Co-ordination and management of chronic conditions in Europe

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Co-ordination and management of chronic conditions in Europe: the role of primary care – position paper of the European Forum for Primary Care

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ABSTRACT

Healthcare systems in Europe struggle with inadequate co-ordination of care for people with chronic conditions. Moreover, there is a considerable evidence gap in the treatment of chronic conditions, lack of self-management, variation in quality of care, lack of preventive care, increasing costs for chronic care, and inefficient use of resources. In order to overcome these problems, several approaches to improve the management and co-ordination of chronic conditions have been developed in European healthcare systems. These approaches endeavour to improve self-management support for patients, develop clinical information systems and change the organisation of health care. Changes in the delivery system design and the development of decision support systems are less common. Almost as a rule, the link between healthcare services and community resources and policies is missing. Most importantly, the integration between the six components of the chronic care model remains an important challenge for the future. We find that the position of primary care in healthcare systems is an important factor for the development and implementation of new approaches to manage and co-ordinate chronic conditions. Our analysis supports the notion that countries with a strong primary care system tend to develop more comprehensive models to manage and co-ordinate chronic conditions.

Keywords: chronic care model, disease management, international comparison, primary care

Introduction

Chronic conditions pose an important challenge to European healthcare systems. According to the World Health Organization (WHO) definition, chronic conditions are health problems that require continuous management over a period of years or decades.[1] Moreover, these conditions require co-ordinated input from a wide range of health professionals.[2] New models of providing health care are being introduced in European countries in response to a set of problems that are evident to some degree in all healthcare systems. These problems include the overuse, underuse and misuse of healthcare services, unco-ordinated arrangements for delivering care, bias towards acute treatment, and the neglect of preventive care.[3–5] The models to improve care for chronic conditions are as diverse as healthcare systems are different. While some countries have introduced disease-specific programmes, others are designing approaches that are more comprehensive.

The aim of this position paper is to analyse the experience of a number of sample countries that are currently trying to reorganise healthcare delivery in order to make the management and co-ordination of chronic conditions more feasible. In particular, we discuss the role of primary care in this process. We use the terms management and co-ordination in a pragmatic way. In our view, they refer to a systematic and organised approach to providing care for chronic conditions (management) as well to an approach that overcomes the segmentation and fragmentation of healthcare delivery in many countries (co-ordination).

We initially focused on analysing the introduction of disease-management programmes in a number of European countries – specifically in Germany, the Netherlands and Spain (Catalonia). While disease-management programmes have been developed and applied in the United States for several decades,[6] their introduction in Europe is a comparatively new development. However, in the process of analysing this specific concept of tackling chronic conditions, the limitations of disease-management programmes became obvious. Disease-management programmes constitute a single-disease approach and tend to neglect co-morbidities. Moreover, by definition, disease-management programmes become active only after individuals have developed a particular chronic disease. As a consequence, disease-management programmes are unable to prevent the advent of chronic conditions. Finally, we found that disease-management programmes have a strong American managed care subtext, which makes their implementation difficult in a number of European countries. As a consequence of these limitations, we extended the scope of the paper towards the management and co-ordination of chronic conditions in Europe and the particular role of primary care.

We do not consider this position paper as the end of a process. Instead we hope that our input will facilitate further discussion about the response of healthcare systems to the challenge of managing and co-ordinating chronic conditions. Each country has a unique healthcare system with individual characteristics, and needs to develop an individual response. Therefore, the position paper has been prepared by experts with a variety of professional backgrounds from a variety of countries.

Moreover, the structure of the paper reflects the differences between countries. In the next section we

summarise the characteristics of our eight healthcare systems (Austria, Belgium, Catalonia, England, Finland, Germany, The Netherlands, Wales). In the third section we analyse the problems that have led to the management and co-ordination of chronic conditions. We find that problem definition varies between countries but that many problems are prevalent in more than one country. The fourth section discusses which approaches have been chosen in each country to co-ordinate and manage chronic conditions. Again, there is considerable variation. In the final section, we analyse the implementation problem. We distinguish between a bottom-up approach and a top-down approach to implementing the management and co-ordination of chronic conditions. Moreover, we find that financial incentives are an important tool to facilitate the implementation of these approaches. Finally, the paper concludes and summarises our findings.

Country characteristics

This position paper analyses approaches towards the management and co-ordination of chronic conditions in selected European countries. These countries differ with regard to the predominant mode of financing and to the role of primary care. We have chosen these characteristics of healthcare systems because they constitute important institutional background for the implementation of improved management and co-ordination of chronic conditions. We assume that it makes a difference whether healthcare finance is primarily tax based or primarily based on health insurance contributions. From the view of policy makers, the implementation of any healthcare reform most of the time is easier in tax-based national health systems.[7] Moreover, competitive social health insurance systems with inadequate risk adjustment face the problem of risk selection which, from the insurer's point of view, might be more profitable than investing in the quality of healthcare delivery. At least in the German case, financial disincentives for health insurers – which have been the consequence of a poor risk adjustment system – have been a major obstacle to improvement of the management and co-ordination of chronic conditions.[8]

Finally, we consider the role of primary care in the healthcare system of our sample countries as a major institutional determinant for the successful implementation of better management and co-ordination of chronic conditions. We assume that a strong primary care system is able to manage and co-ordinate chronic conditions more effectively than a weak primary care system. Single-disease approaches are expected to be more common in weaker primary care systems. Macinko *et al* (2003) rated the strength of primary care systems based on a scoring system which was derived from ten indicators.[9] The strength or weakness of a primary care system is determined by indicators such as regulation, financing, primary care provider, access, longitudinality, first contact, comprehensiveness, co-ordination, family orientation and community orientation.[9]

Table 1 shows that our country sample represents four healthcare systems that are financed primarily by taxes (Catalonia, England, Finland, Wales) and four that are financed primarily by social health insurance contributions (Austria, Belgium, Germany, The Netherlands). (Since Spain has semi-autonomous regions and we only had information about one of

Table 1 Key characteristics of healthcare systems included in the review

	Main source of financing	Competing health insurers	Strong primary care system[a]
Austria	Social insurance	No	No
Belgium	Social insurance	Yes	No
Spain (Catalonia)	Taxation	No	Yes
UK (England)	Taxation	No	Yes
Finland	Taxation	No	Yes
Germany	Social insurance	Yes	No
The Netherlands	Social insurance	Yes	Yes
UK (Wales)	Taxation	No	Yes

[a] Based on Macinko *et al* (2003)[9]

these regions, we cannot generalise to Spain as a whole.) Within the group of social health insurance countries, three feature competing health insurers (Belgium, Germany, The Netherlands), while health insurers in Austria do not compete. According to the classification by Macinko *et al* (2003), Catalonia, England, Finland, the Netherlands and Wales have a strong primary care system.[9] According to the same classification, Austria, Belgium and Germany have a rather weak primary care system.

Problem definition

Although all healthcare systems in our sample are struggling with a variety of problems that have led to a range of approaches to improve the management and co-ordination of chronic conditions, some problems in certain countries are more important than others. Table 2 lists the problems identified by the literature and the expert opinions within our group. The first challenge – *bridging the evidence gap* – refers to practice variations that are not in line with the existing evidence. *Inadequate co-ordination* of care between health services in particular refers to problems between primary care and secondary care. However, inadequate co-ordination between health professions – such as physicians and nurses – can also be a major problem. The same is true for poor co-ordination between health care and social care. In contrast, *lack of self-management* concerns the missing support for individual activities of the patient in order to improve self-management of his or her chronic condition. *Variation of quality of care* – between patient groups and regions – is primarily a matter of fairness. In contrast, the problems of *increasing costs for chronic care* and *inefficient use of scarce resources* primarily have their foundation in an economic line of reasoning. *Lack of preventive care* refers to primary prevention (measures to reduce risk behaviour or risk factors for a chronic condition), to secondary prevention (identification and treatment of asymptomatic persons who have already developed risk factors or pre-clinical chronic conditions but in whom the condition has not yet become clinically apparent) and to tertiary prevention (intervention that aims to mitigate health consequences of a clinical chronic condition). (The definition of primary, secondary and tertiary prevention is based on Reisig *et al.*[10]) The perception of problems may vary considerably, because health professionals, patients and policy makers have different views.

In *Austria*, five problems can be identified which, if addressed, could improve the management and co-ordination of chronic conditions. Bridging the evidence gap is an important issue; the few guidelines that do

Table 2 Problem definition

Problem	Austria	Belgium	Catalonia	England	Finland	Germany	The Netherlands	Wales
Bridging the evidence gap	P	S	S	P	S	P	S	P
Inadequate co-ordination of care between health services	P	P	P	P	P	P	P	P
Lack of (self-) management	P	S	S	P	P	P	S	P
Variation in quality of care (patient groups and regions)	P	P	S	P	S	S	P	P
Increasing costs for chronic care/ inefficient use of resources	S	S	P	P	P	S	P	P
Lack of preventive care	P	S	S	P	S	P	S	P

P: Primary problem that led to new models to improve management and co-ordination of chronic conditions; S: secondary problem

exist are not agreed upon nationally. Moreover, co-ordination between health services is inadequate; there is hardly any co-ordination between health services and social care. Lack of self-management is evident, since patients in Austria are not used to getting involved in the care process and there are no incentives to do so. Regional variation in the quality of care is considerable. Finally, the lack of preventive care is a major problem.

In *Belgium*, the primary problems are considered to be insufficient co-ordination of care between health services – in particular between primary care and secondary care – and variation in the quality of care. These problems have been analysed in detail for diabetes,[11] but they are also prevalent for other chronic conditions.

In *Catalonia*, lack of involvement of hospital professionals, and limited understanding of the need for these programmes is a current barrier for the comprehensive development of disease-management programmes, which require a strategic intervention for full implementation. Compatibility between healthcare information technology (IT) systems is also part of the health system agenda. The primary care IT system is highly developed and adapted for the management and co-ordination of chronic conditions, whereas the hospital IT system is at an earlier stage of development for this same purpose.

In *England*, the problem definition depends on the perspective.[12] From a health-system perspective, variation of quality of care, increasing costs for chronic care, and inadequate co-ordination of care between health services are predominant. From the view of the patient, these latter two problems are most important. The professional view varies: bridging the evidence gap, lack of self-management and lack of preventive care are most important.

In *Finland*, key problems that have led to the development of models to improve management and co-ordination for chronic conditions are lack of self-management, the ineffective use of resources and insufficient co-ordination between health professionals in primary care. From a system perspective, over- and underuse of health services is prevalent. From the point of view of the patient, the process of care lacks co-ordination and patients are not active. From the point of view of health professionals, care is based too much on professionals, and patients' resources are not used. Moreover, resources of nurses could be used more extensively, and co-ordination between nurses and general practitioners (GPs) could be improved.

In *Germany*, the starting point of new approaches towards better management and co-ordination for chronic conditions dates back to a report of the Advisory Council which reports to the Ministry of Health and found extensive overuse, underuse and misuse of health services in the German healthcare system, particularly in the prevention, diagnosis and treatment of chronic conditions.[13] The primary causes for the overuse, underuse and misuse of services were inadequate co-ordination between healthcare services, in particular between primary care and secondary care, neglect of preventive services, insufficient self-management of patients, and practice variations that were not in line with evidence. Moreover, inadequate risk adjustment made it financially harmful for health insurers to invest in improving the management and co-ordination of chronic conditions.[8,14]

In the *Netherlands*, stakeholders – in particular policy makers, health professionals and academics – are motivated by all the problems listed in Table 2. However, the primary motivation for improving management and co-ordination of chronic conditions are the inadequate co-ordination of care between health services and increasing costs for chronic care. Moreover, variation in the quality of care is also a primary problem in the Netherlands.[15]

In *Wales*, the problems of single-disease approaches based on the experiences of the National Service Frameworks highlighted the limitations for the population as a whole and the need to rethink approaches that integrate prevention and self-care, and ensure that systems are proactive rather than reactive and work effectively together. Single-disease frameworks were not the answer to the current and future demands. Ensuring effective use of all resources and improved integrated care for the patient was necessary not only within health between primary and secondary care but with other key stakeholders in social care and the independent sectors. Better-integrated care required better planning and management of services, based upon patients' needs and evidence of effectiveness.

Of course, our review of problems that led to the development of improved management and co-ordination of chronic conditions in our sample healthcare systems is not a representative one. However, it shows that inadequate co-ordination of care between healthcare services is an important problem in all countries that are represented by our group. This is an important finding from the point of view of primary care, since co-ordination between primary care and secondary care, and co-ordination between professions within primary care seem to be ubiquitous problems. Our analysis also shows that other problems – bridging the evidence gap, lack of self-management, variation in quality of care, lack of preventive care, increasing costs for chronic care and inefficient use of resources – are not unique, but concern at least half of the countries in our sample.

Components

Approaches towards improving the management and co-ordination of chronic conditions in our sample

countries vary considerably. It needs to be emphasised that the results of our review do not present a comprehensive image of all approaches in each country. In some countries such as England, Wales and Germany, a national policy has been introduced to improve the management and co-ordination of chronic conditions. In contrast, in Finland, Catalonia and the Netherlands, these approaches have been based on local or regional development projects.

We have categorised these approaches by referring to Wagner's chronic care model.[16] This model can be considered as a guide towards improving the management and co-ordination of chronic conditions within primary care.[17] The six components of the model (see Table 3) are closely linked. The model suggests that improving and integrating these components is the key towards improving the management and co-ordination of chronic conditions. It is important to note that 'the model does not offer a quick and easy fix; it is a multidimensional solution to a complex problem'.[17]

We have identified a number of approaches used to improve the management and co-ordination of chronic care in our European sample countries. Again, it is important to note that this is not a full inventory of all approaches in the respective countries, but a collection of case studies. Nonetheless, important lessons can be drawn from these individual examples.

The six components and their application in each country are listed in Table 3. *Community resources and policies* are an integral part of the chronic care model, because chronic care takes place in a 'trigalactic universe' – the community, the healthcare system and the provider organisation. To improve chronic care, links towards community-based resources need to be established. *Healthcare organisation*, in terms of provider organisation and reimbursement environment, is another important component of the chronic care model. Financial incentives need to be in line with the development of chronic care. A key component of the chronic care model is *self-management support*. This entails helping patients and their families to

Table 3 Components of the chronic care model

Component	Austria	Belgium	Catalonia	England	Finland	Germany	The Netherlands	Wales
Community resources and policies	No systematic implementation of components of the chronic care model yet	No systematic implementation of components of the chronic care model yet (implementation scheduled to start after 2009)	(X)	X	–	–	X	X
Healthcare organisation			X	X	X	(X)	X	X
Self-management support			X	X	X	X	(X)	X
Delivery system design			X	X	X	–	X	X
Clinical information systems			(X)	X	X	X	(X)	X
Decision support			X	X	X	–	(X)	X

X: fully implemented; (X): partly implemented; (–) not implemented

obtain the skills and confidence to manage their chronic condition, providing self-management tools and assessing problems and achievements on a regular basis. Moreover, the chronic care model also demands change in the *delivery system design*, by creating practice teams and a division of labour between physicians and other health professionals such as nurses. Furthermore, evidence-based guidelines provide clinical standards for high-quality chronic care and *decision support* for health professionals. Finally, *clinical information systems* supply primary care teams with feedback, remind them to comply with practice guidelines, and provide registries for planning individual and population-based care.[16,17]

Evidence shows that individual components of the model are effective tools to improve the management and co-ordination of chronic conditions in terms of quality of care and patient outcomes.[18,19] However, the evidence remains inconclusive on the impact of applying the model as a whole. The same is true about the question of which components in what combination achieve the greatest improvement. Models that adopt an unambiguous patient-oriented approach are likely to have the greatest effects on patient outcomes.[20]

In Austria and Belgium, initiatives for improving the management and co-ordination of chronic conditions are at a very early stage of development. In *Austria*, some local or regional efforts in establishing components are under way, but not in a co-ordinated way and not following a model. In *Belgium*, healthcare providers (GPs and specialists) and health insurers have, in the summer of 2008, negotiated a contract to introduce an integrated system ('care pathways'), which is based on all six components of the chronic care model. The system will start in the beginning of 2009 (with diabetes and chronic renal insufficiency).

Initiatives in *Catalonia* come from the main healthcare provider (ICS – Catalan Health Institute), which manages most of the university hospitals and nearly 80% of the primary care centres in Catalonia. The development and experience of chronic care management at a primary care level, combined with the need to introduce cost-effective interventions and reorganise the use of health services, were the two pillars for implementing four disease-management programmes (chronic heart failure, chronic obstructive pulmonary disease (COPD), diabetes and depression). One of the strengths of this approach is the multidisciplinary primary care team's organisation, in which nurses play a key role in the co-ordination and follow-up of chronic diseases, from either call centres, the internet, or face-to face consultations with the support of electronic clinical records. Interactive evidence-based clinical guidelines in the clinical record were specially designed for the disease-management programmes. They were developed by multidisciplinary professionals and with the participation of secondary and social care professionals as well, and have facilitated the involvement of most of the professionals in the programmes. Evaluation of the current programmes is still ongoing, and the first provisional results are very encouraging.

In *England*, the government has launched a custom-built model designed to help health and social care organisations to improve care for people with chronic conditions. The model is built on approaches such as the chronic care model which was adapted to the values and healthcare system of English National Health Service (NHS).

In *Finland*, initiatives are developing at the level of the municipalities. The approach in Espoo includes five components of the chronic care model. Patients are provided with tools for self-assessment, and receive support for using self-management tools. Self-care service points and electronic consultations supplement face-to-face consultations. Care delivery is redesigned to take full advantage of planned co-operation and appropriate division of labour between health professionals, physicians and nurses. Joint electronic records are available for the entire practice team. Evidence-based clinical guidelines are available electronically for every health professional. In addition, health professionals have financial incentives for reaching specific goals such as disease-specific parameters and process indicators.

In Germany and the Netherlands, approaches to improve the management and co-ordination of chronic conditions so far have been based on disease-management programmes. In *Germany*, disease-management programmes have been based on three components of the chronic care model: financial incentives for health insurers and consequently for physicians (see next section), improving self-management support for patients, and clinical information systems. The German experience is a good example of physician resistance to the introduction of evidence-based guidelines. Physicians were – and to a certain degree still are – afraid that the use of evidence-based guidelines in disease-management programmes will lead to a loss of professional autonomy. Physician associations were even asking their members to boycott the introduction of disease-management programmes.[8] However, since third-party payers are paying additional fees for the participation of physicians in disease-management programmes, the boycott was not successful. Nevertheless, changes in healthcare organisation are limited to financial incentives. The organisation of health care – at least on the macro-level – remains largely unchanged. In particular, the segmentation and fragmentation between primary and secondary care remains a major problem for improving the management and co-ordination of chronic conditions in Germany. Disease-management programmes provide only weak

links between primary care and secondary hospital care. Hospitals only play a major part in conditions such as breast cancer where surgery is involved. Moreover, the development of collaborative models of providing health care is still a matter of contention within primary care. Therefore, disease-management programmes in Germany are focused almost exclusively on GPs and specialists (endocrinologists, cardiologists, pneumologists, specialists for paediatrics, and gynaecologists) in outpatient care. Physicians are extremely reluctant to delegate responsibilities to other healthcare professionals such as specialised nurse practitioners.[21] Finally, the integration of community resources and the development of decision support do not yet play a major role in disease-management programmes.

Nevertheless, disease-management programmes in Germany seem to improve the management and co-ordination care of patients with chronic conditions. The results of a study by Szecsenyi *et al* (2008) show that changes in daily practice which have been established by disease-management programmes are acknowledged by patients 'as care that is more structured and that reflects the core elements of the chronic care model and evidence-based counselling to a larger extent than usual care'.[22] Another study found that patients enrolled in disease-management programmes encounter fewer complications than patients in usual care.[23] These improvements are obviously due to changes in the organisation of health care on the micro-level – the introduction of more practices specialising in diabetes care, improved referral mechanisms, and more prescriptions based on evidence-based guidelines.[24]

In contrast to Germany, in the *Netherlands* the design of disease-management initiatives is based on several of the six components of the chronic care model. Most initiatives focus on the first four components; only a few also take the last two components into account. Some of these initiatives have been evaluated[5,25,26] but most are still under construction and no effort has yet been taken to evaluate the outcomes. The evaluations of disease-management programmes have shown that patient subgroups that were treated by specialised nurse practitioners in primary care seem to have benefited most in terms of clinical outcomes, health-related quality of life and patient self-management. Moreover, adherence to guidelines – in terms of number of consultations provided and type of medication prescribed – was highest in the group treated by specialised nurse practitioners.[25,26] The examples do not fully comply with the chronic care model. For instance, the integration of the six components remains incomplete and continues to constitute an important challenge.

In *Wales*, a comprehensive approach to management and co-ordination of chronic conditions has been introduced, building upon Wagner's chronic care model. This has also drawn from other evidence as well as from service users and planners and providers. Together, this informed the development of the Welsh Chronic Conditions Model and Framework and the Service Improvement Plan to support its delivery in practice.[27,28] It has a comprehensive monitoring and evaluation framework supporting its delivery, including baseline indicators, a services-improvement matrix, and incentives to support change and service improvements. This also includes patient experience baseline research to help determine the patients' perspective. This work is underpinned by a predictive risk tool, which will help to identify individuals at each level of care and determine service needs across boundaries more appropriately.

Implementation

New approaches to improve the management and co-ordination of chronic conditions require changes in the organisation of health care. Barriers to implementation are to be expected. Third-party payers might be reluctant to pay for the initial investment. Physicians might be reluctant to adhere to evidence-based guidelines and to share care with other healthcare professionals – as the German example clearly shows. Last but not least, patients might distrust new approaches to improve the management and co-ordination of chronic conditions as possible tools designed to economise health care. However, acceptance of extended roles of nurses by patients seems to be quite high.[29] As a consequence, the implementation of new models of providing health care needs to be considered carefully.

In the European context, two approaches towards implementation can be distinguished. The top-down approach is represented by the German and English examples, while the bottom-up approach is represented by healthcare systems such as those in Catalonia, Finland and the Netherlands (see Table 4). The top-down approach is characterised by implementation on a national level, national regulation and national funding. The main problem of this approach is that changed regulation on a national level is not equivalent to changed practice on a local or regional level. In contrast, the bottom-up approach is characterised by local or regional initiatives within the existing institutional and legislative framework. The main problem of this approach is sustainable funding, since these approaches are mostly financed by one-time grants or short-time contracts.

In Germany, several legislative changes in 2002 were intended to neutralise incentives for competing health insurers to select risks, and to provide incentives for

Table 4 Implementation

	Bottom-up	Top-down	Instruments and incentives
Austria	X		Financial incentives for physicians and patients
Belgium		(X)	Financial incentives for physicians and patients (in development)
Catalonia	X		Indirect financial incentives for physicians and nurses. No specific financial incentives for patients, but university for patients' certificate recognition
England		X	Financial incentives for physicians (pay-for-performance)
Finland	X		Joint participation of all professionals in care delivery design. Financial incentives for primary care providers (pay-for-performance)
Germany		X	Financial incentives for physicians, patients and health insurers
The Netherlands	X	(X)	Financial incentives for primary care providers (in development)
Wales	X	X	Financial incentives for local service improvements/developments, GP quality standards and national targets within an overall national framework

X: in place; (X): in development.

health insurers to actively manage and co-ordinate chronic conditions. Most importantly, health insurers were given financial incentives to set up disease-management programmes for a number of chronic conditions. The tie-in between risk adjustment and the enrolment of patients in disease-management programmes in German social health insurance is unique. Health insurers receive higher risk-adjusted payments for patients who are enrolled in a disease-management programme. Enrolment for patients is voluntary; the disease-management programmes need to be certified by a regulatory agency. Evaluation and re-certification are mandatory. Health insurers face considerable financial incentives to set up as many disease-management programmes as possible as fast as possible, in order to attract as many chronically ill patients as possible. As a consequence, health insurers need to contract as many physicians as possible in order to convince patients to enrol – which they have done by providing considerable financial incentives.[8,30,31]

In 2007, more than 3.3 million patients were enrolled in disease-management programmes in Germany – about two-thirds of them in a disease-management programme for diabetes mellitus type 2.[23] Financial incentives for health insurers to continue disease-management programmes will change after the introduction of health-based risk adjustment in 2009. After that, health insurers will receive higher payments for chronically ill patients, even if they are not enrolled in a disease-management programme. As consequence, health insurers will have financial incentives to invest in other models of providing care for chronically ill patients as well.

The advantages of the top-down model – illustrated by the German example – are seemingly obvious: by providing considerable financial incentives to third-party payers and physicians it was possible to set up disease-management programmes rapidly and extensively on a national level. Moreover, physicians need to adhere to evidence-based guidelines in order to participate in disease-management programmes. This can be seen as an attempt to standardise care across the entire country and thereby reduce variation in the quality of care among regions. However, the disadvantages are evident as well. The introduction of disease-management programmes in Germany has not been based on evidence relating to the clinical and economic consequences of disease-management programmes. Moreover, little is known on whether physicians indeed adhere to evidence-based guidelines. Finally,

disease-management programmes, as they are set up at the moment, allow little flexibility at the local level to better accommodate the needs of the local population.

The bottom-up approach is illustrated by the Dutch example. In several regions, shared or integrated care models and disease-management programmes have been implemented in a slow and rather deliberate process. The consequences of these initiatives have been evaluated in some regions on a regular basis. The shift from shared care within secondary care to a disease-management programme in Maastricht, integrating primary and secondary care, for instance, was supported by a demand from GPs for the specialised nurse practitioners to expand their role. This demand was supported by evidence, since the shared care model was beneficial in terms of both process and outcomes.[3]

In Finland and Catalonia, the participation of all health professionals and the use of expert patients in the design of care delivery and tools for self-management, have been considered to be the main prerequisites for successful implementation of new practices in the management and co-ordination of chronic conditions.

While the implementation of shared care and disease-management programmes seems to have been successful regionally, the link towards an introduction of disease-management programmes on a national level is still missing in the Netherlands. One instrument to provide this link may be the creation of financial incentives for introducing disease-management programmes. More specifically, in the Netherlands an experiment for the introduction of disease-management programmes for diabetes has started in the primary care setting (lasting from 2006 to 2009). In this experiment, diabetes care groups were created. These groups negotiate, with health insurers, a fee for diabetes care (a certain amount per patient per year) in the primary care setting and what type of care has to be provided for that fee. The groups have to deliver care according to the Dutch guidelines for diabetes care. After the evaluation of this experiment, the Dutch government intends to introduce this new financial incentive on a national level, in order to provide financial incentives for the introduction of disease-management programmes – not only for diabetes, but for other chronic diseases as well. Moreover, national government is investing in disease-management initiatives and their evaluation. This implies that the bottom-up approach is now being taken forward with a top-down implementation strategy.

The advantages of the bottom-up approach of implementing new approaches to improve the management and co-ordination of chronic conditions are twofold: first, it is possible to develop this new model of providing health care based on an incremental approach and to adapt it to specific institutional, social and cultural circumstances. Second, by evaluating the process of implementation on a regular basis, it is possible to provide decision makers with hard evidence about the clinical and economic consequences of new models of providing health care for the chronically ill. One important disadvantage of the bottom-up approach is obvious. Regional experiments – even if they are successful – are not adopted automatically on a national level. The development of financial incentives for healthcare providers may provide the link between regional and national implementation. It is to be emphasised however, that all changes in practices are necessarily local, even if boosted by incentives. To support implementation of new practices, new tools for care delivery redesign, self-management support, information sharing and benchmarking are needed.

Conclusion

Healthcare systems in Europe face a number of problems, which have led to a variety of approaches to improve the management and co-ordination of chronic conditions. Inadequate co-ordination of care for chronic conditions between healthcare services seems to be a predominant issue – which is an important finding from the point of view of primary care. Other important problems include a considerable evidence gap, lack of self-management, variation in quality of care, lack of preventive care, increasing costs for chronic care, and inefficient use of resources.

In order to overcome these problems, several approaches to improve the management and co-ordination of chronic conditions have been developed in European healthcare systems. Although most of these approaches have not been explicitly based on Wagner's chronic care model,[16] they can be analysed within such a chronic care model framework. All approaches endeavour to improve self-management support for patients, develop clinical information systems and change the organisation of health care. Changes in the delivery system design, by establishing division of labour between health professionals and the development of decision support systems, are also important. The same is true for the link between healthcare services and community resources. Most importantly, integration between the six components of the chronic care model remains an important challenge for the future.

Implementation of new approaches to improve the management and co-ordination of chronic conditions is an important problem as well. Top-down approaches – national initiatives based on national regulation and

national funding – have one important advantage: it is possible to implement new approaches to improve the management and co-ordination of chronic conditions rapidly and extensively. Bottom-up approaches – based on local and regional initiatives – often struggle for sustainable funding but have a number of advantages as well: they can be developed based on an incremental approach and can be adapted to specific institutional, social and cultural circumstances.

Moreover, by robustly evaluating the process of implementation and its (cost-) effectiveness on a regular basis, it is possible to provide decision makers with hard evidence about the clinical and economic consequences of a new model of providing health care for the chronically ill. Otherwise, the insecurity about the (cost-) effectiveness of these approaches may dissuade policy makers from becoming active. The integration of bottom-up and top-down approaches, which is under way for example in the Netherlands and Wales, is an important challenge for the implementation of new models to improve the management and co-ordination of chronic conditions.

Our analysis has shown that the predominant mode of financing – social health insurance versus tax financing – does not seem to be a major factor for the development and implementation of new approaches to manage and co-ordinate chronic conditions. It can be argued that tax-based national health systems can use a more direct line of command to implement change in the organisation of health care more easily. However, as the German case shows, the appropriate design of financial incentives for health insurers and healthcare providers can result in a wide-scale implementation on a national level as well. In other countries (Finland, Catalonia, The Netherlands), the dissemination of local models to a regional and national level is based on national example projects, education of professionals, benchmarking, and, to a lesser extent, incentives.

Our analysis supports the notion that countries with a strong primary care system tend to develop more comprehensive models to manage and co-ordinate chronic conditions. In contrast, countries with a weak primary care system are still developing these models (Austria and Belgium) or – as in Germany – neglect changes in the design of delivery systems, particularly in primary care. Further research is warranted in order to make this finding more robust.

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REFERENCES

1 World Health Organization. *Innovative Care for Chronic Conditions: building blocks for action.* Geneva: World Health Organization, 2003. www.who.int/diabetesaction online/about/icccreport/en/index.html (accessed 8 December 2008).
2 Nolte E and McKee M. Caring for people with chronic conditions: an introduction. In: Nolte E and McKee M (eds) *Caring for People with Chronic Conditions. A health system perspective.* Berkshire: Open University Press, 2008.
3 Vrijhoef HJM, Spreeuwenberg C, Eijkelberg IMJG, Wolffenbuttel BHR and van Merode GG. Adoption of disease management model for diabetes in region of Maastricht. *BMJ* 2001;323:983–5.
4 Ouwens M, Wollersheim H, Hermens R, Hulscher M and Grol R. Integrated care programmes for chronically ill patients: a review of systematic reviews. *International Journal for Quality in Health Care* 2005;17:141–6.
5 Meeuwissen JAC, van der Feltz-Cornelis CM, van Marwijk HWJ, Rijnders PBM and Donker MCH. A stepped care programme for depression management: an uncontrolled pre-post study in primary and secondary care in The Netherlands. *International Journal of Integrated Care* 2008;8:e05.
6 Krumholz H, Currie P, Riegel B *et al.* A taxonomy for disease management: a scientific statement from the American Heart Association Disease Management Taxonomy Writing Group. *Circulation* 2006;114:1432–5.
7 McKee M and Nolte E. Responding to the challenge of chronic diseases: ideas from Europe. *Clinical Medicine* 2004;4:336–42.
8 Greß S, Focke A, Hessel F and Wasem J. Financial incentives for disease management programmes and integrated care in German social health insurance. *Health Policy* 2006;78:295–305.
9 Macinko J, Starfield B and Shi L. The contribution of primary care systems to health outcomes within Organization for Economic Cooperation and Development (OECD) countries, 1970–1998. *Health Services Research* 2003;38:831–65.
10 Reisig V and Wildner M. Primary prevention. In: Kirch W (ed) *Encyclopedia of Public Health.* Heidelberg: Springer, 2008.
11 Federaal Kenniscentrum voor de gezondheidszorg. De kwaliteit en de organisatie van type 2 diabeteszorg. *KCE Reports* 2006;27A.
12 Department of Health. *High Quality Care For All. NHS next stage review final report.* Norwich: The Stationery Office, 2008.
13 Advisory Council for the Concerted Action in Health Care. *Appropriateness and Efficiency. Volume III: overuse, underuse and misuse.* Bonn: Advisory Council for the Concerted Action in Health Care, 2001. www.svr-gesundheit.de/Gutachten/Gutacht01/Kurzf-engl01.pdf (accessed 8 December 2008).
14 Busse R. Disease management programs in Germany's statutory health insurance system. *Health Affairs* 2004; 23:56–67.

15 Letter on programmatic approach of chronic diseases by Minister of Health, Welfare and Sport. The Hague, 13 June 2008.
16 Wagner EH, Austin BT, Davis C *et al*. Improving chronic illness care: translating evidence into action. *Health Affairs* 2001;20:64–78.
17 Bodenheimer T, Wagner EH and Grumbach K. Improving primary care for patients with chronic illness. *JAMA* 2002;288:1775–9.
18 Zwar N, Harris M and Griffiths R *et al*. *A Systematic Review of Chronic Disease Management*. Sydney: Australian Primary Health Care Institute, 2006.
19 Bodenheimer T, Wagner EH and Grumbach K. Improving primary care for patients with chronic illness. The chronic care model, part 2. *JAMA* 2002;288:1909–14.
20 Nolte E and McKee M. Integration and chronic care: a review. In: Nolte E and McKee M (eds) *Caring for People with Chronic Conditions. A health system perspective*. Berkshire: Open University Press, 2008.
21 Kuhlmann E. *Modernising Health Care: reinventing professions, the state and the public*. Bristol: Policy Press, 2006.
22 Szecsenyi J, Rosemann T, Joos S, Peters-Klimm F and Miksch A. German diabetes disease management programs are appropriate for restructuring care according to the Chronic Care Model: an evaluation with the Patient Assessment of Chronic Illness Care instrument. *Diabetes Care* 2008;31:1150–4.
23 Ullrich W, Marschall U and Graf C. Versorgungsmerkmale des Diabetes Mellitus in Disease Management Programmen. Diabetes. *Stoffwechsel und Herz* 2007;16:407–14.
24 van Lente EJ, Willenborg P and Egger B. Auswirkungen der Disease-Management-Programme auf die Versorgung chronisch kranker Patienten in Deutschland – eine Zwischenbilanz. *Gesundheits und Sozialpolitik* 2008;3:151–9.
25 Steuten L, Palmer S, Vrijhoef B *et al*. Cost-utility of a disease management program for patients with asthma. *International Journal of Technology Assessment in Health Care* 2007;23:184–91.
26 Steuten L, Vrijhoef B, van Merode F, Weeseling G-J and Spreeuwenberg C. Evaluation of a regional disease management programme for patients with asthma or chronic obstructive pulmonary disease. *International Journal for Quality in Health Care* 2006;18(6):429–36.
27 Welsh Assembly Government. *Improving Health and the Management of Chronic Conditions in Wales: an integrated model and framework for action*. Cardiff: Welsh Assembly Government, 2007.
28 Welsh Assembly Government. *Designed to Improve Health and the Management of Chronic Conditions in Wales. Service Improvement Plan 2008–2011*. Cardiff: Welsh Assembly Government, 2008.
29 Redsell S, Jackson C, Stroke T, Hastings A and Baker R. Patient expectations of 'first-contact care' consultations with nurses and general practitioners. *Quality in Primary Care* 2007;15:5–10.
30 Stock S, Redaelli M and Lauterbach KW. Population-based disease management in the German statutory health insurance: implementation and preliminary results. *Disease Management and Health Outcomes* 2006;14:5–12.
31 Stock SAK, Redaelli M and Lauterbach KW. Disease management and health care reforms in Germany – does more competition lead to less solidarity? *Health Policy* 2007;80:86–96.

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CONFLICTS OF INTEREST

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