
- ⇒ Effectiveness of multi-component initiatives may be partly determined by the extent to which the different strategies or elements of an initiative have been implemented.

Fundamental changes are needed in the structures, care processes, and roles assumed by health professionals and their relationships to each other and the patients they serve¹

Evidence of effectiveness is insufficient to bring about change to a more integrated system.¹ Such change is likely to involve: system redesign, Medicare policy changes, financial incentives, availability of services, elimination of traditional barriers to working across health care settings and health technology information systems that incorporate mechanisms to facilitate the safe sharing of key information across services and organisations.

1.2.5 Caveats and limitations in the literature

While there is an extensive literature on integrated health care, there are many shortcomings in the research evidence base. For example, there remains confusion about the use of terms; the quality of studies evaluating the effectiveness of initiatives is poor-to-average; patients' views and experiences are seldom solicited; and economic analyses are incomplete or not included. Some strategies and initiatives have been evaluated extensively; while others have had limited or no evaluation, or evaluation reports were not available for this review. The extent to which strategies and initiatives have been discussed in the current review is not related to their success or benefit to patients, but rather to the availability of relevant studies. More detail related to the quality of the available literature is provided in Appendix 9.2.

For many strategies and initiatives, there is little evidence to directly link improved patient outcomes and experience with a particular program. As patient outcomes data is often the last point of their 'journey' through the health care system, it may take some time to achieve. Thus, lack of outcomes data does not necessarily indicate an ineffective program.

1.2.6 What next?

Some strategies are essential ingredients for integration, including:

- ⇒ Multidisciplinary care teams (communication, collaborations, partnerships and networks)
- ⇒ Information sharing
- ⇒ Patient health literacy.

However, one size does not fit all, and the ways in which these strategies are used may be adapted according to specific needs at the local level.

Some of the more promising initiatives include:

- ⇒ Discharge planning: this strategy appears to be an efficient and effective model of transitional care. It could readily be incorporated into existing systems; and including a practice nurse would free up practitioners' time for other clinical activities
- ⇒ HARP: this model has some common features with other effective models and may be generalisable to other situations
- ⇒ Transitional Care Model: this model had a strong patient-centred care focus
- ⇒ Mental Health Integration project: this model demonstrated flexibility and was tailored to the local setting.

Lessons from overseas models may also be useful, if they could be adapted to the Australian context, including:

- ⇒ Kaiser Permanente and Veterans Administration (US): this model demonstrated consistent benefits for patients
- ⇒ Integrated Care Pilots (UK): this model had a strong focus on developing partnerships and networks of practices, collaborating with the community and incorporating patients' preferences.

In the absence of good quality evidence, pilot programs or demonstration projects may be considered while larger studies are undertaken. In addition, some strategies or elements of integrated care may be implemented more readily and at relatively minimal cost. Examples include:

- ⇒ routine assessment of coordination needs of patients at high risk to avoid adverse events:⁹ for example, communication with family/caregiver to prepare for additional help at home after hospital discharge
- ⇒ communication between providers and across care settings to ensure referral letters and discharge summaries are generated in a timely manner. Electronic medical records systems that operate across different systems would facilitate such communication
- ⇒ communication with community and social services; and up-to-date database of relevant local services
- ⇒ enrolling patients in appropriate integrated care programs and monitoring their outcomes would add to the evidence pertaining to the value of such programs.

2 Report

This Policy Issue Review provides a brief background on what is meant by integrated care; who is involved in, and impacted by, integration of health care services; the importance of streamlining patients' transitions in care from one health service provider to another, across primary, secondary and tertiary care organisations; a brief description of the different strategies or elements that underpin integrated care; a synthesis of the evidence of effectiveness of key initiatives to facilitate integration; and the patients' outcomes, views and experiences of primary health care service integration.

3 Introduction

Health systems in many countries around the world are faced with escalating costs and increasing complexities when managing chronic illness in an ageing population. Australia and other countries with comparable health systems are searching for ways to increase efficiency within their health systems and improve health outcomes for patients.^{10,11,12,13} Increasingly, evidence indicates that integration of services and coordination of care may be an effective way to address both issues of system efficiency and patient experience and outcomes. Indeed, one of the hallmarks of a good primary health care system is its ability to coordinate care across health sectors.¹⁴

Integration and coordination of health care occurs at three levels: the macro level of health policy; the meso level of health services organisations; and the micro level of health service delivery.¹⁵ Integrated care has different meanings to different stakeholders in these levels. At the macro level, the critical factors for policymakers are managing budgets and monitoring the impact of policies across different domains within a broader health system. At the meso level, health care organisations focus on arrangements for collaborating with other health care organisations and coordinating services across professional boundaries. At the micro level, the health care provider expects to be able to deliver health care efficiently and the patient expects a process of care that is seamless and easy to navigate. While all three levels interact, it is the micro and meso levels of health services that have been evaluated most commonly in terms of patients' experience and this report focuses primarily on evidence from these two levels.

The scope of this response is outlined in **Box 1**. The search strategy methods are described in Appendix 9.1. Where possible, available systematic reviews and meta-analyses were critically appraised using the AMSTAR tool (**Box 1**).⁴ An economic analysis of the effectiveness of integrated care initiatives was beyond the scope of this review as studies that examined costs often had incomplete data and few conducted an appropriate economic evaluation.⁵ However, information on cost effectiveness has been included where it is available.

Box 1: Scope of this review.

This **Synthesised Review** is an abbreviated appraisal of evidence undertaken to inform the policy issue. A summary of key messages precedes the report. When applicable, systematic reviews were sought as the first level of evidence. The search was restricted to research conducted in the last ten years.

Given the time limitations inherent with a **Synthesised Review** a reliable indicator of evidence quality has been reported only for systematic reviews or well-conducted meta-analyses which are considered to provide the most reliable evidence to inform clinical practice or policy. However, the quality of systematic reviews can vary considerably.

The validated **AMSTAR (A MeaSurement Tool to Assess Reviews)** rating provides a consistent evaluation of the methodological quality of systematic reviews. The Tool consists of eleven criteria. A point is awarded when the study fulfils that criterion.⁴

4 What is integrated care?

4.1 Clarification of terms

Integrated care is a fundamental part of worldwide health care reforms that focus on more coordinated forms of care provision.¹⁶

The health care literature is replete with a variety of terms used to reflect the delivery of different services by different health care providers to meet patients' needs. For example, one recent review reported finding 175 definitions and concepts related to integration.¹⁷ In addition, terms such as shared care, coordinated care, seamless care, comprehensive care and continuity of care are used interchangeably in the literature pertaining to **integrated care**.

While there are many definitions of integrated health care in the literature, yielding multiple subjective interpretations, there is no consistent or shared understanding of the term.

The WHO¹⁸ provides the following definition of integrated care:

... a concept bringing together inputs, delivery, management and organization of services related to diagnosis, treatment, care, rehabilitation and health promotion. Integration is a means to improve services in relation to access, quality, user satisfaction and efficiency.

Importantly, the term, **continuity of care**, is also used to capture the notion of integrated services (delivered by different or same providers) for patients **over a period of time**:⁶

A service system that facilitates continuity of care is characterised as one where all services needed (comprehensiveness) are delivered over time (longitudinally) by service providers who establish secure and dependable relationships (relationships) and when appropriate care is available (accessibility) and flexible enough (responsiveness) to meet patient needs.⁶

Continuity of care encompasses three core dimensions¹⁹:

- ⇒ Informational: formal records of information and knowledge of patients' preferences, values and circumstances
- ⇒ Management: shared care plans, follow-up and coordination of care
- ⇒ Relationship: interpersonal trusted understanding built on accumulated knowledge of patients' values and preferences.

Patients are more satisfied when they see the same doctor and particularly value relationship continuity¹⁹.

There are also differing degrees of integration, from informal to more structured forms. Strandberg-Larsen (2011) distinguishes between cooperation, coordination and integration according to the level and intensity of interaction between organisations and/or providers; and whether the aim is to coordinate patients' care between independent providers/organisations or to bring the health services together within a common framework. At the simplest level, **cooperation** is:

... an interaction between two or more persons (clinical practice perspective) or organizations (organizational and management perspective), whereby resources are exchanged.²⁰

While organisational change and mutual goals *may* occur, they are not essential for organisations to cooperate in the simple exchange of information or resources (**Figure 4–1**).

At a more complex level, **coordination** is the process whereby cooperation between persons or organisations occurs within agreed collective goals and typically requires organisational and procedural changes. While the coordinated health care organisations are independent, they adjust their goals and some aspects of relevant processes to enable optimal care and seamless transition of patients between organisations.

In contrast, **integration** is used to describe “a coordinated form of cooperation”, whereby a mutual understanding of roles, activities and procedures is established between organisations. The integrated organisations work together within a common framework to deliver services. Strandberg-Larsen (2011) makes the distinction between coordination, the activity, and integration, the performance outcome.²⁰

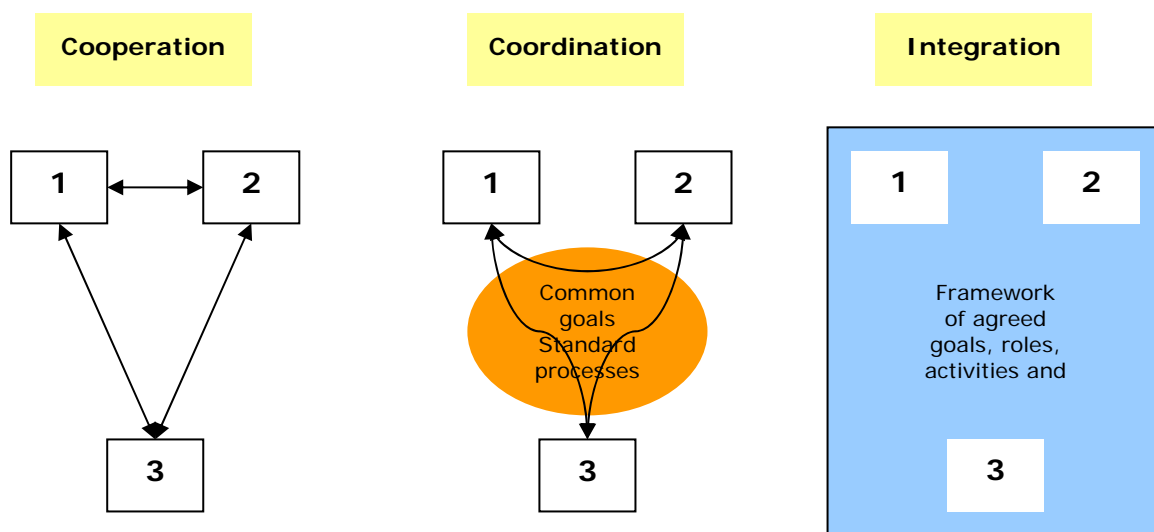


Figure 4–1 Illustration of the level and intensity of interactions between health care organisations (1-3) in cooperation, coordination and full integration frameworks

Thus, integration between Australian primary health care (PHC) and other health care sectors may range from simple cooperation/collaboration between services (eg. posters in hospital to promote GP visits for immunisation) through multidisciplinary coordination of activities (eg, shared care) to linked services within an integrated system (eg. physiotherapist co-located within a PHC organisation.²¹

Different types of integration have also been identified including virtual, vertical, horizontal, functional, clinical, professional and systemic, which may operate at the level of the system or the program/service.^{17,22} This review focuses primarily on integrated care at the program/service level and its impact on patients’ outcomes.

Notwithstanding the differences in terms as defined previously,²³ for the purposes of this review, we have included a broad range of similar terms that focus on integration, coordination and continuity of care, all of which have been included under the umbrella term of integrated care.

4.1.1 Rationale for integration

The main reasons for shifting to an integrated care approach are related to improving the efficiency of the health care system and health care organisations by:^{20,22}

- ⇒ appropriately targeting care and resources
- ⇒ avoiding duplication of tests or treatment by different health care providers
- ⇒ avoiding costly bottlenecks and gaps in care pathways
- ⇒ ensuring care decisions are taken with due regard to upstream capacity and resources
- ⇒ ensuring care is undertaken by the most appropriate professionals.

Importantly, however, a well-integrated system also has the potential to:

... provide a more seamless care experience for the recipient of the services delivered in order to improve the continuity, quality and outcomes of care for patients²⁰

Although integration of health care services is 'intuitively' sound, particularly from the perspective of health care providers involved with patients who are most in need of integrated services, such as the frail elderly and those with disabilities or multiple chronic illnesses,⁷ it must be recognised that the workload (and costs) are likely to increase for those working at the operational level. Leutz's (1999) third law for integrating medical and social services is:

Your integration is my fragmentation⁷

That is, at the practice level, health care professionals and managers who are frequently asked to incorporate additional tasks into their current demanding roles may be less than enthusiastic about the increased time and effort required to coordinate or cooperate with more people from the same or other organisations.

4.1.2 Ways to integrate health care services

Evaluation of ways to facilitate integrated care in relation to the patient experience can be divided broadly into two parts: **strategies** and **initiatives**.

Strategies: Individual elements of integrated care, including tools, activities and/or strategies to improve the procedures, processes, relationships and communication across disparate, and often siloed, sectors of the health system. Examples include care plans, patient or provider reminders, referral systems, discharge plans, co-location of services and multi-disciplinary teams that may be implemented across different types of organisations and population groups.

Initiatives: Specific multidimensional programs, which are underpinned by a combination of different 'strategies', to improve the delivery of health services to a specific population group (eg. patients with chronic disease, the elderly). Examples include the Hospital Admissions Risk Program (HARP), Better Outcomes in Mental Health Initiative and Enhanced Primary Care (EPC) programs.

Both strategies and initiatives may be implemented across the continuum of care from health promotion and prevention to rehabilitation and palliative care, at the level of the system, organisation, provider and/or patient.

To further complicate our understanding of what is meant by integrated care, terms are often 'nested' within other broader terms. For example, **multidisciplinary care** may refer to a specific multidisciplinary team of health care providers working together; or a broader program that includes a multidisciplinary team. The multidisciplinary team may comprise members from within the same discipline; or include those from different medical (or non-medical) disciplines. Broader initiatives may vary substantially across all aspects, including their content (individual elements of the program), composition of providers, setting and target population/disease.

To determine which factors embedded in multifactorial programs were responsible for improved patient outcomes, a systematic review (AMSTAR rating: 8/11, **Box 1**) examined the effectiveness of different strategies for coordinating care in terms of patients' health and satisfaction.^{5,24} Findings from this review are discussed in more detail below (see **6**). In the limited scope of this review, it was not possible to undertake a similar analysis of factors pertaining to effectiveness of individual strategies within multifaceted initiatives; or to determine whether there were differential effects of such initiatives across settings and populations. However, we have endeavoured to identify the strategies and/or initiatives that have demonstrated evidence of positive outcomes for patients.

4.2 Care transitions across boundaries

Patient outcomes may be influenced not only by the performance of individual health care providers, but also by the functioning of the multidisciplinary team and broader organisational structures.²⁵ **Care transition** refers to the:

Set of actions designed to ensure the coordination and continuity of healthcare as patients transfer between different locations or different levels of care within the same location²⁶

At each transition, patients are at risk of experiencing an adverse event. For example, duplication and errors (adverse events), particularly medication discrepancies, may occur during these transition periods.^{27,28}

Communication failures occurring during the transition period may lead to delays in appropriate treatment and community support, additional primary health care or emergency department visits, further laboratory testing, replication of laboratory tests and avoidable hospitalisation²⁹. In a 2003 North American study, poor communication between hospital clinicians and the patient and/or the primary care physician was the most common cause (59%) of adverse events occurring at the time of discharge.²⁷

4.3 Key stakeholders in integrated care

A growing number of stakeholders may participate in the variant forms of integrated care, including those in primary health care, ambulatory care, acute care and social services.

Primary health care is "...the first level of contact of individuals, the family and community"³⁰; and **ambulatory care** involves health services that are community-based.

The main types of services and health care providers in Australian primary health care include:

- ⇒ General practice
- ⇒ Community health services (eg. alcohol and other drug services)
- ⇒ Private allied health services
- ⇒ Mental health
- ⇒ Aboriginal community controlled health services (ACCHS)
- ⇒ Diagnostic/screening (eg. radiology, pathology)
- ⇒ Rehabilitation and aged care
- ⇒ Medical specialists
- ⇒ Nursing and midwifery
- ⇒ Patient support organisations.

Acute care primarily involves health services that are provided in a tertiary care institution, such as a hospital.

Other services that may be integrated into the patient's journey include:

- ⇒ Social welfare
- ⇒ Transport services.

The availability of these services varies geographically across Australia.³¹

4.4 The Australian Context

The Australian population is culturally diverse and widely scattered: approximately 70% live in urban/metropolitan areas; 14% regional; 3% remote; 2.5% Indigenous; 24% migrant; and 16% speak English as a second language.³² Such diversity presents challenges for integrating services. For

Currently, there is no consistent approach to integrating services across primary health care or between primary health care and other health care sectors

example, the primary challenge in urban/metropolitan areas is to coordinate care “across a complex web of generalist and specialist services, many with poor knowledge of each other”.⁸ In contrast, the challenge for rural and remote areas is the provision and linkage of scarce services that are often separated by considerable distances.

In Australia, there are many initiatives, programs and activities to develop linkages between sectors of the health system. Some of these have been national and state initiatives, others are regional and community health services and/or health programs run by the Divisions of General Practice (DGP) at State/Territory or Division level. Such programs include GP education, programs to enhance communication, case conferencing, discharge and referral forms, liaison officers and formal shared care programs. Although many initiatives have been implemented, few have been rigorously evaluated³³ and there has been little overall system reform. In addition, a large proportion of coordination and integration of services occurs voluntarily at a local level; and often it is underpinned by memoranda of understanding between organisations, such as the DGP and Area Health Services.⁸ While some linkages are relatively well-established (eg. general practice referrals to medical specialists), others, such as relationships with community health, are poorly defined and arbitrarily organised.

In Australia, several factors impact upon the ability of services to successfully integrate:

- ⇒ Responsibility for funding health care is divided between the Commonwealth, State/Territory and local governments³⁴
- ⇒ Private and public sectors have different organisational systems and funding arrangements
- ⇒ Different professional cultures exist between large organisations (eg. government health services) and small primary health care organisations (eg. general practice); and lack of clear benefits for both parties⁵
- ⇒ There is an overall shortage of health care professionals, especially in rural/remote areas^{35,36}
- ⇒ There is an inconsistent approach to electronic medical records across sectors.⁸

While the DGP in many areas have developed arrangements to coordinate care between general practice and **community health**, the relationships are often hampered by differences in culture, organisational structure, remuneration of providers and understanding of roles.^{8,37} The financial constraints of community health organisations may also limit the extent to which they can collaborate with other health care sectors. In contrast, coordinating care between general practice and private **allied health care** providers has been facilitated by the introduction of Enhanced

Primary Care Medicare benefits for some allied health services for patients with chronic conditions who have been referred by their GP.³⁸

The relationship between PHC and **hospitals** is complicated by the split responsibility for funding between Commonwealth and State/Territory governments.³⁴ Local factors related to general practice, such as the quality and interoperability of information systems, organisational and administrative capacity and activities supported by Divisions influence the strength of relationships.³⁹ Activities that are organised locally through the DGP vary substantially in their coverage and effectiveness.

Social welfare is also funded by both Commonwealth and State/Territory governments, with many non-government organisations involved. Efforts have been made to improve coordination of services between social services and community health for the very old and the very young, particularly for those who are frail and/or disabled⁸. Other services that involve social welfare include early childhood and family services, child protective services and specialised services that provide support for at-risk pregnant women (eg. parenting programs and alcohol and drug treatment services). However, there is little evidence of coordination or integration of such programs with general practice; and less information about client outcomes related to integration of these services.

Coordination of care between the **public and private** systems is complex and has been identified as a problem causing anxiety for cancer patients who routinely require services (eg. X-rays, radiotherapy) that cross these boundaries.⁴⁰ Patients were often not aware that they were in private care until they received a bill.⁴¹

5 The Patient Experience

The notion of quality of patient care has been discussed at length. In 1972, Archie Cochrane⁴² wrote:

We all recognise quality when we see it and particularly when we receive it. In 'cure', outcome plays an important part in determining quality, but it is certainly not the whole story. The really important factors are kindness and the ability to communicate on the part of all members of the medical team. In 'care' (these factors) become very much more important

Patient-centred care is well-accepted as an ideal paradigm across health systems worldwide, with patients as the central focus of health care delivery as well as playing an active role in health care decisions.^{43,44} In practice, the needs of organisations and health care providers often take precedence. Access to well-coordinated and good quality health care is, however, critical to enhancing patients' understanding, control and self-management of their illness.⁴⁵

While patients' needs and values differ substantially, continuity of care, seamless transitions, and coordination and integration of care have been identified as important dimensions of patient-centred care. Eight broad dimensions identified by Endsley et al.⁴⁶ include:

- 1 Respect for their values
- 2 Information, communication and education
- 3 Access to care
- 4 Emotional support



- 5 Involvement of family and friends
- 6 **Continuity of care and seamless transitions**
- 7 Physical comfort
- 8 **Coordination and integration of care.**

From the patient's perspective, **integration** entails a continuum of intensity in linkages between one health care service and another, so that the experience of integrated care may vary across time. For example, a one-off referral from a GP to a specialist for an acute condition is a relatively 'loose' connection; whereas regular check-ups and tests across specialists and allied health professionals for monitoring and managing chronic conditions is a stronger connection.

Measurements of quality cannot be limited to data on patient experience, although they should be a central element³

Increasingly, patients' subjective experience of health care is recognised as a measure of health care quality⁴⁷. Patients assume that health care providers and organisations are technically competent and that basic standards of health care and safety are maintained.³ Patients also expect to have good access to health care, and that their views and preferences will be respected.

However, patients' preferences may not always align with good quality health care; their understanding of the risks and benefits of health care decisions may differ from those of health care providers; and patients' views on 'timely' access may be unrealistic in a resource-limited system. "Measurements of quality therefore cannot be limited to data on patient experience, although they should be a central element"³ of good quality care. Measures of patients' experience may be useful to supplement, rather than replace, clinical outcome measures. Studies that evaluate the impact of integrated services from the patient's perspective typically use patient satisfaction as a proxy measure of a program's efficacy. However, studies that rely primarily on measures of patient satisfaction should be interpreted with caution as patient satisfaction is prone to social approbation error (ie. desire to please the health care provider and to be seen as helpful and polite). In addition, the construct of satisfaction is largely undefined and data collection instruments in most studies are not standardised or validated.⁴⁸

The Australian Charter for Health Care Rights,⁴⁹ which was endorsed by COAG, may provide a useful framework for developing standards to measure some aspects of patient experience¹. More objective measures of quality of care may include length of wait times for appointments or provision of relevant patient information.⁵⁰ Although standardised, validated measures of patient experience exist, such as the Consumer Assessment of Healthcare Providers and System (CAHPS), they are seldom used in research studies.⁵¹

5.1 The Patient's Journey

Patients' journeys through the health care system vary substantially depending on a range of individual, cultural, geographic and illness-related factors. In addition, for patients with complex and/or long-term chronic illness, the severity of their illness determines the level of intensity of care they need. The 'Kaiser Triangle' (**Figure 5–1**) is a health service delivery model that recognises different levels of chronic care⁵² and stratifies patients according to need, with those at higher risk receiving more intensive care management.

¹ A review entitled *Patient experience of health care performance* (2009) provides more detail on measures of patient experience.

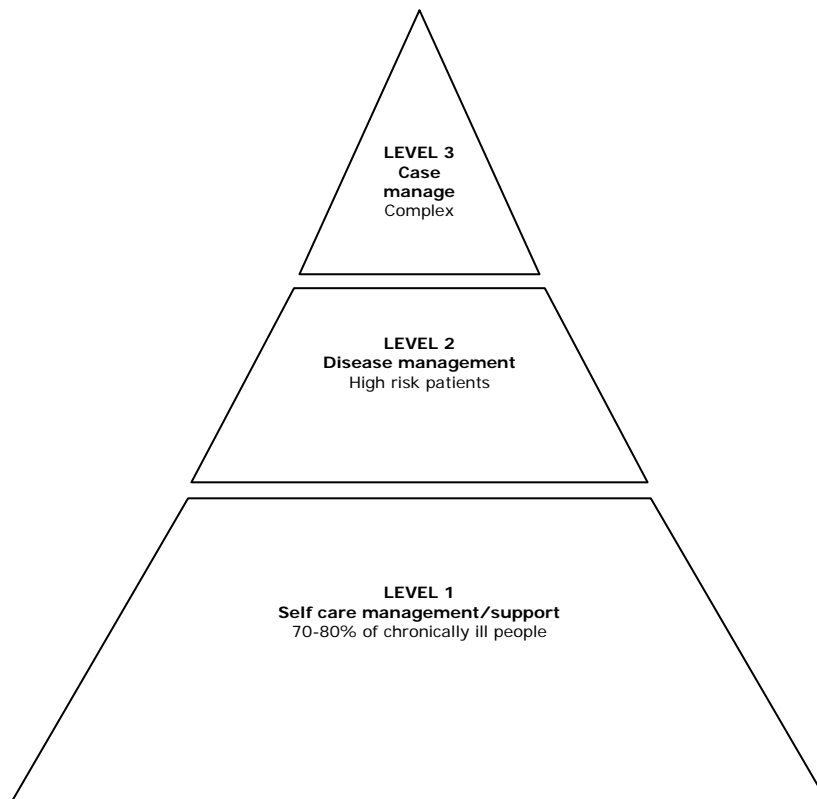


Figure 5–1 The ‘Kaiser Triangle’ shows different levels of chronic care⁵²

With support from health care providers, 70-80% of chronically ill people (and care-givers) are able to develop their knowledge, skills and confidence to manage their own care successfully (Level 1, Self-care management, **Figure 5–1**). Patients with a single complex condition or multiple conditions may be provided with care from a multidisciplinary team, based in primary or community care, using a disease-specific care pathway, with support and advice from specialists (eg. diabetes nurse educator, Level 2, Disease management). At the highest level of intensity, a smaller proportion of patients with complex and/or multiple long-term chronic conditions are at high risk of unplanned use of acute care. Coordination of care for these patients may span health and social services, involving on-going case management tailored to their needs (Level 3, Case management).

While some people go directly to an emergency department, patients’ first point of contact with the health care system is usually through general practice (and/or ACCHS in rural/remote areas). Generally acknowledged as gatekeepers to the health system, GPs have well-established networks through referrals to medical specialists.⁸ Of those referred to specialists, 63% reported that their GP helped them to choose a specialist and 81% said that their GP provided information about their care to the specialist. However, approximately 18% reported difficulties in the coordination of services related to their care.⁵³

Patients may need care for an indefinite period, such as those with chronic condition(s); or they may require temporary care, such as for rehabilitation, recovery from surgery, or palliative care. In both circumstances, patients often require care from more than one provider. For example, one study reported that patients with cancer had met an average of 28 doctors in the first year of

diagnosis.⁵⁴ Moreover, the patient may transition back and forth multiple times between providers and organisations.

A 2009 survey of patients' experiences of the health system in Australia reported that 24% of those aged over 15 years saw three or more health professionals in the previous year for a single condition.⁴¹ Of these, 61% had help to coordinate their care, mostly from GPs (54%) or specialists (31%) and this had helped to a large extent in 71% of cases. For 11% of patients, there were problems due to lack of communication. Overall, communication was better for people aged over 75 and worse for those with fair or poor health.

5.1.1 What can go wrong?

The importance of a seamless path through multiple health services and providers was demonstrated in a series of qualitative studies. Patients with a chronic illness reported a range of negative experiences in their care pathway.⁵⁵ Their experiences included:

- ⇒ Wasting time waiting for appointments
- ⇒ Having multiple appointments with different professionals on different days
- ⇒ Problems with transport to health services
- ⇒ Difficulties accessing health services
- ⇒ Rushed encounters that resulted in unrealistic self management plans.

Long wait times in the doctor's waiting room followed by a short office visit leads to poor patient satisfaction. However, patients are willing to wait longer if they get to spend more time with their doctor.⁵⁶ Open access scheduling, which is an element of the patient-centred medical home, is one strategy to address waiting times and reduce "no shows" (see **7.4.2**).

Different funding arrangements between sectors was identified as a key limitation to implementing integrated care that involved both hospital and community-based services²³ (see **7.2.2** for more detail on Enhanced Primary Care funding arrangements).

5.1.2 Does integrated care improve patients' outcomes?

In a review of studies,²³ integrated care for chronically ill patients demonstrated improvements in several outcomes for patients with Type 2 diabetes, chronic obstructive pulmonary disease and stroke, as shown in **Table 5–1**.

Table 5–1 Health outcomes for chronically ill patients in integrated care

Patient health outcomes in integrated care patients (vs. usual care) ²³	
Type 2 diabetes	<p>Significantly improved glycaemic control</p> <p>Greatest benefit in patients with poorly controlled HbA1c levels at baseline</p> <p>Improvement not sustained at long-term follow-up (18 months)</p>
Chronic obstructive pulmonary disease	<p>No significant improvement in respiratory function, depression, pain or quality of life</p> <p>Significant improvement in functional ability (duration of exercise, use of oxygen) and sleep quality</p> <p>Reduced fatigue and anxiety</p>
Stroke	<p>Improved quality of life</p> <p>Earlier return to independence</p>

Community-based nurse-led stroke care that includes GP liaison was identified as an appropriate model of care.²³ Given that integration of health care services is important to most chronically ill patients, the role of **caregivers** also needs to be considered and incorporated into models of care.

5.2 Strategies to improve patients' journeys

A survey of 78 950 inpatients, day patients, non-admitted emergency patients, outpatients and community health patients examined their experiences of health services in NSW.⁵⁷ Overall, 72.7% of patients gave positive responses ("yes always") related to coordination of care and 64.1% gave positive scores for continuity and transition. Indicators of continuity and transition were:

- ⇒ Discussed purpose of home medications
- ⇒ Discussed danger signals to watch
- ⇒ Discussed medication side effects
- ⇒ Discussed when to resume normal activities
- ⇒ Staff explained when patients were allowed to go home
- ⇒ Knew who to call for help after leaving.

In terms of coordination and integration of care, patients reported feeling vulnerable and powerless coping with illness; and they identified three areas in which proper coordination of care could reduce their feelings of vulnerability:

- ⇒ Coordination of clinical care
- ⇒ Coordination of ancillary and support services
- ⇒ Coordination of front-line patient care.

In terms of continuity and transition, patients expressed anxiety about their ability to manage their illness after discharge; and they identified three areas for improvement to meet their needs:

- ⇒ Provide clear, detailed information regarding medications, physical limitations, dietary needs and other factors related to self-care
- ⇒ Coordinate and plan ongoing treatment and services after discharge
- ⇒ Provide information regarding access to clinical, social, physical and financial support on a continuing basis.

Overall, those who experienced better coordination and continuity were older people, English speakers, non-Aboriginal people and public patients.

A number of recommendations regarding coordination and integration of care was developed by the Consumer Health Forum (CHF) in 2009 following community consultation to identify gaps and issues in the quality use of pathology.⁵⁸ As a result of a consultation process, recommendations included:

- ⇒ Development of resources to enhance self management skills
- ⇒ Prompt access to results and explanation of their meaning
- ⇒ A Medicare item number for a consultation with a GP to receive pathology results
- ⇒ More widespread point of care testing
- ⇒ Expansion of mobile collection services in rural and remote areas
- ⇒ Availability of telemedicine services for receipt of pathology results
- ⇒ Promotion of eHealth to consumers as a way of improving communication, efficiency, safety and quality.

Efforts to integrate services and improve outcomes for patients have led to the development of a number of tools, strategies, programs and interventions to improve patients' pathway across the

traditional boundaries within the health care system. The following section describes some of the key **strategies** and **initiatives** of integrated care and synthesises the relevant evidence of their effectiveness in terms of patients' outcomes and experience.

6 Patients' outcomes and experience of integrated care strategies

While integration and integrated care have been discussed at length in the literature, there is a paucity of good quality studies that have evaluated the effectiveness of different strategies and initiatives to integrate health care services, particularly with respect to assessing patients' outcomes and experiences. Moreover, a fundamental shortcoming in the literature is the scarce use of standardised validated measures of effectiveness.⁹

Overall, the available evidence indicated that integrated care interventions improved some patient outcomes in different conditions across a broad spectrum of clinical settings.⁹ There was consistent evidence of benefits for specific patient populations, including those with diabetes, stroke, heart failure, depression and other mental illnesses. In particular, **multidisciplinary teams** and **case management**, which are common elements in integrated care initiatives, led to reduced mortality and dependency in stroke patients; reduced mortality and hospital (re)admissions in heart failure patients; improved continuity of services for mentally ill patients; and reduced clinical symptoms for terminally ill patients.⁹ Evidence was less consistent in other patient populations, such as those with complex comorbidities, the frail elderly and disabled, and patients transferring between care settings. While many models of integrated care have been implemented in these populations, the heterogeneity across studies makes comparative assessment unreliable. Therefore, this review provides a summary of available research for the different strategies and initiatives, without comparison between them.

In addition, it must be noted that:

The lack of consensus about definitions and measures of effect, and the scarcity of data related to cost-effectiveness of different initiatives, limits the ability to determine the value of particular integrated care initiatives⁹

Several existing reviews, including a comprehensive review of systematic reviews,⁹ two systematic reviews^{5,23} and a rapid review³⁷ evaluated the effectiveness of several integrated care approaches. Strategies and initiatives to facilitate integration embedded in these approaches are listed in **Table 1–1** and **Table 1–2**,² respectively. In terms of patient outcomes and experience, there were mixed results, with improvements in some, but not all measured outcomes. Evaluations of the effectiveness of these strategies included four main types of measures:

- 1 Clinical: glycaemic control, blood pressure, cholesterol level
- 2 Process of care: recording clinical parameters
- 3 System: specialist referrals, hospitalisation rates, costs
- 4 Secondary measures: patient self-reported measures of function, quality of life, experience and satisfaction with care, compliance, knowledge.

A systematic literature review conducted by the Centre for Primary health Care and Equity, University of New South Wales⁵ identified 27 individual strategies or elements related to integrated

² It should be noted that these tables contain the strategies and initiatives identified in our literature searches and are not intended to represent a complete list of those that have been implemented in primary health care.

care. Types of integrated care strategies that demonstrated the highest proportion of significant positive outcomes for patients were those that **enabled strong relationships between service providers** (Table 6–1), including: co-location between PHC and service providers, case management, multidisciplinary team involving PHC and assigning a patient to a specific PHC provider.⁵ Powell Davies et al. (2006) concluded that the most effective types of strategies for improving patients' health outcomes were those that "provide the structures to support coordination: strengthening the relationship between service providers, coordinating clinical activities and providing tools or systems to support collaboration".⁵ Individual strategies and initiatives related to these strategy types are provided in Appendix Table 9–2.

Table 6–1 Types of integrated care strategies and proportions of studies reporting positive outcomes for patients

***	Patient health outcomes		Patient satisfaction	
	N*	%**	N*	%**
Types of integrated care (No. of studies)				
<i>Communication and support for providers and patients</i>				
Support for clinicians (N=33)	16 (28)	57.1	8 (14)	57.1
Communication between service providers (N=56)	26 (47)	55.3	12 (22)	54.5
Support for patients (N=19)	6 (17)	35.3	3 (6)	50.0
<i>Structural arrangements to support coordination</i>				
Relationships between service providers (N=33)	19 (29)	65.5	8 (12)	66.7
Coordination of clinical activities (N=37)	19 (31)	61.3	4 (12)	33.3
Systems to support coordination (N=47)	23 (38)	60.5	7 (19)	36.8
All studies (N=80)	36 (65)	55.4	14 (31)	45.2

* Number of studies with statistically significant positive findings (Number of studies that recorded positive health, patient or economic outcomes)

** The proportion of studies measuring outcomes (health, patient, economic) that recorded a statistically significant result.

*** Modified from Powell Davies et al. (2008)²⁴.

Strategies were not mutually exclusive and some studies used more than one type of integration strategy. Communication between service providers and systems to support coordination of care were the most commonly used strategies overall. In addition, strategies were used differentially across health care issues. For example, communication between service providers was the most common strategy relating to mental health and aged care issues, whereas systems to support coordination of care was the most commonly used strategy relating to chronic disease management. Most studies examined coordinated care within PHC or between PHC and medical specialist services or hospitals; and they primarily related to chronic disease, mental health and aged/palliative care.²⁴ The least effective strategy for improving health outcomes was support for patients, which comprised patient education and support to improve coordination of services.

Overall, findings showed that more than 50% of studies reported better patient health outcomes as well as increased patient satisfaction when strategies included:

- ⇒ Support for clinicians
- ⇒ A specific communication strategy
- ⇒ Enhanced relationships between service providers.

While patient health outcomes were also improved in more than 50% of studies that included coordination of clinical activities and/or systems to support coordination, only around one third of patients reported significant satisfaction with this type of integrated care.

The largest proportions of patients that showed improved health outcomes were in integrated care programs that included structural arrangements to support coordination and systems to improve communication. Recommendations from the systematic literature review²⁴ included:

- ⇒ Developing networks and arrangements to improve access to allied health services
- ⇒ Strengthening multidisciplinary teams, including practice nurses, in chronic disease management
- ⇒ Co-locating general practice and other services and investing in systems to support coordination of care
- ⇒ Strengthening the link between patients with complex needs and primary care providers
- ⇒ Developing stronger networks of service providers
- ⇒ Developing tools (eg. common assessments, care plans, decision support) that can be used across services
- ⇒ Developing systems for communication and sharing information
- ⇒ Developing structures at regional level to support coordination of care.

Table 6–2 identifies the specific PHC activities and Australian examples of initiatives of integrated care that provide structure to support integrated care.

Table 6–2 Strategies that provide structure to support integrated care

Type of strategy	Specific activities involving PHC	Examples in Australia
Coordination of clinical activities	<ul style="list-style-type: none"> ▪ PHC consultations coordinated with those from other providers in/outside PHC, including joint consultations ▪ Shared assessment ▪ Arrangements for accelerated access to a PHC service/for PHC patient to non-PHC service 	<ul style="list-style-type: none"> ▪ Enhanced Primary Care (EPC) ▪ Allied Health and access to Psychological Services
Relationships between service providers	<ul style="list-style-type: none"> ▪ Co-location between PHC and other service providers ▪ Case management ▪ Multidisciplinary team ▪ Assigning a patient to a particular PHC provider 	<ul style="list-style-type: none"> ▪ Practice nursing ▪ More Allied Health Services (MAHS) program ▪ Some projects involving co-location
Systems to support the coordination of care	<ul style="list-style-type: none"> ▪ Shared care plan ▪ Decision support shared by PHC clinicians and other clinicians ▪ Pro formas ▪ Patient-held record ▪ Information or communication systems ▪ Shared records ▪ Register of patients 	<ul style="list-style-type: none"> ▪ Health Assessment in the elderly, Care plans and Team Care Arrangements ▪ Common guidelines for some chronic conditions ▪ Care plan templates

Modified from Powell Davies et al. (2006)⁵

In general, in the few studies that examined costs (28/85 studies, 33%), information related to the costs of integrated services was incomplete; studies were poor in quality; and most lacked robust economic evaluation.⁵ Less than 20% of studies reporting economic outcomes found a significant positive result. Negative outcomes were reported in two studies of strategies to improve communication and two studies to coordinate clinical activities.

The following section is organised into the two types of strategies as shown in **Table 1–1** (using the framework devised by Powell Davies et al.⁵): those relating to **communication and support for patients and providers**; and those relating to **structural arrangements that support integration**.

6.1 Communication and support for providers and patients

Some strategies to improve integrated care focused on the communication between health care providers (**Table 1–1**) in different areas of the health system and support for providers (continuing medical education, case conferencing). Others involved patients in terms of enhancing their understanding of their illness, and participating in decisions about their health (patient education, health literacy, self-management, reminders and prompts and patient-held records).

6.1.1 Continuing Medical Education (CME)

Key points

CME that is delivered interactively in small groups, tailored to a specific problem, combined with other approaches and focuses on simple, small behavioural changes may lead to improved patient outcomes.

Continuing Medical Education (CME) consists of:

... educational activities that aim to maintain, develop, or increase the knowledge, skills, and professional performance of practitioners to provide services for patients, the public, or the profession⁵⁹

CME, which includes conferences, meetings, seminars, workshops and symposia, varies substantially in intensity (frequency and duration of sessions), complexity (from didactic lectures to interactive workshops) and content (targeting specific condition or population).

While the quality of evidence is typically poor, findings from several systematic reviews on the effectiveness of CME consistently report that CME appears to be effective at increasing practitioners' knowledge, skills and behaviours and patients' health outcomes, at least to some degree.^{60,61,62,63,64} For example, a meta-analysis of 31 studies of 61 CME interventions reported an overall small improvement for patient outcomes.⁶¹ Where more complex practitioner behaviour change was needed, CME was likely to work better in combination with other interventions.⁶⁰ Evidence from the better quality studies indicates that both practitioners and patients benefited more when CME contained the following elements⁵⁹:

- ⇒ More interactive (less didactic) format using a variety of methods
- ⇒ Small groups of practitioners from the same discipline, with face-to-face sessions
- ⇒ Simple (less complex) content, which requires smaller magnitude of change
- ⇒ More focused on specific problem (tailored rather than generic)
- ⇒ Additional interventions, such as feedback on performance
- ⇒ Motivated practitioners (self-selected professionals may be more motivated to change).

CME that requires only modest time, financial or staff resource commitments may be more successful for health care providers working in a 'patient-rich, time-poor' environment.⁵⁹

6.1.2 Case conferencing

Key points

Case conferences improved patient and caregivers' awareness of services and reduced hospitalisations

Case conferences involve multidisciplinary meetings with health professionals for planning activities across the continuum of care for patients with chronic and complex care needs.

Tieman et al. (2006)²³ examined the effect of case conferencing on care planning for palliative patients. Results showed some positive benefits for patients including: assistance in discharge from hospital; identification of medication-related problems; increased patient and caregiver awareness of services; and reduced planned and unplanned hospitalisation. However case conferences did not reduce the length of hospital stay or influence quality of life and were most successful in areas that were influenced directly by the PHC team.

In contrast, a recent RCT found some improvement in quality of life scores for palliative care patients whose care had included case conferences, possibly due to improved clinical relationships and the design of emergency care plans that could be implemented at times of clinical deterioration.⁶⁵

6.1.3 Patient education, health literacy and self-management

Key points

Health literacy increased patients' understanding of their condition and strengthened their engagement in their own health care

Decision-making aids increased patients' knowledge, led to more positive experience and appropriate use of health services

Self-management coaching led to increased knowledge, more positive experience, more appropriate use of health services and improved health behaviour and functional status

Patient-focused interventions are "those that recognise the role of patients as active participants in the process of securing appropriate, effective, safe and responsive healthcare".⁶⁶ A survey of adults' literacy and life skills, however, revealed that 47% of adult Australians had less than the minimum level of skill needed to locate, use and understand health care information.⁶⁷

Some integration initiatives have made an effort to engage patients in their own health care by improving⁶⁶:

- 1 Health literacy:** provision of printed materials and internet health information; targeted mass media campaigns and tailored approaches for disadvantaged groups with low literacy
- 2 Clinical decision-making:** decision aids and question prompts for patients; enhanced communication skills for health care providers
- 3 Self-care:** self-management education; self-help groups and peer support
- 4 Patient safety:** infection control; adherence to treatment; monitoring adverse drug events.

A review of systematic reviews identified 129 systematic reviews that examined the four factors listed above and measured patient outcomes in terms of the effects of interventions on their

knowledge, experience, use of health services, behaviours and health status.⁶⁸ The review concluded that engaging patients in their own decision-making can lead to improved health literacy; enhanced experiences with care resources, better health behaviours and improved health. **Table 6–3** provides a summary of findings from the systematic reviews.

Similarly, Coulter and Ellins' synthesis of findings from 25 systematic reviews reported a general improvement in patients' knowledge, experience and use of appropriate services in patients who received a health literacy intervention. However, of the few studies included in the review that examined health behaviour and health status, most showed mixed results.

Table 6–3 Summarised findings of systematic reviews on effectiveness of strategies to inform, educate, and involve patients in their treatment⁶⁸

Topic	No. of reviews	Effects on patients' knowledge			Effects on patients' experience			Effects on use of health services			Effects on health behaviour and health status		
Health literacy	25	N = 13 reviews			N = 16 reviews			N = 14 reviews			N = 13 reviews		
		+ve	-ve	mixed	+ve	-ve	mixed	+ve	-ve	mixed	+ve	-ve	mixed
		10	1	2	10	1	5	9	2	3	4	3	6
Clinical decision making	22	N = 10 reviews			N = 19 reviews			N = 10 reviews			N = 8 reviews		
		+ve	-ve	mixed	+ve	-ve	mixed	+ve	-ve	mixed	+ve	-ve	mixed
		8	0	2	12	1	6	6	0	4	2	5	1
Self care and self management of chronic disease	67	N = 19 reviews			N = 40 reviews			N = 25 reviews			N = 50 reviews		
		+ve	-ve	mixed	+ve	-ve	mixed	+ve	-ve	mixed	+ve	-ve	mixed
		19	0	0	24	5	11	14	2	9	39	6	15
Patient safety	18	N = 4 reviews			N = 1 review			N = 3 reviews			N = 17 reviews		
		+ve	-ve	mixed	+ve	-ve	mixed	+ve	-ve	mixed	+ve	-ve	mixed
		4	0	0	1	0	0	2	1	0	8	0	9

Modified from Coulter and Ellins (2006)⁶⁸

Chronically ill patients who need to navigate the health system on a regular basis are often ill-equipped to do so. A '**coaching**' intervention provided chronically ill patients with support and tools to enhance self-management as they transited across different sectors of health care.⁶⁹ An investigation of their experiences found that patients perceived a more caring relationship with their 'coach', which led to enhanced self-management.

Overall, although there were few well-designed good quality studies, findings consistently showed support for improving patients' health literacy and strengthening their engagement in their own health care. Thus, patients with acute or chronic illness are likely to benefit from a greater understanding of their condition and how it can be improved; and better knowledge about the use of services across different sectors in the health care system.



6.1.4 Reminders and prompts

Key points

Some evidence showed that **reminders** may improve patients' health status and/or medication compliance.

Reminders are interventions that provide an evidence-based summary of key clinical information to aid practitioners' decision-making and prompt them to perform a clinical action or record patient information. Examples include reminders for screening (eg. PAP smear) and chronic disease management (eg. HbA1c check for patients with diabetes). As a tool to facilitate integration of services, reminders and prompts support practitioners' decision-making and facilitate communication with patients and other health care providers.

While a number of systematic reviews have evaluated the effectiveness of prompts and reminders within a clinical decision support system, most have focussed on the process outcomes related to prompting practitioners' behaviour. Few studies measured the impact of provider reminders on patient health outcomes and only 13% of those that did documented significant improvements in patients' health status or compliance with medication or medical advice.⁷⁰

6.1.5 Patient-held records

Key points

While physiological outcomes were unchanged, patients carrying **patient-held records** perceived increased satisfaction with care, more motivation for self-care, better understanding of their condition and increased confidence in health care providers that gave them updated printouts of consultations.

Patient-held records comprise full details or a summary of a patient's records; and may be in hard-copy or electronic "smart card" versions. Typically, patient-held records contain diagnoses, details of treatments and other health problems or advice and other relevant health information. Patients have full access to the contents of hard-copy patient-held records, whereas more recent "smart card" versions require a designated card reader.

The Portable Health File⁷¹ is a type of patient-held record, which is used to exchange patients' information between GPs and specialists. In a study of 76 patients, 62 GPs and four specialists, patients carried their own medical records and asked health care professionals to complete the record after each consultation. Results showed that 95% of patients liked carrying their own record and 80% would recommend it to others. While most providers were willing to fill in the record, 15% of GPs were concerned about confidentiality and accuracy and 13% did not wish to participate. Patients who took greater responsibility and were active in decision-making related to their own health care were more receptive to carrying their records.⁷²

A recent good quality systematic review (AMSTAR rating 9/11, **Box 1**) evaluated 14 studies that implemented patient-held records for patients with chronic disease.⁷³ Patient outcomes included the usefulness of patient-held records, the quality of information exchange and clinical/physiological indicators. Findings showed no significant advantage to using patient-held records. However, due to the high risk of bias and overall poor quality of reviewed studies, these results must be interpreted with caution. Further good quality studies are required to properly evaluate the effectiveness of patient-held records.

A variation on patient-held records is a patient-held summary of their clinical encounter, including details of their condition, test results, medications, care plans and follow-up appointments.⁷⁴

Patients perceived an improved understanding of their treatment, increased motivation to adhere to a care plan, greater satisfaction with their care and more confidence in their health care provider when they received clear, concise and illustrated printouts after a clinical consultation.

6.2 Structural arrangements to support coordination (integration)

Some strategies to improve integrated care focus on the structural arrangements that are needed to support integration of services across different areas of the health system (**Table 1**), including strengthening the networks, relationships and collaborations between providers. Typically, this type of strategy requires an organisational approach and may involve incorporating specific procedures into a records/office system.

Fundamental elements of this type of strategy are access to shared information, the use of shared decision-making and standardisation of common procedures, including referrals and discharge planning. Patients' health care information is not always shared among the multiple professionals that treat an individual patient.⁷⁵ Moreover, transitions between health care providers, such as from hospital to community care, are the most vulnerable times for patients in terms of lapses in coordination, which may lead to adverse events⁷⁶. Lack of continuity in information may result in unnecessary duplication in services, medication errors and/or inappropriate care plans.¹⁶

6.2.1 Multidisciplinary teams

Key points

Multidisciplinary teams may improve patients' control of symptoms and pain; and increase satisfaction with care

Advance practice nurses may reduce burden of coordinating care by freeing up GPs for clinical activities

Almost by definition, strategies to integrate services are likely to include a multidisciplinary team, which involves collaborations of providers, including doctors, nurses and allied health care professionals, working together under appropriate leadership to improve patients' outcomes. In some areas, the team may include other professionals, such as social workers or chaplains (eg. palliative care).

While the multidisciplinary collaborative care approach led to mixed effects overall, outcomes for patients tended to be more positive compared to a non-integrated usual care approach. A systematic review of existing reviews (AMSTAR rating: 6/11, **Box 1**)²⁵ reported overall improvement in patient outcomes associated with interventions to enhance collaboration in multidisciplinary teams. In randomised controlled trials (RCTs), palliative care teams that used a specialist coordinated approach resulted in improvements in control of symptoms, pain, anxiety and patient and family satisfaction compared to the control (usual care) group. In addition, studies that examined **costs** reported trends towards reductions in length of hospital stay without changes in mortality, and similar or lower costs compared to controls.

Studies that examined **costs** reported savings, without change in mortality or morbidity. Overall, most patient outcomes were improved and cost savings were reported in groups that used multidisciplinary teams.²⁵ However, outcomes for patients with chronic conditions are sometimes equivocal and may reflect how well health care providers work together to achieve outcomes.¹²

A number of initiatives using multidisciplinary teams have been implemented in the US to integrate services and coordinate care for patients with asthma.⁷⁷ **Table 6–4** provides examples of initiatives that involved multidisciplinary teams for asthma care and a variety of individual strategies to

support the teams. For example, the Collaborative Intervention Demonstration Project in Washington used an electronic patient tracking system, patient and provider education and community-wide involvement to bridge the gap between evidence-based guidelines for optimal asthma care and current practice. Other initiatives include the use of practitioner ‘champions’ and nurse practitioners to engage health care providers and community stakeholders; focus groups and key informant interviews to identify community needs; a “Link Line” for triage and to facilitate coordinated care; and a home care assessment and education service (eg. Smokeless Homes project). Rosenthal et al. (2006) describe these initiatives in more detail.⁷⁷

Table 6–4 Initiatives using multidisciplinary teams for asthma care and strategies to support integrated care

Examples of Initiatives using multidisciplinary teams ⁷⁷	Strategies to support multidisciplinary teams
Alianza Contra el Asma Pediátrica en Puerto Rico (the ALIANZA), San Juan, Puerto Rico	<p>Steering committee set goals and developed relationships with community health and other stakeholders</p> <p>Nurse care coordinator established in community clinic:</p> <ul style="list-style-type: none"> • Referred children to primary health care providers for evaluation • Coordinated care, including education, medication, equipment (peak flow meter, nebuliser)
DC Asthma Coalition (DCAC), Washington, D.C. Collaborative Intervention Demonstration Project	<p>Multidisciplinary team of doctors, nurses, community health clinics, hospital emergency departments, pharmacists, school nurses, day care workers, family caseworkers, environmental specialists and DCAC community health workers</p> <p>Collaborative case management, including care protocols and guidelines for practitioners; and inform policy-makers about management of resources in the community</p> <p>Data-sharing protocols</p> <p>Electronic Public Health Utility (PHU) to link providers for real-time data sharing and care coordination; and enable tracking of patient care</p>
Consortium for Infant and Child Health (CINCH), Hampton Roads, Virginia	<p>Nurse asthma educator communicated with and trained providers</p> <p>Community health educator coordinated educational and outreach services to schools, faith-based groups, community based organisations and public housing authorities</p> <p>Education and training to doctors and nurses</p>

Advanced-practice nurses (for more detail see **6.2.7**) or other suitably trained staff may play a valuable role working as part of a ‘teamlet’ with the PHC provider to handle all actions associated with care coordination, such as arranging tests, referrals and following up on paperwork.¹⁶ Given that GPs cannot provide all the recommended preventive services to their patients in a typical working day,⁷⁸ the ‘teamlet’ model may also address the limitations of the 15-minute consultation.

6.2.2 Care plans

Key points

Care plans require active coordination and involvement of different disciplines

In general, a care plan is a 3-step model of care³, which involves:

- 1 Assess and plan:** An assessment of the physiological, psychological and social factors predisposing, precipitating, perpetuating and/or protecting against a health problem; consultation with the patient and/or caregiver; discussion about referral and treatment options; and setting goals
- 2 Provide and/or refer for appropriate treatment and services:** Arrange referrals, treatment, and support services; provide patient education; document actions; and provide patients with a copy of the care plan
- 3 Review and manage as required:** Review patient's progress against the goals, modify the plan as required, and provide additional patient education as needed.

Tieman et al. (2006)²³ examined the outcomes of multidisciplinary care planning for four groups: the frail elderly, and those with diabetes, chronic obstructive pulmonary disease and stroke. Care planning was frequently implemented as one component of a multifaceted program. While the review found that coordination improved outcomes for patients, variation in study design, populations and interventions limited the validity of comparisons. The most critical factors for success were identified as:

- ⇒ Active coordination – positive interaction between participants, including team members, case conference group, liaison for care planning (eg. between hospital discharge officer and GPs)
- ⇒ Participation of many disciplines – different perspectives, methods of inquiry and responsibility resulted in better identification of potential needs as well as more comprehensive response to needs.

More details on the use of care plans can be found in Enhanced Primary Care (EPC) program section below.

6.2.3 Case management

Key points

Case management improved clinical outcomes, quality of life and functional status; and reduced hospitalisations in patients with chronic heart failure

Case conferences improved patient and caregivers' awareness of services and reduced hospitalisations

Health literacy increased patients' understanding of their condition and strengthened their engagement in their own health care

Decision-making aids increased patients' knowledge, led to more positive experience and appropriate use of health services

Self-management coaching led to increased knowledge, more positive experience, more appropriate use of health services and improved health behaviour and functional status

Case management, which also includes a range of patient-centred multidisciplinary services, involves coordination and follow-up of medical care that is managed by a single designated health care provider. Activities include an initial assessment, development of an individualised care plan, coordination of services to implement the plan, review and monitoring of patient's progress to

³ Adapted from AGPN's "Better Access to Mental Health Care Orientation Manual"⁷⁹.

assess the effectiveness of the plan and regular adjustment of the care plan as needed. It may include face-to-face encounters as well as other forms of communication.

A case management model was identified as the most promising way to promote continuity and coordination and minimise the risk of diffusion of responsibility across providers.⁸⁰ However, it was also recognised that case managers often have heavy patient loads that are distributed over large distances with dispersed resources, a lack of specialised services and few support structures.

Wensing et al. (2006) evaluated several reviews that focused on integrated care services using a case management (or disease management⁴) model. Overall, case (and disease) management led to a variety of patient outcomes, including:

- ⇒ Improved clinical outcomes in patients with heart failure, asthma, diabetes and geriatric conditions
- ⇒ Improved quality of life and functional status in patients with heart failure
- ⇒ Reduced hospitalisation, but no reduction in all-cause mortality in ambulatory patients with heart failure.

6.2.4 Shared information systems and decision-making

Key points

Few studies assessed patient outcomes associated with the use of **shared information systems**.

Computerised decision support systems for prescribing resulted in reduced medication errors and adverse events.

Models of integrated care typically propose that health care professionals from different organisations and disciplines need to share information about patients' health care in order to provide high quality, coordinated health care for a patient. **Electronic health record systems** have been proposed as a key component of shared information systems.⁸¹ **Electronic health records** are central to the functioning of several successful models, such as the Kaiser Permanente, Veterans Administration and patient-centred medical home models in the USA (see **7.4.1** for more details).

There is an extensive literature pertaining to the rationale for electronic health records and there is substantial variability in the way they are structured, used and shared.⁸² However, evidence related to their impact on patient outcomes is often lacking. In addition, a number of challenges remain, including the availability of funding to establish an electronic record system and concerns about privacy. At a more pragmatic level, the standardisation of processes and interoperability of systems across organisations and jurisdictions needs to be resolved.

Although interoperable (compatible) electronic health records will greatly improve information availability at the point of care, they will not ensure that care is integrated⁸³.

Given the extent of the literature, inconsistencies in use and structure of electronic health records and complexities of implementing them, a comprehensive evaluation of electronic health records, particularly in terms of their impact on patients, is beyond the scope of the current review.

To facilitate communication and information sharing, the Australian Team-Link study assessed the effectiveness of an intervention to improve teamwork among GPs, their staff and allied health

⁴ In contrast to case management, which has a more patient-centred focus, disease management focuses on reducing the impact of a particular disease and improving the quality of life and wellbeing in patients with a specific chronic illness.

professionals.⁸⁴ One of the key elements of the intervention was an enhanced information sharing arrangement, using three-way communication via phone between the GP, patient and allied health professional. A qualitative evaluation of the study reported evidence of increased patients' empowerment and participation in their own care.⁸⁵

Decision-making systems, which provide practitioners with key clinical information and are based on protocols or clinical practice guidelines, aim to assist providers to make optimal health-related decisions. In terms of shared decision-making, while one study showed that some patients preferred to defer all decision-making to the expertise of their doctor, most expected GPs to provide information related to their condition and prescribe medications. Such information contributed to their ability to manage their illness.⁸⁶ However, patients were less likely to consider **pharmacists** as part of the joint decision-making, except in the area of asthma management.⁸⁷ Patients with asthma expected the pharmacist to provide information about asthma, medications, lung function testing, asthma monitoring and inhaler technique. Patient interviews revealed overall satisfaction with a dedicated pharmacy-based asthma service.⁸⁷

Of the few systematic reviews that included patient outcomes in their evaluation of the effectiveness of decision support systems, most reported small or non-significant improvements in some patient outcomes. The most consistent findings related to practitioners' prescribing behaviour, whereby computerised decision support systems resulted in significant reductions in medication errors and adverse drug events.^{25,70}

6.2.5 Co-location

Key points

Co-location of PHC and Mental Health services has led to reductions in hospital length of stay and patients' perceptions of improved quality of care

While patients appreciated the convenience, immediacy of services and easier access to consultations, **co-location** alone, without effective communication and information exchange between providers, may be insufficient to improve patient outcomes.

Health care services may be located within or adjacent to a PHC, hospital or community care facility. The type of central organisation and population it serves is likely to determine the mix of services provided. For example, preventive, diagnostic and treatment services were co-located at a community-based site to deliver services to injecting drug users,⁸⁸ whereas paediatric and psychiatric services were co-located within a general practice for the identification and treatment of behavioural disorders in children.⁸⁹

One systematic review (AMSTAR rating 8/11, **Box 1**) reported significant improvement in patients' health outcomes when PHC was co-located with other service providers.⁵ However, another review showed no significant improvement in older patient outcomes for co-location of multidisciplinary teams.²³ Findings from a comparative study also revealed that co-location of services did not lead to significant differences in patient outcomes compared to a traditional non-integrated method of service delivery.⁹⁰ "The initial stages of the process of seeking help and being assessed for a service may have improved through better communication, understanding and exchange of information amongst different professional groups", but simple co-location was insufficient to improve outcomes for older people. Interviews of elderly participants revealed that:

They had little interest in who organised or delivered their services as long as they received what they felt they were entitled to⁹⁰

The most important factor for this population of elderly patients was the quality of the relationship they experienced with the home care worker.

Spatial co-location is one dimension of the White River Junction Veterans' Administration model of co-located collaborative care.^{91,92} Specifically, the model involves locating a psychologist and psychiatrist (or advanced-practice nurse) within the PHC, using patient-friendly assessment technology, a problem-focussed interview approach and open access for patients. After six years, there was an overall higher level of engagement in treatment when patients were treated for mental health conditions within the primary care setting, compared to those that were referred to separate mental health services.⁹² An evaluation of outcomes demonstrated a number of improvements, including:

- ⇒ Reduced wait times for new appointments (from 6 weeks to minutes)
- ⇒ No show rate reduced from 38% to zero for new patients
- ⇒ 150% increase in the number of patients receiving care when requested/referred (previously many patients did not attend consultations that were scheduled a long time ahead)
- ⇒ Enhanced patient (and staff) satisfaction
- ⇒ Increased adherence to recommended treatment for depression.

Another similar model has been successfully adapted to the needs of the local environment in Saint Louis⁹³ and other locations across the US.⁹² It is recognised, however, that the Veterans Administration model involves patients who remain quite stable within the system, without changing their health insurance plan; and this is not typical of the US health system in general.

In a retrospective analysis of audited data, co-location of geriatric and psychogeriatric services at Bankstown in NSW resulted in reductions in hospital length of stay and improved psychosocial performance for patients compared to traditional care.⁹⁴

Co-location was part of the Brisbane South Centre for Health Services Integration (BSCHSI) initiative that aimed to integrate health services across three different organisations.⁹⁵ The approach included integration across four key areas: undergraduate and postgraduate multidisciplinary education; clinical interaction between organisations/groups; information technology and information management; and governance. While evaluation of co-location revealed largely positive views for health care providers, patients' perspectives were not solicited.

In another model of co-location, a community mental health employee was "out-stationed" in a private paediatric practice.⁸⁹ Patients reported experiencing greater convenience, immediacy of services and easier access to psychiatric consultations. There was also a perceived increase in follow-up to recommended mental health services and enhanced communication, which was perceived as better quality of care.

Consumers also found that pharmacies, especially those **co-located** with GPs, were easier to access and less stressful compared to a doctor's surgery; and the verbal and written information from a pharmacist was in more user-friendly language.⁹⁶

Overall, more rigorous studies are needed to fully evaluate the benefits of co-location in terms of patients' experience.



6.2.6 Shared care

Key points

Shared care led to mixed results for patients, with some improvements in medication prescribing, but no consistent improvements in health outcomes, hospitalisations or satisfaction with treatment

Patients in the **Sharing health care initiative** project reported more confidence in communicating with health care providers; and they experienced more personal, less hurried consultations

Shared care has been defined as “the joint participation of primary care physicians and specialty care physicians⁵ in the planned delivery of care, informed by an enhanced information exchange over and above routine discharge and referral notices”.⁹⁷

Many shared care initiatives between GPs and specialists or specialist services have been established in Australia in mental health, maternity care, chronic disease and cancer care; and many of these are facilitated through the DGP network (see **7.2** for more examples).

A good quality systematic review (AMSTAR rating 9/11, **Box 1**) of the effectiveness of shared care for chronic disease^{97,98} found mixed results related to patient outcomes. While there was a significant improvement in prescribing, there were no consistent improvements in physical, mental health or psychosocial outcomes, hospital admissions or satisfaction with treatment.

The *Sharing Health Care Initiative* funded eight demonstration projects that aimed to:

- ⇒ Improve the health-related quality of life for people with chronic conditions, particularly those with co-morbidities
- ⇒ Improve the use of the health care system by people with chronic conditions
- ⇒ Encourage collaboration between clients, their families and health service provider in the management of chronic conditions.⁹⁹

An evaluation of the projects, which used a variety of educational programs to enhance patients' **self-management** skills, revealed that the development of self-management skills had led to greater confidence in communicating with service providers and being more assertive in obtaining information.⁹⁹ In the South Australian project, which used patient-centred **care planning** along with self-management training, the care planning process was described by patients as more complete, more personal and less hurried compared to the model of care they had received on previous occasions.^{100,101} However, care planners noted that the range of services to which they referred was wider than anticipated and, while all stakeholders valued the approach in enabling clients to better manage their condition, care planning sessions were time consuming and that this was likely to be unsustainable beyond the project.¹⁰¹

⁵ Shared care may also occur between primary health care providers and community health and/or allied health care professionals.



6.2.7 Discharge planning

Key points

Discharge planning led to lower rates of hospital readmission and improved quality of life for elderly patients with chronic heart failure or cardiorespiratory illness.

Individualised discharge plans and increasing patients' knowledge about their condition and treatment were identified as important

Post-hospital support programs and coordination with community and rehabilitation services improved patient outcomes and reduced hospital readmissions

Advanced-practice nursing to coordinate care for chronically ill discharged patients reduced readmissions, deaths and overall costs.

Patients' decisions to see a GP post discharge may be influenced by a range of factors, including: concerns about aspects of their health; the need to renew prescriptions; and the need for clarification about medical management of their complex conditions.¹⁰² The transition between hospital and home is often a vulnerable period for patients who must cope with complicated information about diagnoses, treatment and medications. Patients may leave hospital or their GP's office without a clear understanding of what was said.¹⁰³ Thus, relying on a patient's memory to communicate important clinical information is risky. Continuity of care is a challenge for primary care providers if they receive fragmented information about their patient's hospital stay and recommended post-discharge care.

In a study of Veterans' Affairs claims data from 109 860 veterans hospitalised in 2006, less than 2% received a discharge plan, case conference or medication review; 25% saw a GP within four days; and 71% saw a GP within 30 days (median 12 days) of hospital discharge.¹⁰⁴ Since failure to attend a follow-up appointment may place patients at risk of adverse events, Yang et al. (2010) suggest that interventions to raise awareness of GPs' role in post-discharge care may improve health outcomes.

Therefore, discharge summaries are a key component of effective communication between inpatient and outpatient health care providers and a comprehensive discharge plan that is accurate and timely is likely to reduce potential adverse events and hospital readmissions.¹⁰⁵ Some evidence indicates that a **reengineered discharge (RED)** process, which included a package of services (eg. patient education, appointment coordination, post-hospital care plan, follow-up telephone service) coordinated by a nurse discharge advocate, led to reduction in use of hospital services within 30 days of discharge.¹⁰⁶ However, hospital staff may not recognise the benefits of discharge summaries amidst the hectic daily activities.

In many cases, discharge plans are an essential part of a comprehensive integrated care package, making it more difficult to determine the effectiveness of discharge planning alone.¹⁰⁷

Continuity of care on discharge from hospital has been evaluated in several systematic reviews.^{102,108,109,110} One good quality meta-analysis (AMSTAR rating: 9/11, **Box 1**) showed that comprehensive discharge planning (including post-discharge support) for older patients with congestive heart failure led to significantly lower rates of readmission and improved quality of life (without increased costs) compared to usual care controls.¹⁰⁹

In the UK, there are two main programs that use a multidisciplinary approach to improve older patients' access to health and social care following discharge from hospital:¹¹⁰

- ⇒ Geriatric Consultation Teams (GCTs): Specialist needs assessment and recommendations for patient care, which is undertaken by community health and social services
- ⇒ Geriatric Evaluation and Management schemes (GEMs): comprehensive needs assessment as in GCTs; but also includes implementation of care plans.

A systematic review (AMSTAR rating: 9/11, **Box 1**) of the effectiveness of GCTs and GEMs reported little support for programs that assess needs and make recommendations only, without implementing the post-discharge services.¹¹⁰ Overall, there were no significant differences in a broad range of patient outcomes including: patients' self-rated health, wellbeing, perceived activities, mental health, quality of life, self-esteem and satisfaction with care.

The Victorian Patient Satisfaction Monitor is an annual survey of inpatients at Victorian hospitals.¹¹¹ The 2008-2009 survey of 15 587 people assessed satisfaction with discharge procedures and follow-up after discharge on a scale of 1-5. Mean levels for satisfaction with "Time to plan for going home" were 3.69, "Written information on how to manage your condition at home" 3.81, "Arrangements made by the hospital for any services needed when you got home" 3.99 and "Explanation of medicines you needed to take after you left hospital 3.94.

In Western Australia, a hospital **computer-generated coordinated discharge plan**¹¹² was completed before discharge and faxed to the patient's GP who was able to make alterations based on their knowledge of the patient's history (cardiorespiratory illness) and make an appointment for review. The completed care plan, which was part of the Enhanced Primary Care package (see **7.2.2** below), was then provided to the patient on discharge and copies were faxed to all identified service providers. Mental quality of life, measured using the SF 12, and satisfaction with discharge planning were significantly improved for the intervention group but not the control group patients who were discharged under usual hospital discharge processes. The intervention group also rated more highly the importance of notifying their GP of discharge arrangements. Significantly, 11.6% of the control group's GPs were never contacted by the hospital. Problems with the discharge plan related to inadequacies in a number of areas: incomplete hospital notes; insufficient caregiver consultation; inappropriate goals developed with the patient and caregiver; and lack of interventions and community service providers that met the patient's needs.

In NSW, GP pre-discharge visits made no significant difference to a group of frail aged patients' hospital length of stay and readmission rates, but findings showed enhanced patients' perceived quality of care.¹¹³

Several studies showed that discharge planning that uses standardised information for patients did not improve patient outcomes.^{114,115} Individualised discharge planning that accounts for a patient's home circumstances and telephone follow-up after discharge were identified as essential by 13 post-surgical patients, rather than a standardised, 'one size fits all' plan.¹¹⁵ Similarly, a pharmacy discharge plan for elderly patients, giving details of medication and support required, together with a domiciliary assessment by a pharmacist achieved no better outcomes (including wellbeing, satisfaction and adherence to medication) than a discharge letter to the GP.¹¹⁶

While there is some evidence that increasing patients' knowledge about their condition and treatment enhances the safe transition after hospitalisation, with lower rates of readmission and better self-management,¹¹⁷ patient engagement is seldom included in discharge planning.¹¹⁸

Post-hospital support programs, including coordination with community pharmacists and early discharge rehabilitation services may improve patient outcomes after discharge and reduce hospital

readmissions.¹¹⁸ **Advanced-practice nursing** is a post-hospital discharge program that was developed to improve coordinated care for chronically ill older adults who had been hospitalised with chronic heart failure.¹⁶ Patients who were randomised to the advanced-practice nursing program received in-hospital visits, post-discharge home visits and phone consultations. Hospital readmissions, deaths and overall costs were significantly lower in patients in the intervention group compared to those in usual care.¹¹⁹ Advanced-practice nurses may also act as **coaches** for patients and their families (**Care Transitions Program**), providing instruction on routine care (eg. change dressings, arrange follow-up primary care consultations) in order to enhance their **self-care** skills. An evaluation of the Care Transitions Program reported lower rates of readmission and reduced costs compared to controls.¹⁶

6.2.8 Referral systems

Key points

Few studies on **referral systems** assessed patient outcomes or experience. Patients were typically unaware of any coordinated care relationships between services when they were referred to specialists; and many experienced difficulty accessing information about services and the options available to them.

Most studies regarding interventions to improve referrals evaluated the *process* of referrals and did not include patient outcomes or experience.¹²⁰ Of the few studies that did assess patient outcomes, evidence was weak and relied primarily on patient satisfaction scores.^{120,121}

Three approaches were used most commonly in interventions to improve referral systems:

- ⇒ **Provider education:** disseminating guidelines for health care providers about appropriate referrals, combined with standard referral forms, and engaging providers interactively is more effective for improving referral processes compared to simple distribution of guidelines
- ⇒ **Organisational change:** Enhancing services prior to referral (eg. providing access to allied health services) may improve referral processes
- ⇒ **Financial incentives:** while financial incentives may change the number of referrals, it is unclear whether they improve the quality or appropriateness of referrals.¹²⁰

In a study of older patients with comorbidity (alcohol use and depression/anxiety),⁹¹ patients in the **enhanced referral group** had lower levels of engagement in treatment compared to those in the **integrated care** intervention (see also 7.1.9). Details of the two models are shown in **Table 6–5**.

Table 6–5 Criteria for enhanced referral and an integrated care model

Enhanced Referral	Integrated care
Referral within 2-4 weeks of seeing the primary care provider	Appointment with mental health and substance abuse provider within 2-4 weeks of seeing primary care provider
Treatment by mental health and substance use professionals provided in a separate location	Mental health and substance use services co-located in the primary care setting (assessment, care planning, counselling, case management, psychotherapy, pharmacological treatment); no signage distinguishing services
Agreement by mental health and substance use clinics to comply with times for first appointment and follow-up contact	Verbal or written communication about clinical evaluation and treatment plan between mental health and substance use service providers and primary care provider
Facilitated cover for costs of mental health and substance use services visit	Mental health and substance use services provided by licensed providers (eg. social workers, psychologists, psychiatric nurses, psychiatrists, counsellors)
Assistance with transportation	

The effectiveness of integrated care models is determined by availability of:¹²²

- ⇒ Adequate primary care resources in the community
- ⇒ Formal referral mechanisms
- ⇒ Strategies for communication and information sharing between specialists and primary care providers.

Patients' experience of specialist referrals (cost, waiting time and integration) in Australia were explored in a series of reports^{123,124,125} conducted by the Centre for GP Integration Studies (CGPIS) at the University of NSW (1995-2001). In general, patients were unaware of any relationships between the organisations within the health system. They reported difficulty accessing information about services; were unaware of how to contact service providers or which services they needed to request from their GP; and many assumed they needed a referral from their GP. They were also unaware of the concept of continuity of care; their options to see other allied health professionals or use support services; and many reported having problems keeping up with changes to the health system.¹²⁴ Electronic referral systems are discussed below in **6.3.2**.

6.2.9 Rural health /Visiting specialists

Key points

Outreach visits to rural/remote communities improve access to specialist care and are cost-effective.

Patients in rural and remote areas have particular problems accessing specialists due to the failure of the market to attract specialists to their area.¹²⁶ For example, a series of studies about lung cancer care and survival in rural and remote areas in Western Australia reported more advanced cancers at diagnosis, inability to obtain a second opinion, delays in obtaining diagnostic tests, less diagnostic testing and less frequent surgery compared to non-rural areas.^{127,128,129} Procrastination in scheduling appointments around seasonal workloads, the financial and time costs of extended travel required to attend appointments in the city, and loss of earnings were also factors that delayed diagnosis.^{129,130} Similar themes were found in a study of patients' experience of colorectal cancer treatment in North Queensland.¹³¹

There is some evidence that specialist **outreach visits** to remote disadvantaged communities and Aboriginal communities improves access to specialist care and is **cost effective**.^{128,132,133,134} One outreach service for cardiac care achieved better access for Aboriginal patients by accepting **referrals** from upskilled Indigenous Health Care Workers and removing the need for a referral from primary care.¹³⁵ See **7.1.3** for more details about visiting psychiatrists to rural/remote areas.

Pre-hospital care is another area that may benefit from integration with primary and acute care services, particularly in rural areas of Australia (see **7.1.7** for more detail). In rural settings, teamwork between pre-hospital care providers and other emergency services and health care providers requires established channels of communication, education and training and multidisciplinary clinical teamwork.¹³⁶

6.2.10 Hospital in the Home (HITH)

Key points

Hospital in the Home services were well-received by patients, with equivalent health outcomes and little or no additional risk of adverse events.

Hospital in the Home (HITH) programs are broadly divided into two groups²¹:

- 1 Alternative to hospitalisation:** Hospital type care is provided in the patient's home, with a team of health care professionals, including doctors, nurses and allied health care workers, to maintain continuity of care for the patient, without hospitalisation. A systematic review (AMSTAR rating: 9/11, **Box 1**) of the hospital at home service showed mixed outcomes for patients.¹³⁷ While patients generally reported increased satisfaction compared to in-hospital care, there was some evidence of increased admissions in the longer term; and no difference in quality of life or functional status compared to usual hospital care.
- 2 Early hospital discharge:** Patients are discharged early from hospital under a formal coordinated care program, with a team of health care professionals who provide acute hospital care services to the patient in their own home. A systematic review (AMSTAR rating: 9/11, **Box 1**) of this service showed that patients were more satisfied with their care at home; their caregivers did not report increased burden; and there was no significant difference in their quality of life, functional status, or risk of adverse events compared to usual hospital care.¹³⁸

6.3 Telemedicine and telehealth

Key points

Overall, good evidence is lacking to support **eHealth technologies** in terms of improvements in patient outcomes and/or cost-effectiveness.

However, new **telemonitoring** technology has shown positive outcomes in recent clinical trials.

Telemedicine, telehealth and telecare are used here as umbrella terms to cover a range of health services that involve delivering health care from a distance. They involve the "transfer of information about health-related issues between one or more sites, so that the health of individuals and their communities can be advanced".¹³⁹ Telemedicine is a key technology for achieving equity of access and outcomes in health care,¹⁴⁰ particularly for those with chronic disease/disability and/or those who live a long distance from health services. Some types of telemedicine are potentially useful for delivering medical expertise to developing countries and/or underserved regions in industrialised countries.¹⁴¹

Telehealth is not a single, uniform type of technology; rather it is a targeted approach appropriate to the individual's needs, combining process, organisational and responsibility changes supported by monitoring and collaboration technologies¹⁴².

Telemedicine may be used during a primary consultation, a 'second opinion' consultation, diagnosis, disease management and monitoring, and/or for administrative purposes, such as referrals.¹⁴³ It has been used across a wide range of specialties, including general practice, pathology, dermatology, radiology, neurology, dentistry, endocrinology, oncology, mental health and wound care.

The main types of telemedicine services are:

- 1 Telephone and Internet patient information services: Health advice and triage service
- 2 Electronic referrals and patient transfer: On-line booking system
- 3 Telehealth consultations: diagnoses and health management advice (eg. teleradiology, teledermatology, remote mental health assessments)
- 4 Telemonitoring: patients with controlled chronic conditions upload information or routinely check in by telephone or on-line for preventive care.

Telehealth is one of the mechanisms required to support the **Chronic Care Model** (CCM, described below in **7.1.2**), which aims to deliver integrated health care services from end to end, across the continuum of care, rather than in brief episodes of acute care. The effectiveness of telemedicine approaches for different populations has been assessed in a number of studies pertaining to integrated care.¹⁴⁴ While overall outcomes for patients has been promising, study findings are limited by the use of uncontrolled, non-randomised study designs, small sample sizes and short follow-up periods.

A recent systematic review (AMSTAR rating: 8/10, **Box 1**) of systematic reviews examined the impact of eHealth technologies (eg. electronic health records, prescribing, communication, decision support and provider order entry systems) from the perspective of quality and safety of health care.¹⁴⁵ Black et al. (2011) reported that:

The evidence base in support of eHealth technologies was weak and inconsistent and importantly, there was insubstantial evidence to support the cost-effectiveness of these technologies¹⁴⁵

Moreover, there was some evidence of increased risk of *negative* outcomes as practitioners' clinical skills may deteriorate as they rely more on computerised clinical decision-making and overestimate the functionality of such technologies.

Evidence related to the different types of telemedicine services is described in more detail below. However, the quality (and thus, reliability) of the evidence is weak, as most technologies have not been adequately evaluated against an appropriate set of measures, using independent rigorous evaluation methods. In some emerging areas of telehealth, such as telemonitoring, the evidence is sparse and findings are inconsistent. However, with improvements in the technology, its application in target populations, and adequate support structure, telehealth technologies have the potential to support patient care and enable patients to take more control over their health.¹⁴² The Whole System Demonstrator (WSD) programme, which is funded by the UK Department of Health, is currently evaluating a range of telehealth technologies in a large randomised controlled trial. Results from this study are expected to be available in 2011.¹⁴²

Overall, in terms of patient experience and outcomes, several factors have been identified that need to be addressed to enable telehealth to bring about benefits to the end-users (ie. patients, clients and caregivers).¹⁴² They are:

- ⇒ Understanding patient/client needs
- ⇒ Patient's ability to adopt and use the technology
- ⇒ Cultural change required by patients and their caregivers.

Criteria need to be developed to determine patients' suitability for telehealth services, the type of services they require and the period of time they need such services.

Accuracy of patients' data and information is essential to providing optimal care, particularly when it is delivered remotely to patients' health care providers and care teams. Conditions to enable good quality information are¹⁴²:

- ⇒ A clear understanding of who is intervening and why
- ⇒ Good record keeping
- ⇒ Interoperability of systems communicating information about patients' condition and care management
- ⇒ Clinical leadership and engagement
- ⇒ Education and training of the workforce to use technology appropriately.

Telemedicine and telehealth technologies are rapidly evolving and the literature is expansive. This review provides a limited overview of some of the available technologies that were identified and a more comprehensive exploration may require another more focussed evaluation.

6.3.1 Telephone and Internet patient information services

Patient information services (telephone and/or Internet), which range from relatively simple information depositories to more interactive telephone triage systems, have been introduced in Australia and overseas.

HealthDirect Australia is a free 24-hour telephone health advice line, which is staffed by registered nurses who provide fast and simple advice about health issues and what callers should do next. Currently, the service is available to residents in ACT, NSW, NT, Tasmania, SA and WA. Cumulative data from four customer satisfaction surveys conducted in 2009-2010 revealed overall high levels of customer satisfaction (>99%) in the 20% of customers who participated in the survey.¹⁴⁶ In addition, data showed that the service successfully directed callers to appropriate care. For example, 58% of callers (from a sample of 307 respondents) were diverted from going to the ED/hospital and advised to manage their condition at home or see their GP; whereas 19% who originally intended to care for themselves at home were triaged to the hospital ED.

A review and evaluation of the efficacy of the program is about to commence and a report is due in April 2011 <<http://www.healthdirect.org.au/>>

In WA, the original *HealthDirect* program was expanded to include a variety of additional programs and pilot projects pertaining to mental health (*SouthWest24*), residential care (*Residential Care Line*), sexual assault (*Sexual Assault Referral Centre Crisis Line*), drug use (*Drug Cautioning Line*), public health issues (*Health Incident Lines*), HIV exposure (*Post Exposure Prophylaxis for HIV*) and general health and policy information (*HealthInfo*).¹⁴⁷

A paediatric telephone triage and advice service (*Kidsnet*) was introduced at the Children's Hospital at Westmead in 1997.¹⁴⁸ Using a structured questionnaire, a sample of service users were contacted to determine their satisfaction with the service, helpfulness of the information provided and action taken after using the service. The service was highly valued by survey respondents who perceived the advice to be accurate. However, the sample surveyed was small and it was not possible to obtain the views of callers who were unable to access *Kidsnet*.

A systematic review (AMSTAR rating: 4/11, **Box 1**) of telephone triage and advice services in Australia and overseas found overall reduction in immediate medical workload.¹⁴⁹ However, overall patient satisfaction was reduced when in-person consultations were replaced by telephone consultations.

Health Link Alberta (HLA) is a 24-hours a day, 7-days a week, telephone and Internet health advice and information service available to Albertans.¹⁵⁰ HLA was designed as a 'one-stop shop' to ease the pressure on PHC offices and emergency departments by providing:

- ⇒ Consistent and reliable health information, using evidence-based protocols
- ⇒ Efficient referrals to appropriate services
- ⇒ Support for self-care and chronic disease management.

Service quality and performance is maintained and improved through a feedback mechanism involving service users, HLA staff, regional stakeholders and other service providers to address potential problems and issues as they emerge. An evaluation of the service (by HLA) revealed a high level of awareness of HLA among Albertans and strong acceptance by service users. A rigorous independent evaluation is needed to fully determine its effectiveness.

A Patient Advice and Liaison Service (PALS), which has been implemented in every Primary Care Trust in England, provides an identifiable person for patients to contact if they have a problem or need assistance to negotiate the NHS.¹⁵¹ From workshops and qualitative interviews with service users, a number of criteria were developed that underpin the **standards for service delivery**, including the need for a health information service to¹⁵¹:

- ⇒ Be responsive to the needs and wishes of individuals
- ⇒ Be accessible to all sections of the community, including older people, ethnic minorities and groups with special needs
- ⇒ Offer clear, accurate and comprehensive information about local health and other services
- ⇒ Work with their NHS organisation to create a more patient-centred service
- ⇒ Collaborate effectively with other organisations
- ⇒ Be adequately resourced.

An automated telephone service in the UK that provided severe weather alerts for patients with chronic obstructive pulmonary disease had little evidence of success.^{152,153} While patients generally found it acceptable, there was minimal impact on their management strategies; and hard-to-reach target groups did not participate.

6.3.2 Electronic referral (e-transfer)

E-Transfer systems have been developed to improve access to specialty care, reduce costs and improve coordination of care. An electronic or on-line booking system for referral appointments systems is a unidirectional system that streamlines referral appointments for patients using a collaborative approach and common or shared resources. For example, a State-wide framework for electronic referral in Victoria utilises Service Coordination Tool Templates, which enable service providers to collect information in a common format and share information (with patients consent) with other providers; and a State-wide Services Directory, which is a comprehensive source of services that are available locally.¹⁵⁴ Referrals may also be completed electronically from the GP's desktop to facilitate the transfer of patients from one health service to another (eg. general practice to hospital/specialist care).

The simplest e-transfer system is by email, with files attached as needed.¹⁵⁵ The advantages of this system are the universality of the format and widespread availability of the software. The main disadvantages are the lack of integration with electronic medical records and accounting systems; and risks to privacy and security unless appropriate encryption is used. Alternate methods are by message transfer or Web link. Message transfer requires a compatible electronic patient record system and agreements between participating providers, and involves use of standardised message syntax. Web link, which may be used with or without an electronic patient record system, requires

a secure connection and may involve copying patient information from the local system to the web server.¹⁵⁵

An on-line referral application for GPs to book hospital outpatient appointments from their desktop was implemented as a pilot project in Brisbane.¹⁵⁶ Nineteen GPs in the Brisbane Inner South E-referral Project (BISEP) were satisfied with the approach and an assessment of patient satisfaction revealed no perceived disadvantages in this type of outpatient referral.

6.3.3 Telehealth consultations (e-Consultations)

An electronic consultation system (e-Consultation) is a bi-directional referral and interactive advice system, without the need for face-to-face consultation. E-consultations involve diagnoses and management advice, including counselling and patient support, particularly for patients with chronic disease and/or comorbidities. For example, a GP may email laboratory data, medication and patient history to an endocrinologist who then provides advice on a patient's diabetes care¹⁶.

A survey of PHC providers using an electronic referral system at San Francisco General Hospital showed that 71.9% reported overall improvement in clinical care, quality of care and access to health care¹⁵⁷. Similarly, UK patients were prioritised more efficiently and had shorter waiting times when digital photographs of suspected skin cancers were electronically referred in a 'store-and-forward' teledermatology triage compared to those in the conventional referral group;¹⁵⁸ and patients in Scotland reported high levels of satisfaction with the service, with comparable rates of diagnostic accuracy.¹⁵⁹ While a similar service, which was trialled in regional Queensland, was shown to be feasible, limitations included variability in the quality of images sent by GPs and Internet problems.¹⁶⁰ However, issues of remuneration in a fee-for-service environment and specialists' time for handling electronic referrals may need to be addressed.

A recent RCT of telephone-supported coordinated care for Australian Veterans with congestive heart failure reported no difference in costs or quality of life in the coordinated care group compared to usual care.¹⁴⁴ However, other studies have shown that benefits may be "slow to emerge" and longer intervention and follow-up (>12 months), including economic analyses, may be needed to determine effectiveness and cost-effectiveness of such interventions.¹⁴⁴

CDM-Net is a broadband-based network of computing services for supporting GPs and the associated health care team to provide a systematic, evidence-based approach to managing chronically ill patients.¹⁶¹ CDM-Net incorporates all of the key principles of the CCM as recommended by the Royal Australian College of General Practitioners.

An evaluation of CDM-Net, which was trialled in Barwon (Victoria) and Eastern Goldfields (WA), reported large increases (from baseline) in the implementation of GP management plans and reviews, and team care arrangements and reviews.¹⁶¹ In addition, there were large increases in patients' use of appropriate services; patients and health care providers reported overall positive experience of their participation in the CDM-Net project; and 61% of patients believed that the CDM-Net **care plans** helped to improve their control of diabetes. However, results must be interpreted with caution due to the small sample size and pre-post study design (ie. no control groups).

A review of patients' satisfaction with a telehealth diabetes podiatry program¹⁶² showed that, across a number of telehealth programs, the largest benefits perceived by patients were the elimination of the stress and cost of travel and rapid access to specialty care.

NSW Health has established telehealth infrastructure across NSW and videoconferencing is now routine practice in most Area Health Services and in NSW Health.¹⁶³ There are examples of use of telehealth in radiology, ophthalmology, psychiatry and diabetes foot care. While there are systems of remuneration for specialists, there has been limited uptake in allied health or other primary health services. Issues include the cost of telephone and broadband to community health services, lack of formal networks and protocols with specialist providers and no system for remunerating allied health or nursing consulting time.¹⁶³

A 2010 systematic review (AMSTAR rating: 8/11, **Box 1**) of economic analyses of synchronous video communication¹⁶⁴ found that this was **cost effective** for home care and access to hospital specialists but showed mixed results for rural service delivery and was not cost effective for local delivery of services between hospitals and primary care. Similarly, a review of interactive clinical consultations using real-time video and data collection was a cost-effective model¹⁶⁵ and a systematic review (AMSTAR rating: 7/11, **Box 1**) of telemedicine services¹⁶⁶ suggested that teleradiology can be cost saving.

Costs associated with a telepaediatric service demonstrated significant savings compared to a usual care outpatient service at the Royal Children's Hospital in Brisbane.¹⁶⁷

6.3.4 Telemonitoring

Telemonitoring is a relatively new area that is expanding rapidly. A systematic review (AMSTAR rating: 10/11, **Box 1**) of telemonitoring and structured telephone support for patients with chronic heart failure demonstrated significant reductions in the rates of hospital admissions, all cause mortality and increased quality of life for patients in the intervention group compared to usual care managed in the community.¹⁶⁸ In addition, more than 90% of patients reported a high level of acceptance of the technology, ease of use and satisfaction with the service.

Patient outcomes (eg. hospitalisations) may be determined by the sensitivity of measures being monitored. For example, a recent RCT that examined telemonitoring of weight and symptoms for patients with heart failure was disappointing, with no significant improvement in rates of hospital admission.¹⁶⁹ However, new technology is emerging that uses a wireless device to measure patients' fluid status and early results of clinical trials are promising.^{170,171}

7 Patients' outcomes and experience of integrated care initiatives

The following section examines a range of different multifaceted initiatives (groups of elements or strategies) that have been implemented in Australia and overseas and provides a synthesis of patients' perceptions and outcomes. Typically, these initiatives comprised combinations of **communication and support** for providers and patients and **structural arrangements** to support integrated care. There are some common elements contained in these initiatives and **Table 9–3** (Appendix) provides a summary of the key strategies, tools and activities associated with several initiatives.

7.1.1 Coordinated care trials

Key points

While patients were often unaware that they were part of a **Coordinated Care Trial**, they appreciated the convenience of having a single contact person to assist them in navigating the health care system.

Overall, patients in the CCT had no better outcomes compared to those in usual care.

The Coordinated Care Trials were an Australian government initiative funded between 1995 and 1999. There were nine regional mainstream trials and four Aboriginal and Torres Strait Islander trials. The trials provided care planning and coordination for people with complex care needs using an 'envelope' of funds to provide a flexible range of services consistent with their care plans. The intent was to provide a consumer-focused funding framework in the anticipation that this would meet patients' healthcare needs more efficiently and effectively than the current system.¹⁷² The trials used three models of care coordination:

- 1 Care planning by a GP who undertakes all tasks including development of a care plan, organisation and coordination of services, and medical care
- 2 GP as care coordinator supported by a service coordinator who implements the care plan and arranges services
- 3 Care coordination by care coordinators who are not GPs.

Patients who were considered to be of low risk and were managed solely by their GP had little awareness of being part of a trial and over half of patients in a Victorian trial, which used model 1, had no recollection of a care plan. Many did not know what care coordination was and did not find it helpful. However, responses by patients to models 2 and 3 were favourable, except in situations where the client was able to self care. Service coordinators were perceived as having time to listen, kept in touch and used a more holistic approach than GPs, who were seen as too busy. In the SA Health Plus Trial, patients appreciated the convenience and peace of mind of one contact with whom concerns could be raised. The service was responsive, with service coordinators able to provide access to a wider range of services, suggest services and provide flexible packages. Patients felt comfortable asking for services, experienced less fragmentation in their program of care and had assistance to navigate the system.¹⁷² The SA HealthPlus Trial¹⁷³ led to the development of the Flinders Program™ (formerly Flinders Model), which focuses on self-management and is described in more detail below in 7.1.2 and Appendix 9.5.

Overall, there was no difference in quality of life measures, rates of hospitalisation, readmission or length of hospital stay between patients in the CCT and those in usual care.¹⁷⁴ After the second round of trials, there were mixed outcomes for patients. In the Indigenous trials, patients' satisfaction was associated with their proximity to the regional centre, with greater access and satisfaction reported by those who were closest.¹⁷⁵ There were also differential outcomes for sub-populations (frail elderly and those in the early stages of their chronic condition reported better access to services and improved health and wellbeing).

Economic evaluation indicated that, while the CCTs achieved positive outcomes for patients, it exceeded the existing resources.¹⁷⁶



7.1.2 Chronic Care Model (CCM)

Key points

The **Chronic Care Model** demonstrated mixed outcomes for patients, depending on their conditions. CCM led to improvements in diabetes patients' risk factors (blood sugar, blood pressure and cholesterol); improvements in congestive heart failure patients' symptoms, hospitalisations and quality of life; and reduced hospitalisations and length of hospital stay for patients with chronic obstructive pulmonary disease.

The Chronic Care Model (CCM) was first described by Wagner in 1998.¹⁷⁷ The six key components of CCM include self-management support, decision support, delivery system design, clinical information systems, health care organisation and community resources (see Appendix **Figure 9–1**).

The Expanded CCM builds on the original model by placing “greater emphasis on healthy public policy and community engagement and action”.¹⁷⁸ One of the key elements to delivering a robust chronic disease care service is a **coordinated care plan** (see **6.2.2** for more detail on care plans) that recognises and supports the patient's goals and needs. The Flinders Program™, which was developed at Flinders University (Adelaide, South Australia), includes a collaborative care plan that gives health care providers a range of skills and tools to support patients' self-management (see Appendix **9.5** for more detail).

The chronic Care Model aims to transform care from only responding after people get sick to keeping people healthy with an emphasis on teams and engaging patients²

While Medicare supports many elements of CCM through payments to GPs and practices (eg. PIP and CDM items), only 25% of patients who should be on a care plan have one, and less than 20% of these are appropriately reviewed.¹⁶¹

A systematic review (AMSTAR rating: 8/11, **Box 1**) on the effectiveness of the CCM for diabetes care revealed small-to-moderate improvements in patients' intermediate outcomes, including mean reductions in HbA1c, blood pressure and cholesterol¹⁷⁹ compared to patients in usual care. Interventions that addressed delivery system design and included self-management support showed the largest improvements.¹⁷⁴ Similarly, improvements in symptoms, risk factors, hospitalisations and quality of life were reported for patients with congestive heart failure, asthma and diabetes.¹⁸⁰ However, not all strategies are implemented as readily as others and:

It is often difficult to determine which elements of a multi-component intervention are critical to its effectiveness.

A systematic review (AMSTAR rating: 9/11, **Box 1**) of the effectiveness of the CCM for patients with chronic obstructive pulmonary disease (COPD) revealed no significant differences in quality of life, lung function and functional status compared to usual care.¹⁸¹ However, there were fewer unscheduled visits and hospitalisations and shorter length of stay in hospital for patients who received the CCM.

A comparison of the CCM across eight countries revealed that not all components of the model are delivered effectively to all chronically ill patients.² While doctor-patient communication is a key aspect of CCM, approximately one third of patients across all countries reported that their regular doctor rarely involved them in decisions, did not give them treatment options or advise them about symptoms and side effects. Across countries, New Zealanders were most positive and French were

most negative about various aspects of communication in CCM. Moreover, the highest proportions of patients receiving all recommended care were in the UK, Netherlands and New Zealand, which all have high proportions of primary care practices that use electronic medical records and office systems to facilitate coordination and follow-up care. Overall, US patients experienced fragmented and poorly organised care with gaps in insurance cover that led them to forgo care due to costs. Deficits in transitional care, inadequate coordination of care for patients seeing multiple health care providers and poor efforts to assist patients in self-management of their disease were reported in all countries. However, chronically ill patients in countries with robust PHC infrastructure fared better. The US ranked “last or low for access, care coordination/efficiency, and patient-reported safety concerns”.² Australia ranked in the middle for most measures. In contrast, the Netherlands ranked high for positive experiences and low rates of errors, duplication and perceived waste:

Served by a strong primary care infrastructure, including after-hours physician-led cooperatives and primary practices with electronic medical information systems, Dutch chronically ill patients reported rapid access to physicians when sick, found it easy to get care after hours, and were the least likely to have visited the ER or have coordination problems².

Importantly, although patient safety interventions have focussed mainly on hospitals, all eight countries reported that medical, test and medication errors occurred primarily outside the hospital.

While some research has been conducted on **cost-effectiveness** of the CCM, the evidence is still emerging and varies according to condition and the extent to which all components of the model have been implemented.¹⁸⁰

7.1.3 Mental Health Integration Program (MHIP)

Key points

The **Mental Health Integration Program**, which used a flexible integration framework, resulted in mixed outcomes for patients. Patients were satisfied with their involvement in the program, felt that their input was valued and experienced improved continuity of care. However, high patient workloads and frequent staff turnover was problematic.

In 1999, the MHIP funded three projects to improve formal linkages between private psychiatric services and public mental health services.¹⁸² The program was also expanded to include local GPs and non-government organisations. Although the three projects differed in details and were tailored to the local settings (Inner urban east Melbourne; Illawarra; Far West NSW, **Table 7–1**), their overall purpose was “to create a more flexible integrated framework within which mental health services can be delivered, to improve outcomes within available resources for the consumers of those services”.¹⁸²

Table 7–1 Main components of Mental Health Integration Projects¹⁸²

Inner Urban East Melbourne	Illawarra	Far West NSW
<p>Linkage Unit:</p> <ul style="list-style-type: none"> to foster collaboration between public and private sectors (eg. shared care arrangements); and promote cultural and systems-level change <p>Item numbers:</p> <ul style="list-style-type: none"> to remunerate private psychiatrists for supervision and training, case conferencing and secondary consultations, based on duration and location of service. 	<p>"Local commissioning" model (eg. GP support):</p> <ul style="list-style-type: none"> to develop collaborative partnerships between private psychiatrists, the public mental health system, GPs, and consumer/caregiver support and advocacy groups. 	<p>Access to multidisciplinary mental health services</p> <p>Visiting psychiatrists incorporated services that were tailored to a particular community:</p> <ul style="list-style-type: none"> Direct clinical care Secondary consultations Supervision/training for GPs, mental health workers and Royal Flying Doctor Service staff Health promotion and liaison.

Patients who participated in the Far West NSW project appreciated the integration of services and coordination between GPs, visiting specialist and pharmacist and the care plans that addressed their personal needs. However, they commonly reported frustration with the visiting psychiatrist service due to the high workload and frequent turnover of case workers^{183,184}. They perceived discontinuity of care from having to re-tell their stories and rebuild relationships with new staff. Care plans were valued highly by patients, but not always provided.¹⁸³

While consumers and caregivers' experiences were not universally positive, those participating in the program generally commented positively about their involvement in steering committees and advisory groups; they felt that their input was valued and respected; and they received a greater range of options and better continuity of care.¹⁸² Different measures were used in the different projects, making it difficult to synthesise findings. However, there was an overall trend towards positive outcomes for consumers and caregivers. For example, those in the Illawarra project experienced reduced symptoms and improved function across the period of the project.

Costs were calculated using Health Insurance Commission (HIC) data, which showed no increase in benefits paid for psychiatric services and some reductions in costs. However, complex economic analyses were not conducted; thus it is not possible to attribute the reduction in expenditure to the implementation of a specific project.¹⁸²

The key messages from the evaluation of these projects are shown in **Table 7-2**.

Table 7–2 Summary of key messages from the Mental Health Integration Program

1. Improving integration is hard but possible	Careful planning and support were essential to implement the projects. Several other projects did not proceed beyond the planning phase.
2. Improved integration can only occur in the context of structural and cultural change	Structural and cultural change is necessary, though not sufficient.
3. Integration needs to be planned at the local area level	Funding an extensive planning phase was a good use of resources to ensure successful implementation.
4. System-level integration is required within the specialist mental health sector and beyond	Public/private sector (public mental health/private psychiatrist) and specialist/primary sector (psychiatrist/GPs) are needed.
5. The magnitude of change depends on the starting point	The “inverse integration” law ¹⁸⁵ operates, whereby providers in well-resourced areas perceive they have less reason to work collaboratively than those working in areas with few resources.
6. No one model fits all	Strategies to improve integration differ between areas and depend on their size, level and mix of existing resources, availability of local leaders and existing relationships.
7. Change requires leadership	Strong leadership within the psychiatric profession is essential for driving culture change.
8. Fee-for-service arrangements are limited	Traditional fee-for-service arrangements do not suit all circumstances.
9. Money alone does not drive change	Financial remuneration is insufficient. Providers require activities that are of interest, clear communication and respect for their contribution.
10. Changes occur in a policy context	The project occurs in parallel with other policy developments.

Modified from Eagar et al. (2005)¹⁸².

A similar service was developing in the UK between primary health and mental health care providers. A good quality systematic review (AMSTAR rating: 10/11, **Box 1**) (of eight studies) examined the effectiveness and cost-effectiveness of delivering mental health services directly through primary care (UK) for patients with psychological and psychosocial problems.¹⁸⁶ While results must be interpreted with caution due to several limitations in the data (eg. small sample sizes; pragmatic sample of volunteer practices and GPs), analysis showed significantly improved clinical effectiveness in the counselling group compared to those in usual care, but only in the short term. Patients who were allocated to counselling reported higher levels of satisfaction compared to those allocated to ‘usual care’. In addition, there was some evidence that counselling reduced health service utilisation and that overall **costs** associated with counselling were similar to usual care. However, comparison between studies was hampered by the substantial variety in the types of economic analysis techniques utilised.

7.1.4 Managed Clinical Networks

Key points

Managed Clinical Networks provided a voice for patients and their caregivers, engaging them in the Network activities to deliver multidisciplinary care. However, details related to patients’ outcomes and experiences were not available.

Managed Clinical Networks (MCNs), which originated in Scotland, are defined as:

Linked groups of health professionals and organisations from primary, secondary and tertiary care, working in a coordinated (or collaborative) manner, unconstrained by existing professional and organisational boundaries, to ensure equitable provision of high quality, clinically effective services¹⁸⁷ (p68, Chapt 8).

MCNs may be disease-specific (eg. Diabetes MCN); service-specific (eg. neonatal care MCN); or specialty-specific (eg. oncology MCN). The key principles of MCNs are:

- 1 They are multidisciplinary networks managed by an identified clinical leader
- 2 Patients are partners
- 3 They have an established quality assurance program
- 4 Evidence-based guidelines and protocols inform clinical decisions
- 5 Audit and evaluation is part of the process.

MCNs differ from other clinical networks in their use of evidence-based and outcome measures, and the involvement of patients in forming a network.

In broad terms, proponents of MCN suggest that the benefits to patients are improved access and continuity of care.¹⁸⁸ This may be achieved by several underlying mechanisms:

- ⇒ **Clear communication** between MCN clinicians increases the patient's likelihood of being seen by an appropriate professional
- ⇒ **Shared information** that is readily available to clinicians assures patients that their care is likely to be the same, irrespective of which clinician they see, as the referral process is the same
- ⇒ **All staff work to the same protocols**, which speeds up admissions and referrals and eases pressure on beds.

A 2010 evaluation of nine Managed Clinical Networks¹⁸⁹ reported that they delivered a "wide range of benefits to patient care and overall, are delivering excellent value for money". The evaluation methodology included a review of project documentation, attendance of the evaluators at network meetings, a survey of GPs and stakeholders and engagement events for patients. Benefits were found in promoting best practice, building an evidence base supporting multidisciplinary care, providing a voice for patients and facilitating patient-driven improvements. However, there were no details on patients' outcomes or experiences of MCN.

7.1.5 Lean Practice

Key points

The effects of **Lean practice** on patient outcomes are unknown.

There has been a shift in thinking about quality of care that involves "simplifying processes by understanding what adds value and eliminating waste".⁴⁶ Originally developed by Toyota to improve the quality of vehicles at lower costs, the principles of Lean Design have been incorporated into many different service industries, including health care.¹⁹⁰ The culture of Lean Design involves working in interdisciplinary teams, sharing information, removing waste and focusing on the patient's needs.

The key principle of Lean Design is that "every step within every process within your practice ... should add value for your customers: your patients".⁴⁶ Some processes, which are not directly 'valuable' to patients, are essential to good operating practice:

When you create a value-added experience for the patient, something unexpected occurs: you end up more satisfied yourself, with a more efficient, effective practice⁴⁶

The steps to creating a Lean practice are:

- 1 **Map the current state:** identify the start and end points of the patient pathway, from the patient's perspective
- 2 **Identify waste:** determine flow problems, including patients' waiting times and staff idle times; unnecessary movement; duplication of effort; rework due to incomplete processes
- 3 **Map the future state:** bring work to the patient; eliminate unnecessary steps; increase clinician support to maximise doctor's time with the patient; review technology
- 4 **Test and revise the new process:** a continuous process of assessment and improvement.

Lean Practice is a relatively new concept in health care and its impact on patients and an evaluation of patients' experiences is unknown.

7.1.6 Hospital Admissions Risk Programme (HARP)

Key points

Patients participating in several **HARP** projects experienced reductions in emergency department attendances, emergency admissions and days in hospital; and improvements in functional independence, quality of life and satisfaction in communication with their providers.

The Victorian State Government funded 87 HARP projects over 2001-2005. The main purpose of HARP was to:

Identify those at risk of repeated hospitalisation at the time of emergency presentation or hospital admission or at discharge from hospital, in order to target alternative interventions at appropriate points in their journey through the health system¹⁹¹

The HARP program is based on the Kaiser chronic care framework as illustrated in **Figure 5-1**. HARP clients are high-risk patients (Levels 1 and 2) who present, or are at risk of presenting, to hospital frequently, including:

- ⇒ People with chronic illnesses (eg. heart disease, respiratory disease, diabetes)
- ⇒ Older people with complex needs
- ⇒ People with complex psychosocial needs
- ⇒ People with complex comorbidities.

HARP clients receive a range of services from intense specialist to generalist care, depending on their needs. Services include:

- ⇒ Comprehensive assessment and care planning
- ⇒ Comprehensive hospital discharge planning
- ⇒ Secondary preventive care
- ⇒ Specialist medical and GP management
- ⇒ 24-hour advice
- ⇒ Self-management advice
- ⇒ Other specialist and allied services where needed.

HARP projects focused on one or more of the following goals:

- ⇒ Prevent health deterioration in the community
- ⇒ Identify alternative management for those who deteriorate
- ⇒ Provide different approaches for 'at-risk' patients who present to hospital
- ⇒ Provide more targeted support for 'at-risk' patients discharged home.

The HARP objectives to address these goals were:

- 1 Improve communication and cohesion between services
- 2 Improve management of 'at-risk' patients
- 3 Improve proactive management of patients
- 4 Provide better continuity of care
- 5 Improve responsiveness to patients' needs
- 6 Increase capacity within the health system to manage people's health needs.

To address these goals and objectives and to engender optimal responses to the needs of patients who customarily relied on emergency services and hospital care, HARP interventions involved developing interagency partnerships and coordination of services across the continuum of care; plus training and development in the acute and community sectors.

An evaluation of the HARP projects revealed that patients experienced:

- ⇒ 35% fewer emergency department attendances
- ⇒ 52% fewer emergency admissions
- ⇒ 41% fewer days in hospital.

Patients also reported improvements in functional independence, quality of life and increased satisfaction in communication with their health care providers.

The outcome is a program that is delivering a model for the continuity of client care that bridges service gaps and eliminates boundaries¹⁹¹ (HARP clinician, p26)

A HARP project, which was undertaken by a consortium of acute and community health care providers in the western suburbs of Melbourne, to improve health outcomes for patients with chronic obstructive pulmonary disease (COPD) and chronic heart failure (CHF) was recently evaluated in a non-randomised controlled trial.¹⁹² In addition to usual care, patients in the program were assessed by a care facilitator to identify unmet health care needs; provide health information and education pertaining to self-care and management of their condition. Control patients received usual care. Emergency presentations, admissions and hospital inpatient bed-days were significantly reduced in HARP patients compared to controls. Moreover, COPD control patients had significantly increased usage in all three outcomes. COPD HARP patients also reported significant reduction in their symptoms and CHF patients reported improved overall health and quality of life scores.

Thus, overall results indicate that the patient-focussed HARP model promotes better self-management and improved continuity of care across the acute and community health sectors, which benefits patients and leads to reduced use of acute health care services.

7.1.7 Pre-hospital practitioner model

Key points

The **pre-hospital practitioner model** has improved patient experience in several areas, including: increased survival, fewer hospitalisations, more efficient treatment and referral and increased patient satisfaction.

The pre-hospital practitioner model proposes a change in roles for paramedics and practitioners in emergency care, increasing the scope of treatment and clinical decision-making and extending practice to include primary care activities before and after the "chain of survival"⁶ window.¹³⁶

⁶ The "chain of survival" comprises four 'links': 1. Early recognition; 2. Early cardiopulmonary resuscitation; 3. Early defibrillation; and 4. Early advanced care. If any links in the chain are delayed or missing, the odds of survival decrease substantially.

Unlike the existing emergency service models or the "chain of survival" model, it is an integrated system that provides a range of services at multiple points during the patient care cycle¹³⁶.

The pre-hospital practitioner model involves the continuum of care including health promotion to avoid injuries and illness, emergency responses, treatment and transport and recovery programs. Using a decision-making model, patients may be allocated to one of four action categories:

- 1 Transport by ambulance to the emergency department
- 2 Transport to the emergency department, but may safely go by alternative means
- 3 Referred to primary health care providers within 24 hours
- 4 Field assessment and treatment only.

In contrast to developing and extending education and training for ambulance paramedics, the 'paramedic practitioner' is a generic health worker who spans across various community and hospital settings. SA Ambulance implemented a system that combined enhanced education and regular clinical reviews.¹⁹³ Six years after implementing the system, survival from ventricular fibrillation arrest rose from approximately 10% in the traditional system to 24% after paramedics took more control in managing patients. Other outcomes included a drop in the number of medical and interpersonal complaints from patients.

Pre-hospital practitioners include paramedic practitioners and emergency care practitioners, which are defined as:

a healthcare professional (paramedic or nurse) who works to a medical model, with the attitude, skills and knowledge base to deliver holistic care and treatment within the pre-hospital, primary and acute care settings with a broadly defined level of autonomy¹⁹⁴.

Some evidence indicates that emergency care practitioners in the UK impacted positively on patient care in terms of:

- ⇒ Fewer trips to hospital
- ⇒ More immediate treatment and referral
- ⇒ Higher level of patient satisfaction¹⁹⁴.

Limited data also suggested overall savings when traditional ambulance responders were replaced with emergency care practitioners. However, more research is needed to examine patient safety, clinical practice, professional roles and financial implications of these changing roles.¹⁹⁴

7.1.8 GP/Facility Clinical Handover Project (NSW)

Key points

Findings from the **GP/Facility Clinical Handover project** are not yet available.

The Safe Clinical Handover Program is currently developing the GP/Facility clinical handover project in collaboration with health services, general practice, and patients and caregivers to address quality and safety issues related to the care of patients during the critical period of transition between hospital and general practice <<http://www.archi.net.au/e-library/safety/clinical/nsw-handover/gp>>. The main aim of this project is to improve the transfer of clinical information between PHC and acute care, with a key focus on the role of patients and caregivers.

A literature review¹¹⁸ on evidence related to different aspects of care transition (discharge, referral and admission) has been completed and will inform the project. In terms of patient health outcomes and experience associated with interventions to improve care transition, the review reported mixed results. However, the value of continuity of care was acknowledged in one systematic review, which reported a strong positive association between continuity of care and

patient health outcomes and satisfaction with care, particularly when care was coordinated across different health care providers.¹⁹⁵

7.1.9 Integration initiatives for the elderly

Key points

Integrated service models for the elderly led to lower rates of functional decline and higher levels of satisfaction, empowerment and involvement in health-related decisions.

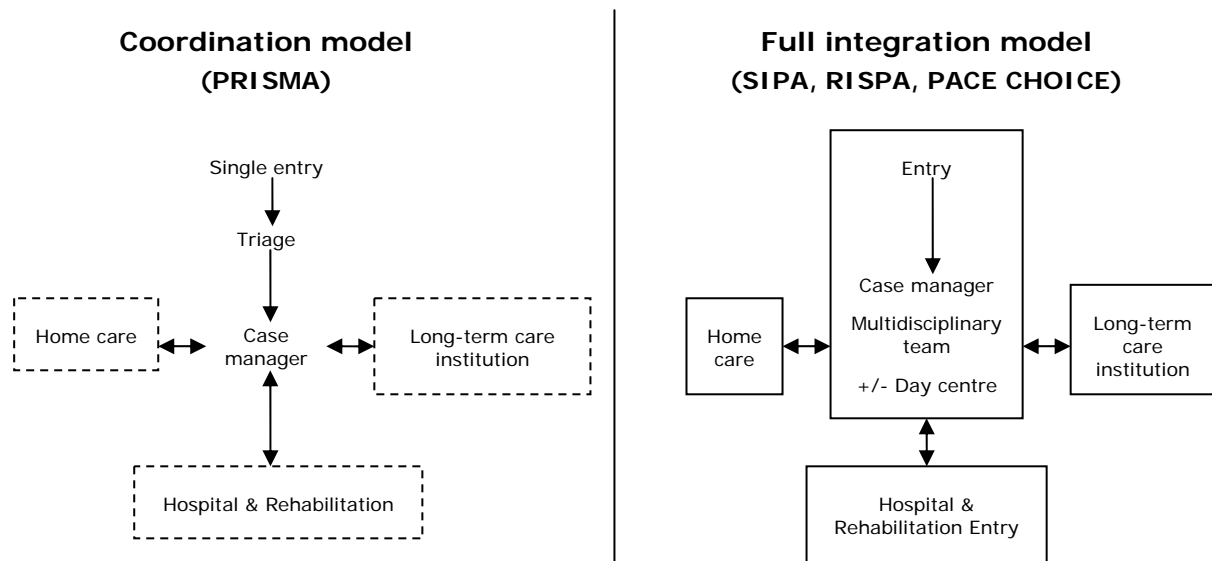
The **Transitional Care Model** resulted in fewer hospital readmissions and emergency room visits, improved health, functional status and quality of life after discharge, and enhanced patient and caregiver satisfaction.

The **IMPACT program** led to reduced severity of depression, increased compliance with depression medication, improved satisfaction with care and improved quality of life in elderly people with depression.

Statistical trends in Australia indicate that the increased lifespan of Australians is likely to include a period of disability.¹⁹⁶ In light of our ageing population and increased prevalence of chronic disease, the need for continuity of care and efficient access to services is particularly germane to the frail elderly. Functional decline generates increased demand for elderly individuals and their families and/or caregivers in terms of assessment, treatment, rehabilitation, palliative care, social support, and support to remain at home or move to an appropriate long-term care facility.

A number of integrated service delivery programs have been developed to specifically address the needs of older and disabled populations. These programs fall into two main categories, which are illustrated in **Figure 7–1**¹⁹⁷:

- 1 **Coordinated model:** Each organisation retains its own structure, but participates in an overarching system and modifies its operations and resources to agreed processes and procedures. The program is embedded within the existing health and social service system. **PRISMA:** The Program on Research for Integrating Services is a coordinated model, which was developed in Canada (Quebec) to fit within a publicly funded health care system.¹⁹⁷ The **PRISM-E** (Primary care Research In Substance abuse and Mental health for the Elderly) study, which examined a variant of this model, showed higher levels of engagement in treatment when patients received treatment for mental health conditions within the primary care setting compared to those referred to a separate mental health service.⁹¹
- 2 **Full integration model:** The organisation is responsible for all services, either under one structure or by contracting delivery of services with another organisation. **RISPA** (Réseau intégré de services pour personnes âgées, Estrie Canada); **SIPA** (Système intégré de services pour personnes âgées fragiles, Montreal Canada); **PACE** (Program of All-inclusive Care for the Elderly, US); and **CHOICE** (Comprehensive Home Option of Integrated Care for the Elderly, Edmonton Canada) are examples of fully integrated models that are nested within the existing health and social services systems and “run in parallel to them”.¹⁹⁷



NB: Boxes with dotted lines indicate that organisations' autonomy is partially devolved to the integrated structure; boxes with solid lines indicate that organisations have independent structure and management. Modified from¹⁹⁷

Figure 7–1 Two models of integrated service delivery¹⁹⁷

It must be noted that integration of services in Quebec is facilitated by the existence of integrated structures, including health and social services, which are under a single government department.

Findings from a comprehensive evaluation of integrated service delivery programs in Canada¹⁹⁸ revealed a number of positive effects for elderly patients and their caregivers⁷. Compared to usual care, elderly participants in the intervention group experienced:

- ⇒ Lower rate of functional decline
- ⇒ Higher levels of satisfaction
- ⇒ Higher levels of empowerment and involvement in health-related decisions
- ⇒ Reduction in handicap levels.

In addition, there were no significant differences in mortality, institutionalisation, or disability; and caregivers reported feeling an increased burden associated with increased number of hours for assistance, but no increased desire to institutionalise those for whom they were caring.

These results are limited by an overall lack of statistical power in long-term follow up (4 years); and incomplete implementation of all components of the intervention, which is a common problem in population-based studies. However, based on an 'intention-to-treat' principle, the observable trend was for intervention participants to experience more positive outcomes.

7.1.9.1 Transitional Care Model (TCM)

The **Transitional Care Model** (TCM) has been developed in the US to address the challenges of coordinating services for "chronically ill high-risk older adults hospitalized for common medical and surgical conditions"¹. The essential components of the TCM are:

- ⇒ A transitional care nurse (TCN), as primary care coordinator, ensures consistency of provider across an episode of care
- ⇒ Comprehensive in-hospital assessment

⁷ The evaluation was not undertaken independently as the authors are part of the PRISMA group.

- ⇒ Preparation and development of an evidence-based care plan
- ⇒ Regular home visits by the TCN, with ongoing telephone support (7 days per week) for an average two months post-discharge
- ⇒ Continuity of care between hospital and PHC provider, facilitated by the TCN, who accompanies the patient to their first follow-up visit
- ⇒ Comprehensive holistic patient-centred care
- ⇒ Active engagement of patients and their family/caregivers, including education and support
- ⇒ Emphasis on early identification and response to health care risks and symptoms to avoid adverse events and hospital readmissions
- ⇒ Multidisciplinary approach, including the patient, family and caregivers as part of the team
- ⇒ Practitioner – nurse collaboration
- ⇒ Communication among patient, family, caregivers, primary health providers and other professionals.

Compared to usual care, chronically ill elderly patients (and their caregivers) in the TCM program reported significant improvements in a number of patient-related outcomes¹:

- ⇒ Avoiding hospital readmissions and emergency room visits for primary and coexisting conditions
- ⇒ Improved health outcomes after hospital discharge, including physical health, functional status and quality of life
- ⇒ Enhanced patient and caregiver satisfaction.

The authors also reported “significant total savings in **costs**”. However, the details of their economic analyses were not provided.

7.1.9.2 IMPACT program

The Improving Mood Promoting Access to Collaborative Care Treatment (IMPACT) program was designed to address the unmet needs of elderly people with depression.^{199,200} IMPACT was delivered by a multidisciplinary team, including the patient’s primary care provider, a psychiatrist, a specialist depression care nurse and a liaison primary care provider. A depression care manager and psychiatrist reviewed progress weekly and adjusted treatment using a stepped care protocol¹⁹⁹ (see Appendix 9.4 for more detail).

Control patients receiving usual care had access to all the same treatments as those in the IMPACT group, but their care was not coordinated by a multidisciplinary team. During the two year follow-up period, IMPACT patients in the US were less depressed; more compliant with antidepressant medication; more satisfied with their depression care and enjoyed a better quality of life. Additional evidence from the PRISMA-E study suggests that older patients are more likely to participate in treatment for depression that is offered in primary care.⁹¹

7.2 Divisions of General Practice (DGP)

The Divisions of General Practice (DGP) have played an extensive role in integrating PHC with hospitals, allied health providers and mental health services. Many PHC practices have implemented a broad range of collaboration and shared care programs,²⁰¹ including:

- ⇒ Collaboration with other primary care providers
- ⇒ Collaboration with hospital and/or specialists
- ⇒ Formal agreements with other organisations
- ⇒ Allied health professionals funded by Divisions
- ⇒ Formal mechanism for involving consumers



- ⇒ Structured shared care program
- ⇒ GP collaboration with patient and community support groups
- ⇒ After hours services
- ⇒ Program developed in collaboration with Aboriginal Community Controlled Health Service (ACCHS).

Numerous initiatives have been implemented nationally or at the State level and it was not feasible to identify and assess them all in the available timeframe. A sample of these programs and initiatives is provided below. However, it must be noted that this is not an exhaustive list.

7.2.1 *Better Outcomes in Mental Health Care Initiative- Access to Allied Psychological Services (ATAPS)*

Key points

The **Better Outcomes in Mental Health Care Initiative (ATAPS)** resulted in improvements in patients' psychological health and wellbeing.

DGP activities undertaken with Commonwealth funding through the Access to Allied Psychological Services (ATAPS) program have demonstrated success in facilitating integrated care between GPs and allied health providers (AHPs).^{5,202,203,204}

An evaluation of the Access to Allied Psychological Services (ATAPS) projects^{203,204,205} reported improved patient outcomes related to psychological services. Larger effect sizes in patient psychological health and wellbeing (eg. anxiety, depression, wellbeing and general health scores) were reported when GPs referred patients directly to an allied health professional compared to voucher, brokerage or register systems. Models where the allied health professional was employed by the Division rather than retained on contract were also associated with better outcomes.²⁰⁶ However, findings from these studies must be interpreted with caution as the uncontrolled pre- and post-intervention study design precludes attributing improvements directly to the intervention; and patients may have improved over time despite the intervention. In addition, there has been no systematic assessment of patient experience.

7.2.2 *Enhanced Primary Care (EPC) program*

Key points

While some patients were often unaware that they were in the **EPC program**, they appreciated getting referrals to other providers, rebates for allied health care services, co-location with other services and not having to make co-payments.

Evidence also indicated that **multidisciplinary care plans** improved patients' metabolic control and reduced cardiovascular risk factors.

The Enhanced Primary Care (EPC) program was introduced in 1999 to facilitate access to multidisciplinary care for people with chronic conditions.⁸ General practice could receive a MBS fee for **aged care assessments, care planning and case conferences**; Practice Incentive Payments (PIP) for infrastructure; and Service Incentive Payments (SIP) for reaching designated service targets. More recently, fee-for-service payments were introduced for GP-referred private allied health services for people with chronic conditions.

Patients' views of the EPC initiative have been explored in a number of studies.^{207,208,209,210} Overall, patients did not have a clear understanding of the purpose of their care plans;²⁰⁹ and did not expect to participate in decisions about their care.²¹⁰ However, patients appreciated getting referrals to other health care providers and rebates for allied health care services. **Co-location** of services was a notable success with patients perceiving that information would be exchanged

between the allied health professionals (AHP) and the GP.²⁰⁷ However, some patients indicated that their GP appeared unclear about the role of the AHP, and were surprised when told about the education provided, their motivational interviewing techniques and the changes that the patient had adopted as a result of the consultation. After having seen the AHP, most patients felt that they had learned what they needed to and did not need to return. Approximately 50% of patients had seen an AHP in the past but had discontinued due to cost, waiting times or availability. Patients appreciated not having co-payments; and while 64% were prepared to pay a co-payment if services were provided in the GP rooms (co-location), 30% of patients would not have consulted AHPs if they were required to pay. Since many patients had attended AHPs for the first time under the program, the authors concluded that, if a co-payment was required, one in three patients would not be able to access services and be at greater risk of complications. They concluded that the program was **cost-effective**, however, it was not clear how the economic analysis had been undertaken. While EPC may increase access to allied health services, gap payments may deter economically disadvantaged groups in particular.²⁰⁸

An audit of 230 patients' medical records revealed that after receiving a **multidisciplinary care plan** for Type II diabetes, patients had improved metabolic control and cardiovascular risk factors.²¹¹

7.2.3 Primary Care Partnerships (PCPs)

Key points

Primary Care Partnerships led to improved patient-provider interactions in terms of receiving appropriate information about their conditions, increased opportunity to discuss and make choices about treatment, and ease of referrals to relevant services.

In 2000, the Victorian government established 31 Primary Care Partnerships (PCPs) across the state to improve coordination of planning and service delivery between State and Commonwealth funded PHC services.²¹² These partnerships comprise DGP, hospitals, community health, local government and non-government organisations. PCPs support implementation of a variety of health service innovations and the model has been emulated in Queensland and South Australia (GP Plus).⁸

Four factors emerged from an evaluation of patients' experiences of the PCPs,²¹³ including:

- 1 Consumer interactions with professionals** – eg. sufficient time with health provider, received information about condition, opportunity to discuss and make choices about treatment
- 2 Information sharing between agencies** – eg. information received on time, consumer referred to useful services
- 3 Service information** – eg. received necessary information, received information about services, services were convenient
- 4 Consumer information** – eg. received general health information, useful information in waiting room, received information about health promotion activities.

Results of the evaluation showed that consumers rated highly their interactions with health professionals across each domain. Consumers were asked to describe the frequency with which they had experienced 22 different kinds of positive experiences or aspects of care in the past three months on a scale of 1 (never) to 5 (always). Analysis showed that the mean score for **information sharing** between services was 3.8 (sometimes) and receiving information about services was 4.4 (often). Overall, the evaluation concluded that the impact of the PCP Strategy had

been positive for both agencies and consumers. However, there has been limited success in engaging general practice.⁸

7.2.4 More Allied Health Services (MAHS) programs

Key points

Patients' views about the **MAHS** programs are not available.

The More Allied Health Services (MAHS) program was established in 2001 with the aim to:

... improve the health of people living in rural areas through access to allied health care and improve local linkages between allied health care and general practice²¹⁴

A wide range of allied health professionals have been engaged by DGP and funded through MAHS including, Aboriginal and Torres Strait Islander health workers, audiologists, chiropractors, counsellors, dietitians, physiotherapists, podiatrists, psychologists, speech pathologists, registered nurses and social workers.

An evaluation of MAHS found that co-location, shared patient notes and formal referral and feedback processes led to better coordination and integration. While patient perspectives were obtained in the evaluation, they have not been reported, except for stating that the program has been “popular” with patients.²⁰²

7.2.5 Australian Better Health Initiative (ABHI)

Key points

The **Australian Better Health Initiative** is currently being evaluated.

The Australian Better Health Initiative (ABHI), which was funded for four years in 2006, was a \$500 million joint Commonwealth, State and Territory program that focused on prevention and reducing the burden of chronic disease.²¹⁵ One component of the initiative was “Improving Integration and Coordination of Care”. DGP currently undertake diverse programs under this component of the initiative. An evaluation of these programs is underway in collaboration between La Trobe University School of Public Health and Australian Institute for Primary Care, Public Health Information Development Unit, University of Adelaide and Health Economics and Funding Reforms, but further information is not currently available.

7.2.6 National Primary Care Collaboratives Program (NPCCP)

Key points

Patients with diabetes or coronary heart disease in the **NPCCP** showed improvements in physiological risk factors (blood pressure, HbA1c, cholesterol).

The NPCCP was introduced in 2004 to improve access and integration of health care services for chronically ill patients and/or those with complex conditions

Using Plan-Do-Study-Act (PDSA) cycles and focusing on the local needs in practices, the NPCCP led to improved quality of care for patients with coronary heart disease.²¹⁶

Following implementation in seven selected sites in Western Australia, there were improvements in medication and reduced blood pressure in patients with coronary heart disease; improvements in HbA1c levels, cholesterol and blood pressure in patients with diabetes.²¹⁷

7.2.7 Primary Care Amplification Model (PCAM)- 'Beacon' practice

Key points

A **Beacon practice** at Inala Primary Care resulted in increased attendance by the Indigenous population, increased satisfaction with services, due to a more culturally appropriate approach to access and services, and significant reduction in mean blood sugar levels in Indigenous patients with diabetes.

The Primary Care Amplification Model (PCAM) involves building PHC capacity by “uniting local general practices around a central ‘**beacon**’ practice⁸,”²¹⁹ In addition to the core principles of general practice and PHC “first contact, continuous, comprehensive and coordinated care provided to populations undifferentiated by gender, disease, or organ system”,²²⁰ the PCAM has four key features²¹⁹:

- 1 Support primary care within and external to the practice
- 2 Expanded clinical model of care
- 3 Governance approach tailored to specific needs of the local community
- 4 Technical and physical infrastructure to support an expanded scope of practice.

The PCAM model provides:

A mechanism for integrating, rather than competing with, local service delivery and supporting and assisting capacity within local general practices²²¹.

The pilot ‘beacon’ practice is Inala Primary Care (IPC), which was opened in 2007 in a low socioeconomic area of Brisbane. Due to the large Indigenous population and high prevalence of diabetes in this area, IPC developed a multidisciplinary, integrated diabetes care service – the Inala Chronic Disease Management Service (ICDMS) – which involves partnerships between an endocrinologist, diabetes educators and IPC clinical fellows to support local GPs.

Prior to opening IPC, an evaluation of the Inala mainstream general practice from the perspective of Indigenous patients revealed a number of shortcomings, including: lack of items within the facility that Indigenous people could identify with; lack of Indigenous staff; inflexible attitudes concerning time; intolerance towards Indigenous children’s behaviour; and perception of staff as unfriendly.²²¹ Following community consultation, the following strategies were implemented:

- 1 **Employ more Indigenous staff:** Indigenous health worker, receptionist, liaison worker
- 2 **Culturally appropriate waiting room:** health posters, artefacts, Indigenous radio station
- 3 **Cultural awareness:** training for staff
- 4 **Inform Indigenous community:** disseminate information about services to the community
- 5 **Promote intersectoral collaboration:** liaise with ACCHS and Indigenous Women’s health support group.

By addressing the barriers and implementing culturally appropriate service (eg. local languages, beliefs, gender and kinship systems), attendance by Indigenous patients increased from 12 in 1994

8 “Beacon practice supports and extends the capacity of local general practices in areas of local population clinical need, undergraduate and postgraduate teaching (medical, nursing, and allied health), relevant local clinical research, and improved integration with local secondary, tertiary, and other state-funded health care”²¹⁸.

to over 3 000 registered patients in 2008. The Indigenous population remained stable during this period. Interviews with 35 Indigenous patients confirmed their increased satisfaction with services, due to better communication with the Indigenous staff and more Indigenous focus. The “**one-stop shop**” approach provided access to allied health services, mental health, alcohol and other drug services and child health services. In addition, preliminary analysis of 64 (of 170) patients after six months attending the ICDMS showed significant reduction in mean HbA1c (0.64%, $p < 0.01$).²¹⁸

Another evaluation of the ICDMS is underway and findings are not yet available.²²²

7.2.8 GP Super Clinics

As part of the national Health Reform process, the Australian government has committed funds for developing 36 GP Super Clinics around the country²²³ over the next four years.⁸ One of the core characteristics of GP Super Clinics is to “provide their patients with well integrated multidisciplinary patient centred care”.²²³ With a focus on PHC, the objective of clinics is to develop better coordination between GP services, community health and other State and Territory funded services.

It is intended that each GP Super Clinic will bring together general practitioners, nurses, visiting medical specialists, allied health professionals and other health care providers to deliver better health care, tailored to the needs and priorities of the local community.²²³

7.3 Additional initiatives in the Australian context

There are a large number of initiatives that have been implemented in different locations across Australia. However, few of these have been evaluated for effectiveness or cost-effectiveness, and fewer still have explored the impact of integrated care on patient outcomes. A sample of these initiatives is shown in **Table 7–3**.

Table 7–3 Other Australian integration initiatives

Initiative/Description	Structures , processes and activities to support initiatives	Evaluation
GP Hospital Integration Demonstration Sites program: Models of integration between PHC and acute care sector	<ul style="list-style-type: none"> Overall steering group Project committees /working/reference groups Memoranda of Understanding Facility as base for integrated activity (co-location) Consultation with stakeholders Joint service planning and development activities Workshops for participants/organisations Mapping patient journeys Plan Do Study Act cycles Use of MIM⁹ to measure aspects of integration 	<p>Available evaluations typically focussed on process outcomes rather than the impact on patients’ health and wellbeing. Only the Perth site demonstrated benefits for patients, with reductions in length of hospital stay and waiting times²²⁴. No data on patient experience were included in the report on the Tasmanian program²²⁵</p>

⁹ MIM: Mater Integration Measure.



<p>Australian Demonstration Hospitals Program: Innovative health service delivery approaches to overcome barriers to integrated care²²⁶</p>	<p>Health service agreement Memoranda of Understanding Information systems upgrade Support elements for collaboration in: Quality improvement Communication systems Resource sharing Research, education & learning Benchmarking, policy & ethics Standards, guidelines & pathways GP Liaison Officers Shared Care After hours primary care GP Home Link Emergency to Home Outreach service Hospital in the home Care continuum pathway project</p>	<p>The program aimed to facilitate integration across organisational boundaries²²⁷. Only consumer participation was evaluated; not consumer outcomes^{228,229}.</p>
<p>GP Liaison Officers: Funded by the Victorian Government under the HARP Initiative since 2005 and by DGP through a variety of funding sources^{230,231}</p>	<p>Workshops Email network at State-wide level GP Hospital liaison meetings of senior hospital and division personnel at local level Strong commitment from State Health Dept, hospitals and general practice at a senior level</p>	<p>GP Liaison officers located in hospitals have been seen as one of the best strategies for GP-Hospital integration since the late 1990s. In the 2007 Annual Survey of Divisions³⁹, 65% of Divisions indicated that they had a GP Hospital Liaison program. While GP Liaison Officers led to improved relationships, better communication of discharge summaries to GPs, improved referral practices and improved information to GPs about hospital services and processes²³², the patients' perspectives were not examined.</p>
<p>Connecting Health care in Communities</p>	<p>Shared planning and service delivery Shared assessment tools Common management protocols Agreed roles in patient support and education Local community health promotion action²³³</p>	<p>Initiative has been established by Queensland Health to develop local collaborations in PHC aimed at enhancing service coordination and delivery. The Initiative is currently being evaluated²³⁴. Consumer feedback about the early stages of the initiative is included in the baseline report. While it is generally positive, little detail is given.</p>

7.4 Overseas models

7.4.1 Kaiser Permanente and Veterans Health Administration – USA

Key points

Kaiser Permanente and Veterans Health Administration delivered a system of integrated care that resulted in improvement in some clinical outcomes for patients and higher levels of patient satisfaction

The **eHealth record system** facilitated coordination of care and led to improved disease management, reduced mortality and overall enhanced patient experience.

Kaiser Permanente (KP), which is the largest managed care organisation in the USA,²³⁵ and Veterans Health Administration (VHA) are vertically integrated organisations that use a centralised approach to health care service. In both cases, KP and VHA use a single *eHealth* record system that works across primary, hospital and community care settings.⁸¹ The *eHealth* record system facilitates their system of care coordination; supports case management, with embedded chronic care management protocols; and focuses on prevention and hospital avoidance, early discharge to

skilled nursing and rehabilitation facilities. KP, which also owns a network of non-profit hospitals and diagnostic services available to subscribed members, exclusively contracts medical practitioners to deliver PHC privately owned practices.

Using the RAND quality assessment tools, Asch et al. (2004) found significantly higher adherence to recommended care for patients in the VHA compared to patients in a national sample, particularly in chronic disease management and preventive care.²³⁶ Both VHA and KP have reported improved clinical efficacy, outcomes (eg. weight loss and smoking cessation) and patient satisfaction since implementing the integrated information systems.⁸¹

Optimal information sharing and exchange requires informed patients and providers; accurate, secure and confidential identification of patient, provider and location; accurate and standardized information; robust and secure information systems; and well-grounded standard operating procedures and governance protocols⁸¹.

In a comparison of the **economic** performance of the UK NHS and KP in California, findings indicated that KP provided superior services with a budget similar to that of the NHS.²³⁷ However, a subsequent study challenged these results due to the substantial differences between the universal population coverage by the NHS and the affluent employed clientele serviced by KP.²³⁸ Overall, evidence suggests that the KP system reduces hospital admission rates and length of stay, but evidence related to patients' health outcomes and wellbeing is limited.²⁰ Nevertheless, the KP model has been influential for implementing changes in some areas of the NHS.²³⁹

There is evidence that the *eHealth* record system is beneficial in achieving care coordination in chronic disease;²⁴⁰ and enables intensive monitoring that has achieved an unprecedented reduction of blood lipid levels in a monitored group.²⁴¹ A recent study by KP²⁴² of the use of *eHealth* records and a disease registry to facilitate care coordination for patients with cardiac disease achieved a substantial reduction in mortality (16/628 (2.5%) deaths from all causes in the intervention group versus 188/628 (30%) in the non intervention group). **Cost** savings for those enrolled in the program were also noted. The project, which was undertaken by KP, gathered data from a number of sources and provided physician prompts, thus enabling proactive intervention on test results, screening, overdue prescriptions and medication compliance.

Another KP-led study²⁴³ analysed the association between the use of *eHealth* records and clinicians' perceptions of three dimensions of care coordination (timely access to complete information, treatment goal agreement, and role/responsibility agreement). The study found that clinicians who used *eHealth* records for longer than six months were significantly more likely than those who did not to report having timely access to relevant clinical information. Those using the *eHealth* records also demonstrated agreement with other treating clinicians regarding patient treatment objectives.

KP also uses the IDEO¹⁰ Innovation Methodology to explore the emotional experience of patients in their pathway through the Kaiser medical system.^{244,245} This methodology includes observation as well as patient interviews to develop innovative solutions that aim to improve the patient experience in the belief that a comfortable environment and a reduction in stressful experiences improve health outcomes.

¹⁰ IDEO is a "design thinking" organisation that integrates what is desirable with what is "technologically feasible and economically viable" <<http://www.ideo.com/about/>>.

Although individuals with drug and/or alcohol-related problems commonly have related medical and/or psychological conditions, PHC and substance use treatment services are seldom well-coordinated. Treatment for alcohol-related conditions may be associated with a range of health services, such as primary care, emergency care, obstetrics (eg. foetal alcohol syndrome) and mental health care as well as social services, including domestic violence, child protective services, housing and employment. In a good quality RCT, patients were randomly assigned to an integrated services model of care (PHC delivered in a drug and alcohol treatment clinic) or usual care (PHC and drug and alcohol treatment services delivered independently) at the Chemical Dependency Recovery Program of KP, California.²⁴⁶ After six months, while there were similar improvements in measures of substance use for both groups, patients in the integrated care group were more likely to be abstinent than those in the independent care group. Analyses also showed that patients with physiological and behavioural conditions related to substance use had better outcomes when they received integrated care; and the outcomes were related to the patient-provider interaction rather than higher use of health services.²⁴⁶

7.4.2 Patient-Centred Medical Home (PCMH) – USA

Key points

There is mixed evidence related to patients' experience to the **Patient-Centred Medical Home** model, with improvement in some patient outcomes and increased satisfaction with care.

The Patient-Centred Medical Home (PCMH) is gaining traction in the USA as a new way to organise and finance health care and to maintain the key values of primary care.²⁴⁷ It has been described as a model that:

... combines the traditional core values of family medicine – providing comprehensive, coordinated, integrated, quality care that is easily accessible and based on an ongoing relationship between patient and physician – with new practice tools such as health information technology²⁴⁸.

The PCMH model of PHC seeks to simultaneously address multiple aspects of continuity of care, including information sharing, multidisciplinary teams and case management.¹⁹

Implicit in the concept of the patient-centred medical home is the recognition that care is a longitudinal process and is not simply a series of isolated events¹⁹.

The PCMH is based on seven key principles²⁴⁷:

- ⇒ **Personal physician:** Each patient has an ongoing relationship with a personal physician trained to provide first contact and continuous and comprehensive care
- ⇒ **Physician-directed medical practice:** The personal physician leads a team of individuals at the practice level who collectively take responsibility for the ongoing care of patients
- ⇒ **Whole-person orientation:** The personal physician is responsible for providing for the entire patient's health care needs and taking responsibility for appropriately arranging care with other qualified professionals
- ⇒ **Coordination and/or integration of care:** Care is coordinated and/or integrated across all elements of the complex health care system (eg. subspecialty care, hospitals, home health agencies, nursing homes) and the patient's community (eg. family, public, and private community-based services). Care is facilitated by registries, information technology, health information exchange, and other means
- ⇒ **Quality and safety:** Quality and safety are hallmarks of a medical home, achieved by incorporating a care-planning process, evidence-based medicine, accountability, performance measurement, mutual participation, and decision making



- ⇒ **Enhanced access:** Enhanced access to care is available through systems such as open scheduling¹¹, expanded hours, and new options for communication between patients, their personal physician, and practice staff
- ⇒ **Payment:** Payment appropriately recognises the added value provided to patients who have a patient-centred medical home beyond the traditional fee-for-service encounter.

Consistent, good quality evidence indicates that patients who have a “continuity relationship” with their primary care provider have better outcomes; and patients in primary care practices that demonstrate more features of the medical home are more likely to be up to date on preventive care (eg. immunisations, screening) and less likely to use emergency rooms.²⁵⁰

The National Demonstration Project tested this model in a large group-randomised controlled trial in Kansas (US).²⁵¹ Patient-rated outcomes, which included: primary care attributes, patient empowerment, general health status and satisfaction with the service relationship, were surveyed up to 26 months after the intervention was implemented.^{252,253} Substantial adoption of the different components of the PCMH model occurred in the highly motivated and self-selected practices that participated in the study. However, while significant improvements were recorded in quality of care, access, preventive care and chronic care scores, there was no evidence of improvement in patients’ self-reported experiences. Since the model did not include infrastructure to support changes to the service delivery system, Jaen et al. suggest that:

Without fundamental transformation of the health care landscape that promotes coordination, close ties to community resources, payment reform, and other support for the PCMH, practices going it alone will face a daunting uphill climb²⁵².

7.4.3 Integrated inpatient health care (IHC) - Germany

An integrated Inpatient Health Care (IHC) program in Germany involves patient information, education and motivation combined with structured case management, clinical pathways and interdisciplinary patient care.²⁵⁴ There were no significant differences in self-reported health-related quality of life or patient satisfaction compared to patients who were not on the program. However, patients’ length of hospital stay and waiting times for rehabilitation were reduced.

7.4.4 Integrated care pilots – UK

Key points

Integrated care pilots resulted in reduced hospital admissions and fewer bed-days for emergency admissions for chronically ill patients; fewer hospital admissions for patients in palliative care; and more appropriate prescribing.

Currently a project is underway in the UK to evaluate 16 integrated care pilot projects.²⁵⁵

One integrated care pilot in Guildford, Surrey reported that the integrated care initiative was perceived by patients as “more responsive and joined-up”.²⁵⁶ Six practices in Guildford joined forces to form an integrated care organisation managing approximately 73 500 patients, with a capitated budget of around £800 per patient for primary and secondary care and with management support from Integrated Health Partners (IHP).²⁵⁶ Stakeholders (IHP, GPs and partners within and between practices) shared a similar vision and identified eight areas for improvement: chronic

¹¹ Open access scheduling involves limiting the number of appointments that can be booked in advance and increasing time for unscheduled appointments, so that patients call for an appointment on the day they want to be seen. Open scheduling increases patient satisfaction (same-day appointment, less waiting) and benefits practice as fewer “no shows”²⁴⁹.

disease management, end-of-life care, patient engagement, elective pathways management, claims validation, public health, medicines management and primary care in accident and emergency. **Table 7–4** shows some of the strategies and associated outcomes in some of the focus areas identified for improvement.

Table 7–4 Summary of strategies and achievements in focus areas

Focus area	Strategies
Chronic disease management	Long-term chronically ill patients and those who were most at risk of hospital admissions were visited regularly at home by community matrons and district nurses, respectively, resulting in reductions in hospital admission rates (0.6% in pilot practices vs. 4.6% increase in other Guildford practices); and fewer bed-days for emergency admissions (reduced by 7.8%).
End-of-life care	The Gold Standards Framework for end-of-life care ¹² was adopted to avoid unnecessary hospital admissions and ensure that patients who wished to spend their last days at home could do so. All partners received training in end-of-life care; multidisciplinary meetings were held every six weeks, with relevant palliative care providers to discuss and manage the needs of patients with terminal illnesses. Twenty admissions were avoided during the pilot period (saving £60 000).
Elective pathway systems management	Rapid access to community physiotherapy services Occupational health visits to patients at home Rapid access care packages (eg. caregivers to assist frail elderly person who had fallen at home) Direct line to intermediate care services, with a community matron available to update GPs on available services Social services were integrated into the scheme by including them on the intermediate care referral form. In this way patients could potentially avoid a hospital admission, with the help of a social services care package.
Medicines management	Prescribing was reduced by sharing medicine management data with other members and pharmacists. Patient medication reviews often took place in their homes and prescribing costs reduced by 3% compared to the previous year.
Primary care in accident & emergency	The local walk-in centre was integrated into accident & emergency, saving £258 000.

The key success factors to getting all six practices working together were:

- ⇒ **Communication** was enhanced by ensuring practices were well represented at meetings, particularly during the development stage of the project
- ⇒ **Data sharing** was challenging, but critical to smooth functioning. Practices shared data about prescribing and referrals and IHP used systems to track referrals. Each partner in a practice was responsible for a specific clinical area. Data sharing resulted in 0.7% reduction in outpatient appointments (saving £230 000), whereas practices outside the project reported a 5.2% increase. Data sharing also identified areas where additional training was needed
- ⇒ **Clear lines of responsibility and accountability** were established with input from a steering group, a clinical GP leader and an IHP management leader.

Twelve months after implementation, the group reported a savings of £1.6m at a cost of £600 000; and benefits of patients, including:

- ⇒ Reduced unnecessary hospital admissions
- ⇒ Improved medication management
- ⇒ Patients perceived improved care, including better end-of-life care.

¹² Gold Standards Framework: <<http://www.goldstandardsframework.nhs.uk/AdvanceCarePlanning>>

Despite the achievements, the Primary Care Trust did not continue with the scheme in Guildford beyond the pilot stage. Analyses from other pilot areas are not yet available.

7.4.5 Primary care networks (PCN) – Canada

Key points

Patient outcomes and experience of PCNs is not yet available.

Primary Care Networks are an initiative from Alberta, Canada established under the Primary Care Initiative.²⁵⁷ They are self organised groups of general practitioners, either within one large practice or alliances between small practices, together with nurse practitioners and other allied health professionals. The network receives funding from the regional health authority to become established, and also receives guidance and assistance in creating a website, business planning, marketing material, and resources for patients. Networks report back to the Primary Care Initiative Committee. Their mission is to:

... plan and deliver comprehensive, publicly funded primary care services to a defined group of patients. Each network is unique, developing local solutions to address needs of the local population²⁵⁸.

PCNs are responsive to the needs of their community so there is considerable variation in structure. For example, the Calgary Rural PCN²⁵⁹ involves 100 doctors delivering services to 110 000 patients. The network is composed of seven regional multidisciplinary teams. Some of these teams share **electronic health records** using iPhone technology.

A key success factor for the PCNs is development of a cooperative and collaborative relationship between the health care professionals and the regional health authority. **Table 7–5** shows some innovative ideas and programs that have been launched in several PCNs.

Table 7–5 Examples of strategies implemented in some PCNs

Strategies

After-hours clinic

Women's health clinic, with female practitioners and public health nurses

Access to nurses for chronic disease management frees up doctors for other patients

Same-day appointments

Well-baby clinic avoids separate appointments with public health nurses and family doctors

Home care nurses to network doctors, rather than geographic assignment for better continuity of care

The Practice Management Program (PMP) is a critical support system for health care providers in the PCNs.²⁵⁸ The PMP facilitates development of networks, provides free business consulting services, and assists providers with information about PCN establishment, governance, taxation and liability.

There is an enormous amount of work to do that physicians just do not have the time to do while continuing to practise full-time medicine. We could not have done this without PMP's hard work and support (Calgary West Central network physician²⁵⁸)

An evaluation of the Primary Care Networks is underway,²⁵⁷ which includes assessment of patient outcomes through a telephone survey of 8 000 patients. The evaluation is due to be completed in 2011.

A related initiative of the Alberta Health Services is the use of the **Expanded Chronic Care model** in Chronic Disease Management Programs across Alberta. The Primary Care Networks Office is represented on the Advisory Committee. The Chronic Disease Management Services in each region deliver services in partnership with Primary Care Teams.¹⁷⁸ While there are perceived benefits for patients, outcome data is not yet available.

7.4.6 Southcentral Foundation (SCF) Nuka model of care – Alaska

Key points

SCF Nuka model of care has led to reductions in hospital days, emergency department use and specialist use; and patients' access and wait times for appointments have improved.

Southcentral Foundation (SCF) is an Alaskan Native-owned non-profit health care system located in Anchorage, Alaska <http://www.youtube.com/user/CHSRF#p/u/0/tLnZ3_AccoU>. Small integrated primary care teams, which comprise a primary care physician, medical assistants, a care coordinator nurse, an administrative assistant and, sometimes, a behaviourist, work to develop relationships with patients to coordinate and manage their health care needs.²⁶⁰ Depending on the nature of the problem, the primary care team may schedule patients (customer-owners) to see the doctor, medical assistant or any other member of the team; or issues may be dealt with over the phone. In this way, access is improved and waiting times are reduced as not all patients need to see the doctor:

To eliminate the doctor as the rate-limiting step, or bottleneck, processes are performed in parallel, shifting the work to where it's most appropriately and cheaply done²⁶⁰

Since its transition to a customer-owned system in 1999, SCF has transformed from an inefficient, impersonal provider of “tests, diagnoses, pills and procedures” to a system that puts customers' needs, goals and values as its central focus. Given the high proportion of Alaskan Native population in the area, there is a strong focus on cultural values and competencies in community health services. According to SFC's review of their own performance, the transformation has resulted in a number of benefits to patients, the organisation and the community, including:

- ⇒ Reductions in use of a number of services, including 40% reduction in urgent care and emergency department use
- ⇒ 50% reduction in specialist use
- ⇒ 30% reduction in hospital days
- ⇒ “Perfect care” for children with asthma increased from 35% to 85%, and hospital admissions dropped from 10% to less than 3%
- ⇒ Same-day access was implemented and wait-list reduced from 1300 individuals to almost zero in 12 months
- ⇒ 91% of SFC patients reported satisfaction with overall care (survey conducted by SFC).²⁶⁰

An independent evaluation of this model of care, including long term follow-up, is needed to determine its effectiveness and cost-effectiveness.



8 References

- 1 Naylor, M. D., & Sochalski, J. A. (2010). Scaling up: Bringing the transitional care model into the mainstream. *Issue Brief (Commonw Fund)*, 103, 1-12, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=21053533.
- 2 Schoen, C., Osborn, R., How, S., Doty, M., & Peugh, J. (2009). In chronic condition: Experiences of patients with complex health care needs, in eight countries, 2008. *Health Aff (Millwood)*, 28(1), w1-16, <http://proquest.umi.com/pqdlink?index=0&did=1866363101&SrchMode=1&sid=2&Fmt=4&VInst=PROD&VType=PQD&ROT=309&VName=POD&TS=1284361802&clientId=20831>.
- 3 Wensing, M., Jung, H. P., Mainz, J., Olesen, F., & Grol, R. (1998). A systematic review of the literature on patient priorities for general practice care. Part 1: Description of the research domain. *Soc Sci Med*, 47(10), 1573-1588, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=9823053.
- 4 Shea, B. J., Hamel, C., Wells, G. A., Bouter, L. M., Kristjansson, E., Grimshaw, J., et al. (2009). AMSTAR is a reliable and valid measurement tool to assess the methodological quality of systematic reviews. *J Clin Epidemiol*, 62(10), 1013-1020, <http://www.sciencedirect.com/science/article/B6T84-4VNCC0R-8/2/536c7170fc163d398b19f12d877c9218>.
- 5 Powell Davies, G., Harris, M., Perkins, D., Roland, M., Williams, A., Larsen, K., et al. (2006). *Coordination of care within primary health care and with other sectors: A systematic review*. Canberra: Research Centre for Primary Health Care and Equity, The University Of New South Wales, University Of Manchester, <http://www.anu.edu.au/aphcri/Domain/MultidisciplinaryTeams/index.php>.
- 6 Yates, P. (2004). Cancer care coordinators: Realising the potential for improving the patient journey. *Cancer Forum*, 28(3), 128-132.
- 7 Leutz, W. (1999). Five laws for integrating medical and social services: Lessons from the United States and the United Kingdom. *Milbank Q*, 77(1), 77-109.
- 8 Powell Davies, G., Perkins, D., McDonald, J., & Williams, A. (2009). Integrated primary health care in Australia. *Int J Integr Care*, 9, e95, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2787230/?tool=pubmed>.
- 9 McDonald, K. M., Sundaram, V., Bravata, D. M., Lewis, R., Lin, N., Kraft, S. A., et al. (2007). *Closing the quality gap: A critical analysis of quality improvement strategies*. Rockville, MD: Agency for Healthcare Research and Quality, <http://www.ahrq.gov/clinic/tp/caregaptp.htm>.
- 10 Rittenhouse, D. R., & Shortell, S. M. (2009). The patient-centered medical home: Will it stand the test of health reform? *JAMA*, 301(19), 2038-2040, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=19454643.
- 11 Ham, C., & Smith, J. (2010). Removing the policy barriers to integrated care in England. London: The Nuffield Trust, www.nuffieldtrust.org.uk/publications.
- 12 Kodner, D. L. (2009). All together now: A conceptual exploration of integrated care. *Healthc Q*, 13 Spec No, 6-15, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20057243.
- 13 Blendon, R. J., Schoen, C., DesRoches, C., Osborn, R., & Zapert, K. (2003). Common concerns amid diverse systems: Health care experiences in five countries. *Health Aff (Millwood)*, 22(3), 106-121, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=12757276.
- 14 Rawaf, S., De Maeseneer, J., & Starfield, B. (2008). From Alma-Ata to Almaty: A new start for primary health care. *Lancet*, 372(9647), 1365-1367.
- 15 Dunbar, J., & Reddy, P. (2009). Integration and coordination of care. *Aust J Rural Health*, 17(1), 27-33.



- 16 Bodenheimer, T. (2008). Coordinating care - A perilous journey through the health care system. *NEJM*, 358(10), 1064-1071, <http://www.nejm.org/doi/abs/10.1056/NEJMp0706165>.
- 17 Armitage, G. D., Suter, E., Oelke, N. D., & Adair, C. E. (2009). Health systems integration: State of the evidence. *Int J Integr Care*, 9, e82.
- 18 Grone, O., & Garcia-Barbero, M. (2001). Integrated care: A position paper of the WHO European Office for Integrated Health Care Services. *Int J Integr Care*, 1, e21, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16896400.
- 19 Guthrie, B., Saultz, J. W., Freeman, G. K., & Haggerty, J. L. (2008). Continuity of care matters. *BMJ*, 337, a867, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18687724.
- 20 Strandberg-Larsen, M. (2011). Measuring integrated care. *Dan Med Bull*, 58(2), B4245, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=21299927.
- 21 Centre for GP Integration Studies. (2001). *GP-Hospital integration: What have we learnt?* Canberra: Australian Government Department of Health and Ageing, <http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pcd-programs-gphi-learnt.htm>.
- 22 Lloyd, J., & Wait, S. (2006). *Integrated care: A guide for policymakers*. London: Alliance for Health & the Future.
- 23 Tieman, J. J., Mitchell, J., Shelby-James, T. M., Currow, D., Fazekas, B., O'Doherty, L., et al. (2006). *Integration, coordination and multidisciplinary approaches in primary care: A systematic investigation of the literature*. Canberra: Australian Primary Health Care Research Institute, Flinders University Department of Palliative and Support Services., <http://www.anu.edu.au/aphcri/Domain/MultidisciplinaryTeams/index.php>.
- 24 Powell Davies, G., Williams, A. M., Larsen, K., Perkins, D., Roland, M., & Harris, M. F. (2008). Coordinating primary health care: An analysis of the outcomes of a systematic review. *Med J Aust*, 188(8 Suppl), S65-68.
- 25 Wensing, M., Wollersheim, H., & Grol, R. (2006). Organizational interventions to implement improvements in patient care: A structured review of reviews. *Implement Sci*, 1(1), 2, <http://www.implementationscience.com/content/1/1/2>.
- 26 Coleman, E. A., Boulton, C., & American Geriatrics Society Health Care Systems Committee. (2003). Improving the quality of transitional care for persons with complex care needs. *J Am Geriatr Soc*, 51(4), 556-557.
- 27 Forster, A. J., Murff, H. J., Peterson, J. F., Gandhi, T. K., & Bates, D. W. (2003). The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med*, 138(3), 161-167.
- 28 Vira, T., Colquhoun, M., & Etchells, E. (2006). Reconcilable differences: Correcting medication errors at hospital admission and discharge. *Quality & Safety in Health Care*, 15(2), 122-126.
- 29 Muecke, S., Kalucy, E., & McIntyre, E. (2010). *Continuity and safety in care transitions: Communication at the hospital/community interface*. Adelaide, South Australia: Primary Health Care Research & Information Service, http://www.phcris.org.au/phplib/filedownload.php?file=/elib/lib/downloaded_files/publications/pdfs/news_8330.pdf.
- 30 Alma-Ata. (1978). Declaration of Alma-Ata. International conference on primary health care. *Alma-Ata, USSR Sept, 6 - 12*, http://who.int/hpr/NPH/doc/declaration_almaata.pdf.
- 31 Ansari, Z. (2007). A review of literature on access to primary health care. *Aust J Prim Health*, 13(2), 80-95, http://www.publish.csiro.au/?act=view_file&file_id=PY07026.pdf.
- 32 Liaw, S. T., & Kilpatrick, S. (2008). *A textbook of Australian rural health*. Canberra: Australian Health Rural Education Network.
- 33 Christensen, H., Griffiths, K. M., & Gulliver, A. (2008). Plenty of activity but little outcome data: A review of the "grey literature" on primary care anxiety and depression programs in Australia. *Med J Aust*, 188(12 Suppl), S103-106.
- 34 Jackson, C., Nicholson, C., Doust, J., O'Donnell, J., & Cheung, L. (2006). *Integration, coordination and multidisciplinary care in Australia: Growth by optimal governance*



- arrangements. Canberra: Australian Primary Health Care Research Institute, The University of Queensland., <http://www.anu.edu.au/aphcri/Domain/MultidisciplinaryTeams/index.php>.
- 35 Australian Institute of Health and Welfare. (2010). *Australia's health*. Canberra, <http://www.aihw.gov.au/publications/index.cfm/title/11374>.
- 36 Humphreys, J. (2007). *Equity and distributive justice in non-metropolitan Australia*. Background paper prepared for the 10th International Medical Workforce Conference, Vancouver 20-25 March 2007, http://www.rcpsc.medical.org/publicpolicy/imwc/10_equityAUS.pdf.
- 37 Powell Davies, G., McDonald, J., Jeon, H., Krastev, Y., Christl, B., & Faruqi, N. (2009). *Integrated primary care centres and polyclinics: A rapid review*. Canberra: Centre for Primary Health Care and Equity, UNSW, <http://www.anu.edu.au/aphcri/Domain/MultidisciplinaryTeams/index.php>.
- 38 Foster, M. M., Mitchell, G., Haines, T., Tweedy, S., Cornwell, P., & Fleming, J. (2008). Does enhanced primary care enhance primary care? Policy-induced dilemmas for allied health professionals. *Med J Aust*, 188(1), 29-32, http://www.mja.com.au/public/issues/188_01_070108/fo10385_fm.pdf.
- 39 Hordacre, A. L., Howard, S., Moretti, C., & Kalucy, E. (2008). *Moving ahead. Report of the 2006-2007 Annual Survey of Divisions of General Practice*. City: Primary Health Care Research & Information Service, Department of General Practice, Flinders University, and Australian Government Department of Health and Ageing.
- 40 Bruce, N., Romios, P., Naksook, C., & McBride, T. (2008). *Pathways of cancer care that involve public and private cancer services: The consumer experience*. Melbourne: Health Issues Centre,, <http://www.healthissuescentre.org.au/documents/items/2009/05/278811-upload-00001.pdf>.
- 41 Australian Bureau of Statistics. (2010). *Health services: Patient experiences in Australia 2009*. <http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/4839.0.55.001Main%20Features%2012009?opendocument&tabname=Summary&prodno=4839.0.55.001&issue=2009&num=&view=>.
- 42 Cochrane, A. L. (1972). *Effectiveness and efficiency*. London: Nuffield Provincial Hospitals Trust.
- 43 Australian Government Department of Health and Ageing. (2009). *Primary health care reform in Australia. Report to support Australia's first National Primary Health Care Strategy*. Canberra: Australian Government Department of Health and Ageing.
- 44 WHO. (2008). *The World Health Report 2008: Primary care now more than ever*. (Online). Geneva: World Health Organization, http://www.who.int/whr/2008/whr08_en.pdf.
- 45 Jeon, Y. H., Kraus, S. G., Jowsey, T., & Glasgow, N. J. (2010). The experience of living with chronic heart failure: A narrative review of qualitative studies. *BMC Health Serv Res*, 10, 77, <http://www.biomedcentral.com/1472-6963/10/77>.
- 46 Endsley, S., Magill, M. K., & Godfrey, M. M. (2006). Creating a lean practice. *Fam Pract Manag*, 13(4), 34-38, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16671348.
- 47 Elwyn, G., Buetow, S., Hibbard, J., & Wensing, M. (2007). Measuring quality through performance. Respecting the subjective: Quality measurement from the patient's perspective. *BMJ*, 335(7628), 1021-1022, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18007003.
- 48 Whitten, P., & Love, B. (2005). Patient and provider satisfaction with the use of telemedicine: Overview and rationale for cautious enthusiasm. *J Postgrad Med*, 51(4), 294-300, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16388172.
- 49 Australian Commission on Safety and Quality in Healthcare. (2009). *The Australian charter of healthcare rights*. Sydney: ACSQH, [http://www.health.gov.au/internet/safety/publishing.nsf/Content/52533CE922D6F58BCA2573AF007BC6F9/\\$File/17537-charter.pdf](http://www.health.gov.au/internet/safety/publishing.nsf/Content/52533CE922D6F58BCA2573AF007BC6F9/$File/17537-charter.pdf).



- 50 Williams, B., Coyle, J., & Healy, D. (1998). The meaning of patient satisfaction: An explanation of high reported levels. *Soc Sci Med*, 47(9), 1351-1359, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=9783878.
- 51 Darby, C., Crofton, C., & Clancy, C. M. (2006). Consumer Assessment of Health Providers and Systems (CAHPS): Evolving to meet stakeholder needs. *Am J Med Qual*, 21(2), 144-147, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16533906.
- 52 Singh, D., & Ham, C. (2006). *A review of UK and international frameworks*. Birmingham: University of Birmingham, NHS, http://www.improvingchroniccare.org/downloads/review_of_international_frameworks_chris_hamm.pdf.
- 53 Schoen, C., Osborn, R., Doty, M. M., Bishop, M., Peugh, J., & Murukutla, N. (2007). Toward higher-performance health systems: Adults' health care experiences in seven countries, 2007. *Health Aff (Millwood)*, 26(6), w717-734, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=17978360.
- 54 Smith, S. D., Nicol, K. M., Devereux, J., & Cornbleet, M. A. (1999). Encounters with doctors: Quantity and quality. *Palliat Med*, 13(3), 217-223, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=10474708.
- 55 Jeon, H., Jowsey, T., Yen, L., Glasgow, N., Essue, B., Kljakovic, M., et al. (2010). Achieving a balanced life in the face of chronic illness. *Aust J Prim Health*, 16, 66-74, http://www.menzieshealthpolicy.edu.au/other_tops/pdfs_research/ajphbli.pdf.
- 56 Anderson, R. T., Camacho, F. T., & Balkrishnan, R. (2007). Willing to wait?: the influence of patient wait time on satisfaction with primary care. *BMC Health Serv Res*, 7, 31, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=17328807.
- 57 NSW Health. (2009). *NSW health patient survey 2009 statewide results*. Sydney: NSW Health, http://www.health.nsw.gov.au/pubs/2008/pdf/patient_survey_2008.pdf.
- 58 Consumers Health Forum of Australia. (2010). *Quality use of pathology consumer consultation project*. CHF, <https://www.chf.org.au/reports.php>.
- 59 Bywood, P. T., Lunnay, B., & Roche, A. M. (2008). *Effective dissemination: A systematic review of implementation strategies for the AOD field*. (Systematic review). Adelaide: National Centre for Education and Training on Addiction (NCETA), Flinders University, Adelaide Australia.
- 60 Forsetlund, L., Bjorndal, A., Rashidian, A., Jamtvedt, G., O'Brien, M. A., Wolf, F., et al. (2009). Continuing education meetings and workshops: Effects on professional practice and health care outcomes. *Cochrane Database Syst Rev*(2), CD003030, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=19370580.
- 61 Mansouri, M., & Lockyer, J. (2007). A meta-analysis of continuing medical education effectiveness. *J Cont Educ Health Prof*, 27(1), 6-15, <http://dx.doi.org/10.1002/chp.88>.
- 62 Renders, C. M., Valk, G. D., Griffin, S., Wagner, E. H., Eijk, J. T., & Assendelft, W. J. (2001). Interventions to improve the management of diabetes mellitus in primary care, outpatient and community settings. *Cochrane Database Syst Rev*(1), CD001481, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=11279717.
- 63 Thomson O'Brien, M. A., Freemantle, N., Oxman, A. D., Wolf, F., Davis, D. A., & Herrin, J. (2001). Continuing education meetings and workshops: Effects on professional practice and health care outcomes. *Cochrane Database Syst Rev*(2), CD003030, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=11406063.
- 64 Weingarten, S. R., Henning, J. M., Badamgarav, E., Knight, K., Hasselblad, V., Gano, A., et al. (2002). Interventions used in disease management programmes for patients with chronic illness - Which ones work? Meta-analysis of published reports. *BMJ*, 325(7370), 925-928F,



- http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=12399340.
- 65 Mitchell, G. K., Del Mar, C. B., O'Rourke, P. K., & Clavarino, A. M. (2008). Do case conferences between general practitioners and specialist palliative care services improve quality of life? A randomised controlled trial (ISRCTN 52269003). *Palliat Med*, 22(8), 904-912.
- 66 Coulter, A., & Ellins, J. (2006). *Patient-focused interventions: A review of the evidence*. London: The Health Foundation, http://www.health.org.uk/publications/research_reports/patientfocused.html.
- 67 Australian Bureau of Statistics. (2006). *Health literacy, Australia 2006*. Australian Bureau of Statistics, <http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/4233.0Main%20Features22006?opendocument&tabname=Summary&prodno=4233.0&issue=2006&num=&view=>.
- 68 Coulter, A., & Ellins, J. (2007). Effectiveness of strategies for informing, educating, and involving patients. *BMJ*, 335, 24-27, <http://www.bmj.com/content/335/7609/24.long>.
- 69 Parry, C., Kramer, H. M., & Coleman, E. A. (2006). A qualitative exploration of a patient-centered coaching intervention to improve care transitions in chronically ill older adults. *Home Health Care Serv Q*, 25(3-4), 39-53, <http://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=2009322146&site=ehost-live>.
- 70 Garg, A. X., Adhikari, N. K., McDonald, H., Rosas-Arellano, M. P., Devereaux, P. J., Beyene, J., et al. (2005). Effects of computerized clinical decision support systems on practitioner performance and patient outcomes: A systematic review. *JAMA*, 293(10), 1223-1238, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15755945.
- 71 Lassere, M., Johnson, K., Rappo, J., Gellately, W., Iedema, R., Parle, A., et al. (2008). *Use of patient-held paper-based and electronic-based Portable Health Files (PHFs) to facilitate reliable health knowledge transfer among direct health-care providers and their consumer-patients: A clinical trial*. Paper presented at the National Health Informatics Conference (2008: Melbourne, Vic.). from <http://search.informit.com.au/documentSummary;dn=385249034757574;res=IELHEA>.
- 72 Forsyth, R., Maddock, C. A., Iedema, R. A., & Lassere, M. (2010). Patient perceptions of carrying their own health information: Approaches towards responsibility and playing an active role in their own health - Implications for a patient-held health file. *Health Expect*, 13, 416-426.
- 73 Ko, H., Turner, T., Jones, C., & Hill, C. (2010). Patient-held medical records for patients with chronic disease: A systematic review. *Qual Saf Health Care*, 19, 1-7, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20511601.
- 74 Tang, P. C., & Newcomb, C. (1998). Informing patients: A guide for providing patient health information. *J Am Med Inform Assoc*, 5(6), 563-570, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=9824803.
- 75 van Walraven, C., Taljaard, M., Bell, C. M., Etchells, E., Zarnke, K. B., Stiell, I. G., et al. (2008). Information exchange among physicians caring for the same patient in the community. *CMAJ*, 179(10), 1013-1018, <http://www.cmaj.ca/cgi/content/abstract/179/10/1013>.
- 76 Coleman, E. A., & Berenson, R. A. (2004). Lost in transition: Challenges and opportunities for improving the quality of transitional care. *Ann Intern Med*, 141(7), 533, <http://search.proquest.com/docview/222234325?accountid=10910>.
- 77 Rosenthal, M. P., Butterfoss, F. D., Doctor, L. J., Gilmore, L. A., Krieger, J. W., Meurer, J. R., et al. (2006). The Coalition Process at Work: Building Care Coordination Models to Control Chronic Disease. *Health Promotion Practice*, 7(2 suppl), 117S-126S, http://hpp.sagepub.com/content/7/2_suppl/117S.full.pdf+html.
- 78 Yarnall, K. S., Pollak, K. I., Ostbye, T., Krause, K. M., & Michener, J. L. (2003). Primary care: Is there enough time for prevention? *Am J Public Health*, 93(4), 635-641, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=12660210.



- 79 AGPN. (2006). *Better access to mental health care. Orientation manual*. Manuka: Australian General Practice Network.
- 80 Knightbridge, S. M., King, R., & Rolfe, T. J. (2006). Using participatory action research in a community-based initiative addressing complex mental health needs. *Aust N Z J Psychiatry*, 40(4), 325-332.
- 81 Protti, D. (2009). Integrated care needs integrated information management and technology. *Healthc Q*, 13 Spec No, 24-29, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20057245.
- 82 Häyrynen, K., Saranto, K., & Nykänen, P. (2008). Definition, structure, content, use and impacts of electronic health records: A review of the research literature. *Int J Med Inform*, 77(5), 291-304, <http://www.sciencedirect.com/science/article/B6T7S-4PYJCRV-1/2/2f1eb779462df94f0aa879f51a4370fe>.
- 83 Reid, R. J., MD PhD, & Wagner, E. H., MD MPH. (2008). Strengthening primary care with better transfer of information. *CMAJ*, 179(10), 987-988, <http://www.cmaj.ca>.
- 84 Harris, M. F., Chan, B. C., Daniel, C., Wan, Q., Zwar, N., & Davies, G. P. (2010). Development and early experience from an intervention to facilitate teamwork between general practices and allied health providers: The Team-link study. *BMC Health Serv Res*, 10, 104, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2877025/>.
- 85 Chan, B. C., Perkins, D., Wan, Q., Zwar, N., Daniel, C., Crookes, P., et al. (2010). Finding common ground? Evaluating an intervention to improve teamwork among primary health-care professionals. *Int J Qual Health Care*, 22(6), 519-524, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20956284.
- 86 Du Pasquier, S., & Aslani, P. (2008). Concordance-based adherence support service delivery: Consumer perspectives. *Pharm World Sci*, 30(6), 846-853.
- 87 Panvelkar, N., Armour, C., & Saini, B. (2010). Community pharmacy-based asthma services-what do patients prefer? *J Asthma*, 47(10), 1085-1093.
- 88 Sylla, L., Bruce, R. D., Kamarulzaman, A., & Altice, F. L. (2007). Integration and co-location of HIV/AIDS, tuberculosis and drug treatment services. *Int J Drug Pol*, 18(4), 306-312, <http://www.sciencedirect.com/science/article/B6VJX-4NP9KBN-1/2/48f064294dabcaff86a452b520ffc62b>.
- 89 Williams, J., Shore, S. E., & Foy, J. M. (2006). Co-location of mental health professionals in primary care settings: Three North Carolina models. *Clin Pediatr (Phila)*, 45(6), 537-543, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16893859.
- 90 Brown, L., Tucker, C., & Domokos, T. (2003). Evaluating the impact of integrated health and social care teams on older people living in the community. *Health Soc Care Community*, 11(2), 85-94, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14629210.
- 91 Bartels, S. J., Coakley, E. H., Zubritsky, C., Ware, J. H., Miles, K. M., Arean, P. A., et al. (2004). Improving access to geriatric mental health services: A randomized trial comparing treatment engagement with integrated versus enhanced referral care for depression, anxiety, and at-risk alcohol use. *Am J Psychiatry*, 161(8), 1455-1462, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15285973.
- 92 Pomerantz, A. S., Shiner, B., Watts, B. V., Detzer, M. J., Kutter, C., Street, B., et al. (2010). The White River Model of colocated collaborative care: A platform for mental and behavioral health care in the medical home. *Fam Syst Health*, 28(2), 114-129, <http://www.sciencedirect.com/science/article/B7GWH-50TH7Y1-5/2/6425c2880bf5c4621c4ca321493df235>.
- 93 Brawer, P. A., Martielli, R., Pye, P. L., Manwaring, J., & Tierney, A. (2010). St. Louis Initiative for Integrated Care Excellence (SLI2CE): Integrated-collaborative care on a large scale model. *Fam Syst Health*, 28(2), 175-187, <http://www.sciencedirect.com/science/article/B7GWH-50TH7Y1-9/2/94426e68e8684a05dc19191d54ddafbe>.



- 94 Chiu, A., Nguyen, H. V., Reutens, S., Grace, D., Schmidtman, R., Shen, Q., et al. (2009). Clinical outcomes and length of stay of a co-located psychogeriatric and geriatric unit. *Arch Gerontol Geriatr*, 49(2), 233-236, <http://www.sciencedirect.com/science/article/B6T4H-4TT70Y7-1/2/a2bbd5599455bcbb3200d06f26434ec0>.
- 95 Jackson, C., Nicholson, C., Tweeddale, M., Kardash, C., Matthews, P., & O'Donnell, J. (2007). Creating an integrated vision by collocating health organisations: Herding cats or a meeting of minds? *Aust Health Rev*, 31(2), 256-266.
- 96 University of South Australia: Quality use of Medicines and Pharmacy Research Centre, Harrison Health Research, Tony Lawson Consulting, & Australia's Health PL. (2005). *Consumer experiences, needs and expectations of community pharmacy*. Pharmacy Guild of Australia, http://www.guild.org.au/uploadedfiles/Research_and_Development_Grants_Programs/Projects/ExecSumm_8Mar06.pdf.
- 97 Smith, S. M., Allwright, S., & O'Dowd, T. (2007). Effectiveness of shared care across the interface between primary and specialty care in chronic disease management. *Cochrane Database Syst Rev*(3), CD004910, <http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD004910/frame.html>.
- 98 Smith, S. M., Allwright, S., & O'Dowd, T. (2008). Does sharing care across the primary-specialty interface improve outcomes in chronic disease? A systematic review. *Am J Manag Care*, 14(4), 213-224.
- 99 Australian Government Department of Health and Ageing. (2005). *National evaluation of the Sharing Health Care Initiative. Final technical report*. Australian Government Department of Health and Ageing.
- 100 Fuller, J. (2004). *Sharing Health Care SA. Qualitative impact evaluation final report*. Department of Public Health and the Spencer Gulf Rural Health School, University of Adelaide, http://sgrhs.unisa.edu.au/resources/DocCentre/Dnld_Pubs/CDSM/SHC_Fin_Rep.pdf.
- 101 Fuller, J., Harvey, P., & Misan, G. (2004). Is client-centred care planning for chronic disease sustainable? Experience from rural South Australia. *Health Soc Care Community*, 12(4), 318-326, <http://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=2004158062&site=ehost-live>.
- 102 Yang, S. C., Zwar, N., Vagholkar, S., Dennis, S., & Redmond, H. (2010). Factors influencing general practice follow-up attendances of patients with complex medical problems after hospitalization. *Fam Pract*, 27(1), 62-68.
- 103 Crane, J. A. (1997). Patient comprehension of doctor-patient communication on discharge from the emergency department. *J Emerg Med*, 15(1), 1-7, <http://www.sciencedirect.com/science/article/B6T8B-3XSK4WM-1/2/d5ae628139c7a9f90c04eaa65a01abba>.
- 104 Roughead, E. E., Kalisch, L. M., Ramsay, E. N., Ryan, P., & Gilbert, A. L. (2009). "Continuity of care: When do patients visit community health care providers after leaving hospital?". *Intern Med J, Published online Oct 2009*.
- 105 Kaur, J., Leyland, M., Hunter, D., & Sparkes, J. (2009, 25-27 Aug). *The discharge summary divide: A review of electronic solutions, obstacles and benefits*. Paper presented at the World Congress on Privacy, Security, Trust and the Management of e-Business, 2009. CONGRESS '09.
- 106 Jack, B. W., Chetty, V. K., Anthony, D., Greenwald, J. L., Sanchez, G. M., Johnson, A. E., et al. (2009). A reengineered hospital discharge program to decrease rehospitalization. *Ann Intern Med*, 150(3), 178-187, <http://www.annals.org/content/150/3/178.abstract>.
- 107 Shepperd, S., Parkes, J., McClaren, J., & Phillips, C. (2004). Discharge planning from hospital to home. *Cochrane Database Syst Rev*(1), CD000313.
- 108 Mistiaen, P., & Poot, E. (2006). Telephone follow-up, initiated by a hospital-based health professional, for postdischarge problems in patients discharged from hospital to home. *Cochrane Database Syst Rev*(4), CD004510, <http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD004510/frame.html>.
- 109 Phillips, C. O., Wright, S. M., Kern, D. E., Singa, R. M., Shepperd, S., & Rubin, H. R. (2004). Comprehensive discharge planning with postdischarge support for older patients with congestive heart failure: A meta-analysis. *JAMA*, 291(11), 1358-1367.



- 110 Richards, S., & Coast, J. (2003). Interventions to improve access to health and social care after discharge from hospital: A systematic review. *J Health Serv Res Policy*, 8(3), 171-179.
- 111 Ultrafeedback. (2009). *Victorian Patient Satisfaction Monitor: Year 8 annual report 1 March 2008 to 28 February 2009*. Melbourne: State Government of Victoria, Australia. Department of Human Services, http://www.health.vic.gov.au/patsat/vpsm_annual_report_year_8.pdf.
- 112 Preen, D. B., Bailey, B. E., Wright, A., Kendall, P., Phillips, M., Hung, J., et al. (2005). Effects of a multidisciplinary, post-discharge continuance of care intervention on quality of life, discharge satisfaction, and hospital length of stay: A randomized controlled trial. *Int J Qual Health Care*, 17(1), 43-51.
- 113 McInnes, E., Mira, M., Atkin, N., Kennedy, P., & Cullen, J. (1999). Can GP input into discharge planning result in better outcomes for the frail aged: Results from a randomized controlled trial. *Fam Pract*, 16(3), 289-293, <http://fampra.oxfordjournals.org/content/16/3/289.abstract>.
- 114 Johnson, A., & Sandford, J. (2005). Written and verbal information versus verbal information only for patients being discharged from acute hospital settings to home: Systematic review. *Health Educ Res*, 20(4), 423-429.
- 115 McMurray, A., Johnson, P., Wallis, M., Patterson, E., & Griffiths, S. (2007). General surgical patients' perspectives of the adequacy and appropriateness of discharge planning to facilitate health decision-making at home. *J Clin Nurs*, 16(9), 1602-1609.
- 116 Nazareth, I., Burton, A., Shulman, S., Smith, P., Haines, A., & Timberal, H. (2001). A pharmacy discharge plan for hospitalized elderly patients - A randomized controlled trial. *Age Ageing*, 30(1), 33-40.
- 117 Coleman, E. A., Parry, C., Chalmers, S., & Min, S. J. (2006). The care transitions intervention: Results of a randomized controlled trial. *Arch Intern Med*, 166(17), 1822-1828, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=17000937.
- 118 Cummings, E., Showell, C., Roehrer, E., Churchill, B., Turner, B., Yee, K. C., et al. (2010). *Discharge, referral and admission: A structured evidence-based literature review*. Hobart: eHealth Services Research Group, University of Tasmania (for the Australian Commission on Safety and Quality in Health Care and NSW Department of Health).
- 119 Naylor, M. D., Brooten, D. A., Campbell, R. L., Maislin, G., McCauley, K. M., & Schwartz, J. S. (2004). Transitional care of older adults hospitalized with heart failure: A randomized, controlled trial. *J Am Geriatr Soc*, 52(5), 675-684, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15086645.
- 120 Akbari, A., Mayhew, A., Al-Alawi, M., Grimshaw, J., Winkens, R., Glidewell, E., et al. (2008). Interventions to improve outpatient referrals from primary care to secondary care. *Cochrane Database of Systematic Reviews*, 2008(4), Art. No.: CD005471. DOI: 005410.001002/14651858.CD14005471.pub14651852, <http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD005471/frame.html>.
- 121 Brink-Huis, A., van Achterberg, T., & Schoonhoven, L. (2008). Pain management: A review of organisation models with integrated processes for the management of pain in adult cancer patients. *J Clin Nurs*, 17(15), 1986-2000, <http://dx.doi.org/10.1111/j.1365-2702.2007.02228.x>.
- 122 Druss, B. G., & von Esenwein, S. A. (2006). Improving general medical care for persons with mental and addictive disorders: Systematic review. *Gen Hosp Psychiatry*, 28(2), 145-153.
- 123 Betbeder-Matibet, L., Frith, J., Harris, M. F., Mira, M., Comino, E., & Fridgant, Y. *Integration of general practitioners with hospitals and community health services: Survey of specialist referrals*. (General Practice Integration Research Program Report No. 0 7334 1635 7). Sydney: Centre for General Practice Integration Studies, University of New South Wales, <http://www.commed.unsw.edu.au/cgpis/>.
- 124 Fridgant, Y., Powell Davies, P. G., Harris, M. F., & Betbeder-Matibet, L. *Integration of general practitioners with hospitals and community health services: Focus groups*. (General Practice Integration Research Program Report No. 0 7334 1636 5). Sydney: Centre for



- General Practice Integration Studies, University of New South Wales,
<http://www.commed.unsw.edu.au/cgpis/>.
- 125 Powell Davies, P. G., Harris, M. F., Comino, E., Bolton, P., Fridgant, Y., Betbeder-Matibet, L., et al. *Integration of general practitioners with hospitals and community health services: Summary report*. (General Practice Integration Research Program Report No. 0 7334 1640 3). Sydney: Centre for General Practice Integration Studies, University of New South Wales, <http://www.commed.unsw.edu.au/cgpis/>.
- 126 National Rural Health Alliance. (2004). *Models of specialist outreach services for rural, regional and remote Australia. Paper by the National Rural Health Alliance for the Rural Sub-Committee of AHMAC*. National Rural Health Alliance, http://nrha.ruralhealth.org.au/cms/uploads/publications/04_specialistoutreach.pdf.
- 127 Hall, S. E., Holman, C. D., Threlfall, T., Sheiner, H., Phillips, M., Katriss, P., et al. (2008). Lung cancer: An exploration of patient and general practitioner perspectives on the realities of care in rural Western Australia. *Aust J Rural Health*, 16(6), 355-362.
- 128 Gruen, R. L., Weeramanthri, T. S., Knight, S. E., & Baillie, R. S. (2004). Specialist outreach clinics in primary care and rural hospital settings. *Cochrane Database Syst Rev*(1), CD003798.
- 129 Jiwa, M., Halkett, G., Aoun, S., Arnet, H., Smith, M., Pilkington, M., et al. (2007). Factors influencing the speed of cancer diagnosis in rural Western Australia: A general practice perspective. *BMC Fam Pract*, 8, 27.
- 130 Rankin, S. L., Hughes-Anderson, W., House, A. K., Heath, D. I., Aitken, R. J., & House, J. (2001). Costs of accessing surgical specialists by rural and remote residents. *ANZ J Surg*, 71(9), 544-547.
- 131 Hanks, H., Veitch, C., & Harris, M. (2008). Colorectal cancer management - the role of the GP. *Aust Fam Physician*, 37(4), 259-261.
- 132 Gruen, R. L., Baillie, R. S., Wang, Z., Heard, S., & O'Rourke, I. C. (2006). Specialist outreach to isolated and disadvantaged communities: A population-based study. *Lancet*, 368(9530), 130-138.
- 133 Gruen, R., & Baillie, R. (2004). Specialist clinics in remote Australian Aboriginal communities: Where rock art meets rocket science. *J Health Serv Res Policy*, 9 Suppl 2, 56-62.
- 134 Gruen, R. L., Baillie, R. S., d'Abbs, P. H., O'Rourke, I. C., O'Brien, M. M., & Verma, N. (2001). Improving access to specialist care for remote Aboriginal communities: Evaluation of a specialist outreach service. *Med J Aust*, 174(10), 507-511.
- 135 Tibby, D., Corpus, R., & Walters, D. L. (2010). Establishment of an innovative specialist cardiac indigenous outreach service in rural and remote Queensland. *Heart Lung Circ*, 19(5-6), 361-366.
- 136 O'Meara, P. (2003). Would a prehospital practitioner model improve patient care in rural Australia? *Emergency Medicine Journal*, 20(2), 199-203, <http://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=2003127176&site=ehost-live>.
- 137 Shepperd, S., Doll, H., Angus, R. M., Clarke, M. J., Iliffe, S., Kalra, L., et al. (2008). Admission avoidance hospital at home. *Cochrane Database of Systematic Reviews*(4), 1-63, <Go to ISI>://000259895000092.
- 138 Shepperd, S., Doll, H., Broad, J., Gladman, J., Iliffe, S., Langhorne, P., et al. (2009). Early discharge hospital at home. *Cochrane Database of Systematic Reviews*(1), 1-144, <Go to ISI>://000263035400038.
- 139 Craig, J., & Patterson, V. (2006). Introduction to the practice of telemedicine. In R. Wootton, J. Craig & V. Patterson (Eds.), *Introduction to telemedicine* (2nd ed., pp. 3-14). London: The Royal Society of Medicine Press Ltd, http://books.google.com/books?hl=en&lr=&id=CUoi5nNCVaYC&oi=fnd&pg=PA3&dq=Australia+telehealth+OR+telemedicine+%22primary+care%22&ots=wc_GvMVMst&sig=z9X9rbVAacvhO54kvCTAKOg_hFI#v=onepage&q=Australia%20telehealth%20OR%20telemedicine%20%22primary%20care%22&f=false.
- 140 Kidd, M. R., Watts, I. T., & Saltman, D. C. (2008). Primary health care reform: Equity is the key. *Med J Aust*, 189(4), 221-222, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18707568.



- 141 Wootton, R., Jebamani, L. S., & Dow, S. A. (2005). E-health and the Universitas 21 organization: 2. Telemedicine and underserved populations. *J Telemed Telecare*, 11(5), 221, <http://proquest.umi.com/pqdweb?did=892866851&Fmt=7&clientId=20831&RQT=309&VName=PQD>.
- 142 Cruickshank, J., Beer, G., Winpenny, E., & Manning, J. (2010). *Healthcare without walls. A framework for delivering telehealth at scale*. London: 2020health.org, <http://www.2020health.org/2020health/research/telehealth.html>.
- 143 Caffery, L. J., & Smith, A. C. (2010). A literature review of email-based telemedicine. *Stud Health Technol Inform*, 161, 20-34.
- 144 Wootton, R., Gramotnev, H., & Hailey, D. (2009). A randomized controlled trial of telephone-supported care coordination in patients with congestive heart failure. *J Telemed Telecare*, 15(4), 182-186, <http://jtt.rsmjournals.com/cgi/content/abstract/15/4/182>.
- 145 Black, A. D., Car, J., Pagliari, C., Anandan, C., Cresswell, K., Bokun, T., et al. (2011). The impact of eHealth on the quality and safety of health care: A systematic overview. *PLoS Med*, 8(1), e1000387, <http://dx.doi.org/10.1371/journal.pmed.1000387>.
- 146 National Health Call Centre Network. (2010). *healthdirect Australia. Annual survey report*. Canberra: National Health Call Centre Network Ltd, <http://www.healthdirect.org.au/publications-and-information>.
- 147 Bentley, P. J., Turner, V. F., Hodgson, S. A., Drimatis, R., & Hart, J. (2005). A central role for the health call centre. *Aust Health Rev*, 29(4), 435-438.
- 148 Hanson, R. M., Exley, B. J., Ngo, P., Fitzpatrick, M. P., Petering, E. L., Matthews, S. J., et al. (2004). Paediatric telephone triage and advice: The demand continues. *Med J Aust*, 180(7), 333-335.
- 149 Leibowitz, R., Day, S., & Dunt, D. (2003). A systematic review of the effect of different models of after-hours primary medical care services on clinical outcome, medical workload, and patient and GP satisfaction. *Fam Pract*, 20(3), 311-317.
- 150 Letourneau, S. (2009). Health Link Alberta: A model for successful health service integration. *Healthc Q*, 13 Spec No, 56-60, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20057251.
- 151 Abbott, S., Meyer, J., Copperman, J., Bentley, J., & Lanceley, A. (2005). Quality criteria for patient advice and liaison services: What do patients and the public want? *Health Expect*, 8(2), 126-137, <http://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=2005122723&site=ehost-live> Publisher URL: www.cinahl.com/cgi-bin/refsvc?jid=1706&accno=2005122723.
- 152 Cooper, R., & O'Hara, R. (2010). Patients' and staffs' experiences of an automated telephone weather forecasting service. *J Health Serv Res Policy*, 15(suppl_2), 41-46, http://jhsrp.rsmjournals.com/cgi/content/abstract/15/suppl_2/41.
- 153 Bakerly, N. D., Roberts, J. A., Thomson, A. R., & Dyer, M. (2011). The effect of COPD health forecasting on hospitalisation and health care utilisation in patients with mild-to-moderate COPD. *Chronic Respiratory Disease*, 8(1), 5-9, <http://crd.sagepub.com/content/8/1/5.abstract>.
- 154 Akyalcin, J. (2004). *Victorian state-wide forum on electronic referral summary report April 2004*. Paper presented at the National Health Informatics Conference (12th : 2004 : Brisbane, Qld.). from <http://search.informit.com.au/documentSummary;dn=886934524827958;res=IELHEA>.
- 155 Wootton, R., Harno, K., & Reponen, J. (2003). Organizational aspects of e-referrals. *J Telemed Telecare*, 9 Suppl 2, S76-79, http://jtt.rsmjournals.com/cgi/content/abstract/9/suppl_2/76.
- 156 Nicholson, C., Jackson, C. L., Wright, B., Mainwaring, P., Holliday, D., Lankowski, A., et al. (2006). Online referral and OPD booking from the GP desktop. *Aust Health Rev*, 30(3), 397-404.
- 157 Kim, Y., Chen, A., Keith, E., Yee, H., & Kushel, M. (2009). Not perfect, but better: Primary care providers' experiences with electronic referrals in a safety net health system. *J Gen Intern Med*, 24(5), 614-619, <http://dx.doi.org/10.1007/s11606-009-0955-3>.



- 158 May, C., Giles, L., & Gupta, G. (2008). Prospective observational comparative study assessing the role of store and forward teledermatology triage in skin cancer. *Clin Exp Dermatol*, 33(6), 736-739, <http://dx.doi.org/10.1111/j.1365-2230.2008.02850.x>.
- 159 Tadros, A., Murdoch, R., & Stevenson, J. H. (2009). Digital image referral for suspected skin malignancy-A pilot study of 300 patients. *J Plast Reconstr Aesthet Surg*, 62(8), 1048-1053, <Go to ISI>://000268516500013.
- 160 Hockey, A. D., Wootton, R., & Casey, T. (2004). Trial of low-cost teledermatology in primary care. *J Telemed Telecare*, 10 Suppl 1, 44-47, http://jtt.rsmjournals.com/cgi/content/abstract/10/suppl_1/44.
- 161 Hilton, J., & Georgeff, M. (2010). Why is telemedicine not more widely used? *Pulse+IT*, 19, 32-41.
- 162 Devine, J. (2007). *User satisfaction and experience with a telemedicine service for diabetic foot disease in an Australian rural community*. Greater Southern Area Health Service, NSW Health, http://www.ircst.health.nsw.gov.au/_data/assets/pdf_file/0009/98397/Jenni_Devine_report.pdf.
- 163 Eagar, K., Owen, A., Cranny, C., Samsa, P., & Thompson, C. (2008). *Community health: The state of play in NSW - A report for the NSW Community Health Review (Report 2)*. Centre for Health Service Development, University of Wollongong, , http://www.health.nsw.gov.au/pubs/2008/chr_state_play.html.
- 164 Wade, V. A., Karnon, J., Elshaug, A. G., & Hiller, J. E. (2010). A systematic review of economic analyses of telehealth services using real time video communication. *BMC Health Serv Res*, 10, 233.
- 165 Pan, E., Cusack, C., Hook, J., Vincent, A., Kaelber, D. C., Bates, D. W., et al. (2008). The value of provider-to-provider telehealth. *Telemed J E Health*, 14(5), 446-453, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18578679.
- 166 Roine, R., Ohinmaa, A., & Hailey, D. (2001). Assessing telemedicine: A systematic review of the literature. *CMAJ*, 165(6), 765-771, <http://www.cmaj.ca/cgi/reprint/165/6/765>.
- 167 Smith, A. C., Scuffham, P., & Wootton, R. (2007). The costs and potential savings of a novel telepaediatric service in Queensland. *BMC Health Serv Res*, 7, 35.
- 168 Clark, R. A., Inglis, S. C., McAlister, F. A., Cleland, J. G., & Stewart, S. (2007). Telemonitoring or structured telephone support programmes for patients with chronic heart failure: Systematic review and meta-analysis. *BMJ*, 334(7600), 942.
- 169 Chaudhry, S. I., Mattera, J. A., Curtis, J. P., Spertus, J. A., Herrin, J., Lin, Z., et al. (2010). Telemonitoring in patients with heart failure. *NEJM*, 363(24), 2301-2309, <http://www.nejm.org/doi/abs/10.1056/NEJMoa1010029>.
- 170 Krum, H. (2011). Telemonitoring of fluid status in heart failure: CHAMPION. *The Lancet*, 377(9766), 616-618, <http://www.sciencedirect.com/science/article/B6T1B-524V3X7-4/2/6b5d977b952d3fcc432740e8dd1c4b69>.
- 171 Abraham, W. T., Adamson, P. B., Bourge, R. C., Aaron, M. F., Costanzo, M. R., Stevenson, L. W., et al. (2011). Wireless pulmonary artery haemodynamic monitoring in chronic heart failure: a randomised controlled trial. *Lancet*, 377(9766), 658-666, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=21315441.
- 172 Silagy, C. (1999). *The Australian Coordinated Care Trials: Interim technical national evaluation report*. Canberra: Commonwealth Department of Health and Aged Care.
- 173 Battersby, M., Harvey, P., Mills, P. D., Kalucy, E., Pols, R. G., Frith, P. A., et al. (2007). SA HealthPlus: A controlled trial of a statewide application of a generic model of chronic illness care. *Milbank Quarterly*, 85(1), 37-67, <http://dx.doi.org/10.1111/j.1468-0009.2007.00476.x>.
- 174 Zwar, N., Harris, M., Griffiths, R., Roland, M., Dennis, S., Powell Davies, G., et al. (2006). *APHCRI stream four: A systematic review of chronic disease management*. Canberra: Research Centre for Primary Health Care and Equity, School of Public Health and Community Medicine, UNSW, http://www.anu.edu.au/aphcri/Domain/ChronicDiseaseMgmt/Approved_25_Zwar.pdf.



- 175 Australian Government Department of Health and Ageing. (2007). *The national evaluation of the second round of Coordinated Care Trials: Final report*. Canberra: Australian Government Department of Health and Ageing.
- 176 Australian Government Department of Health and Ageing. (2001). *The Australian Coordinated Care Trials: Final technical national evaluation report on the first round of trials*. Canberra: Australian Government Department of Health and Ageing.
- 177 Wagner, E. H. (1998). Chronic disease management: What will it take to improve care for chronic illness? *Eff Clin Pract*, 1(1), 2-4, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=10345255.
- 178 Delon, S., & Mackinnon, B. (2009). Alberta's systems approach to chronic disease management and prevention utilizing the expanded chronic care model. *Healthc Q*, 13 Spec No, 98-104, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20057258.
- 179 Si, D., & Baillie, R. (2008). Effectiveness of chronic care model-oriented interventions to improve quality of diabetes care: A systematic review. *Prim Health Care Res Dev*, 9, 25-40.
- 180 Coleman, K., Austin, B. T., Brach, C., & Wagner, E. H. (2009). Evidence on the Chronic Care Model in the new millennium. *Health Aff*, 28(1), 75-85, <http://content.healthaffairs.org/cgi/content/abstract/28/1/75>.
- 181 Adams, S. G., Smith, P. K., Allan, P. F., Anzueto, A., Pugh, J. A., & Cornell, J. E. (2007). Systematic review of the Chronic Care Model in chronic obstructive pulmonary disease prevention and management. *Arch Intern Med*, 167(6), 551-561, <http://archinte.ama-assn.org/cgi/content/abstract/167/6/551>.
- 182 Eagar, K., Pirkis, J. E., Owen, A., Burgess, P. M., Posner, N., & Perkins, D. A. (2005). Lessons from the National Mental Health Integration Program. *Aust Health Rev*, 29(2), 189-200.
- 183 Perkins, D., & Lyle, D. (2003). *CEPHRIS. Far West mental health integration project evaluation report*. Canberra: Centre for Equity and Primary Health Research, Australian Government Department of Health and Ageing.
- 184 Perkins, D. A., Roberts, R., Sanders, T., & Rosen, A. (2006). Far West Area Health Service Mental Health Integration Project: Model for rural Australia? *The Australian Journal of Rural Health*, 14(3), 105-110, <http://dx.doi.org/10.1111/j.1440-1584.2006.00777.x>.
- 185 Hart, J. T. (1971). The inverse care law. *Lancet*, 1(7696), 405-412, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=4100731.
- 186 Bower, P., & Rowland, N. (2006). Effectiveness and cost effectiveness of counselling in primary care. *Cochrane Database Syst Rev*, 3, CD001025.
- 187 NHSSB. (2003). *The 2003 Report of the Director of Public Health*. Northern Health and Social Services Board.
- 188 Skipper, M. (2010). Managed clinical networks. *Br Dent J*, 209(5), 241-242, <http://dx.doi.org/10.1038/sj.bdj.2010.771>.
- 189 NHS Scotland. (2010). *Review of nine national Managed Clinical Networks*. NHS Scotland, http://www.nsd.scot.nhs.uk/publications/servicereviews/nmcn_review.pdf.
- 190 IHI. (2005). *Going lean in health care*. Cambridge, MA: Institute for Healthcare Improvement.
- 191 Victorian Government Department of Human Services. (2006). *Improving care Hospital Admission Risk Program*. Melbourne: Metropolitan Health and Aged Care Services Division.
- 192 Bird, S., Noronha, M., & Sinnott, H. (2010). An integrated care facilitation model improves quality of life and reduces use of hospital resources by patients with chronic obstructive pulmonary disease and chronic heart failure. *Aust J Prim Health*, 16(4), 326-333.
- 193 Grantham, H. (1997). New paradigm paramedics. Retrieved 23 February 2011, from <http://www.saambulance.com.au/publicweb/para.html>
- 194 Cooper, S. J. R., & Grant, J. (2009). New and emerging roles in out of hospital emergency care: A review of the international literature. *International Emergency Nursing*, 17(2), 90-98, <http://www.sciencedirect.com/science/article/B8JG9-4VGDNY5-1/2/03eab9b088e843373d1ea4a2e03c49d1>.



- 195 Van Walraven, C., Oake, N., Jennings, A., & Forster, A. J. (2010). The association between continuity of care and outcomes: A systematic and critical review. *J Eval Clin Pract*, 16(5), 947-956, <http://dx.doi.org/10.1111/j.1365-2753.2009.01235.x>.
- 196 Percival, R., & Kelly, S. (2004). *Who's going to care? Informal care and an ageing population*. Canberra: NATSEM, University of Canberra, http://www.canberra.edu.au/centres/natsem/publications?sq_content_src=%2BdXJsPW0dHAIM0EIMkYIMkZ6aWJvLndpbi5jYW5iZXJyYS5iZHUuYXUIMkZuYXRzZW0IMkZpbmRleC5waHAIMOZtb2RIJTNEcHVibGJjYXRpb24IMjZwdWJsaWNhdGlvbiUzRDY2OSZhbGw9MQ%3D%3D.
- 197 Hebert, R., Durand, P. J., Dubuc, N., & Tourigny, A. (2003). PRISMA: A new model of integrated service delivery for the frail older people in Canada. *Int J Integr Care*, 3(1), e08, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16896376.
- 198 Hebert, R., Raiche, M., Dubois, M.-F., Dubuc, N., Tousignant, M., Rokhaya Gueye, N., et al. (2008). Impact of the PRISMA-Estrie integrated service delivery network on the elderly and their informal caregivers. In R. Hebert, A. Tourigny & M. Raiche (Eds.), *PRISMA Volume II Integration of services for disabled people: Research leading to action* (Vol. II, pp. 237-263). Quebec: Edisem.
- 199 Hunkeler, E. M., Katon, W., Tang, L., Williams, J. W., Jr., Kroenke, K., Lin, E. H., et al. (2006). Long term outcomes from the IMPACT randomised trial for depressed elderly patients in primary care. *BMJ*, 332(7536), 259-263, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16428253.
- 200 Unutzer, J., Katon, W., Callahan, C. M., Williams, J. W., Jr., Hunkeler, E., Harpole, L., et al. (2002). Collaborative care management of late-life depression in the primary care setting: A randomized controlled trial. *JAMA*, 288(22), 2836-2845, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=12472325.
- 201 Scott, A., & Coote, B. (2007). *The value of the Divisions Network: Full technical report*. Melbourne: Melbourne Institute of Applied Economic and Social Research, The University of Melbourne, http://www.agpn.com.au/_data/assets/pdf_file/0019/19306/20070208_rep_Melb-Institute---Value-of-Network-study.pdf.
- 202 Australian Government Department of Health and Ageing. (2007). *More Allied Health Services program review 2007 Executive summary*. Canberra, <http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pcd-programs-mahs-execsummary>.
- 203 Morley, B., Kohn, F., Pirkis, J., Blashki, G., & Burgess, P. (2005). *Evaluating the Access to Allied Health Services component of the Better Outcomes in Mental Health Care initiative. Third interim evaluation report. Benefits and barriers associated with different models of service delivery*. Melbourne: University of Melbourne, Program Evaluation Unit, [http://www.health.gov.au/internet/main/publishing.nsf/Content/683F4C05ACFD3035CA257132007EB7C1/\\$File/int3.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/683F4C05ACFD3035CA257132007EB7C1/$File/int3.pdf).
- 204 Morley, B., Pirkis, J., Sanderson, K., Burgess, P., Kohn, F., Naccarella, L., et al. (2007). Better outcomes in mental health care: Impact of different models of psychological service provision on patient outcomes. *Aust N Z J Psychiatry*, 41(2), 142-149.
- 205 Vagholkar, S., Hare, L., Hasan, I., Zwar, N., & Perkins, D. (2006). Better access to psychology services in primary mental health care: An evaluation. *Aust Health Rev*, 30(2), 195-202, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16646768.
- 206 Pirkis, J., Burgess, P., Kohn, F., Morley, B., Blashki, G., & Naccarella, L. (2006). Models of psychological service provision under Australia's Better Outcomes in Mental Health Care program. *Aust Health Rev*, 30(3), 277-285.
- 207 Grimmer-Somers, K., Dolesj, W., & Atkinson, J. (2010). Enhanced primary care pilot program benefits type II diabetes patients. *Aust Health Rev*, 34(1), 18-24.
- 208 Haines, T. P., Foster, M. M., Cornwell, P., Fleming, J., Tweedy, S., Hart, A., et al. (2010). Impact of enhanced primary care on equitable access to and economic efficiency of allied



- health services: A qualitative investigation. *Aust Health Rev*, 34(1), 30-35,
http://www.publish.csiro.au/?act=view_file&file_id=AH09732.pdf.
- 209 Shortus, T., Rose, V., Comino, E., & Zwar, N. (2005). Patients' views on chronic illness and its care in general practice. *Aust Fam Physician*, 34(5), 397-399,
<http://www.racgp.org.au/afp/200505/200505shortus.pdf>.
- 210 Shortus, T. D., McKenzie, S. H., Kemp, L. A., Proudfoot, J. G., & Harris, M. F. (2007). Multidisciplinary care plans for diabetes: How are they used? *Med J Aust*, 187(2), 78-81,
http://www.mja.com.au/public/issues/187_02_160707/sho10345_fm.html.
- 211 Zwar, N. A., Hermiz, O., Comino, E. J., Shortus, T., Burns, J., & Harris, M. (2007). Do multidisciplinary care plans result in better care for patients with type 2 diabetes? *Aust Fam Physician*, 36(1-2), 85-89.
- 212 Victorian Government Department of Health. (2010). Primary Care Partnerships. Retrieved 12 October 2010, from <http://www.health.vic.gov.au/pcps/>
- 213 Australian Institute for Primary Care. (2005). *An evaluation of the Primary Care Partnership strategy*. Melbourne: Australian Institute for Primary Care, La Trobe University,
http://www.health.vic.gov.au/pcps/downloads/eval_pcp_strat.pdf.
- 214 The Australian Department of Health and Ageing. (2008). *Guidelines for the More Allied Health Services program*. Canberra: The Australian Department of Health and Ageing.
- 215 Harris, E., Harris, P., & Kemp, L. (2006). *Rapid equity focused health impact assessment of the Australia Better Health Initiative: Assessing the NSW components of priorities 1 and 3*. Sydney: UNSW Research Centre for Primary Health Care and Equity.
- 216 Farmer, L., Knight, A., & Ford, D. (2005). Systems change in Australian general practice--early impact of the National Primary Care Collaboratives. *Aust Fam Physician*, 34 Suppl 1, 44-46,
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16369683.
- 217 Smith, P. (2007). *Evaluation report of the Aboriginal Health Council of Western Australia's implementation of the National Primary Care Collaboratives (NPCC) program*. Subiaco East: AHCWA, NPCC.
- 218 Jackson, C., & Askew, D. (2008). Is there a polyclinic alternative acceptable to general practice? The 'beacon' practice model. *Br J Gen Pract*, 58(555), 733,
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18826791.
- 219 Jackson, C., Askew, D., Nicholson, C., & Brooks, P. (2008). The primary care amplification model: Taking the best of primary care forward. *BMC Health Serv Res*, 8(1), 268,
<http://www.biomedcentral.com/1472-6963/8/268>.
- 220 Starfield, B. (1994). Is primary care essential? *Lancet*, 344(8930), 1129-1133,
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=7934497.
- 221 Hayman, N. E., White, N. E., & Spurling, G. K. (2009). Improving Indigenous patients' access to mainstream health services: The Inala experience. *Med J Aust*, 190(10), 604-606.
- 222 Askew, D., Jackson, C., Ware, R., & Russell, A. (2010). Protocol and baseline data from The Inala Chronic Disease Management Service evaluation study: A health services intervention study for diabetes care. *BMC Health Serv Res*, 10(1), 134,
<http://www.biomedcentral.com/1472-6963/10/134>.
- 223 Australian Government Department of Health and Ageing. (2009, 24 June 2010). GP Super clinics. from <http://www.health.gov.au/internet/main/publishing.nsf/Content/pacd-gpsuperclinics>
- 224 Powell Davies, P., Perkins, D., & Hare, L. (2006). *GP Hospital Integration Demonstration Sites Program: National evaluation report*.: Centre for Primary Health Care and Equity, University of NSW.
- 225 Elmer, S., & Kilpatrick, S. (2006). Using project evaluation to build capacity for integrated health care at local levels *Journal of Integrated Care*, 14(5), 6,
<http://proquest.umi.com/pqdlink?index=7&did=1158599691&SrchMode=3&sid=1&Fmt=2&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1284096424&clientId=20831&aid=1>.



- 226 Popplewell, R., & Wilson, B. (1999). *Enhancing integration through the formalisation of collaboration between hospitals and Divisions of General Practice - A guide to smooth sailing in developing a service agreement*. Adelaide: Flinders Medical Centre, [http://www.quitnow.info.au/internet/main/publishing.nsf/Content/EDD7AA0DC12F6412CA2572AE0023D59B/\\$File/ndhp3integrationguide.pdf](http://www.quitnow.info.au/internet/main/publishing.nsf/Content/EDD7AA0DC12F6412CA2572AE0023D59B/$File/ndhp3integrationguide.pdf).
- 227 Australian Government Department of Health and Ageing. (2008). National Demonstration Hospitals Program: NDHP Phase 3 - Integrated acute care website. Canberra: Australian Government Department of Health and Ageing, <http://www.quitnow.info.au/internet/main/publishing.nsf/Content/health-hospitals-demonstration-NDHP-3>.
- 228 Alexander Henderson and Associates. (2001). *National Demonstration Hospitals Program Phase 3 July 1999 – March 200. A resource for integrating health services*. [http://www.health.gov.au/internet/main/publishing.nsf/Content/F2FD56F7501DF289CA2572B10014AD2B/\\$File/resourceforintegratinghealthservices-full.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/F2FD56F7501DF289CA2572B10014AD2B/$File/resourceforintegratinghealthservices-full.pdf).
- 229 Alexander Henderson and Associates. (2001). *National Demonstration Hospitals Program Phase 3. A qualitative review of NDHP 3*. [http://www.health.gov.au/internet/main/publishing.nsf/Content/CC9465FA34FCCF30CA2572B1001A8329/\\$File/aqualitativereviewofNDHP-3-full.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/CC9465FA34FCCF30CA2572B1001A8329/$File/aqualitativereviewofNDHP-3-full.pdf).
- 230 Lissing, J., & Powell Davies, G. (2000). Bridging the gap: The impact of GP-Hospital Liaison Officers in Australia: Centre for GP Integration Studies, University of NSW.
- 231 Betbeder-Matibet, L., Fridgant, Y., Harris, M. F., O'Toole, B. I., Comino, E., Bolton, P., et al. (2000). Where's the common ground? A survey of hospitals, community health centres and divisions of general practice in Australia. *Aust Fam Physician*, 29(4), 378-383.
- 232 Lippmann, L. (2006). *The role & achievements of Victorian public sector GP Liaison Officers*. Melbourne: Department of General Practice, University of Melbourne, http://www.wagpnetwork.com.au/client_images/123185.pdf.
- 233 GPO. (2010). Connecting Healthcare in Communities Initiative (CHIC). Retrieved 24 February, 2011, from http://www.gpqld.com.au/page/Programs/Chronic_Disease/Our_programs/Primary_Care_Integration/The_Connecting_Healthcare_in_Communities_Initiative_CHIC
- 234 Australian Institute for Primary Care. (2009). *CHIC Statewide evaluation. Baseline organisational survey & service delivery and innovation survey data report*. Melbourne: Australian Institute for Primary Care, Latrobe University, http://www.chicpartnerships.com.au/content/Document/08_CHIC%20Evaluation/Baseline%20organisational%20%20%20SDI%20survey%20report%20%20June%2009%20FINAL_1.doc
- 235 Kaiser Permanente. (2010). Website, <https://www.kaiserpermanente.org/>.
- 236 Asch, S. M., McGlynn, E. A., Hogan, M. M., Hayward, R. A., Shekelle, P., Rubenstein, L., et al. (2004). Comparison of quality of care for patients in the Veterans Health Administration and patients in a national sample. *Ann Intern Med*, 141(12), 938-945, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15611491.
- 237 Feachem, R., Sekhri, N., & White, K. (2002). Getting more for their dollar: A comparison of the NHS with California's Kaiser Permanente. *BMJ*, 324(135), <http://www.bmj.com/content/324/7330/135.full#article-title-2>.
- 238 Talbot-Smith, A., Gnani, S., Pollock, A., & Pereira Gray, D. (2004). Questioning the claims from Kaiser. *The British Journal of General Practice*, 54(503), 415-421, <http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=1266198>.
- 239 Eastern Birmingham Primary Care Trust, Solihull Primary Care Trust, & Birmingham Heartlands and Solihull Hospital NHS Trust. (2003). Implementing learning from Kaiser Permanente in our local health economy: National Primary and Care Trust Development Program, <http://www.natpact.info/uploads/commissioning/Eastern%20Birmingham.doc>.
- 240 MacPhail, L., Neuwirth, E., & Bellows, J. (2009). Coordination of diabetes care in four delivery models using an electronic health record. *Med Care*, 47(9), 993-999, http://journals.lww.com/lww-medicalcare/Abstract/2009/09000/Coordination_of_Diabetes_Care_in_Four_Delivery.9.aspx.



- 241 Kauffman, A., Olson, K., Youngblood, M., Zadvorny, E., Delate, T., & Merenich, J. (2010). Attainment of low-density lipoprotein cholesterol goals in coronary artery disease. *J Clin Lipidol*, 4(3), 173-180, [http://www.lipidjournal.com/article/S1933-2874\(10\)00101-7/abstract](http://www.lipidjournal.com/article/S1933-2874(10)00101-7/abstract).
- 242 Delate, T., Olson, K., Rasmussen, J., Hutka, K., Sandhoff, B., Hornak, R., et al. (2010). Reduced health care expenditures after enrollment in a collaborative cardiac care service. *Pharmacotherapy*, 30(11), 1127, <http://www.atypon-link.com/PPI/doi/abs/10.1592/phco.30.11.1127>.
- 243 Graetz, I., Reed, M., Rundall, T., Bellows, J., Brand, R., & Hsu, J. (2009). Care coordination and electronic health records: Connecting clinicians. *American Medical Informatics Association Annual Symposium Proceedings*, 208-212, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2815429/>.
- 244 Altringer, B. (2010). The emotional experience of patient care: A case for innovation in health care design. *J Health Serv Res Policy*, 15(3), 174-177, <http://jhsrp.rsmjournals.com/cgi/reprint/15/3/174>.
- 245 Dining Zuber, C., Alterescu, V., & Chow, M. (2005). Fail often to succeed sooner: Adventures in innovation. *Perm J*, 9(4), <http://xnet.kp.org/permanentejournal/fall05/fail.html>.
- 246 Weisner, C., Mertens, J., Parthasarathy, S., Moore, C., & Lu, Y. (2001). Integrating primary medical care with addiction treatment - A randomized controlled trial. *Jama-Journal of the American Medical Association*, 286(14), 1715-1723, <Go to ISI>://000171466800021.
- 247 Stange, K. C., Miller, W. L., Nutting, P. A., Crabtree, B. F., Stewart, E. E., & Jaen, C. R. (2010). Context for understanding the National Demonstration Project and the patient-centered medical home. *Ann Fam Med*, 8(Suppl_1), S2-8, http://www.annfammed.org/cgi/content/abstract/8/Suppl_1/S2.
- 248 Kellerman, R. (2009). The patient centred medical home: A new model of practice in the USA. *Aust Fam Physician*, 38, 279.
- 249 Robinson, L. W., & Chen, R. R. (2010). A Comparison of Traditional and Open-Access Policies for Appointment Scheduling. *Manufacturing & Service Operations Management*, 12(2), 330-346, <Go to ISI>://000277474900008.
- 250 Rosenthal, T. C. (2008). The medical home: Growing evidence to support a new approach to primary care. *J Am Board Fam Med*, 21(5), 427-440, <http://www.jabfm.org/cgi/content/abstract/21/5/427>.
- 251 Stewart, E. E., Nutting, P. A., Crabtree, B. F., Stange, K. C., Miller, W. L., & Jaen, C. R. (2010). Implementing the patient-centered medical home: Observation and description of the national demonstration project. *Ann Fam Med*, 8 Suppl 1(4), S21-32; S92, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20530392.
- 252 Jaen, C. R., Ferrer, R. L., Miller, W. L., Palmer, R. F., Wood, R., Davila, M., et al. (2010). Patient outcomes at 26 months in the patient-centered medical home National Demonstration Project. *Ann Fam Med*, 8(Suppl 1), S57-67, http://www.annfammed.org/cgi/content/abstract/8/Suppl_1/S57.
- 253 Crabtree, B. F., Nutting, P. A., Miller, W. L., Stange, K. C., Stewart, E. E., & Jaen, C. R. (2010). Summary of the National Demonstration Project and recommendations for the patient-centered medical home. *Ann Fam Med*, 8(Suppl 1), S80-90, http://www.annfammed.org/cgi/content/abstract/8/Suppl_1/S80.
- 254 Nickel, S., Thiedemann, B., & von dem Knesebeck, O. (2010). The effects of integrated inpatient health care on patient satisfaction and health-related quality of life: Results of a survey among heart disease patients in Germany. *Health Policy*, 98(2-3), 156-163, <http://www.sciencedirect.com/science/article/B6V8X-50GTR37-2/2/51901d18eec075a0b88a18de7b7c079e>.
- 255 Ling, T., Bardsley, M., Adams, J., Lewis, R., & Roland, M. (2010). Evaluation of UK Integrated Care Pilots: Research protocol. *Int J Integr Care*, 10, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20922068.
- 256 Bint, A. (2010). Integrated care pilot saved us £1m in one year. *Pulse* Retrieved 17 February 2011, from <http://www.pulsetoday.co.uk/story.asp?storycode=4126981>



- 257 Primary Care Initiative (Canada). (2010). Primary Care Network website, <http://www.albertapci.ca/OperatingPCN/Evaluation/Pages/EvaluationFAQ's.aspx>.
- 258 Alberta Medical Association. (2006, March/April). Primary Care Networks: Collaborative relationships, new opportunities and challenges. *The Alberta Doctors' Digest*, 31, 6-9.
- 259 Oelke, N. D., Cuning, L., Andrews, K., Martin, D., MacKay, A., Kuschminder, K., et al. (2009). Organizing care across the continuum: Primary care, specialty services, acute and long-term care. *Healthc Q*, 13 Spec No, 75-79, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20057254.
- 260 Gottlieb, K., Sylvester, I., & Eby, D. (2008). Transforming your practice: What matters most. *Fam Pract Manag*, January, 32-38.
- 261 Fuller, J., Perkins, D., Parker, S., Holdsworth, L., Kelly, B., Fragar, L., et al. (2009). *Systematic review on service linkages in primary mental health care: Informing Australian policy and practice*. Canberra: Australian Primary Health Care Research Institute, Sydney School of Public Health, University of Sydney, http://www.anu.edu.au/aphcri/Spokes_Research_Program/Stream_Thirteen.php.
- 262 Centre for General Practice Integration Studies. (2005). *Integration and continuity of care. Background paper for the development of the National Chronic Disease Strategy*. Sydney: Centre for General Practice Integration Studies and Centres for Primary Health care and Equity, University of New South Wales.
- 263 Strandberg-Larsen, M., & Krasnik, A. (2009). Measurement of integrated healthcare delivery: A systematic review of methods and future research directions. *Int J Integr Care*, 9, e01, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=19340325.
- 264 Altman, D. G., & Bland, J. M. (1995). Absence of evidence is not evidence of absence. *BMJ*, 311(7003), 485, http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=7647644.
- 265 Dozeman, E., van Schaik, D., Beekman, A., Stalman, W., Bosmans, J., & van Marwijk, H. (2007). Depression and anxiety, an Indicated Prevention (DIP) protocol in homes for the elderly: feasibility and (cost) effectiveness of a stepped care programme. *BMC Geriatrics*, 7(1), 6, <http://www.biomedcentral.com/1471-2318/7/6>.

9 Appendix

9.1 Methods

The scope of this review was determined by the limited timeframe and available resources. Given the extensive literature addressing the issue of integrated health care across many levels from local to global health systems, this review is an overview of these issues from the perspective of the patient's journey, rather than a comprehensive review on the integration of health services.

Table 9–1 shows the sources and search strategy used to identify literature. A snowballing technique was used, whereby bibliographic references of relevant papers were searched for further relevant studies. Published and unpublished literature that focused on the patients' perspectives of integration initiatives was examined. While studies that evaluated initiatives implemented in an Australian setting were the primary focus, those conducted in countries with comparable health systems, such as New Zealand, the United Kingdom, Canada or the United States were also examined.

Table 9–1 Search strategy

Keywords			
primary health, primary health care, primary care, general practice			
allied health, psychology, community health, acute care, tertiary care, secondary care, hospital			
multidisciplinary, collaboration, integration, integrated, coordinated, shared care, linkage, communication, liaison			
referral, discharge, care plan, case conferencing, case management, disease management			
Strategies, initiatives, models, tools, programs			
Primary Information Sources			
Websites	Major citation databases	Grey literature	Systematic Reviews
ABS	Ovid MEDLINE (R)	<i>Health Policy Monitor</i>	<i>Cochrane</i>
AIHW	Pub Med	<i>European Observatory on Health Systems and Policies</i>	<i>Health Systems Evidence</i>
APHCRI	CINAHL (Ebsco)	<i>The Commonwealth Fund</i>	<i>Australian Primary Health Care Research Institute</i>
Aust Govt Dept of Health and Ageing		<i>The King's Fund</i>	<i>Health-Evidence.ca</i>
Centre for Primary Health Care and Equity		<i>Google</i> <i>Google Scholar</i>	
Secondary Information Sources			
Reference lists from retrieved articles and publications.			

A series of existing systematic and non-systematic reviews on integration of PHC with other sectors provided a comprehensive understanding of strategies for improving coordination of care within PHC and between primary care and other health care services.^{5,8,21,24,34,118,261,262} To avoid duplication of effort, studies that were critically appraised in existing systematic reviews were not re-examined for this review and only the synthesised findings of existing reviews are discussed here.

9.2 Limitations of the review

9.2.1 Integrated care – use of terms

- ⇒ There is no shared understanding of what is meant by integrated care
- ⇒ There are inconsistencies in the use of terms, which are often ‘nested’ within similar terms, making comparisons between different strategies and initiatives difficult
- ⇒ It is impossible to determine the effectiveness of individual strategies or elements embedded in multifaceted initiatives.

9.2.2 Quality of evidence

While there was no shortage of information about integrated health care, the overall quality of studies that evaluated the impact of strategies and initiatives to facilitate integrated care from the perspective of patients was poor. The key limitations in the research were:

- ⇒ Weak study design: studies typically failed to avoid biases and contamination
 - lack of adequate follow-up
 - inappropriate, or no, comparator
 - poor reporting of methods and/or participant characteristics
 - lack of independence in evaluation studies (eg. evaluations conducted by the organisations implementing the intervention are prone to selection bias that overestimates positive effects).
- ⇒ Lack of common validated measures of patients’ outcomes and experience: many studies focused on self-reported satisfaction and *perceived* benefits rather than empirically derived outcomes; and few described which patients’ benefited. Criteria have been developed for measures of integrated care delivery and some instruments designed to gauge project effectiveness are available, although testing and modifying existing measures may be needed to suit specific purposes.²⁶³ However, such measures were seldom used in studies that evaluated patients’ experience.
- ⇒ Lack of appropriate economic analyses; and/or lack of detail on how analyses were undertaken.

Not all patients’ encounters in the health care system are likely to require integrated services and studies examining the effectiveness of integration from the patient’s perspective invariably investigate patients with chronic or complex health and social needs¹³. The timing and length of patients’ involvement in integrated care services is not well defined or explored in the literature. In addition, where studies have reported on patients’ experiences of integrated care, few have included their experiences in the post-treatment or follow-up stages of the patient’s pathway.

The paucity of good quality evidence related to patients’ experience of integrated care is problematic as there is a high expectation that integration will improve health outcomes. However, an “absence of evidence is not [the same as] evidence of absence” of an effect.²⁶⁴ While there was little evidence to indicate that initiatives to facilitate integration of services provided significant improvements in patients’ clinical outcomes, patients typically expressed positive experiences related to convenience of integrated services; and appreciated better communication and interaction with health providers.

¹³ See the ‘Kaiser triangle’ model of chronic care (see 5.1).

Overall, caution is needed before committing resources to support initiatives that have not satisfactorily demonstrated effectiveness in rigorous well-designed, controlled, studies, including economic analyses and adequate follow-up.

9.3 Individual strategies and initiatives related to structures, strengthening relationships and systems to support collaboration

Table 9–2 illustrates the individual strategies and initiatives that have been implemented and evaluated in studies. For more details, see Powell Davies et al. (2006).⁵

Table 9–2 Individual strategies and initiatives that related to broad types of strategies

Strategy type	Individual strategies and initiatives
Communication between service providers	Case conferencing involving PHC related to decision making on patients' care Simple exchange of information within PHC and between PHC and other service providers
Systems to support coordination of care	Shared care plans used by PHC providers Shared decision support between PHC and other service providers Pro formas for communication and/or referrals Shared records used by PHC providers Patient-held records Information or communication systems used by PHC providers Registers of patients used to support PHC
Coordinating clinical activities	Coordinating consultations between service providers, including joint consultations Shared assessments Priority access to a health service
Support for service providers	Support/supervision for PHC providers (eg. from specialists who shared care) Joint training/training on collaboration involving PHC Reminders for PHC providers Facilitating communication
Relationships between service providers	Co-location between PHC and other service providers Case management Multidisciplinary team involving PHC Assigning patient to a particular PHC provider
Support for patients	Joint patient education/relating to sharing care involving PHC Reminders Assistance in accessing PHC (eg. making follow-up appointment with GP rather than simple referral)
Joint planning, funding and/or management	Joint funding including a PHC provider/service Joint management involving a PHC provider/service Joint planning involving a PHC provider/service
Organisational agreements	Formal agreement involving a PHC organisation
Organisation of the health care system	Change to funding arrangements impacting on PHC (eg. Coordinated Care Trial)

* Modified from Powell Davies et al. (2006)⁵

Table 9–3 provides a summary of the key strategies, tools and activities contained in initiatives.

Table 9–3 Summary of key strategies, tools and activities embedded in multifaceted initiatives

Initiative	Individual strategies, tools and activities
Coordinated Care Trials	Care plans Organisation and coordination of services for patients Patient self-management support
Chronic Care Model	Multidisciplinary team – collaborations between providers Care plans Shared clinical information Resources provided by community and health care organisations Self-management and decision support for patients
Mental Health Integration Program	Tailored to local setting Multidisciplinary team – visiting specialists Develop partnerships and collaborations (eg. Linkage unit, Local commissioning) MBS items – remuneration
Managed Care Networks	Multidisciplinary team – with clinical leader Disease, service or specialty-specific Patients consulted as partners Evidence-based guidelines and protocols of care Audit and feedback Common protocols Shared information
Lean Practice	Interdisciplinary teams Shared information Focus on patients' needs Remove 'waste' (eg. duplication, waiting times)
Hospital Admissions Risk Program	Interprofessional partnerships, collaborations and networks Assessment and care planning Discharge planning Patient self-management
Pre-hospital practitioner	Training in clinical decision-making Regular clinical reviews
Transitional Care Model	Multidisciplinary team (including family and caregivers) Transitional care coordinator nurse (TCC nurse) Collaboration between practitioner and nurse Comprehensive in-hospital assessment and evidence-based care plans Home visits by TCC nurse Telephone support Active engagement of family and caregivers
IMPACT program	Multidisciplinary team Depression care manager Stepped care protocol
Enhanced Primary Care	Multidisciplinary team



	Care plans MBS and PIP payments Co-location
Primary Care Partnerships	Multidisciplinary team and partnerships Information sharing systems
More Allied Health Services	Multidisciplinary teams Co-location Shared patient information Formal referral and feedback protocols
Primary Care Amplification Model	Multidisciplinary team and partnerships Focus on local needs One-stop-shop
Kaiser Permanente – Veterans Health Administration	Centralised, vertically integrated system eHealth record system Case management Chronic Care Model Co-location
Patient-centred medical home	GP-led multidisciplinary team Personal physician – long-term relationship with patients Whole-person oriented – GP coordinated care with other providers and community Information sharing Patient registers Quality and safety focus – evidence-based medicine, care plans Enhanced access – open scheduling, expanded hours
Integrated health care (Germany)	Multidisciplinary team Case management Patient information, education and self-management
Integrated Care Pilots (UK)	Partnerships and networks of practices Clinical GP leader Home visits by community matrons and occupational health and safety workers Gold standard framework for end-of-life care Telephone advice system Social services integration Data sharing - patient information and medication
Primary Care Networks (Canada)	Multidisciplinary teams Shared electronic health records Dedicated clinics: After hours, women's health, well-baby Chronic disease management nurses Open scheduling Home care nurses
Southcentral Foundation (Alaska)	Small multidisciplinary primary care teams Patients included as "customer-owners" Scheduled visits allocated to most appropriate team member

9.4 Stepped Care Protocol

Table 9–4 illustrates the Stepped Care Protocol, which comprises a 4-step program of incremental care from “watchful waiting” to specialist consultation.²⁶⁵

Table 9–4 Stepped Care Protocol for depression

Steps	Details
Step 1: Watchful waiting	In up to 50% of cases of depression, patients’ symptoms disappear without active intervention. If symptoms persist after three months, they move to Step 2
Step 2: Biblio-therapy and a signal to the GP	Patients with persistent symptoms (measured by CES-D) may complete a self-help course for coping with depression and anxiety. Emphasis is placed on activity scheduling; staff in residential care facilities are trained to assist residents; and GPs are informed about progress. If symptoms persist after three months, patients move to Step 3.
Step 3: Life review intervention and consult GP	Emphasis is placed on problem-solving. A trained mental health nurse delivers the intervention and checks for possible somatic causes (eg. thyroid disease, vitamin deficiencies, Parkinson’s disease) or substance use. If symptoms persist after three months, patients move to Step 4.
Step 4: Consultation with mental health specialist	Where patients still have CES-D scores >15, their GP may prescribe medication (antidepressants) and/or refer to a mental health specialist.

9.5 Chronic Care Model (CCM)

The Chronic Care Model (**Figure 9–1**) comprises four interacting components:

- 1 The community: provides appropriate resources and policies
- 2 Health care organisations: provide appropriate support and systems
- 3 A multidisciplinary care team: work together to deliver appropriate services
- 4 An informed patient: engaged and educated about their condition and self-care.

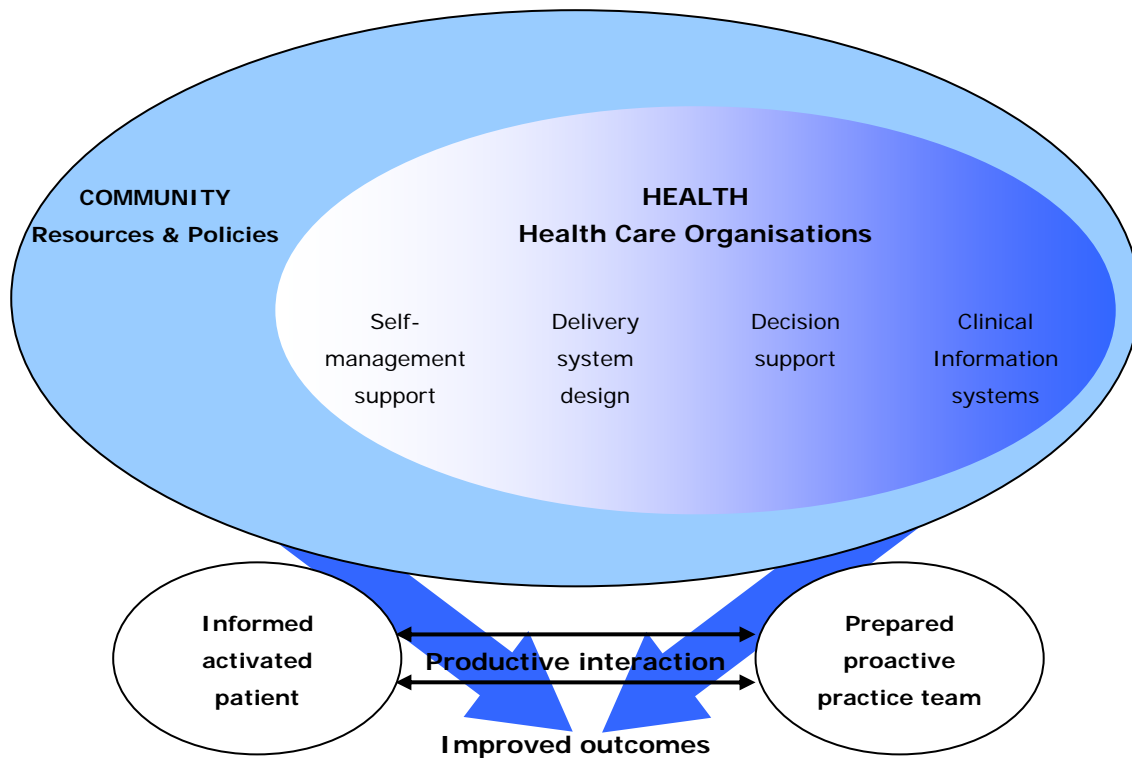


Figure 9–1 The Chronic Care Model (CCM)¹⁷⁷

The Flinders Program™ (formerly Flinders Model of Chronic Care Self Management), which was developed at the Flinders Human Behaviour and Health Research Unit (FHB&HRU) at Flinders University, is underpinned by cognitive behavioural therapy (CBT) principles and takes a generic approach to chronic disease management.¹⁷³ Health care providers are trained to support patients' self-management by:

- ⇒ Assessing self-management capacity
- ⇒ Identifying problems collaboratively
- ⇒ Setting client-based goals
- ⇒ Developing individualised care plans
- ⇒ Using motivational techniques
- ⇒ Measuring outcomes.

FHB&HRU has developed a generic set of tools:

- ⇒ Partners in Health Scale©
- ⇒ Cue and Response Interview©
- ⇒ Problem and Goals assessment.

See <<http://www.flinders.edu.au/medicine/sites/fhbhru/self-management.cfm>> for details about tools and functions of the Flinders Model.