

Chapter 5

Health sector innovation and partnership

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Health care systems in developed countries face a series of sustained structural challenges over the next decade. The demographic and technological dimensions of these systemic pressures are well documented. A third structural pressure is the long-term fundamental shift of wealth creation away from developed nations toward the emerging economies.

This chapter explores key organisational implications for health care systems that unfold from these three structural challenges. It emphasises that innovation in medicine requires a complex series of knowledge-based transformations, enabling basic research in a wide range of disciplines to move into clinical application and then to full scale diffusion and delivery. The chapter also assesses a number of new organisational initiatives that health care systems are taking to better serve their growing numbers of chronically ill patients.

Introduction

Health care systems in developed countries face a series of sustained structural challenges over the next decade. The demographic and technological dimensions of these systemic pressures are well documented (Comas-Herrera and Wittenberg, 2003; Eckholm, 2010). A third structural pressure is the long-term fundamental shift of wealth creation away from developed nations toward the emerging economies. This global economic shift has already increased fiscal challenges for health sector policy making, and may well present the most serious of the structural challenges.

This chapter explores key organisational implications for health care systems that unfold from these three structural challenges. After briefly reviewing the changed global economic context and the likely consequences it holds for future funding of health care services, we summarise major organisational responses by European health systems to date taken in response to this new environment. The chapter then explores strategies for implementing further organisational innovation and partnership in the health sector, and considers how new types of co-operation between actors in the systems can be helpful in improving clinical, organisational and financial outcomes in this changed structural climate. Finally, the chapter considers innovative examples of service delivery from the Netherlands, Sweden and the United States that suggest the direction that future health system development can be expected to take.

The changing economic context

Health systems are highly dependent on the broader economic context within which they operate. The personnel, institutions, and finances of health systems necessarily reflect the structural characteristics of the national economy they are embedded within (Granovetter, 1985; Saltman 1997). In particular, although they comprise one of the largest industrial sectors in developed economies, their sources of operating funds are not independently generated from customers, based on the volume and quality of their production. Instead, as a social welfare rather than a private industrial sector of European economies, health systems rely on predominantly publicly raised, regulated, and expended funds (either tax based or social health insurance based). In turn, this public sector reliance tightly ties the range and quality of services offered to the core financial carrying capacity of the overall national economy, which provides the financial foundation for all public sector revenues. Consequently, as is now well known, higher levels of per capita income are closely associated with higher levels of health care expenditure (Maxwell, 1981). Conversely, as

became apparent in central and eastern Europe with the collapse in 1991 of the Soviet Union, rapidly falling economic productivity in the national economy as a whole is directly associated with a fall in the quantity and quality of publicly-funded health services (Preker *et al.*, 2002) and with a substantial rise in private and grey market payment for care (Lewis, 2002).

Falling rates of growth in developed countries

The centrality of the broader economic context to available health system revenues, and previous experience with falling public sector revenues in central and eastern Europe during the early 1990s, both highlight the potential risk for health systems presented by current fiscal and economic problems in western Europe, the United States, and also Japan. High levels of sovereign debt and/or unfunded financial obligations, producing slowing or declining levels of national economic growth, can be expected in turn to result in slower growth or even absolute reductions in publicly-funded health care expenditure. Ongoing European experience in Greece, Ireland, Portugal, Iceland, and Spain, as well as the drastic spending reductions necessary to balance public sector budgets in the United States, illustrate the seriousness of this second possible outcome.

Recent macroeconomic analysis confirms that the last two decades have witnessed a strong downward shift in the relative economic growth in most developed western countries (King, 2010). The 2008 economic crisis has made visible an ongoing re-distribution of global economic production away from western countries, and toward China and the Asian Rim. This continuing global economic reflects the effects of the Third Industrial Revolution, which began with the invention of the first commercially viable transistor in 1951 by William Shockley in – ironically – the United States. A key consequence of the ensuing, electronic computer-based revolution has been to transform the character, content, and flow of information, facilitating new forms of globalised economic competition, and encouraging substantial manufacturing and similar wealth-creating industrial activities to migrate away from developed toward developing economies (Wolf, 2004).

The implications of this computer-based revolution for developed western economies have been complex. While knowledge-based industries have grown, many traditional industrial activities have been transferred to emerging economies (Wolf, 2011). Core industrial activities that remain in western economies have increasingly been sold off to developing country companies (for example Volvo in Sweden sold to China 2010; Arcelor in France sold to Mittal of India). Natural resource suppliers in Africa and South America that are essential to maintain a manufacturing base are increasingly being bought by China and India, denying sources and raising the price of remaining supplies to western manufacturing companies

(*Financial Times*, 26-27 April 2011). As a consequence of slowing growth and reduced industrial production, long-term unemployment rates, especially among less well educated workers, rose substantially in the early 1990s and have stayed high (King, 2010). Long-term aggregate economic growth rates in developed countries – with some near-term exceptions – have slowed substantially (King, 2010).

Potential implications of economic decline for health systems

For health policy making, this shifting global economic picture generates three linked fiscal dilemmas. First, as noted above, countries with high sovereign debt and/or low growth rates will likely have increasing difficulty providing existing levels of public funds for health care services. Second, in developed countries that rely on national or regional governments to provide most or all funding for the health system and/or for specific health care programmes, the funding entity – the national or regional government – may no longer have the necessary funds to provide the expected volume, quality or range of services. Third, in countries that currently have good rates of economic growth (Germany, Sweden), pressures to maintain economic growth rates and to keep exports competitive internationally may reduce the government's ability to raise domestic taxes/social insurance contributions in order to provide needed additional funds for health care services.

The first two dilemmas are of crucial importance in countries where citizens in the past had trusted – or at a minimum expected – their government to provide adequate funds for health care. These citizens may now find that, regardless of political commitments, their governments may no longer have the financial capacity to maintain existing levels of services, and likely will not have the financial capacity to pay for additional, expanded, or new technologically-based services. In Greece, there are reports that the national government has greatly reduced funds available to public hospitals to pay suppliers of pharmaceuticals and medical equipment, endangering quality of care (Jack and Hope, 2011). In Spain, some of the regional governments that provide health care services are severely indebted, and others are believed to have hidden off-budget sizeable unpaid health sector obligations (Ross-Thomas, 2011). Similar concerns about fiscal solvency and the inability of the national government to meet its health-related financial obligations lie at the heart of the increasingly heated debate in the United States about the need to fundamentally re-structure the federally-funded Medicare programme for the elderly, which currently has USD 24.6 trillion (thousand billions) of unfunded liabilities (Annual Report of Medicare Trustees, 2011). Other peripheral euro-zone countries (Portugal, Ireland), central European countries (Latvia), and also England,

where there are “unprecedented plans to cut public health spending in real term to reduce public sector debt/borrowing” (Appleby, 2011), all face severe fiscal stress that could potentially reduce citizen trust in the capability and eventually the legitimacy of publicly financed health services.

Social implications of computer revolution for health systems

Further altering the policy making environment, the growth of one key dimension of the computer revolution – the worldwide web – and its migration to multiple portable and hand-held devices, has also altered the social context within which health systems function. Technology-savvy “digital natives” among younger populations in western countries are increasingly disinclined to join or support traditional social institutions (churches, charitable associations, social organisations) in favour of personally-focused on-line social networks and other computer rather than civil society oriented activities (Bennett, 1998). These younger citizens increasingly choose to meet on line, not inside existing social institutions. This different value set creates additional challenges to national health policy makers seeking to sustain collective institution-based funding models for welfare state services such as health care when the practical effects of this changed social behaviour is combined with an era of reduced economic growth.

New emphasis on individual responsibility in health care

In response to these social and economic challenges, several European researchers have begun to conceptualise a different set of philosophical approaches to the design of health care funding and service delivery. They seek new organisational mechanisms to integrate individual responsibility for some defined subset of health-related activities and, in some cases, individual responsibility for funding those services, into what would remain overall as a socially responsible, collectively-funded health system (Tinghogg *et al.*, 2010; Schmidt, 2007).

Additionally, senior national policy makers in countries with extensive welfare states have begun to worry publicly about the sustainability of their present publicly-funded and civil servant-based health care arrangements. As one example, a senior Norwegian health official stated in a 2009 public meeting that “the present system of complete public funding of health care in Norway is unsustainable” (Bjorn-Inge Larsen, Norway, 2009). At the same meeting, a senior advisor to the Finnish Minister of Health – Taina Mantyranta – concluded that in the future “citizens will have duties as well as rights” and that there will have to be a new balance between collective and individual responsibility for health care services (Ministerial Advisor,

Finland, 2009). Triggered, then, by the unrelenting growth of globalisation-generated financial cross-pressures, in combination with unfavourable demographic trends and the rapid expansion of new health technology as well as expensive bio-engineered and (soon) genetically customised pharmacology, this national political search for re-structured service delivery and, potentially, funding arrangements, perhaps in combination with a new social contract between the individual citizen and the state, is likely to grow more intense over the next years.

Health sector responses to the changing economic context

The financial pressure that European health systems face began in the early 1980s. The initial impact of the demographic changes, and the aging of the population, began to appear in the early 1990s, as did the increasing pace of development in medical technology and in pharmaceuticals.

Responding to these pressures, systematic policy efforts to improve health sector efficiency date from the late 1980s (Saltman and von Otter, 1992). The introduction of patient choice for maternity and primary health centers in Stockholm County in Sweden in January 1988, as well as the April 1991 introduction in the United Kingdom of the first self-governing hospital trusts and a public sector purchaser-provider split, signaled the beginning of two decades of provider-side organisational re-structuring in tax-funded health systems. Tax-funded systems also began efforts to shift hospital budgets to primary care actors (private GPs in the United Kingdom, sub-county districts in Sweden, municipal health and social boards in Finland), as a way both to strengthen the role of primary as against hospital care and also to stimulate competition among public hospitals for contracts and/or patient referrals. In Social Health Insurance (SHI) systems, the March 1987 publication in the Netherlands of the Dekker report, followed by the 1992 structural reforms agreed in Germany, initiated a similarly long-term effort to introduce more market-style competition among not-for-profit sickness funds on the funding side of these SHI health systems.

Other efficiency-oriented measures have been adopted, especially in the more institutionally rigid tax-funded health systems. Traditional hard boundaries between public and private sector institutions began to melt (Saltman, 2003). Diversity of provider (public, private not-for-profit, private co-operative, private for-profit, international) was encouraged by reducing provider payment regulations. Longstanding clinical and hospital clinic boundaries between medical specialties and, importantly, between primary and specialist medicine also began to melt, replaced by a variety of integrated care and disease management strategies. Patient choice, integral to many of the competitive re-structuring strategies, grew in importance,

creating more individually oriented, consumerist pressure in what has been heretofore been predominantly collectivist health systems (true for both tax-funded and SHI systems alike) (Coulter and Magee, 2003). Consolidation of local health-related public sector governments have occurred (Norway, Denmark, Finland, Sweden) (Magnussen *et al.*, 2009), as well as re-centralisation of fiscal and key policy dimensions to the national government (Norway, Denmark, Ireland) (Saltman, 2008). Similar consolidation of private sector funding organisations (Netherlands, Germany) also has taken place (Kutzin, 2010). Pharmaceutical usage (inpatient and outpatient) has been constrained through a diverse range of financial and efficacy-based restrictions (Mossialos *et al.*, 2004).

Beyond these organisational changes, a wide range of incentive-based financial mechanisms were also adopted. These included (depending on the country) introducing case-based payment (particularly adapted DRG or DRG-like models), linking different public budgets to stimulate cross-budget efficiencies (for example the 1992 ADEL Reform in Sweden), a wide number of different co-payment strategies (Robinson, 2002), new co-insurance strategies (Saltman and DuBois, 2005), and, most recently, efforts to develop and implement performance measurement and pay-for-performance, especially for medical staff (Smith *et al.*, 2009).

All these efficiency-oriented measures have sought to improve the access and quality of existing health systems while reducing the rate of growth of overall health system expenditures. In some countries (Germany), the rate of increase in health sector funding has been explicitly tied to the average rate of growth of wages, as another device to reduce the growth of health sector expenditures (Carrera *et al.*, 2008).

Innovation in the health sector

As the above reform strategies demonstrate, European policy makers have already introduced a considerable range of institutional reforms in response to the financial and organisational pressures that their health systems confront. As the changing global economy generates further fiscal and social pressures, additional reform approaches will be necessary. This section explores recent thinking about new conceptual strategies upon which to develop future health care institutions and relationships. The conceptual framework is derived from recent thinking about how to combine “best practices” clinically with more efficient organisational arrangements managerially. The core observation, drawn from experience in private sector industry, is that innovation necessarily must focus on and harness the central driving forces in the health sector that can produce high quality outcomes.

A complex knowledge system

Viewed organisationally, health services can be characterised as modern society’s most complex knowledge system. In terms of the complexity of actors, range of different “products” and activities, and the multiple ways that services need to meet expectations from patients as well as serve the broader population, few other economic sectors compare. There is, further, the reality that many characteristics of most countries’ health services are of substantial interest to elected politicians and senior civil servants, and thus health-related decisions typically must reflect political as well as health service logics (Calltorp and Maathz, 2009).

A further aspect of this “knowledge system” perspective is the rapid pace of innovation linked to basic biomedical research. Present-day biomedical research extends into a number of neighbouring arenas (often called life sciences) and interacts with technological innovation in a multidisciplinary manner. Further, this is an innovation model in which biomedical laboratory research must be transformed into clinical innovation, which in turn requires biomedical innovation to be incorporated into the behaviour of key actors within medical schools and health provider institutions. There are currently concerns that this model may be weakening due to changes in the incentives of the different participating actors. From the opposite side of the policy spectrum, there also are concerns that the existing biomedical research system is too powerful, establishing too rapid a pace of innovation that is too costly for publicly-funded health systems to support (technology assessment has traditionally been an attempt to ameliorate this problem).

The central question about how to prioritise and steer biomedical innovations towards more valuable and less costly interventions has recently been discussed by Victor Fuchs (Fuchs, 2010). Fuchs underlines the distinction between three types of biomedical interventions, regarding their effects:

- The effect on quality of care (reductions in mortality and morbidity rates, relief of pain and improvements of other types of care that patients desire);
- The effect on the cost of care (the resources used to develop it and provide it to patients, relative to those used for current practice);
- The effect on the value of care (changes in quality relative to change in cost).

Fuchs, like other economists, worries that cost is often viewed as less important than quality, meaning that value in this specific sense is not

prioritised. Of course, there are examples of innovations that result in unambiguously positive value such as antibiotics and diuretics. However many clinical innovations tend to increase both quality of care and cost of care. Following along from, among others, Alan Williams' concept of QUALYS (Williams, 1994) and Lewis Thomas' notions of "half-way technologies" (Thomas, 1995), Fuchs calls for a renewed emphasis on value rather than quality alone.

Overall, the key point is that innovation in medicine requires a complex series of connections, enabling basic research to move into clinical applications and then to full scale diffusion and delivery. The model for diffusion of medical technologies is often linked to Rogers' general model of diffusion of innovation (Rogers, 1995), with early attempts around technology assessment in medicine being first shaped in the United States (Banta *et al.*, 1981).

Innovation in service delivery – a weaker process

Some observers argue that a weak point in the system of biomedical innovation remains how biomedical outputs are adopted into practice. A particular concern is the rigidity of current-day delivery systems and their inability to adapt existing organisational arrangements to fit new needs and procedures.

The delivery system has to match, on the one hand, the possibilities that are developed from biomedical research, however it also has to adapt to changes on the patient or consumer side, particularly changing need due to demography and the age composition of the population, changing disease patterns, and changing attitudes and requests for specific services. This becomes a formidable task.

The architecture of the health system forms the basic framework for understanding change and the factors that facilitate and enforce change as well as those that hinder it. The so-called "iron triangle" (Reinhardt, 2001) defines dimensions that can be linked to most health care system to identify ways to influence the process of innovation: *who pays* (structure of financing in the system), *who delivers* (the organisation and structure of payers, uniformity or multiplicity, private/public, etc.) and *who judges quality* (actors and measures to define and measure outcome and quality). To steer a health systems requires handling these contradictory perspectives, balancing strongly conflicting forces and (at least on the surface) conflicting goals as well.

The "typology" of different health systems also usually includes dimensions of how they are organised on macro, meso- and micro-levels. Generally depending on how well integrated they are (*e.g.* how well

connected the three levels are and what “tools” are developed to enforce policies throughout the system, *e.g.* to “integrate” between the levels) possibilities are shaped to handle innovation, balancing costs and outcome and reaching basic goals including patient satisfaction, safety and equity.

Modes of management have been changing over time – as reflected in the earlier sections of this chapter. Health systems that have had a uniform, integrated and tax financed structure have been moving towards more flexible methods of functioning (purchaser-provider models, etc.). On the other side of the spectrum, strongly disaggregated systems (such as the United States) have recently shown some tendencies to develop stronger integration between different levels of the system, as important management functions aimed at reaching overall goals seem to benefit from stronger integration (see example below of Intermountain health care).

Of great importance for the effort to speed up organisational innovation in different health systems is the development of techniques to measure outcomes, results, and patient satisfaction, as well as new techniques to link those measurements to the costs that the system incurs for different activities. This new clinical data makes it possible to balance costs and medical outcomes overall, as well as to link those parameters to organisation, structure and management of different types of health service providers.

Taken together, all of these technology and innovation tied areas of research and development form the basis for what could be called knowledge informed – or more knowledge based – health management. This evolution can be understood as representing an organisational management parallel to the evolution of “evidence-based medicine” for clinical practice (Calltorp and Maathz, 2009). While this area of expertise has yet to be fully developed, it has the potential to create health systems that can better reach ambitious new organisational goals by mobilising new knowledge components and linking them to practice.

The evaluation and quality agenda

A central operational element of this new knowledge-based framework for managing health care organisations is the monitoring and evaluation of service quality. There are four general “movements” or main lines of research that, together, form the basis for stronger evaluation of medical care services:

- Technology assessment (TA): first developed in the United States by the federal government’s Office of Technology Assessment in the 1980s, now active internationally in a series of strong research

networks aimed at defining the value of medical “procedures” (Garido *et al.*, 2008). A new variant in the United States now focuses on “comparative effectiveness”, where the basic biomedical value component builds on technology assessment (TA) principles, however utilising a comparison of alternative models for organising and delivery. This can be viewed as a response to criticism of TA’s earlier slowness to address innovation and to change daily medical practice;

- Outcomes research: aimed at capturing and measuring clinical and patient outcomes from medical procedures (cites). This development is closely linked to the advancement of measuring techniques regarding health outcome in a wide sense, both regarding length of life and quality of life (Institute of Medicine, 2005);
- Quality assessment/quality assurance/quality improvement: principally the agenda developed to measure and assess different parts of the care process, and to understand how to link its different elements together to produce the best possible result. Thinking here reflects areas of process development in other societal areas like “lean techniques” developed for industrial production. Also techniques like “process re-engineering” and other similar production methods are moving into medicine (Institute of Medicine, 2001);
- Patient safety: recently emerged in the first decade of the 2000s as a critical aspect of delivering efficient and effective medical care. Rapidly growing efforts are being made to reduce medical errors (from wrong-site surgery to incorrect medicines) in order to minimise both the human and also the financial consequences of poor quality medical care (Kohn *et al.*, 2000).

The “evidence movement”/evidence-based practice/evidence-informed policy and management

The search for evidence-based medical practice has become a popular “concept” in medicine (relating to medical professional work) reflecting the four areas of quality and evaluation-related activity just sketched above. The general challenge is implementation – getting scientifically-based knowledge into practice. This in turn has given rise to focusing on implementation and changing professional practice protocols. Powerful international movements developing the scientific basis of medical interventions, like the Cochrane Collaboration, link together a range of national attempts to build guidelines and protocols (UK NICE, Sweden Socialstyrelsen-SBU). However, as implied earlier, debate has arisen in some quarters as to whether this approach may in

some cases lead to a slower pace of medical innovation at the micro/practice level. The parallel concept to “evidence-based medicine” – “knowledge-informed management” – seeks to address some of these issues and, by building on other relevant areas of research knowledge and specific informed knowledge about health system structure and organisation, define appropriate techniques for management and steering. The key challenge is to use appropriate tools to integrate the many dimensions (actors) that build a modern health system – and to let them work on incentives, yet to co-work for high patient outcome and satisfaction. New sets of “tools” are developing for this, which is the meaning of evidence informed health policy and management. Since multiple chronic conditions make up at least half of the care volume in most industrialised countries – the application of these new principles are of key concern for handling the challenges in front of us (Calltorp and Maathz, 2009).

Organisational responses to increasing numbers of patients with multiple chronic conditions

The combination of a shifting structural context for health policy making, in combination with a growing understanding of the knowledge-based processes that stimulate innovation in the delivery of health services, have stimulated the emergence in a number of health systems of a variety of new organisational partnerships and configurations. As would be expected, the specific mechanisms may differ in order to fit the particular organisational and financial criteria of individual health care systems. However a general pattern can be discerned which provides important indications of the types of new organisational arrangements that the combined impact of current structural pressures (demographic, technological, and economic) in combination with greatly increased numbers of patients with multiple chronic conditions will require from health systems generally.

This section examines new organisational configurations emerging in the Netherlands and Sweden, as well as one example of innovative cross-sector arrangements in the United States. All three country examples provide a practical lens through which to view the potential responses of health systems in developed countries to the structural pressures they confront, and to assess the ability to date of advanced health systems to adopt new knowledge-based organisational arrangements.

Organisational challenges and responses in the Netherlands social health insurance-based system

The Netherlands introduced a new structural and financial architecture for its health care system in 2006 (Schafer *et al.*, 2010). Responsibility for purchasing private health insurance was shifted to the individual, however collective payment of a risk-adjusted premium was also incorporated to ensure that sicker individuals, and those with chronic conditions, would be properly covered (van de Ven, 2011). This structural reform has generated considerable organisational innovation, particularly in such partnership forms as mergers and acquisitions, and also existing companies expanding and/or re-designing their business models in order to provide the complex mix of services that elderly patients with multiple chronic conditions require, and for which the newly re-designed financing system would now pay.

Recent Dutch experience suggests both the strengths and pitfalls of organisational innovation and partnership, especially as regards treating patients with multiple chronic conditions. Moreover, since this new Dutch health system structure encourages a wide range of differing organisational strategies, there are a considerable number of innovative Dutch examples that are worthy of discussion.

Growing demand for integrated services

Facilitated by demand that predominantly was single-morbidity driven, health systems over the years have developed a strong division of labour between providers as well as professionals. The resulting segmentation of organisational and professional markets is strongly institutionalised in public and private regulation, diverse payment structures and support systems (information systems, quality assurance systems, terms of labour conditions, etc) and a sophisticated professional status stratification. Within this context GPs, general surgeons and internists have a generalist outlook that facilitates their – predominantly *ad hoc*, case-specific – co-ordinating role on the operational level.

Emerging concern with multimorbidity has created new requirements to co-ordinate and integrate specialised health services, inside and between provider organisations. Diagnosis and treatment of multimorbidity requires complex health service processes, offered by a diversity of medical, paramedical and nursing professionals in different working environments. Frequently, this is not enough. Multimorbidity not only affects health status, it often brings needs in other areas such as mobility, housing, nutrition, social relations and income. Market-oriented health service providers respond to such needs by offering “full service” solutions that also cover social care, transportation, adaptation of the living environment etc. To meet these new

client needs in an effective and efficient way, such solutions require planned interdisciplinary, interorganisational and intersectoral integration. Conventional co-ordination routines do not provide them as they refer back to an earlier, less complex supply reality.

Changing the supply of services

In the Netherlands, provider responses to the growing need for dealing with multiple morbidities can be observed in long-term care, primary care as well as hospital care. Often, but not in all cases these responses are supported by governmental and health insurer policies.

Long-term care

In long-term care, providers respond by stretching their portfolio of services. They prefer mergers with complementary providers rather than developing additional services on their own. As a result, mergers between complementary service providers have been prominent over the last decade. Stand alone long-term care organisations are rare now in the Netherlands. Most nursing homes, home care organisations, homes for the elderly and protected housing centers merged together into nursing and caring organisations. In several cases the new organisations diversified beyond care for the elderly, running portfolio's that also cover social welfare services, care for mentally disabled, psychiatric care and primary care. In this development, nursing home boards are in the lead, reflecting their core position within the long-term care sector.

Cordaan in Amsterdam is an example of this kind of full-service provider. It is a regional organisation that offers nursing home care, care for the elderly in independent living situations, homes for the elderly, household support, social welfare, care for mentally disabled, and protected living and day activities for psychiatric patients. These services are mainly paid for by the national public long-term care insurance (AWBZ). Social support and welfare services are responsibilities of Dutch local governments and are contracted by the city of Amsterdam.

Cordaan also operates in primary health care, by offering its originally intramural medical and paramedical capacities to the larger public. These professional services (nursing home medicine, physiotherapy, ergo therapy, music therapy, speech therapy, dieticians, etc.) in primary care are contracted by health insurers. They are covered by the acute care insurance (Zorg Verzekeringwet, ZVW) or by the supplementary care insurance. Other services are delivered on a private payment basis. In this way Cordaan runs a multisectoral business model, combining a multisectoral health and social services portfolio with a diversified set of payers.

Cordaan and other multisectoral long-term care providers have thus institutionalised the structural conditions necessary to realise full service concepts of care. Crucially, however, this organisational level of integration does not automatically result in integrated service delivery on the process level. Therefore, these providers also have to invest considerable resources in business process redesign, seeking to construct robust integrated care programmes and practices.

The obstacles to achieving this process-focused innovation are substantial. First there is professional resistance, as professionals are being asked to give up their familiar role design and control. In the integrated care programming format, the professional is simply one supplier to processes designed and controlled by a third party in the organisation. For professionals, it is difficult to accept that need assessment/triage is done elsewhere and that they are asked only to solve a pre-specified problem/situation as part of a larger process that they did not design, do not oversee and do not control. In the new, integrated process approaches, the professional does not deal with the complex process as a whole but only with a specific sub process. This runs counter to traditional and deeply-rooted professional values of overseeing the entire clinical care process, designing and adapting it on an individual case basis.

A second obstacle is that an integrated process-based response to multimorbidity is heavily dependent on an integrated information system. However differences in IT infrastructure typically create technical alignment problems inside and between organisations that aim for integrated processes. A related concern is cultural resistance, since on the departmental level in an organisation everybody tends to master and protect existing working routines (Crozier, 1971). Moreover, the strong orientation of professionals and managers toward their own domain makes it difficult to develop an attitude of “open book” sharing of information.

The development of shared standards for primary and support processes is a basic technical requirement for process integration within and between health organisations. This standardisation is something many health providers invest in by now. In the long term, this will result in better integrated organisations, offering integrated supply chain processes. Here too, solutions are available on the technical level, however on a cultural level effectively integrated service processes require managers and professionals to think and plan in network terms, with network partners (*e.g.* organisational parts) that are convinced of their complementary role in complex integrated chains of care. They must have a notion of interdependency and a willingness to work for added value for the end-user, the client. Progress is partly blocked by cultural inability of professionals to overcome their almost exclusive focus on their own clinical outcomes. In a

parallel way, managers have difficulties overcoming the boundaries of their own organisations, as their supervisory boards hold them accountable for organisational results and not for results in a joint integrated care network.

In addition to professional, informational, and organisational culture issues, progress is also blocked by funding systems that do not cover co-ordination costs in the supply chain. In manufacturing industries, an upstream supplier in a business chain can deliver services to a downstream intermediary who adds value and subsequently delivers his services to the final user. The final user pays money to the intermediary who in turn pays the upstream supplier. This facilitates chain integration as financial incentives are part of the relations in the chain. However, in health care chains there is often no transfer of money from one provider to the next one in the chain. Instead, each separate organisation is paid independently by the funders.

In the Netherlands, health insurers are currently experimenting with new approaches to overcome this situation. The long-term health insurance system in the Netherlands (AWBZ) has recently changed its payment arrangements from budgets to output-based payment. For this purpose, a classification of ten output categories (“products”) has been developed, based on intensity of care (“Zorg Zwaarte Programma’s”, care intensity programmes). Providers agree after the need assessment with the client on a care plan and get paid according to the product that resulted from the need assessment. This switch to output pricing, based on agreed integrated care plans, is a huge stimulus for long-term care providers to redesign their operations. At the same time, as price pressure grows, there is a strong incentive for providers to design integrated processes to realise efficiency gains. Basically, supply chain theory here promises improvement of service quality (in terms of less mistakes, high response times, etc) combined with efficiency gains (because of process simplification, optimal planned use of human resources in the processes, etc). To realise these gains, a health services planning system, a human resource planning system, a work flow system and a dynamic client/patient file has to be available and to be integrated. Long-term care providers in the Netherlands therefore are investing considerable resources in this kind of planning systems at the moment.

Integrated care at the neighbourhood level

The Dutch government seeks to keep elderly as long as possible in their local living environment. Two conditions are seen as crucial to realise this: a high level of social integration of elderly in their neighbourhoods and provision of easy-access integrated care and welfare for them. Currently twelve neighbourhood pilot projects are being run, distributed across the

country, bringing together health insurers, local authorities, long-term care providers, welfare organisations and social housing associations. The starting point is to map client needs and then to design integrated health and welfare services, using a supply chain format that can be adapted to local circumstances in a flexible way.

Several practical obstacles exist in building effective and efficient supply chains. It is difficult to align funding formats of health insurers and local authorities. Insurers deal with entitlements, local authorities with subsidies. And both work under strong budgetary pressures that create incentives to roll off costs onto the other. In commissioning services from providers, they have different financial and quality-control routines that are difficult to align as well. Also there are different time horizons: local authorities deal with elections every four years, insurers re-set their premiums every year, social housing associations combine long-term investment periods with annual adaptations of rent. A major non-financial obstacle is the existing governance structure. Supervisory boards hold managers accountable for results of their organisation and not for supply chain results that are shared with others.

Additional obstacles are more cultural in nature. Supply chains require a high level understanding of interorganisational dependencies and collaboration. These requirements challenge traditional routines of protecting organisational autonomy. They require sharing of business information and acceptance that fruits of integrated services are not equally distributed over the network participants.

Finally, integrated supply chains at the neighbourhood level create tensions with formal policy rules of competition in the health and social welfare markets. In regional or larger markets, providers can participate in supply chains that compete with other chains. Neighbourhood markets however are very small and splitting them over competing chains does not contribute to the policy goal of strengthening local social infrastructure. Moreover, Dutch local authorities and health insurers have experienced that their efforts to introduce competition in long-term care and welfare markets frequently resulted in the breakdown of locally-based providers – damaging major pillars of their local social infrastructure instead of strengthening them.

Primary care

Organisational responses to multimorbidity are booming in primary care. GPs are under pressure as hospitals shorten their length of stay, which results in additional demand for GP home visits. GPs are also under pressure as psychiatric hospitals and mental health institutions seek to integrate their

clients in the local community. These clients subscribe to a GP practice in a local area (in the Netherlands, everyone has a fixed relationship with a GP practice in one's neighbourhood). Thus GP's are confronted with multimorbidity of an aging client population, but also with a growing frequency of somatic and psychiatric problems. The range of competencies required to handle these problems on a high professional level is such that GPs in the Netherlands look for specialised support.

In the field of multimorbidity with psychiatric problems, the government and health insurers support partnerships between psychiatric care and GP practices. The organisational format is to attach nurse practitioners and other professionals, based in psychiatric institutions, to GP practices. The government and insurers also follow a policy to upscale GP practices. They do this by increasing technical requirements for contracting, like telephone response time, physical accessibility to the practice, administrative procedures, etc. The requirements are such that it gradually becomes difficult for GP's to meet them in a solo practice. In addition, GPs are only allowed to compete for contracts with insurers on transmural DBCs for diabetes, COPD, chronic heart failure and CVA if they meet strict professional and administrative conditions. Responding to this requirement, the GPs group together into regional co-operative structures and upscale their group practices.

These upscaled structures enable GP practices to become planners and controllers of integrated primary care services. The growing scale of group practices facilitates diversification of the GP portfolio by using nurse practitioners and attached workers from psychiatric care providers. Gradually hospitals become interested to place out-patient activities of their specialists in GP practices, as this can help secure referrals to the hospital. Somewhat conversely, some large scale group practices start to grow in the direction of community health centers, by attracting paramedical professionals and offering a local home for home care organisations.

The integrating role of GP's in primary care is reinforced by changes in the reimbursement for the treatment of important groups of chronic illness. The so-called transmural DRG's (in Dutch: DBC's, *Diagnose Behandel Combinaties*) that have been introduced in the Netherlands to cover the costs of treatment chains for diabetes, chronic heart failure, COPD and CVA, are instruments that create a payment situation that comes close to the typical industrial situation where services go down the chain and money goes up. Health insurers can contract GP's for the overall treatment process of patients in these categories. The GP receives the money and can subcontract other suppliers to the treatment process chain. So, for the diabetes DBC, GPs receive money to run a pre-specified process that includes – besides

their own activities – a check by an eye specialist, consultation by a dietician, consultation by an internist, and so on.

The necessity to adapt to a complex new environment places severe strains on GPs who lack basic organisational and financial skills to run their practice as an integrated health business. While there is a booming regional GP organisation in Zoetermeer, for example, a regional GP health center in Delft has become insolvent due to inexperience in operating a complex organisation in a competitive environment.

The changing environment in primary care generates interest from private investors and health insurers. Arts&Zorg (www.artsenzorg.nl) is an example. This company have established ten health centers, mainly in the region around The Hague, that offer a GP practice, a pharmacy, physiotherapy, psychological consultation and dieticians.

There is a growing group of GP's that do not want to carry the organisational and administrative burden themselves and also a growing number who want to work part time. In the Netherlands, the majority of new GPs are women, who for family reasons often prefer not to work full time and are not willing to do complex organisational management. Arts en Zorg offers them a sophisticated business model for health centers that fits their professional and private demands.

In the northern part of the Netherlands, health insurer Menzis also invests in primary care centers, together with a private investor, under the name “Zorgpunt” (care point). This joint venture has 28 centers and 155 000 patients.

Both Zorgpunt and Arts&Zorg see their investment as something that will be profitable in the long run. At this moment, they aim at value creation for patients by co-ordination and integration of services present within the center. The next step is to develop integrated care processes funded by the integrated DBC's for diabetes etc. Here again, they see opportunities for value creation, for patients as well as for the company.

Hospitals

Dutch hospitals concentrate on treatment of acute patients, leaving integrated complex care to nursing homes and home care organisations. However, elderly that require complex care can only be discharged after a place in a nursing home or home care capacity is secured, which leads to delays (bed blockers). For a Dutch hospital, these patients are a financial problem as they generate less income than a patient in treatment – this is an implication of the DRG (in Dutch: DBC, *Diagnose Behandel Combinatie*) payment system. Where hospital specialists are working on a fee for service

basis there is an additional problem, since they want beds with patients they can treat (and thus generate income for themselves). Since medical specialists have contracts that force them to restrict their practice to patients in one hospital, the physicians have no way to generate additional income by using hospital capacity elsewhere.

The institutional response is to establish formal partnerships between hospitals and nursing homes – and to a lesser degree with home care organisations. By using vertical integration methods, hospitals try to secure the availability of capacity in nursing home or home care for patients. This is a matter of creating a supply chain that starts functioning the very moment a patient is admitted to the hospital. A prognosis is made about the moment of dismissal and follow-up capacity in nursing homes/home care is secured at the same time. This requires integration of IT infrastructure, planning and operational management. It also requires a culture of information exchange and taking responsibility for the chain as a whole, as well as consciousness of one's own contribution to the chain process. In the Netherlands, such chains are well established for total hip operations and CVA. A financial barrier to this kind of partnership is the existence of independent payment systems for acute and long-term care, which creates no incentive for collaboration. It is clear that collaboration is essential for the quality of patient care and for restraining overall costs during the treatment period. However the financial profit from this kind of vertical integration goes to the hospital and the specialists, but neither is willing to pay for the investments that need to be made by long-term care institutions.

Some hospitals try to respond to growing numbers of patients with multiple chronic conditions by revising their business model. They in fact create a kind of matrix organisation by dividing patients in three subgroups: acute, elective and chronic. Specialist groups are organised in capacity groups and sophisticated planning is used to allocate these groups to the care process. Examples are the hospitals of Breda, Deventer and the Onze Lieve Vrouwen Gasthuis in Amsterdam.

Organisational challenges and responses in Sweden tax-funded health system

Sweden has a predominantly publicly planned and structured health system (Glenngard *et al.*, 2005). Locally elected county and municipal governments are responsible for both financing and delivering services, while national government bodies set standards, regulate key processes, and (increasingly) evaluate outcomes. Entitlement to both health care and social services is linked to citizenship while financing is through taxation and minor user fees (Calltorp, 1999). Although Sweden's public structure of

service planning and funding, as well as its predominately public service delivery, contrasts sharply to the Netherlands' mixed public-private approach, both countries share many of the same welfare ambitions and, interestingly, many of the resulting outcomes are fairly similar.

With regard to individuals with multiple chronic conditions, one might expect that in Sweden the integration of care issue could be readily resolved by administrative means, given its publicly-funded and planned system. This however has not been the case. A central obstacle in Sweden is in fact structural: clinical health care services are the responsibility of the regional-level county councils, while care for social needs – support in the home, nursing home, and/or other care and support defined as “non-medical” – is the responsibility of the local municipalities. Daily care for chronically ill patients thus cuts through two quite different public authorities, and commentators often describe the resulting situation as presenting a real challenge to get services working smoothly and with adequate quality from the patient's perspective (Johansson, 1997; Krasnik and Paulsen, 2009).

A second co-ordination challenge lies within the county council's area of clinical care responsibility. The county's medical services are divided between two quite separate sub-sectors within the public system, namely the primary care system (outpatient care) as against internal medicine, surgery and consulting subspecialties (in-patient care). In rural parts of the country where population is sparse and hospital care has had to be restructured to be able to meet needs in a sustainable way, integration between these two sub-sectors poses real challenges.

In more urban areas, structural reforms of the health delivery system have been developed according to a formula of “närsjukvård” (“near” care). This approach relies on a variety of instructions and incentives to convince the three main actors within the public structure (primary care, specialist care, and social care) to co-operate functionally and create “chains of care” (seamless care) for chronically ill patients.

Different “tools” on the clinical side help stimulate this integration, such as evidence-based care protocols and guidelines defining the most common diseases categories and their treatment. These patient management tools are nationally developed, however it is regarded to be important that they are molded into workable practical “aids” locally. The process of developing these aids becomes an important part of the process of getting different actors in a locality to work together to better integrate care. Different types of incentives including economic (payment structures) are also being used to a greater extent (Calltorp and Larivaara, 2009).

More generally, the national government has introduced financial incentives to the county councils to stimulate better and more rapid access

(funding is allocated in accordance with targets for waiting times). This will be followed by similar financial incentives for integration in elderly chronic care and, potentially, to reduce care-induced accidents.

National government induced health reforms in recent years also include an emphasis on increased diversity of providers within the tax financed health system and under county council control. A mandatory “choice of care” (*vårdval*) for the citizens within primary care has been introduced whereby different actors (public and private) can provide services as long as certain quality criteria are met (a form of licensing system) (Calltorp, 2011). This reform has thus far resulted in major changes in primary care in the three large county councils that cover half of the Swedish population. In these three counties, primary care services are now provided by a mix of public and private actors, with approximately 20% of the private actors owned by foreign companies.

While this structural shift toward private provision of first contact primary care services is not innovative by the standards of social health insurance countries such as the Netherlands, or even tax-funded countries like Denmark, the United Kingdom, or Norway, it represents a major change of consciousness and structure in the Swedish context, by explicitly introducing market-style competition for patients inside what had originally been conceived as a catchment based, public health dispensary model of care (Magnussen *et al.*, 2009). Thus the Swedish example, while emphasising the introduction of structural change to generate better integrated care of the chronically ill, also highlights the growing role of competitive approaches to professional groups that deliver those health services as a strategy to potentially improve access to and the quality of integrated care services.

An organisational response from one not-for-profit provider in the United States private health insurance-based system

The health care system in the United States is a complex mix of public (national, state, county and municipal), private not-for-profit, private for-profit, and charitably run funding, delivery and planning systems. Within this complex framework, a number of defined public as well as private health delivery systems have sought to develop integrated care models to address the needs of individuals with multiple chronic conditions. The best known public sector model is the federally run Veterans Administration system, which is highly regarded for its implementation of the “medical home” model of integrated care (Oliver, 2007).

In the private sector, Intermountain health in Utah is a well regarded example of an integrated health delivery system, in which management

focuses heavily on measuring and evaluation. This private not-for profit health care system achieves its results through co-ordination of care processes while operating within a broader market-oriented health care system in which funders and providers typically are not linked together.

Intermountain delivers health care to about half of the 2.6 million inhabitants in Utah. Intermountain patients are a cross-section of federally-funded Medicare and privately-insured patients. The system itself provides private health insurance for 600 000 people.

Physicians within Intermountain may be either employed by the system or self-employed – but generally this does not seem to be an important part of the explanation of Intermountain’s achievements. Instead it is the advanced development of concrete “tools” for defining the content of medical practice, measuring outcome, and evaluating and comparing outcome for the individual patients as well as patient groups that seems to explain Intermountain’s achievements. There is also a long history of determined work during at least the last 30 years, as well as a defined corporate and value-based culture within a system that belonged to the Mormon Church until 1976, when it became an independent non-profit organisation.

The key component to Intermountain’s workings is a highly successful process orientation throughout the system’s outpatient and inpatient settings. Intermountain defines eight clinical programmes (coronary care, pediatrics, behavioral care, etc.) that run through the system and which focus on the individual patient with specific diseases or conditions. The main work of the clinical programmes, led by a physician with support of analytical competence and management co-ordination, is to define system-wide concrete guidelines for the care in that specific programme. Evidence-based detailed care principles are formulated by searching the literature and then adapting general principles to the situation within Intermountain.

An important element is detailed goal setting and improvement targets to be reached for each year. Outcome is measured in accordance with set goals regarding both medical care and resource aspects. A key aspect of the clinical programme work is to measure outcome and resources, to evaluate results, and to then feed them back to clinicians. Intermountain has developed a step-wise sequence defining evidence-based practices – measuring quality and outcome – and feeding back outcome to physicians and other key actors further than most other health delivery organisations. It demonstrates the potential of concepts within the areas of technology assessment, quality improvement and management control as “tools” for achieving better and more cost-effective care (James and Savitz, 2011).

An additional dimension illustrated by Intermountain is the centrality of a sophisticated IT-based information system. To be able to measure,

collect, evaluate and feed-back information to the extent that this system is doing, there is an absolute condition to have a fully digitalised medical record and information system. All relevant data are stored in an Electronic Data Warehouse – and the data are used and fed back in appropriate ways.

Other top private not-for-profit integrated health organisations in the United States have similar integrated care programmes. The Kaiser Permanente system may be best known in this respect. Also Group Health Cooperative of Puget Sound, where “The Chronic Care Model” was developed by Ed Wagner (Wagner *et al.*, 1996) within the organisation’s Group Health Research Institute, is another example of both integration and strong innovation on the private not-for-profit side of the US health system.

Conclusions

In the new economic context they face, developed country health systems will find themselves under a series of re-doubled structural and organisational pressures. While efforts by national policy makers to introduce structural reform, and to re-make their provider systems into more efficient as well as higher quality configurations have been ongoing since the onset of economic globalisation in the early 1990s, the scale of the stakes involved has escalated considerably in the aftermath of the 2008 global fiscal crises. These intensifying pressures for financial efficiencies, coupled with the simultaneous growth of patient demands for greater quality, the rapid increase in both the absolute and relative number of elderly with multiple chronic conditions, and the dramatic strides made by both clinical and information technology, all point toward the importance of new structural and organisational responses by health professionals and provider organisations.

Professionals and organisations alike can respond to these new challenges in two interconnected manners. One is to focus on the learning characteristics of health care networks. The second is to re-structure health provider organisations by adopting innovative new configurations of health professionals and provider institutions that facilitate the delivery of simultaneously more effective clinical and custodial care to chronically ill elderly and doing so in a financially integrated and fiscally less expensive manner. This involves moving beyond the much-discussed “hospital of the future” (Rechel *et al.*, 2010) to the type of integrated cross-institutional and cross-sectoral networks that are essential to dealing with large numbers of elderly with multiple morbidities (Duran *et al.*, 2011 forthcoming).

The three country examples highlight the complexity of implementing new organisational arrangements inside existing health systems. Inherent resistance against new organisational arrangements and – as noted in both the

Dutch and Swedish examples – the necessary re-distribution of professional responsibility and authority suggest the degree of managerial challenge involved in making this type of structural change work well in practice.

Recent experience in the Netherlands suggests that appropriate organisational responses potentially can emerge from a complex mix of structural health system reforms undertaken by national policy makers in combination with the careful harnessing and application of key market forces and incentives. In this regard, although the specific mechanisms utilised in the Netherlands are of course conditioned by the particular institutional context and culture found in that country (Hofstede, 1980, 1991), the conceptual strategy pursued by the Netherlands may well be adapted for use in different national contexts found in other developed countries. One key challenge for the future thus becomes finding useful ways to adapt the core Dutch strategy for use in additional national health system and policy making environments.

Ultimately, of course, these innovative organisational arrangements, by themselves, are not capable of resolving the compromised economic and financial posture that many developed countries now confront. Moreover, this type of organisational re-structuring to better provide integrated care is only one dimension of a wide variety of health sector reforms that are increasingly being discussed by national health policy makers in Europe and beyond. The new organisational configurations presented above do, however, have the ability to make existing revenue sources work harder – to get, as the British like to say, “better value for money” – by improving the quality, safety, and patient satisfaction as well as the marginal cost of the services delivered.

Thus, although these innovative new organisational approaches cannot be expected to solve the entire fiscal problem in public sector-funded health systems, they may be able to help improve care in the near term while at the same time contributing to the delay of more serious financial cuts. Although innovation and partnership cannot by themselves provide the entire solution to present-day fiscal pressures on developed country health systems, they can serve as one important element in a near-term strategy to improve health system performance and outcomes.

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