Coordinating primary health care: an analysis of the outcomes of a systematic review

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ABSTRACT

Objectives: To identify the types of strategy used to coordinate care within primary health care (PHC) and between PHC, health services and health-related services in Australia and other countries that have comparable health systems, and to describe what is known about their effectiveness; to review the implications for health policy and practice in Australia.

Methods: We conducted a systematic review of the literature (January 1995 to March 2006) relating to care coordination in Australia, the United States, the United Kingdom, New Zealand, Canada and The Netherlands. Our review was supplemented by consultations with academic experts and policymakers.

Results: Six types of strategy were identified at patient/provider level, falling into two groups: (i) communication and support for providers and patients, and (ii) structural arrangements to support coordination. These were broadly consistent with existing typologies. All were associated with improved health and/or patient satisfaction outcomes in more than 50% of studies, and interventions using multiple strategies were more successful than those using single strategies.

Conclusions: The largely incremental approach to improving coordination of care in Australia has involved a broad range of strategy types but has also perpetuated existing structural problems. Reforms in governance, funding and patient registration in primary health care would provide a stronger base for effective care coordination.

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Coordinating care is a significant challenge, especially for people with complex chronic care needs.[1] A 2002 Commonwealth Fund survey found that patients in five developed countries, including Australia, were "at high risk for deficiencies in care coordination, communication failures, and medical care errors".[2] The primary health care (PHC) sector has a major role in coordinating care,[3] and this has increased as more care is provided in the community.[4] It is therefore important to know what strategies are effective for improving coordination of care through PHC.

Previous systematic reviews have tended to focus on particular health issues, settings or strategies for coordinating care.[5] The systematic review we performed in 2006[6] sought to identify the range of strategies used for coordinating care within PHC or at the interface between PHC and other services and to describe their effectiveness in terms of health, patient satisfaction and economic outcomes. We summarise the methods and results of our review and discuss the implications for Australian policy and practice.

Methods

We conducted a search of the literature from January 1995 to March 2006 using terms relating to integration, coordination, PHC and multidisciplinary care. We searched major electronic databases including ABI Global, the Australasian Medical Index, CINAHL, the Campbell Collaboration database, the Australian Public Affairs Information Service, EMBASE, Global Health, Health and Society, MEDLINE, PsycINFO, Social Sciences Index and the Cochrane Collaboration database. We also followed the citation trail from a comprehensive rapid appraisal review[7] and hand-searched targeted journals.

Studies were included if they were from Australia, Canada, New Zealand, the United Kingdom, the United States or The Netherlands; were experimental studies (randomised controlled trials and quasi-experimental studies) or evaluation studies (trials, pilots, intervention studies, controlled before and after, comparative studies); and focused on coordination of care involving PHC.

Articles were first screened independently by two researchers for initial relevance, and then again for relevance and for a main focus on coordination of care that included PHC. Data were extracted from eligible studies and results were compared. At each stage, disagreements were referred to a third researcher or to the team for resolution.

Eighty-five articles met the inclusion criteria. Strategies for coordinating care were extracted from the studies and analysed qualitatively to develop a typology of strategies for coordinating care. Assessment of study quality by two independent raters using the Quality Assessment Tool for Quantitative Studies from the Effective Public Health Practice Project[8] led to a further five studies being excluded from the analysis of outcomes.

The inter-rater reliability (computed using intraclass correlation) was 0.56. Twenty-one relevant systematic reviews were analysed separately and the results were compared with the findings from the primary studies.

Consultations were held by phone, email or face-to-face meetings and involved an expert in the field from each country studied, policymakers from the federal government and five state/territory governments in Australia and PHC researchers to help frame the research questions and interpret the findings. Further details of our methods are available in the full report (http://www.anu.edu.au/aphcri/Domain/MultidisciplinaryTeams/index.php).

Results

The countries, issues and settings involved in the 80 studies used for assessing outcomes are summarised in Box 1.

The majority of studies were conducted in the US, Australia or the UK. Most related to coordination between PHC and specialist services or hospitals or within PHC itself, and concerned chronic disease, mental health or aged/palliative care.

Nine broad types of strategy were identified (Box 2). The first six types operated at the patient/provider level, and the rest at organisation or health system level. Only patient/provider level strategies are reported here, the others being poorly represented in the studies. The six types covered all the strategies reported in the systematic reviews, and fell into two main groups: (i) communica-

1 Studies used to assess outcomes, by country, setting and health issue

	Number of studies ($n = 80$)
Country	
United States	36
Australia	16
United Kingdom	16
The Netherlands	6
New Zealand	3
Canada	3
Setting for coordinating care	
Between PHC and specialist providers	38
Between PHC and hospital	28
Within PHC	12
Between PHC and aged care	2
Health issue	
Chronic disease management	30
Mental health care	23
Aged/palliative care	15
Other	12

PHC = primary health care. ◆

tion and support for providers and patients, and (ii) structural arrangements to support coordination.

Most studies used a combination of strategy types. Thus, an intervention to improve coordination of care between hospitals and general practice included procedures for discharge communication, use of an Enhanced Primary Care discharge plan with an agreed format, and arrangements to fax the form to the general practitioner for review and then give a copy to the patient and other service providers. The GP made an appointment for the patient to attend within 7 days of discharge. Those receiving the intervention rated discharge care arrangements as more achievable ($P < 0.038$), were more satisfied with their input into discharge procedures ($P < 0.02$), and had higher mental quality of life 7 days after discharge ($P < 0.003$).[9]

There were some variations in the types of strategy used across contexts: studies of mental health and aged/palliative care often attempted to improve communication between service providers, while chronic disease studies were more likely to develop structured arrangements for coordinating service provision and systems to support the coordination of care. The strategy types were compared with the relevant parts of existing frameworks for integration[10] and coordination of care[11] and found broadly comparable.

Following Weingarten et al,[12] we assessed the effectiveness of each type of strategy as the proportion of studies using that strategy that measured health status, patient satisfaction or economic outcomes and reported a statistically significant positive result (Box 3). Economic outcomes are omitted, as the data were generally of poor quality and only five studies reported significant outcomes in this area.

For each strategy type, at least half the studies that measured health or patient satisfaction outcomes reported statistically significant positive results. Having structured relationships between service providers and with patients was the most commonly effective strategy for both types of outcomes. Otherwise strategies that were more effective for health outcomes tended to be less effective for patient satisfaction, and vice versa. The success of strategy types in achieving health outcomes was broadly similar across health issues, except that providing support for service providers was considerably more successful for mental health care (80%).

Most studies used several strategies for coordinating care (range, 1–6; median, 3). Apart from one study that used all six strategies and reported statistically significant positive health outcomes,[13] these outcomes were most common in studies using between two and four strategies.

Discussion

Our review analysed studies from six countries to identify the strategies used to coordinate care. The typology of strategies that we identified at patient and provider level accounted for the individual strategies found in other systematic reviews and proved consistent with existing schemata for integration and continuity of care, suggesting that this typology has both local and international application.

All strategy types were associated with improved health or patient satisfaction in at least 50% of studies that measured these outcomes. Interventions using several strategies were more likely to be successful than those using single strategies. This is consistent with the quality improvement literature,[14] which suggests that policies and service developments should encourage comprehensive approaches across the full range of strategies, in order to

2 Types of strategies used to coordinate care ($n = 85$)

Patient and provider level

Arrangements to improve communication between service providers, including case conferencing (56 studies)

Using systems to support care coordination, including care plans, shared decision support, patient-held or shared records, shared information or communication systems, and a register of patients (47 studies)

Structured arrangements for coordinating service provision between providers, including coordinated or joint consultations, shared assessments, and arrangements for priority access to another service (37 studies)

Providing support for service providers, including support/supervision for clinicians, training (joint or relating to collaboration), reminders, and arrangements for facilitating communication (33 studies)

Structuring the relationships between service providers and with patients, including co-location, case management, multidisciplinary teams or assigning patients to a particular primary health care (PHC) provider (33 studies)

Providing support for patients, including education (joint or relating to sharing care), reminders, and assistance in accessing PHC (19 studies)

Organisational level

Joint planning, funding and/or management of a program or service (7 studies)

Formal agreements between organisations (3 studies)

System level

Changes to funding arrangements (1 study) ◆

3 Types of strategies used for coordinating care at micro (patient and provider) level

Strategy type	Studies reporting positive outcomes*	
	Health outcomes	Patient satisfaction
Structural arrangements for coordination		
Having structured relationships between service providers and with patients (33 studies)	19/29	8/12
Using structured arrangements for coordinating service provision between providers (37 studies)	19/31	4/12
Using systems to support care coordination (47 studies)	23/38	7/19
Coordination activities		
Providing support for service providers (33 studies)	16/28	8/14
Improving communication between service providers (56 studies)	26/47	12/22
Providing support for patients (19 studies)	6/17	3/6

* The numerator is the number of studies reporting a health/patient satisfaction outcome that was both positive and statistically significant, and the denominator is the total number of studies that measured that type of outcome, irrespective of the result. ◆

maximise health and patient satisfaction. Structuring relationships between providers and between providers and patients (eg, case management, multidisciplinary teams or assigning patients to a particular PHC provider) warrants particular attention.

Our review included a range of conditions and settings for care coordination. This reflects the circumstances in PHC, where clinicians and services must care for a wide range of patients, often with complex comorbidities, and work with many other service providers. This requires arrangements for care coordination that are sufficiently specific to meet the needs of particular patient groups, sufficiently general to be sustained in everyday PHC practice, and consistent enough to support coordination with a wide range of clinicians and services.

In recent years, federal and state/territory governments in Australia have supported a range of strategies for improving care coordination within their jurisdictions. These have been driven by various imperatives, including a perceived need to integrate general practice better with other health services,[15] to improve chronic disease care,[16] to improve access to services in rural areas[17] and to reduce avoidable hospitalisations.[18]

Initiatives have been incremental, evolving over time and operating within the constraints of the existing health care system. Thus, the Enhanced Primary Care program initially provided fee-for-service payments to GPs for care planning and case conferences. This was gradually extended to cover other aspects of chronic disease care, including assessment and referral for mental health care. The use of Enhanced Primary Care items was supported by a series of programs, delivered largely through Divisions of General Practice, including enhancements to practice nursing and initiatives to improve access to allied health services from general practice.

These developments have been complemented by other local initiatives, often involving the Divisions and state health services.[19] Over time, these developments have supported most of the types of strategy identified in our review.

This incremental approach is well suited to a pluralist system in which coordination often depends on voluntary collaboration. It enables policymakers and other stakeholders to gauge the impact and acceptability of reforms and make necessary adjustments. It also allows organisations like the Divisions' network and professional organisations to play a part in shaping initiatives at the local or regional level. At its best, "logical incrementalism" can combine a strategic approach with flexibility and broad engagement in change.[20] However, these incremental changes have not addressed aspects of the health system that create barriers to better care coordination, and have been less effective in improving the structural arrangements to support coordination.

In Australia, the relationships between service providers and between providers and patients are affected by the absence of registration of patients with general practices. Although most patients get their chronic disease care from a single practice, the lack of a formal relationship leaves GPs uncertain about the extent of their responsibility for ongoing care and care coordination, particularly in the area of psychosocial care.[21] Attempts to structure relations between service providers and between providers and patients are further hampered by discontinuities between general practice, community health and non-government organisations, who work from different locations, in different sectors of the health care system, often with conflicting boundaries and without shared lines of accountability. This provides a weak base for the teamwork and multidisciplinary care required for complex and chronic disease care.

Much recent support for coordination of care has been funded through fee-for-service payments, especially for general practice and private allied health services. The use of these Medicare Benefits Schedule (MBS) items is tightly controlled in order to limit costs and avoid misuse. This reduces flexibility and can make efficiencies difficult to achieve — for example, through substitution of service providers, with extended roles for practice nurses or physician assistants. Meanwhile, an increasing array of MBS items has been created to accommodate the variety of patient needs, resulting in a complex system that appears to be losing its power as an incentive.[22]

Alternatives include boosting infrastructure payments rather than fee-for-service, and cashing out fee-for-service payments to permit more flexible and locally appropriate service development, as in the Coordinated Care Trials and the Primary Health Care Access Program.

As well as creating barriers to care coordination, the divisions between different health care sectors, particularly federal and state, have undermined attempts to reduce these barriers. Initiatives have tended to address the needs of the sector within which they are developed, rather than those of other sectors whose collaboration is required. Thus, the Enhanced Primary Care program provided support for GP involvement in care coordination but not for community health or allied health services, resulting in limited

uptake of the program.[23] The More Allied Health Services and Access to Allied Psychological Services programs have created a private allied health sector more closely linked to general practice, but with no mechanism for coordination with state-funded services.

The division of responsibility for PHC has also hampered attempts to develop consistent systems to support care coordination, including common patient records, compatible information systems, consistent assessments and shared referral directories. Some states have sought to support coordination across sectors through voluntary regional networks of services, but the experience of the Primary Care Partnerships in Victoria suggests that progress is slow and participation difficult to achieve.[24] Unlike the UK, with its Primary Care Trusts, and New Zealand, with its Primary Health Organisations, Australia has no primary care organisations with the authority and responsibility to address coordination across the whole of PHC.[25]

With the increasing burden of complex and chronic care, PHC needs a strong foundation for care coordination. In Australia, it seems unlikely that continued incremental change will create the relationships between service providers, between providers and patients, and across the systems that are required to support effective coordination of care.

New gains will require more fundamental reforms of the overall governance of the PHC sector, the arrangements for funding care and its coordination, and the relationship between citizens and their PHC services. If structured well, these can provide a consistent framework, flexible incentives and more effective tools to support care coordination. This will then create an environment in which ongoing incremental reform can continue to contribute, by developing strategies for emerging areas of health care (eg, chronic disease prevention) and improving service coordination at a local level.

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Competing interests

None identified.

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