IMPROVING CARE FOR PEOPLE WITH LONG-TERM CONDITIONS

A review of UK and international frameworks

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FOREWORD

In January 2005, the government launched a bespoke NHS and Social Care Model designed to help local health and social care organisations improve care for people with long-term conditions. This model builds on successes, experiences, and innovations in the UK and elsewhere and focuses on helping health and social care communities use the tools they already have to develop a targeted systematic approach to care for people with long-term conditions.

The White Paper 'Our Health, Our Care, Our Say: a new direction for community services,' released in 2006, lays out the Government's vision for community-based care. It builds upon broader public sector reforms, helping people to live more independently and to exercise greater personal choice. In order to achieve this, people will look for greater flexibility in service provision, improved accessibility, more timely interventions, a broader range of service providers from whom they can choose their care, and care closer to home with minimal disruption to their daily lives.

This all requires a significant 'shift' in the way care is delivered, away from a reactive 'one size fits all' approach, often delivered in a hospital setting, towards a community based, responsive, adaptable, flexible service. This is far more than simply changing the location where care is delivered, and requires a significant whole system change. Not only do we need to support the shift in the location of delivery, but also the behavioural change of both service users and providers to deliver sustainable improvements in line with the White Paper's vision.

The overall vision goes some way to describing the methods for achieving this. The NHS Institute for Innovation and Improvement's Primary Care/Long Term Conditions Priority Programme aims to work with a range of field test sites to establish how far this vision has been adopted within local communities, to further develop the how to deliver a shift of care (across a range of themes) and how to accelerate this change, for learning, adoption and spread across the NHS. Within the framework of the NHS and Social Care Model, the field sites will be reviewing and fundamentally redesigning the process of care for those with long-term conditions so that the system fits around the person, rather than the person fitting within the system.

This evidence review was commissioned as an early part of the NHS Institute's workplan to help us gain a greater understanding of current international, national, and local thinking about the different approaches in use. We want to develop high-impact approaches, based on best evidence of 'what works.' This review suggests that there is a great need to test different approaches, understand which factors make the biggest difference, and spread the knowledge widely. We are making the review available because we hope that local care communities will find the information useful background material as they continue to implement the NHS and Social Care Model and the White Paper.

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Acknowledgements

This review was conducted by Debbie Singh and Chris Ham.

Debbie Singh is an independent researcher and evaluator, working with the NHS, local authorities, universities, and charities. Debbie led the review of models of chronic care, searching databases, contacting authors of relevant studies, and writing up the results; developed the questionnaire for the SHA survey and responded to enquiries from SHAs; and wrote and edited the report.

Chris Ham is Professor of Health Policy and Management at the University of Birmingham Health Services Management Centre. Chris developed the idea for the study in conjunction with the NHS Institute for Innovation and Improvement, liaised with the commissioners of the report, and led the survey of Strategic Health Authorities.

We would like to thank Strategic Health Authorities and Primary Care Trusts throughout England for contributing to this review, colleagues in the UK and abroad that we contacted for information; and Ed Wagner and Rafael Bengoa for providing feedback on a draft of the report.

We would also like to thank publishers for allowing us to reproduce diagrams. Copyright permissions are listed on page 35.

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A REVIEW OF UK AND INTERNATIONAL FRAMEWORKS

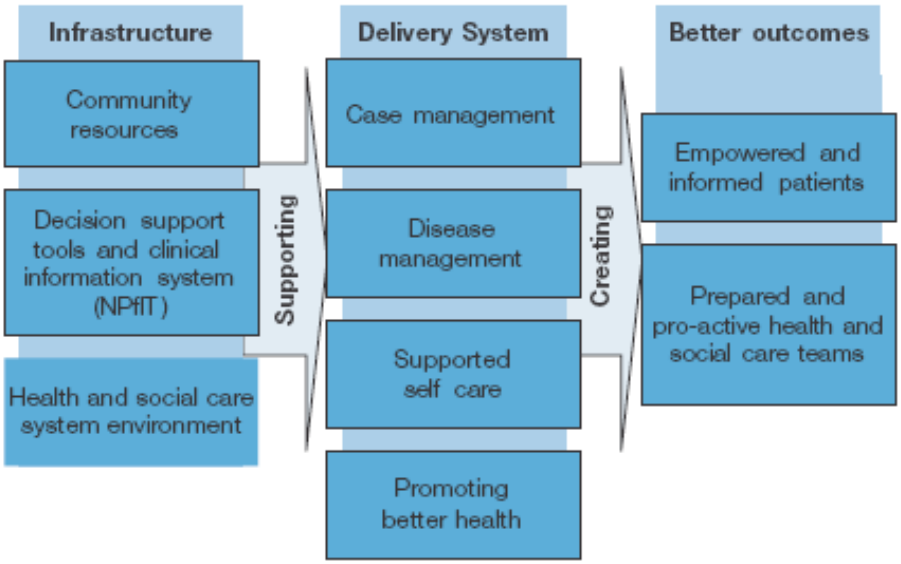
SECTION 1: BACKGROUND

In Britain, six out of ten adults report having a long-term condition that cannot currently be cured - and people with long-term illnesses often suffer from more than one condition, making their care even more complex.[1] Eighty percent of primary care consultations and two thirds of emergency hospital admissions in the UK are related to long-term conditions.[1]

"Chronic disease represents a significant and exciting challenge for the NHS. Good chronic disease management offers real opportunities for improvements in patient care and service quality, and reductions in costs."[2]

Supporting People with Long-term Conditions, published January 2005, set out the government's plans to help people with long-term conditions live healthy lives[3] and introduced the NHS and Social Care Model. This model outlines how people with long-term conditions will be identified and receive care according to their needs; how the *Expert Patients Programme* will be expanded throughout England to promote self-management; how specialist nurses (community matrons) will support people with complex conditions; and how teams of staff will be encouraged to work together with people with long-term conditions and their families.

The NHS and Social Care Model[4]



The key facets of the NHS and Social Care Model are:

- a systematic approach that links health, social care, patients and carers,
- identifying everyone with a long-term condition,
- stratifying people so they can receive care according to their needs,
- focusing on frequent users of secondary care services,
- using community matrons to provide case management,
- developing ways to identify people who may become very high intensity service users,
- establishing multi-disciplinary teams in primary care, supported by specialist advice,
- developing local ways to support self care,
- expanding the Expert Patient Programme and other self-management programmes,
- and using tools and techniques already available to make an impact.

AIMS

The NHS and Social Care Model was developed based on examples of good practice in the UK and abroad. Other similar frameworks are being implemented throughout the world.

The NHS Institute for Innovation and Improvement has been commissioned to identify ways to help the NHS shift care out of hospitals and into significantly redesigned community based systems, focusing on the management of long-term conditions. This work will support the ongoing implementation of the NHS and Social Care Model and the Our Health, Our Care, Our Say White Paper.

As a starting point for this work, the NHS Institute wanted to compile up to date up to date information about other generic care models and the impact of these models. Therefore this report describes some of the key frameworks used to conceptualise chronic care in the UK and abroad and summarises evidence about the effects of these frameworks.

Our three key questions were:

- What frameworks for people with long-term conditions have been used internationally?
- What evidence is there about the impacts of these frameworks?
- What approaches have been adopted by Strategic Health Authorities?

We defined a 'framework' as an overarching approach that describes the different elements needed to care for people with long-term conditions most effectively. We did not focus on particular local interventions. Instead the focus was on 'higher level' strategic frameworks that outlined multiple interlinked components.

The review describes frameworks for working with people with long-term conditions generally, rather than evidence about approaches to specific conditions.

IDENTIFYING FRAMEWORKS

We used three methods to review chronic care frameworks in the UK and abroad:

1. a rapid review of published and unpublished literature,
2. feedback from experts in the field,
3. a survey of all Strategic Health Authorities in England.

Reviewing literature

We searched 17 electronic databases for published and unpublished reports about broad conceptual frameworks for providing care for people with long-term conditions. One reviewer searched MEDLINE, Embase, ERIC, Ovid, Cinahl, the Science Citation Index, the Cochrane Library and Controlled Trials Register, PsychLit, HealthStar, the WHO library, Health Management Information Consortium, Sigal, ReFeR, Dissertation Abstracts, NRR Research Registers, ASSIA and HMIC for information available as at December 2005.

Search terms included combinations of:

- generic terms (chronic care; model; framework; care model; long-term condition; elements; multidisciplinary, interdisciplinary, partnership, shared care, joint working, collaborative, disease management, care management; networks; pathways);
- names of models and organisations (CCM; WHO; ICCC; IHI; Kaiser; EverCare; Pfizer);
- and conditions and associated synonyms (asthma; diabetes; hypertension; arthritis; heart failure; stroke; cardiac; dementia; mental health; depression and so on).

Mesh terms and expanded keyword searches were used where available.

We also hand searched selected journals, websites, and the bibliographies of identified articles for additional material.

We included descriptive articles outlining components of any named or unnamed model plus studies of any design that assessed the impacts of these frameworks. When assessing impacts we prioritised systematic reviews and randomised trials published between 1995 and 2005. However, in instances where trials were not available, studies lower in the 'hierarchy of evidence' were included. Using this hierarchy of evidence allowed the reviewers to focus on the highest quality research, whilst not excluding lower quality studies when there was where a paucity of evidence.

Any documents or websites available only in a language other than English were translated - by the original authors where possible.

All impact studies were checked for validity and relevance by one reviewer, using the methodology of the Cochrane Collaboration and the NHS Centre for Reviews and Dissemination.

One reviewer extracted data about frameworks and their impacts. To synthesise material, one reviewer grouped studies according to topic areas and outcomes and provided a narrative summary of key trends. Meta-analysis was not possible given the heterogeneity of evidence about each model and the paucity of evidence about most frameworks.

Feedback from experts

We contacted more than 100 experts in the field and authors of identified papers to see whether they knew of any additional frameworks or unpublished material. We contacted experts from governments and health organisations in Australia, Canada, France, Germany, Italy, New Zealand, Turkey, the US and the UK as well as organisations such as WHO, European Observatory on Health Systems and Policies, RAND, US Institute for Healthcare Improvement, US National Institutes for Health, Kings Fund, NHS Centre for Reviews and Dissemination, UK National Centre for Primary Care Development, and universities. Any material identified by experts in the field was assessed for relevance and validity by one reviewer and included in the evidence summary if appropriate.

Surveying Strategic Health Authorities

To gain feedback about the approaches implemented by Strategic Health Authorities (SHAs) in England we designed a simple questionnaire and posted and emailed the survey to all 28 SHAs. We targeted representatives from the SHA Long-term Conditions Network and those with responsibility for chronic care and older people's services. We telephoned and emailed reminders to all SHAs and followed up some SHAs with more detailed interviews where required.

Twenty out of 28 SHAs responded (71%). We analysed the feedback by synthesising key trends.

CAVEATS

When interpreting the evidence about key frameworks overleaf, it is important to bear in mind the following caveats.

- The review focused on readily available literature and feedback and was completed within a three week period. It is not a systematic appraisal of all material in this field.
- There are many descriptions of service delivery models, but fewer outlines of underlying thinking. Service delivery models may be underpinned by theoretical frameworks, but if those frameworks were not explicit, they were not included in this review.
- Many impact assessments do not assess the mechanisms by which components of a framework or model interact. The lack of comparative evidence makes it difficult to draw conclusions about the extent to which certain components of a framework are essential.
- In practice, not all components of a particular framework may be implemented consistently. Theoretical models provide guidance about components for practitioners to consider, but it is difficult to assess the effectiveness of different models because the models themselves will be interpreted and applied in varying ways by different practitioners.
- A lack of comparative evidence does not mean that there are no differences between frameworks. Nor does a lack of research or 'naming' of certain frameworks necessarily mean that unnamed models are not effective for people with long-term conditions.
- The context in which frameworks are implemented influences outcomes. Much of the available evidence is sourced from countries with very different healthcare economies and styles of working to the United Kingdom. On a related note, some studies have compared new models with 'usual care.' What comprises 'usual care' in one country or location may be very different from usual care in another context, but most studies do not define the components of usual care in any detail.

SECTION 2: INTERNATIONAL MODELS

This section outlines international frameworks, including those that helped to inform the development of the NHS and Social Care Model. It covers:

- broad theoretical frameworks for providing care for people with long-term conditions,
- models for delivering selected components of these frameworks (delivery models),
- and examples of approaches being applied in some developed countries.

BROAD FRAMEWORKS

The Chronic Care Model

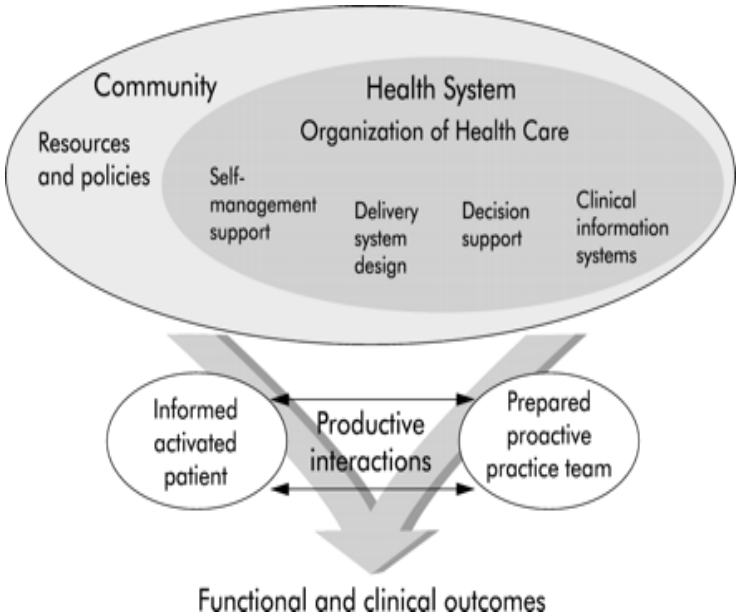
The Chronic Care Model is perhaps the best known framework about care for people with long-term conditions. The model focuses on linking informed, active people with long-term conditions with pro-active teams of professionals. It acknowledges that a substantial portion of chronic care takes place outside formal healthcare settings and suggests that six elements are of central importance in initiatives to improve chronic care: community resources; the healthcare system; patient self-management; decision support; delivery system redesign; and clinical information systems.[5] The components of the model are based on research evidence.

The key principles of this model include:[6]

- mobilising community resources to meet the needs of people with long-term conditions,
- creating a culture, organisation, and mechanisms that promote safe, high quality care,
- empowering and preparing people to manage their health and healthcare,
- delivering effective, efficient care and self-management support,
- promoting care that is consistent with research evidence and patient preferences,
- and organising patient and population data to facilitate efficient and effective care.

Developed by Ed Wagner and his team in the US in 1998, this model has been implemented in numerous settings.[7,8,9,10,11,12] In fact, most chronic care policies in developed countries now draw on this model to some extent.

The Chronic Care Model[13]



Examples of service delivery components of the Chronic Care Model[14]

Delivery System Design
- Care management roles
- Team practice
- Care delivery/coordination
- Proactive follow-up
- Planned visit
- Visit system change

Self-management Support
- Patient education
- Patient activation/psychosocial support
- Self-management assessment
- Self-management resources and tools
- Collaborative decision making with patients
- Guidelines available to patients

Decision Support
- Institutionalization of guidelines/prompts
- Provider education
- Expert consultation support

Clinical Information Systems
- Patient registry system
- Use of information for care management
- Feedback of performance data

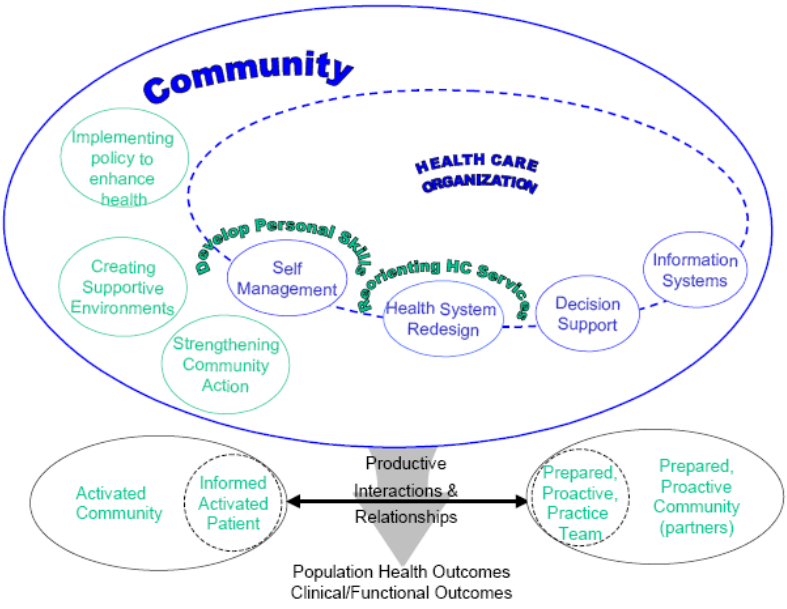
Community Resources
- For patients
- For community

Health Care Organization
- Leadership support
- Provider participation
- Coherent system improvement and spread

Based on pilot testing and published evidence, in 2003 the model was revised to include cultural competency, patient safety, care coordination, community policies, and case management. The revised model is sometimes referred to as the 'Care Model.'[15]

A number of countries have adapted or added to the Chronic Care Model. For example, in Canada policy makers felt that the Chronic Care Model was focused on clinically oriented systems, making it difficult to apply to prevention and health promotion activities. A Health Authority in Vancouver helped to conceptualise the "Expanded Chronic Care Model" which includes population health promotion components such as the social determinants of health and enhanced community participation.[16] Similarly, the US Veteran's Affairs model adds a health promotion and prevention component to elements of the Chronic Care Model.

The Expanded Chronic Care Model[17]



Is the Chronic Care Model effective?

"The chronic care model is not a quick fix or a magic bullet; it is a multi-dimensional solution to a complex problem."[18]

We reviewed 44 studies about the effects of the Chronic Care Model. We found no studies comparing the effects of the original and the Expanded Chronic Care Model or the 'Care Model.'

The Chronic Care Model was developed based on reviews of best practice and high quality evidence. For example, a Cochrane systematic review of hundreds of studies suggested a synergistic effect when individual interventions (components of the model) are combined.[19] However until recently, the Chronic Care Model had not been evaluated in controlled studies.[20] Observational studies reported better processes, outcomes, or costs in individual organisations adopting the Chronic Care Model, but such studies do not tell us whether the model is more effective than others.[21,22,23,24,25,26,27,28]

Therefore a formal evaluation programme was set up in the US to assess the effects of the Chronic Care Model. RAND led a four-year study of three collaboratives with more than 40 US organisations implementing the model. Although the findings are still being analysed, the evaluators suggest that successful implementation of the Chronic Care Model can lead to better processes and outcomes of care, including clinical outcomes, satisfaction, and costs.[29,30,31] These trends seem to hold for adults and children[32] with conditions such as asthma,[33,34] diabetes,[35] heart failure,[36] and depression.[37]

However RAND investigators found that quality improvement initiatives were implemented to varying degrees by each organisation and that organisations focussed more on some components of the model than others.[38] Four components of the model were most likely to be associated with sustained change: organising practice teams; collaborative decision making with people with long-term conditions; encouraging provider participation in improvement efforts; and de-emphasising traditional patient education.[39]

A number of literature reviews have also been undertaken about components of the Chronic Care Model. The most recent is a meta-analysis of 112 studies. The authors concluded that interventions incorporating at least one element of the Chronic Care Model are associated with improved outcomes and care processes for people with asthma, diabetes, heart failure, and depression. Only people with heart failure and depression consistently had improved quality of life.[40]

The reviewers also assessed whether any elements of the model are essential for improving outcomes. They found that:

- no single element of the Chronic Care Model was essential for improving outcomes;
- changes to delivery system design significantly improved processes and outcomes;
- self-management support significantly improved processes and outcomes;
- decision support improved care processes, but not outcomes;
- there were no significant benefits from clinical information systems.

There was insufficient evidence about community resources and organisational elements.

These findings are important because they attempt to analyse exactly which components of the model may have most benefit.

Another review found that programmes based on the Chronic Care Model may improve patient and staff satisfaction, quality of care, and clinical outcomes, and reduce resource use in some cases. However, the reviewers concluded that it was difficult to distinguish which components of these programmes may be most effective.[41]

Quality of care

The Chronic Care Model is often implemented as part of a broad disease management programme. In addition to the studies outlined above, we identified six reviews about the impacts of broad programmes which included components of the Chronic Care Model.[42,43,44,45,46,47] The totality of evidence suggests that applying components of this model may improve quality of care for people with many different long-term conditions, but it remains uncertain which components are most effective or transferable.

Clinical outcomes

Evidence about effects on clinical outcomes is varied. While some systematic reviews suggest improved functional status and reduced risk of hospital admission,[48] others have found only small benefits.[49] Unpublished documents from the US RAND evaluation suggest improved clinical outcomes in people with diabetes, heart failure, and asthma.[50]

There is still debate about whether all components of the Chronic Care Model impact on clinical outcomes. An observational study of 17 US clinics using the Chronic Care Model to improve diabetes care found that delivery system redesign was the only factor linked to improved clinical outcomes. Self-management support and clinical information systems had no significant impact on clinical outcomes.[51] A similar study found that activities initiated by practitioners and managers and an organisational commitment to quality improvement were the two most important components of the model.[52]

Resource use

There is evidence that implementing the Chronic Care Model can reduce healthcare resource use. We identified a number of reviews to this effect.[53,54,55] One review found that in 18 out of 27 studies of long-term conditions such as congestive heart failure, asthma, and diabetes, components of the Chronic Care Model were associated with reduced healthcare costs or reduced use of healthcare services.[56] Cost-effectiveness analyses from developed countries throughout the world support these findings.[57,58] However, there are some dissenting views. For example, a randomised trial in ten US community hospitals found that regional collaboration with quality improvement and disease management programmes had no significant effect on clinical outcomes or healthcare resource use.[59]

Caveats

In fact, a literature review for the World Health Organisation (WHO) found that while broad chronic care programmes may improve health professionals' adherence to evidence-based standards of care, there was no strong evidence about which components of these programmes may impact on the quality of care provided. Nor did WHO find evidence of a direct link between broad chronic care programmes and reductions in mortality, improvements in quality of life, or cost-effectiveness.[60] Also, even the most effective interventions based on the Chronic Care Model tend to have modest effects.[61]

Much research is not 'high quality' evidence. There are randomised trials of specific components of the Chronic Care Model, such as patient education or self-management, but there have been few high quality studies assessing the impact of this overall framework. Those studies that do exist tend to have relatively small samples, be industry-sponsored, or be observational studies rather than randomised trials.[62,63,64,65] Most available evidence is drawn from the US, although recent studies from Europe, Canada, and Australia tend to support these trends.

In summary, there is extensive evidence about each component of the Chronic Care Model, but less is known about how this model compares with others in terms of effectiveness. This is largely because few other clearly distinct models exist for comparison.

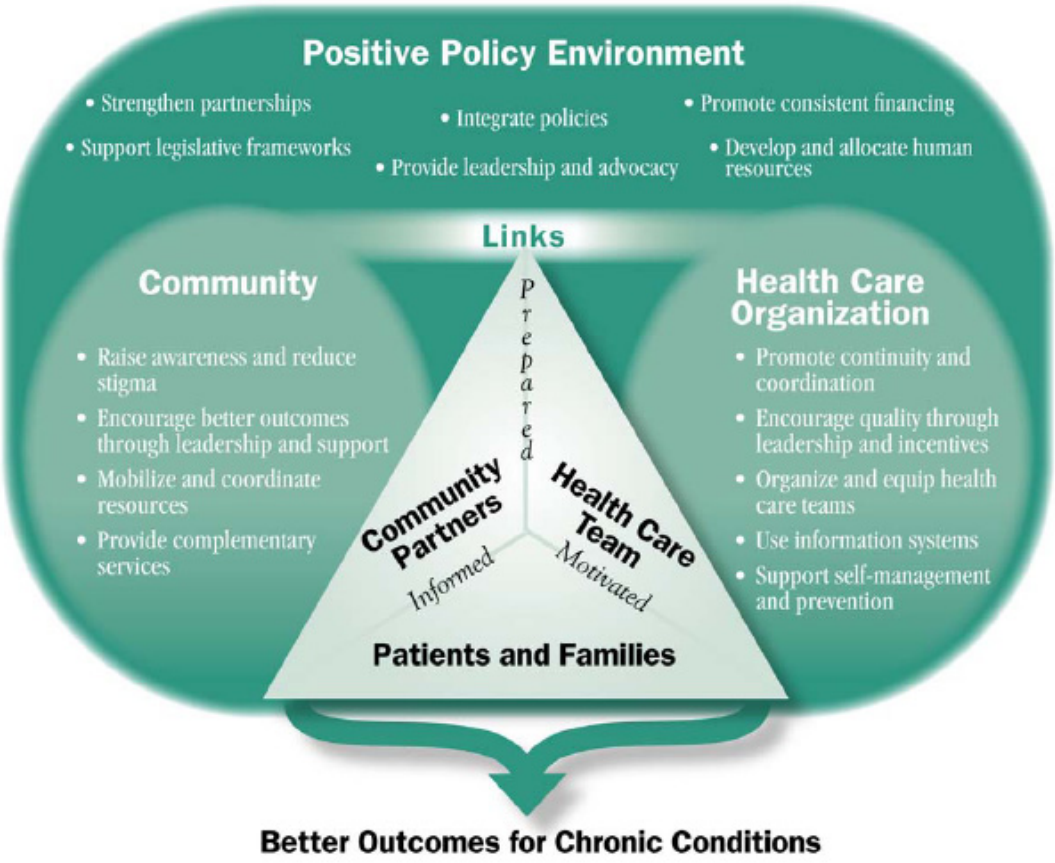
> While there is evidence that single or multiple components of the Chronic Care Model can improve quality of care, clinical outcomes, and healthcare resource use, it remains unclear whether all components of the model, and the conceptualisation of the model itself, is essential for improving chronic care.

Innovative Care for Chronic Conditions Model

The Chronic Care Model may be conceptualised from a primary care perspective. In 2002 WHO adapted this model to focus more on community and policy aspects of improving chronic care.

The Innovative Care for Chronic Conditions Model focuses on improving care at three different levels: micro level (individual and family), meso level (healthcare organisation and community), and macro level (policy).[66]

The Innovative Care for Chronic Conditions Framework[67]



At the centre of the Innovative Care for Chronic Conditions Framework is the micro level, consisting of people with long-term conditions, families, community partners, and the healthcare team. The model suggests that positive outcomes for people with long-term conditions occur only when people and their families, community partners, and health professionals are informed, motivated, and working together. The micro level is supported by healthcare organisations and the broader community, which in turn influence and are impacted on by the broader policy environment. In this model, essential elements for the policy environment include leadership and advocacy; integrated policies that span different disease types and prevention strategies; consistent financing; developing human resources; legislative frameworks; and partnership working.

Like the Chronic Care Model, there is evidence that specific components of the Innovative Care for Chronic Conditions Framework can improve some processes and outcomes.[68] However we identified no review, trial, or observational study that explicitly attempted to assess the effectiveness of the Innovative Care for Chronic Conditions Framework and no rigorous evidence about the value of a policy focus.

Public Health Model

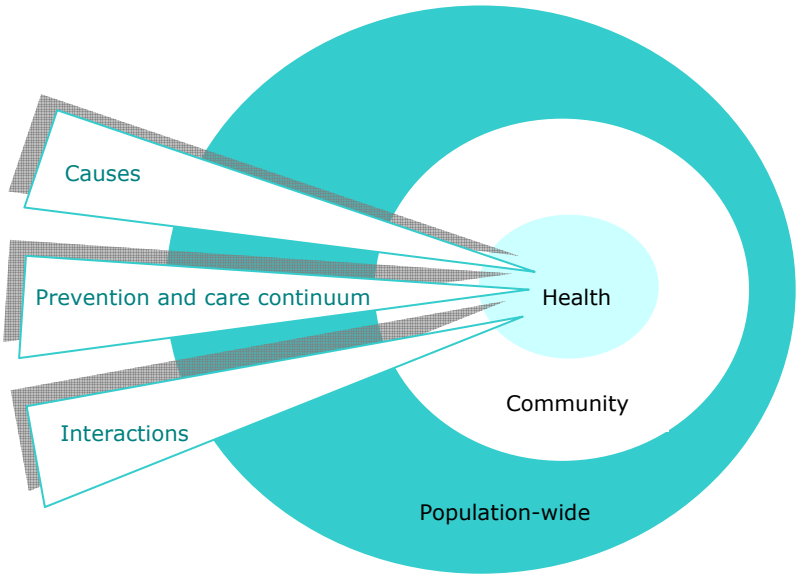
Similar to the Innovative Care for Chronic Conditions Model is the Public Health Model for chronic conditions developed in the US in the early 2000s. Although this is not a well known model, it received some attention in journal articles.[69]

The underlying principle of the Public Health Model is that in order to impact on the burden of chronic conditions, there must be three levels of intervention:

- population-wide policies,
- community activities,
- and health services.

Health services include both preventive services and ongoing care for people with chronic conditions. The model suggests that it is important to identify and address interactions between and among the three levels of action.

The Public Health Model



The Public Health Model is a systems-wide perspective which includes the continuum of prevention and care. It emphasises the determinants of disease as well as social, cultural, and economic factors that might impinge on the quality and quantity of care.

Furthermore a Public Health Framework in the US suggests that the following elements are critical to the success of chronic care programmes:[70]

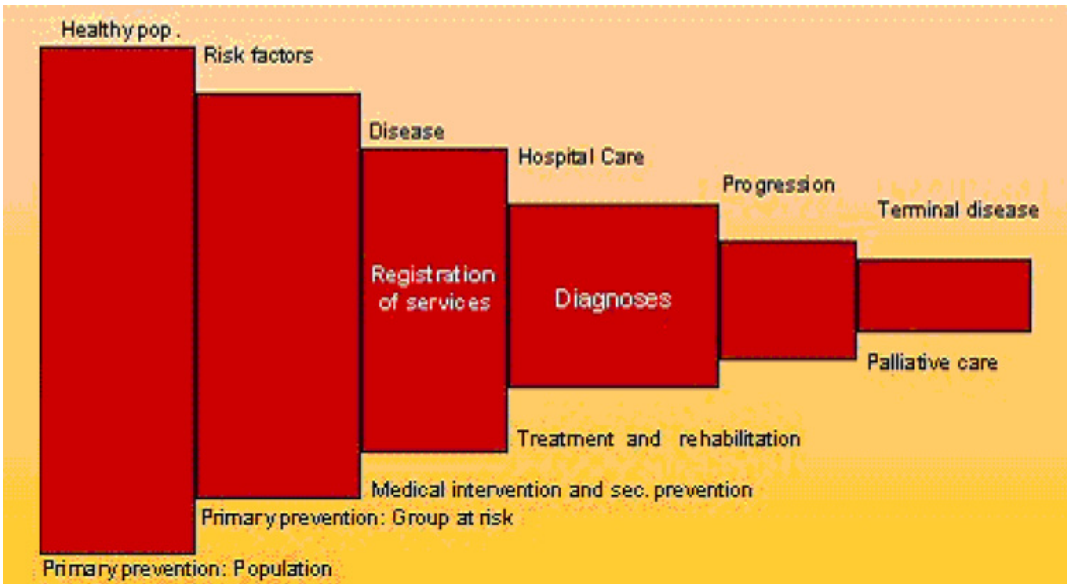
- leadership,
- epidemiology and surveillance,
- partnerships,
- state plans,
- targeted interventions in various settings,
- evaluation,
- programme management and administration.

Although there are evaluations of individual public health initiatives, we identified no study of the implementation of the Public Health Model and no evidence of its effectiveness.

The Continuity of Care Model

The Continuity of Care Model outlines how chronic conditions develop in response to risk factors in the community and suggests points at which to target prevention efforts, medical intervention, treatment and rehabilitation, and palliative care. It was conceptualised in the 1990s.

The Continuity of Care Model[71]



This model tracks chronic care from the general population (left of diagram); through people who develop one or more long-term conditions following exposure to risk factors; through to people who have terminal disease (right of diagram). The model suggests the need for different prevention schemes, treatment, rehabilitation, and palliative care at varying stages of the disease pathway.

Adaptations of this model have been applied to emphasise the role of rehabilitation[72] and to conceptualise neurological conditions.[73] Other models are based on similar principles, including the Life Course Model.[74]

We identified few studies of implementing the Continuity of Care Model. One observational study in Australia reported implementing the model in an Extended Care Centre for older people. The authors noted the model was associated with reduced length of stay, better teamwork and staff morale, and systemic adaptations in other parts of the healthcare sector.[75] However, no more rigorous evidence was identified.

Although there are evaluations of individual interventions that prioritise continuity, we identified no high quality studies of the implementation of the Continuity of Care Model.

EXAMPLES OF SERVICE DELIVERY MODELS

As well as broad theoretical frameworks, models have been developed which focus on the most effective ways to deliver services for people with long-term conditions. These service delivery models target specific components of the broad frameworks outlined above or target people at greatest risk of hospitalisation.

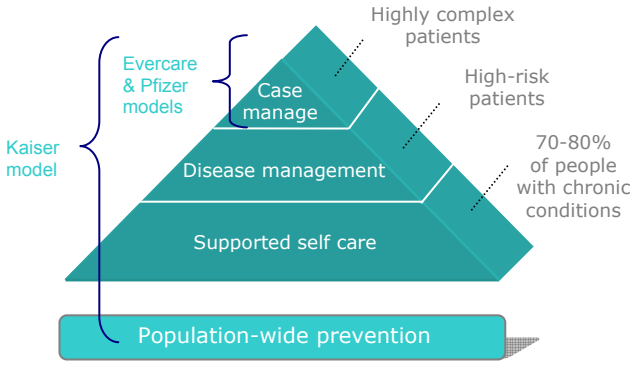
This section describes selected examples of service delivery models. The aim is not to provide a systematic overview of all existing models, but rather to give a flavour of some of the most commonly referred to models.

Kaiser, EverCare, and Pfzier approaches

Three commonly discussed service delivery frameworks for supporting people with long-term conditions are the approaches developed by Kaiser Permanente, EverCare (United Healthcare), and Pfizer in the US. These approaches are not mutually exclusive. All share a proactive approach to managing care for people with long-term conditions.

Their major distinguishing features are that the Kaiser model focuses on integrating services and removing distinctions between primary and secondary care for people at all stages of the 'Kaiser pyramid' whereas the Evercare and Pfizer approaches focus on targeting those at highest risk of hospitalisation.

The 'Kaiser Triangle' illustrating different levels of chronic care



The approach taken by Kaiser Permanente is based on the Chronic Care Model.[76] Kaiser focus on integrating organisations and disciplines. Doctors from primary and secondary care share the same budget and function within multi-speciality centres which also house nurses, pharmacists, laboratory technicians, radiology staff and others. People with long-term conditions are stratified according to need, with intensive management targeted at those at highest risk.[77]

United Healthcare's EverCare model targets people at highest risk using Advanced Primary Nurses as case managers (similar to community matrons). Here the focus is on integrating social and healthcare to meet an individual's needs. Once older people at high risk have been identified, Advanced Primary Nurses assess their care needs and coordinate their journey along a care pathway. The aim is to maintain health, detect changes and prevent unnecessary admissions, and facilitate early discharge when admissions occur.[78]

The Pfizer approach also targets those at highest risk, using telephone case management to supplement existing services.

All of these service delivery models include some form of case management as a component of care. A wide range of other case management frameworks have been described, ranging from social models to medical models.[79,80,81]

Key characteristics of selected service delivery models[82]

	Kaiser approach	EverCare approach	Pfizer approach
Overall essence	**Uses a wide mix of strategies to target the whole care continuum, focussing on integrated services**	**Uses specialised nurses to individually support those people at highest risk of hospital admission**	**Uses telephone system to monitor and refer people at highest risk**
Key principles	• Unplanned hospital use is an indicator of system failure • Align care to the needs of the client • No boundary between primary and secondary care • Patients are 'partners' in care • Patients are providers of care • Information is essential • Improvement occurs through commitment and shared vision, not through coercion	• Individualised whole person approach • Care provided in least invasive manner in the least intensive setting • Primary care is the central organising force for all care • Decisions based on data and population evaluation • Avoid adverse effects of medications and poly-pharmacy	• Proactive contact with patients at highest risk to assess, refer, educate, and monitor • Supplement to existing services (not substitute) • Encourage self-treatment and behaviour modification
Key strategies			
Education	• Patient education, including using the internet and during hospital stay	• Focused education and follow-up mentoring • Self-care promotion	• Patient education through telephone support
Target	• Whole spectrum of chronic care • Includes targeted risk assessment	• Identifying people at high risk using 'Hospital Analysis Tool'	• Identifying people at high risk
Care planning	• Proactive management • Developing integrated care pathways to reduce inappropriate referrals to services	• Proactive management of people at high risk • Individualised care plan • Medicines management for co-morbidities	• Case finding • Patient assessment • Proactive management of people at high risk
Staff	• Developing partnerships between clinicians and managers • High proportion of doctors in leadership roles • GPs in Accident and Emergency Departments; consultants in GP clinics; dedicated MD rounds	• Case management by specialised nurses ('Advanced Primary Nurses') • Extended GP role through partnership with nurses	• Dedicated telephone support staff (nurses)
Tools	• Info systems such as reminders on patient notes and monitoring systems • Clinical evidence database	• IT risk assessment • Share data and patient info across system to improve care	• Software for telephone case management incorporating national and local guidelines
Discharge	• Online discharge summaries • Dedicated discharge planners (1 per 25 patients)	• Single point of contact to help access services	
Evidence	• In California, this model is associated with improved quality of life, and fewer hospital admissions and days spent in hospital	• In the US this model is associated with improved quality of life, and fewer hospital admissions and bed days	
UK trials	• This model is being formally trialled in nine PCTs in England	• This model is being formally trialled in nine PCTs in England	• This model is being formally trialled in England

Are these models effective?

Most information about the effects of the Kaiser, Evercare, and Pfizer approaches is drawn from the US. For example, an evaluation of the Evercare programme in the US found that this model reduced hospitalisations by focusing resources on those most at risk of hospitalisation[83] and could save thousands of pounds per year for each nurse employed.[84]

Adaptations of the Kaiser, Evercare, and Pfizer models are all being trialled in England, as are other adaptations including 'Pursuing Perfection' initiatives.[85]

Nine primary care trusts are working with United Healthcare to implement the EverCare programme, focussing on 'proactive care for the most vulnerable.' This programme aims to avoid hospital admissions for older people by providing an integrated primary care service with advanced nurses working collaboratively with GPs.[86] The national evaluation of EverCare found that this model effectively identifies vulnerable older people, helps to provide preventive health care, and has the potential to organise care around people's needs.[87] Longer term information about potential reductions in hospital admissions is not yet available.

However a significant number of people enrolled into EverCare programmes in the UK were not frequent healthcare service users. The evaluators concluded that EverCare and other case management initiatives may identify unmet needs and increase demand on health services. They also suggested that the tools designed by EverCare were not the only ones available, and that other identification and risk stratification tools may be just as effective.[88]

Nine other primary care trusts are applying the Kaiser model, focussing on reducing hospital admissions by integrating services. Case studies suggest some positive benefits.[89]

Another primary care trust is working with Pfizer to implement their InformaCare® model for chronic disease management. This approach uses telephone support and evidence-based clinical guidelines to encourage people to engage with the most appropriate health services and be better informed about how to deal with their condition.[90]

In the US, programmes run by Kaiser and Pfizer have both been found to reduce hospital admissions and improve co-ordination of care.[91,92] The Pfizer and Kaiser approaches are being evaluated locally, with the help of external evaluators. We identified no detailed information about outcomes from these service delivery models in the UK.

The Strengths Model

The Strengths Model originally referred to a type of case management. It was developed in the early 1980s as an alternative to 'traditional' case management in mental health. However, it has also been proposed as a model that can be applied to service delivery in long-term care and other care for people with long-term conditions. It is drawn from social service perspectives.

The Strengths Model focuses on helping people and communities discover and develop their own talents, capacity, and interests, and on connecting them with the resources they need to achieve their goals. Some authors suggest that by drawing on people's own strengths, interventions and costs can be contained.[93]

Although there is evidence that the Strengths Model can improve satisfaction and quality of life in mental health, we identified no studies of the effectiveness of this as a broader framework for chronic care service delivery.

The Adaptive Practice Model is a similar concept, which emphasises participatory decision-making and family-centred care. The aim is to encourage people with long-term conditions and their families to share the responsibility for decision-making with physicians. This model conceptualises the physician-individual relationship and provides a structure for analysing clinical situations and choosing clinical approaches.[94] We identified no studies of the effectiveness of this model for people with long-term conditions.

Guided Care

Guided Care is another emerging service delivery model, currently undergoing testing. This US approach has been designed for older people with multiple chronic conditions. Principles from successful initiatives have been melded into a single service delivery model. A specially trained Guided Care Nurse based in a primary care practice collaborates with primary care physicians to provide seven services for 40-60 people at high-risk:

- comprehensive assessment and care planning,
- 'best practices' for chronic conditions,
- self-management,
- healthy lifestyles,
- coordinating care,
- informing and supporting family, and accessing community resources.[95]

This is similar to the Community Matron role in the NHS.

Some reports suggest that Guided Care may improve quality of life and reduce healthcare resource use.[96,97] Although descriptions of this model are beginning to emerge, we identified no high quality evidence of its impacts.

PACE Model

The Program of All-Inclusive Care for the Elderly (PACE) is a US model of service provision and financing that aims to reduce use of hospital and nursing home care. The model focuses on elderly people attending day centres, uses an interdisciplinary team for care management, and integrates primary and specialist medical care. The key feature of this model is integration of acute and long-term care services. This allows frail older people with multiple problems to receive care from a single service organisation.[98] This is one of a number of similar health insurance provider initiatives in the US, but the PACE Model has been more well documented than most.[99,100,101,102]

While there are numerous descriptive assessments of the PACE model,[103,104] we found little high quality evidence about its effectiveness. One comparative analysis suggested that PACE reduced hospital admissions compared to usual care, but increased the use of nursing homes.[105]

We have not provided descriptions of all of the service delivery models currently in use. Indeed, there are many thousands of service delivery models being implemented throughout the world, many of which are not formally named. However, the few examples we have described illustrate that service delivery models tend to focus on selected components of broad chronic care frameworks, and while evaluations of individual services are available, there is no good evidence that any particular service delivery model is more effective than another.

EXAMPLES OF MODELS IN DIFFERENT COUNTRIES

Our review found few distinct named chronic care frameworks. Whether models are named or unnamed, they tend to draw on the Chronic Care Model, usually explicitly. Some argue that relatively few provider settings are fully prepared to execute the Chronic Care Model.[106] Various countries have interpreted and adapted the model slightly differently.

This section provides a brief description of some of the frameworks used in selected countries. Readers should bear in mind that numerous models may be implemented in each country. This section attempts to give a flavour of what is happening in different areas, rather than a systematic account of all developments. It does not explore details of health service financing and service delivery in each country.

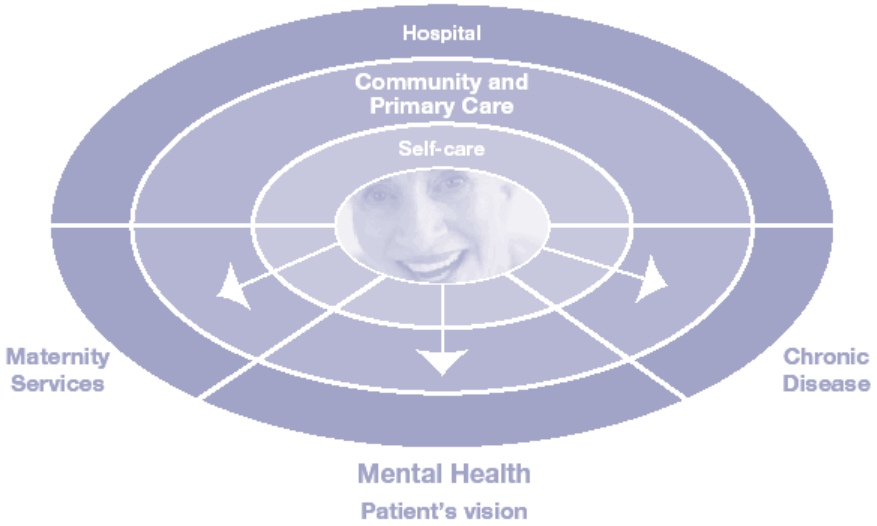
United Kingdom

As outlined above, in England the NHS and Social Care Model was released in January 2005. We identified no evidence about the impacts of the NHS and Social Care model.

In Scotland there is an ongoing programme examining different ways to deliver chronic care. Although a formal framework for chronic care has not been conceptualised, key principles have been established. These include:[107]

- pathways of care focussed on individuals with long-term conditions,
- partnership between professionals and people with long-term conditions,
- partnership between primary care, social care, and other agencies,
- integrated solutions that respond to the needs of people with long-term conditions,
- focus on providing care in primary care and community settings,
- and self care.

Scotland's model for health care[108]



Wales has also identified effective chronic care as a key theme within recent health strategies.[109] There are plans to remodel services within an integrated chronic care framework over the next few years.[110] Details of the planned model are not yet available.

Evaluations of individual interventions and service delivery models are available in England, Scotland, and Wales, but we found no descriptive or impact studies comparing the frameworks used in these countries.

Europe

Many parts of Europe have developed programmes to improve chronic care. However, apart from service delivery models, we identified no distinct chronic care frameworks.

The key principles in service delivery models in Europe appear similar to the Chronic Care Model. In particular, models have been developed that focus on nurse-led services, provide community-based or home-based care,[111] and use telemedicine.[112,113]

The World Health Organisation rates France's health system performance as number one out of 191 countries. It has been suggested that France's attention to chronic care is one of the reasons that this country spends less than half the amount of the United States per capita on annual healthcare.[114] The model used in France focuses on regional systems, population-based prevention, continuity of care, physician involvement in decision-making, and combining specialised medical care, assistive technology, and home support. The regional systems aim to make services more geographically accessible. However, it should be noted that the WHO's rankings are controversial, and a number of features of the health care system in France are not consistent with the Chronic Care Model.

Denmark's system involves remodelling institution-based long-term care into nationally run home-based and community-based services.[115,116] Denmark's model combines the Expanded Chronic Care Model, the Continuity of Care Model, and the Spanish home healthcare service model.[117,118] However we did not identify any evidence of the effects of this approach.

In Italy, service delivery has focused on care in nursing homes, and residential and outpatient services in community venues. We found no high quality evaluations of this service delivery model, but some reports suggest reduced inappropriate admissions, improved quality of life, decreased dependence on private resources, growth of voluntary services, and new occupational opportunities.[119]

In Germany, physicians initially opposed a service delivery model focussed on evidence-based guidelines and data sharing, but disease-specific programmes are now being implemented.[120] Legislation has been introduced to provide incentives for care providers to develop approaches to coordinate care for people with long term conditions and plans are in place to include new risk-adjustment mechanisms.[121]

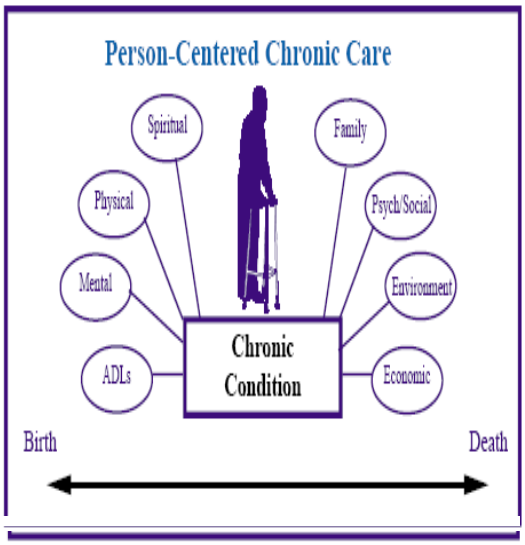
In the Netherlands, the government has been implementing components of the Chronic Care Model for at least 10 years (before the model was formally conceptualised). Their Transmural Care Programme aims to bridge the gap between hospital and community care, although there is conflicting evidence about its effectiveness.[122]

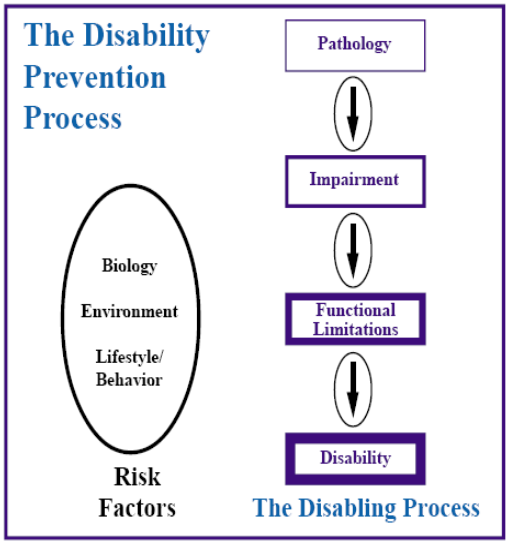
North America

In the US, the growth of managed care in the 1990s focused on better coordination as a way to control costs and improve care for people with long-term conditions.[123] Prior to the conceptualisation of the Chronic Care Model, consortiums in the US were prioritising key elements of integrated care management, including:[124]

- person-centred chronic care,
- ongoing disability prevention,
- integrated services,
- targeting people at high risk,
- and using care pathways and interdisciplinary teams.

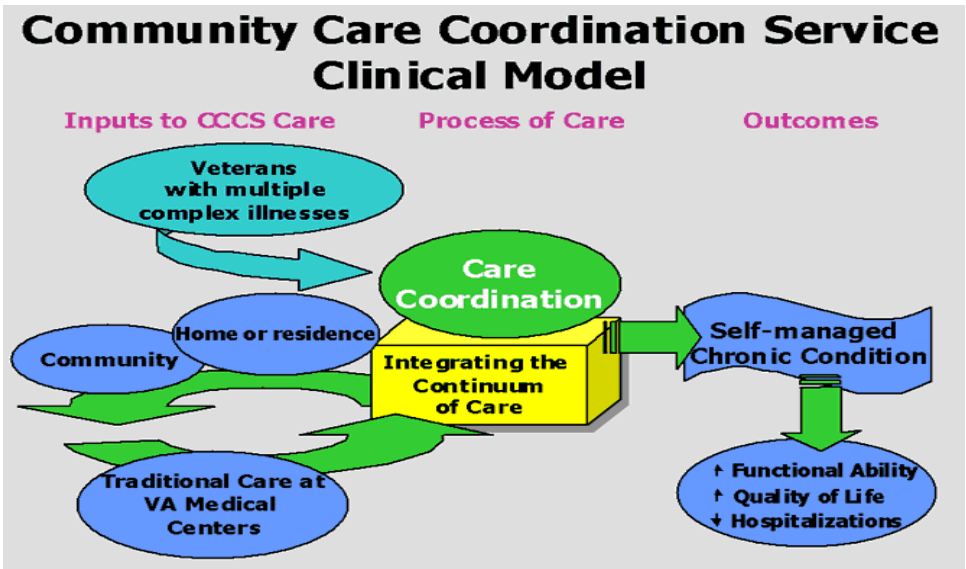
Key elements of pre-Chronic Care Model frameworks in the US[125]





Most major health organisations and regions in the US have a service delivery framework designed to improve care for people with long-term conditions,[126] such as that used by the Veterans Affairs system. The majority are based explicitly on the Chronic Care Model or focus instead on one component of service delivery, such as targeting people at high risk of hospitalisation.

Veteran's Affairs Care Model[127]



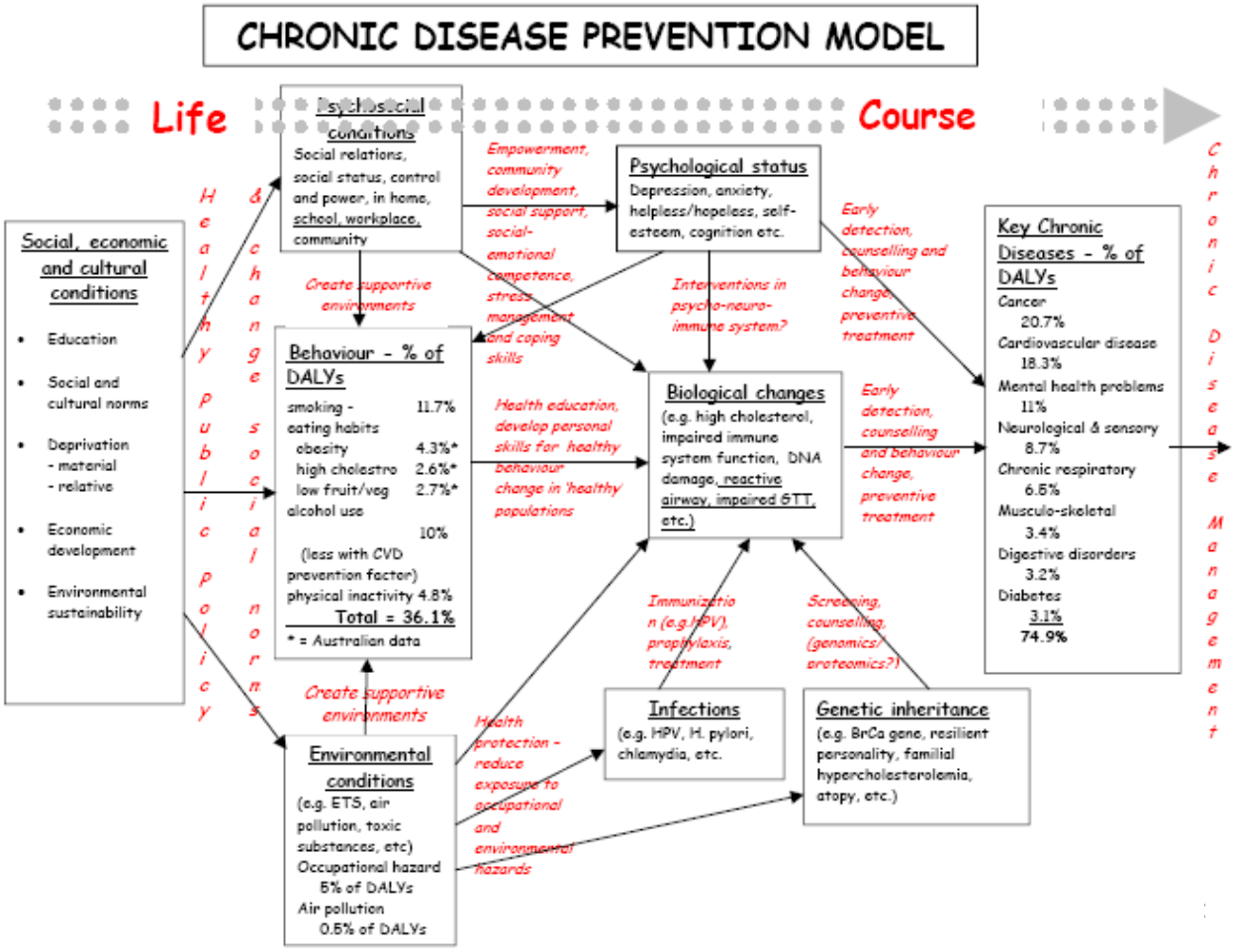
For instance, the VNS CHOICE Model in New York focuses on the principles of consumer choice; involving people with long-term conditions and their family in care planning; improving independence and functional status; collaborating with community providers and facilities to provide fully coordinated care; integrating acute and long-term care services; and collaboration between interdisciplinary care teams.[128]

Another system for caring for disabled older people has been trialled in Ohio. The service model included a single point of entry to long-term care services, a telephone screen from which people could choose options, care management, and funding for extra services.[129]

Another example is the Chronic Care Network for Alzheimer's Disease Model which focuses on identifying people who may have dementia, diagnostic assessment, care management, and providing information and support to caregivers.[130] Many thousands of other similar service delivery models have been implemented in the US.

Like the US, different parts of Canada have developed frameworks related to the Chronic Care Model.[131] For instance, British Columbia is using an 'Expanded Chronic Care Model' which incorporates health promotion and disease prevention.[132]

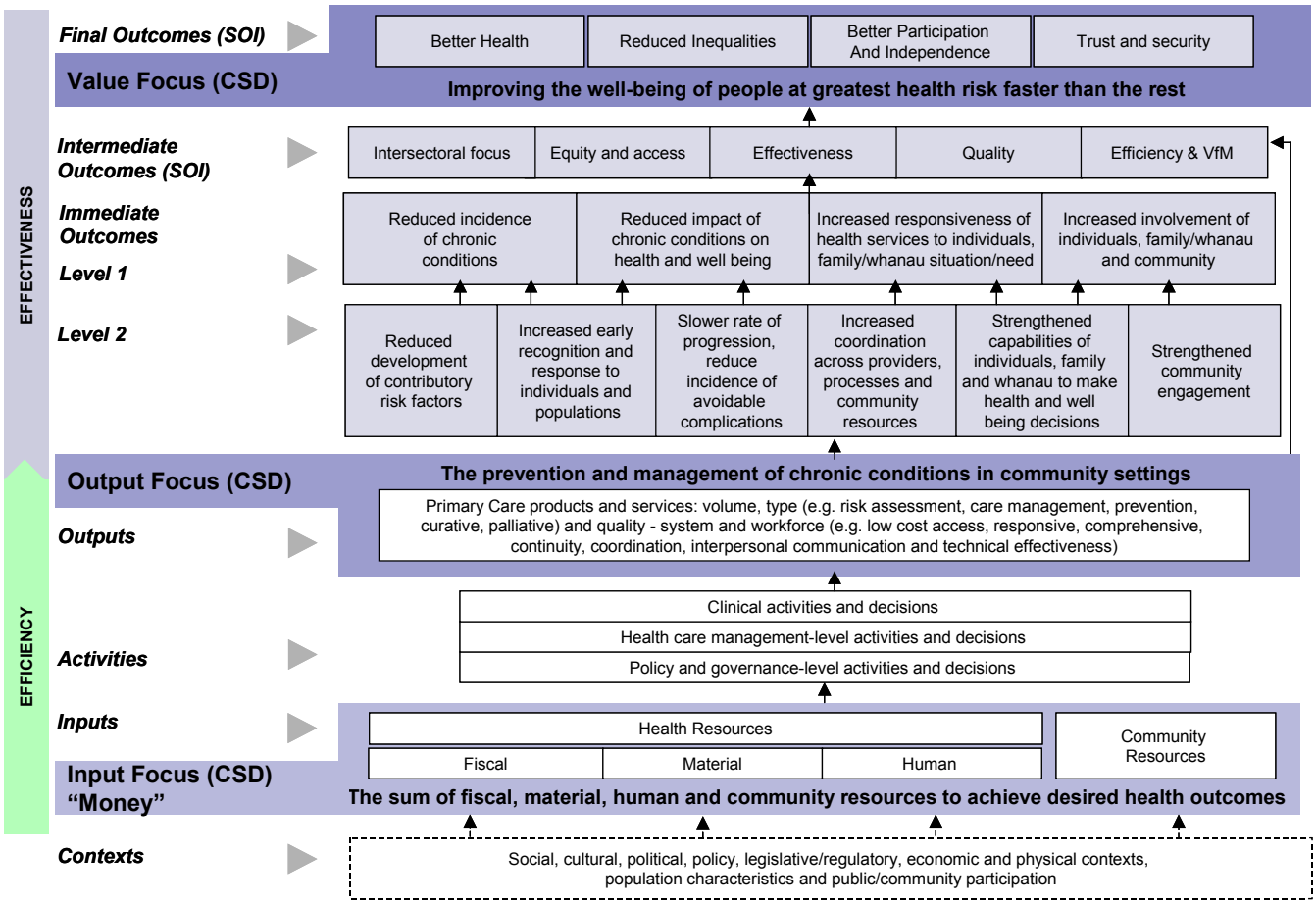
Example of a prevention model used in Canada[133]



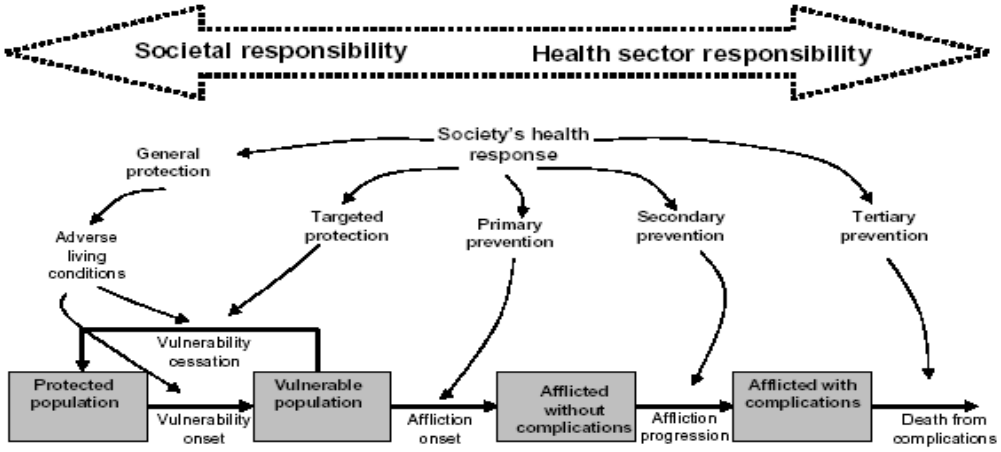
New Zealand and Australia

A number of service delivery models have been trialled in New Zealand. The New Zealand Government is using an 'outcomes intervention' approach to illustrate the relationship between aetiology, interventions, and outputs.[134] This is based on a 'Life Course' Model.[135]

New Zealand's Outcomes Intervention Model[136]



Example of the Life Course Model used in New Zealand[137]

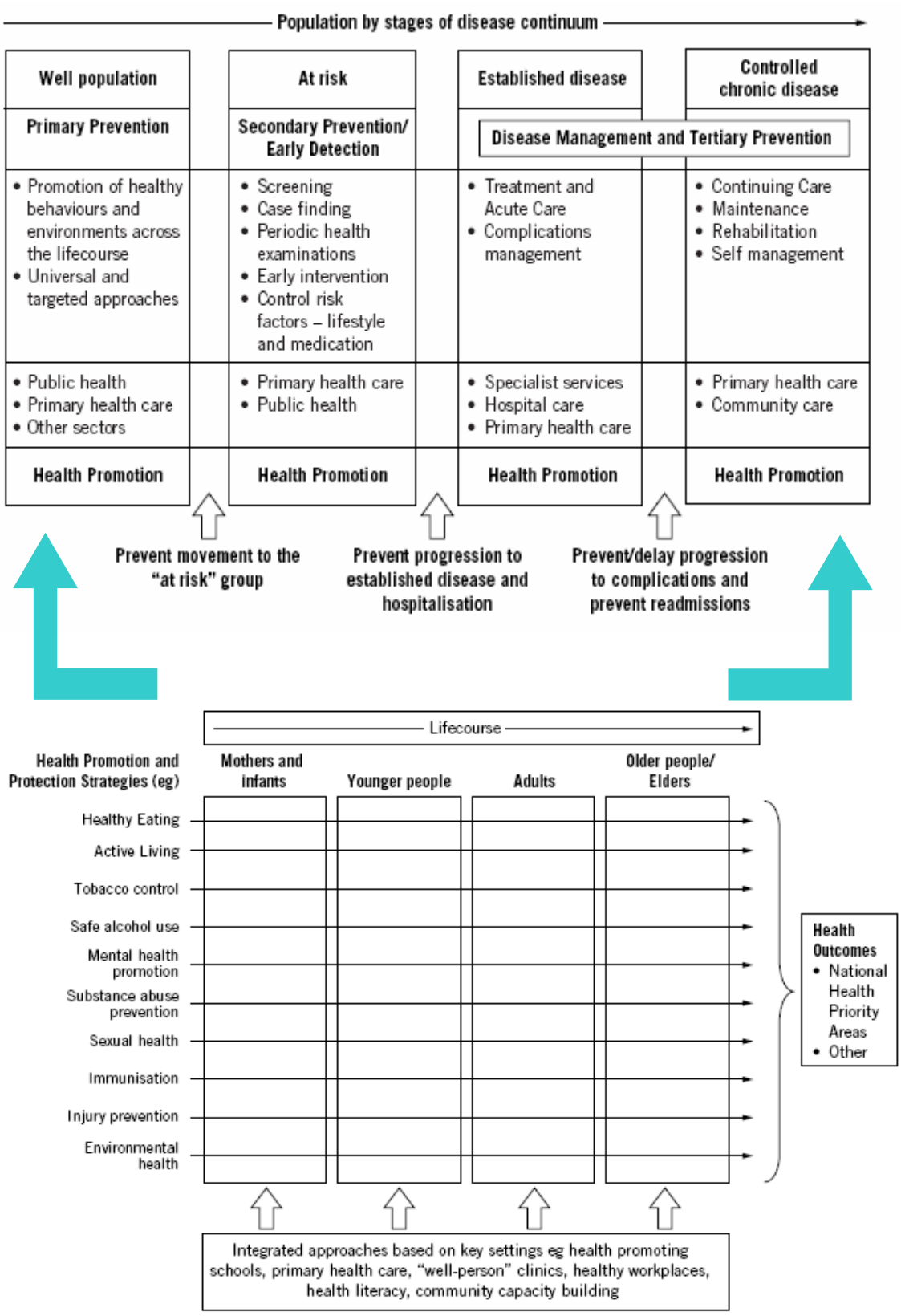


A number of specific models of care are also being trialled. For instance, the Care Plus programme, which contains some elements of the Chronic Care Model, has been tested in three primary health organisations. An evaluation found that Care Plus provides effective coordinated care from a range of health professionals.[138]

The Chronic Care Management Model was trialled in one area in New Zealand. The model, which drew on the Chronic Care Model, included targeting people at high risk, organising interventions into a system of care, and using improved data storage, flags and reminders. An evaluation suggested improved health outcomes and reduced healthcare costs.[139]

Various service delivery models have been trialled in different parts of Australia. A national strategy for long-term conditions is forthcoming,[140] and individual states have developed their own frameworks, drawing on the Chronic Care Model.[141] A public health framework, with an emphasis on prevention and health promotion, has been in place since 2001.

Australia's national model of chronic disease prevention and control[142]



Regional strategies are also in place. For example, New South Wales Health has developed a model which aims to:[143]

- place people with long-term conditions at the centre of the health system,
- design services around people's unique health needs,
- develop people's capacity to participate fully in their own health care,
- develop people's capacity navigate their way through the health system,
- ensure easier and more timely access,
- have continuity of relationships between providers and between providers and patients,
- develop organisational and governance systems to support long term orientation,
- and reorientate care within the health system.

Components of chronic care clinical governance in New South Wales[144]

Like other countries, Australia has trialled a number of new service delivery models. For instance, HealthPlus is a coordinated care model for people with multiple chronic conditions. A randomised trial found that this model improved clinical outcomes, but did not reduce healthcare costs. The model did not fully take into account organisational characteristics, environment, healthcare teams, and individual characteristics.[145]

Asia

Service delivery models are also being developed in Asia. The government in Singapore proposed a new chronic care framework because they felt that US models focussed too heavily on managed care which may confuse healthcare professionals working in Asia.[146] This framework emphasises primary care and self care, but has less emphasis on organisational linkages. We found no evidence of the effectiveness of this model.

Programmes to improve care for people with long-term conditions are being implemented throughout the world, however we found no distinct chronic care frameworks in local areas. Most local models either draw heavily on the Chronic Care Model or focus on specific aspects of service delivery without explicitly outlining any underlying conceptual framework. The main point of similarity is a move to reorientate care from episodic or acute interventions towards a continuum of care which enables better prevention and management of chronic conditions.

No matter what organisational model is in place, what happens in each county seems to be based on two factors: (1) funding (not the finance system itself, but rather making funding available as an incentive to develop an organisational system); and (2) culture. Some suggest that although national policy makes a difference, it is at community level that people work together to design innovative local solutions.[147]

SECTION 3: APPROACHES ADOPTED BY STRATEGIC HEALTH AUTHORITIES

Alongside our review of the literature and international experience, we undertook a survey of strategic health authorities (SHAs) in England to assess their approaches to chronic care. In view of the tight timetable to which we were working, the survey took the form of a short questionnaire based on the following three questions:

1. What model(s) is your SHA area using to provide or organise chronic care?
2. Why did you choose this model?
3. Is your model having any impact?

The questionnaire was emailed to SHA leads on long-term conditions on 28 November with a deadline for completion of 14 December. A hard copy of the questionnaire was posted at the same time and SHA leads were contacted by telephone a few days later to ensure the questionnaire had been received. SHAs that had not responded by the deadline were telephoned with a reminder.

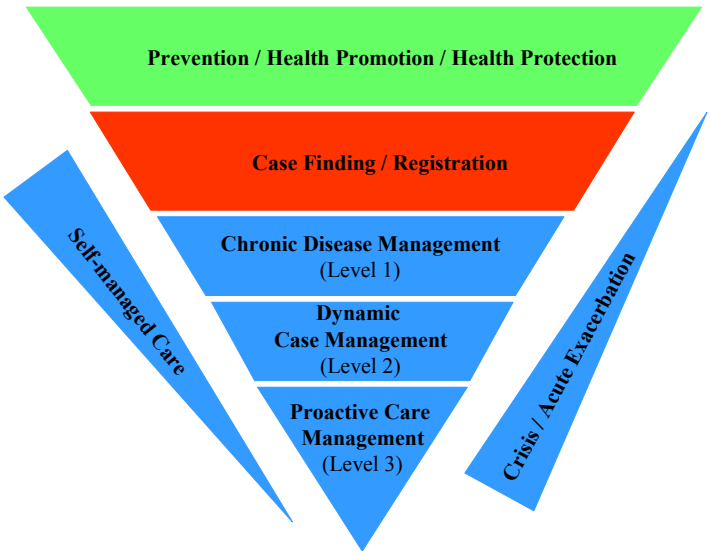
We received responses from 20 of the 28 SHA areas, a response rate of 71%.

OVERVIEW OF RESPONSES

Responses to the survey varied from brief replies to each of the three questions to detailed submissions accompanied by local management papers and policy documents. Sixteen of the 20 responses came from SHA leads on long-term conditions or their colleagues (80%) with the remaining four taking the form of replies from individual PCTs from within the SHA areas.

All of the responses emphasised that the main responsibility for leadership on long-term conditions rests with PCTs rather than SHAs. In six cases, it was reported that an SHA-wide model has been adopted to support PCTs (30%). In South Yorkshire, for example, the SHA is using an inverted version of the Kaiser triangle.

South Yorkshire SHA model[148]



Dorset and Somerset SHA has also adopted an SHA-wide approach, set out in its document: A Strategic Framework for the Development of Services for People with Long Term Conditions. The framework uses the Kaiser triangle to identify three levels of care. A similar approach was reported by Leicestershire, Northamptonshire and Rutland SHA.

The Transforming Chronic Care Programme in Surrey and Sussex is a further example of an SHA-wide approach. This programme was set up by the 15 PCTs in Surrey and Sussex, rather than the SHA, in partnership with people with long-term conditions, social care, acute trusts, and the voluntary sector. It draws on the Wagner model and the Kaiser triangle, and, as its name suggests, sets out a programme of action across the whole system of care.

The NHS Health and Social Care Model is being used by the Thames Valley SHA and Trent SHA, the latter also drawing on the Kaiser triangle and the Evercare approach to case management.

In other SHA areas, a wide variety of models have been adopted, based on the decisions of PCTs. The responses suggest that in many cases SHAs have facilitated collaboration between PCTs to exchange ideas and experience. Two examples are North West London, which has initiated a long-term conditions collaborative, and West Yorkshire which has encouraged PCTs to work with each other and to network with PCTs in other SHA areas in developing their approach to long-term conditions.

In other cases, it would appear from the responses that most SHAs have been less directly involved and have taken the view that PCTs are in the driving seat on this policy.

APPROACHES IN USE IN THE NHS

As might be expected from the location of leadership responsibility with PCTs, a wide variety of approaches have been adopted to support implementation of the NHS and Social Care Model. Those mentioned in the responses to the survey were:

- Wagner's Chronic Care Model (broad conceptual model),
- Kaiser's triangle (service delivery model),
- Evercare (service delivery model),
- Unique Care / Castelfields (service delivery model),
- NPDT collaborative eg on COPD (service delivery model),
- Expert Patient Programme (service delivery model),
- Pursuing Perfection (service delivery model),
- PARR tool developed by King's Fund (service delivery model).

The varied quantity and quality of information supplied in each response and the diverse sources of this information (PCT or SHA) makes it difficult to be more precise about the models that have been adopted most frequently.

In some cases, models have been adapted by SHAs and PCTs. For example, the South Yorkshire model described above; the addition of end of life care to the Kaiser triangle in Birmingham and Black Country SHA; and adding informatics and data analysis in various SHAs.

There appears to have been a particular emphasis to date on service delivery models that focus on case management and the use of community matrons, such as Evercare and Unique Care / Castlefields. This reflects the priority attached to case management and community matrons by the Department of Health. An example is Essex SHA whose approach is informed by the Kaiser triangle but whose strategic framework document focuses on case management and sets out the principles to be used to develop case management.

Similarly, most of the responses from PCTs (for example, from Kent and Medway) emphasised the work they are doing to appoint community matrons and strengthen services for people with long-term conditions at level three of the Kaiser triangle.

Indeed, most SHAs and PCTs that provided information about the components of the model they were using typically referred to the three levels of the Kaiser triangle and rarely referred to other elements.

REASONS FOR CHOOSING DIFFERENT MODELS

We asked SHAs why they had selected specific approaches. Responses to this question were less detailed than to the request for information about which frameworks they were drawing on.

In a small number of cases, it was reported that models had been chosen after a review of the evidence about different approaches (Surrey and Sussex, Essex, Dorset and Somerset, South Yorkshire, and North East London).

Three responses referred to the importance of international links with Kaiser (Leicestershire, Northamptonshire and Rutland, and Surrey and Sussex) and United Health Europe (Trent).

In other cases, the reasons given focused on individual preferences, including:

- a desire to continue with approaches already in place (North West London and South Hams and West Devon PCT),
- a preference for a generic rather than a disease-specific model (Birmingham and Black Country),
- a desire to adopt a model that fitted local circumstances and was not overly medically orientated (North and East Yorkshire and Northern Lincolnshire),
- and Department of Health guidance (Thames Valley).

A number of responses suggested that they had chosen a model because it was most likely to contribute to targets such as bed day reductions.

The remaining responses did not provide sufficient information to identify the reasons for choosing a particular approach.

IMPACTS

We asked SHAs whether their approaches were having any impact. The most common response to this question was that 'it is too early to say.'

Beyond this, a number of responses referred to 'anecdotal evidence' that the approaches adopted were beginning to have an impact, for instance in slowing and reducing emergency bed day use. Some of these responses included data illustrating changes following the introduction of case management and similar interventions. Others indicated that impact was being evaluated by PCTs without providing further information.

A number of the responses gave examples of more detailed frameworks for evaluating the impact of models. Some of these frameworks outlined ambitious attempts to evaluate the impact of the long-term conditions policy along a number of dimensions. An example is the approach taken in Surrey and Sussex which is tracking patient experience, processes, staff views, and resource use. The table overleaf lists the key targets and measurement tools being used in Surrey and Sussex. Baseline information has been collected in 2005 and this will be followed up in late 2007 / early 2008.

The management reports and policy papers that accompanied the responses to the survey included many examples of local audits and stocktakes undertaken to track progress to date. An example is the approach being taken in Shropshire and Staffordshire where the SHA is undertaking a stocktake with PCTs to assess progress in six areas:

- identification of people at levels 3, 2 and 1,
- personalised care plans for complex patients,
- implementation of community matrons,
- measures for achieving the targets and local priorities including financial balance,
- overall continued strategic planning and leadership,
- and effective communication.

An example of a local audit is the evaluation of the Eldercare Project in Cornwall (EPIC) undertaken by three PCTs in Cornwall. This evaluation now forms the basis of the approach to chronic disease management in Cornwall.

Another example is the East Riding Case Management Pilots Evaluation Report that found a 56% reduction in admissions and a 73% reduction in emergency bed days in the pilot phase.

A few responses indicated an intention to establish comprehensive evaluations in due course. For example, Birmingham and Black Country and Trent are working with United Health Europe in developing its approach.

Evaluation framework being used in Surrey and Sussex[149]

Outcomes	Indicators / Targets	Measurement	Outcomes	Indicators/ Targets	Measurement
People feel more informed about their condition and care	75% of people with long-term conditions feel informed about their condition and care	Surrey and Sussex wide survey (2005 and 2008)	Increased shared vision of service provision	80% of NHS staff are aware of the chronic care model	MORI NHS staff survey
	100% of PCT areas develop new resources or delivery methods	Annual PCT self-assessment audit		10% of staff working with people with long-term conditions take part in joint learning each year	Annual PCT self-assessment audit
Increased sense of control	25% of people with long-term conditions take part in self-management education programme	Surrey and Sussex wide survey (2005 and 2008); EPP data	Increased job satisfaction	33% of NHS LTC staff say they are more satisfied with their role	MORI NHS staff survey,
	Expert Patient Programme or equivalent available in 80% of areas	EPP data Annual PCT self-assessment audit		33% of NHS staff working in chronic care feel more able to make a difference	MORI NHS staff survey
	50% of people with long-term conditions say they feel in control of and involved in planning care	Surrey and Sussex wide survey (2005 and 2008)		50% of staff working with people with long-term conditions feel there is less duplication of effort	MORI NHS staff survey
Improved experience of care	50% of people with long-term conditions perceive improved quality, accessibility, and consistency of care	Surrey and Sussex wide survey (2005 and 2008)	Improved perception of service systems	75% of staff working with people with long-term conditions feel services are more co-ordinated	MORI NHS staff survey
	5% reduction in complaints from people with chronic conditions	PALs and PCT quarterly Board reports		75% of staff think information is more likely to be shared between staff and between organisations	MORI NHS staff survey
	90% of those eligible are assigned to a case manager	Routinely collected data			
	90% of people receive annual medical reviews	Routinely collected data		75% of staff trust that colleagues they refer patients to will treat patients appropriately	MORI NHS staff survey
Improved quality of life	50% of people have improved quality of life	Patient survey (2005 and 2008)			
Improved clinical indicators	10% reduction in emergency admissions for each condition	Routinely collected data	Better co-ordinated care	100% of PCT areas implement single assessment process	Annual PCT self audit
	Absolute increase of 10% in proportion of people with specified QoF markers	Routinely collected data		80% of PCT areas adopt standardised risk stratification / triggers	Annual PCT self-assessment audit
	Absolute increase of 10% in people with heart failure prescribed ACE inhibitors / beta blockers	Routinely collected data		100% of PCT areas adopt case management for those at high risk	Annual PCT self-assessment audit
	10% increase in people with stroke who are prescribed aspirin or clopidogrel	Routinely collected data		75% of patients and 75% of staff feel care is well co-ordinated	Patient and staff surveys
	Improved 'cost effectiveness' for prescribing	Routinely collected data		75% feel there are partnerships between patients and staff	Patient and staff surveys
Reduced emergency admissions	10% reduction in emergency admissions	Routinely collected data	Improved referral systems	33% of PCT areas have self referral policies to specialists	Annual PCT self audit
Reduced emergency hospital days	Adjusted PSA target: 1.8% by March 2006; 6.9% by March 2007; 12% by March 2008	Routinely collected data		25% of PCT areas reduce referral / entry forms for patients or have drop-in services	Annual PCT self-assessment audit
Redeployment of resources towards community care and health promotion	5% shift in finances used for chronic conditions towards self-management and health promotion	Annual PCT self-assessment audit	Improved shared info systems	80% of PCT areas use shared data management tools / registries / definitions / triggers	Annual PCT self-assessment audit
	5% increase in resources (finances and staff) available for community and social care	Annual PCT self-assessment audit	Partnership with local government , community, and voluntary sector	50% of PCT areas proactively working with voluntary / non health sector	Annual PCT self-assessment audit
	Case management introduced at same or lower overall cost of care for frequently admitted patients	Annual PCT self-assessment audit		80% of PCT areas moving towards integrated health and social care system with joint targets	Annual PCT self-assessment audit

SUMMARY OF SURVEY RESPONSES

Feedback from SHAs suggests:

- SHAs have adopted different styles to developing their approach to long-term conditions ranging from promoting SHA-wide models, seeing PCTs as having the lead responsibility, and supporting PCTs through collaborative and networking activities.

- A wide range of approaches have been adopted to support implementation of the NHS and Social Care Model, including broad frameworks such as Wagner's Chronic Care Model, and service delivery approaches such as the Kaiser triangle and EverCare.

- There has been a particular interest in developing case management drawing on EverCare, Unique Care / Castlefields and similar approaches.

- The reasons cited for choosing different approaches include the evidence base, international experience, Department of Health guidance, continuing existing approaches, a preference for generic models, and wanting to use models that will meet targets.

- Good quality evidence on the impact of the approaches is lacking, with most respondents reporting that it is too early to present rigorous evidence. Anecdotal evidence indicates that case management may be reducing emergency bed day use and a number of SHA areas are planning to evaluate their programmes more systematically in the future. At least one SHA area has set up an extensive evaluation programme.

Summary of responses from each SHA area

PCT area	Response	Model	Impact
Shropshire & Staffordshire	Response from SHA	No SHA wide model. PCTs have developed own models focused on case management	Impact reviewed in SHA stocktake in January 2005 and planned for 2006
North West London	Response from SHA	No SHA wide model. PCTs have developed own models focused on case management	Evaluations being undertaken by PCTs
North East London	Response from SHA	Variety of models dominated by Wagner approach with examples of Evercare and Unique Care	Evaluations being planned
South East London	Response from SHA	No SHA wide model. PCTs have developed own models – some disease specific and others generic, including Evercare, Pursuing Perfection, COPD collaborative, Expert Patient and King's Fund PARR	Each project has own evaluation criteria. Too little comparable data and too early to say if objectives achieved
Thames Valley	Response from SHA	The NHS Health and Social Care Model has been adopted across the SHA	SHA has developed guidance for PCTs on evaluation of matrons
Essex	Response from SHA	SHA developed framework for case management for use by PCTs and has encouraged application of King's Fund PARR tool	Anecdotal evidence suggests some effect on emergency bed day use although too early to attribute
Surrey and Sussex	SHA / PCT Alliance	The Transforming Chronic Care Programme involves all 15 PCTs and has adapted the Wagner and Kaiser models across the SHA area	A detailed evaluation is underway to assess impact on a number of dimensions
Kent and Medway	Responses from PCTs	Medway PCT has adopted the Kaiser model. Canterbury and Coastal PCT has adopted The NHS Health and Social Care Model and has appointed community matrons as part of the Empowering Patients Independence care programme. East Kent Coastal PCT has focused on case management drawing on Evercare and Castlefields	It is too early to assess impact. East Kent Coastal PCT is developing a data collection tool to measure service outcomes
South West Peninsula	Responses from PCTs	Mid Devon PCT is focusing on case management using Evercare, chosen because of potential to reduce non-elective admissions. Exeter PCT has adapted the Kaiser model and a whole system approach. South Hams and West Devon PCT has adapted an existing generic model (called Closer to Home). The three Cornwall PCTs have used a number of models including Evercare and Kaiser	Individual PCTs are conducting their own assessments. It is too early to assess impact. In Cornwall, PCTs have undertaken an evaluation of the Eldercare Project which provides case management for people aged over 75. This suggests progress in reducing emergency admissions.
Dorset and Somerset	Response from SHA	The Kaiser triangle has been adopted across the SHA area	It is too early to say if the model is making a difference, but there are some early indications of emergency bed day savings
Avon, Gloucestershire and Wiltshire	Responses from PCTs	Gloucester PCT has used the Kaiser triangle and drawn on Castlefields and Evercare approaches. North Somerset PCT is hoping to draw on Unique Care in developing its approach, and is involved in the NPDT collaboratives in COPD and diabetes	It is too early to assess impact
Hampshire and Isle of Wight	Response from SHA	SHA has a strategic facilitation programme but PCTs provide the clinical leadership for the vision, strategy and implementation. PCTs are taking different approaches	It is too early to assess impact
West Midlands South	Responses from PCTs	South Warwickshire PCT has adapted the Kaiser model. Herefordshire PCT has used the Kaiser model and also drawn on the Wagner model and its approach will be evaluated	It is too early to assess impact
Birmingham and Black Country	Response from SHA	PCTs have developed their own models and these have been linked back to the Kaiser model. United Healthcare Europe is involved in an informatics programme to provide risk profiling	The approach will be evaluated using data from the informatics programme and other sources
Northumberland, Tyne and Wear	Response from SHA	No SHA wide model. PCTs have developed their own models, including the Wagner approach and Unique Care	SHA is promoting a benefits realisation framework. It is too early to assess impacts
Leicestershire, Northamptonshire and Rutland	Response from SHA	The Kaiser model has been adopted across the SHA area	An evaluation framework is being developed to assess impact
North and East Yorkshire and Nth Lincolnshire	Response from SHA	No SHA wide model. PCTs have developed their own models focused on case management and influenced by Unique Care	The approaches adopted are starting to slow the increase in admissions and bed days
South Yorkshire	Response from SHA	The Wagner and Kaiser models have been adapted into an SHA wide approach	Evidence on impact is sketchy
West Yorkshire	Response from SHA	PCTs have developed their own models. These models have drawn on Unique Care / Castlefields, Evercare, Kaiser, and Expert Patient Programme	
Trent	Response from SHA	The NHS and Social Care Model has been adopted with case management supported by United Healthcare Europe / Evercare and Kaiser triangle	It is too early to evaluate the model but there is some anecdotal evidence

SECTION 4: SUMMARY

What models of chronic care have been used internationally?

This rapid review suggests that the Chronic Care Model and the related Innovative Care for Chronic Conditions Model are the most common frameworks for conceptualising effective components of care for people with long-term conditions. The Kaiser pyramid of care appears to be used throughout the developed world to conceptualise service delivery. While a number of other approaches guide service delivery, these tend not to be conceptualised as formal models, nor are their components clearly articulated.

Summary of named models

Model	Origin	Key components	Evidence of impact
Broad frameworks			
NHS and Social Care	UK	• Risk assessment • Targeting frequent users • Case management by matrons • Multidisciplinary teams • Self management	We identified no evidence about the effectiveness of this model, although it is newly implemented so it is too early to gauge effects
Chronic Care Model and revised 'Care Model' and 'Expanded Chronic Care Model'	US	• Community resources • Healthcare system • Self-management • Decision support • Delivery system redesign • Clinical information systems	We identified evidence that components of the model can improve quality of care and resource use. We identified no comparative evidence about whether this model is better than other frameworks
Innovative Care for Chronic Conditions	WHO	• Micro level (individual, family, and health staff) • Meso level (community and health care organisations) • Macro level (policy)	We identified no evidence about the effectiveness of this model
Public Health Model	US	• Population-wide policies • Community activities • Health services	We identified no evidence about the effectiveness of this model
Continuity of Care Model	US	• Tracks intervention needs from general population through to those needing palliative care	We identified no evidence about the effectiveness of this model
Service delivery approaches			
Kaiser Model	US	• Care provided care based on risk assessment • Case management for those with complex needs • Care management for 20-30% • Supported self care for most	Evidence from the US suggests that this model can provide more integrated care and reduce hospital admissions
Evercare and Pfizer models	US	• Focuses on identifying those at highest risk for hospitalisation and providing nurse led case management (Evercare) or telephone support (Pfizer)	There is evidence that the Evercare and Pfzier models may reduce healthcare costs in the US. A UK evaluation of Evercare found increased identification of unmet needs
Strengths Model	US	• Self empowerment • Identifying people's capacities	We identified no evidence about this model
Veteran's Affairs	US	• Similar to Chronic Care Model, but applied to particular population segment	We identified no additional evidence about implementing this model in the US Veteran's Affairs system, other than that focussed on the generic Chronic Care Model
Guided Care	US	• Nurse-led care	No evidence about this model
PACE	US	• Integrated care for the elderly • Targetting day centre users • Single access point	There is limited evidence about this model, although it may reduce hospital admissions and increase nursing home use

What evidence is there about the impacts of these models?

There is limited high quality evidence about the impact of any model.

Although components of the Chronic Care Model have been studied extensively and a detailed evaluation has been undertaken in the US, it is still unclear whether this model is any more effective than others. This is largely because other models are not well conceptualised or described. However, there is also limited information about whether *all components* of the Chronic Care Model are necessary or effective.

There is evidence that improvement programmes which aim to implement the Chronic Care Model can have a sustainable impact on quality of care and some clinical and resource outcomes. The relative merits of each component of the model, and the extent to which these are implemented effectively by healthcare organisations, is still under review.

There is almost no evaluative information about any other broad chronic care framework.

Evaluations of specific models of service delivery, such as the Kaiser and Evercare approaches, are available. These suggest that specific service delivery models may have some impacts on quality of care and healthcare resource use, however most high quality evidence is drawn from the US health system.

What approaches have been adopted by Strategic Health Authorities?

SHAs have adopted different styles to developing their approach to long-term conditions, with some taking the lead or facilitating PCT collaborations and others leaving policy in the hands of individual PCTs.

A wide range of approaches have been adopted in SHAs and PCTs, including broad frameworks such as Wagner's Chronic Care Model, and service delivery approaches such as the Kaiser triangle and EverCare. Many of the SHAs are focussing on service delivery models and case management, rather than a broader approach taking into account multifaceted components.

The majority of SHAs had based their decisions about which approach to adopt on pragmatic or experiential factors rather than research evidence.

As yet, it appears too early to say whether any of the models implemented are having an impact on chronic care.

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- American College of Physicians (ACP Online) for the Chronic Care Model,
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- Surrey and Sussex PCT Alliance for the key characteristics of selected service delivery models,
- Surrey and Sussex PCT Alliance for the evaluation framework being used in Surrey and Sussex,
- Ministry of Health Planning for the example of a prevention model used in Canada,
- National Chronic Care Consortium for the key elements of pre-Chronic Care Model frameworks,
- National Public Health Partnership for the Australia's national model of chronic disease prevention,
- New Zealand Ministry of Health for the New Zealand's Outcomes Intervention Model,
- South Yorkshire Strategic Health Authority for the South Yorkshire SHA model,
- The Stationery Office for the NHS and Social Care Model,
- The World Health Organisation for the Innovative Care for Chronic Conditions Framework,
- United States Department of Veteran Affairs for the Veteran's Affair Care Model.

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