Do Danes enjoy a high-performing chronic care system?

DO DANES ENJOY A **HIGH-PERFORMING CHRONIC CARE** SYSTEM?

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Summary: The trends in population health in Denmark are similar to those in most Western European countries. Major health issues include, among others, the high prevalence of chronic illnesses and lifestyle related risk factors such as obesity, tobacco, physical inactivity and alcohol. This has pressed the health system towards a model of provision of care based on the management of chronic care conditions. While the Chronic Care Model was introduced in 2005, the Danish health system does not fulfil the ten key pre-conditions that would characterise a high-performing chronic care system. As revealed in a recent report,[1] the fragmented structure of the Danish health system poses challenges in providing effectively coordinated care to patients with chronic diseases.

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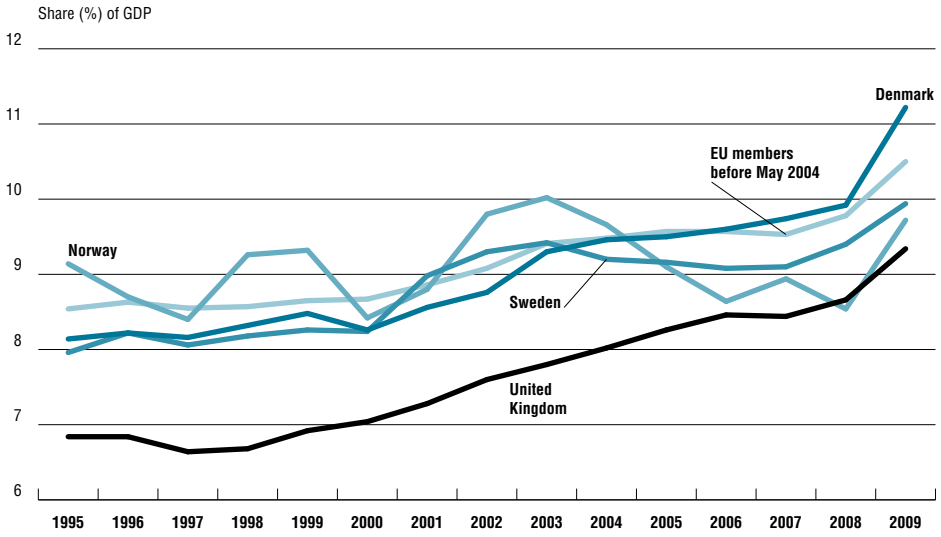
Increasing health care expenditure is a common trend in many countries. The proportion of gross domestic product (GDP) devoted to health has increased substantially across Europe. The underlying drivers of this escalating trend include: medical innovation, an ageing population and the related high prevalence of chronic diseases. Denmark is no exception. Health care expenditure in Denmark is slightly higher than the average for pre-2004 European Union Member States (EU15) (**see Figure 1**).

The prevalence of non-communicable chronic conditions, many associated with important changes in lifestyle, is forcing countries to move away from a traditional acute and episodic model of care, as it no longer meets the needs and preferences of patients with multiple and chronic disorders. This has been the case in Denmark, where there has been a national call for a paradigm shift in the way health care is organised, with a number of key white papers published by the Danish National Board of Health.[2]

Health status in Denmark

Throughout the world, chronic conditions are influencing the quality of life of individuals and are challenging health systems. It has been estimated that 70% of the global disease burden in 2030 will be due to chronic diseases, with an increasing number of individuals having multiple chronic conditions in their lifetime.[4] Chronic conditions, including some forms of cancer, mental disorders, diabetes,

Figure 1: Trends in health expenditure as a share (%) of GDP in Denmark and selected countries, 1995–2009



Source: [3]

obesity and pulmonary disorders, are increasing substantially. The World Health Organization estimates that the number of patients with diabetes will double from 2005 to 2030, while obesity has been categorised as a pandemic.[5]

> national call for a paradigm shift in the way health care is organised

Denmark has also seen an increase in the number of patients suffering from chronic conditions. Danish health status is generally good and there is evidence of a substantial reduction of mortality and morbidity rates in the last two decades.[6] However, the Danish population lags behind compared to other Nordic countries with regard to life expectancy and socioeconomic inequalities in health and also registers worse results for some lifestyle factors with negative health effects.

While 79% of adult Danes perceived their individual health status as "good" or "very good" in 2005, according to the Danish Health and Morbidity Survey (SUSY), 39.8% of the adult population reported that they suffered at least one long-standing disease. This share was slightly higher for women (41.7%) than for men (37.8%), and increased with age. Among them, musculoskeletal, cardiovascular, and respiratory diseases, as well as diseases of the nervous system and sensory organs, were the most frequent among the surveyed population.[7] A more recent national survey, the National Health Profile 2010, confirmed these trends (see [1] for a detailed explanation of these results).

A rise in the proportion of obese Danish citizens has also taken place, following the European trend. From the late 1980s to 2005, the proportion approximately doubled from 5.5% of the population to 11.4%. The share of people living in Denmark who are moderately overweight (i.e., with a body mass index between 25 and 30) has also increased, with approximately 41% of men and 26% of women characterised as overweight in 2005. By comparison, only 35% of men and 17% of women were overweight in 1987.[7] These results were confirmed by a study conducted in the Central Denmark Region in 2010, which showed an increase in the proportion of the population being overweight in the period 2006 to 2010[8], as well as the National Health Profile 2010 which found similar patterns.[9]

Tobacco use in Denmark has been found to be a contributing factor to mortality, causing approximately 14,000 deaths per year and 2,000 deaths related to passive smoking.[10] Alcohol consumption is high in Denmark; in 2008, the average consumption per inhabitant over fifteen years old was 10.9L of pure alcohol. This is similar to the EU15 average (10.8L) but higher than the average for the OCED as well as other Nordic countries.[11]

Tackling chronic diseases in Denmark

The Danish health system is mainly public and financed through national taxes. Although it is traditionally a decentralised health system with primary and secondary care responsibilities allocated locally, several reforms from 2007 have led to a more centralised approach, with a decrease in the number of municipalities and regions (see [1] for details on the reform processes and the different responsibilities of the state, regions and municipalities). Universal coverage is provided by the Danish health system, with all registered residents in Denmark being able to freely access most of the health care services provided – either directly or after referral by their general practitioner (GP). Although pharmaceuticals, dental care and some other services require a co-payment, chronically ill patients can apply for full reimbursement of their drug expenditure above a certain annual ceiling for a permanent or high drug utilisation level (see [1] for more information on user charges in the Danish health system).

The primary care sector in the Danish health system consists of private (self-employed) practitioners and municipal health services, with GPs acting as gatekeepers by referring patients to hospital or specialist treatment. Electronic medical records and integrated information systems have been major priorities in health information technology (IT) strategies since the late 1990s, with the focus on improving IT for chronic care. Electronic medical records are used by all primary care doctors, with 90%

of all clinical communication between primary and secondary care performed electronically in 2010.[12]

Since the late 1990s, different governments have launched comprehensive preventive public health programmes covering specific risk factors (e.g., tobacco, alcohol, nutrition, physical inactivity, obesity and traffic), age groups (e.g., children, young people, older people), health-promoting environments (e.g., primary schools, work places, local communities, health facilities) and structural elements (e.g., intersectoral cooperation, research and education) (for more information on different prevention initiatives through time, see[1]). The main aim of these national public health programmes is to provide individuals with the necessary knowledge and tools to be able to prevent disease, self-manage their chronic conditions and promote their own health status and care. The Healthy Throughout Life 2002–2010 programme is an example of these initiatives (see[1] for a detailed explanation of these and other programmes).

In 2005, the National Board of Health produced a series of recommendations to improve the management of chronic care conditions in Denmark, following the American Chronic Care Model initially developed by Wagner et al.[13] These include: emphasis on self-management support programmes, appropriate organisation of the health service delivery system, the use of decision support tools such as guidelines and disease management programmes, community participation and wide use of health IT, systematic patient education and rehabilitation initiatives, a strong primary care sector, regional coordinators, GPs in a coordinating role, patients stratified according to needs and interdisciplinary health care teams, among others.[3] The regions and municipalities are, at the time of writing, also developing disease management programmes for cardiovascular diseases, chronic obstructive pulmonary disease (COPD) and musculoskeletal diseases.

Since 2006, the Chronic Care Model has been offered in more than 70 (out of a total of 98) municipalities.[3] Different initiatives to favour continuity within primary care have been implemented, such as pathway coordinators, and a special fee for GPs to act as coordinators of care for specific groups of chronically ill patients (see[1] for further initiatives). New national efforts to provide integrated care have been observed. An example is the integrated cancer pathways introduced in the National Cancer Plan II, from 2007 and implemented by January 2009, which focuses on improving the integration of health care and coordination between departments, hospitals and the primary and secondary sectors.

Risk stratification of chronically ill patients (provided by the pyramid model of US-based Kaiser Permanente) has been of interest to Danish policymakers. The implementation of the model is taking place in all of the regions, but modified and applied according to local needs and settings. The criteria for stratification differ across the five regions and the focus also differs regarding the process (from care to rehabilitation).[14] At the time of writing, the National Board of Health is working on a further development of the stratification criteria, including going beyond strictly medical criteria to psychosocial elements and self-management potentials, among others.

Several national strategies for digitalisation of the Danish health care system are being developed. A common strategy for the use of telemedicine has recently been acquired by the Danish regions, with the task of generalising experience in the use of telemedicine from pilot projects carried out in the different regions. Despite the ongoing development of telecare across Denmark, a new system of electronic monitoring of clinical data for patients with chronic illness, diagnostic measures and interventions in general practice has recently been agreed between the regions and GPs.

A high-performing chronic health system?

Ten key pre-conditions have been identified by Ham[15] to characterise a high-performing chronic care system (**see Box 1**).

The Danish health system satisfies, to some degree, most of the characteristics cited. The coverage of the Danish health system is universal and access is mainly free at the point of delivery. Different national health prevention programmes have been implemented since the late 1990s, as a first step to favouring self-management of chronic conditions by patients. This has been reinforced with the adoption of the chronic care model, allowing for risk stratification of the population, together with some efforts to provide integrated patient pathways.

> provide individuals with the necessary knowledge and tools to be able to prevent disease

However, the fragmented structure of the Danish health system poses some challenges compared to an ideal high-performing chronic care system. While the primary care sector has traditionally been quite strong with the role of the GP as a gatekeeper and coordinator, patient pathways across primary/secondary care have been criticised for lack of coherence and continuity, due to the lack of appropriate communication systems among providers.[1] Furthermore, the existence of different electronic health record systems across the country does not facilitate the development of full and functional electronic health record coverage within the health care sector in the near future. The value of initiatives regarding multidisciplinary team work within primary care, including the role of the many new municipal health centres for prevention and rehabilitation, is still uncertain, as are the effects on the quality of chronic care of improvements in communication between the different chronic care providers in primary and secondary services. The evaluation of the

Box 1: Ten characteristics of a high-performing chronic care system

1. Ensuring universal coverage
2. Provision of care that is free at the point of use
3. Delivery system should focus on the prevention of ill-health
4. Priority is given to patients to self-manage their conditions with support from carers and families
5. Priority is given to primary health care
6. Population management emphasised through risk-stratification of chronic ill patients
7. Care should be integrated to enable primary health care teams to access specialist advice and support when needed
8. The need to exploit the potential benefits of information technology in improving chronic care
9. Care is effectively coordinated
10. Link these nine characteristics into a coherent whole as part of a strategic approach to change

Source: [15]

latest strategies designed at national level to favour coordination and integration of the Danish chronic care system would provide some guidance on the way forward.

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