

IMPROVING CHRONIC DISEASE MANAGEMENT

An Anglo–American exchange

This report summarises the proceedings of a policy seminar that was held in England in March 2006, and was jointly sponsored by the King's Fund and The Commonwealth Fund of New York. The seminar brought together leading policy-makers, clinicians and academics from England and the United States.

The aims of the seminar were:

- to compare and contrast the context for effective chronic disease management in the two countries
- to identify facilitators and barriers for success
- to explore methods for evaluating chronic disease management programmes.

Six case studies of chronic disease improvement programmes – three from each country – were presented at the seminar to illustrate the range of initiatives and options available. These case studies are presented separately and summarised in the Appendix 1.

Background

The most common chronic diseases worldwide are heart disease, stroke, diabetes, asthma, cancer and chronic obstructive pulmonary disease (COPD) (World Health Organization 2005). There are many risk factors associated with chronic illness. However, at all ages, the vast majority of chronic disease deaths in men and women can be explained by the following common, modifiable risk factors: unhealthy diet, physical inactivity and tobacco use (World Health Organization 2005). Although death rates from chronic disease are falling, the prevalence of chronic disease is rising. This is due to changes in population demographics, in particular the ageing of the population, as well as increased exposure to risk factors resulting from social and environmental changes.

The Global Burden of Disease study estimated that in high-income countries, heart disease, stroke, mental health disorders, bronchial cancers, COPD, diabetes and alcohol misuse were the top 10 leading causes of disease in 2001 (Lopez *et al* 2006). Chronic disease imposes costs at all levels of society. There are currently efforts under way to estimate better the economic burden of chronic disease (Suhrcke *et al* 2006). Given the personal and societal costs of chronic disease and its rising prevalence, it is vital that countries find ways to minimise the impact of chronic disease on quality of life, and establish ways to prevent it.

Many health systems are currently seeking to address the challenge of chronic disease and are trying to improve the way in which health systems respond to the needs of patients with chronic illness. Policies to improve the management of chronic disease¹ have generally focused on physical ill health but, increasingly, mental health conditions, such as depression, are also being tackled as part of these programmes.

There is a growing body of evidence and experience suggesting that health care systems that combine multidisciplinary teams, self-management support and clinical information systems can lead to better management of patients with chronic illness. Despite this, health care systems in the United Kingdom and United States have not yet introduced all of these interventions.

In addition, findings from The Commonwealth Fund's recent international health policy surveys highlight further shortfalls in the management of chronically ill patients. Drawing on the views and experiences of adults with one or more chronic conditions and primary care doctors in the United Kingdom and the United States, the surveys found that:

- only 42 per cent of the diabetic patients in the United Kingdom and 58 per cent of the diabetic patients in the United States had been given a plan for self-management at home
- one-half or fewer respondents with chronic illnesses reported that a nurse was involved in the management of their condition (52 per cent in the United Kingdom; 41 per cent in the United States) (The Commonwealth Fund 2005)

¹ In England, the term 'long-term conditions' is more commonly used in official policy documents to refer to chronic disease. However, for the sake of simplicity, 'chronic disease' is used throughout this paper unless in reference to a specific English publication or organisation.

- two in five diabetic patients did not receive some of the recommended care for management of their condition (42 per cent in the United Kingdom; 44 per cent in the United States)
- one in four patients with chronic illnesses in the United Kingdom (23 per cent) and two in five patients in the United States (39 per cent) had experienced a medical, medication or lab error
- following hospitalisation, one in three chronically ill patients reported a failure in discharge co-ordination (35 per cent in the United Kingdom and 33 per cent in the United States)
- at most, three in four doctors said that they were well-prepared to take care of patients in their practices who had multiple chronic diseases (76 per cent in the United Kingdom; 68 per cent in the United States) (Schoen *et al* 2006).

The policy context for chronic disease management

The US policy context

In the United States, 28 per cent of the population reported being uninsured at some time during 2005 (approximately 47 million people) (The Commonwealth Fund 2006). The insured are covered either by private insurance policies (the majority purchased by employers) or by publicly funded insurance (Medicare and Medicaid). Medicare is a publicly funded federal insurance system that provides cover to people over 65 years old and those with a disability under 65 years old (approximately 14 per cent of the population). Medicare covers hospital services (Part A), physician services and outpatient care (Part B) and, since 2006, pharmaceuticals (Part D). The majority (85 per cent) of people who are covered by Medicare are over 65 years old. Medicaid is a state-administered programme for the poor. There are different eligibility criteria and levels of coverage in each state.

Some of the earliest examples of chronic disease management come from the United States, where managed care organisations under a fixed capitation had strong incentives to prevent and promote the health of enrollees with chronic conditions (Dixon *et al* 2004). Similar schemes were developed and implemented by the publicly funded insurance schemes. The Centers for Medicare and Medicaid Services has long recognised the need to improve care for people with chronic illnesses. Beginning in the late 1990s, it initiated a number of demonstration projects designed to implement models and incentives that appeared promising. These projects included the Medicare Coordinated Care Demonstration, Medicare Disease Management, and the Physician Group Practice Demonstration.

Currently, 80 per cent of Medicare beneficiaries are enrolled in traditional fee-for-service plans, while 20 per cent of beneficiaries are enrolled in a range of private plans, known as Medicare Advantage, which includes co-ordinated care plans and plans that offer a limited network of providers (Kaiser Family Foundation 2007). In view of the rising economic costs and burden of chronic diseases, policy-makers have recently been focusing on improving services and reducing costs for this cohort of patients. The 2003 Medicare Prescription Drug, Improvement and Modernisation Act (MMA) included two policy measures of particular relevance.

The first was the introduction of the Medicare drug benefit (known as Part D), which came into effect in 2006. This provided elderly US patients with coverage for prescription drugs for the first time. Previously only those who could afford to buy a supplementary ‘Medigap’ insurance were covered. Part D is important for the management of complex chronic illness since non-compliance with prescribed drugs is a well-recognised cause of avoidable clinical deterioration (Piette *et al* 2004). By reducing the financial barriers to access to drugs, it is expected that Medicare Part D will lead to better maintenance of health and reductions in avoidable admissions. However, given the design of the drug benefit, many beneficiaries will experience substantial co-payments and coverage gaps. It remains to be seen how much these barriers will reduce adherence to medication regimes.

The second policy measure was the establishment of the Medicare Health Support (MHS) programme. This provides financial incentives for ‘Chronic Care Improvement Organizations’ to deliver evidence-based health management for high-cost patients who are enrolled in the fee-for-service arm of Medicare. The MHS programme currently targets patients with congestive heart failure, complex diabetes and COPD. In a significant departure from traditional fee-for-service arrangements, initiatives run under the programme have to be *population based*: that is, rather than paying providers for specific services provided to individual Medicare beneficiaries, a monthly fee is paid for the management of populations with specific predefined conditions (California Health Care Foundation 2004). The MHS programme is being run as a pilot for three years, during which time the MMA requires that beneficiaries be assigned to intervention or control groups (although those assigned to the intervention group can choose not to participate in the intervention). This will mean that, because of the large numbers of patients involved, a statistically robust evaluation of the programme can be carried out in terms of cost, quality and patient satisfaction, before the programme is rolled out on a large scale (California Health Care Foundation 2004).

Chronic Care Improvement Organizations contracted by Medicare are required to save the programme a minimum of 5 per cent of net health care costs for Medicare fees. The organisations selected for the demonstration sites offer a variety of approaches to chronic disease management, including:

- the use of named care co-ordinators
- self-care education for beneficiaries, and educational support for physicians and other clinicians
- the use of remote monitoring technologies
- harnessing information resources.

The English policy context

In England, the majority of care for chronic conditions is funded and provided by the National Health Service (NHS). Reforms introduced into the NHS since 2000 have placed the responsibility for commissioning or purchasing services with local geographically based organisations called primary care trusts (PCTs). There are currently 152 PCTs in England, each of which covers an average population of just under 300,000. PCTs are responsible for spending 80 per cent of the NHS’s total expenditure, which is equivalent to around £58 billion (King’s Fund 2006). Increasingly, budgets are being further devolved from PCTs to primary care practices (so-called practice-based commissioning) in an effort to provide stronger incentives for more proactive and preventive care to take place.

Since the late 1990s, a series of policies have been implemented, aimed at improving care for people with chronic diseases. For example, National Service Frameworks (NSFs), which were launched during the late 1990s, define best practice and set minimum standards of care for a range of common conditions and selected patient groups. These standards are expected to be met across the whole country, and progress against them is assessed regularly. NSFs exist for several chronic diseases, including coronary heart disease, diabetes, COPD, renal diseases and mental health (Department of Health 2007). The introduction of the NSFs has triggered a range of service redesign and innovation initiatives, often characterised by collaboration between health care providers and other organisations (including local government and voluntary organisations).

NSFs were initially implemented in isolation for each condition. Consequently, several clinical teams might care for a person with multiple chronic diseases. There has been growing recognition of the need to integrate services for people with multiple complex problems, and to take a more systematic and proactive approach to chronic disease management. In 2004, new policies started to emerge to address these issues. Policies were informed by two models developed in the United States: the Chronic Care Model developed by Wagner (Improving Chronic Illness Care 2007) and the 'risk pyramid' model developed by Kaiser (National Primary and Care Trust Development Programme 2007).

The risk pyramid model significantly influenced Department of Health policy guidance on the development of health and social care policy for long-term conditions, identifying three tiers for intervention – case management, disease management and self-care/self-management – to be targeted at patients with high, medium and low risk of clinical deterioration respectively (Department of Health 2005).

To support case management, the government proposed that 3,000 nurse case managers, known as community matrons, be employed across England in order to improve health, co-ordinate care from multiple providers, reduce the use of health care services and support patients and carers. In addition, community matrons were to work with a range of condition-specific disease management teams and make use of increasing resources for self-management (Department of Health 2005).

Early expectations (based on evaluations of Evercare in the United States) were that community matrons could reduce emergency hospital admissions for long-term conditions by up to 50 per cent. Evaluations of pilot sites in England reported no significant reduction in emergency admissions (Gravelle *et al* 2007), but by the time the research was published, the community-matron policy was already being rolled out nationally.

PCTs are increasingly making use of case-finding tools, such as PARR (Patients At Risk of Readmission) (Billings *et al* 2006), to identify patients who are at high risk of unnecessary admission to hospital. Many of these patients are elderly with multiple chronic diseases. The development and evaluation of interventions for these patients are still in their formative stages. The main programme to support patients in England is the Expert Patient Programme. This is an adaptation of the Chronic Disease Self Management Programme developed in Stanford (Lorig *et al* 2001).

Summary of seminar discussions

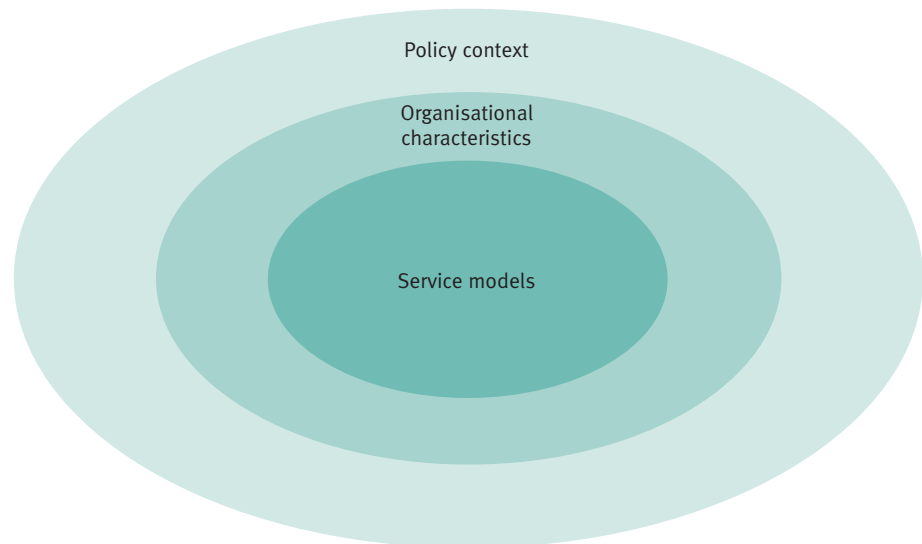
The case studies presented at the seminar in England in 2006 triggered wide debate among attendees about how best to establish, operate and evaluate services for people with complex chronic conditions at high risk of illness and hospitalisation. The main points covered during the debate can be organised into three groups:

- aspects of the policy context in which chronic disease services operate
- the characteristics of the organisations that are commissioning and providing chronic disease care
- features of the service models used to deliver the care.

These groups can be understood to form ‘tiers of influence’ on the effectiveness of chronic disease services. Figure 1 (below) provides a visual representation of how these tiers interact.

An outer ‘layer’ of high-level policy and regulation sets the context and defines the incentives that shape the responses of health care organisations to the growing population of people with complex chronic illnesses. The culture and processes of these organisations – their organisational characteristics – then shape the way that front-line services, targeted at specific high-risk patients, are organised and delivered.

1 TIERS OF INFLUENCE ON THE EFFECTIVENESS OF CHRONIC DISEASE SERVICES



The points raised at the seminar relating to each of these tiers are discussed below.

Policy context

PAYMENT AND REIMBURSEMENT MECHANISMS

The defining high-level policy issue is the alignment of financial incentives across the many organisations that contribute to chronic disease management. In both countries, there is a

need to develop financial incentives that will result in better chronic disease management and reduce fragmentation between different providers.

In the United States, the MHS programme and other Medicare pilots are testing the effects of different payment systems across providers, insurers and physician groups. Efforts are underway to introduce an ‘integrating’ payment system through Medicare ‘regulation 646’. Theoretically at least, this should encourage integration by enabling providers to take full financial risk for groups of patients, but its success will depend on adequate risk adjustment. In England, devolving budgetary responsibility to PCTs and practice-based commissioners is creating stronger incentives than previously existed in the NHS to manage patients with chronic disease more effectively in the community, and to reduce unnecessary admissions. However, this may be undermined by Payment by Results (PbR): an activity-based payment system that gives hospitals incentives to admit patients. In particular, PbR may make it difficult to develop and sustain the collaboration needed for effective integrated pathways of care for long-term conditions.

QUALITY INDICATORS AND PERFORMANCE TARGETS

Clearly defined targets and standards generate performance measures that enable both the assessment of and comparison between services. However, these should not be allowed to distort the design and provision of care. A wider set of metrics that captures local variations in service provision, user satisfaction and clinical quality is required. Examples of the use of performance targets to achieve improvements in the NHS include targets to reduce waiting times (Harrison and Appleby 2005), as well as a target to reduce the number of emergency bed days occupied by patients with long-term conditions by 5 per cent between 2004 and 2008. This target was set in 2004 as part of the public service agreement between the Department of Health and the Treasury.

There are examples of the use of standards in chronic disease services in England and the United States. The Veterans Administration (VA) health system in the US, which provides publicly funded health care to veterans of the US military, is using standards linked to a strong system of accountability for local performance to shape the work of local VA hospitals and clinics. In England, NSFs set uniform national standards for selected conditions and services.

In practice, the use of national standards and targets should ensure service users benefit from improved services while allowing local discretion to determine how this is done.

ACCOUNTABILITY FOR SERVICES

With the increasing use of competition and financial incentives to shape care provision, there is also a need for a system of greater accountability.

The role of insurers (in the United States) and commissioners (in England) can be used to drive provider improvement and to monitor performance. For example, in the United States, detailed analysis of data on claims and the use of services by individuals is the cornerstone of performance monitoring by payer organisations. However, most primary care providers do not get routine feedback on performance and there is a lack of uniform national standards.

NHS commissioners currently have very limited ability to fulfil their monitoring role, due to a lack of standardised data and information across the care pathway. Although the ‘Quality

and Outcome Framework' in NHS general practice has standardised and improved primary care data, there is limited use of additional local performance measures for PCT performance management. In addition, the current lack of integration between health and social care information systems creates problems for measuring the performance impact of integrated services.

WILLINGNESS TO RIDE OUT POLITICAL STORMS

Changes in service provision associated with improved chronic disease management may occasionally be unpopular and should therefore be implemented with care. For example, policies in England to shift more care closer to home may result in some hospitals implementing bed reductions and/or closures: types of reconfiguration that, in the past, have been met with hostile media coverage and public protests. In the United States, the VA dealt with the challenge of reconfiguration by gradually reducing bed numbers: rather than making sudden closures, they stopped building extra beds as the local population grew. These examples suggest that the pace of policy implementation influences public and professional acceptance, with rapid change more likely to increase resistance.

Organisational characteristics

SCALE

Changes in policy often trigger small-scale pilot projects that struggle to survive when start-up funding runs out. Therefore, when pilot services *are* effective, it is important that they are then scaled up in a sustainable manner. The local personalities and relationships that get such services off the ground must be underpinned by systems that sustain efficient, larger-scale service delivery. Pilots such as the MHS in the United States and the Whole System Demonstrator sites in England allow opportunities for innovation and evaluation, and therefore often attract organisations that are already motivated and are leaders in their field. It will be a challenge to ensure that the most effective and beneficial approaches to chronic disease management are rolled out successfully on a larger scale. A key to this is to design the right incentives to encourage take-up.

CONTINUITY OF RELATIONSHIP

In order to provide an integrated service that spans both preventive and curative care for patients with chronic diseases, it is important that there is continuity of payer or insurer. US studies have highlighted the disincentives for providing preventive care that are created by a mobile enrollee population moving regularly between health plans: insurers' investments in preventive services may not deliver better health for patients until some years later. Therefore, the financial benefits of their outlay on mobile populations may accrue to other insurers in the future. By contrast, when the continuity of risk is carried throughout a person's life by a single organisation, such as the NHS, this reduces the barriers to investment in preventive care.

In England, the devolution of budgets to PCTs and practice-based commissioners means that these incentives to invest in prevention now lie at a local level. However, the problem is that health policy has tended to result in public health initiatives aimed at reducing risk factors being developed and implemented separately (typically by public health and health promotion staff) from initiatives designed to deal with people with established conditions.

Reversing the rising incidence of chronic disease requires measures to address the underlying risk factors for these conditions (for example, obesity, tobacco and alcohol consumption, poor diet and inadequate levels of physical activity), and depends on individual behavioural changes as well as changes in the wider social and environmental context.

US case studies illustrate how technologies and interventions used to support case management can potentially be extended to the preventive context. For example, there are opportunities for using aspects of the chronic disease management infrastructure (such as telephone-based decision support and ‘motivational interviewing’) to achieve wider goals in relation to supporting behavioural change for prevention purposes.

IT AND DATA SYSTEMS

A robust information technology and data collection system is essential to support risk stratification and to allow services to be targeted at individuals according to need. It is also required to automate the collection and analysis of individual data in ways that enable services to be delivered on a large scale.

In the United States, there has been a great deal of work to identify individuals at risk of incurring health care costs in future. This is because of the availability of large claims-based datasets, and the incentives for insurers, providers and managed care plans to scrutinise costs in order to find ways of reducing them.

US systems place particular emphasis on risk stratification tools, remote monitoring technologies (such as the use of electronic scales for heart failure patients), and automated voice and text technologies. These technologies are used to:

- identify patients at high risk
- deliver key health promotion messages to a much larger population
- target the use of decision support technologies.

Decision support technologies are used to:

- help clinicians deliver evidence-based practice
- guide the content of nurse-initiated telephone conversations
- prompt clinicians about gaps in care (such as outstanding immunisations) and opportunities to effect behavioural change (‘motivational interviewing’)
- enable patients to make informed treatment choices.

These approaches are not yet used widely in England but have the potential to be effective, particularly where services are being ‘scaled up’ to meet the needs of much larger populations.

In the United States, when electronically held clinical data is not available, health care organisations gather data about patients by using analytic tools that draw on claims information generated by the billing transactions associated with health insurance claims. These transactions provide data on inpatient and outpatient contact and medication use.

Individual risk is re-analysed each time additional data about a patient is received. The aim is to identify opportunities for effective contacts with patients (typically nurse telephone contacts) in order to review their clinical condition, provide information to support decision-making and/or offer support for lifestyle change. Triggers for contacting patients include new diagnoses (particularly depression), changes in medication and recent discharge from hospital.

In the case of the VA, because it is an integrated health system, the organisation has access to both clinical and administrative data for risk assessment and performance monitoring. As a result, it can combine health informatics with telehealth technologies and disease management programmes to support care co-ordination for high-risk patients. In addition, it can use health informatics to support wider efforts to promote evidence-based practice and improve patient care.

One of the advantages of the NHS over the US system is its continuous, longitudinal patient medical record in primary care. Yet, despite this advantage, health service providers in England make less intensive and systematic use of data. Although patients are identified partly through electronic disease registers and risk stratification tools, there is less ongoing, iterative analysis to shape the nature and intensity of clinical intervention, compared with the United States.

On the other hand, case management teams in England are often informed when a patient is admitted to hospital – either by telephone from the ward or by case managers who follow patients into the hospital. Although these communication links are less reliable than the computerised systems used by US organisations, they are more timely and can be used to trigger care rapidly where needed. If, in addition to these links, the NHS wishes to make significant use of information systems to support chronic disease management, the problems of accessing data – particularly the clinical data held on general practitioner (GP) computer systems – must be overcome.

LOCAL PERFORMANCE MEASUREMENT

As well as developing an over-arching set of standards and targets for complex chronic disease management, flexibility is required around the development and adaptation of specific services according to local need. However, all approaches require standardised measurement methods that capture the outcomes of care across different providers, and in both primary and specialist care, in order to drive service improvement.

Patients with multiple chronic illnesses are at increased risk for poor hand-offs and poor co-ordination of care, leading to adverse events and increased hospitalisations. In order to improve the quality of care and outcomes for these patients, it is important to develop effective, evidence-based measures for ensuring that care is co-ordinated between providers, levels of care and care settings.

For effective chronic disease management, it is also important to develop reliable and efficient organisational systems that can help to reduce unwarranted variations in physicians' practice style. A tension exists in complex chronic disease management between central control and local autonomy. If standardised systems are particularly dominant, the local relationships required to lever additional or alternative care from local providers may be underdeveloped. If there is significant local autonomy, then variations in clinical practice away from an evidence-based optimum become increasingly likely.

Service models

The organisation of front-line clinical services that span health and social care provision – the service models – are critical in determining the success of chronic disease management programmes.

LEADERSHIP, TEAM-WORKING AND SKILL MIX

Given the complexity of chronic disease management, it is almost inevitable that care will be provided by a multi-professional group, typically employed by more than one organisation. Without care co-ordination there is likely to be duplication and fragmentation, so incentives are needed to promote co-ordinated care.

One approach to encouraging such co-ordination is to develop payment methods that bring together teams of people from different professional groups and provide them with incentives to offer good-quality care. Another approach is to set standards of care that cannot be achieved by one professional group (such as physicians) working on their own: this then encourages multidisciplinary teams to develop.

Effective team-working and clinical engagement are also essential to the delivery of high-quality chronic disease management. These need to occur both within and between organisations, and rely on staff working effectively across professional boundaries. Staff may be required to take on new roles and need appropriate training to support this transition. For example, the role of a community matron, care co-ordinator or personal nurse is increasingly being incorporated into case-management teams to support, coach and monitor patients and to help them navigate the system. The non-directive, motivational approach of these services is challenging to deliver for health professionals trained in a much more directive approach. For example, nurses providing proactive chronic care support by telephone need different skills to those employed in more traditional face-to-face nursing roles. Experience in the United States suggests that those taking on these new roles require considerable training.

Evaluating interventions for complex chronic disease management

There was considerable consensus among participants about the main features of policy, organisations and services required to support the delivery of high-quality chronic disease management, but there is a need for more evidence on these issues.

The question that then arises is what sort of methods are best suited to the task of evaluating new policies, models and approaches to chronic disease management? Evaluation methods that capture reality and inform service evolution in an ongoing way (such as developmental and action research) present rather different opportunities to those that aim for a methodologically rigorous impact evaluation (such as a randomised controlled trial (RCT)).

A classic RCT may be most suitable for evaluating a 'mature' intervention that is well-developed and embedded in its local health care system. An RCT may be a less suitable or feasible option when the intervention under consideration is regularly changing and improving, or is imprecisely defined from the start. For such interventions, observational, comparative before-and-after studies may be most appropriate; alternatively, mixed-methods evaluation studies that seek to understand the intervention, the context in which it is delivered, and the ways in which it evolves during implementation, may work best.

There are various challenges involved in evaluating complex chronic disease management interventions, some of which are associated with particular types of evaluation. For example, a particular problem with conducting RCT evaluations in this context is that their strict

requirements for standardised processes and interventions can stifle providers' ability to adapt the intervention and innovate in response to signals from patients. On the other hand, more flexible evaluation approaches, such as observational studies and mixed-methods evaluations, commonly encounter problems when there are changes in eligibility thresholds to boost the recruitment of patients to the intervention they are studying. If a threshold is lowered so that more lower-risk patients are included in the intervention, this can reduce its impact: it is therefore important that interventions target a 'sick-enough' population if they are to be evaluated effectively.

In general, when evaluating interventions, it is important to remember that, although regular feedback on research findings and programme performance are valuable, interim findings may be misleading. The reliability of interim results needs to be assessed, based on target population, outcome measures used and the salience of point of entry.

Measuring the impact of interventions to improve the management of people with chronic diseases may require multiple data sources. Where possible, these should be aligned with data that is routinely collected by service providers to minimise the costs of evaluation. Ideally, evaluations should consider a range of outcomes. An over-reliance on patient satisfaction measures, for example, is potentially problematic because patients tend to favour focused, patient-centred interventions of this type and often provide very positive scores that do not always correlate well with other measures of outcome (such as health status or number of hospital admissions).

Conclusions

The United States and England face similar trends in demography and prevalence of chronic disease. Despite substantial differences in their health systems, there is some consensus about the type of policy context needed to support better chronic disease management, the characteristics of health care organisations that are required and the models of service provision that are most effective. These are as follows:

- well-aligned financial incentives and payment mechanisms for different providers that reward effective preventive care
- high-level standards and targets, and clear policy objectives to set the direction for the organisations that pay for and provide services
- IT and data collection systems to support risk stratification and the timely identification of 'triggers' to initiate contact by a health professional, and to provide the information needed for interventions to reduce risk factors for chronic illness, support informed health care decisions and provide other individually tailored interventions
- the scaling up of service provision by providers of complex chronic disease management to meet the growing demands of an ageing population and increasing rates of co-morbidity
- a balance between managing the high-cost patients of today and seeking to reduce the growth in tomorrow's complex chronic disease management population through prevention initiatives
- leadership by doctors or other professionals working in multi-professional groups that provide chronic disease management

- effective leadership by professionals and good working relationships between front-line clinicians and intervention teams
- multidisciplinary teams to monitor a patient's condition, ensure that they get all of the recommended care and preventive services, and coach and support them and their family in managing their care
- newly defined relationships ensuring that the patient is at the centre of the care process and that providers support patients in being partners in care
- a reorientation of training to provide the workforce with the necessary skills for chronic disease management.

References

- Billings J, Dixon J, Mijanovich T, Wennberg D (2006). 'Case finding for patients at risk of readmission to hospital: development of algorithm to identify high risk patients'. *British Medical Journal*, vol 333, no 7563, p 327.
- California Health Care Foundation (2004). *Medicare's Chronic Care Improvement Pilot Program: What is its potential?* Factsheet, June 2004. Oakland, California: California Health Care Foundation.
- Department of Health (2007). 'National Service Frameworks (NSFs)'. Available at: www.dh.gov.uk/en/Policyandguidance/Healthandsocialcaretopics/DH_4070951 (accessed on 15 June 2007).
- Department of Health (2005). *Supporting People with Long Term Conditions: An NHS and social care model to support local innovation and integration*. London: Department of Health. Available at: www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4100252 (accessed on 15 June 2007).
- Dixon J, Lewis R, Rosen R, Finlayson B, Gray D (2004). *Managing Chronic Disease: What can we learn from the US experience?* London: King's Fund. Available at: www.kingsfund.org.uk/publications/kings_fund_publications/managing_chronic.html (accessed on 19 July 2007).
- Gravelle H, Dusheiko M, Sheaff R, Sargent P, Boaden R, Pickard S, Parker S, Roland M (2007). 'Impact of case management (Evercare) on frail elderly patients: controlled before and after analysis of quantitative outcome data'. *British Medical Journal*, vol 334, no 7583, p 31.
- Harrison A, Appleby J (2005). *The War on Waiting for Hospital Treatment: What has Labour achieved and what challenges remain?* London: King's Fund. Available at: www.kingsfund.org.uk/publications/kings_fund_publications/the_war_on.html (accessed on 15 June 2007).
- Improving Chronic Illness Care (2007). 'The Chronic Care Model'. Available at: www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2 (accessed on 15 June 2007).
- Kaiser Family Foundation (2007). '50 state comparisons: Medicare'. Available at: www.statehealthfacts.org/cgi-bin/healthfacts.cgi?previewid=3&action=compare&welcome=1&category=Medicare (accessed on 15 June 2007).
- King's Fund (2006). *Variations in NHS Spending Priorities*. London: King's Fund. Available at: www.kingsfund.org.uk/publications/briefings/local_variations.html (accessed on 25 June 2007).
- Lopez AD, Mathers CD, Ezzati M, Jamieson DT, Murray CJL eds (2006) *Global Burden of Disease and Risk Factors*. Washington: Oxford University Press and The World Bank. Available at: www.dcp2.org/pubs/GBD (accessed on 15 June 2007).

Lorig KR, Ritter P, Stewart AL, Sobel DS, Brown BW Jr, Bandura A, Gonzalez VM, Laurent DD, Holman HR (2001). 'Chronic disease self-management program: 2-year health status and health care utilization outcomes'. *Medical Care*, vol 39, no 11, pp 1217–23.

National Primary and Care Trust Development Programme (2007). 'Supporting people with long-term conditions homepage'. Available at: www.natpact.nhs.uk/cms/2.php (accessed on 15 June 2007).

Piette JD, Heisler M, Wagner TH (2004). 'Cost-related medication underuse among chronically ill adults: the treatments people forgo, how often, and who is at risk'. *American Journal of Public Health*, vol 94, no 10, pp 1782–87.

Schoen C, Osborn R, Huynh PT, Doty M, Zapert K, Peugh J, Davis K (2006). '2006 international health policy survey of primary care doctors' office systems, experiences and views in seven countries'. *Health Affairs* [web exclusive], vol 25, no 6, w555–71.

Suhrcke M, Nugent RA, Stuckler D, Rocco L (2006). *Chronic Disease: An economic perspective*. London: Oxford Health Alliance.

The Commonwealth Fund (2006). '2005 Biennial Health Insurance Survey'. Available at: www.commonwealthfund.org/surveys/surveys_show.htm?doc_id=367929 (accessed on 15 June 2007).

The Commonwealth Fund (2005). 2005 international health policy survey of sicker adults. Unpublished data.

World Health Organization (2005). *Preventing Chronic Diseases: A vital investment*. Geneva: WHO. Available at: www.who.int/chp/chronic_disease_report/full_report.pdf (accessed on 15 June 2007).

Acknowledgements

The authors would like to thank The Commonwealth Fund for supporting the event at Pennyhill Park, the speakers who presented and prepared case studies and papers, all those who attended and contributed to the discussions, as well as Susan Hodge and Jennifer Fenelon for all their hard work in organising the event.

The seminar participants

FROM THE UNITED KINGDOM

Dr Fiona Adshead, Deputy Chief Medical Officer, Department of Health
Sarah Barron, Assistant Director, Chronic Disease Management, Haringey Teaching Primary Care Trust
Gary Belfield, Head of Primary Care, Department of Health
Will Cavendish, Head of Strategy, Strategy Directorate, Department of Health
Anita Charlesworth, Director of Public Services, HM Treasury
Dr David Colin-Thomé, National Primary Care Director, Castlefields Health Centre
Niall Dickson, Chief Executive, King's Fund
Dr Jennifer Dixon, Director of Policy, King's Fund
Sheila Downey, Assistant Director, Integrated Community Services, Greater Peterborough Primary Care Partnership
Siobhan Harrington, Director of Primary Care Commissioning, Haringey Teaching Primary Care Trust
Dr Mark Hunt, Director of Primary Care, Mercury Health
Dr Noel O'Kelly, East Lincolnshire Primary Care Trust
Professor Martin Roland, Director, National Primary Care Research and Development Centre, University of Manchester
Dr Rebecca Rosen, Senior Associate, King's Fund
Jonathan Slater, Director, Capability Review Team, Prime Minister's Delivery Unit

FROM THE UNITED STATES

John Billings, Director, Center for Health and Public Service Research, New York University
Randall S Brown, Vice President and Director of Health Research, Mathematica Policy Research Inc
Dr Adam Darkins, Chief Consultant for Care Coordination, Veterans Health Administration
Erik Eaker, Director, International Business Development, Innovation Center, Humana Inc
Stuart Guterman, Senior Program Director, Medicare's Future, The Commonwealth Fund
Dr Mary Jane Koren, Senior Program Officer, Frail Elders Program, The Commonwealth Fund
Dr Jonathan T Lord, Senior Vice President and Chief Innovation Officer, Humana Inc
Linda M Magno, Director of Medicare Demonstration Programs Group, Centers for Medicare and Medicaid Services
Mary D Naylor, Marian S Ware Professor in Gerontology, University of Pennsylvania School of Nursing
Robin Osborn, Vice President and Director, International Program in Health Policy, The Commonwealth Fund
Dr David Wennberg, President and Chief Operating Officer, Health Dialog Analytic Solutions

APPENDIX 1: IMPROVING CARE FOR HIGH-COST PATIENTS WITH COMPLEX CHRONIC CONDITIONS

CASE STUDY OVERVIEW

	East Lincolnshire Chronic Obstructive Pulmonary Disease (COPD) Service	Greater Peterborough Primary Care Partnership (GPPCP)	TeamHealth: Pilot Between Haringey Teaching PCT (TPCT) and Pfizer
	Dr Noel O’Kelly	Sheila Downey	Siobhan Harrington
Programme goals	To provide an integrated patient-focused service, delivering efficient, high-quality, evidence-based care to patients with COPD in Lincolnshire	To reduce hospitalisation (especially unplanned hospital admissions); reduce crises and improve confidence for the individual and carers in managing conditions; give more control to the individual; and ensure positive patient experiences of well co-ordinated care	To explore the feasibility of adapting a successful US disease management approach to an NHS environment and to assess the programme’s impact on health-related behaviours, clinical outcomes and use of resources
Target population and eligibility requirements	Patients registered with general practices providing enhanced care for mild/moderate COPD, and patients with moderate/severe COPD who have complex medical and nursing needs	Adults aged 65 years or over who meet three or more of the identified risk factors; now changing to include all adults, although older people, particularly ages 75+, are likely to be the majority user group	Patients with diabetes, coronary heart disease (CHD) and heart failure (includes more than one condition) registered with a GP practice in Haringey. Criteria for inclusion and exclusion set out for each condition
Size of the programme and population served	All COPD patients in East Lincolnshire Primary Care Trust population (total population = 280,000)	Currently serving 400 people. Target is to extend service to 1,000 individuals at any one time by end of 2007	At-risk patients from Haringey with coronary heart disease (200), heart failure (200) or diabetes (200). 150 patients were randomised at point of recruitment, 50 into each disease group to form comparison group
Enrolment strategies	Screening and diagnosis of patients with COPD provided within primary care; referrals from primary care clinician for specialist advice to the Inspire team; and referrals from hospital specialists for patients requiring specialist support in the community	Case finding through local communications with practices, co-ordination with accident and emergency, and analysis of emergency admission data. Also recently began using the King’s Fund predictive risk tool	Patients enrolled initially through secondary care clinics at two local hospitals; eligible patients also contacted through GP practices with an invitation to attend recruitment clinics
Key features of the programme	<p>Services include:</p> <ul style="list-style-type: none"> ■ training and support to primary care clinicians ■ case management and co-ordination of care by specialist COPD teams spanning primary and secondary care (Inspire team) ■ acute respiratory assessment service ■ assisted discharge service ■ community-based pulmonary rehabilitation ■ mental health support ■ palliative care service ■ oxygen assessment ■ triage of secondary care referrals ■ patient support/expert patient groups 	<p>Intensive case management integrating health and social care: community matrons manage care for patients in their own home, following them into the hospital and back into the community. Once care/condition is stabilised, responsibility may be transferred to a member of the integrated community team, with whole care continuing to be co-ordinated through one named individual</p> <p>Services include:</p> <ul style="list-style-type: none"> ■ information ■ preventive advice and support ■ comprehensive health and social care assessments ■ treatment ■ review ■ monitoring 	<p>Intervention begins with a telephone-based comprehensive assessment of the patient’s health and well-being generates feedback report and recommendations for support, education and referrals. Based on these recommendations, care managers work with the patient to develop a care plan, relevant goals and a follow-up schedule</p> <p>Interventions include:</p> <ul style="list-style-type: none"> ■ education ■ coaching ■ reminders for recommended tests and screenings

Veterans Health Administration	Green Ribbon Health (GRH) Humana Inc	Health Dialog Case Study
Dr Adam Darkins	Dr Jonathan Lord	Dr David Wennberg
To change the location and resulting emphasis of how care is provided to patients with chronic diseases, making the home the preferred place of patient-centric care, predicated on the Wagner model of chronic care and self-management	To show improvements in clinical quality, beneficiary and provider satisfaction, and reduce Medicare's cost for patients with diabetes and congestive heart failure by at least 5%	To reduce costs compared to control population (5% net savings) and to improve disease specific quality (eg, lipid management in diabetics) and general prevention (eg, influenza vaccination)
Patients at risk of long-term institutional care due to diabetes, chronic heart failure, post-traumatic stress disorder, depression, chronic obstructive pulmonary disease and spinal cord injury	Medicare fee-for-service beneficiaries with diabetes and/or congestive heart failure in a 9-county region of South Florida	High and moderate risk fee-for-service Medicare beneficiaries with diabetes and congestive heart failure, identified using medical claims criteria
National across all 50 states plus Puerto Rico. Currently serving 11,400 patients, projected to increase to 21,000 by October 2006 and 50,000 by 2009	Currently serving 20,000 Medicare beneficiaries in a 9-county region of South Florida; approximately 10,000 beneficiaries from the same region were randomly selected by Centers for Medicare and Medicaid Services (CMS) for control group	Currently serving 20,000 beneficiaries in the intervention population (10,000 in a control group)
Organisational targets are set for enrolment into the programme. Patients are recruited by care co-ordinators who support primary care physicians	Beneficiaries notified by CMS of opportunity to participate via a letter with toll-free number to call to enrol; enrolment campaigns include follow-up letters, educational phone calls with incentives, invitations to senior community events, and direct contact with Humana Personal Nurses ®	Multi-phase enrolment approach using mail, interactive voice recognition (IVR) technology and outbound calls from health coaches
Care co-ordinators use home telehealth technologies to enhance and extend care and case management Care co-ordination services include: <ul style="list-style-type: none"> ■ retinopathy screening ■ remote consultation services for patients with mental health disorders in community-based outpatient clinics ■ care of combat wounded with amputation, head injury, blast injury and post-traumatic stress disorder ■ home telehealth for patients at risk of requiring long-term institutional care 	Needs assessment through unique domain risk stratification tool Once needs are assessed, programme interventions are initiated through multidisciplinary teams, which include: <ul style="list-style-type: none"> ■ geriatric nurse specialists ■ care managers ■ community health workers ■ dieticians ■ InformaCare ® evidence-based patient management tool (web) ■ Humana Personal Nurse ® coaching model ■ Voice application technology (ELIZA) ■ 24/7 personal nurse triage line ■ Silver Sneakers fitness programme ■ complementary and alternative health education 	Multidimensional program includes a spectrum of intervention, ranging from prevention to disease management to case management to end of life Services include: <ul style="list-style-type: none"> ■ whole person 'collaborative care' addressing effective care ■ preference sensitive care ■ supply sensitive care

APPENDIX 1: IMPROVING CARE FOR HIGH-COST PATIENTS WITH COMPLEX CHRONIC CONDITIONS
CASE STUDY OVERVIEW (CONT'D)

	East Lincolnshire Chronic Obstructive Pulmonary Disease (COPD) Service	Greater Peterborough Primary Care Partnership (GPPCP)	TeamHealth: Pilot Between Haringey Teaching PCT (TPCT) and Pfizer
	Dr Noel O'Kelly	Sheila Downey	Siobhan Harrington
Payment structure	Locally Enhanced Services budget of the new GMS contract	All staff employed by GPPCP; there are no additional payments	Half funded by the Department of Health (DH); and half by a development grant from Pfizer Ltd
Length of operation	3-phase programme, with 1st phase commencing in 2000 and 3rd phase implementation commencing in 2005; now commissioned service	Started Nov 2004, with first group of users in Dec 2004; second stage implementation ongoing	First patients recruited in May 2004 with an enrolment period of 10 months; participation in the intervention group from 9 to 18 months. Intervention period finished 30 Nov 2005; primary analysis results published in June 2006
Initial cost savings	Initial savings of £345,000 due to decreased hospital admissions; £670,000 savings projected from full implementation	Independent evaluation showed savings of £572,000 per annum to date, based on admissions avoided of initial year 1 activity, projected to rise to £1,000,000 per annum as service is extended	Evaluation is ongoing. Will be determined

Veterans Health Administration	Green Ribbon Health (GRH) Humana Inc	Health Dialog Case Study
Dr Adam Darkins	Dr Jonathan Lord	Dr David Wennberg
Capitated payment for patients within the pre-existing resource allocation system	CMS pays programme fees over 3 years; GRH guarantees 5% net savings off Medicare costs	Fee-based payment (per participant per month)
Pilot 2000–2003, national implementation 2003 – ongoing	3 years	3 years
Reductions in hospitalisations, 30% fewer emergency room use and 30% reduction in the average number of bed days of care, and improvements in health-related quality of life	Will be determined	Enrolment period just ended. Will be determined

ISBN 978-1-85717-559-2



AUTHORS

Rebecca Rosen is a Senior Associate at the King's Fund.

Perviz Asaria is a Researcher at the King's Fund.

Anna Dixon is Deputy Director of Policy at the King's Fund.

Tel: 020 7307 2682 Email: a.dixon@kingsfund.org.uk

King's Fund

11-13 CAVENDISH SQUARE
LONDON W1G 0AN

Telephone 020 7307 2400
www.kingsfund.org.uk

The King's Fund is an independent charitable foundation working for better health, especially in London. We carry out research, policy analysis and development activities, working on our own, in partnerships, and through funding. We are a major resource to people working in health and social care, offering leadership development programmes; conferences, seminars and workshops; publications; information and library services; and conference and meeting facilities.

Registered Charity 207401