Chronic disease management in primary care: from evidence to policy

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ABSTRACT

Objectives: To review the effectiveness of chronic disease management interventions for physical health problems in the primary care setting, and to identify policy options for implementing successful interventions in Australian primary care.

Methods: We conducted a systematic review with qualitative data synthesis, using the Chronic Care Model as a framework for analysis between January 1990 and February 2006. Interventions were classified according to which elements were addressed: community resources, health care organisation, self-management support, delivery system design, decision support and/or clinical information systems. Our major findings were discussed with policymakers and key stakeholders in relation to current and emerging health policy in Australia.

Results: The interventions most likely to be effective in the context of Australian primary care were engaging primary care in self-management support through education and training for general practitioners and practice nurses, and including self-management support in care plans linked to multidisciplinary team support. The current Practice Incentives Payment and Service Incentives Payment programs could be improved and simplified to encourage guideline-based chronic disease management, integrating incentives so that individual patients are not managed as if they had a series of separate chronic diseases. The use of chronic disease registers should be extended across a range of chronic illnesses and used to facilitate audit for quality improvement. Training should focus on clear roles and responsibilities of the team members.

Conclusion: The Chronic Care Model provides a useful framework for understanding the impact of chronic disease management interventions and highlights the gaps in evidence. Consultation with stakeholders and policymakers is valuable in shaping policy options to support the implementation of the National Chronic Disease Strategy in primary care.

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Worldwide, the prevalence of chronic disease and risk factors for their development are increasing and placing greater demands on health care systems and carers. It is estimated that chronic diseases currently account for 70% of the total burden of ill health in Australia, as measured by disability-adjusted life-years, and this is expected to increase to 80% by 2010.[1] The Australian National Chronic Disease Strategy, developed in response to the increasing burden of chronic disease, provides a broad framework and set of principles for how care should be organised and delivered. These include providing evidence-based care, coordinating that care across a range of health care settings, and promoting self-management. Implementation of the strategy will require further policy and program development as well as capacity building in the health care workforce.[2] Primary care has an important role in chronic disease management, as increasingly general practitioners and other primary health care professionals are managing people with chronic disease, often in collaborative arrangements with specialised services.

In order to inform policy and program development for the management of chronic disease in primary care, we undertook a systematic review with qualitative synthesis of data to focus on the evidence for the effect of interventions on the management of chronic physical diseases most commonly seen in primary care[3] from countries comparable to Australia. The aim of our article is to put the evidence from the review into the context of the Australian health care system to produce a number of evidence-based policy options.

Methods

We used the Chronic Care Model described by Wagner et al[4] as a framework for analysis, reporting on the evidence for each of the six elements of the model: self-management support, delivery system design, decision support, clinical information systems, community resources and health care organisation. Our review methods, summarised here, have been reported in detail elsewhere.[5]

Search strategy

We searched several major databases — MEDLINE, EMBASE, CINAHL and PsychLit — for articles published from January 1990 to February 2006, as well as the Cochrane Effective Practice and Organisation of Care (EPOC) specialised register (Issue 4, 2005), the Cochrane Library (Issue 4, 2005), the Database of Abstracts of Reviews of Evidence (DARE) and the Joanna Briggs Institute Library collection.

Our search strategy was developed to identify chronic diseases of interest and aspects of disease management, using a combination of keyword searches of titles and abstracts and also database indexing terms. The bibliographies of all primary research articles included in our review were searched to identify additional studies and systematic reviews for inclusion. Using relevant government and health-related websites, we also searched the grey literature.

Inclusion criteria

We included systematic reviews, randomised controlled trials, controlled clinical trials, controlled before-and-after studies and interrupted time series studies involving adults aged 18 years and over with one or more of the following chronic conditions: hypertension, coronary heart disease, type 2 diabetes, lipid disorders, asthma, chronic obstructive pulmonary disease (COPD), arthritis (including osteoarthritis and rheumatoid arthritis) and osteoporosis.

We considered for inclusion any studies of organisational, professional or financial interventions for chronic disease, as described by the EPOC taxonomy of interventions and delivered by non-hospital health professionals. Patient-mediated interventions, such as distribution of educational materials, education sessions, motivational counselling, brief intervention, commu-

nity programs, self-management and call-back reminder notices, were also considered.

Outcome measures sought were objective measurements of health professional performance, such as adherence to disease-specific guidelines, and patient-level measures of disease control, such as blood pressure or self-report measures with known validity and reliability, as well as patient satisfaction, provider satisfaction and economic measures.

We included only studies that were undertaken in Australia, Canada, The Netherlands, New Zealand, Scandinavia, the United Kingdom or the United States. Studies published before 1990, in a language other than English, or pertaining only to a change in patient knowledge, were excluded.

Results

Key findings

A total of 141 studies and 23 systematic reviews contributed to the analysis. As there was considerable heterogeneity among the studies included in our review, we could not undertake a formal meta-analysis. Our key findings relevant to the Australian policy context are summarised in the Box (detailed findings have been reported elsewhere[5]). Interventions to support patient self-management or change delivery system design were most strongly associated with improvements in patient and process outcomes. Stakeholders and policymakers were consulted for their opinions on the key findings. This consultation process identified policy levers and policy options specifically for the Australian health care system.

Discussion

From evidence to policy for self-management support

Our review found that self-management interventions are effective in improving both process of care and patient outcomes. There was most evidence for self-management support for diabetes and hypertension, with some evidence for arthritis and less clear evidence for asthma and COPD.

In Australia, to date, self-management practices have been used mainly to relieve pressure on the acute care system and are not firmly embedded in primary care.[2] However, to embed self-management in primary care, GPs, practice and community nurses and Aboriginal health workers need to have the education and training to enable them to provide effective self-management support.[6] The education of some health workers will be addressed through the recent Australian Better Health Initiative, but a comprehensive approach is needed to ensure that all relevant professionals have the skills and are able to integrate this with their other roles.[7] Self-management support could be enhanced by incorporating it into care plans, which could be achieved by linking referral to allied health professionals to the provision of self-management support. Practice nurses are effective at providing self-management support,[8-12] and extending Medicare benefits to reimburse practice-nurse time would provide an opportunity to deliver self-management support without additional burdens on GPs. Divisions of General Practice are also well placed to provide education and support for self-management practices. This could be achieved by better linking general practices with self-management support programs run through community health, multicultural health and Aboriginal health services as well as more specialised services. This would be particularly important to provide group self-management support to people from specific ethnic groups and to provide a diverse range of options along the lines of recent developments in the UK.[13]

Self-management should be incorporated into health information given to patients and into evidence-based guidelines provided to health care professionals, such as those published by the National Health and Medical Research Council, the National Heart Foundation and Diabetes Australia, to ensure that patients receive consistent information.

From evidence to policy for delivery system design

Delivery-system design interventions such as multidisciplinary team care have been shown to have positive effects on both provider behaviour and some patient outcomes, particularly for diabetes, hypertension and lipid disorders. In Australia, funding support for multidisciplinary team care has been provided through the Enhanced Primary Care package. Under this package, multidisciplinary care is facilitated by the development of a team care arrangement to plan the care for people with chronic and complex disease. The team care arrangement can provide the patient with access to five allied health visits per year. Initially, GPs found using these item numbers challenging because of the organisation, resources and communication involved,[14] but recently, claims against these item numbers have been increasing.

In the UK, The Netherlands and Sweden, the role of practice nurses is well developed[15-17] and they have been shown to be effective at providing high-quality guideline-directed care,[18] but this is yet to occur to the same extent in Australia. The practice nurse role has been supported in other countries by postgraduate and masters-level training such as that offered by Education for Health[19] in the UK, which offers a range of chronic disease training courses for practice nurses. A recent survey conducted by the Royal Australian College of General Practitioners found that 75% of practice nurses surveyed were involved in chronic disease care, but few had undergone any formal training.[20] As well as education, there is a need for funding systems to support the role of the practice nurse. The introduction of a Medicare item number for practice nurse input into chronic disease care has recently been announced.[21] It remains to be seen whether the value of the rebate is sufficient to support practice nurse costs. If a multidisciplinary team approach to chronic disease care is to be effective, health care professionals need to be supported with training in teamworking to ensure that care from the members of the team complements rather than duplicates the work of others.

From evidence to policy for decision support and clinical information systems

Our review found that evidence-based guidelines and educational meetings for health professionals improved health professional adherence to guidelines and some patient outcomes. Education of health professionals, on its own, did not improve patient health outcomes. However, clinical information systems that provide audit and feedback encourage the use of decision support, and chronic disease registers are an important feature of chronic disease management so that people with chronic disease can be identified easily and regular follow-up planned.

Between 1997 and 2003, many Divisions of General Practice established regional diabetes registers based on a minimum clinical dataset,[22] which appeared to have had a positive effect on the

quality of care.[23] However, these registers have not been sustained in the long term because of lack of government incentives to support their ongoing development and a lack of tools to allow easy extraction of data from practice software for clinical audit. Practice Incentives Payments and Service Incentives Payments to GPs have not been taken up universally, because the system for claiming is complex[23] and the payments are only available for diabetes and asthma. This makes it difficult for GPs to take a holistic approach to their patients, and it would be beneficial if incentives for registers extended across a range of chronic diseases.

High-quality practice data are important for enabling GPs to monitor the quality of their care.[24] General practice data in Australia are extremely variable in quality, and this has affected the ability of practices to coordinate and audit the care they deliver. As well as problems with quality, lack of access to practice-level data is also a major barrier to monitoring the extent and quality of chronic disease care. Supporting the use of the Collaboratives methodology (a quality improvement model designed by the US Institute for Healthcare Improvement)[25] by practices or Divisions may provide incentives for practices to improve the quality of searchable data and, ultimately, the quality of care through the plan–do–study–act cycles.[26]

From evidence to policy for community resources and health care organisation

We found little research evidence for the effective use of community resources and health care organisation to support chronic disease management in primary care. This is an important gap in the literature, as people with chronic disease manage their condition in the context of their family, workplace and wider community. For example, the most effective self-management programs in disadvantaged communities appear to be those that are developed in partnership with culturally acceptable health workers from within a particular community.[27]

How can policy and program development progress to reflect the evidence?

In order for the evidence for effective chronic disease management in primary care to permeate Australian health policy, there is a need for increased collaboration at the level of the primary care service, state and federal. There are already some systems in place where this might occur, and at a national level there is progress on coordination of programs under the authority of the Council of Australian Governments. An important outcome of this process has been the development of the National Health Priority Areas and the 2005 National Chronic Disease Strategy.[2] These have brought about some sustained systemic changes at all levels, but a coherent approach is still lacking.

At the local level, increased collaboration between general practice and private and public allied health services would help promote multidisciplinary team care. Multidisciplinary teams and the increasing role of practice nurses to support GPs will require negotiation at a local level to ensure that each member is clear about his or her function in the team. Divisions could take on an

Summary of the key findings from our systematic review, according to the element of the Chronic Care Model[4]

Element of Chronic Care Model	Effective interventions	Effect of interventions on outcome measures
Self-management support	• Patient educational sessions • Patient motivational counselling • Distribution of educational materials • Most evidence for effectiveness of self-management support for diabetes and hypertension • Some evidence for effectiveness of self-management support for arthritis and asthma	• Physiological measures of disease • Patient quality of life • Patient health status • Patient functional status • Patient satisfaction with service • Patient risk behaviour • Patient knowledge • Patient service use • Patient adherence to treatment
Delivery system design	• Multidisciplinary teams • Most evidence for effectiveness of delivery system design for diabetes, hypertension, lipid disorders and heart disease	• Physiological measures of disease • Professionals' adherence to guidelines • Patient service use
Self-management support and delivery system design	• Multidisciplinary teams plus patient educational sessions • Multidisciplinary teams plus patient motivational counselling	• Physiological measures of disease • Patient quality of life • Patient health status • Patient satisfaction with service • Patient risk behaviour • Patient service use • Professionals' adherence to guidelines
Decision support	• Implementation of evidence-based guidelines • Educational meetings with professionals • Distribution of educational materials among professionals	• Professionals' adherence to guidelines • Physiological measures of disease
Clinical information system	• Audit and feedback	• Professionals' adherence to guidelines
Health care organisation	• Little published experimental evidence	
Community resources	• Little published experimental evidence	

increased role to work towards supporting GPs to improve practice data and implement clinical governance measures, which have been shown to improve quality of care in the UK.[24] Standards for practice clinical software systems that allow data extraction are urgently needed. In addition, negotiation is needed between software developers and guideline developers to integrate clinical guidelines into practice software systems to facilitate greater use and to improve the quality of practice data. The number and complexity of incentive programs are a barrier to their use, and a simplified and better integrated system is needed.

Conclusion

Our review of the effectiveness of elements of chronic disease management in primary care, supported by consultation with stakeholders and policymakers, identified a number of implications for Australian health policy. The findings from this process provide direction for a comprehensive and coordinated strategy to improve quality of care and patient outcomes in chronic disease. If practice-level data are improved and accessible, evaluation of policy initiatives will be possible. Further research should be undertaken to broaden our understanding of how health care organisation and community resources can support chronic disease management in primary care.

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Competing interests

None identified.

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