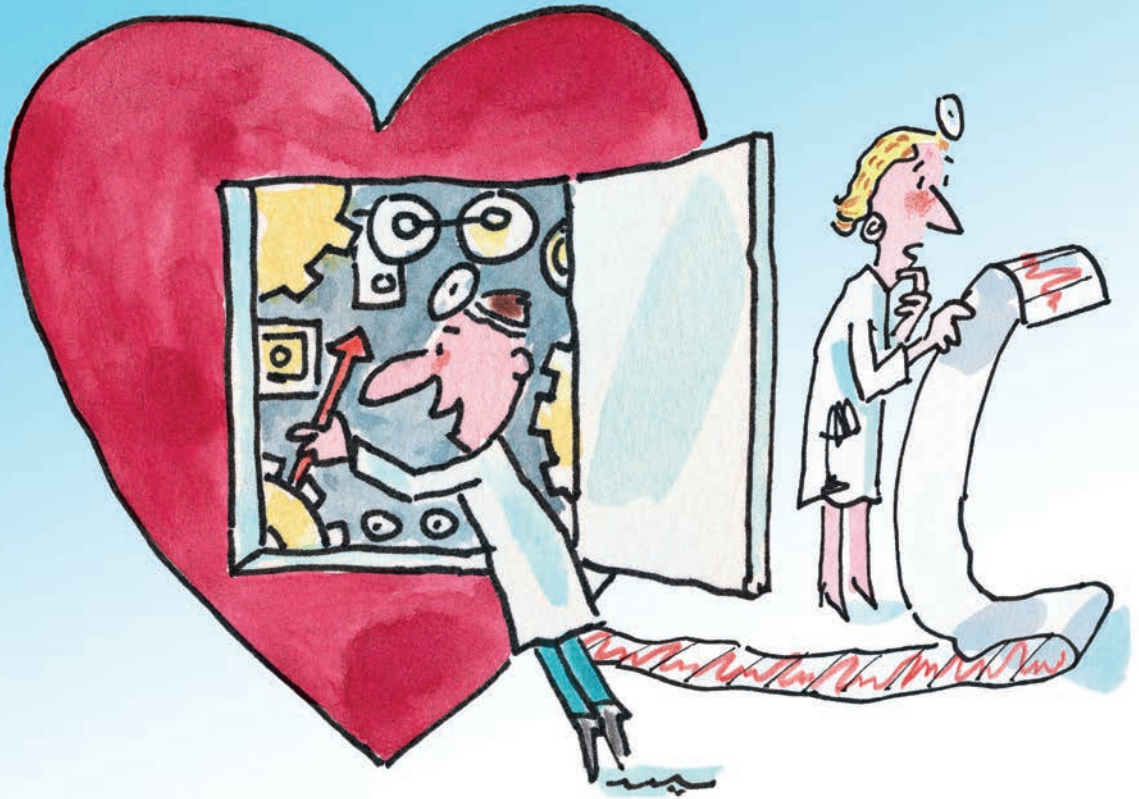




OECD Reviews of Health Care Quality

# DENMARK

RAISING STANDARDS



# **OECD Reviews of Health Care Quality: Denmark 2013**

RAISING STANDARDS

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## *Foreword*

This report is the third of a new series of publications reviewing the quality of health care across selected OECD countries. As health costs continue to climb, policy makers increasingly face the challenge of ensuring that substantial spending on health is delivering value for money. At the same time, concerns about patients occasionally receiving poor quality health care led to demands for greater transparency and accountability. Despite this, there is still considerable uncertainty over which policies work best in delivering health care that is safe, effective and provides a good patient experience, and which quality-improvement strategies can help deliver the best care at the least cost. *OECD Reviews of Health Care Quality* seek to highlight and support the development of better policies to improve quality in health care, to help ensure that the substantial resources devoted to health are being used effectively in supporting people to live healthier lives.

This report seeks to provide constructive advice to further the efforts of Danish authorities, informed by the experience of OECD countries at large. Among OECD countries, Denmark has led the way in monitoring and policy development for quality of care. As several sophisticated quality assurance mechanisms have been implemented over several decades, particularly in the secondary care sector, the next priority for Denmark is to ensure overarching linkages across institutions. Efforts ought especially to focus on creating a unified vision, and extending quality monitoring and improvement initiatives to primary care, particularly in light of the increasing number of people living with multiple chronic conditions and needing good continuity of care in the community sector. Another important area will be to support the hospital specialisation reform by encouraging inter-hospital comparisons based on quality. Last, Denmark's commitment to addressing inequalities in access to health care and utilisation is commendable; with an excellent data infrastructure, there is a potential for better monitoring inequalities in health and health care and acting to address them.

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## *Table of contents*

Acronyms and abbreviations .....	9
Executive summary .....	11
Assessment and recommendations .....	15
<b>Chapter 1. Quality of care policies in Denmark .....</b>	<b>35</b>
1.1. Introduction.....	36
1.2. Context.....	38
1.3. Profiling policies on quality of health care and their impact .....	41
1.4. Health system design .....	41
1.5. Assuring the quality of inputs to the Danish health care system .....	47
1.6. Patient safety policies .....	52
1.7. Health system monitoring: building an information infrastructure for measuring quality .....	55
1.8. Health system standards and guidelines .....	61
1.9. Managing health system improvement .....	65
1.10. Strengthening the role and perspective of the patient .....	66
1.11. Conclusions.....	69
Bibliography .....	71
<b>Chapter 2. Primary care and integrated care in Denmark.....</b>	<b>73</b>
2.1. Introduction.....	74
2.2. Configuration of primary care in Denmark.....	75
2.3. Outcomes associated with primary care in Denmark.....	80
2.4. Primary care quality initiatives in Denmark .....	83
2.5. Initiatives to support integrated care in Denmark.....	87
2.6. Maximising primary care’s contribution to quality health care in Denmark .....	94
2.7. Conclusions.....	100
Notes .....	102
Bibliography .....	103

<b>Chapter 3. Hospital specialisation in Denmark</b> .....	109
3.1. Introduction.....	110
3.2. Overview to the hospital sector in Denmark.....	110
3.3. Recent reforms to drive specialisation and rationalisation in the hospitals sector .....	118
3.4. Using the specialisation plan to drive improvements in quality .....	132
3.5. Conclusions.....	139
Bibliography .....	141
<b>Chapter 4. Promoting equity in health and health care in Denmark</b> .....	143
4.1. Introduction .....	144
4.2. Equity is a building principle of the Danish health care system but there is evidence of growing inequalities in health .....	145
4.3. Measures of health inequities should be strengthened in Denmark .....	152
4.4. Existing initiatives to tackle risk factors may be insufficient to address observable health inequities .....	155
4.5. Addressing inequitable utilisation and access to health care should be a priority .....	160
4.6. Steps to reduce the financial burden of low-income people will protect vulnerable groups but should be especially targeted to primary care and prevention .....	168
4.7. Conclusions .....	176
Note .....	179
Bibliography .....	180
<b>Figures</b>	
Figure 1.1. Life expectancy at birth, 2009 (or nearest year), and years gained since 1960 .....	38
Figure 1.2. Average annual growth in health spending across OECD countries, 2000-10 .....	39
Figure 1.3. Ischemic stroke (left) and hemorrhagic stroke (right) in hospital case fatality rates in Denmark rank among the lowest in OECD countries .....	40
Figure 2.1. General practitioners, specialists and other doctors as a share of total doctors, 2009 or nearest year .....	76
Figure 2.2. Uncontrolled diabetes hospital admission rates and prevalence of diabetes, 2009 or nearest year .....	81
Figure 2.3. COPD hospital admission rates and influenza vaccination coverage, 2009 or nearest year.....	82
Figure 2.4. DAMD output allowing GPs to compare the quality of their practice with peers .....	84
Figure 2.5. DAMD output allowing patients to self-monitor their management .....	85

Figure 2.6. Expected waiting time (weeks) for cancer treatments, Denmark, 2002-11 .....	90
Figure 3.1. Number of hospital beds per 1 000 population, 1997-2010 .....	111
Figure 3.2. Allocation of hospital beds in 2009, numbers of beds per 1 000 population .....	112
Figure 3.3. Allocation of hospital beds across the Danish regions .....	113
Figure 3.4. Specialists per 1 000 population across OECD countries, 2010 or earliest year available .....	114
Figure 3.5. Average length of stay for acute care across OECD countries, 1990-2011 or earliest years available .....	115
Figure 3.6. Hospital spending per person (USD PPP), 2010 or earliest year available .....	116
Figure 3.7. Admission-based and patient-based in-hospital case fatality rates within 30 days after admission for AMI, 2009 or nearest year .....	117
Figure 3.8. New hospitals and modernisation projects in Denmark .....	128
Figure 4.1. Inequality increased in most Nordic and Oceanic countries, including Denmark .....	146
Figure 4.2. Increased Gini coefficients of income inequality in Nordic and Oceanic OECD countries, 1975-2008 .....	147
Figure 4.3. Higher incomes is a predictor of a higher life expectancy, Denmark .....	147
Figure 4.4. Lower percentage of people from the highest income quartile report “very bad” health, Denmark .....	148
Figure 4.5. Share of people reporting poor health is higher the lowest the educational level .....	149
Figure 4.6. Poor patients have a higher probability of visiting a GP in Denmark, after adjusting for need .....	161
Figure 4.7. Rich patients have a markedly higher probability of visiting a specialist in Denmark, after adjusting for need .....	162
Figure 4.8. Unmet needs for medical examination are most often due to waiting times in Denmark .....	163
Figure 4.9. Physician services are quite evenly distributed across regions in Denmark relative to other OECD countries .....	166
Figure 4.10. Out-of-pocket spending in Denmark fell between 2000 and 2010 .....	169
Figure 4.11. Households out-of-pocket expenditure as a share of household consumption is only just below the OECD average in Denmark.....	170
Figure 4.12. Out-of-pocket dental spending in Denmark is quite significantly higher than the OECD average .....	171
Figure 1.13. Unmet need for dental consultation is higher for poor people in Denmark .....	173
Figure 4.14. One in five Danish has supplementary health insurance .....	175



**Tables**

Table 1.1. A typology of health care policies that influence health care quality .....	41
Table 3.1. Hospital executives perceived influence on decisions prior to reform.....	124
Table 3.2. The regions efforts in redesigning hospital services .....	126
Table 4.1. Inequality in 30-year olds' remaining life expectancy and the percentage of the remaining life that can be expected to be in good health, 2004/05 .....	148
Table 4.2. The ten diseases contributing most to the Danish inequality in burden of disease .....	154
Table 4.3. Some inequalities in health behaviour in Denmark rose between 1987 and 2010, notably obesity and inactive leisure time .....	156

## *Acronyms and abbreviations*

AMI	Acute myocardial infarction
ANP	Advanced nurse practitioner
CABG	Coronary artery bypass graft
CME/CPD	Continuous medical education or continuous professional development
COPD	Chronic obstructive pulmonary disease
DAK-E	<i>Dansk Almenmedicinsk KvalitetsEnhed</i> (Danish General Practice Quality Unit)
DALY	Disability-adjusted life year
DAMD	Danish General Practice Database
DANPEP	Danish Patients Evaluate Practice
DDKM	Danish Health Quality Programme
DHMA	Danish Health and Medicines Authority
DRG	Diagnosis Related Group
DSAM	<i>Dansk Selskab for Almen Medicin</i> (Danish College of General Practitioners)
DSFP	Danish Society for Patient Safety
HER	Electronic health record
HSMR	Hospital Standardised Mortality Rate
GDP	Gross domestic product
GP	General practitioner
HQS	British Health Quality Services
IHI	International Health Insurance
ICPC-2	International Classification of Primary Care Coding System

IKAS	<i>Institut for Kvalitet og Akkreditering i Sundhedsvæsenet</i> (Danish Institute for Quality and Accreditation in Health care)
IoM	Institute of Medicine (of the United States National Academies)
HSMR	Hospital standardised mortality rate
IS-GBE	German Federal Health Monitoring Information System
LGDK	Local Government Denmark
LPR	National patient register
LTC	Long-term care
LUP	National Danish Survey of Patient Experiences
LVS	Organisation of Danish Medical Societies
MoH	Ministry of Health
NAPRC	National Agency for Patient Rights and Complaints
NIP	Danish National Indicator Project
OOH	Out-of-hours care
PKO	<i>Praksiskonsulenterordningerne</i> (General practitioners as advisors in hospitals)
PLO	<i>Praktiserende Lægers Organisation</i> (Practitioners Medical Association, Danish GPs' Professional Body/Trade Union)
PPP	Purchasing power parity
PROMs	Patient-reported outcome measures
RKKP	Quality Improvement Programme
SSI	National Institute for Health Data and Disease Control
WONCA	World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians

## Executive summary

Denmark is rightly seen as a pioneer in health care quality initiatives among OECD countries. Over many years, it has developed a sophisticated array of quality assurance mechanisms. Yet, like all other countries, it faces a number of *health care challenges* including increasing public and political expectations around the continuity of care; increased specialisation in the hospital sector, which translates into shorter stays and earlier discharge back into the community; and a rise in the number of elderly patients with multiple long-term conditions, requiring safe and effective co-ordination of care and avoiding unnecessary hospitalisation. This quality review assesses how well Denmark's quality assurance mechanisms are placed to address these challenges.

Denmark has impressive *quality monitoring and improvement initiatives*. It has extensive databases on the processes and outcomes of care and a strong agenda to strengthen its information infrastructure; it can also boast many local clinical guidelines, national guidelines and standards developed as part of disease management programmes and pathways. Perhaps as a consequence, though, the challenge remains to create more linkages and synergy between these diverse initiatives, with the aim of improving quality of care for the health care system as a whole. At the same time, more could be done to develop clinical guidelines and indicators which fully address the realities of patients with multi-morbid conditions, improve the measurement of patient experiences and develop better quality metrics for primary and long-term care

*Primary care* is a particular area of concern. While Danish GPs have fulfilled the primary care function well over many years, the challenges outline above demand a different, stronger and modernised primary care sector, which has not yet emerged. Health system reforms in recent years have focused on efforts to improve quality and efficiency in the hospital sector – relegating modernisation of the primary care sector to a cautious and incremental path. There are few mechanisms to reward quality and continuity of the care that GPs provide, whether through financial or other instruments. Going forward, specific quality initiatives in primary care should focus on co-ordination between primary and secondary care and

creating incentives for primary care professionals to take a high level of responsibility for quality and outcomes across the whole patient pathway. Success will depend upon radically developing the data infrastructure underpinning primary care. At present, the lack of data on primary care activity, compared to other health care sectors, makes it difficult to know how effectively GPs and other primary care professionals are meeting community health care needs.

A prominent feature of recent health policy in Denmark are the far-reaching reforms to its *hospital sector*. Hospital beds have fallen from around 25 000 in 1996 to 18 000 by 2009, with Danish regions pro-actively managing the trend by closing small hospitals and concentrating specialised services into a handful of major hospitals across the country. The balance struck between national guidance and regional planning, and the extensive engagement of clinicians in the decision-making process, offer an impressive model for other countries to follow if seeking a similar rationalisation of their hospital sector. It is likely that improvements in quality will naturally flow from preventing highly specialised services to operate in relatively inexperienced centres. Accompanying technological and capital investments should also help lift quality. But these reforms require careful monitoring to ensure that they do not adversely affect certain patient groups or clinical training. In particular, Danish policy makers ought to continue with efforts to strengthen pre-hospital care (such as ambulances or physician-manned mobile emergency units); encourage hospitals to monitor internally the performance of individual clinicians; and support the exchange of best hospital practices throughout the country.

*Health equity* is a stated priority of Danish public life and indeed, compared to most OECD countries, health inequalities in Denmark are low. Yet, until recently, there have been few policies or interventions specific to the health sector to address inequity. Although gaps in data make it difficult to get a full picture across all areas, evidence suggests that there are socioeconomic disparities in health status, access to health care and health outcomes - some of which are growing. Policy makers should not therefore take for granted that a well-established principle of equal access and a high share of public spending on health will automatically safeguard equity. A better data infrastructure would leave Danish authorities better equipped to assure health equity. Unique patient identifiers across health and social care and civil administration databases, provide an incredibly rich source of information for Denmark and should be marshalled so as to better monitor health care equity across population groups. Better data gathered from GPs that captures care quality and outcomes across socioeconomic groups could be used to inform interventions addressing inequities. Other issues would be to review co-payments and cost-sharing policies to steer health behaviours

towards the desired direction in target groups, such as encouraging compliance with prescribed medical treatment, as well as monitor travel times faced by patients.

Over many years, whether at national or institutional level or led by individual pioneers, Denmark has demonstrated a commitment to monitoring and continuously improving the quality of its health system. Its initiatives and reforms serve as a model to other countries looking to prioritise health care quality. The next phase of Denmark's quality agenda must be one of consolidation – ***creating coherence across these many initiatives***, with a special focus on measuring and maximising the contribution made by primary care. Whilst restructuring of the hospital sector is likely to yield a natural quality dividend, and health inequity is less of a problem in Denmark than elsewhere, neither of these facts should be taken for granted and a relentless quality focus should be maintained for both.



## *Assessment and recommendations*

Denmark has traditionally been a leader in policy development for quality of care among OECD countries. The Danish health care system is decentralised and largely publicly run, with successive governments and regions having prioritised equal access and responsiveness to community needs. However, co-ordination across multiple levels of government and multiple actors remains an ongoing challenge that needs to be successfully negotiated if Denmark is to make the most of the good programmes it has in place to monitor and improve the quality of health care.

Denmark spends more than most OECD countries on health care. Health care accounted for 11% of GDP in 2010 – the fourth highest among members of the European Union and fifth highest in the OECD. Funded predominately through local and general taxation, health coverage is universal and largely free of charge at the point of service. Denmark also has lower levels of private payments, which represent only 15% of health financing and help ensure that financial barriers do not stand in the way of people's access to health care. Health care legislation encourages equal access to health services and its administration through decentralised government means that regions and municipalities play a critical role in planning and providing public services. This is supplemented by a long-standing tradition of GPs, who act as gate-keepers to secondary care and play a strong role in maintaining population health.

Over the past few years, the Danish health system has seen significant reforms that have rationalised its governance structure. In 2007, major administrative reforms merged 13 counties (and three municipalities with country functions) into five regions whose main responsibility was to deliver hospital care and contract with physicians. These reforms also rationalised the number of municipalities from 275 to 98. Following these reforms, municipalities have a financial stake in the funding of hospital services and are directly responsible for providing long-term elderly care, rehabilitation, supported or institutional housing for older people, public health, school health services, child dental treatment and some aspects of prevention.



Alongside the recent reforms to the split of administrative responsibilities, central and regional governments have embarked on major hospital reforms. Central government authorities provided guidance on the planning and location of certain hospital medical specialties and there have been efforts at both levels of government to rationalise the number of small hospitals. Regional governments bore the bulk of responsibility for translating the guidance of central government into major changes to the structure of hospital services on the ground. Hospitals are owned by regions and are paid on a DRG basis for providing secondary and tertiary care through employing salaried doctors. In contrast, general practitioners are self-employed professionals who are paid mainly on a fee-for-service basis in combination with a significant fixed monthly payment.

Denmark is ahead of most OECD countries in efforts to monitor and improve clinical health care quality. Central, regional and municipality government all share responsibility for quality monitoring depending on the services they deliver or oversee. Over time, Denmark has set up strong institutions for tracking and improvement the quality of health care, ranging from accreditation to clinical guidelines, quality registries and quality indicators.

This governance structure and impressive reforms have helped to create a health care system that supports citizens' good health. Many health status indicators compare favourably with other OECD countries. Seven out of ten Danish people rate their health as being good or very good. Life expectancy, at 81 years in 2010, and mortality from all causes, are in line with OECD averages. The share of obese adults in the population was only 13.4% in 2009, among the lowest in the OECD, and smoking rates have been cut by nearly 40% in the past decade, highlighting the success of health prevention and promotion initiatives. Mortality from ischemic heart disease for both men and women and prevalence of diabetes in the adult population (5.7% in 2011) fall below OECD averages, and Denmark also features low admission rates for some preventable conditions.

That said, while reforms in recent years have focused on efforts to improve quality and efficiency in the hospital sector, general practice has not been modernised to deliver the new set of functions in care co-ordination and integration that they ought to perform. A number of challenges remain to improve the quality of care in Denmark:

- Different and sophisticated quality assurance mechanisms are still mostly focused on secondary care and lack overarching coherence and linkages – quality monitoring does not necessarily drive improvement efforts in a systematic way and quality information is not yet presented in ways that support patient choice.

- While Denmark is focusing its efforts on the long-term organisation of secondary care, the vision for general practice remains undefined. This is against a background of increasing numbers people with multiple chronic conditions, demanding policies and better data to improve primary care, particularly with a view to improving care continuity.
- Municipalities have been asked to take on additional health care responsibilities, around long-term care and rehabilitation. Here too, however, the lack of quality-related data is stark. There is an urgent need to develop indicators of effective, safe and patient-centered care which focus on these new functions; an initial focus on falls, infections and pressure ulcers in nursing homes and rehabilitation facilities would be one way forward.
- At the same time, many municipalities report having little capacity to take on new roles in primary care, rehabilitation and nursing care; their potential for preventing people from entering hospitals and for shifting care provision to the community has not been maximised.
- Denmark is not taking full advantage of the data generated from the hospital specialisation reform to support inter-hospital comparisons based on quality and help hospitals improve their offer vis-à-vis peers.
- Despite a strong commitment to equitable health care and evidence pointing to widening inequalities in risk factors to ill health, Denmark is not applying its sophisticated data infrastructure to the regular monitoring of inequalities in health and health care.

Facing up to these challenges will require further reform.

## **Further efforts are needed to improve coherence in assuring the quality of health care services**

### ***Denmark has a sophisticated array of quality assurance mechanisms in place***

Quality assurance policies represent a major foundation of the Danish health care system. Over the years, Denmark has established an array of mechanisms for monitoring and improving health care quality that few other OECD countries have. Indeed, Denmark provides a useful case of a country

which has managed to maintain a focus on quality improvement in the context of decentralised governance where most of the decision making and service delivery is done closer to local communities and at the regional level.

Denmark's experience with formal health care quality assurance mechanisms extends over at least 20 years. Denmark's national quality strategy was first published in 1993 and updated in 2002. Over this period, stakeholders in Danish health care have developed a number of robust initiatives to assure the health care quality, such as licensing of professional competences, accreditation of health care facilities and certification of the quality and safety of drugs and medical devices. Recent years have seen further internationally pioneering activities related to patient safety, such as the Danish Safer Hospital Programme. Another important component is the Danish system for adverse event reporting, co-ordinated by the National Agency for Patient Rights and Complaints (NAPRC).

The central priorities driven through Denmark's array of quality programmes have been balanced with local freedom to innovate and contextualise. In doing so, many actors across the health care landscape have concurred in making quality of care a key priority. The central government reaches agreements with the Danish regions on high-level service goals such as mortality or adverse event rates, without specifying more detailed targets for population-based health care outcomes. Similarly, the Danish Health and Medicines Authority (DHMA) develops service quality standards, such as disease management models, but allows them to be adapted to be operationally useful at regional level. Regions have taken it upon themselves to ensure that quality assurance and improvement are well embedded in their activities. For example, each region has a department dedicated to quality that monitors and initiates programmes for quality improvement with some also hosting quality Knowledge Centres. At the local level, municipalities are responsible for assuring quality of the care they provide or contract within nationally determined standards.

### ***Coherence across initiatives and across levels of government ought to be the priority***

Having established several quality monitoring and improving mechanisms, Denmark now needs to start creating effective links and synergies between its various quality initiatives, so that it addresses quality in the health care system as a whole. This is particularly important for patient pathways that span health care services managed separately by regional and local governments. At present, most quality assurance mechanisms, such as accreditation, guidelines or patient safety initiatives

focus on specific services in hospitals. The next logical step is to evolve towards approaches that focus on the mix of health services a Danish citizen might receive. Such an approach would provide a greater emphasis on continuity of care and integrated care delivery and offer opportunities for streamlining quality assurance. Examples of how this could be implemented in practice include accreditation of pathways of care, clinical guidelines setting out the generic principles for management of patients with multiple long-term conditions and piloting of indicators which measure the quality of integrated care.

At the same time, some remaining quality assurance gaps need to be filled. General practice, home care and nursing homes do not have an accreditation system (although systems are being developed) and formal continuing professional education requirements are not in place. At municipal level, quality assurance mechanisms in long-term care and rehabilitation are not well developed and there appears to be significant variation in how quality assurance is organised across the country at the municipal level. In order to exploit the strengths of Denmark's decentralised governance framework, central leadership on filling these gaps should be balanced against the freedom to develop local solutions to local problems. A diverse array of locally owned, bottom-up solutions is often more effective than a single prescribed template.

***Denmark has very good databases on quality of care but the goldmine is only partly exploited***

Denmark has been a pioneer in the use of clinical quality registers, which monitor patterns of care for particular patient groups. Innovation continues today, with work being undertaken to seek the possibility of cross-quality-register data linkage via unique patient identifiers. This would allow for tools such as cluster-reporting that is currently being trialled for diabetes (which jointly looks at the contribution from hospitals, GPs and municipalities in individual patients' diabetes management). Likewise, development of a national biobank of patients' blood and tissue samples will yield a richer set of measures (both determinants of health and health care outcomes), that can be linked to data on the type and quality of care received.

Across the health care system, however, there is little evidence of quality indicators being used to guide and drive system-wide service improvements. Whilst not necessarily advocating target-setting or thresholds, and whilst recognising the limitations of discrete indicators, there is clear potential for better use of Denmark's indicator sets, at the same time as developing new indicators as mentioned above. Among others, open

comparisons of quality of care across providers and across regions, as successfully happens in other countries, could be one important step in this direction. Similarly, while the various registers produce separate annual reports on quality improvement relevant to their particular disease, there is no overall report on “the quality of health care in Denmark”. Publishing one would mark an important advance in taking a system-wide and patient-centered approach to health care quality.

The possibilities for patients to make use of quality data, whether about their own care or local services more generally, are even more limited. Researchers are able to access anonymised data to track patients’ pathways across the health system, but this information could also be useful patients or their GPs to see what services they have interacted with, and with what outcomes. Electronic health records are progressing at different speeds in the various regions and some sectors, notably municipality-led care, are trailing far behind in the implementation of e-solutions to better health care. This uneven approach implies a risk that initiatives to improve health care quality are not consistently applied. A national stock-take and strategic review of the e-health agenda seems warranted.

### ***The patient perspective exists in theory but can be strengthened in practice***

Denmark has several laws in place that assure patient rights, including a modern, formal system for entering into dialogue with patients about service quality, including handling complaints. Patients’ involvement in quality assurance has grown in recent years, as evidenced by the rich array of quality-related information made available to patients through the *sundhedskvalitet.dk* website and the pioneering Danish Society for Patient Safety’s *Patient Handbook*, which is designed for patients and their families to use throughout a hospital stay and encourages patients to ask questions, understand the details of their care, and voice concerns.

Nevertheless, although patient centeredness is set out as a key principle for steering and monitoring care, this ambition needs further operationalisation in practice. For example, patient councils and patient representation in the management structure of hospitals and nursing homes are not compulsory and patient involvement in setting the standards for care does not always happen. Likewise, patient experiences are reported annually at hospital level but their impact on changing service delivery is not clear and the National Association for Patient Rights and Complaints, as a standalone entity, does not benefit from the command and authority that it might have if formally connected to the DHMA.

## Strengthening primary care in Denmark

### ***The Danish primary health care system is good, but an ageing population and hospital reforms call for modernisation and reform***

The Danish primary care model centres around a medical practitioner (the “general practitioner” or GP) trained to be the first point of contact for unselected acute, chronic and preventive health care issues, and with whom the vast majority of the population register on a long-term, one-to-one basis. This system supports the development of long-term relationships between patients and GPs and gives the latter the opportunity to co-ordinate and advise on complex patterns of care and support patients in primary and secondary preventive efforts. Access to primary care is available 24 hours a day (either through a patient’s regular GP or a deputising service), free at the point of use and even after adjusting for differences in need, low-income patients see their GP more often than higher-income groups. Patient satisfaction rates are higher than the European average and some quality indicators, such as low admission rates for asthma (36.5 per 100 000 population versus an OECD average of 51.8) suggest good primary care and co-ordination for some clinical areas.

While the primary care system has served well its role up to now, demographic changes and important reforms in the Danish hospital sector demand a different, stronger and modernised primary care sector. Demographic trends and the rise in the number of elderly patients with multiple long-term conditions place pressure on the primary care sector to co-ordinate their care safely and effectively, making best use of resources and avoiding unnecessary hospitalisation. Public and political expectations are that health care be well co-ordinated and seamlessly patient-centered.

This expectation is further reinforced by reforms taking place in the Danish hospital sector. Hospital rationalisation and increased specialisation of care mean that hospitals are refining the services they provide to more specialised functions, and shorter hospital stays mean that more patients are being discharged earlier. This places even more demands on primary care services, particularly on GPs, to play an even more central role in managing this shifting pattern of health care use.

### ***Health sector reforms and quality initiatives have focussed primarily on secondary care, leaving modernisation of primary care behind***

Danish general practice is not currently stepping up to the task demanded of it. In many ways, primary care remains a passive recipient of knock-on effects of administrative and hospital reforms, with few ambitions

for a modern national primary care service. Although GP services are included in biannual region-municipality negotiations to standardise and improve local health services in response to the challenges outlined above, the independent-contractor status of the majority of Danish GPs means that they are not directly obliged to follow these service agreements and achieving compliance can be difficult.

Perhaps as a consequence, many of the quality initiatives that have been the hallmark of the Danish health care system have not reached the primary care sector. The Danish Health care Quality Model at present only covers hospitals, although accreditation standards for GPs are being developed. Denmark's National Indicator Programme includes few ambulatory care sensitive conditions; for those that are included (COPD, diabetes, heart failure and depression) the indicators are overwhelming focussed on secondary care. The Danish Society for Patient Safety's *Patient Handbook* and various demonstration projects mostly concern hospital stays. Similarly, the National Institute for Health Data has not published any reports on activity or quality in primary care. The Danish General Practice Database (DAMD) for primary care falls far short of being comparable to the clinical quality registers developed in the specialised care sector; it is primarily administrative (supporting fee-for-service payments) and does not systematically contain procedure or diagnosis codes.

Hence, modernisation of the primary care sector has been relatively cautious and incremental. There are few mechanisms to reward quality and continuity of the care that GPs provide, whether through financial or other instruments. The fact that most GP income derives from fee-for-service may not be best suited to the provision of holistic, integrated care. Initiatives on Bornholm and in Copenhagen offering GPs significant cash incentives to participate in integrated care projects met with unexpectedly low uptake, for example, GPs citing too high a workload to engage in additional activities. Neither are there strong sanctions to actively discourage and reduce poorly co-ordinated care. GPs' ways of working have not been modernised, either: 37% of Danish GPs still work as lone practitioners (although this proportion is slowly reducing), an organisational model that may not perform well with the complexity of the tasks primary care is asked to deliver.

***A vision is needed for primary care, focussed on an explicit responsibility for assuring integrated care***

Now is an opportune moment to discuss a national vision for what primary care in Denmark should look like over the next 5-10 years. This should focus on continuous and co-ordinated care for those with multiple long-term conditions and highlight the GP-patient partnership as *the key*

*relationship* in ensuring high-quality and safe care, that is easily accessible, personalised and successfully negotiates the organisational boundaries of complex health and social care systems. This could take place in the context of updating the national quality strategies of 1993 and 2002 into a nationally agreed conception of health care quality in the primary care sector.

The right balance between supporting, encouraging and requiring GPs to deliver a modern primary care service needs to be found. Underpinning this would be further development of clinical guidelines for primary care practice (which, in other settings, have been shown to contribute positively to the development and professionalisation of health care actors). In developing clinical guidelines and patient management programmes, attention should be given to ensure that they go beyond disease categories to address care of elderly patients, care at hospital discharge or care of the patient with multiple long-term conditions. Some incentives or sanctions around compliance with these guidelines, suitably adapted to local conditions, may be appropriate.

Central to building a modern primary care sector would be continuing to encourage the natural evolution away from solo toward group practice. This does not need to imply any loss of the continuous, personalised care rightly valued by Danish patients; other countries have moved from solo practices to small group practices of three or four clinicians without losing this ethos. At the same time, support will be needed to extend the quality, safety and peer-support gains of group practice to those GPs working in settings where group practice is less feasible, such as those working rurally. Tele-networking and facilitation for these GPs to spend structured face-to-face time with colleagues are obvious solutions.

### ***Specific quality initiatives in primary care should focus on the patient experience and the pathway***

Well co-ordinated care, which treats each patient as an individual and takes account of their circumstances and preferences, matters to patients and their families. At the same time, Danes value the personal and long-standing professional relationship they have with their GP, as their initial and most frequent point of contact with the health care system. It makes sense, then, that modernisation of the the primary care sector should focus on the patient experience and pathways of care, especially for long-term conditions. The following seem to deserve high priority:

- The hospital accreditation programme should be expanded to include primary facilities (GP clinics, nursing homes, municipal health centres, etc). While it has been acknowledged that Denmark should move away from institution-based accreditation to



something that more closely reflects the patient pathway, it remains unclear how this would be achieved. A transparent agenda with targets and timelines should be pursued.

- More appropriate incentives for primary care professionals to work in larger teams and take responsibilities for the whole patient pathway are needed. Consideration could be given to recognising and incentivising quality in primary care in contractual renegotiation, moving beyond mere productivity. Such incentives need not be financial: public reporting of health care provider performance has been associated with improvements in health care quality in other settings.
- There is a need to strengthen initiatives around co-ordination between primary and secondary care, which is known to generate a significant number of patient complaints and adverse events in many countries. Initiatives such as pathway co-ordinators and designated contact persons whom patients can approach with questions during admission and multiple ambulatory visits, ought to be assessed and if appropriate, replicated.
- There is a particular need for quality initiatives in long-term care (LTC). Municipalities' ambitions to deliver quality care in this new role is not met by sufficient support or capacity to develop LTC quality indicators, or accreditation and care workers' standards. Denmark could learn from the experiences of other countries such as the Netherlands, the United States and Germany to develop quality measures and policies in this area.

***Success will depend upon radically developing the data infrastructure underpinning primary care as a first immediate step***

Relative lack of data on primary care activity and limited use of what exists, compared to other health care sectors, makes it difficult to know how effectively GPs and other primary care professionals are meeting community health care needs. Although Denmark's General Practice Quality Unit (DAK-E) collects and transmits data back to Danish GPs on some aspects of chronic disease management, there is little evidence that GPs use this to systematically improve their practice. Unless backed-up by incentives or sanctions to participate in audit cycles or other evidenced quality improvement activities, investment in such feedback systems is wasted. Additionally, more complete recording of all primary care diagnoses, prescribing and procedures will enable more robust analysis of

patterns and quality of care. A complementary priority would be to push ahead with a centralised quality register of primary care patterns. A particular oversight to be corrected is that the long-term care sector appears to have been forgotten in these initiatives: municipality home nurses, for example, have no access to a patient's electronic health record. This inevitably raises care continuity and patient safety issues and should be resolved.

There is also clear potential for more extensive data linkage within the primary care sector and across the primary and secondary care sectors. A chronic care quality register, holistically describing patient needs and service use across all health care sectors, would go beyond a site/silo conception of health care quality. Denmark would be able to move towards a patient-pathway perspective when setting standards and judging health care quality, for example around preventable admissions. In particular, thought must be given to developing indicators around co-ordinated and continuous care. Although a difficult area to measure, candidate indicators might relate to medication errors, waiting times and surveys of patient experience.

## **Linking hospital reforms to quality**

### ***Denmark's central government and the Danish regions have undertaken an ambitious programme of hospital restructuring***

Denmark is pursuing ambitious and worthwhile reforms to encourage the further specialisation and rationalisation of its hospital sector. This plan is a good example of efforts to improve the quality of secondary and tertiary care while balancing economic priorities. Over the past decade, hospital beds have fallen from around 25 000 in 1996 to 18 000 beds by 2009. As the owners and operators of hospitals, since 2007 the Danish regions have sought to accelerate this process through further closures of small hospitals across the country and concentration of certain “specialised” hospital services (accounting for about 10% of all services delivered) into a handful of major hospitals across the country.

The reform has been facilitated by a large capital investment, 60% of which was funded by central government. This capital investment was used alongside an expanded role for the Danish Health and Medicines Authority (DHMA) to determine whether the nominated specialised hospital services ought to occur at a one or a small number of hospitals for the whole country or at one or a small number of hospitals in each of the five regions. By prescribing which services could be delivered where, the central government's decisions had flow-on implications for the health and capital

planning of individual regions. Regions' capital plans were submitted to the central government, along with bids for investment to modernise services that often included closing or scaling down smaller hospitals. Currently, capital investments are being rolled out as part of a decade-long investment programme that shall amount to the equivalent of an additional 2.5% of health spending per year.

The restructuring of specialist hospital care is being led by both quality and efficiency concerns. Many of the small hospitals that have been closed down had up to 100 beds at most, well below thresholds regarded internationally as desirable to deliver safe and appropriate services. In an environment where the literature on optimal size and volume provides limited guidance for policy making, decisions regarding hospital configuration and appropriate volume thresholds were made by the DHMA, but drew heavily on the input of clinicians and administrators. This was informed by considerations such as the rarity of a disease, the technological intensity of treatment and the skill mix needed to undertake a given procedure. It is commendable that as hospitals are authorised to deliver specialist services, they are also obliged to collect and submit data to the DHMA for evaluating the results of these changes. The specialisation plan should address the concern amongst surgeons and policy makers in Denmark that there were certain specialist services being delivered in potentially unsafe circumstances. While it is too early to systematically evaluate the impact of these reforms, it will be important for policy makers to use changes in the supply of hospital services to drive improvements in quality of care.

***Individual clinician performance should be tracked at a hospital level and central authorities should proactively support the diffusion of best practice***

According to the literature on volume and quality, the volume of services a clinician delivers is a better determinant of patient outcomes than hospital volumes. To help evaluate the success of the plan and monitor quality on an ongoing basis, the DHMA should seek that hospitals internally monitor data on the performance of individual clinicians, alongside system-wide efforts already being undertaken to evaluate the performance of specialist hospitals. This would help improve the richness of monitoring on quality-of-care outcomes in the short term. Such information would also help build a base of expertise in hospitals which could in the future help refine the DHMA's guidance on volume thresholds for certain services, which may extend to specifying minimum clinician volumes, alongside volumes for the institutions in which they work.

Having established guidance for the volume at which certain hospital services should be delivered, central government should also support hospitals in exchanging and disseminating good practices across regions. Major teaching and specialist hospitals that are also centres of excellence for particular specialisations can often be the source of innovations in new medical procedures and processes. The Danish authorities could encourage the exchange of best-practice clinical research, from the few highly specialised hospitals to the system at large. One possibility is to establish a forum to help translate knowledge from specialist centres into practical improvements in accreditation and in the measurement of patient experience that meets the need of different types of hospitals. More broadly, central government agencies should see their role as increasingly one of evaluation and “best practice diffusion” by supporting regions to develop common assessments of clinical outcomes, disseminate information and learn from top-performing regions.

This would also encourage the spread of new and successful models of care. To date, there has only been a small number of new models of care that have emerged which take advantage of larger, more specialised hospitals. Denmark ought to consider models of care such as that available in Australia, which has used the concentration of highly specialised cancer services to develop programmes such as specialist-led cancer teams for very complex patients, which are based in a tertiary hospital and linked to other health care services. The new structure of the hospital sector also unleashes new opportunities for greater medical research. The Danish government should work with universities, speciality groups and regions to review the structure of medical research facilities and ensure that they evolve to make the most of the opportunities provided by larger scale specialist hospitals.

### ***A programme of professional development for individual clinicians ought to be implemented***

The changes to the role of hospitals will demand health care providers to evolve into different roles. For example, whilst not losing their valued generalist role, further skill specialisation amongst some GPs could be explored. Interested GPs could develop extended competencies in defined clinical areas (e.g., dermatology, ear nose and throat, paediatrics, obstetrics and gynaecology). Similar developments of GPs with special interests have proved popular amongst both patients and professionals in other settings. Likewise, there is scope for some nurses to develop enhanced competencies, for example around co-ordinating the care of patients with multiple chronic conditions, developing clinical management skills for defined conditions (such as COPD or diabetes) or dealing with minor ailments. These advanced nurse practitioners have been shown to provide effective, safe and cost-

effective care in other OECD countries, particularly if introduced in an incremental manner.

Denmark may wish to consider a more formalised system of continuous professional development (CPD). In contrast to several other OECD countries that have formalised CPD requirements to a minimum number of hours per year, requirements around this are not formalised in any way in Denmark. Thought should be given to whether a similar requirement could lead to quality gains in the Danish system, or whether a system of positive rewards or incentives would be appropriate. New specialist hospitals that act as clinical centres for excellence could play a major role in assisting with continuous professional development of doctors working in general hospitals. Over the longer term, Denmark needs to consider how the public can remain assured of the on-going competence of health care professionals, particularly doctors. It may wish to consider whether maintenance of professional licensing should be contingent upon a programme of annual appraisal by peers, as in other OECD countries such as England, or whether other solutions would be more appropriate to the Danish context.

## **Monitoring health inequalities**

### ***Health care financing and access in Denmark is provided equitably***

The Danish health system is built on the principle of equal access for all citizens, however it should not assume that generous social policies automatically lead to health equity and should rather work on embedding equity considerations within the process of quality measurement and improvement.

Legislation encourages equal access to health services within the context of a decentralised system of governance. Patients enjoy free choice over specialists and hospital services. There is good access to care, facilitated by low out-of-pocket spending. Public spending as a share of GDP is among the highest in the OECD (9.5% of GDP in 2010), and 86% of health spending is public. Out-of-pocket spending accounts for 13.2% of total health spending, well below the OECD average of 19.4% in 2010. State revenues redistributed to localities via block grants take into account socioeconomic differences and population size, while half of the allocations to hospitals also reflect hospital admissions. This is regarded as being a fair resource allocation system that takes into good account geographical variation in need. Denmark also has a large health workforce to serve its population's health needs.

Recent initiatives seek to reinforce the commitment to equitable access by eliminating user charges in the hospital sector. A government platform

(“Equality in Health”) to address inequalities has been established, involving stakeholders from the regions, the central government and three municipalities; GPs will also be involved in due course. The Danish regions have published in 2010 an overview of regional initiatives to address inequities and adjust health care services to the specific needs of different population groups. Other ongoing initiatives include National clinical guidelines to reduce variations in quality of treatment and outcomes across regions. These each demonstrate an awareness of equity issues, although their impact on re-orienting the system to better support the disadvantaged remains to be seen.

***There is some evidence of growing socioeconomic inequalities in health and low-income people having trouble accessing quality care***

Although a traditionally egalitarian society, the income gap between the richest and the poorest in Denmark is expanding, with the Gini coefficient showing an upward trend since the 1980s to its current level of 0.25 (which nevertheless remains low by international standards). Socioeconomic inequities in risk factors for ill-health are also widening: for example, the difference in prevalence between the highest and lowest educated groups for obesity has increased from 10.2% in 1987 to 16.9% in 2010; equivalent figures for daily smoking are 17.9% and 27.7% (though smoking prevalence halved over that period). Unsurprisingly, people with less than ten years of education are more likely to have a longstanding and limiting illness (over 78% compared to those with 12 or more years), experience long-term restrictions in activity due to illness (more than 118%), and experience work cessation due to illness (more than 178%) than people with 12 or more years of education, while higher incomes have been shown to predict longer life expectancy in Denmark, as elsewhere.

There are currently inequalities in the utilisation of health services, including preventative services. The proportion of low-income women having had cancer screening in the past two years is only slightly over 10%, the lowest among 15 OECD countries. Data show that people from lower socioeconomic backgrounds are less likely to participate in breast cancer and uterus cancer screening, and are at higher risk of being readmitted to hospitals for preventable conditions.

***Denmark should better exploit its solid data infrastructure for regular measurement and reporting of health inequalities***

Denmark has an excellent data infrastructure and a largely untapped potential to profile inequalities in health. The Danish civic registration system makes it possible to link age, country of origin, socioeconomic

variables with health status information. Every four years, the Danish regions and the Danish National Institute for Public Health conduct a national survey – the Danish National Health Profile (last published in 2010), which provides a picture of self-assessed health status, quality of life and health behaviours. The data enable benchmarking across regions and has the potential to be used for analysing inequities in health. Similarly, the data from National Health Interview Surveys carried out by the Danish National Institute for Public Health could be used for measuring health inequalities.

Despite the wealth of data, measurement of health inequities is not yet systematic. For example, while the Danish Health and Medicine Authority published a report on health inequalities in 2011, there is no regular report focusing on inequalities in health. Periodic surveys do not allow for regular monitoring of changes in health utilisation and disease prevalence. There are no disaggregated quality indicators by population groups, especially with regard to community-based care, and no appraisal and regular monitoring of the equity impact of health activities at regional and local level.

Information available in national disease quality registers should be used for supporting monitoring of clinical information disaggregated by socioeconomic groups. The rich data infrastructure could be used for regular reporting on health utilisation and quality in hospital care, which should be disaggregated by socioeconomic groups. Significant efforts should go to addressing data gaps in primary care in particular. Work underway to improve data collection on variation in chronic diseases in general practice should be strengthened. Critically, it will be important to ensure that information on inequalities in health is then effectively used to tackle inequalities at local and regional level, through on-going central guidance as appropriate, agreeing targets, disseminating and encouraging the scaling-up of successful local initiatives to tackle inequalities and other measures.

### ***Geographical inequalities and the impact of hospital reorganisation on access to care should be closely monitored***

While Denmark has good supply of doctors, beds and technologies relative to other OECD countries, there are some indications of clustering of health care services around urban centres, although the lack of data makes it difficult to ascertain the extent of geographical inequities. Incentivising or requiring young doctors to practise in underserved areas during their early years of practice may be one way to address geographical disparities.

Initiatives to reduce geographical inequalities in health care capacity should be monitored and strengthened. If the government wishes to address health inequities, it would be important for equity to be an explicit

consideration in health service planning decisions, both at local and regional level. This does not seem to systematically occur today. Indeed, a concern remains that by specialising certain hospital services at a higher level, patients will have to travel further for care. Several other OECD countries have observed an equity gradient in lower socioeconomic status persons being less willing (or able) to travel for care. While the distances in Denmark are significantly smaller than most other OECD countries, and hospital planning decisions to date have tried to take into account the patient travel burden, striking a fair balance between safety considerations and patient accessibility ought to remain an important priority. The closure of smaller hospitals may impact disproportionately on elderly populations, for whilst elderly patients do have their expenses for transportation refunded, the burden of increased travel, especially for regular hospital visits, may in itself be significant. For this, Denmark should continue to monitor the equity impact of any major reform affecting health services such as the hospital specialisation reform. For example:

- Unique patient identifiers linked to social security information currently allow researchers to assess the travel burden faced by patients. Using its data advantage, Denmark may wish to pioneer monitoring of the frequency of travel to hospitals for treatment.
- Regions could review whether after-hours GP access and ambulance services are equipped to ensure that patients access needed care. Reporting average travel times to the nearest hospital, the performance of ambulances, and the extent to which patients have had to travel to reach primary care or emergency services, as in the Netherlands, would be important. While greater use of mobile teams as in the Netherlands and ambulance services as in France come at high unit costs, these should be traded off against safety considerations.

***Steps to reduce the financial burden of low-income people should be especially targeted to primary care and prevention***

Publically funded health care in Denmark provides broad coverage of diagnostic, preventative and curative services, with low cost-sharing by OECD standards. While financial barriers do not seem to be the main barrier to access health care, there are concerns that rising out-of-pocket costs and the lack of income thresholds triggering exemptions from co-payments might pose a significant burden on low-income groups, beneficiaries of social benefits and seniors. Relatively high co-payments for pharmaceuticals, dental care, physiotherapy and eye products can impact disproportionately upon low-income groups. For example, people on low



income have a much lower probability of having visited a dentist in the past 12 months than in most OECD countries. The growing role of voluntary private health insurance for services that are only partially reimbursed by the public system has also raised concerns that inequities in prompt access to services would widen, despite significant efforts to reduce waiting time for elective surgery.

The removal of the tax credit on private health insurance policies, and further reduction in cost sharing for hospital services and on prescription drugs for chronically ill patients are likely to improve financing equity. However, considering the large share of health expenditure already paid for by the public system, it is unlikely that there would be much room for reducing private health spending even further in Denmark. A more sensible approach could be to make intelligent use of cost-sharing policies to drive health system objectives, for example by:

- Encouraging open and regular review of the criteria (e.g., cost effectiveness) for inclusion or exclusion of specific services from the public benefit package;
- Designing or re-designing cost-sharing to encourage desired behaviour (e.g., compliance with prescribed medical treatment, cost-effective drugs or preventative care) or conversely to discourage unwanted behaviour (e.g., consumption of branded pharmaceutical products when a cheaper bioequivalent is available);
- In addition to preventative policies designed to address health risks, policies that promote equity and good health should be considered, for example child health checks in primary care settings and schools.

## **Policy recommendations for improving the quality of the health care system in Denmark**

The main challenge for the Danish health care system will be to make the many different quality monitoring and improvement mechanisms part of a coherent quality assurance system underpinned by a modernised primary care sector and stronger monitoring of clinical practices in hospitals and of health inequalities. This will require reforms to:

### **1. Create effective links and synergies between a dense array of disease and service-focused quality initiatives by:**

- Aggregating information on the quality of care that is currently stored in separate repositories, for example by using Electronic medical records to create links between quality registers and by organising a strategic review of Denmark’s e-health agenda.
- Bringing quality registers together to match typical patient pathways, and exploring the potential for clinical accreditation to typical patient pathways, rather than discrete institutions, as well as long-term care services.
- Considering setting up a set of nationally developed care protocols, guidelines and standards to level-up ambitions and reduce local variations, and developing an annual report on the quality of health care in Denmark based on a uniform vision.
- Strengthening the patient perspective by making patient representation in the management structure of hospitals and nursing homes mandatory and presenting quality information in ways that can better inform patient choice,
- Strengthening regions’ and hospital focus on performance, for example by more systematic use of inter-regional and inter-hospital comparisons to drive quality improvement and by setting up agreed quality targets within agreements between the centre and decentralised governments.

### **2. Modernise the primary care sector by:**

- Setting a national vision for how the primary care sector should deliver seamless and co-ordinated care, especially in light of increasing burden of long-term conditions and a faster through-put in specialist care.
- Bringing about a more transparent, formalised and verifiable programme of continual professional development for all primary care practitioners, supported by national standards, guidelines and time-limited financial incentives.
- Rewarding quality and continuity of the care that GPs provide, such as through sharing of useful local experiences of successful integrated care models, encouragement of group-based practice models, and piloting of advanced nursing roles.

### **Policy recommendations for improving the quality of the health care system in Denmark (cont.)**

- Developing quality mechanisms – such as clinical guidelines and standards – centered around patients with multiple chronic conditions and long-term care needs, and the co-ordinating role of the general practitioner.
- Strengthening the information infrastructure underpinning quality in primary care, for example by establishing a quality register for chronic care based in primary care and by making better use of the DAK-E data capture system.

#### **3. Link hospital specialisation reforms to quality by:**

- Seeking data on the quality performance of individual hospital physicians as well as the hospitals in which they work and using this along with information on patient outcomes to drive service improvement and professional development.
- Working with regions, specialist hospital directors and universities to review how to make the most of the improved possibilities for medical research that are provided by more specialised hospitals.
- Encouraging opportunities for improving care integration, for example by embedding contact details for specialist services in clinical decision aids such as disease or symptom management guidelines and by assessing and encouraging new models of integrated care and continuity.

#### **4. Improve capacity to secure Denmark commitment to equity in health care by:**

- Strengthening data to monitor equitable health care, for example by disaggregating quality registers data by socioeconomic group and by improving data collection on variation in chronic diseases within general practice.
- Renewing action and monitoring of risk factors to chronic diseases that falls disproportionately on low-income groups at primary care level, such as obesity, inactivity, smoking and binge-drinking, in addition to wider policies that promote equity, such as early intervention in primary care settings and schools.
- Surveying the impact of hospital sector reforms on geographic access by monitoring patients' travelling time, ensuring that certain patient groups are not forced to forego health care because of difficulty travelling and by assessing whether out-of-hours local GP and ambulance services provide safe and effective care, with equitable outcomes, for Danes living in remote areas and for elderly populations.
- Reviewing the impact on access to care of limited cost-sharing exemptions for certain services (dental care, optician services, physiotherapy and pharmaceuticals), and considering innovative cost-sharing approaches focused on encouraging healthy behaviours and efficient health care use, such as to encourage preventative care.

## *Chapter 1*

### **Quality of care policies in Denmark**

*This chapter summarises the many policies and activities that are in place in Denmark to assure and improve quality of care, highlighting how policies to monitor and improve quality in the Danish health system should move from a focus on quality management of hospital services, towards quality improvement of the health care system as a whole. After describing the quality governance structure and the roles of the central government and its agencies, the regions and the municipalities, the chapter focuses on the assurance of the quality of professionals, pharmaceuticals and devices, and health care facilities. Safety policies are listed in a separate section, as are the various ways to shape the Danish information infrastructure to support the measurement and management of quality. Specific attention is given to policies aimed at strengthening the role and perspective of the patient. This chapter concludes that Denmark has a sophisticated and highly developed set of quality assurance mechanisms already in place, but that challenges remain to create more linkages and synergy between the many activities to realise quality of care not just for specific services but especially for the health care system as a whole*

## 1.1. Introduction

Stakeholders in the Danish health care system have over the years developed and institutionalised a myriad of mechanisms to ascertain the effectiveness, safety and patient centeredness of health care. Compared with other OECD countries Denmark has a broad spectrum of quality policies and activities already in place. This chapter will explore how these various initiatives relate to one another, and whether they constitute a consistent framework for quality management and quality improvement for the health system as a whole.

The description and profiling of quality of care policies in this chapter are structured according to a framework that is detailed in Table 1.1. After providing some contextual information, this chapter will address:

- the legislative framework and governance for quality of care in Denmark;
- the quality assurance of respective inputs (health care professionals, technologies and physical infrastructure);
- policies for monitoring and standardising quality of care as well as safety policies;
- whether policies encourage health system improvement and patient involvement.

A short description of the Danish health care system is provided in Box 1.1. For more detailed information on the Danish health system, the European Observatory's *Health Systems in Transition* report on Denmark offers a useful source of information (Olejczak et al., 2012).

### Box 1.1. Overview of the Danish health system

Denmark's health system is organised across three administrative levels, state, regional and municipal, with planning and regulation take place at both state and local levels. The state holds responsibility for overall regulatory, supervisory and fiscal functions but is also increasingly taking responsibility for more specific planning activities, such as quality monitoring and planning of the distribution of medical specialties at the hospital level. The five regions are, among other things, responsible for hospitals as well as for self-employed health care professionals. The municipalities are responsible for disease prevention and health promotion. Regulation takes place through national and regional guidelines, licensing systems for health professionals and national quality monitoring systems.

### Box 1.1. Overview of the Danish health system (*cont.*)

A general process of “(re)centralisation” has been taking place in the recent years through a series of reforms and policy initiatives. The structural reform of 2007 merged the old counties into larger regions, and reducing the number of municipalities to 98. Furthermore, a more centralised approach to planning and regulation has been taking place over recent years. This is evident in the new national planning of medical specialties as well as the establishment of a nationwide accreditation system.

Access to a wide range of health services is largely free of charge for all residents. Health legislation formally provides residents with the right to easy and equal access to health care and entitles patients to choose treatment, after referral, at any hospital in the country. Financing of the health system is through taxation at the state level (progressive general income tax) and at the municipal level (proportional tax and property taxes). The municipalities are financed through taxes and direct transfers from the state, while the regions are financed through block grants from the state and the municipalities.

Total health care expenditure in Denmark is 11% of GDP, higher than the average 9% across other European OECD countries. Public expenditures account for 85% of total health expenditure, compared to an average of 73% across other European OECD countries. Out-of-pocket payments (OOP) account for much of the remaining financing (13% of total expenditure, compared to a 21% on average among other European OECD countries). The share of OOP spending in Denmark has decreased 1.5% over the past decade, compared to the 0.3% average increase seen across European OECD countries.

Since 2002, state-subsidised supplementary voluntary health insurance (VHI) has played a small but rapidly growing role in financing elective surgery and physiotherapy. The expansion of voluntary health insurance is motivated by population groups’ desire to reduce co-payments, but also to ensure access to the small private hospital sector if needed.

The physical and organisational infrastructure of the hospital sector has been undergoing some changes in recent years. By 2010 the number of hospital beds was at 3.5 per 1 000 people, decreasing a 2% per year, from 2000 to 2010 (the number of hospital beds across EU member states shows a similar trend). Average length of stay in hospital has declined following an increase in outpatient treatment as well as a policy of de-institutionalisation in the psychiatric sector. Denmark is also merging smaller hospitals and centralising medical specialties, including a reorganisation of the acute care system, and the establishment of fewer, but also bigger and more specialised hospitals.

Relative to its population, Denmark has slightly more doctors than most European OECD countries, with 3.5 practicing doctors per 1 000 people, but there are some concerns about the rate of recruitment of physicians, especially in rural areas. General practitioners (GPs) are fairly well distributed throughout the country, but practicing specialists tend to be concentrated in the capital and other urban areas. Nurses constitute the largest group of health workers and the number of nurses has increased in recent decades. In 2010, the ratio of nurses to physicians was the highest among European OECD countries, at 4.4 nurses per doctor (compared to an average of 2.5 in European OECD countries).

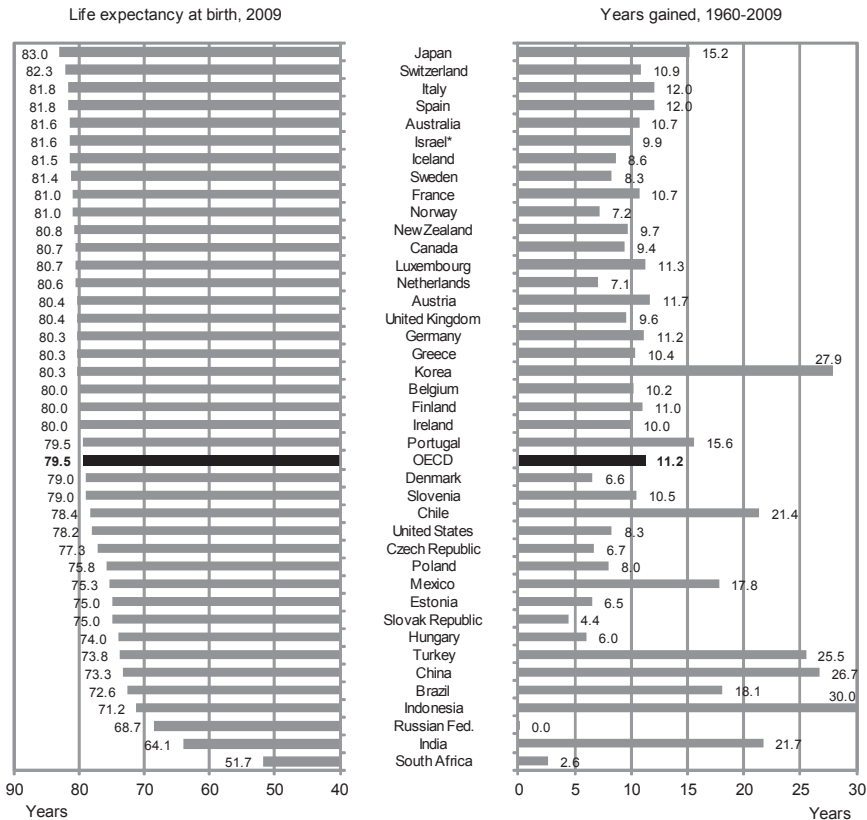
*Source:* Olejaz, M. et al. (2012), “Denmark Health System Review”, *Health System in Transition*, Vol. 14, No. 2, pp. 1-192; OECD (2012), *Health at a Glance. Europe 2012*, OECD Publishing, doi: 10.1787/9789264183896-en.

## 1.2. Context

### *Denmark has good quality indicators but some outcomes lag behind other Nordic countries*

With an average life expectancy at birth of 79 years and an increase in life expectancy between 1960-2009 of 6.6 years, Denmark is close to the OECD average for life expectancy at birth of 79.5 (OECD, 2011, Figure 1). Four out of five people report being in good health. Mortality rates from heart disease are well below the OECD average and prevalence for diabetes in the adult population is also below the OECD average. Smoking rates, which used to be high, have been cut significantly in the past few years, now being below the OECD average, highlighting success in health prevention and promotion initiatives (OECD, 2011).

**Figure 1.1. Life expectancy at birth, 2009 (or nearest year), and years gained since 1960**



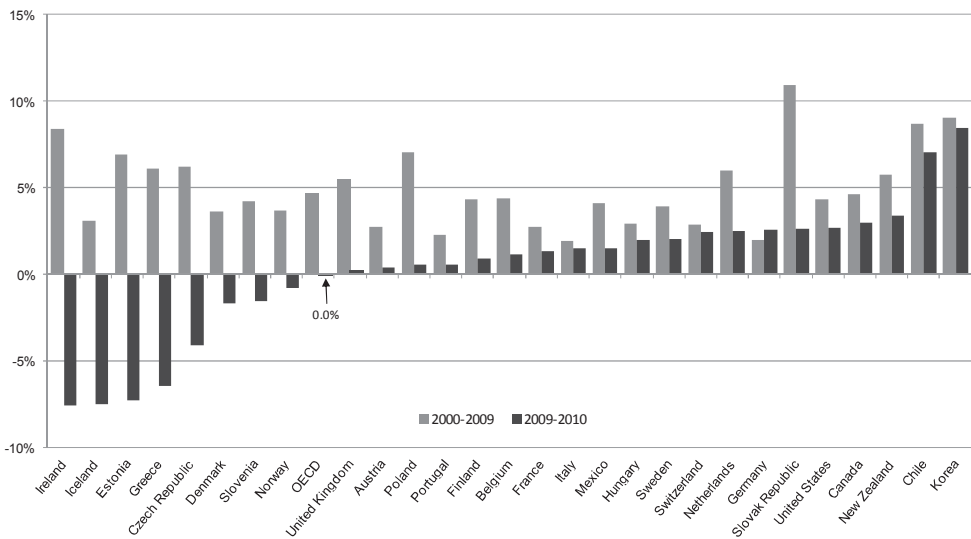
\* Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Source: OECD Health Data 2011; World Bank and national sources for non-OECD countries.

However, some key health status indicators still lag behind other Nordic countries. For example, life expectancy in Denmark is lower than in Sweden (81.4 years), Norway (81 years) or Finland (80 years). Denmark also has high disease-specific mortality from several cancers, relative to the OECD average.

As a share of GDP, Denmark spent 11.5% on health in 2009, the fifth highest level of spending in the OECD, and 11.1% in 2010. Total health expenditure per capita was USD PPP 4 348 in 2009, above both the OECD average of USD 3 233, and neighbour countries such as Sweden (USD PPP 3 722) and Finland (USD PPP 3 226), but below Norway (USD PPP 5 352). Denmark's per capita spending is higher than other countries with comparable level of GDP per capita, such as Finland. Denmark experienced growth in spending on health care in the period 2000-10 of around 4% per year, but, similarly to other OECD countries hit by the economic and financial crisis, most recent OECD data show a decline in spending (2009-10) (Figure 1.2).

**Figure 1.2. Average annual growth in health spending across OECD countries, 2000-10**



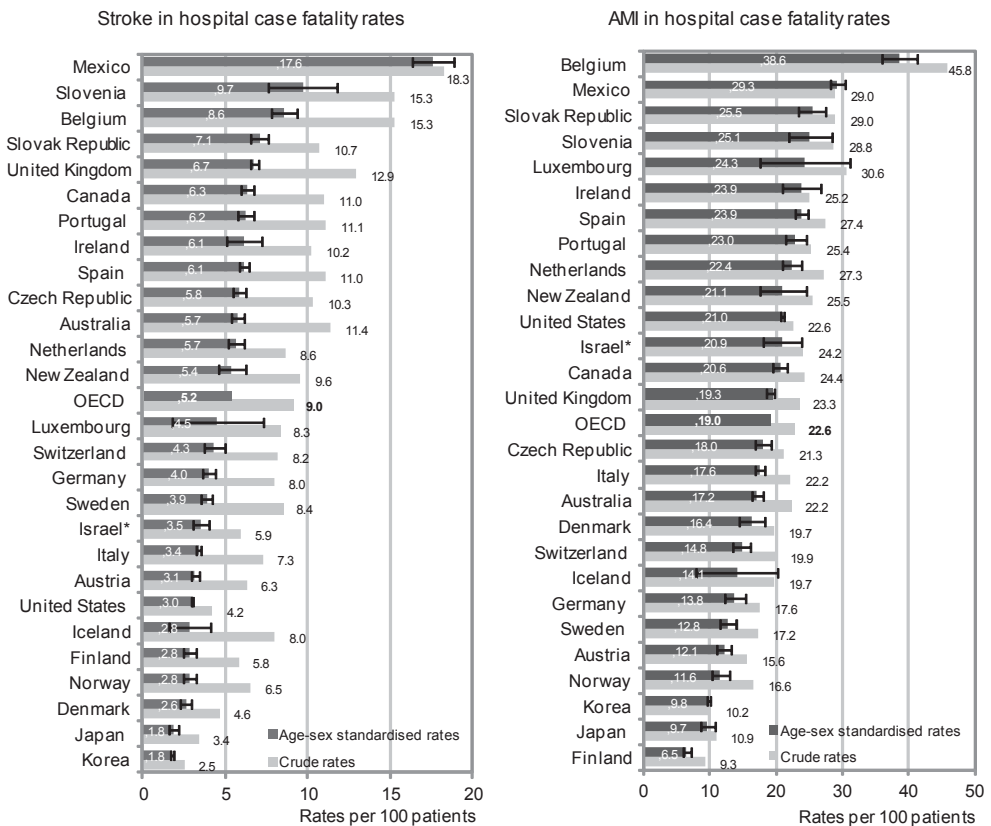
Source: OECD Health Data 2012.



**Quality indicators for acute care and cancer care in Denmark show a mixed picture**

These broad indicators say little about quality of care in Denmark. When looking at the most recent indicators on quality of care, the picture for Denmark is mixed. On some indicators of acute care, Denmark appears to be doing well, for example 30-day mortality for acute myocardial infarction (Figure 3.7) and stroke (Figure 1.3) are below the OECD average.

**Figure 1.3. Ischemic stroke (left) and hemorrhagic stroke (right) in hospital case fatality rates in Denmark rank among the lowest in OECD countries**



\* Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Source: OECD Health Data 2011; IS-GBE, 2011.

However, Denmark has worse rates than Norway, Sweden and Finland on other quality indicators such as five-year survival rates for breast, cervical and colon cancer (Figure 1.4). Indicators on potential preventable hospital admissions, which offer a measure of the functioning of the primary care system, display a mixed picture for Denmark, with relatively high admissions for COPD, around average for diabetes and below the OECD average for asthma and chronic heart failure (see Chapter 2).

### 1.3. Profiling policies on quality of health care and their impact

Quality issues have gained importance across OECD countries in recent years as governments and the public increasingly focus on what is being delivered in exchange for major public investments in health care. Policies to address quality of care help improve patient outcomes. This chapter seeks to profile the key policies and strategies that Denmark has used to encourage improvements in the quality of health care. The description of policies in this chapter is structured according to a framework for categorising quality policies detailed in Table 1.1 below.

**Table 1.1. A typology of health care policies that influence health care quality**

Policy	Examples
Health system design	Accountability of actors, allocation of responsibilities, legislation
Health system input (professionals, organisations, technologies)	Professional licensing, accreditation of health care organisations, quality assurance of drugs and medical devices
Health system monitoring and standardisation of practice	Measurement of quality of care, national standards and guidelines, national audit studies and reports on performance
Improvement (national programmes, hospital programmes and incentives)	National programmes on quality and safety, pay for performance in hospital care, examples of improvement programmes within institutions

*Source:* Authors' elaboration for the OECD.

### 1.4. Health system design

Quality has a long history in Danish health care, which is reflected in legislation, and a series of national quality policies that were developed over the past 20 years. The Danish governance model, of a national government, regions and municipalities has advantages, especially related to developing

tailor made local services, but also poses challenges for aligning the management and improvement of quality of care in hospitals, primary care, rehabilitation, prevention and long-term care.

A national strategy on quality of care was developed in 1993 and was followed by a second national strategy in 2002. More recently, quality of care played an important role in hospital reforms (see Chapter 3), reforms to limit the number of regions, and the decentralisation of responsibilities for home care and rehabilitation to municipalities. Denmark's previous 13 counties and three municipalities with county functions were rationalised to five regions in 2007. The former counties' responsibilities for social and environmental policy were shifted to municipalities and responsibility for high schools was moved to the central government. The combination of these changes saw a narrowing of the breadth of the regions' responsibilities such that they are now principally responsible for running hospitals and contracting with GPs. The thrust is that due to their larger size and capacities, regional governments would be able to perform better than smaller government units in managing hospitals and driving further quality and efficiency (Andersen and Jensen, 2009).

At the same time, the 271 municipalities were consolidated into 98 municipalities, who also gained responsibilities in health, in particular on health promotion, primary prevention, rehabilitation and long-term care. To drive co-ordination between regional and municipal governments, it was legislated that municipalities and regions are obliged to agree (as stated in so-called health agreements) on how they share and co-operate, particularly on "boundary" issues such as health care for the elderly.

These three layers – state level, five regions and 98 municipalities – characterise the design of the Danish Health System and are at present considered the best fit between a top-down and bottom-up approach. Nevertheless, they pose a challenge when seeking to aligning the management and improvement of quality of care in hospitals, primary care, rehabilitation, prevention and long-term care.

### ***The legal context***

The Danish Health Care Act forms the main legislative framework for health care and contains a number of quality requirements. It stipulates a general obligation for the state, regions and municipalities to ensure the development of quality of care through education, research, planning and co-operation. Furthermore, it holds articles on the organisation of highly specialised treatment, patient safety and national clinical databases. In a law on authorisation of health care persons and health care provision, general requirements, responsibilities, overall requirements for education, and

conditions for authorisation are laid down for each of the 16 public authorised health care professions (among them physicians and nurses). The Danish Medicines Act regulates the authorisation and control of medicinal products and companies' manufacturing, storing and otherwise handling of medicinal products. It also establishes rules on the reporting of adverse reactions to medical products. Authorisation for clinical trials on humans is also regulated by the Act.

In general, legislation on quality of care in Denmark is not very detailed. The Danish Health Care Act states that the regions should continuously improve quality of care. However, some areas have, over the years, become the focus of more specific legislation, such as upper limits on waiting times for certain life-threatening diseases, safety of medical devices and pharmaceuticals and a no-blame reporting system regarding adverse events which is mandatory for all health care professionals.

More detailed regulation is carried out through the agreement between the national level, the regions, and the municipalities. Although the agreement system is primarily focused on budgets, it is increasingly used to set quality targets. For example, the economic agreement on the regional budget for 2013 stipulates a 10% decrease in hospital standardised mortality rate (HSMR) and a 20% decrease in patient harm for the next three years. Although the agreement system is not legally binding, it is considered by the stakeholders as an important mechanism to govern the Danish health care system, whilst leaving sufficient room for regional and local adaptations according to needs. A trend to link economic agreements to health system performance goals is still under development and at present there is no clear relation between the quality targets set in agreements so far and overall population health objectives.

From the system-governance perspective, there could be a stronger and more coherent alignment of public health and health care performance targets at national, regional, municipal and individual health care provider level. Current performance requirements in the agreements with the regions and municipalities, and between regions and specific providers, do not seem to be coherently linked to health system performance improvement. For areas such as cardio-vascular care, diabetes and cancer, there are opportunities to more strongly align existing quality measures to process and outcomes of care delivery, addressing the whole health system care continuum from prevention, identification and addressing of individual risk factors, to treatment in primary care, admission to hospitals, hospital performance and performance of home care, rehabilitation and long-term care.

## ***Institutions responsible for quality of care in Denmark at the national level***

At national level, the main actors involved in quality policies are the Ministry of Health, the Danish Health and Medicines Authority (DHMA) and the National Institute for Health Data and Disease Control.

### *The Ministry of Health*

The Ministry of Health is the principal health authority, responsible for legislation on health care provisions, personnel, hospitals and pharmacies, medical products, vaccinations, pregnancy, child health care and patients' rights. This legislation specifies the tasks of the regions and municipalities in the health sector. The ministry also sets standards for running health care services, although the Danish Health and Medicines Authority is responsible for operationalising standard settings. The Ministry of Health supports efforts to improve quality through the dissemination of experiences and through economic incentives.

### *Danish Health and Medicines Authority (DHMA)*

On March 1, 2012 the Danish National Board of Health and the Danish Medicines Agency merged, forming a new and larger organisation, under the name “Danish Health and Medicines Authority” (DHMA). The Danish Health and Medicines Authority is the supreme authority for health care and regulatory control of medicines. DHMA's overarching area of responsibility is to create a coherent health care sector with integrated care pathways for patients and to ensure and develop the quality of health care. DHMA assists and advises the Ministry of Health as well as other authorities (regions and municipalities) with the administration of health care services, and informs Danish citizens on health care issues. It is also responsible for the availability of effective and safe medicines, medical devices and new therapies and should promote their proper use. DHMA is, for example, in charge of planning and allocating specialised treatments, the authorisation of health care professionals, certification of foreign doctors to ensure their ability to perform as physicians according to Danish standards, inspection, and whether treatments are conducted in a safe way, in accordance with the legislation by health care professionals and health care institutions (for instance hospitals and nursing homes).

DHMA is also responsible for a number of registries related to side effects of pharmaceuticals and medical devices. In addition DHMA should define the framework of integrated care pathways for patients. Functions embedded in DHMA are a mixture of development, support, standard setting and control/supervision. For some areas the standard setting and

control/supervision function seems to dominate (pharmaceuticals, devices, professionals), whilst for others the development and support role seems to be more prominent (for example disease management initiatives). When it comes to patient safety all functions seem to get more or less equal attention. For much of its work the DHMA is partnering actively with other stakeholders in the Danish health care system. It is advisable to keep closely monitoring how the balance of each of the four functions evolves for the various parts of the Danish health care system.

### *National Institute for Health Data and Disease Control (SSI)*

The SSI is a public enterprise under the Danish Ministry of Health, and the Institute's duties are partly integrated in the national Danish health services. The SSI works to prevent and control infectious diseases, biological threats and congenital disorders. However, the division called National Health Surveillance and Research at SSI is responsible for collecting all health documentation within the Danish health care system, including overall monitoring of quality based on quality indicators. The SSI can therefore play a leading role in the co-ordination of the further development of the Danish information infrastructure. The challenge will be to align the e-health agenda with the positioning and further development of the various clinical registries. Another priority is making better use of individual health care providers data for driving quality improvement of provider and for management purposes.

### *The role of the Danish regions*

The main task of the regions is to manage hospitals, although they are additionally responsible for various aspects of the social sector and regional development. The governing bodies of the regions are the Regional Councils with 41 elected members, elected for four-year terms. At the head of the Regional Council stands a Regional Chairman. The most recent elections for Regional Councils were in 2009. On national level the regions are organised in a corporate organisation called The Danish regions that represents the interests of the five regions both nationally and internationally. This corporate body is also involved in negotiations around budgets, pay and working conditions. Compared with health care systems in other countries The Danish regions can be considered the executive branch of the health care system. The regions are the employers of staff employed in the health care services. Each region has its own economy with a budget that is adopted by regional politicians. Health and regional development are mainly financed through government grants, but also partly by the municipalities, while social services are financed solely by municipalities. The regions are

also responsible for psychiatric services, services for vulnerable groups and people with special needs.

### *Regional Health Quality Agenda*

The Danish regions have formed a “quality agenda” with the overall objective to improve the quality of care in the Danish health care system. The agenda states that quality improvement is part of the solution to the financial challenges that health care is facing. Six values have been stated that must guide the quality work: effectiveness, safety, cost-effectiveness, patient-centeredness, and timeliness and equality. Each region has its own staff in charge of monitoring quality of care in the health services in the region and initiating programmes for quality improvement. Also, there are three Knowledge Centres for Quality of Care that support all regions. Programmatic efforts are at present aimed at preventing pressure-ulcers, the use of the safe-surgery checklists and the use of the sepsis bundle. New programmatic initiatives on blood management, quality in mental health care and prevention of resistance to antibiotics are in the pipeline. Policies and programmatic initiatives seem to have been inspired by initiatives in the United States (Institute of Medicine and Institute of Health Care Improvement). The various regional initiatives aim to link quality improvement to waste reduction and cost containment.

Overall the quality assurance and improvement function seems to be well embedded in the managerial functions of the regions and both the monitoring function (performance measures) and support function (specific programmes and projects) are in place. What could be strengthened is the focus on the performance of the integrated health care service delivery system of each region as a whole. Compared with, for example, Sweden, where systematic comparisons of counties have been in place for several years, inter-regional comparisons in Denmark seem to be less common. The topics chosen in the regional action programmes are relevant but a direct link with local and regional public health challenges was sometimes less clear.

### *The role of the municipalities*

The 98 municipalities are local administrative bodies. The municipalities have a number of tasks, of which health represents one part. In the health field, the municipalities are responsible for home care, public health, school health services, child dental treatment, prevention and rehabilitation. The municipalities are also responsible for the majority of social services, some of which (subsidised housing for older people in the form of non-profit housing, including homes for elderly people with care

needs) have important intersections with the health care service. There is strong intertwinement of health care services and services delivered as part of social care, especially related to long-term care provision. The municipalities are themselves responsible for assuring quality of the care for the services they provide or contract, although standards set by the DHMA have to be met and guidance is provided by the Ministry of Health.

Local Government Denmark (LGDK) is the member authority of Danish municipalities. Although membership of LGDK is voluntary, all 98 municipalities are currently members. The mission of LGDK is to safeguard common interests of the municipalities, assist the individual municipality with consultancy services and, in addition, ensure that local authorities are provided with up-to-date and relevant information – also on how to assure quality in the care tasks that the municipalities provide. As health care is only one of several responsibilities of LGDK, policy plans and programmatic activities are less developed. Guidance on quality of care for long-term care services and home care is comparatively limited, although it should be noted that DHMA has detailed regulations related to the supervision of nursing homes. Development, support and standard-setting work in the area of long-term care could be strengthened and should be complemented with the necessary monitoring and control mechanisms as are already in place for hospital care, i.e., DKKM model.

## **1.5. Assuring the quality of inputs to the Danish health care system**

Denmark has a sophisticated and highly developed series of quality assurance mechanism. However, the main challenge is to create more linkages and synergy between many activities of the health system in order to realise quality of care not just for specific services but for the system as a whole.

### ***Professional certification and CME/CPD of doctors and nurses***

A crucial factor in assuring quality of care is the competences, skills and attitudes of health care professionals. An adequately skilled and motivated workforce is essential for delivering high-quality care and in addition to assuring the necessary numbers of professionals it is essential that mechanism are in place to guarantee adequate training and continuous improvement of the performance of health care professionals.

Like all other countries, Denmark has several of these mechanisms in place. Diplomas of professionals and professional training are assured via a system of certification executed by the Danish Health and Medicine Agency covering a total of 16 publicly authorised health care professions (among



them physician and nurses). In addition, 38 medical specialties are presently recognised. Authorisation is given by the Danish Health and Medicines Authority based on reports on graduates from the recognised educational institutions. License to practice is linked to this authorisation; however, for doctors, dentists and chiropractors, the right to practice independently (full registration) is earned after a further one year approved basic clinical training. Danish medical education and subsequent specialist training meet the requirements in Directive 2005/36/EC and education of nurses is in accordance with the directives requirement for nurses responsible for general care.

Danish law and departmental regulations do not require re-certification, which in other countries is linked to mandatory continuous medical education or continuous professional development (CME/CPD). Danish authorities and organisations like the Danish Medical Association question the effectiveness of re-registration models and see continuous performance evaluation of individual health professionals as part of the annual evaluation by employers. On the basis of the evaluation, professional development is planned in a dialogue between the employee and the management at department or hospital level. Doctors employed in hospitals are guaranteed a minimum of ten days a year financed by the regions, for activities related to professional development. Similarly, GP's and practising specialists have access to funding by the regions reserved for professional development. The right to practice expires at 75 years old, but can be extended by application. Temporary or permanent restriction or removal of authorisation can be caused by criminal offence, malpractice, physical or mental disability, in cases of abuse, or voluntarily by application.

Contrary to some other OECD countries, CME and CPD for health care providers in Denmark are not regulated by law. Every health care professional is expected to take responsibility for the quality of their work, including personal CME and CPD. In a small country like Denmark, in which the vast majority of doctors and nurses are employed in public hospitals, and where municipal health care services are publicly licensed and billed to the national health care system, the need for CME/CPD is enforced by the regions in their capacity as employers, chief executives, collegial networks, scientific societies and medical association/unions. In single GP and specialist offices, CME courses are actively encouraged by respective scientific societies. Main stakeholders in providing CME are the Health Care Regions, the Danish Medical Association and related unions, national and international scientific societies and private companies. Pharmaceutical companies can be sponsors of scientific meetings and courses (without marketing influence of the scientific agenda). As CME is voluntary,

CME credits are not provided, but CME courses are mostly documented through the issuing of a certificate of attendance.

In Denmark quality control of the performance of individual health care professionals lies for a large part in the domain of self-regulation of the profession with complementary signalling and supervision tasks of the DHMA. At the same time there is a responsibility of the employers to ensure that their employees have the knowledge and skills necessary for the tasks they perform. Compared with the existing mechanisms for ensuring the performance of health care institutes and safety of drugs and devices, strengthening the control function of individual professionals, for example through a more systematic individual performance assessment based on registry data and linkage of individual CME port-folio's to performance, seems advisable.

### *Safety of pharmaceuticals and devices*

Before a pharmaceutical product can be sold in Denmark it must be authorised by either the Danish Health and Medicines Authority or the European Commission. This is also the case for herbal medicines and strong vitamins and minerals. In special circumstances the DHMA may withdraw the marketing authorisation for a product. Standards applying to the Danish market are published in the Danish Drug Standards, an extended version of the European pharmacopoeia which is updated three times a year. A detailed system of registration and monitoring of adverse reactions is in place at the DHMA. A list of medicines subject to stricter reporting requirements is available and reporting of serious adverse reactions should be done within 15 days. Notification requirements to the European Medicines Agency and authorities in other EU and EEA countries are in place. Companies marketing a product must regularly submit a safety update report and DHMA can decide to act upon that. New EU legislation on pharmacovigilance has been implemented in Denmark since July 21, 2012.

Danish regulation on medical devices includes two acts, nine executive orders, one guideline and one circular. The Danish Health and Medicines Authority (DHMA) is the competent authority and administrate the regulation on medical devices. DHMA's work activities include:

- implementation and enforcement of the regulations for medical devices;
- investigation of adverse/serious incident reports from manufacturers and users;

- operating the vigilance system for notifications affecting medical devices on the market;
- designating and monitoring of the notified bodies in Denmark;
- contributing to the European work programmes for the safety and quality of medical devices;
- provision of advice to users, manufacturers and interested parties;
- maintaining the register of Danish manufacturers of Class I, custom made devices and procedure packs;
- issuing export certificates to Danish manufacturers of medical devices.

The DHMA monitors medical devices on the Danish market, which includes assessment of accidents with medical devices and inspection of Danish device manufacturers. Hospitals, other health care establishments and manufacturers have a duty to report accidents that involve medical devices. The medical device manufacturer is responsible for the safety and performance of the device once it is on the market. By law, the device manufacturer must report to the DHMA any device malfunction or deterioration in the function or performance of the device. The Danish language is required for labelling and the instructions for use for all medical devices. This is regardless of the intended user's skills or profession. Therefore, the information necessary for the correct and safe use of devices must be in Danish. Compared to other OECD countries, Denmark seems to have better regulation mechanisms for the quality of medical devices. Further strengthening of links with guideline programmes and programmatic activities to increase the role of users/patients should be considered.

### ***Quality assurance of health care facilities***

Over a relatively short period of time a sophisticated accreditation system has been put in place in Denmark. It has helped to describe and assess the processes in Danish health care services in a standardised way. *Den Danske Kvalitetsmodel* (DDKM, the Danish Health Quality Programme) is a national and interdisciplinary quality system for the health care system. The introduction of the model in 2005 was one of the initiatives taken as part of the second national quality strategy plan of 2002. The Danish quality model has helped to make care processes explicit and hence is considered to have helped to “organise” the provision of health care. The

model has been implemented in all public hospitals, pharmacies and pre-hospital units. In primary care, some municipalities are adapting the model and the same goes for most private hospitals. It is expected that primary care practices should adapt the model as part of an agreement between the doctors and the regions, and the regions strive to have the same agreement with the GPs (see also Chapter 2). The goal for the Danish Health Quality Programme is to cover all publicly financed health care services and its aim is to operate also across different services thus enhancing co-operation and integration. The objectives of DDKM are to ensure the on-going development of quality in all publicly funded health services, to create better and more coherent patient pathways, and to prevent errors and unintended events in the health care system.

The *Danish Institute for Quality and Accreditation* (IKAS) in health care was founded in 2005. The initial purpose of the organisation was to develop a joint Danish model for quality in health care. Today, IKAS develops, plans and manages the Danish Health Quality Programme (DDKM). The development of accreditation standards is carried out in collaboration with health care professionals across the country. In addition, IKAS manages the operation of DDKM. In practice, this means that IKAS supplies the material to all stakeholders encompassed by the programme and provides counselling and supportive services. IKAS also manages the recruitment and training of the Danish corps of surveyors and acts as a secretariat for the Accreditation Committee, which will eventually approve the accreditation of the individual institutions and services. The IKAS standards have not been developed in a way that makes them explicitly compatible with ISO norms. An exploration of how this could be done in a pragmatic way to increase alignment of quality assurance of health care services in Denmark with international quality standards used in other industries and several of the quality models in other OECD countries might be considered.

The DDKM programme aims to include indicators on structure and processes but also on disease-specific indicators. DDKM was initially heavily criticised for overwhelming collecting data requests, with a proposed 120 standards and 700 indicators. The programme then underwent a revision, ending with a hospital model based on generic disease standards, having 104 standards and 455 indicators. DDKM was implemented in 2010 and in 2012 all public hospitals were accredited for the first time, valid for a three-year period.

After initial accreditation of a few hospitals in Copenhagen through the American Joint Commission International model in 2002 and accreditation of hospitals in Southern Jutland in 2004 by the British Health Quality Services (HQS), the Danish health care system now only uses one

accreditation programme based on one set of standards and indicator data. The programme has a uniform scoring system. The scoring system only varies between different sectors such as the hospitals and general practise. Current programmes are mostly mandatory as public hospitals, pharmacies, and pre-hospital units are obliged to participate in accreditation processes. The municipalities can voluntarily decide if they wish to participate in the programmes. IKAS employs approximately 30 persons and is governed by a board with representatives from the National Board of Health, the Ministry of Health, the Danish regions, LGDK (the National Association of Municipalities), the Danish Organisation of Private Hospitals and the Association of Danish Pharmacies.

To date, the DDKM programme and its accreditation system do not systematically include primary care practices, home care and long-term care facilities. If the original aim to assure co-ordinated and integrated care delivery is going to be met, strengthening of the model to a broader set of health care services seems warranted. Having one model surely has advantages. The main challenge will be to broaden the model to other services, and as important, local and regional integrated care delivery systems. Initiatives such as that seen in Germany, where disease management programmes can also be accredited as a pre-requisite for financing, have not been identified in Denmark yet. As with the hospitals, this broadening agenda within the DDKM programme should be based on standards and quality measures for, for example, primary care, home-care and nursing home care. Active co-operation with actors involved in standard setting and indicator development work in these areas is therefore necessary.

## **1.6. Patient safety policies**

Denmark has an impressive series of patient safety initiatives that might be even stronger with focus on health care activities outside the hospital. The past decade has seen a lot of activities related to patient safety, often initiated by the Danish Patient Safety Association. With these policies Denmark has positioned itself as one of the world leaders in patient safety and many of its policies can serve as an example for other countries. Danish patient safety initiatives started through a national study on adverse events in hospitals in 2001, and are developed and governed through an association in which all main stakeholders in the Danish health care field participate, the Danish Society for Patient Safety, which initiated various national programmes such as the Danish Safer Hospital programme, and are backed up by a patient safety legislation and institutionalised adverse event reporting system. Hence, all necessary functions around patient safety, such as development, standard setting, monitoring and control and support for safety improvements in practice, seem to be in place.

### ***The Danish Adverse Event Study in 2001***

In the year 2000, the Danish Institute for Health Services Research together with the Ministry of Health and the Danish Counties carried out the first Danish prospective study on patient safety: “The Incidence of Adverse Events in Hospitals”. The study aimed at determining the extent and nature of harmful adverse events during hospital admissions in Denmark. The Danish Adverse Event Study was published in September 2001. Based on review of 1 097 patient records the study found that 9% of patients admitted to a Danish hospital were involved in an adverse event. Of these adverse events, 40% were preventable and the remaining 60% were classified as complications. The adverse events prolonged the hospital stay by an average of seven days.

The study led to several national initiatives. The Danish Act on Patient Safety passed parliament in June 2003 and was put into force in January 1, 2004. The Act on Patient Safety was later integrated into the Danish Health Care Act on 1 January 2007. The Act on Patient Safety was finally expanded in 2010, including the primary care sector as well as formalising the role of patients and relatives in the reporting system. Regional organisations were established to handle patient safety and to act on the reports that are entered into the reporting system.

### ***The Danish Society for Patient Safety (DSFP)***

The Danish Society for Patient Safety (DSFP) was established in December 2001 and is a non-profit organisation. The aim of the Society is to ensure that patient safety aspects are a part of all decisions made in Danish health care. The board of the Society consists of representatives from a wide range of stakeholders in Danish health care: the health care professionals, patient and research organisations, the pharmaceutical and medical device industry, the hospital owners and Local Government Denmark. This corporatist composition offers possibilities for all parties to work together for the common patient safety interest. Examples include the Danish version of the US “saving 100 000 lives” campaign, the Danish Safer Hospital initiative and the Danish National reporting system for adverse events.

### ***Patientsikkert Sygehus (the Danish Safer Hospital Programme)***

TrygFonden, Danish regions and the Danish Society for Patient Safety are working together on the Danish Safer Hospital Programme 2010-13 with expert assistance from the US Institute for Health care Improvement. The programme is a demonstration project designed to prevent errors, injuries, and deaths, aiming at a 15% reduction in in-patient mortality and a 30 % reduction in patient harm. The programme is built around five work streams

(critical care, perioperative care, leadership, medicines management, general ward), each consisting of a number of care bundles, and comprehensive series of evidence-based protocols. The care bundles are designed around recognised and accepted best practices. The programme uses well proven improvement methodologies. Five hospitals were chosen after an application procedure to participate in the programme. Results are planned to be spread by an active effort to hospitals in the rest of the country.

### *National reporting system for adverse events*

In January 2004, a national reporting system for adverse events was established. The purpose of the system is to improve patient safety in health care. In September 2010 the reporting system was expanded to cover adverse events occurring in the primary health care sector, including general practitioners and pharmacies. In September 2011 the reporting system was expanded further in order to give patients and their relatives the possibility of reporting adverse events as well.

The reporting system aims to collect, analyse and communicate knowledge of adverse events in order to reduce the number of adverse events in the health care system. This requires health care professionals to report any adverse events they become aware of in connection with patients' treatment. The system is designed as a bottom up process, where the majority of the work is locally rooted. This is based on the idea that adverse events which occur locally should be analysed and corrected locally. This is also thought to have a positive impact on the development of a safety culture. Therefore, the responsible authorities – the regions or the municipalities – are obliged to receive and analyse reports of adverse events and afterwards forward the information to the National Agency for Patients' Rights and Complaints.

On the basis of information from the local authorities, the National Agency for Patients' Rights and Complaints advises other stakeholders in the health care system concerning patient safety, thus supporting the development of learning from adverse events nationally. It is important to note that health care professionals reporting an adverse event will not, as a result of the reporting, be subject to disciplinary investigations or measures by their employer, supervisory reaction by the DHMA, or criminal sanction by the courts. The reporting system is sanction-free and the no-blame reporting system regarding adverse events is mandatory for all health care professionals. The National Agency for Patient Rights and Complaints is at present an independent, stand-alone agency. Strong links with the DHMA seem functional given the similar role and position in the Danish health care system.

With strong patient safety policies in place, the challenge for Denmark will be to keep the present activities in place and try to expand them to other sectors beyond the hospitals. Standardisation as well as monitoring through patient safety indicators could be further enhanced in primary care and long-term care settings. At the same time, with patient safety developing its own dynamics, Danish policy makers should be careful to assure that new initiatives on patient safety are aligned with already existing quality improvement initiatives. Both on a programmatic and institutional level quality and safety policies are in essence two sides of the same coin.

### **1.7. Health system monitoring: building an information infrastructure for measuring quality**

Denmark has very good databases on quality of care; however, this goldmine is only partly exploited. The data-infrastructure for primary care is, compared to the clinical and hospital sector, less developed and the data-infrastructure for home care and nursing home care is still weak.

Denmark has made remarkable progress in the development of the measuring of quality of care through clinical registries, although the hospital sector is better served through this initiative than primary care and long-term care. In the beginning the databases were created in single departments by motivated physicians, but they quickly spread to include surgical specialties or treatments. Initial databases focused on outcomes and additional information on co-morbidities to allow risk-adjustment. The first national database is the one for treatment of breast cancer, initiated in 1976. In 1999, the Danish National Indicator Project (NIP) was established as a mandatory disease-specific quality system for all hospitals.

From the year 2000, quality standards, indicators and prognostic factors were developed on ten diseases: acute abdominal surgery (bleeding gastro-duodenal ulcer and perforated peptic ulcer), Birth, chronic obstructive pulmonary disease (COPD), depression, diabetes, heart failure, hip fracture, lung cancer, schizophrenia and stroke. Around the year 2000 the number of national clinical databases was as high as 60 – a unique number in comparison with other countries. Alongside the NIP, the Danish society for Internal Medicine started in 2000 the “Good Medical Department” initiative. This programme has a similar goal as the clinical databases, but with different methods and indicators. Instead of focussing on continuous indicators on disease specific results and complications, this initiative used cross-sectional analyses of predefined generic indicators on processes in several areas, such as referral, screening for dietary needs, diagnostic and treatment continuity and co-ordination. DGMA was closed in 2006 and embedded in the Danish accreditation system (DDKM).



A national Quality Improvement Programme (RKKP) was established late 2010 to provide a framework for strengthening the infrastructure around the clinical quality databases with the planned standardisation of the conditions for the operation of the about 60 national clinical databases in Denmark. The databases were established separately, and also evolved differently over time. Standardisation would secure efficient data collection and the rational use of data from the databases, and provide a good basis for improving the quality of care.

The main objectives of the clinical databases – with the structured collection of patient-level clinical data – are:

- To improve care by providing health care providers with information on the quality of care with regard to prevention, diagnostics, treatment and rehabilitation;
- To provide documentation for clinical governance and organisational priority setting;
- To provide information on the quality in health care for citizens and patients.

Twenty-four databases covering cancer are organised within established multidisciplinary cancer groups, with the added objectives of securing a research infrastructure on cancer and providing practice data that inform continuous update of clinical guidelines. For each database quality indicators are developed and maintained by health care professionals based on standards in the international literature. All databases are required to provide continuous feedback on indicator to participating hospitals as well as producing and publicly disclosing annual reports on results.

All registries include patient-level data using the patients' unique patient identifier. The national clinical registries are increasingly based on data from national administrative registers (national histopathology register, national patient register). These central registries increasingly supplement the use of dedicated collection systems in the older registries. Data collection in the primary sector is done exclusively via the electronic health record (EHR). In the secondary sector experiments with data collection to the clinical registers directly via the EHR are on-going just as projects trying to include laboratory data and prescription data. Seven registries at present include patient outcome measures based on data collected from patients using either online or paper-based surveys.

Several methods are applied systematically to ensure that the data collected in the clinical registries are used actively for quality improvement.

Among them are an annual clinical audit at national level (all national clinical databases publish an annual report), annual qualitative audits at regional and local level, ad hoc in-depth national clinical audits on specific items (for example reports on regional variation in survival on lung cancer) and feedback of results to decision makers and public reporting.

In addition to the reporting of indicators based on clinical registries Denmark has over the past years also gained experience with the reporting of the hospital standardised mortality rate (HSMR). HSMR is the number of deaths at a hospital as a percentage of the expected number of deaths calculated from the national average.

$$\text{HSMR} = (\text{number of observed deaths} / \text{number of expected deaths}) \times 100\%$$

HSMR is an overall measure of mortality after hospitalisation and is considered as an indicator that signals potential problems with quality of care. HSMR is an overall measure of the quality of hospital care, which not only includes medical treatment, but also the organisation of patient pathways, internal delays in medical examinations, and co-operation between departments. This tool is in Denmark only used at regional/hospital level. The results are made public on “sundhed.dk”. Recently, reduction of HSMR has been included in agreements between the Ministry of Health and the regions.

### ***Regional information systems***

Results from ten national clinical registries are sent monthly to the regional online information systems accessible to clinicians, administrators, management, and politicians in the regions. This is done using a generic information sharing model developed by the regions, the competence centres and the DHMA, allowing all five regions to access the results and the relevant clinicians to access the patient data. By the end of 2013 it is expected that results from 40 clinical registries will be made accessible this way. Box 1.2 provides an overview of the status of the health care information systems in the five Danish regions.

#### **Box 1.2. Regional information systems and other buildings blocks of the Danish National Information Infrastructure**

##### ***The Region of Southern Denmark***

The Region of Southern Denmark collects all relevant data on quality, activities, finance, payroll and personnel in SydLIS. SydLIS is aimed at all organisational levels: politicians, health directors, hospital managers, department managers, clinicians and others. The system provides various reports designed specifically for different audiences. The information in SydLIS is included in the management's decision making, but is also working as a common basis for dialogue between the various organisational levels. To increase transparency, the performance of a hospital ward is displayed alongside academic targets, which the ward should

strive to attain. It also shows the development of its performance over time and for benchmarking; the performance compared to the results of comparable wards in the region. It is possible to decompose a given result to partial results on the underlying organisational levels, and in time breaking down the results to the individual level should be possible.

### ***Central Denmark Region***

Central Denmark Region is using the common management information system InfoRM, which also is a portal for the NIP databases and the quality databases of Competence Centre Nord (external portal: RMInfo). Overall, the strategy for the region's management information system is that data is fed into one place (PAS/MidtEPJ) and made visible in InfoRM. InfoRM should thus be the main platform for monitoring and following up on quality in health care in the Central Denmark Region. In addition to data on quality of treatment, InfoRM also contains key figures regarding economy, DRG records, and data concerning absence, occupancy and politically agreed service levels. Additionally specific MID-Electronic Health Records reports are compiled to the clinical management regarding process statistics, diagnostic statistics, hospital statistics bed-day consumption and hourly load.

### ***The North Denmark Region***

The North Denmark Region's management information system KoncerN collects The North Denmark Region's data analysis and management information for all regional areas (health, psychiatric and regional development) in one system. In the hospital area, the system contains data about activity and finance as well as links to data on achievement of service aims. In 2011 the North Denmark Region launched a project where they presented a series of quality data in KoncerN. Initially, the system must include data from e.g., previous NIP databases. Then data from other nationwide clinical quality databases.

### ***Region Zealand***

In Region Zealand, a single system of management-information is under construction. The work will be finished by the end of 2012. The focus is on key figures, such as activities, service aims, economy, and salaries; quality data will be added to the system in a subsequent phase. Psychiatric care and the two somatic hospitals have already developed management information systems. Region Zealand has decided to make a strategic move to gather all information in a joined system. Some hospitals are already actively using reports of quality data, accessible by clinical department managers and based on data collected through RKKP (the NIP databases) and eHealth (the Danish Health and Medicine Authority). For psychiatric care, there is a portal of information for their disease-groups, where key figures concerning activity, service aims, economy, salaries, personnel and quality are gathered. The same management information system is used at both Hospital South and Hospital North.

### ***The Capital Region of Denmark***

The Capital Region of Denmark currently has a new shared management information system under construction. The new system will replace the existing local management information systems. The shared system – FLIS – will be implemented in a preliminary version at two hospitals during early autumn 2012. When fully implemented the system will cover finance, activity, salaries/Human Resources, capacity and quality.

Much ongoing development work aims to ensure that the Danish health care information infrastructure can be further strengthened, harnessing the e-health potential. Box 1.3 lists some of the core elements of the Danish e-health agenda.

### **Box 1.3. Core initiatives in Denmark in relation to the e-health agenda**

#### **Medcom**

Medcom was established in 1994 with the purpose of developing nationwide communication standards for the most common messages between public hospitals and general practitioners as well as private companies linked to the health care sector. The messages cover the most frequent text-based clinical messages in the Danish health care system such as discharge letters, referrals, laboratory test orders, e-prescriptions and reimbursement from the public health insurance. From a rather slow start with less than 4 000 documents in the first year, the exchange of health care documents is now almost fully electronic with more than 60 million messages sent in 2011. This implies that the vast majority of documents between professionals are exchanged electronically. The focus is now on digitising messages sent between hospitals and home nursing on municipality level including discharge letters and home nurse care plans. MedCom is financed and owned by the Ministry of Health, Danish regions and Local Government Denmark.

#### **E-journal/e-records**

The e-records project is about creating access to electronic record data supplied by Danish hospitals. The aim is to provide hospitals and GPs with access to relevant information regarding the patient's previous treatments, test results and information about allergies, medication intolerances, etc., as a supplement to the existing available information. At the same time, the aim is to provide citizens with a better view of their own patient record and, thus, increased awareness of their own illness and a basis for active participation in treatment and self-care. Alongside the establishment of access to record data there is the intention of creating a technical solution whereby clinicians will only be able to access record data where they have a treatment provider-patient relationship. In addition, citizens should also be able to monitor the clinicians' access to the citizen's own record data. The e-records project is being accomplished through close collaboration between MedCom, the Danish regions, *sundhed.dk* and the five regions.

Currently the e-records project is being expanded to a National Health Record ("sundhedsjournalen"). The National Health Record will display data from various data sources including:

- Information from EHR systems of hospitals and HER systems from GP's;
- Data from laboratories;
- Data on vaccination from the Danish Vaccination Register;
- Material from an interregional radiology information system/picture archiving communication system.

**Box 1.3. Core initiatives in Denmark in relation to the e-health agenda (cont.)**

The system is expected to be fully implemented across all public hospitals by the end of 2013.

**Shared Medication Record**

The Shared Medication Record (“Faelles Medicinkort”) is being implemented across the Danish health system. The system consists of a central database containing information on all Danish citizens’ medicine dispensed during the previous two years as well as an updated list of every patient’s current medication. Once the implementation is completed citizens, doctors, emergency physicians and other health professionals will have digital access to updated information on medication prescribed to the patient. Patients can also access their own record.

**Telemedicine**

In August 2012, the Danish government, Danish regions and Local Government Denmark launched a national action plan for the further distribution of telemedicine solutions in Denmark. The plan of action has numerous goals. First of all it contributes to making telemedicine more used in the health care sector. Secondly, the action plan has an evaluating function. Based on five specific initiatives the action plan delivers information evaluation, later to be used as a base for decisions on possible national use of telemedicine. The five initiatives include clinical integrated home monitoring, telemedical in-home monitoring of KOL patients, telemedical assessment of ulcers, tele-psychiatry and internet-based behavioral therapy. The national plan of action is an initiative in the shared public strategy of digitisation.

The work with telemedicine in Denmark focuses a great deal on large-scale projects. As part of the action plan, telemedical assessment of ulcers is going to be implemented nationwide. 35 000 to 40 000 persons in Denmark are estimated to have foot ulcers due to diabetes. By using telemedicine the municipal nurse together with the doctors at the hospital can optimise wound care. Another large-scale project currently being implemented as part of the action plan is the “Tele Care North Project” in the North Denmark Region. The purpose of the project is to monitor and treat patients with KOL. The treatment is conducted in co-operation between the hospital, municipal home care and general practice. The project has 1 450 participating patients.

It can be stated that Denmark is well advanced in establishing a health care information infrastructure that will help it to address the continuous monitoring and improvement of quality of care. Based on the clinical registries, and with enhanced capabilities for linkages between databases and the potential of secondary data use of data in electronic health records, quality management becomes more and more feasible. The necessary data security and privacy conditions seem to be in place.

Despite these achievements several main challenges remain. The present information infrastructure is strong on the hospital side, but still relatively weak in primary care and long-term care, although initiatives have been taken in primary care (such as the DAK-E system described in Chapter 2).

Governance responsibility for the further development of the Danish Information Infrastructure in health care are divided across a broad set of stakeholders. Recent initiatives to give SSI a stronger co-ordinating role and agreements between the central authorities on common goals on better data use address this but co-ordination of the various registries and administrative databases used for generating quality measures remains necessary and asks for increased standardisation and inter-consecutiveness. Furthermore, although data accessibility is improving, possibilities for health care providers and patients to use the databases actively for monitoring their own practice or assessing the quality of providers in their region are limited.

Access and timeliness of data is a key factor. The managerial capability of the data infrastructure can be further improved and should be balanced with the scientific rigor of data collection and reporting. Annual reports are at present presented by the various clinical registries. Like in other countries, the release of national, regional and/or local performance reports summarising quality indicators on various domains and disease categories might be useful also in Denmark to get a more comprehensive picture on quality of care on a regular basis. Such comprehensive reporting on quality of care might also help to strengthen the whole system perspective in assessing and improving quality of care.

## **1.8. Health system standards and guidelines**

This section of the chapter discusses how to move from building disease-specific, evidence-based clinical guidelines towards pathway-oriented, care-delivery standards for patients with multiple chronic conditions and varying care needs.

The initial initiatives around standards and guidelines in the Danish health care system have been clinical guidelines developed by the medical profession. Based on notions of evidence-based medicine and experience with clinical registries, clinical guidelines have traditionally been developed along the lines of specialties, specific diseases and procedures. Only more recently has attention been shifting to the standardisation of the organisation of service delivery (a responsibility of the DHMA) and guidelines addressing multi-morbidity.

The Organisation of Danish Medical Societies (LVS) organises 117 scientific societies within the field of biomedicine in Denmark. The total membership of these societies is 23 061 predominantly medically qualified persons. The general aim is to promote the interests of the member societies. The Organisation is engaged in post-graduate medical education and the development of clinical quality in the Danish health care system by initiating and developing clinical guideline.

Alongside clinical guidelines, standardisation of health care practice also takes place via the development of disease management programmes and patient pathways. The three types of activities (guidelines, disease management programmes and pathways) try to standardise the delivery of health care by describing in explicit terms what should be done in which situation. Practice guidelines have their roots in (profession-led) consensus conferences during the 1980s and have gradually been focusing on evidence-based medicine. Guidelines today are commonly based on systematic literature reviews and weighing of available evidence, complemented by systematic local empirical knowledge. Most guidelines are disease or specialty based and they usually describe “what” should be done. The terms “disease management” and “patient pathways” have their roots in attempts to describe systematically the steps that a patient should go through when confronted with a specific disease or medical problem. Disease management and pathways are usually anchored in clinical guidelines but in addition to describing “what should be done”, they tend to describe “who should do what, when and where”.

### *National clinical guidelines*

Clinical guidelines have until now predominantly been developed at a non-governmental level by the different professional societies and the regions. With the 2012 government annual budget, the development of clinical guidelines was undertaken at national level (with an investment of DKK 80 million (USD PPP 10.2 million) over a four-year period). Approximately 50 clinical guidelines are to be developed in 2012-15. These guidelines should be multidisciplinary and applicable across health care services boundaries.

The Danish Health and Medicines Authority (DHMA) will be responsible for developing the national clinical guidelines in close corporation with medical and other health professional societies and the regions and municipalities. The main objective of the national clinical guidelines is to ensure that health practice at all levels of the Danish health sector follows the principles of evidence-based medicine. Furthermore, national clinical guidelines will ensure that medical treatment is carried out at the same high standard nationwide, thus reducing the variation in health practice and in the quality of treatment.

### *Regional clinical guidelines*

The 2004 decision to develop the Danish Health Quality Programme, DDKM, also boosted the development of clinical guidelines in hospitals. When the first version of the DDKM was implemented in 2009 every region

had prepared clinical guidelines for all the disease areas included in the quality model. Given this, the forthcoming national guidelines build upon a number of the guides already in use as a part of DDKM. Other national initiatives that have an impact on the standardisation of health care in Denmark are the national disease management programme and various pathway initiatives.

### ***Disease management programmes***

The Danish government launched a programme for patients with chronic diseases based on pool funds from the Ministry of Health from 2010 to 2012. Most of the funding is distributed to municipalities and regions, following requests for project funding for initiatives related to disease management programmes for chronic obstructive pulmonary disease (COPD), diabetes, heart diseases and musculoskeletal diseases as well as projects dealing with patient education. Simultaneously, the Danish Health and Medicines Authority (DHMA) carried out several projects on the development of generic models for disease management programmes for chronic disease, establishing national register-based monitoring of chronic diseases, recommendations on wider use of patient self-treatment (self-medication), recommendations regarding the quality assurance of patient education programmes, an overall evaluation of the projects regarding chronic diseases in municipalities and regions, and on-going nationwide sharing of knowledge about chronic disease management and patient education facilitated by DHMA (see also Chapter 2).

These simultaneous activities – funding of regional and local initiatives whilst providing national guidance through the DHMA – were an attempt to develop and implement standards for patients with chronic conditions locally, whilst assuring national agreement on standards and facilitating mutual learning. The implementation of the disease management programmes as well as other local initiatives that require cross-sectorial co-operation are supported by the four-year health care agreements between regions and the municipalities, and include general practitioners.

### ***Pathway initiatives***

In the Danish health care system patient pathways have been developed at a national level in the areas of cancer and heart disease. On a regional level, they have also been developed in the field of psychiatry (Box 1.4). The core of the political decision to establish these pathways as a national and regional initiative was to increase the quality through developing integrated pathways covering both organisational and clinical standards for the diagnoses and treatment.



### **Box 1.4. Examples of pathways initiatives**

#### **Cancer pathways**

As waiting times for cancer patients were unacceptable and the survival rates for cancer were poor in Denmark compared to other Nordic countries, an improvement initiative was developed. In October 2007 an agreement was reached between the Danish government and the Danish regions on acute action and accurate data collection for all cancer patients. By January 2009, 34 integrated cancer pathways were implemented in the Danish health care system. Since then, pathways have been updated based on new evidence and broadened to areas such as rehabilitation and palliative care.

#### **Pathways for heart diseases**

Based on the experiences with cancer pathways and the wish to improve the quality and efficiency of treatment, four pathways were constructed in 2010. The pathways were established for life-threatening, but non-acute, heart diseases. It was a general political initiative on both national and regional level.

#### **Pathways in psychiatry**

These pathways are a part of a regional initiative about quality, which sets some new standards for better quality in psychiatry and for better life expectancy for psychiatric patients. The regions are now implementing pathways for nine areas related to psychiatric care including paediatric psychiatry. National pathways focus on “the journey of the patient through the health care system”.

The aim of the pathways on the field of cancer and heart diseases are to reduce processing-times, in particular to reduce referral time, obtain faster diagnoses and quick onset of treatment. Furthermore, the main objective is to ensure that all patients are treated according to the national clinical guidelines. For cancer and heart diseases working groups supervised by DHMA were established, each including representatives from the specific medical specialities, the five regions, general practitioners, and when relevant, pathologists, radiologists etc. Founded on national evidence-based clinical guidelines, pathways were developed as organisational standards for the diagnoses and treatment. The cancer pathways have recently been updated and new elements on rehabilitation and palliation have been included.

Clinical guidelines are used in disease management programmes and pathways and are as such essential for these programmes that both try to address not only the clinical questions what should be done but also the organisational challenge how to do it. The disease management programme describes the combined interdisciplinary, intersectional and co-ordinated

effort for a specific chronic condition. It ensures the use of evidence-based recommendations, a precise description of the distribution of tasks and the co-ordination and communication between the health care providers involved. A disease management programme also describes the monitoring and evaluation of the programme as mandatory, as well as regular, systematic updates of the programme.

The extent to which the process of developing local disease management programmes has resulted in standardised and sustainable approaches cannot yet be established. The experience does, however, illustrate the complexities of standardising both the content and context of the organisation of health care in a multi-level health care system. Furthermore, it should be noted that disease management programmes focusing on a single disease are not adapted to the health care needs of an ageing and multi-morbid population. Although clinical guidelines are in place, and seem to be well grounded in evidence, national (service) standards, particularly on long-term care, seem scarcer. Consideration might be given to focusing the recently launched national guideline initiative on areas that have been less the focus of guidelines and standards so far, and build on the realities of multi-morbidity in the Danish elderly population. A link with the specialisation agenda and striving to deliver the right care by the right person at the right place could be sought.

## **1.9. Managing health system improvement**

The various national programmes on quality improvement described in the previous paragraphs, and the on-going work in the regions and municipalities, illustrate how quality features high on the Danish health care agenda. However, the extent to which the various initiatives result in population health improvements that would otherwise not have been achieved remains a matter of debate. Denmark is shifting its focus from a governance model based on pure cost-control and planning towards a governance model that tries to steer population health and quality of care for individual patients, alongside cost containment.

However, to reach this goal for the health care system as a whole, quality targets, population health targets and cost targets should also be linked, and regional and national targets should be related to the performance of individual health care institutions and health care professionals. Although the governance model – with agreements between the national level, regions and municipalities – is shifting towards quality governance, a more comprehensive and consistent set of health system performance measures would be helpful. The present quality management initiatives are very much focused on the clinical sector, and on hospitals in

particular. With the implementation of the specialisation plan and the reforms that allocated responsibilities for home care and rehabilitation at municipalities, the performance of integrated delivery systems at local and regional level will be important for guiding quality improvement at national health system level. Denmark has a well-developed information infrastructure and despite shortcomings in quality measurement in primary care and long-term care, measures can be developed to monitor quality of care focused on local health systems. Experiences gained from national initiatives on disease management and care pathways have shown how national development and support and evidence-based practice can be married with addressing local challenges.

Far more than a system-design issue, this is an improvement process that needs managing and adaptation to cultural and contextual factors. The work done on patient safety demonstrates that such efforts can be successful in the Danish health care system once key stakeholders agree on common goals and values. To make the shift from quality management of hospital services towards quality improvement of the whole health care system, a sharp focus on the needs and goals of the system as a whole is needed. Further implementation of quality targets in the agreements between national, regional and local level, broadening of quality measurement to primary care and long-term care, regular reporting on local and regional system performance and consideration of economic incentives to support this agenda can be the way forward.

### **1.10. Strengthening the role and perspective of the patient**

Overall, the Danish health care system has been responsive to the needs of its citizens, and several mechanisms to assure and strengthen the position of the patient in the health care system are in place. Apart from legislation that ensures patient rights, the Danish health care system has a formalised and modern system for handling complaints.

#### ***The National Agency for Patients' Rights and Complaints***

The National Agency for Patients' Rights and Complaints functions as a single point of access for patients wishing to file a complaint about professional treatments they received. The agency also deals with complaints about the disregard of patient rights and complaints about the Patient Insurance Association's decisions over compensation. In addition, The National Agency for Patients' Rights and Complaints is responsible for the administration of the system for reporting adverse events within the health service, and helps to make sure that the knowledge gained from these incidents and patient and liability suits is used preventatively. Moreover,

The National Agency for Patients' Rights and Complaints offers guidance on rights to health care in other countries in accordance with Danish legislation, EU regulations and other international agreements. When a patient submits a complaint, the patient is offered a dialogue with the hospital. After this local dialogue, the patient decides whether to keep the complaint and have it put on a trail at the National Agency.

***Denmark has an advanced system for public reporting on quality: sundhed.dk***

*Sundhed.dk*, the Danish e-health portal, is the official portal for the public Danish health care services and enables patients and health care professionals to find information and communicate. Denmark has been at the forefront on many IT initiatives within health services. *Sundhed.dk* is a public, internet-based portal that collects and distributes health care information among citizens and health care professionals. In a secure part of the portal the patient has access to:

- Personal health data on treatments and notes from hospital records, information about medication and visits to the GP;
- Various e-services including making appointments with GP's, prescription renewals and electronic communication with the GP;
- Information on waiting times at all public hospitals and ratings of hospitals in terms of patient experienced quality;
- Patient networks and the sundhed.dk handbook for patients.

It is unique in bringing the entire Danish health care sector together on the Internet and providing an accessible setting for citizens and health care professionals to meet and efficiently exchange information. By servicing both the citizens and the health professionals, the portals aim is to enable the two to achieve co-operation based on the same data. This should empower the citizen and gives the health professionals better tools to improve quality in care.

Also, in the patient safety initiatives (see Section 1.5), there is a strong focus and involvement of patients and patients are asked to report adverse events. One of the initiatives of the Danish Patient Safety Society is the release of a handbook aimed at patients to increase their involvement in assuring safe care.

Another patient-centered feature of the Danish health care system is the contact person programme. According to the Danish Health Care Act all

patients admitted to hospital shall be offered a contact person if their treatment takes more than two days. Patients with special needs – for instance chronically ill patients or patients suffering from cancer – shall be offered a contact person at an earlier stage even if they stay in hospital for less than two days. The purpose of the contact person scheme is to contribute to increasing quality and co-ordination in the hospital sector.

### ***The National Danish Survey of Patient Experiences (LUP)***

A key quality of care policy consists of measuring and reporting on patient experiences. It is of critical importance that the patients' experiences with their illnesses and the treatment and care efforts of the health care system are taken into consideration if the health care system is to further develop services for the benefit of patients. Asking patients about their experiences of the Danish health care system provides valuable knowledge, which is an important contribution to the on-going improvement of the quality of health care in Denmark. The National Danish Survey of Patient Experiences (LUP) is a questionnaire survey for assessing patients' experiences with the Danish health care system.

LUP is conducted on behalf of the five regions in Denmark and the Ministry of Health. A steering group consisting of representatives from the regions, and the Ministry of Health, are responsible for the survey. Two regional organisations specialising in patient experiences and surveys have developed the survey concept and work together carrying out the survey. This organisation has existed since 2000, when the first national survey was conducted. Since then the concept behind the surveys has been further developed and is continuously adjusted in line with general developments in health care. As a result of this process the concept behind LUP currently includes somatic health, psychiatry and child delivery.

LUP is carried out as an annual, nationwide survey, investigating the experiences of both inpatients and outpatients in Danish hospitals. The survey presents the results at five distinct levels: unit, hospital, medical speciality regional and national level. The main objective of LUP is to provide an input for improving patients' experiences. This is done by collecting data on patient experiences on specific topics, benchmarking results among comparable units and systematically monitoring the development in patient experiences and evaluations over time. Every year approximately 240 000 questionnaires are distributed to patients subsequent to their discharge or the end of treatment. The response rate was 60% in the latest survey in 2011. Depending on the field in which the survey is carried out the questionnaire have approximately 30-50 questions. In an effort to make sure that the public has access to the results from the surveys and consequently has the opportunity to check the results from any relevant unit

or hospital in any given part of the country, the results from new surveys are published at *sundhed.dk*, which is the public's main point of contact and of information about the health care system in Denmark.

The systematic efforts of LUP are a positive achievement. However, with the questionnaire being mainly focused on hospital care, there is still the challenge of broadening the systematic measurement of patient experiences to other areas, notably long-term care and primary care. Another area where the measurement of patient experiences could be expanded is the collection of data on patients' reported outcomes. Given the data available in the clinical registries and the existing LUP data, a data collection effort focused on PROMs might provide additional insight in the quality of care as perceived by the users.

### ***Danish patient organisations***

Several patient organisations exist in Denmark. One major one is Danish Patients, an umbrella organisation for 16 patient associations in Denmark representing 850 000 members. Danish Patients works to ensure the patients the best possible conditions in the health care system, develops policy based on documented knowledge and acts as ambassador for patients in relation to authorities and the public. Danish Patients co-operates with authorities, research institutions and other health care organisations in developing the health care system of the future based on the interests of the patients.

Although patients are organised in Denmark, their formal involvement in policy making is limited. Decentralised decision making through regional councils assures citizen involvement that in other countries is channelled through participation in national patient associations. Patient councils, as well as representation on hospitals boards, home for the elderly and nursing homes, are not compulsory like in some other OECD countries. Given the desire to enhance the role of users in the Danish health care system, the creation of mandatory client- and patient councils, especially for long-term care facilities, might be considered.

## **1.11. Conclusions**

Denmark has a sophisticated and highly developed series of quality assurance mechanisms. However, the main challenge is to create more linkages and synergy between many ongoing activities and initiatives, with the aim of improving quality of care not just for specific services but for the health care system as a whole.

The Danish governance model of a national government, regions and municipalities poses challenges when seeking to align the management and

improvement of quality of care in hospitals, primary care, rehabilitation, prevention and long-term care. Denmark has very good databases on quality of care and a strong agenda to strengthen its information infrastructure, but this goldmine is only partly exploited. More could be done, for example, to make data accessible in a timely way for managers, health care professionals and the public. The data infrastructure for primary care is, compared to the clinical and hospital sector, less developed, and the data infrastructure for home care and nursing home care is still weak.

Although Denmark has a lot of local clinical guidelines, national guidelines and standards developed as part of disease management programmes and pathways, standard development for care outside the hospital could be strengthened; this should take into account the realities of patients with multi-morbid conditions, link the standards to quality measures and improve measurement of patient/client experiences.

Denmark is a breeding ground for innovative quality improvement initiatives but wider distribution, and the national learning potential, of these initiatives should be optimised through more systematic links between outputs of innovative projects and ongoing programmes on quality of care; through enhanced links between quality and safety initiatives and the training of professionals; and strengthening of patient involvement.

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## *Chapter 2*

### **Primary care and integrated care in Denmark**

*Denmark faces a number of health care challenges including increasing public and political expectations around the continuity of care; increased specialisation in the hospital sector, which typically translates into shorter stays and earlier discharge back into the community; and a rise in the number of elderly patients with multiple long-term conditions, requiring safe and effective co-ordination of care and avoiding unnecessary hospitalisation.*

*This chapter assesses how well positioned Danish primary care is to meet these challenges, particularly the challenge of integrated care. The chapter begins by describing the current configuration and outcomes associated with primary care in Denmark, and the quality initiatives implemented by the sector. A section focussed on integrated care follows, before closing with an assessment of the gaps and opportunities in Danish primary health care quality.*

*Whilst Danish GPs have actively developed a number of in-house quality initiatives, enthusiasm for cross-sectoral working is much less evident. The sector is well placed, however, to modernise its offer, including new ways of working such as making better use of advanced nurse practitioners. Better information infrastructure is key, as will be combining national vision with local freedom to innovate.*

## 2.1. Introduction

### *Reconfiguration of the hospital sector and changes in public expectations are presenting new challenges to Danish primary care, as are demographic trends*

Denmark, in common with most European countries, is undergoing a transition to a more elderly demographic: the population aged over 65 years is expected to nearly double by 2050, from its 2010 level of 16.6%, while fertility rates are below the replacement rate of 2.1 children per woman that achieves population stability. On most estimates, around two fifths of the general population and four fifths of the elderly population suffer from a long-term condition such as diabetes or hypertension or, in many cases, multiple long-term conditions simultaneously (Moth, 2012; Nolte, 2008). Even if living healthily, this demographic shift inevitably implies increased contact with, and support from, the health care system. Inevitably, patient expectations around the proper co-ordination, safety and effectiveness of care for long-term conditions are mounting.

Primary care services are seen as central to meeting the challenge of providing effective, co-ordinated care for patients with multiple needs (King's Fund, 2010). In particular, a key objective for the primary care sector is to reduce the number of avoidable hospitalisations, which are costly, unwelcome and often complicated by adverse events. Primary care is being asked to offer more proactive and ambitious packages of care in the community, focussed on risk stratification, tailored management and patient education. This is in the context of a more general drive to deliver as many health care services as possible outside the hospital setting, driven by advances in drugs and other treatment technologies and, in particular, patients' preference for care closer to home. Reorganisation of the hospital sector into fewer, more specialised units, as explained in the next chapter, means that these pressures are particularly acute in Denmark. The community sector is being expected to deliver a wider and more complex set of health care functions and primary care, naturally, is expected to play a central role in managing and delivering this shifting pattern of health care use. For example, the number of inpatient cases for cataract surgery has dropped by 16.5% in the past decade in Denmark, while the number of day cases has grown by 8% (OECD, 2012).

At the same time, primary health care has an important public health function to deliver. Whilst the percentage of daily smokers in Denmark has dropped dramatically from 47% in 1984 to 19% in 2009 (such that smoking rates are now below the OECD average), the obesity rate among adults – based on self-reported height and weight – was 13.4% in 2010, up from 9.5%

in 2000 and 11.4% in 2005 (the OECD average for countries providing self-reported data was 15.1% around 2009). Obesity's growing prevalence foreshadows increases in the occurrence of health problems (such as diabetes and cardiovascular diseases), and higher health care costs in the future.

Taken together, these factors suggest major fiscal challenges in the future if Denmark is unable to adapt its primary care sector to accommodate for more complex demand for care. This chapter assesses how well positioned Danish primary care is to meet these challenges, particularly the challenge of integrated care. Some aspects considered in Chapter 1, such as overall quality governance, patients rights and complaints and systems for handling adverse events, are not repeated here.

## 2.2. Configuration of primary care in Denmark

### *General practitioners play a central role in Danish health care and will be called upon to meet the challenges set out above*

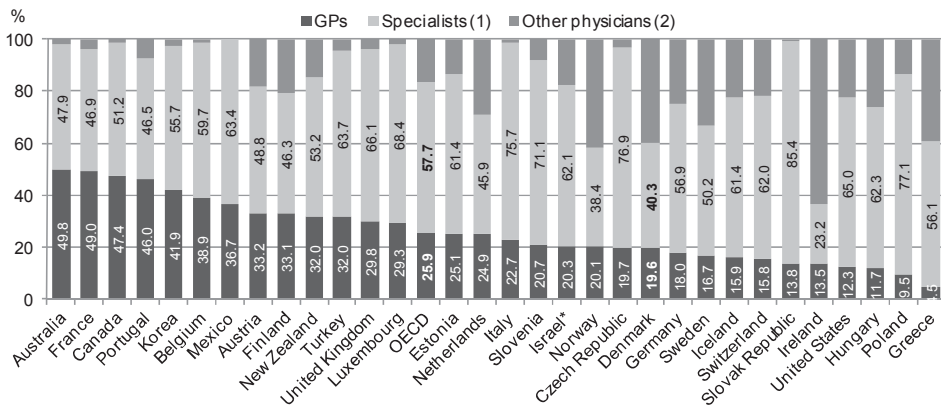
“Primary health care” looks very different in configuration and delivery from country to country. The model followed in Denmark centres around a medical practitioner trained to be the first point of contact for unselected acute, chronic and preventive health care issues, and with whom the vast majority of the population register long term, on a one-to-one basis and who acts as a gatekeeper for non-acute access to most other specialities (the “general practitioner” or GP). This closely resembles the models of primary health care in the Netherlands and United Kingdom. In recent review of 31 countries in the European region exploring the strength of various features of primary care such as the degree of gate keeping access to other services, the breadth of services offered by GP, its academic status and GPs’ remuneration, the role played by primary care in Denmark was found to be particularly strong compared to other countries’ health systems (Kringos et al., 2013).

Although general practice was first recognised as a medical speciality in Denmark in 1994, the Danish College of General Practitioners was founded in 1970 and the first university Department of General Practice in 1974. Indeed beyond this, there is a recognisable tradition of GP in Denmark for at least a century. In defining the speciality, the Danish College of General Practitioners (DSAM, Dansk Selskab for Almen Medicin) uses the widely adopted WONCA<sup>1</sup> definition. This describes GP as, among other things, the usual first point of contact within the health care system, dealing with all health problems regardless of the age, sex, or any other characteristic of the person concerned. Uniquely, GP is responsible for providing longitudinal, on-going management including acute, chronic and preventive health care, integrating physical, psychological, social, cultural and existential dimensions relevant to the patient and her health care concerns. GP is also

characterised by close working with other professionals in the primary care setting (such as community nurses) and by managing the interface with other specialities as necessary.

There are around 3 600 GPs currently in practice in Denmark, around 20% of employed physicians. Compared to hospital specialists and other doctors, this is relatively few compared to the OECD average, but comparable to Scandinavian peers (Figure 2.1).

**Figure 2.1. General practitioners, specialists and other doctors as a share of total doctors, 2009 or nearest year**



1. Specialists include paediatricians, obstetricians/gynaecologists, psychiatrists, medical specialists and surgical specialists.

2. Other doctors include interns/residents if not reported in the field in which they are training, and doctors not elsewhere classified.

\* Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Source: OECD Health Data 2011.

In Denmark, then, the GP is a central figure in the health care system. Danish GPs deliver around 40 million contacts to the population per year (PLO, 2012a). Just over half of these are face-to-face contacts, with the remainder comprising telephone contacts, e-consultations and home visits. Four per cent of patients seen are referred to hospitals, 2% to community specialist care, and 2-3% to auxiliary services such as physiotherapy. As well as dealing with ad hoc medical complaints as they arise, Danish GPs are responsible for the systematic monitoring of weight, physical activity, smoking status and alcohol misuse in their patient group, with appropriate lifestyle advice and referral to further intervention in the municipality as necessary. With an average list size of 1 600 patients each, the average consultation rate is seven contacts per year, in line with consultation rates in

other countries such as the United Kingdom. Out-of-hours (OOH) care in each region is organised by GPs with the assistance of other doctors employed as freelancers to cover evenings, weekends and at night-shifts.

Choice of GP in Denmark is free but in practice limited to a geographic radius of 15 km (beyond which, the GP is permitted not to refuse registration given potential difficulties in performing home visits). Registered patients have free access to their GP, as well as free access to other community services, hospital specialists, laboratory, x-ray, and pathology services. No co-payments or deductibles apply to these services, although they do require referral. Prescribed medications incur a co-payment, initially of DKK 865, tapering off at higher out-of-pocket spends. Low-income individuals, seniors and pregnant women are not exempt from medication co-payments, although some groups such as low-income old age pensioners receive additional social benefits or other supplementary contributions.

A very small number of Danes (less than 1%) participate in a residual “Group II” scheme and pay a per-visit fee in return for the right to visit any GP, specialist or diagnostic service without referral. Those registered to this scheme are typically elderly who by tradition have been used to paying out of pocket for medical services. There are no systematic differences in the standards of the care and medical services across Group II members and the majority population (most Group II still, in fact, rely on the GP to discuss specialist referral); it is generally believed that the Group II scheme will eventually disappear.

### ***Danish GPs contract their services to local government***

The larger Group I scheme, to which the vast majority of Danes subscribe, functions as the national health insurance scheme. It was established in 1978 and is funded through progressive taxation. Within this scheme, responsibility for purchasing and providing primary care services falls to the mid-tier local governments, recently reorganised into five regional authorities (“the regions”) as described in Chapter 1. The most recent OECD *System of Health Accounts* data for Denmark in 2010 shows that, out of a total national spend on health of USD PPP 4 464 (equivalent to 11.1% GDP), 28.4% is spent on ambulatory care, 45.1% on hospital care, 13.4% on nursing and residential care and 11.5% on purchase of drugs and medical goods (OECD, 2010).

Nearly all Danish GPs are independent professionals working on a contractual base with the regional authorities, and are commissioned to provide primary care services either from their own facilities, or (less often) renting space from a publicly run local health care clinic. GPs are paid through a mixed system comprising both capitation sums (about 30% of GP income) and fee-for-services sums (about 70%), negotiated between the regions and GP representative bodies and applied uniformly across the

country. Fees are earned on consultations, home visits and minor surgery; some preventive health care work also attracts a fee, such as vaccinations and child health programmes. There is, however, no direct quality-related component in the current payment structure for primary care provision.

Physician density is regulated to ensure even geographic access for patients and even income for GPs across the country, reducing any tendency to avoid practice in poorer or less populated areas. Nevertheless, in response to some persistently understaffed districts, recent contracts allow regions to establish primary care clinics and employ GPs on a salaried basis, or for independent practitioner GPs to employ other GPs on a salaried basis in branch facilities.

Other professionals in Denmark's primary health care workforce include 3 700 dentists (similar to the number of GPs) and 245 community pharmacies. All citizens are entitled to home nursing for phases of acute, chronic or palliative care, provided by their municipality. When prescribed by a GP and assigned by the municipality home nursing and any necessary equipment or home modifications delivered by the municipalities, are free of charge. Danes also have access to physiotherapists, provided free of charge for people with serious physical disabilities or subsidised if otherwise prescribed by a GP. Every region also has a medically qualified public health officer, whose role is administrative, advising the regional authorities on environmental and communicable disease threats, as well as broad supervision of all health activities in the area.

### ***Training to become a GP is formalised, but thereafter professional development is unstructured***

All Danish medical graduates are exposed to GP as part of their undergraduate training, which consists of around a month of clinical practice, accompanied by theoretical lectures and examined in the final qualifying exams. This is broadly similar to the extent to undergraduate exposure in other OECD countries. Additionally, however, about 80% of Danish medical practitioners work in GP after qualifying as part of their basic clinical training. For those planning a career in GP, specialist training comprises five years, made up of a further six months in an approved training GP setting, followed by various hospital posts (typically including general medicine, surgery, paediatrics, gynaecology/obstetrics and psychiatry) over four and a half years, throughout which the trainee continues to work 1-2 days a month in GP. Clinical practice is supported by a theoretical course of 200 hours, organised at regional level with other local trainees; a research training module is also included. These arrangements for specialist GP training are very similar to other OECD countries. After specialist qualification, continuous medical education or professional development (CPD) is self-regulated and managed by GPs' professional

association. At present, there is no formal system of CPD for GPs, setting out expectations or documenting GP's professional development.

One issue pertinent to the continuing professional development of GPs is the notable predominance of solo practitioners in Denmark. A solo (or “single-handed”) GP manages patients in a geographical area in isolation without daily interaction with other GPs, or may share premises but be uniquely responsible for the care of patients on her list. Although solo practice has historically been associated with professional isolation and poor quality (Collings, 1950), recent studies have not found evidence that lone GPs provide worse care (Chambers 1994; Campbell, 2001; Majeed, 2003). Nevertheless, CPD can be more difficult, unless mitigated by learning groups or other initiatives (Beyer, 2003). The solo practitioner model is nevertheless slowly becoming less common: now, around 40% of the general practitioners in Denmark now work in group practices, compared to around 25% some decades ago, a trend in keeping with a steady evolution towards a more collective approach to the provision of primary care seen elsewhere. Those solo practices which persist are largely a metropolitan phenomenon – for example almost 70% of GPs in the Copenhagen area work alone, compared to 48% in South Denmark; this is thought to be due to difficulties in obtaining sufficiently large premises in urban areas (PLO, 2012b). Nevertheless, even within collective provision, practice sizes in Denmark remain small with around half comprising just two GPs and another 25% three GPs.

### ***Denmark's future GPs are likely to demand different working conditions***

Two demographic trends stand out amongst the Danish GP workforce: increasing age and increasing feminisation. Currently, around a third of Danish GPs are aged over 60 (PLO, 2012a) and the proportion of female GPs has risen from around 10% in the 1980s to close to 50% today. Younger and female doctors are more likely to request working flexibly or part time (Johannessen and Hagen, 2012; Simoens and Hurst, 2006), although part-time working is popular amongst Danish GPs more generally. Anticipating the likely impacts on medical labour supply implied by these preferences, the Ministry of Health reports significant concern around ensuring even distribution across rural and urban areas. Likewise, the GP professional association estimate a current shortfall of approximately 150 GPs (4% of the workforce), concentrated in the periphery (specifically, North Jutland and Lolland Falster), but also in large cities (PLO, 2012b). To offset these possible shortfalls, training capacity in general practice has been increased from 104 training posts/year to the current 180 posts and a further increase to 230 posts/year is planned (Ministry of Health, 2008b).



### 2.3. Outcomes associated with primary care in Denmark

#### *Although little data is available, Danes appear satisfied with primary care services*

Levels of satisfaction with primary care services in Denmark appear high. In a recent Eurobarometer survey, 91% of Danish respondents rated the quality of family doctors as “good”, compared to an EU27 average of 84% (European Commission, 2007). This concurs with findings from a 2008 survey undertaken by the GPs’ professional association, when 86% of those polled said they were satisfied or very satisfied with their GP, and 4% dissatisfied (PLO, 2012a). In an industry-sponsored, pan-European survey of consumer satisfaction with health care services (including secondary care), Denmark was the second highest ranking country out of 34, behind the Netherlands (Björnberg, 2012). Only 3% of Danes switch GPs per year (most often because of a change of address), again suggesting satisfaction with individual practitioners.

One area of slight concern relates to access. In the Eurobarometer survey, gaining access to a GP was rated as “easy” by 82% of Danish respondents, below the EU27 average of 88% (European Commission, 2007). Financial access, however, was not an issue, with Danish respondents reporting the lowest rate of unaffordability at 1%, compared to an EU27 average of 11%. It has also been shown that for the same level of need, low-income people are more likely to visit a GP than those with higher income in Denmark (Devaux and de Loooper, 2011). While this is true in several other OECD countries, the pro-poor gradient of GP visits is especially marked in Denmark. The theme of health and health care equity is explored further in Chapter 4.

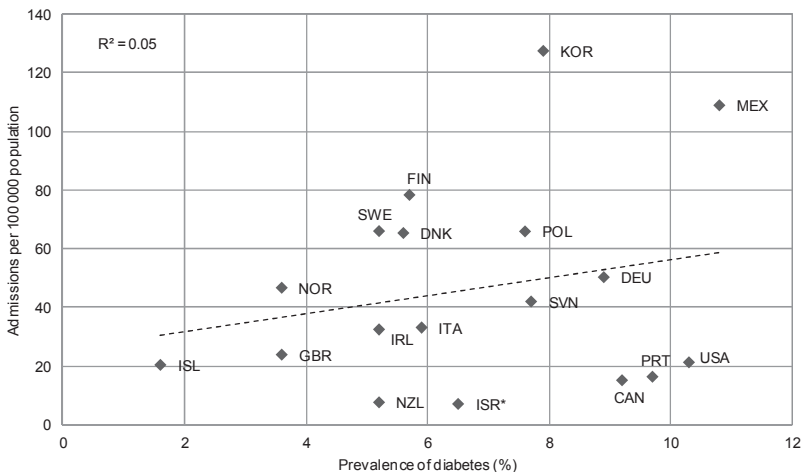
Since 2001, a patient satisfaction survey called DANPEP (Danish Patients Evaluate Practice) has been used in Denmark to systematically collect patient reported measures of the quality of primary care, including experience of the patient journey, degree of involvement in decisions about their care and co-ordination of care. DANPEP evolved from the EUROPEP questionnaire, which was developed and validated by a task group of research institutes from eight different European countries (Wensing, 2000). Every practice is obliged to conduct a survey on a sample of patients at least every three years and receives a breakdown of results by individual doctor, by practice and by region. Analysis of recent DANPEP results found high levels of satisfaction overall, with the most positively rated aspects of care being confidentiality, empathy and precision, while the poorest levels of satisfaction regarding GP availability by phone and amount of waiting time in the waiting room. Elderly patients, frequent attenders, patients who had a long history with the GP and patients with a good self-rated health were those who were most satisfied in general (Heje, 2010).

### ***Objective indicators of primary care quality, however, are not always reassuring***

The OECD collects a number of internationally comparable indicators reflective of the quality of primary health care. These largely relate to long-term conditions such as asthma and diabetes which should be fully manageable in the community – any hospital admission for these conditions is likely to reflect a lapse in the quality of primary health care. Denmark performs well in some of these indicators. Asthma admission rates at 36.5 admissions per 100 000 population (aged over 15, and age and sex standardised to the 2005 OECD population) are well below the OECD average of 51.8 admissions (OECD, 2012). Likewise, for congestive heart failure, Denmark has the lowest standardised admission rate amongst similar European countries.

Other indicators are less reassuring. The standardised admission rate for poorly controlled diabetes, at 65.4 admissions per 100 000 population aged over 15, is higher than the OECD average of 50.3. This aberration cannot be linked to a higher diabetes prevalence, which in Denmark is very moderate (Figure 2.2). Furthermore, the lower limb amputation rate amongst diabetics in Denmark is one of the highest in Europe (OECD, 2012) – a distressing eventuality which should be avoidable irrespective of the background prevalence of diabetes.

**Figure 2.2. Uncontrolled diabetes hospital admission rates and prevalence of diabetes, 2009 or nearest year**

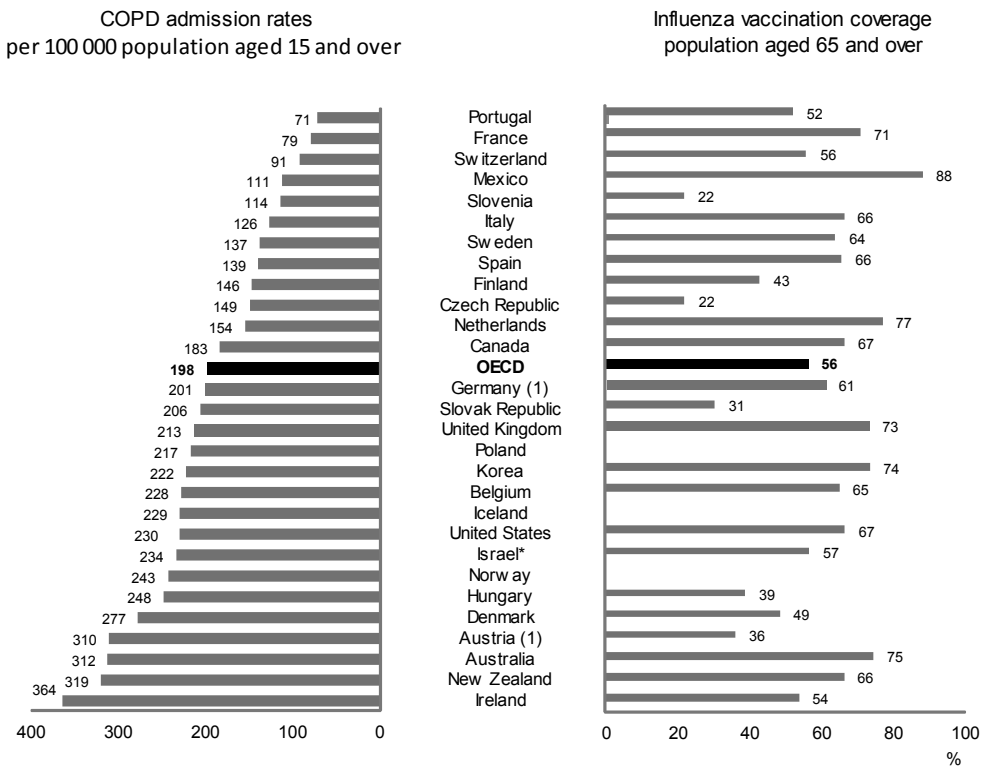


\* Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Source: OECD Health Data 2011.

Likewise, the admission rate for chronic obstructive pulmonary disease (COPD) at 277 per 100 000 population aged over 15, far exceeds the OECD average of 198 admissions. Whilst this may relate to Denmark’s historically high smoking levels, referred to in the opening paragraphs of this chapter, cause for concern is compounded upon noting Denmark’s relatively poor record at vaccinating older people against influenza (Figure 2.3) – a vital primary care function, which reduces the risk of hospitalisation in patients with COPD and other chronic illnesses (Nicholson et al., 1995).

**Figure 2.3. COPD hospital admission rates and influenza vaccination coverage, 2009 or nearest year**



Note: Rates are age-sex standardised to 2005 OECD population.

1. Influenza vaccination coverage population aged 60 and over.

\* Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Source: OECD Health Data 2011.

## 2.4. Primary care quality initiatives in Denmark

### *Danish primary care has developed a number of quality initiatives, particularly around clinical data capture*

The Danish General Practice Quality Unit (DAK-E) was established in 2007 as a unit under the Foundation for Quality and E-Health in Denmark. DAK-E aims to monitor and improve the quality of Danish General Practice, and is funded jointly by the Danish regions and GPs' professional organisation, the PLO, who both reaffirmed quality as a shared priority in their most recent contract negotiations. Funding for DAK-E was recently reduced however, leading to a decision to focus activity on the DAMD data-platform, described below, rather than other activities such as training and educational activities for GPs.

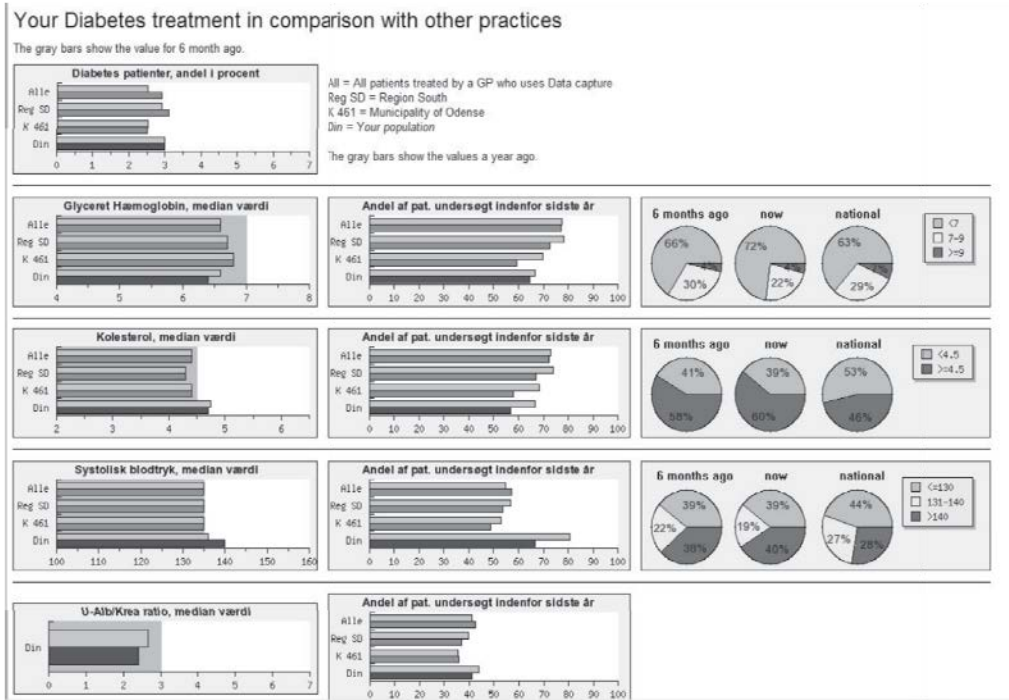
Close to 100% of Danish GPs use electronic health records for in-house patient management of their patients and over 80% of communications with other service providers are electronic (Ministry of Health, 2008a). Although Danish GPs use a variety of software packages for patient and practice management, a requirement to code all activity for chronic disease management using the International Classification of Primary Care coding system (ICPC-2) should facilitate shared activities and communication between them, at least in the area of chronic diseases. ICPC-2 allows classification of the patient's reason for encounter, the problems/diagnosis managed, interventions (including medications, procedures and referrals) and administrative data (WHO, 2003). An e-learning programme is supporting GPs with implementation.

Additionally, Denmark uses a system of automatic data capture from primary care records to monitor quality. The data include diagnoses, procedures, prescribed drugs and laboratory results. Most data is collected automatically, limiting any additional burden on GPs themselves, although annual data checks and specific research projects may request additional data via occasional pop-up screens. Participation was initially voluntary at set up of the system in 2006, but since April 2011 every practice is obliged to participate within two years (currently, just over 70% of practices are participating). Data are sent to the Danish General Practice Database (DAMD) hosted by the University of Southern Denmark.

DAMD provides a platform through which GPs can access quality reports from their own practice for over thirty areas, including management of chronic diseases such as depression, COPD, diabetes or heart failure; routine care such as childhood vaccination and provision of contraception and aspects of effective practice administration. As well as being able to identify individual patients that are sub-optimally treated, the system allows them to

benchmark their practice against other practices at municipal, regional, and national levels (see Figure 2.4 for an example relating to diabetes management). Patients can also monitor their own clinical data (Figure 2.5).

**Figure 2.4. DAMD output allowing GPs to compare the quality of their practice with peers**

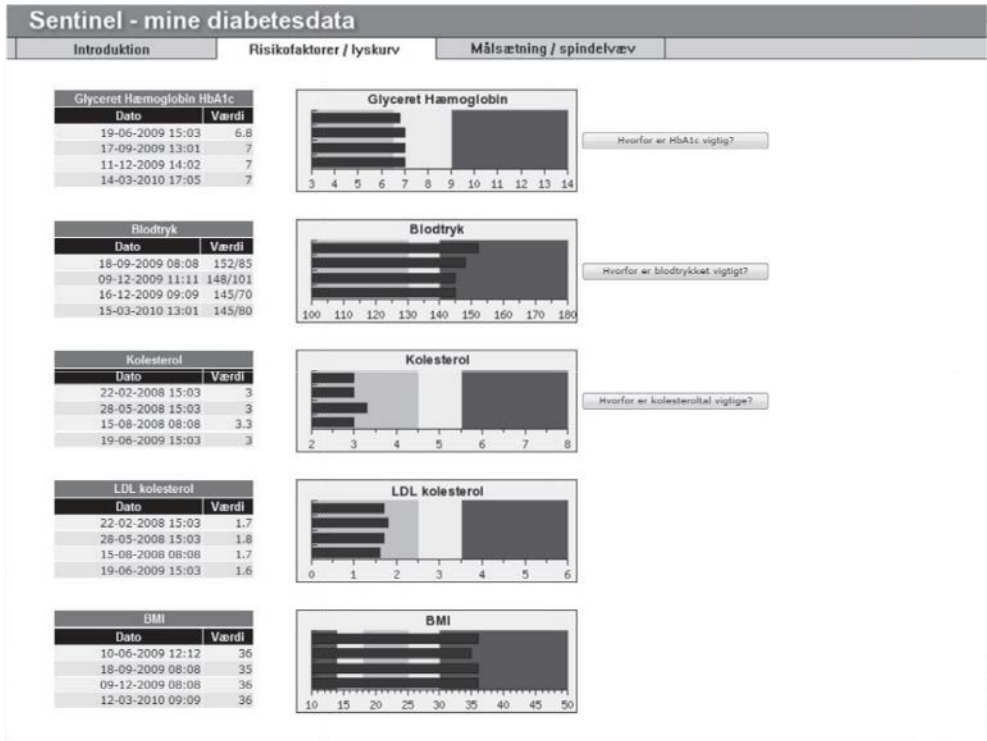


Glossary: *Median værdi*: median value; *andel af pat. undersøgt indenfor sidste år*: proportion of patients with an annual check in the last 15 months.

Source: [www.dak-e.dk](http://www.dak-e.dk).

The DAMD produces weekly quality reports as well as occasional in-depth analyses of particular topics. For example, a recent analysis examining the quality of diabetes primary care reported significant improvements in the proportion of diabetics on antidiabetic, antihypertensive and lipid-lowering medications where appropriate (Schroll, 2012). Absence of a control group, however, precludes any firm conclusion that the improvement in the quality of care observed was a direct result of the DAMD tool, although a smaller cluster randomised controlled trial using an earlier version of the tool in Vejle municipality reported similar positive impacts on appropriate prescribing (Guldborg, 2011).

Figure 2.5. DAMD output allowing patients to self-monitor their management



Glossary: *Lyskurv*: traffic light; *værdi*: value; *blodtryk*: blood pressure; *hvor er 'x' vigtigt?*: Why is 'x' important?

Source: [www.dak-e.dk](http://www.dak-e.dk).

Nevertheless it remains far from clear whether GPs make regular, effective use of the information available to them through DAMD – the most recent data show that only one in six GPs open the practice quality reports they are sent (DAK-E, 2013). Hence, the challenge now is to encourage and implement activities related to feedback, such as reflection on individual or group practice or discussion through quality circles.

***In general, quality initiatives in primary care are disconnected from broader system quality initiatives or have been slow to develop***

In assessing the likelihood of meeting the challenge above, it should be noted that many of the quality initiatives discussed in Chapter 1 have only poor “reach” into primary care. For example, Denmark’s National Indicator

Programme “measures the quality of care provided by the *hospitals* to groups of patients with specific medical conditions”;<sup>2</sup> of the eleven disease areas NIP addresses, few have an important primary care component. Of those that conceivably do, namely COPD, diabetes, heart failure, low back pain and depression, their focus is mostly on secondary care (the standards around depression, for example, refer entirely to hospitalised patients or hospital outpatients). Only the indicator sets for low back pain, COPD and diabetes capture primary care activities. Meanwhile, the articulation between NIP and primary care’s home-grown indicator project, the DAMD platform described above, is only partial. Principally, whilst NIP sets out specific standards and timeframes, with threshold values for what proportion of patients should achieve a certain standard within a given timeframe, DAMD does not specify standards, timeframes or threshold values. Instead, its function is to provide quantitative feedback to GPs on how their clinical and administrative management compares to their peers. As of April 2012, however, a new project is exploring how patient-level data held by DAMD and NIP on diabetes management can be brought together to give a more integrated picture of the quality of care. Similar work is planned for COPD.

Likewise, the Danish Institute for Quality and Accreditation in Health care (IKAS) manages an accreditation programme across Denmark’s health system. Accreditation involves determining minimum standards of quality, assessing health care providers against these, and using any deficiencies identified as an empirical basis to improve quality, as described in Chapter 1. An underlying aim is to develop a culture where all institutions engage in ongoing learning and continuous quality development. To date, all Danish hospitals, public as well as a number of privately owned units, have been visited by the IKAS programme and given an accreditation status.<sup>3</sup> Accreditation standards have also been agreed for the pre-hospital emergency care sector, for Danish pharmacies and for municipal health care services and many of these services have completed the accreditation process. To date, however, systematic accreditation in the primary care sector is not in place.

An agreement was signed late 2010, however, between IKAS, the Danish regions, the PLO and DSAM to begin work on developing and piloting accreditation standards for primary care. The version being piloted has 19 standards in four areas: a general section on availability of appointments, telephone access, efficient referrals and care for vulnerable patients; patient involvement and information; patient safety; management and organisation. There are also some additional standards around the management of diabetic patients. Piloting by 26 practices across Denmark took place over 2012, with an independent consulting firm collecting users’

feedback on the process and results. The plan is to have a formal, national system of primary care accreditation in place by 2014.

In a similar vein, Denmark's national patient safety programme concerns only hospital care and the Danish Society for Patient Safety's widely acclaimed *Patient Handbook* and various demonstration projects only concern hospital stays (although a demonstration project for community care is currently under discussion).

## 2.5. Initiatives to support integrated care in Denmark

### *Although evidence is scant, Denmark's provision of integrated care seems under par*

The Danish population's expectations of health and social care, particularly long-term care, is distinct vis-à-vis other European countries. Danes are most likely to want to be looked after by a professional care service at home during older age (46%; Hungarians, 8%, were least likely) and most likely to expect it (51%; Croatians, 4%, were least likely; Eurobarometer 2009). A decisive element is who gives the care: Danes are least likely to want to be looked after at home by a relative (20%; Polish respondents, 70%, were most likely to want this; idem). The implication is that Danes have a clear expectation that public services make a comprehensive offer of health and social care, within a fully personalised physical setting and social context. Hence there is a need for co-ordination between regional and local health prevention, treatment and care in order to offer smooth, patient-centered solutions. Yet, within those with experience of such care, Danes were the most likely to report that they felt the care received fell somewhat short of their needs (16% reporting that care was "only partly appropriate"; Greeks, 4%, were least likely). Some caution here is needed, however, because but numbers responding to this particular question were small.

One crude measure of care integration is waiting times between one element of care starting after being referred from another, or after self-referral. Denmark routinely monitors expected and actual waiting times *within* the acute care sector,<sup>4</sup> these are shown in Figure 2.6 for 18 selected surgical procedures and treatment for cancer during the period 1998-2011. In general, waiting times are stably low or have been declining in recent years (apart from an increase in 2008 explained by a two-month general strike among hospital personnel).



### **Box 2.1. Seamless continuity of health and social care – an increasing expectation from patients and their carers**

Given the context of an epidemiological transition towards longer lives and an increasing prevalence of long-term conditions – and, in some cases, care needs – health and social care systems across the world are grappling with the problem of how to deliver high-quality, personalised care whilst controlling costs and maintaining overall efficiency. More concretely, their task is to ensure that individual patients get appropriate care for acute episodes of ill-health, as well as effective management over longer periods to stabilise their health and avoid costly and unpleasant deteriorations (Kodner and Spreeuwenberg, 2002). The services responsible for delivering and sequencing such care include primary and ambulatory health care, emergency and specialist health care and social care services, hence a critical issue is ensuring that interactions between these providers about individual cases, and patient transitions from one service to another, are timely, safe and minimally disruptive for the patient and their family or informal carers. Co-ordination is an issue both within the health care sector (as a patient prepares for discharge from a hospital into the community, for example) and across the interface between health and social care (such as when a patient requires additional home help to live independently) and is particularly important for patients with chronic conditions and the elderly who may have difficulty navigating fragmented care systems (Oxley, 2009).

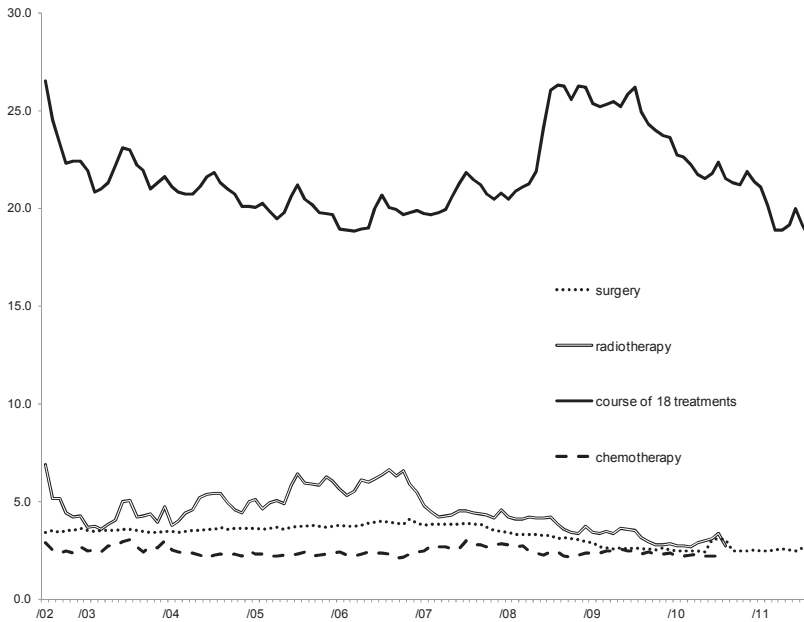
Increasing concern for health care quality and patient safety are major drivers of the pursuit of better integrated care, indeed the concept of well co-ordinated, patient-centered care has become one of the key objectives of modern health care systems. The Institute of Medicine’s influential 2001 report *Crossing the Quality Chasm* (Institute of Medicine, 2001) identified better co-ordinated care as a central feature of health care quality; since then an increasing body of evidence has demonstrated that orienting a health system around the preferences and needs of patients improves overall patient satisfaction and health outcomes, as well as reduces costs (Oxley, 2009; OECD, 2010). Studies based on information from “root-cause” analysis of specific incidents suggest that poor design of health care delivery processes and fragmentation, rather than technical incompetence of professionals, underpins the majority of medical errors (Hofmarcher et al., 2007). Patient expectations are also driving the demand for better co-ordinated care. Unsurprisingly therefore, a 2007 OECD survey indicated that policy makers in virtually all responding countries were concerned about inadequate care co-ordination within their health system (Oxley, 2009). Policy discussions about care co-ordination are most closely linked to goals of quality of care, followed by cost efficiency and, to a lesser degree, on ensuring access to care (Hofmarcher et al., 2007). Before going further, it is worth noting that variety of terms are in use to describe the concept, including “managed care”, “shared care” or “transmural care”; throughout this volume we use “integrated care”.

A recent King’s Fund review (Curry and Ham, 2010) identifies common features of successful integrated care programmes: first, proactively identifying individuals that are at high risk of using services intensively and crossing frequently between ambulatory and acute care, or having simultaneous, intensive health and social care needs; second, setting up multidisciplinary teams to provide and take responsibility for care co-ordination, including delivery of social care services, allowing individuals to go to one place to access a range of

services; third, preferentially investing in effective lower cost services (such as home care) whilst embedding incentives to use them rather than higher costs substitutes (such as admission to long-term residential care). The authors note that effective integration of care requires action across several levels of a care system. At a macro-level, this includes shared goals, planning and purchasing across health care commissioners and providers, perhaps within a single institution. Kaiser Permanente in the United States is a well known example. Integration at a micro-level refers approaches such as case management or virtual wards to deal with individual patients. In between is meso-level integration where the focus is on the needs of particular groups of patients (Curry and Ham, 2010). Most, if not all, care systems place the primary care professional as a key agent (often, *the* key agent) delivering integrated care at the micro-level, and to some extent, at the meso-level. Hence, this quality review considers the provision of integrated care as a central issue alongside the assessment of the quality of Danish primary care.

Nevertheless, personalising the health and social care offer to separate individuals with complex needs and distinct preferences is difficult. Each case is essentially novel and unique, there are no absolutely “correct” solutions and there are few generalisable rules to guide resolution other than at an abstract level. Hence, health care providers face a classically “wicked problem” with no straightforward solution (Conklin, 2005). Surveying countries’ policy response to the problem, Oxley reports that problems in co-ordination most often appear at the interface between levels of care, particularly as patients leave acute care settings: around two thirds of countries agreed with the statement that difficulties exist at transitions from ambulatory care and four-fifths at the level of transitions from acute care. 30% of countries indicated problems of care co-ordination within hospitals, suggesting potential to improve organisation within the acute care sector; it was also reported that long-term care services were poorly formulated to meet the challenge of care co-ordination (Oxley, 2009).

Financing arrangements were identified as a particular obstacle, given that funding care from multiple individual silos tends to encourage cost shifting, rather than shared activity. Similarly, strong limitations exist on the roles different care professionals are allowed to take or there is a lack of professional esteem between professional groups were also suggested as impediments to integrated care (Oxley, 2009). Adding to these difficulties is on-going uncertainty around how effective integration can be measured (and by implication, rewarded). Some existing quality metrics actually encourage clinicians to avoid or deprioritise medically complex patients, by exempting such patients from quality measurement programmes. Indicators which might plausibly reflect the extent of integrated care are currently limited to measures around waiting times and self-reports from patients regarding their experience of care (OECD, 2013; Schoen et al., 2011). There is still much work to be done before these metrics are validated and generally accepted as being useful, either for within-country performance assessment or for cross-country comparison.

**Figure 2.6. Expected waiting time (weeks) for cancer treatments, Denmark, 2002-11**

Source: Sundhedsstyrelsen “Ventetid”, Danish Health and Medicines Authority, available at: [www.sst.dk/Indberetning%20og%20statistik/Sundhedsdata/Ventetid.aspx](http://www.sst.dk/Indberetning%20og%20statistik/Sundhedsdata/Ventetid.aspx).

Nevertheless, only 52% of Danes were satisfied with the waiting time for ordinary treatment (Sundhedsstyrelsen, 2011a). Waiting times in other parts of the health sector are not routinely measured, although the Ministry of Health reports that there are no significant problems around patients being unnecessarily maintained in acute care settings because transfer to a more appropriate setting (such as a nursing home) cannot be arranged. As already mentioned there are, however, few other reliable metrics of care integration routinely available.

Some further insight is available from the academic literature. Schiøtz et al. compare admission and readmission rates, average length of stay and mortality rates for heart disease, hypertension and COPD between the Danish national health system and the Kaiser Permanente health system in the United States, using data from 2002-07 (Schiøtz et al., 2011). No difference in mortality rates is seen, but nearly all other outcomes are worse in the Danish system: admission rates for ischaemic heart disease are ten times higher and readmission rates two times higher for example. Whilst alternative explanations are possible (such as supply-induced demand, since there are more beds available in the Danish system), the authors conclude

that the Danish health system “is a more fragmented system with GPs, hospitals, preventive and rehabilitation services being paid from different public sectors, without aligned incentives or a proactive approach to prevention.” They also identify intersectoral cultural differences and mistrust, as well as a lack of information integration, as decisive factors in Denmark’s higher readmission rates. It should be noted that the study uses data from before Denmark’s reform of local government and that comparisons between Kaiser Permanente and other health systems comparable to Denmark’s have generated considerable controversy regarding validity (Feachem, 2002; Ham, 2003).

Based on studies such as these, the European Observatory on Health Systems and Policies recently reported that patient pathways in Denmark are poorly coherent, particularly across primary/secondary care, probably due to a lack of mutual understanding between providers and to inadequate communication systems (Olejaz et al., 2012).

### ***Clinical guidelines and pathways show promise, but remain narrowly defined and unevaluated***

As described in Chapter 1, Denmark has developed an extensive set of clinical guidelines and pathways. Good examples are the fast-track cancer pathways, in place since October 2007. These comprise clinical guidelines setting out diagnostic and treatment standards alongside maximum waiting times which translate into a predefined course of appointments, booked ahead as a patient enters the pathway. Pathways relating to over 30 different cancer types are now in place, including pathways for unknown primary tumours and for non-specific presentations with “red-flag” features that could indicate cancer. Similar pathways for defined presentations of heart disease and mental illness have also been implemented.

Although these pathways offer potential for better integrating care (particularly within the acute care sector), their impact remains unevaluated. In fact, the possibility of evaluation may remain remote for some time, since one recent discussion of these pathways noted that problems with registration mean that very few data are available for evaluation (Olejaz et al., 2012). Evidence from the United Kingdom demonstrates the need for careful evaluation; there, some fast-track cancer pathways were associated with significant service disruption as GPs channelled increasing numbers of patients through them, with ever lower thresholds for fast-track referral, crowding out routine referrals and follow-ups (Potter et al., 2007).

A second issue is that these pathways remain narrowly defined, each addressing a single disease. Whilst welcome and necessary, they are still insufficient to meet many patients’ expectations of integrated care. No clinical

guidelines for the management of patients with multiple, complex care needs or explicitly around the integration of care are in place. In order to address the more complex needs of patients with multiple chronic illnesses, local initiatives have piloted new roles such as “pathway co-ordinators” and a designated contact person who patients and families can approach with questions during an admission or across multiple ambulatory visits.

***Other initiatives have also been held back by low enthusiasm amongst GPs***

One Danish innovation often referred to is the *Praksiskonsulenterordningerne* (PKO) scheme, sometimes referred to in English as “General practitioners as advisors in hospitals”. The PKO role, which began on the island of Fyn in 1991 and has since undergone adoption and local adaption in nearly all Danish counties, is typically co-located across both primary care and hospital settings (Olesen et al., 1998). He or she will fulfil a number of roles, such as becoming involved in individual complex patient cases which could benefit from the attention of a professional focussed on care co-ordination (micro-level care co-ordination, to use Curry and Ham’s terminology), and supporting hospitals and local primary care services to develop working practices which contribute to co-ordinated care (meso-level co-ordination). Although an evaluation of the PKO scheme reported positive impacts found on co-operation and communication between primary and secondary care (Sundhedsstyrelsen, 2003), only modest levels of enthusiasm were found among hospital consultants and management for continuation or development of the scheme and the lowest levels of enthusiasm were found amongst GPs themselves: in some regions just over half of GPs felt that resources put into the PKO scheme could be better used for something else. The authors conclude that greater support and interest from GPs is necessary to sustain the scheme. No subsequent evaluations of the PKO scheme are available.

Likewise, Frolich et al. describe a quality improvement project focussed on integrated rehabilitation for patients with COPD, diabetes, heart failure and falls, shared between GPs, the University Hospital and local government in Copenhagen (Frohlich et al., 2010). The authors found that only 50% of managers and health care professionals perceived integration of care in Denmark to be satisfactory. Regarding the integrated rehabilitation programme for COPD, less than half the GPs surveyed rated it positively. In particular, GPs disliked the amount of additional work (mainly investigations to assess disease severity) needed to refer pts to the programme. Several barriers to integrated care were identified: lack of integrated IT systems, misaligned economic incentives and established ways of providing care that did not support sharing patients between organisations.

Another example relates to the integration of the DAMD and NIP data on diabetes management referred to earlier. This project has the potential to compare individual GPs' actual practice alongside the national standards and thresholds set out in NIP. GPs, however, were resistant to this level of exposure; consequently, the initial approach will be to try "cluster quality reporting", where reports will be issued at the level of a hospital catchment area.

Beyond the health sector, efforts to achieve greater integration between health and social care have focussed on attaching GPs to municipality social services departments. As for PKO, a bimodal pattern of work managing individual cases whilst pursuing broader organisational integration, is typical. The reverse configuration, where municipal social workers are located within health care premises, is less often seen. This is despite the fact that this configuration is probably preferable, since the social worker would be able to interact directly with the full health care team, including nurses, midwives, psychologists, drugs and alcohol counsellors, as well as secondary care services. Joint health and social care positions, however, of whatever configuration have been less extensively trialled than the PKO role.

An organisational shift which has the potential to encourage closer health and social care working are multidisciplinary health centres. These typically house a number of GPs, usually working in group practice, jointly with other health care professionals (including hospital specialists running outreach clinics), alongside professionals from other sectors, notably social work and other local authority services. The model is still undergoing development and retains great flexibility. Despite the potential offered by municipality health centres for patient-centered care, a particularly striking feature has been their slow and tentative emergence. This may be related to a prevailing bias amongst Danish GPs that patients are best served when general practice premises are not too big, not too institutionalised and not too bureaucratic. Whether this is a sentiment shared by Danish patients, or whether this service philosophy is any less achievable in a municipality health centre, remains unclear.

***Disease management programmes have recently been introduced, but success depends upon adequate engagement from GPs***

A 2007 survey of OECD member states' approach to integrated care found that while there were few countries with specific care co-ordination programmes in place nationally, many were experimenting with pilot programmes (Hofmarcher et al., 2007). This has recently been addressed by introduction of a national chronic care model, launched by the DHMA in conjunction with the regions and the municipalities. The model is based on the chronic care model developed in the United States (Wagner, 1996) and

emphasizes patient education, a continuum of services provided by interdisciplinary care teams with a strong primary care sector in a co-ordinating role, and use of non-financial and financial incentives to align activities. In particular, the model recommends developing disease registers and proactively identifying patients with complex needs (for example those with poorly controlled disease) through risk stratification and assigning case managers (Frohlich et al., 2008).

In addition to national guidelines and pathways, Denmark's 2007 Health Act requires that all municipalities and regions jointly develop and regularly review *sundhedsaftaler* or "health contracts" to address continuity of care across their respective health functions, including general practice. These have tended to focus on cardiovascular disease, diabetes, COPD and musculoskeletal disorders thus far. A number of common, broad requirements for these health contracts are specified, for example that they include aspects of prevention and health promotion and pay due attention to mental health needs. A recent evaluation carried out by Sundhestyrelsen (Sundhestyrelsen, 2011b) found that the contracts were good platforms for strengthening co-operation but faced challenges in remaining up to date and adequately reflecting service developments, particularly the increasing transfer of care away from hospital settings. Furthermore, *sundhedsaftaler* are not binding on individual GPs and there have been reports of low uptake or compliance with their requirements.

Translating *sundhedsaftaler* into real improvements in integrated care for patients depends heavily on adequate engagement from GPs given the expectation placed on them to fill a central co-ordinating role. It remains unclear, however, whether this engagement will be forthcoming. One recently implemented programme for diabetics, for example, offered GPs a financial incentive of DKK 1 000 to participate in the chronic care model. Few GPs chose to participate, however, citing too great an increase in their workload and uncertainty whether the scheme would be sustained (Wadmann, 2009).

## **2.6. Maximising primary care's contribution to quality health care in Denmark**

***Whilst Danish GPs have actively developed a number of in-house quality initiatives, enthusiasm for cross-sectoral working is much less evident***

Although Danish GPs have developed a number of quality initiatives in co-operation with regional and national agencies, some important gaps remain and coherence with broader system quality drives is not always fully exploited. For example, DAMD offers impressive real-time feedback to GPs

on how their practice processes and clinical management of patients compares to that of their peers, but covers only a limited set of clinical areas. For now, it fails to provide a comprehensive picture of the spectrum of primary care activity and, most notably, has only partial links to the National Indicator Project. This is a particularly unfortunate omission for indicators with a strong primary care component, such as depression or heart failure. These structural limitations are compounded by GPs' apparent limited motivation to make use of DAMD data, with only a small minority opening their quality reports, as indicated earlier.

Equally apparent, it seems, is GPs' lack of interest in initiatives which pursue cross-sectoral work and seek better integrated care. Even the home-grown PKO initiative met with only moderate support in the primary care sector and other initiatives, such as the chronic care models for diabetes attracted limited uptake, despite a financial incentive to participate. Whether the flexibility and potential offered by municipality health centres will be embraced also appears uncertain, although this is also dependent upon municipalities themselves demonstrating sufficient backing and competency.

Nevertheless, given that GPs manage the vast majority of Danes' contacts with the health system and satisfaction levels are generally high, GPs have a critical role to play in providing better integrated care. The need for an expanded role, clearly defined and enthusiastically adopted, is made more urgent by the challenges bearing upon Danish health care set out at the beginning of the chapter: increasing public and political expectations around the continuity of care; increased specialisation in the hospital sector, which typically translates into shorter stays and earlier discharge back into the community; and a rise in the number of elderly patients with multiple long-term conditions, requiring safe and effective co-ordination of care and avoiding unnecessary hospitalisation. Added to these are Denmark's high admission rates for COPD and diabetes, which signal that primary care quality and the quality of care co-ordination have substantial room for improvement. The next sections consider the ways in which this could be achieved.

### ***Leadership at national level is needed to develop the potential of primary care services, whilst supporting local innovation***

Although the last decade has seen a number of quality initiatives develop within primary care and health care more widely, still lacking is a *unifying* national vision of what primary care in Denmark should look like over the next five to ten years. While it may be the case that each stakeholder in primary care claims to have a vision for the sector's future, it does not seem to be the case that these visions are closely aligned or are as



ambitious as they could be. This stands in marked contrast to other sectors, where clearly articulated visions for development of the hospital sector (described in the next chapter) and for community provision of long-term care, both focussed on quality, exist. A national vision for the future of primary care services would start by reaffirming the central role played by GPs in Danish health care and their identity as providers of longitudinal care that integrates physical, psychological and social aspects whilst working closely with other professionals. It would also, however, emphasize the need for modernisation.

Modernisation in the context of the health care challenges set out earlier means a more ambitious approach in dealing with multiple chronic morbidity. A new approach which secures pro-active, tailored and better integrated care is needed, both at individual patient level as well as at the service level. Identifying the new tasks, roles and ways of working that ensue would benefit from a national working group involving professional and academic associations, and central, regional and municipal levels of government. Some of these new ways of working, and the tools to embed quality alongside them, are detailed below; they include an expanded role for primary care nurses and a more ambitious programme of continuous professional development for individual practitioners.

While it seems clear that Denmark would benefit from a nationally renewed aspiration for primary care, this should not preclude development of local solutions to pressing health care challenges. The chronic care model described earlier demonstrates a good approach to resolving this tension: articulation of goals and expectations at national level, with practical action designed locally. This is particularly relevant to the issue of integrated care, since effective solutions will depend heavily on local factors. Amidst a diverse array of bottom-up solutions, the role of the centre is to ensure a broad equality of service provision and to support identification and diffusion of particularly successful innovations; nevertheless, there are some underpinning elements that would benefit from being established at a national level. Foremost, is the information infrastructure underlying primary care.

### ***Better information infrastructure is key to sector modernisation***

Many stakeholders noted a relative lack of data on primary care activity compared to other health care sectors. The level of data currently available does not easily permit assessment of the extent to which GPs and other primary care professionals are meeting community health care needs, particularly with respect to chronic disease management. Clearer scrutiny of primary care activity patterns would clarify, for example, the amount of GP time spent on routine monitoring of stable patients – a task which could be

shifted elsewhere, freeing up GP time to concentrate on more complex cases. It would also allow more detailed profiling of the practice population, identifying the local burden of disease and numbers of patients with intense resource needs. Such pro-active risk stratification is a key component of effective chronic care provision (Coleman, 2009). A priority therefore is to move towards centralised or local registries of primary care activity patterns. The necessary elements are already in place with the DAK-E data capture system and recent agreement to code all activity for chronic disease management using the International Classification of Primary Care coding system, although the recent decrease in DAK-E's funding, noted earlier, may limit its ability to expand.

Bearing in mind the imperative of better integrated care, there is also potential for more extensive data linkage within the health sector and across the health and social care interface. Typically, for example, community-based health care providers other than GPs feel “forgotten” when new IT initiatives are designed. The community nursing service in Denmark, for example, can access a patient's basic medical information through *sundhed.dk* (such as diagnoses and lab results), but not the full medical record including recent consultations and treatment plans. Given that community nursing is not an adjunct but a core role within the primary care service, this may raise care continuity and patient safety issues. More complete record sharing across the primary care team should be easily resolvable through local agreements – although national impetus may be needed to make this happen.

A more intractable issue is the lack of information jointly held across primary, secondary and social care services, despite the fact that increasing numbers of patients make intensive use of all three sectors. Denmark has taken an important early step to correct this deficit by setting up a common data set for individual patients, to be used as a “back-bone” for cross-sector communication (see [www.medcom.dk/wm111943](http://www.medcom.dk/wm111943)). This data-set is not intended to function, however, as a register of those with complex chronic care needs. A conceivable additional step would be to establish jointly held chronic care registries. As well as listing residents with chronic care needs, this would holistically describe their service use across all sectors, moving beyond a silo approach to service planning and better capturing the patient experience. Chronic care registries, as well as being internationally innovative, would allow Denmark to focus more fully on the patient pathway and integrated care – something identified by several experts as the necessary next phase in the health care quality agenda. New guidelines, standards and indicators could be developed, around the care co-ordinator role, for example.

At the same time, it is important not to lose sight of the need to continue developing richer measures of the quality of care sector by sector. A particularly urgent need in Denmark is to develop quality indicators for the new health care functions delivered by municipalities (rehabilitation and nursing home facilities). Initial candidate indicators include falls, infections and pressure ulcers.

### ***New ways of working in primary care are also needed to underpin sector modernisation***

One drive that should be continued is the evolution toward group practice in primary care. Although studies do not always associate group practice with better quality care, this is nonetheless the desired direction of travel given the advantages that individual practice becomes visible to a peer group, that complex cases can be more easily discussed and that efforts toward individual and organisational professional development can be shared. Furthermore, group practice may offer other benefits relevant to better integrated care. These include the ability to pool some tasks such as overnight care, or facilitate task shifting, such as monitoring of stable chronic disease to specialist nurses.

Expansion of nurses' roles deserves special attention. Throughout the OECD, development of the nursing role is another major current in primary care reorganisation – more and more countries are moving toward independent nurse practitioners working alongside doctors. In Denmark, nurses have taken on new roles managing elderly patients and others with complex, chronic care needs, particularly in the context of services provided by the municipalities. Indeed, municipal health centers are frequently managed and predominantly staffed run by nurses. Nurses in Denmark cannot, however, prescribe. Although this, for now, is typical (very few countries have licensed nurse prescribers, and then often with restricted activity; Masseria, 2009) nurse prescribers have been used effectively elsewhere to develop their role in providing primary care. For now, Denmark also lacks advanced nurse practitioners (ANPs). These are nurses that have attained special competencies in a discrete disease area such as COPD, including organisation and interpretation of investigations, treatment modification, and referral rights. Elsewhere, ANPs have been shown to provide effective, safe and cost-effective care, particularly around better care integration and if introduced in an incremental manner. Hence, a national working group examining the future of primary care in Denmark should also examine the future of nursing.

At the same time, it would also be worth revisiting the PKO role. Although there is a degree of ambivalence about the role amongst GPs, as

shown earlier, the positive impacts on care co-ordination associated with PKOs means that it is worth exploring how the role can better meet local needs. This may, of course, mean reducing GPs' involvement and employing more nurses in this capacity instead. Perceived legitimacy is likely to be critical to the success of a relatively unusual role which seeks to work across sectors and, if the situation demands it, reallocate duties and responsibilities between them. Hence, consideration should be given to developing national standards and guidelines for the PKO role, since in other sectors these have been shown to support professionalisation and build legitimacy (most notably for GPs themselves, over the 1970s and 1980s). As previously, national guidance should not forestall local solutions, and regional or national professional networks for PKOs should also be established to support practitioners and diffuse best practice.

Finally, thought must also be given to the role of incentives and sanctions in promoting better quality primary and integrated care. In Denmark, the preference is for soft incentives (through performance feedback and peer comparison), with a view that tying clinical performance to payment may adversely distort practitioners' priorities, particularly with respect to difficult-to-treat patients or patients with non-incentivised conditions. Although there is some evidence that such fears may be founded (Campbell, 2009), the absence of a quality-related pay component or strong, third party sanctions for poorly co-ordinated care has been noted as a weakness by other authors (Wadmann, 2009) and is now somewhat unusual in the European context. An EC survey in 2009 found that just over half of countries surveyed had some element of quality-adjustment in their pay structure for GPs (Masseria, 2009). Hence, it may be appropriate to trial further incentive schemes in conjunction with GPs and other primary care professionals. Of note, any scheme must be perceived as being viably sustainable, since this was a factor that limited uptake in the chronic disease model incentive schemes discussed earlier.

***An ambitious programme of professional development for individual clinicians, linked to quality assurance, could be implemented***

Danish GPs engage in regular continuous professional development and learning, although expectations and requirements around this are not formalised in any way. In contrast, several other countries have moved towards formalised CPD requirements of a minimum number of hours per year (in some cases, compliance is necessary to maintain scientific society membership). Other countries, such as the United Kingdom, have gone further and implemented a programme of annual appraisal where CPD and other elements of professional practice are assessed by a peer. Successful

completion is necessary to maintain professional licensing. Again, then, Denmark has adopted a soft, self-regulatory approach to this area which contrasts with primary care systems elsewhere. Thought should be given to whether formalised CPD requirement and/or annual appraisal could lead to quality gains in the Danish system. The primary care accreditation pilot currently being undertaken by IKAS would provide a suitable vehicle for this.

Accreditation could also consider moving away from institution-based accreditation to something that more closely reflects the patient pathway. Accrediting local pathways of care could be achieved by setting standards around timeliness, information exchange and patient involvement, for example. This would again represent an international innovation led by Denmark, but one that is widely identified as being necessary. Furthermore, similar to the discussion on ANPs earlier, a renewed focus on professional development of the GPs also offers additional opportunities relevant to Denmark's health care challenges. In response to hospital sector reform, some GPs could develop extended competencies in defined clinical areas, such as dermatology or paediatrics, whilst not losing their valued generalist role. Similar developments of GPs with special interests have proved popular amongst both patients and professionals in other settings.

## 2.7. Conclusions

While Danish GPs have fulfilled the primary care function well over many years, demographic changes and far-reaching structural reforms in the Danish hospital sector demand a different, stronger and modernised primary care sector. Demographic trends and the rise in the number of elderly patients with multiple long-term conditions place pressure on GPs to co-ordinate their care safely and effectively, making best use of resources and avoiding unnecessary hospitalisation.

While health system reforms in recent years, however, have focused on efforts to improve quality and efficiency in the hospital sector, modernisation of the primary care sector has been relatively cautious and incremental. The fact that most GP income derives from fee-for-service may not be best suited to the provision of holistic, integrated care. Neither are there strong sanctions to actively discourage and reduce poorly co-ordinated care. GPs' ways of working have not been modernised either – a large minority still work as solo practitioners, an organisational model that may not perform well with the complexity of the tasks primary care is asked to deliver. There are few mechanisms to reward quality and continuity of the care that GPs provide, whether through financial or other instruments.

Now is an opportune moment to reach a unified, national vision for what primary care in Denmark should look like over the next 5-10 years. This

should focus on continuous and co-ordinated care for those with multiple long-term conditions and highlight the GP-patient partnership as the key relationship in ensuring high-quality, patient-centered and safe care.

Specific quality initiatives in primary care should focus on the patient experience and the pathway; in particular, there is a need to strengthen initiatives around co-ordination between primary and secondary care and more appropriate incentives for primary care professionals to work in larger teams and take responsibilities for the whole patient pathway are needed. Consideration could be given to recognising and incentivising quality in primary care in contractual renegotiation, moving beyond mere productivity. At the same time, quality initiatives in long-term care should be strengthened and the hospital accreditation programme should be expanded to include primary facilities.

Success will depend upon radically developing the data infrastructure underpinning primary care as a first immediate step. Relative lack of data on primary care activity, compared to other health care sectors, makes it difficult to know how effectively GPs and other primary care professionals are meeting community health care needs. There is also clear potential for more extensive data linkage within the primary care sector and across the primary and secondary care sectors.

## Notes

1. WONCA is the commonly used acronym for the World Organisation of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians, an international organisation of national colleges, academies or professional bodies focussed on the academic aspects of primary care. See [www.globalfamilydoctor.com/](http://www.globalfamilydoctor.com/).
2. See [www.nip.dk](http://www.nip.dk); italics not in the original.
3. Accreditation is carried out every three years. One of the following outcomes is awarded: *accredited* (if the standards in all essentials are complied with, and any shortcomings are of marginal significance); *accredited with comments* (if not all standards are fulfilled but are can be shown to have been done so within reasonable time); *not accredited* (if the institution cannot meet accreditation standards within a reasonable timeframe). Outcomes are made publicly available on the IKAS website.
4. The *experienced waiting time* is defined by Sundhedsstyrelsen as the time that an average patient without complications has actually waited from referral by a GP or a practicing specialist to the beginning of final hospital treatment, while the *expected waiting time* is the estimated maximum waiting time from referral to being seen at a hospital for examination or treatment. Other relevant waiting times, such as from diagnosis to start of treatment, or between consecutive episodes of treatment within a spell of treatment are currently not monitored in Denmark.

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## *Chapter 3*

### **Hospital specialisation in Denmark**

*This chapter examines recent reforms to drive further specialisation in the Danish hospital sector. It begins by providing an overview of the hospital sector and broader reforms to the structure of government responsibilities in health in Denmark. The key elements of the hospital specialisation reforms are argued to be: greater involvement of central government by setting guidelines for where certain specialist services should be located; a major capital investment programme; and regional governments driving the redesign of hospital services on the ground. The hospital specialisation plan is argued to have an impact on the structure of the hospital sector that is well beyond simply high-specialised services. Though the specialisation plan is still in the process of implementation and thus difficult to evaluate, the decisions of policy makers were driven by the clinical judgements of experts as the scientific literature on quality and volume offers limited insights to guide decision making in practice. Looking ahead, the challenge for the government shall be how to best use the new structure of hospital services to drive improvements in the quality of care in Denmark.*

### 3.1. Introduction

Denmark's pursuit of further specialisation and rationalisation of its hospital sector is an interesting example of a country seeking to improve the quality of care while balancing economic priorities. Beginning in 2007, Denmark has sought to systematically plan the location of specialised hospital services across the country, through a process led by the central government working alongside regional governments. While focused on specialisation, the implications of these reforms have extended beyond, prompting Denmark's regions to re-assess their hospital service planning at large. This has been aided by a commitment to major capital improvements, with a large injection of funding provided to redesign and develop new health and hospital infrastructure.

Denmark's reforms to hospital specialisation are remarkable not only for their scope and size, but for the relatively high levels of co-operation between levels of government, hospital administrators and health professionals. Operating in an environment in which there is a paucity of conclusive international or national evidence to inform decision making – as is often the case in health care policy and planning – Danish health authorities have nonetheless undertaken reforms by drawing extensively on professional input. This chapter shall provide an overview to Denmark's hospital sector, characterise hospital sector reforms and how they were achieved, and finally provide some recommendations on how quality of care in Danish hospitals may be improved as part of this process.

### 3.2. Overview to the hospitals sector in Denmark

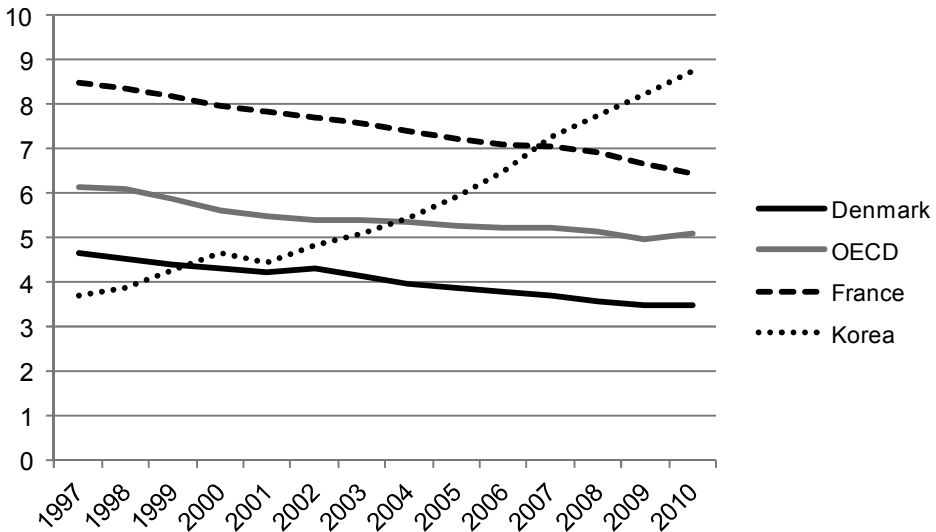
***Denmark's hospital sector is dominated by public hospitals and has seen gradual reductions in the number of beds and facilities over time***

Denmark's hospital sector primarily consists of publicly owned and operated hospitals that are staffed by salaried doctors, nurses and other health workers. Denmark's five regional governments are the owners and operators of public hospitals, which tend to provide the bulk of secondary and tertiary care for the country, with a significant presence of outpatient services delivered from hospitals. Denmark's hospitals are funded through a mix of global budgets and case-based payments, with the share between these two forms of financing varying across regions.

As in most OECD countries, Denmark has seen a progressive reduction in the number of hospitals over a long period of time, in line with advances in medical technology and the shift to more ambulatory treatments. While

Denmark does not currently submit data on the number of hospitals to the OECD, other sources suggest that over the past 20 years, the number of general acute care hospitals has fallen from 82 hospitals in 1997 to 52 hospitals by 2004 (Bech, 2009). Since 2004, there has been a further reduction to 40 hospitals in 2010. Reforms currently in train are anticipated to result in 21 acute care hospitals in Denmark by 2020. This reduction is mirrored in the number of hospital beds, which has fallen from around 25 000 in 1996 to 18 000 beds by 2009 (Ministry of Health). Denmark has both maintained a lower level of hospital beds relative to its population than most OECD countries and has continued to make reductions in hospital beds in line with reductions seen across all OECD countries. The number of hospital beds in Denmark has fallen to 3.5 per 1 000 population in 2010 from 4.5 hospital beds per 1 000 population in 1997, compared to a fall from 6.1 per 1 000 people to 5.45 per 1 000 people among all OECD countries (excluding Chile, Estonia, Mexico and Turkey) over the same period (Figure 3.1).

**Figure 3.1. Number of hospital beds per 1 000 population, 1997-2010**



Source: OECD Health Data 2012.

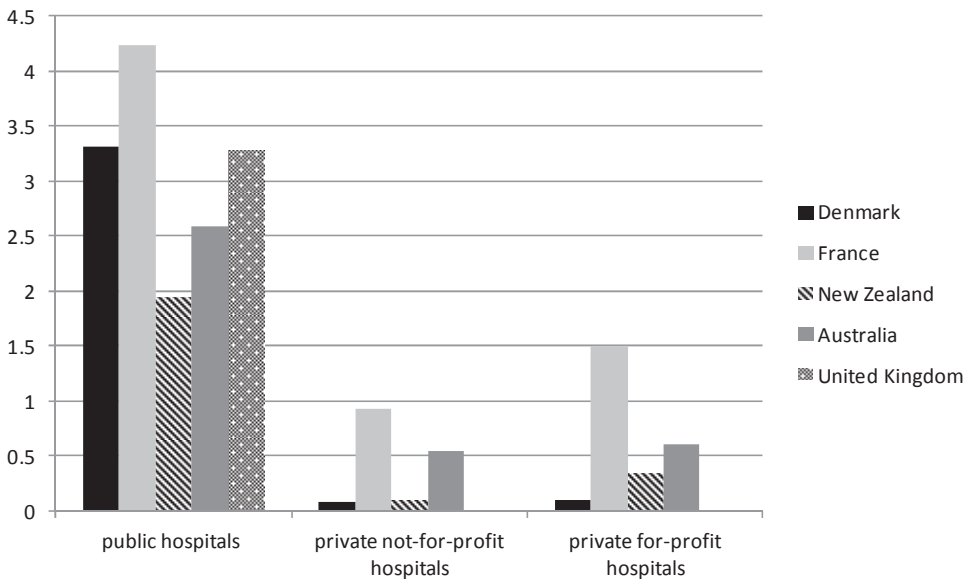
While the overall trend across OECD countries has been to reduce the number of beds, many countries have seen reductions in acute care beds accompanied by increases in nursing home (or rehabilitation) beds. More than in many other OECD countries, Denmark has experienced a similar



situation but has emphasised expansions in sheltered housing and social and nursing support to individuals living in their own homes, which could help account for its lower numbers of beds than in several OECD countries (HEN, 2003).

Relative to other OECD countries, Denmark has a smaller private hospital sector. As demonstrated in Figure 3.2 below, there were some 3.4 hospital beds per 1000 population in the public sector in Denmark in 2009. In the same year, there were only 0.1 hospital beds in each of the not-for-profit private and for-profit private sectors respectively, considerably lower than France, New Zealand, Australia and the United Kingdom. The private sector accounted for about 2% of total hospital production across all surgical categories in 2010 and up to 10% of service volumes in some categories (Sundhedsstyrelsen, 2011).

**Figure 3.2. Allocation of hospital beds in 2009, numbers of beds per 1 000 population**



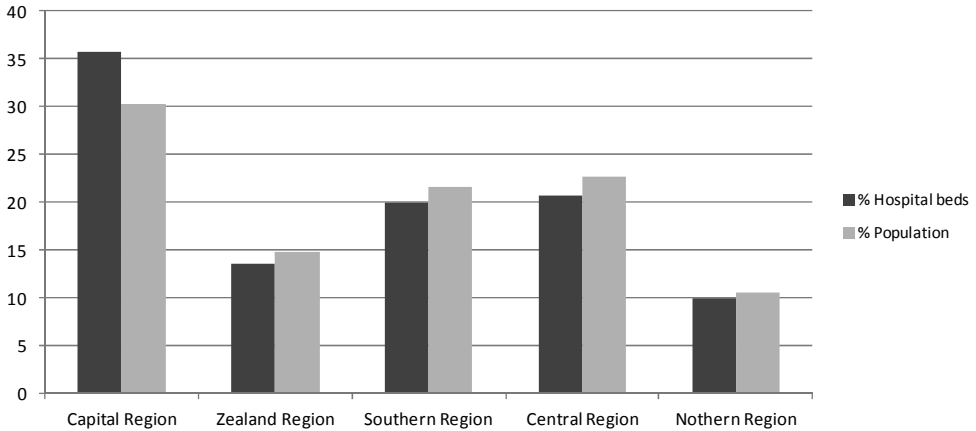
Source: OECD Health Data 2012.

### ***The location of hospital beds broadly reflects the location of Denmark's population***

Despite being a relatively small country without the large travel times that characterise many other OECD countries, Denmark has maintained hospital bed capacity broadly in line with the location of the country's

population. As demonstrated in Figure 3.3 below, the proportion of hospital beds in each of the five regions created after administrative reforms in 2007 is broadly in line with the populations across Denmark’s five regions. While the capital region of Copenhagen contains slightly greater numbers of beds, this is likely to reflect the concentration of major hospitals, private hospitals, and highly specialised functions in the country’s most populous city.

**Figure 3.3. Allocation of hospital beds across the Danish regions**

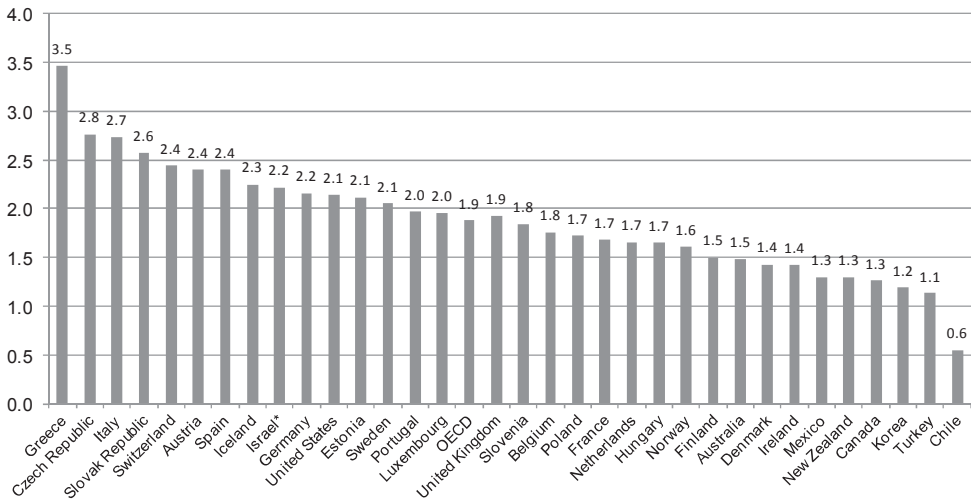


Source: Based on data from SSI and Statistics Denmark.

### ***Denmark has fewer medical specialists relative to its population than other OECD countries***

A peculiarity of Denmark is its relatively fewer medical specialists compared to its population than most OECD countries. In 2010, there were 1.4 specialists per 1 000 people compared to an average of 1.9 specialists per 1 000 people across the OECD (Figure 3.4). In addition to excluding GPs (which are counted amongst specialists in Denmark, though separately in OECD data), it is likely that this data reflects international differences in classification and whether certain domains are recognised as specialisations (e.g., emergency medicine is not a speciality in Denmark). These differences are even starker when measured on proportional terms – with medical specialists (not including GPs) accounting for 41% of physicians in Denmark, considerably lower than an average of 60% of physicians across OECD countries – suggesting that Denmark has fewer medical specialists amongst its health workforce.

**Figure 3.4. Specialists per 1 000 population across OECD countries, 2010 or earliest year available**



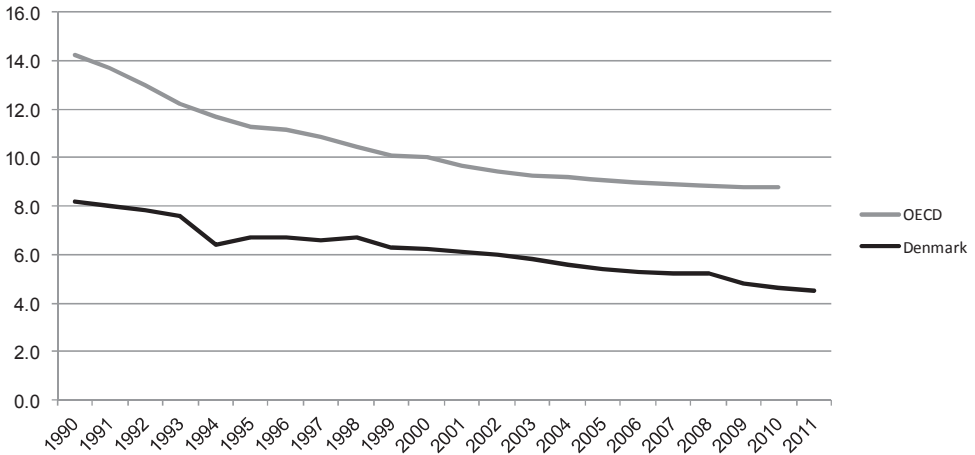
\* Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Source: OECD Health Data 2012.

***The average length of stay in Denmark is considerably lower than other OECD countries, and has continued to decline steeply in recent years***

Denmark has one of the lowest average lengths of stay across OECD countries. In 2011, average length of stay in hospital fell to a low of 4.5 days, compared to an average among OECD countries of almost double this amount, at 8.8 days. As well as being at significantly lower levels than most OECD countries, there was a 38% reduction in average lengths of stay in Denmark between 2000 and 2009, compared to a 14% reduction across OECD countries. Denmark's average length of stay has fallen in recent years in particular, to 4.5 days in 2011 from 5.2 days in 2008 (Figure 3.5). Denmark's consistently lower levels of average length of stay may also reflect that more outpatient services (of a shorter duration) are being undertaken in Danish hospitals when compared to most OECD countries.

**Figure 3.5. Average length of stay for acute care across OECD countries, 1990-2011 or earliest years available**



Source: OECD Health Data 2012.

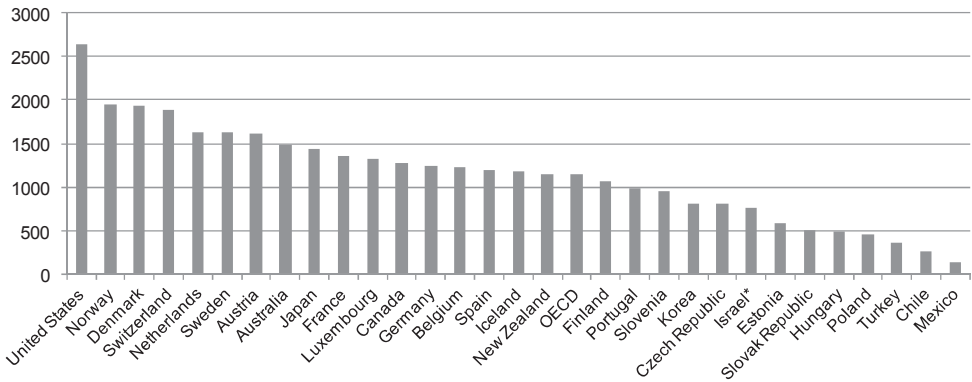
### ***Denmark spends more on hospitals than most other OECD countries***

Denmark has the third highest level of spending on hospitals on a per capita basis among OECD countries, after adjusting for differences in price levels between countries. As shown in Figure 3.6, an average of USD PPP 1 937 was spent on hospitals per person in Denmark in 2010, behind only the United States at USD PPP 2 634 and Norway at USD PPP 1 951. This is significantly above the OECD average of USD PPP 1 145 in 2010 though it is on par with Denmark's Scandinavian neighbours, which all count amongst the highest spenders on hospitals among the OECD when measured in per person absolute terms (OECD, 2012a).

Denmark's level of hospital spending remains high as a proportion of the health budget, accounting for 43% of total current expenditure on health in 2010, higher than an average of 35% among OECD countries in the same year. Preliminary results from the OECD's hospital pricing project suggest that after adjusting for hospital specific prices, Denmark maintains the second highest level of expenditure per capita on hospitals, suggesting that high overall levels of spending may have more to do with the volume of activity Denmark's hospitals are undertaking than the prices paid for hospital services. However, this is likely to reflect that hospitals in Denmark

have both inpatient and outpatient clinics (Olejaz et al., 2012), and as a result, a much higher share of overall outpatient spending is in a hospital setting rather than in independent ambulatory settings. The consequence of this is also that outpatient spending in hospitals is much higher as a share of total hospital spending than in other countries.

**Figure 3.6. Hospital spending per person (USD PPP), 2010 or earliest year available**



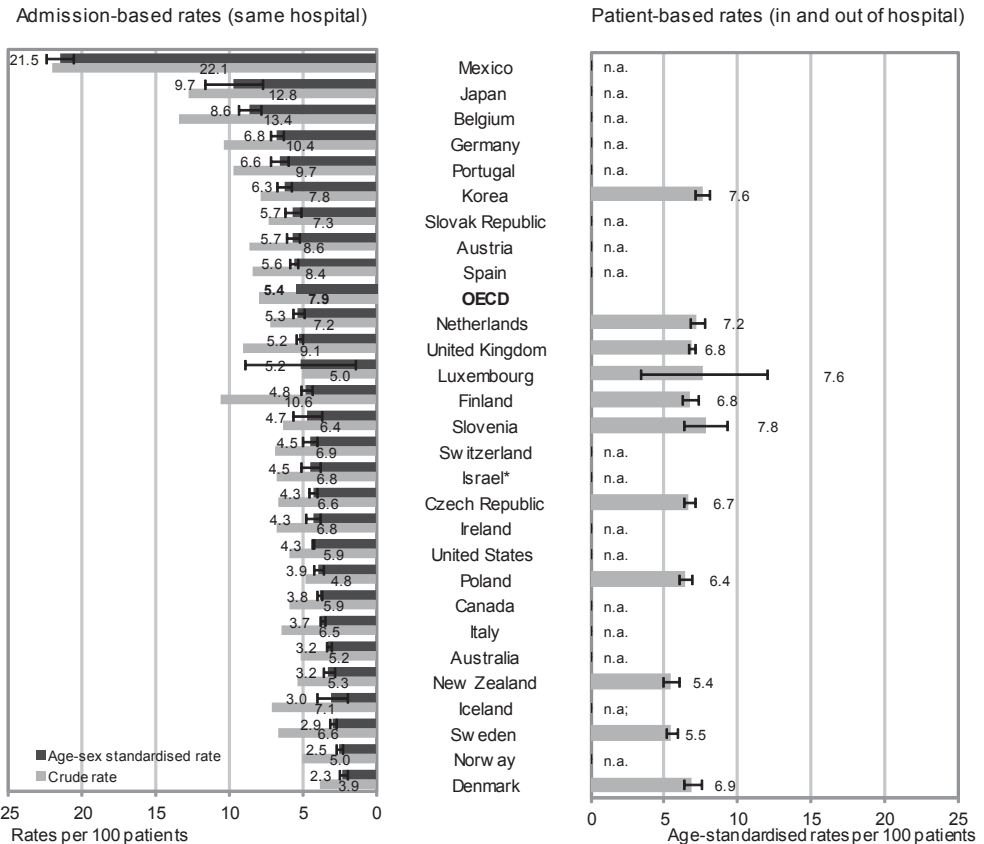
\* Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Source: OECD Health Data 2012.

### ***Denmark performs well on indicators of quality of acute care but less well on quality of care across the health care system***

Denmark performs well on indicators of quality of care in hospitals when compared with other OECD countries. Denmark's in-hospital case-fatality rates within 30 days after admission for acute myocardial infarction was, in 2009, the lowest among all OECD countries with an age-sex standardised rate of 2.3 per 100 patients compared to 5.4 per 100 patients across OECD countries. As in other OECD countries, improvements in quality of care have seen fatality rates reduce from 6.3 per 100 patients in 2000 to 2.3 per 100 patients in 2009 (Figure 3.7).

**Figure 3.7. Admission-based and patient-based in-hospital case fatality rates within 30 days after admission for AMI, 2009 or nearest year**



Note: Rates age-sex standardised to 2005 OECD population (45+). 96% confidence intervals represented by H.

\* Information on data for Israel: <http://dx.doi.org/10.1787.888932315602>.

Source: OECD Health Data 2011.

Similarly, Denmark performs relatively well in regards to in-hospital case-fatality rates within 30 days after admission for both ischemic and hemorrhagic strokes with rates per 100 patients of 2.6 per 100 people and 16.4 per 100 people in 2009. This is significantly lower than OECD averages of 5.6 per 100 people and 19 per 100 people. Along with other OECD countries, process and technological improvements such as in the introduction of dedicated stroke units have seen reductions in in-hospital case fatality rates over the last decade, however with already low levels. Denmark’s scope for further reductions has been more limited than that in

other OECD countries. Though subject to significant variations in coding practices across the OECD, Denmark reports low rates of procedural and post-operative complications. In 2009, Denmark ranked among the best OECD countries for all procedural or post-operative patient safety indicators (foreign body left in during procedures, accidental puncture or laceration, post-operative sepsis and post-operative pulmonary embolism or deep vein thrombosis) (OECD, 2012a).

While the indicators may suggest that Denmark provides high quality of care for specific hospital-based interventions, its relatively weaker performance on cancer survival suggests that there may exist room to improve the co-ordination of services across the health system. Denmark's female breast cancer mortality was in 2009 the highest among the OECD with an age-standardised rate per 100 000 females of 28.6, far above the OECD average of 19.8 per 100 000, suggesting that improvements in early detection and treatment of breast cancer ought to be a focus. Denmark is also slightly below OECD averages for survival and mortality rates for colorectal cancer, the third most commonly diagnosed form of cancer worldwide. Over the 2004-09 period, Denmark performed below the OECD average of 59.9 colorectal cancer five-year survival rate with a rate of 55.5. In terms of mortality, Denmark displayed age-standardised rates per 100 000 population of 27 and 25.3 in 2000 and 2009, significantly above the OECD average of 20.4 and 18.5 (OECD, 2012a).

### **3.3. Recent reforms to drive specialisation and rationalisation in the hospitals sector**

The character of the hospital sector described in the previous section reflects years of policy changes, as Denmark has undertaken a number of reforms. In particular, the 1990s saw a number of reforms oriented towards questions of efficiency and targeted at reducing waiting times. Some of these major reforms have been:

- The introduction of patient choice of hospital beyond those in one's county in 1993;
- Linking hospital reimbursement to activity through DRGs from 2000 onwards;
- The introduction of explicit waiting time guarantees which provided the right to publicly funded services in private hospitals if public hospital waiting times exceed pre-defined limits.

In contrast to these reforms, the hospital specialisation reforms that are the subject of this chapter have directly focused on influencing the structure

of supply of hospital services across the country. Indeed, while many OECD countries have undertaken reforms to their hospitals sector that have sought to enhance patient choice, link financing to activity and tackle waiting times, Denmark is one of the few OECD countries that has sought to tackle how their hospitals are arranged and what they do.

Denmark's programme of restructuring its hospital sector began in 2007 and sought to encourage the specialisation of the most complex hospital services across the country into fewer hospitals. By influencing where specialist services were located, this reform also provided an opportunity for the government to drive further rationalisation in the size and location of hospitals across the country. Denmark's hospital specialisation reforms were undertaken through the joint efforts of national government and regional governments. National government took on a more proactive role in regulating the location of certain specialist services as well as allocating capital funds to hospitals. The regions – as the owners of public hospitals – were responsible for developing hospital service plans for their population which were consistent with national regulation, and had the opportunity to compete for capital funding in order to modernise their hospitals.

### ***Broader reforms set the stage for the hospital reform***

Prior to considering the details of the hospital specialisation reforms, it is important to locate them within the context of broader structural reforms to Danish governments. In the mid-2000s, the national government sought to drastically rationalise the number and functions of lower levels of government, in what has been described as the largest reform of the public sector since the 1970s.

Denmark's 13 counties and three municipalities with county functions were rationalised to five regions in 2007. The former counties' responsibilities in social and environmental policy were shifted to municipalities and responsibility for high schools to central government. The combination of these changes saw a narrowing of the breadth of the responsibilities of regions, such that they are now principally responsible for running hospitals and contracting with GPs. It was argued that due to their larger size and capacities, regional governments would be able to perform better than smaller government units in the complex task of managing hospitals and driving further quality and efficiency (Andersen and Jensen, 2009).

At the same time, the 271 municipalities were merged into 98 municipalities, who gained responsibilities in health in relation to health promotion, primary prevention, rehabilitation and long-term care. To drive co-ordination between regional and municipal governments it was legislated that municipalities and regions are obliged to agree on health agreements on



how they share and co-operate, particularly on “boundary” issues such as health care for the elderly.

Behind these changes in policy responsibilities were changes in financial relationships between levels of government. Unlike the former counties, the new regions are not allowed to levy taxes themselves and are financially dependent on central government, and to a lesser extent, municipalities. The state levies a “health contribution” (8% of the tax base) from its citizens. Around 79% a region’s health spending is provided to them in the form of block grants from central government, with a further 3% based on activity. The remainder of regions’ budgets for health come from municipal governments which provide 7% in block grants and a further 11% in activity-based funding. The higher share of activity-based funding provided by municipalities reflects that they are obliged to provide a 34% share of each hospital service delivered by regions. There also exists a ceiling for regions to raise their own funds of DKK 19.3 billion (in 2013) and a ceiling on the municipal co-financing per treatment of DKK 13 750.

The intention behind these financial arrangements is to provide municipalities with an incentive to make efforts to reduce hospitalisations where avoidable through better prevention, rehabilitation and long-term care. However, when the split of responsibilities was negotiated in 2007, municipalities were provided with funding that they would then direct to regions in the form of their share of hospital funding, as municipalities on their own do not have the fiscal resources to underwrite this expenditure. In effect, the central government remains the source of payments for most hospital services, even though part of this is channelled through municipalities.

The 2007 local government reforms also saw a change in the type of payments to lower levels of government. Having reduced the number of conditionalities associated with specific sources of funding and increased the autonomy of regional and municipal governments, the central government became more actively involved in monitoring activities and setting centrally defined standards. This has been most pronounced in the expansion of the role of the Danish Health and Medicines Authority from a body that was traditionally a regulator of health services to one that has now taken on a more proactive role where it seeks to shape the planning of specialist functions across the country’s hospitals.

Reforms to drive further specialisation of the hospital sector in Denmark were the first key task presented to the five newly constituted regional governments. While reducing hospital infrastructure in any form has been difficult to deliver across OECD countries in recent years, there was a remarkable level of consensus and goodwill surrounding these efforts in

Denmark. To some extent, this may reflect that these reforms occurred at time when regions found themselves uniquely responsible for health and more financially dependent on the centre, giving them every reason to be highly responsive to the policy ambitions of the centre – even if this meant undertaking difficult reforms.

### ***Key elements of hospital specialisation reforms***

Denmark’s hospital reforms have been a joint effort of the central government and regional governments. In broad terms, central government provided guidance for where certain specialised services ought to be located and regions undertook the bulk of re-structuring to ensure these national level guidelines could be realised in their respective communities. When initially presented, it was argued that larger and more specialised hospitals would be able to drive quality improvements through the benefits that accrue from more “practice by doing”. The key elements of reforms proposed by the Danish government from 2007 were:

1. A focus on *driving further specialisation* in the Danish hospital sector, by classifying some 1 100 specific hospital services as being appropriate only for delivery at a restricted and defined number of hospitals.
2. The *greater involvement of the central government in hospital planning*, with the Danish Health and Medicines Authority (a national statutory body formerly known as the National Board of Health) made responsible for determining which hospitals can deliver certain functions for a “region” and where certain highly specialised services ought to be located across the country.
3. A *major capital investment programme* of more than DKK 40 billion over ten years, which was made available by the central government to flexibly finance upgrades in technology and capital, expanding or refurbishing existing hospitals, the building of new hospitals and locating primary health care clinics.
4. *Regional governments asked to submit hospital service plans* that accord with national guidance on where services ought to be delivered and provide bids for capital funding to help drive the re-design of their hospital services.

To steer these reforms, the Danish Health and Medicines Authority (DHMA) – the central government’s medical advisory agency – worked with each medical speciality group to divide different services into one of three groups: “basic”, “regional” or “highly specialised”. Basic interventions accounted for around 90% of the services within each speciality, though this

varies greatly from one speciality to the next. Services classified as regional often involved diagnostics, treatment, rehabilitation of rarer diseases and health care services of a certain complexity that they demand a pooling of other resources (some examples include: vascular surgery, clinical microbiology, oral and maxofacial surgery, specialised gynaecology and obstetrics and breast cancer surgery). It was planned that regional functions would only be handled by 1-3 hospitals per region. Procedures classified as highly specialised would be those of very high complexity, occur rarely and require lots of co-operation with other specialities (e.g., neurosurgery). It was planned that highly specialised functions would be handled by one to three hospitals across the country.

Regional governments bore the bulk of the responsibility for translating this guidance into changes in hospitals across the country. Following the release of guidance from the DHMA (and in some cases, before this), regional councils took the leadership for evaluating their hospital services and developing new service plans that accorded to national guidance. The regions have then been the principal actors in the management of major changes to multiple hospital facilities as the plan has been implemented.

***The DHMA was asked to develop as best a process as possible given the shortage of information on optimal volumes of hospital procedures***

The DHMA played a significant role in this hospital reform plan. The DHMA was tasked with assessing regional hospital plans with proposals for locating specialised functions and to approve the number and location of specialised services. In order to undertake this, the DHMA formed expert committees of relevant specialist groups to aid them in the classification of activities into basic, regional or highly specialised categories. Expert groups based their suggestions to the DHMA on the development of appropriate volume thresholds which took into account the rarity of a disease, the complexity of diagnosis and treatment and the technology and people required alongside, such as support from intensive care, specialised nursing staff and other factors. The outcome of these expert groups formed the DHMA's guidance to regional governments, who were asked to submit a hospital plan for their region that was consistent with the DHMA's classification of services into the three categories. In addition to this, the DHMA specified a number of criteria which they indicated they would use to assess regions hospital plans, detailed in Box 3.1 below.

### **Box 3.1. Key criteria used by the DHMA**

Once hospital plans are submitted to the DHMA, the specialised care components are then assessed according to a number of criteria. The criteria currently used in assessing applications in this framework include, but are not limited to:

- Capacity and stability of a centre’s clinical services;
- Patient volume, clinical experience and professional expertise;
- Competency in all relevant professional and supportive fields;
- Access to all required technical facilities;
- Documented clinical quality and prospective reporting of results to relevant national databases;
- A multi-disciplinary approach;
- Safeguards to ensure continuity of patient care;
- Active and documented research, development and education;
- Procedures for assessing new technologies and treatments;
- Collaboration with other hospitals and relevant specialised departments.

*Source:* Prepared by OECD based on information from DHMA.

A hallmark of the Danish approach is that it turned to its clinical community to guide judgements about what is practicable and sensible for a country of their size. Reflecting on both the role of the DHMA and the regional governments who executed the hospital specialisation reform, hospital executives were able to influence decisions relating to these reforms. As indicated in Table 3.1, a survey undertaken prior to the hospital reform found that most hospital executives felt as if they had influence on decisions relating to the up or down grading of certain clinical specialities, professional choices relating to treatment and the introduction of local quality systems.

In addition to being a good way to build engagement with the clinical community, it was also difficult for the Danish government to make decisions based on the large and contested literature on the relationship between volumes and quality of care. It is broadly acknowledged that quality gains from increases in service volume tend to concentrate at low numbers of services (Box 3.2), though thresholds of the number of services before which improved quality outcomes are observed vary substantially

from one study to the next, making their practical utility in informing health policy decisions limited for OECD countries. Furthermore, the cost and time associated with undertaking such research specifically for the Danish context could have been prohibitive and incompatible with the window of opportunity presented to pursue hospital reform due to broader changes the structure of local government.

**Table 3.1. Hospital executives perceived influence on decisions prior to reform**

Category (%)	To a great extent or to some	To a lesser extent or not at	Missing (%)
Up / downgrading of treatment areas	86.1	8.1	5.9
Academic selection of general treatment regimens	91.2	3.7	5.1
Introduction of new medical technology	86	8.9	5.1
Introduction of local quality systems	81.6	13.3	5.1
Standardisation of staff	55.2	40.5	4.4
Staff policy	77.3	18.4	4.4
IT systems	26.4	69.1	4.4
Major financial investments (e.g. in the form of new equipment)	57.4	36.8	5.9
Management structure of the department (e.g. responsibilities)	80.9	14.7	4.4

Source: Nielsen, M.B. and K. Vrangbaek (2006), “Sygehus- og afdelingslederes opfattelse af aktuelle udfordringer på tærskelen til strukturreformen”, article presented at the 12th Annual Meeting of the Danish Forum of Public Health, Aarhus 24 November 2006, Faculty of Health Sciences at the University of Denmark, translated to English and available at: <http://sundhedsreform.ku.dk/publikationer/artikler/udfordringer.doc/>.

### **Box 3.2. The mixed evidence on the relationship between volume and quality in hospital services**

There is an extensive academic literature on the relationship between volume and quality in hospital services. Under pressure to drive improvements in quality and reduce costs, OECD countries have often encouraged the concentration of hospital services among fewer and larger hospitals. This has provided scope for studies in this area to explore whether higher hospital volumes truly deliver improvements in quality and patients’ outcomes.

#### **Systematic reviews confirm that volumes do make a difference**

Studies have shown that patients who receive care from physicians who undertake a type of surgery frequently are less likely to die or have complications. A study of some 135 studies undertaken since 1985 by Halm, Lee and Chassin (2002) found that 70% of studies demonstrated in broad terms that patients have lower mortality rates if a hospital or physician does large

numbers of procedures. This finding was strongest in AIDS treatment, surgery on pancreatic cancer, esophageal cancer, abdominal aortic aneurysms and paediatric heart problems. Weaker relationships were identified for heart surgery, surgery for other cancers and orthopaedic procedures. Most of the studies examined in this review took into account patient characteristics, but only 28% of studies used statistical techniques to correct for this.

Consistent with these conclusions, a major study that drew on US Medicare data found that admission to hospitals with high volumes was associated with a reduction in AMI, heart failure and pneumonia (Ross et al., 2010). As is often common in such studies “volume thresholds” were identified beyond which the marginal benefit from increasing volumes became small, at 610 procedures for patients with AMI, 500 for heart failure and 210 for pneumonia. This study also found that teaching hospitals demonstrated higher volume thresholds. Other studies looking into a range of procedures in the United States have also demonstrated better results on cardiovascular surgery, major cancer resections and other high risk procedures (Birkmeyer and Phibbs, 2012).

### **A surgeon’s volumes is often more important than the hospital’s**

Results from the systematic review suggest that surgeon volume was a more important determinant than hospital volume in the case of CABG, carotid endarterectomy, surgery for ruptured abdominal aneurysm and surgery for colorectal cancer. Another study found considerably lower mortality rates for selected cardiovascular operations and cancer resections amongst high volume surgeons than those with less experience (Birkmeyer and Nallamothu, 2007). While limited to a small number of clinical domains, this finding has important policy implications, as it suggests that a low volume surgeon at a high volume hospital could have poorer results than a moderate volume surgeon in a moderate volume hospital (Halm et al., 2002). Untangling the effects of hospitals and physicians is very hard to do as few studies examine results at both of these units simultaneously.

The positive relationship between quality and volume observed in many studies also raises a question about the direction of the causality. Most studies do not monitor changes in volumes over time. The few studies which were able to draw on longitudinal data found that changes in volumes at a hospital over time had little effect on outcomes. This has important policy implications, as it suggests that there is likely to be a complex interaction between the volumes a particular surgeon does and the hospitals where high volume surgeons work in (Halm et al., 2002). Good outcomes may be associated with certain processes of care, such as routine treatment algorithms, reminders for staff and established systems of clinical flows within hospitals. To the extent that there is an observed association of lower surgical mortality at high volume hospitals, this may not necessarily reflect more skilled surgeons and fewer technical errors, but a range of other aspects of care such as patient selection of anesthesia and post-operative care.

*Source:* Ross, J.S., S.T. Normand, Y. Wang, D.T. Ko, J. Chem, E.E. Dtrye, P.S. Keenan, J.H. Lichtman, H. Bueno, G.C. Scvheiner and H.M. Krumholz (2010), “Hospital Volume and 30-Day Mortality for Three Common Medical Conditions”, *New England Journal of Medicine*, Vol. 362, pp. 1110-1118; Birkmeyer, J.D. and B. Nallamothu (2007), “Surgeon Volume”, The Leapfrog Group, Factsheet; Birkmeyer, J.D. and C. Phibbs (2012), “Evidence-based Hospital Referral”, *The Leapfrog Group*, Factsheet; Halm, E.A., C. Lee and M. Chassin (2002), “Is Volume Related to Outcome in Health Care? A Systematic Review and Methodologic Critique of the Literature”, *American College of Physicians-American Society of Internal Medicine*, Vol. 137, No. 6; Ferguson, B., T. Sheldon and J. Posnett (1997), *Concentration and Choice in Health Care*, Royal Society of Medicine Press; London.

While the DHMA looked to international literature on this topic, it was primarily the clinical judgements of experts in the system working alongside policy makers that drove the decisions behind these reforms. To some extent, Denmark's strong tradition of quality monitoring of hospitals, through information collection on outcomes, volumes and costs, facilitated decision making. Similarly, the Danish medical profession had sufficient professional interest in quality of care to engage in difficult resource allocation decisions rather than resisting reforms that would threaten or dislocate employment in the sector.

### ***Regions undertook an extensive process of re-designing their hospital plans to fit national guidance***

The specification of volume thresholds by the DHMA began a multi-year process on the part of regions to re-design their hospital services to be consistent with national guidelines on specialisation. While the process is likely to have varied considerably from one region to another, a stylised summary of the key efforts undertaken by regions is contained in Table 3.2.

**Table 3.2. The regions efforts in redesigning hospital services**

<b>Phase 1</b> Dec 2008-Jan 2009	Regional governments requested their medical council representatives (consisting of those from their hospital departments to produce suggestions for locations of specialities). This included facts about volume, patient basis, number of doctors with the specialities concerned and an assessment of whether or not the professional requirements from the Danish Health and Medicine authorities were met.
<b>Phase 2</b> Feb 2009-May 2009	The suggestions of the region's medical council were discussed with hospital management, and then presented to the executive management of the regions to approve final decisions and resolve areas where the medical council and hospital management may have disagreed.
<b>Phase 3</b> May 2009	The political council of the region approved their region's plan prior to it being sent to the Danish Health and Medicines Authority.
<b>Phase 4</b> June 2009-June 2010	Meetings are held between the DHMA and the regions based on applications handed in by regions. The DHMA would provide suggestions to regions on the location of specialities. Following a period of dialogue and an opportunity for regions to formally complain about the DHMA's choice of locations, the DHMA issued the final plan for the location of specialities across Denmark.
<b>Phase 5</b> June 2010-June 2011	The location advice issued by the DHMA is communicated to hospital management by regional administration.
<b>Phase 6</b> June 2011 onwards	By law, the regions are obliged to produce an annual report the DHMA on fulfilling the requirements set out in specialisation reforms. The first reports produced are for the year 2011.

*Source:* Authors elaboration based on information communicated from Danish authorities.

***While plans were about specialist services, they influenced the structure of the hospital sector***

The central government was able to use the specialisation reforms to influence the structure of the hospital sector in Denmark. While it is often noted that the areas directly under review in the specialisation reforms account for only 10% of activity, changes to certain specialisations and wards are likely to have had consequences for other hospitals in a region. Most directly, the establishment of regional centres would have meant that some hospitals had to close or merge specialist departments that were previously delivered across more than one site. As part of these reforms, regional governments submitted hospital plans showing how their plan would accord with the imperative to specialise, and how regions planned to change their other hospital services in the process. While the explicit objectives of the reforms were to provide larger and more specialised hospitals, it was envisaged by the National Board of Health that the number of acute care hospitals should be reduced from around 40 in 2006 to between 20 and 25 in 2015 (Olejaz et al., 2012).

To help realise new hospital plans, a major investment in hospital capital. More than DKK 40 billion was made available for hospital use and related health infrastructure and technology investments between 2010 and 2020 – equating to about 2.5% of total health expenditure per year over a decade – with central government providing 60% and the regions the remaining 40%. In stylised terms, this represents the renewal of just under one third of hospital square meterage in Denmark. Currently, a total of 16 hospital projects are planned (Figure 3.8). Bids to access this funding were made by application to the Government’s Expert Committee and with reference to the regions’ hospital service plans. By making the funding conditional on hospital plans being consistent with relevant guidelines and recommendations, and through its ability to vary the amount of capital money on offer and what it was deployed towards, the central government could steer the overall capacity of hospitals in regions and influence the balance between specialisation and general services in each region.



**Figure 3.8. New hospitals and modernisation projects in Denmark**

*Note:* The circles indicate the location of new hospitals and major hospital modernisation projects in Denmark.

*Source:* Information provided by Danish regions.

Investments from the capital fund suggest that the national government has been willing to invest heavily in hospitals. The Minister of Health has a broad remit to provide capital funding to upgrade hospitals that supported “objectives” of the plan. In practice, this allowed for investments as wide-ranging as upgrades to facilities to help certain hospitals become major centres, general upgrades to buildings and equipment in hospitals of all sizes and helping old hospitals re-fit themselves as smaller primary health care centres. Indeed, as outlined through the case study of Zealand in Box 3.3, through dialogue and successive re-consideration of funding for new projects, the central government was able to influence the structure of hospital services in individual regions.

### **Box 3.3. The impact of the specialisation plan on the Region of Zealand**

Zealand is a region in the east of Denmark with 820 000 residents across some 17 municipalities (14.7% of the population). The region employs 15 000 workers, most of them in health and hospitals, at an annual budget of around EUR 2.3 billion.

The structure of hospital services will change considerably as a result of the specialisation reforms. Following the issue of the DHMA's guidelines for speciality planning in December 2008, the Regional Council reached an agreement on the distribution of specialist services in the region that was formally submitted to the DHMA in June 2009, flagging that they would be looking to submit a hospital service plan for the region. The hospital service plan submitted in March 2010 sought to close three "rural" hospitals, build a new major university hospital (KØge), continue the development of three other acute care hospitals (Slagelse, Holbaek, Nykobing F.) and change the services delivered at the two major hospitals (Roskilde and Naestved). The small hospitals that were closed accounted for about 90 beds across the three facilities. As sought by the DHMA, these reforms saw cancer services centralised, invasive cardiology moved to a single hospital and maternity limited to fewer hospitals that had paediatrics. A key general principle that was followed in designing the region's new hospital plan is that smaller hospitals ought to at a minimum have everything they need to stabilise a patient before transferring them to a larger hospital if they are a complex case.

Prior to the submission of this plan in March 2010, the region undertook a process of meetings with all specialities on how to understand the guidelines, how to change patients pathways between hospitals, dealing with budgetary changes and consulting on new arrangements for where clinical services ought to be located. By 2020, the region shall have one university hospital with acute care services, three acute care hospitals and two hospitals with planned/outpatient care.

As with other regions, the Region of Zealand faced some difficult decisions at a local level after having already secured local support for the structure of hospital services prior to 2007. Clinicians were initially mixed in their support, many understood the rationale while others resisted certain services being transferred to other facilities. The region faced a situation where they were being asked to specialise some functions in order to keep them at all, and did not want to miss out on the opportunity of significant new funding being offered for hospital re-development. Planning efforts by the region involved considerable analysis on how to redeploy the workforce, including to the extent of where doctors and nurses lived, while specialists working in small hospitals were primarily re-deployed to acute hospitals.

At the same time, the sites of two smaller hospitals which were slated to close were transformed into health centres along with GPs and municipalities and ambulance support to these areas was enhanced. As with other regions in Denmark, Zealand remains in discussions with GPs about how best to adapt their services to reflect changes in the hospital sector, and the extent to which GPs ought to be remunerated for extra activities.

**Box 3.3. The impact of the specialisation plan on the Region of Zealand (cont.)****Changes to hospitals in Zealand due to the specialisation plan, 2012 and 2020**Hospitals in Region Zealand 2012:Hospitals in Region Zealand 2020:

Source: Supplied by Region Zealand.

***Preliminary studies can only offer indicative insights into whether specialisation and rationalisation will improve the efficiency or quality of Denmark's hospitals***

It is difficult to assess the impact of these reforms given their scale, complexity and the changes in behaviour they are likely to trigger amongst those working in the Danish hospital sector. There are few studies of past experiences – even at a more microlevel – of increased specialisation and concentration of hospital services in Denmark. Nonetheless, two recent papers have sought to estimate the impact of an increase in hospital size and reduction in numbers on their efficiency. A study by Kristensen et al. (2008) seeks to identify optimal hospital size and quantify benefits from economies of scale that would result in fewer but larger hospitals. The optimal size of hospitals is suggested to be 275 beds per hospital (with a 95% confidence interval between 130 to 585 beds per hospital). In general terms, the study suggests that economies of scale may be realisable in Denmark's hospital sector, though recognises that other considerations, such as the need for a

local emergency facility, transport costs and opportunity costs from travel time ought to be taken into account in informing policy.

A second and more recent study (Kristensen et al., 2010) seeks to estimate gains from mergers in Danish hospitals. These are then decomposed into efficiency gains, size (scale) effects and mix (scope effects). The results vary substantially across regions and by the specification of the model, demonstrating significant positive effects to some small negative effects. This suggests that while some mergers may lead to cost reductions, there is also scope for some hospitals to become too large and suffer from diseconomies of scale, making decisions made at a regional level about which hospitals are merged very important. This study does not account for quality differences across hospitals, making it difficult to use these results to inform policy.

### ***Closing down highly specialised services in low volume hospitals ought to deliver improvements in quality***

At the simplest level, the specialisation plan ought to address the concern amongst surgeons and policy makers in Denmark that there were certain specialist services being delivered in potentially unsafe circumstances. When compared to many OECD countries, Denmark is a small country with a broad dispersion of hospitals. However, hospitals vary considerably in size in Denmark and some 58% of Danish hospitals are likely to be below the informal 275-bed threshold after which the positive relationship between volumes and quality dissipates (Kristensen et al., 2008). Similarly, it is likely that specialists that are attached to small hospitals in Denmark prior to the reforms may not be surpassing volume thresholds suggested by the international literature.

Across many OECD countries, small hospitals often lack the scale and resources to undertake the kind of quality monitoring and management programmes common in larger hospitals. With greater human resources and speciality teams, major hospitals often lead the way in the development of internal clinical pathways and essential checklists for different health care professionals and the treatment of the most common conditions. It is also more difficult to compare quality outcomes between very small hospitals and their larger counterparts due to the influence of patient characteristics accounting for outcomes. Nonetheless, specific efforts on the part of policy makers, hospital managers and clinicians can overcome this norm, for example, as implementation can be simpler in a smaller setting and regional governments focus on driving improvements across a number of hospitals.

### 3.4. Using the specialisation plan to drive improvements in quality

With the specialisation plan being implemented at the time of this report's writing, it is too early to evaluate its impact on the hospital sector and the Danish health care system. Evidently, the reforms will lead to a Danish hospital sector with fewer units for highly specialised hospital services and will accelerate the long-term trend towards a reduction in general hospital infrastructure. With long lead times involved in changing complex hospital infrastructure and that capital funding comes into effect from 2010 is likely to mean that even though the number of hospital beds and average lengths of stay in Denmark have continued to decline in recent years to among the lowest in the OECD, it is too early to attribute to these to the effects of recent specialisation reforms. Nonetheless, as policy makers continue about the implementation of hospital specialisation, they ought to focus on how changes in the supply of hospital services could be used to drive improvements in quality of care. This last section discusses some potential areas.

***Denmark ought to be commended for ensuring that the plan is monitored and evaluated, and may wish to pay attention to individual clinician performance***

The DHMA has been undertaking a range of ad-hoc studies of individual surgical specialities and put in place the infrastructure to monitor the effects of hospital specialisation reforms. For the last ten years, the DHMA has undertaken a number of studies of specific hospital services as part of its “surgical project”. The surgical project seeks to analyse data from the national patient register and make suggestions for improving quality of care in a particular speciality field, including whether there is a need for specialisation or the use of specific procedures or techniques. Some of the surgical project's studies have looked at volume and quality – through examining procedures per year, patient age group composition and variations across regions. Ongoing support for the surgical project – across topics such as knee and hip replacement surgery, paediatric surgery, appendectomies in children – will make them a continued means for assessing whether the quality of care has improved in the context of specialisation reforms (DHMA, [www.sst.dk/Planlaegning%20og%20kvalitet/Kirurgiprojektet/Igangvaerende\\_projekter.aspx](http://www.sst.dk/Planlaegning%20og%20kvalitet/Kirurgiprojektet/Igangvaerende_projekter.aspx)).

This will be supplemented through formal follow up studies on speciality functions that have recently changed. Participation in this follow up study is mandatory for hospitals licensed by the DHMA to deliver specialised services. It is also anticipated that the results of this follow up analysis will be used to inform future decisions on the list of services designated for “regional” and “specialised” hospitals, which is subject to review by the DHMA every

three years. The efforts of the DHMA to collect information such as volumes, processes undertaken and patient outcomes (from patient registries) are commendable. By obliging hospitals with specialised functions to collect and return information, the DHMA will be able not only to compare and evaluate differences in patient outcomes across hospitals, but ensure future adjustments to which level services ought to be delivered are aided by more evidence. This will become particularly important as technological changes and surgical process innovations require the DHMA to revise its guidelines. It will also provide an important evidence base for other countries seeking to learn from Denmark's experience.

In evaluating the success of the plan and monitoring ongoing quality, the DHMA should seek data on the performance of individual physicians as well as the hospitals in which they work. As demonstrated in systematic reviews of the literature between volume and quality (see Box 3.2), surgeon volume is often a more important determinant of better patient outcomes than hospital volumes across a range of key procedures. While it may not be optimal to publish volumes of services undertaken by individual physicians (given the effect of patient specific factors), the DHMA ought to receive information from the regions to verify whether their desirable volume thresholds are being met.

Given that volume thresholds are likely to have been developed in circumstances where there was weak conclusive literature available to guide decision making, this information would help ensure that volume thresholds can be refined in the future. Furthermore, by linking information on volumes undertaken by individual clinicians with other information on patient outcomes and whether process associated with good quality care are being met, the DHMA and regions will be able to better inform future surgical projects and make a more sophisticated assessment of whether clinicians or hospitals drive better patient outcomes.

### ***Increased travel for patients ought to be closely monitored***

A significant immediate concern for Denmark from specialising certain services at a higher level is that patients will have to travel further for care. Danish patients are currently offered a free choice of hospital across the country, and have a series of entitlements relating to private hospitals if they have waited beyond specified times. Reviews of the relationship between distance and utilisation find that while there is often a distance decay in patients willing to travel for primary care and screening services, this might not be the case for acute hospitals (Ferguson et al., 1997). With distances faced by those in rural areas of Denmark being less significant than experienced by larger OECD countries such as Canada, the United States and Australia, the strong growth in people willing to undertake hospital

treatment outside of their region suggests that Danes are often willing and able to travel for care.

In the Danish health care system general practitioners can play an influential role in the choice of a patient's hospital. Other than those which occur through the emergency department, referrals to hospitals in Denmark are likely to be made by a GP, with the extent of a patient's travel time most influenced by the GP's suggestion. Similarly, highly specialised services that may not be available at a local hospital level are only likely to accept patients who have previously seen a specialist doctor and secured a referral. With unclear evidence on distance-decay in accessing hospitals and the likelihood that there are benefits from GP review prior to referral to a major hospital, Denmark's decision to accept higher travel times in order to ensure patients receive care in safer circumstances is a worthwhile policy.

Nonetheless, managing the balance between which services are available locally and which are available centrally ought to remain an ongoing issue of surveillance for policy makers. In determining which services were to be specialised, the DHMA took into account the patient travel burden by avoiding the specialisation of conditions requiring frequent treatment except for where considerations of clinical safety prevailed (i.e., certain cancer procedures). An area that will remain of concern will be access to emergency services, where there exists evidence of a negative association with attending an emergency department and distance (Ferguson et al., 1997). To their credit, regions have undertaken measures to strengthen pre-hospital care, such as through further investments in ambulances, physician manned mobile emergency units and working with central government to establish a national helicopter emergency medical service. While the closure of certain small hospitals is a worthwhile policy from the perspective of patient safety, regions ought to review whether the combination of after-hours GP access and ambulance services are equipped to ensure that patients are able to access care when they need it.

With information architecture that links unique patient identifiers to social security information, policy makers in Denmark ought to be able to map the travel burden faced by patients. In this domain, Denmark should follow the lead of the Netherlands, which currently reports annually on average travel times to the nearest hospital and the extent to which patients have had to travel to reach primary care or emergency services (NIPHE, 2012). While the distances involved in Denmark are small, mobile medical teams in the Netherlands and the SAMU in France (Box 3.4) provide examples of services that are able to deploy a deep skill set of medical services in emergency situations, though they often come at high costs. Denmark should assess whether similar types of services ought to be set up by trading costs with safety considerations.

### **Box 3.4. France’s emergency health services (“Service d’Aide Médicale d’Urgence”)**

The French emergency service Service d’Aide Médicale d’Urgence (SAMU) may serve as a useful model for Denmark as part of its process of consolidating hospitals. The SAMU is organised as a mobile system of intensive care units (“unités mobiles hospitalières”), that have the capacity to provide intensive treatment in the field, with care provided by physicians trained in emergency medicine.

The SAMU intensive care units are housed individual hospitals and co-ordinated by a central dispatch centre. The intensive care units are not necessarily functionally integrated with hospital services, but are equipped so as to be able to ensure that the patient is fully stable before transporting them to the most appropriate hospital, thereby providing a model of emergency care that is not dependent on local hospital emergency service departments, but rather integrates the whole hospital network.

One of the guiding principles of the SAMU is that the most appropriate care be provided for each case, as part of an optimisation of resources: intensive, highly skilled, extensively equipped services are provided to those cases with the most acute need, whilst lower intensity care is provided to less severe cases. There are separate mobile intensive care units for both adults and children, the dispatch of which is managed by trained operators fielding emergency calls, who are backed up by physicians (emergency medicine and paediatricians). Operators are trained to assess the severity of the emergency, and would either send a mobile intensive care unit with a doctor and a nurse anaesthetist or, if the patient’s condition is assessed to be less severe, a nurse in a less comprehensively equipped mobile ICU. If the call is assessed not to be an emergency, a general practitioner is sent through SOS/UMP private companies that employ GPs who are then reimbursed by the insurance fund.

*Source:* SAMU France ([www.samu-de-france.fr](http://www.samu-de-france.fr)).

### ***Hospital-based research in Denmark will change as a result of further specialisation***

Regional and national hospitals that will be deemed as specialist centres are likely to have better opportunities to conduct medical research. With its smaller population, Denmark faces some natural disadvantages compared to other OECD countries when having to undertake medical research. A key variable for medical researchers is the number of patient observations, with researchers often requiring a certain scale. Specialisation reforms ought to increase the possibilities for hospitals to do more and bigger clinical trials. Similarly, rare and highly complex patients are often the subject of medical research, and greater concentration of the most highly specialised services at a national and regional level is likely to provide greater exposure of the more complex cases to the specialists most likely to be undertaking research. As has done for medical education, the government ought to work with



universities, speciality groups and regions to review whether the structure of medical research facilities make the most of the new structure of the hospital sector in Denmark.

Efforts ought to be undertaken by policy makers to ensure that the new specialist hospitals also proactively work to support system wide improvements. Major teaching hospitals that are also centres of excellence for particular specialisations can often be the source of innovations in new medical procedures and processes. Danish government at a national and regional level ought to support specialists in maintaining a continual dialogue across hospitals of different sizes to support the dissemination of best practices. Particularly in a country where continuous professional development is not obligatory, regional specialist centres and national specialist hospitals could play a major role in assisting with continuous professional development of doctors working in general hospitals. These hospitals – who are likely to house research leaders across various specialisations – could allow their staff to either lead continuous professional development or to occasionally work in specialist centres in order to gain specific competencies. These reforms will also impart to national government a detailed understanding of the location of specific specialist services across the country, which often does not occur in federal systems. The national government ought to ensure that this valuable information is proactively used to help inform future decisions on the number and specialisation of Denmark’s health workforce in the future.

### ***Specialisation reforms can inform clinical guidelines that are better tailored to a doctor’s needs***

Alongside the specialisation plan, the DHMA is currently engaging with regions and clinical specialities to develop national clinical guidelines. The DHMA was co-ordinating work on five clinical guidelines in 2012 with plans to develop fifteen more in each of the following years from 2013 to 2015. At the same time, there are a number of initiatives underway to improve pathways for patients, particular in cancer, heart disease and psychiatry.

With the benefit of its workforce being divided by their level of specialisation, the DHMA should seek to tailor its guidelines to specific clinical audiences in terms of the facilities in which they work. For example, a guideline for a specialist working in a general hospital ought to provide additional support on identifying which patients should be referred to a “regional” hospital or a “specialised” hospital. Similarly, guidelines for the regional hospitals could be customised to reflect the greater range and more sophisticated clinical services they are able to offer.

Denmark has the opportunity to ensure that clinical guidelines build in “real time” practical information for doctors seeking to refer complex patients. The current clinical guideline project by the DHMA is seeking to make sure these guidelines are available electronically. In addition to aiding doctors with diagnosis and evidence-based treatment options, electronic guidelines could include contact details of key specialists in hospitals with “regional” and “specialised” functions, to make it easier for a hospital doctor identify the responsible person and communicate with them in order to co-ordinate care across multiple sites. While such networks undoubtedly exist in Denmark today, they place the onus on the doctor to have a network of people to whom they can refer rather than systematically provide this information to doctors so as to encourage better co-ordination of care for complex patients.

***Hospital managers and administrators will benefit from greater certainty of operations and funding once reforms have been implemented***

The significant amount of change that has been undertaken in the Danish health care system in recent years has elevated the role of competition and choice in the hospital sector. A survey taken on the eve of the implementation of hospital specialisations reforms found that hospital managers and the heads of hospital departments were most concerned about competition from other hospitals and departments outside of their county but within their region (71% of hospital leaders and 49% of departmental leaders). Interestingly, fewer were worried about the prospect of a substantial change to their hospital or department’s functions (48% of hospital leaders and 46% of department leaders) and some 19% of both hospital leaders and department leaders were worried about the closure of hospitals (Nielsen and Vrangbaek, 2006).

The specification of certain services being undertaken at regional or national level ought to more clearly clarify the basis for competition between hospitals once fully implemented. At a basic level, it will provide clarity to hospital managers on which services they will be expected to compete. Those hospitals providing “regional” and “specialised” functions will be able to clearly identify the other hospitals with which they are competing with and which they ought to compare themselves in relation to their performance on national programmes such as the National Quality Improvement Programme (detailed in Chapter 1). Furthermore, the specification of specialist services in certain centres provides the opportunity for Denmark’s hospitals to be able to refine activity-based (or flat) payments to ensure they reflect the complexity of their activities. A constant challenge in administering the financing of hospital is the extent to

which payors refine diagnostic group payments to pay for highly complex services such as trauma, neurology, certain paediatric surgeries and mental health. Locating the most specialised and difficult to code hospital procedures in fewer facilities provides the ability to selectively finance these services, such as through fixed payments.

By having specified the clinical priority areas for hospitals, the government will also be able to reduce the implicit competition that can occur between hospitals as they try and distinguish themselves for a particular specialisation. Other publicly managed hospital systems across the OECD such as the United Kingdom, France, Australia and New Zealand have often seen financial resources shifted between departments at a hospital level as hospital management make a decision to run certain services at a loss in order to hold onto the prestige of a particular speciality department. These hospitals finance such strategies through driving down costs in other areas. This kind of competition can confound attempts to compare quality across hospitals. The establishment of institutional priorities by regulation will reduce the pressure on Danish hospitals to each distinguish themselves within a particular clinical domain, which in time ought to reduce differences in funding for individual procedures from hospital to hospital, and facilitate like for like comparisons of quality of care.

***The national government should turn its focus to supporting the diffusion of best practices amongst the most specialised hospitals across the country***

At a broader governance level, the categorisation of the hospital sector into levels of complexity ought to see national government take a greater role in supporting the diffusion of best practice in regional level hospitals across the country. The further concentration of facilities can create a risk that higher-volume specialist hospitals become high profile silos. With regions now limited to one to three facilities for certain clinical specialisations, there exists a case for national government to ensure that the most specialised hospitals engage in regular dialogue to support the exchange of best practice processes between highly specialised hospitals.

Such an exchange ought to engage the medical specialities and be informed by a combination of performance indicators for individual hospitals (as detailed in Chapter 1), surgical projects in specific areas, and new information collected as part of evaluation of the hospital specialisation reform. Over the longer term, establishing closer exchange between highly specialised hospitals could lead to the establishment of a forum that helps ensure that system wide quality of care activities such as accreditation and

patient experience measurement can be customised to suit the unique needs of the most specialised hospitals.

### 3.5. Conclusions

Denmark has managed to undertake very large reforms to the structure of its hospital sector while many OECD countries have struggled with more modest reforms of the same ilk. The hallmark of Denmark's reforms has been the balance struck between national guidance and regional planning, along with extensive engagement of health professionals in helping set guide key parameters for decision making. With these reforms now in train, the focus of policy makers, hospital administrators, and health care professionals has been squarely on their direct consequences. It is likely that there will be improvements in quality from no longer allowing highly specialised services to occur in unsafe circumstances. Technological and capital improvements should help lift quality, and there will be new opportunities to train students by rotating them through specialist centres. The reforms will also require careful monitoring to ensure that it does not adversely affect patients or lead to diseconomies of scale amongst the largest institutions.

The challenge for the future, and where Denmark ought to invest more effort as they roll out these reforms is to identify the key quality improvements that fewer, larger and more specialised hospitals can deliver. To begin with, Danish policy makers ought to:

- Track individual clinician volumes as part of evaluating the effects of the reforms and contributing to ongoing quality monitoring and assessment.
- Continue on efforts already being undertaken to strengthen pre-hospital care, such as ambulances, physician manned mobile emergency units and monitor travel times faced by patients.
- Ensure that specialised hospitals support medical training and the dissemination of best practices across the system.
- Tailor clinical guidelines by the level of specialisation in a hospital, and build in practical information to co-ordination of patient care across hospitals.
- Support the regular exchange of best practices among highly specialised hospitals throughout the country.

While each of these specific reforms build on the more strictly defined and leaner hospital sector that ought to emerge from the hospital

specialisation reforms, their potential to improve quality of care across the system will require complementary reforms across the system. In particular, an overarching priority ought to be the strengthening of primary and community care services – explored in detail in Chapter 2 – to ensure it is able to take on the greater demands that shall be placed on it in the future.

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## Chapter 4

### Promoting equity in health and health care in Denmark

*Whilst health equity is a stated priority of the Danish health care system and the current Danish government, until recently there have been few policies or interventions designed to safeguard equity, or to address inequity. There are indications that health inequalities in Denmark are rising, and although gaps in data make it difficult to get a full picture across all areas, evidence suggests that there are disparities in health status, access to health care and health outcomes.*

*This chapter examines Denmark's need to build upon the principle of equity that is a cornerstone of the Health Act, and work across all levels of government to put in place appropriate policies that promote equity across the health care system. The chapter suggests that policies that prevent structural inequalities should accompany existing initiatives targeting health risks, and that close examination should be given to possible barriers to equitable access to services. Efforts to promote equity in health and health care will be most successful with a comprehensive data infrastructure, and recommendations about strengthening areas of data weakness are made.*

*Changes and improvements in policies around quality of care, the primary care system, and the hospital system all have the potential to impact upon equity, and the analysis and recommendations made in this chapter are closely tied to those of the three preceding chapters.*



## 4.1. Introduction

Equity in health is a key priority of the Danish health system, and this chapter offers an analysis of the current levels of health equity in Denmark, and of policies, initiatives and elements of the health system design that contribute to or mitigate against inequity, as well as a number of recommendations for how Denmark can ensure that currently levels of equity are maintained and built upon further.

The chapter begins by examining the Danish context, and acknowledging that Denmark's longstanding commitment to equity – as a building principle of the health care system – has largely led to good and equitable health care for the whole Danish population. However, it is also apparent that there are some clear inequities in health status and health outcome across the Danish population, which Denmark has perhaps not historically done enough to directly address, and which are in some cases rising. The current Danish government, and the Danish Minister for Health, have stressed that health equity is a priority. In order to address health inequities Denmark would benefit greatly from a better data infrastructure in order to monitor these inequities, and this recommendation is detailed in Section 4.3 of this chapter.

Although some analysis is limited by a lack of data, evidence suggests that there are inequities in Denmark around health risk factors and access to services. Sections 4.4 and 4.5 address these two areas, recommending that Denmark looks to introduce a more comprehensive set of preventative health policies, and also that ensuring equitable access to services be an explicit policy goal, especially in the context of the current reforms to the Danish hospital system. There is a need for policies that focus on structural inequalities around health, in addition to Denmark's historical focus on health risk behaviour. Denmark's municipalities could also include policies to address inequity as part of their responsibility for prevention and health promotion. Strongly related to the challenge of ensuring equitable access to services, Section 6 addresses the possible financial barriers that exist in the Danish health care system. Despite having a very small number of services for which there are co-payments, very limited exemptions to co-payments on these services appears to represent a barrier to care, and Section 4.6 recommends that co-payment exemptions are re-examined and made the subject of greater policy consideration in Denmark.

## **4.2. Equity is a building principle of the Danish health care system but there is evidence of growing inequalities in health**

### *The principle of equity is at the centre of the Danish health system*

The Danish health system is founded on a principle of equal and universal access to care for all citizens. In Denmark, the aim of easy and equal access to health care is enshrined in the Danish Health Act, and is a central part of the government health care platform (Danish Government, 2011). The principle of equity underpins the health care model across the Nordic countries, and indeed reflects the wider societal view that social security and protection should be provided to all citizens (Vallgård and Lehto, 2009).

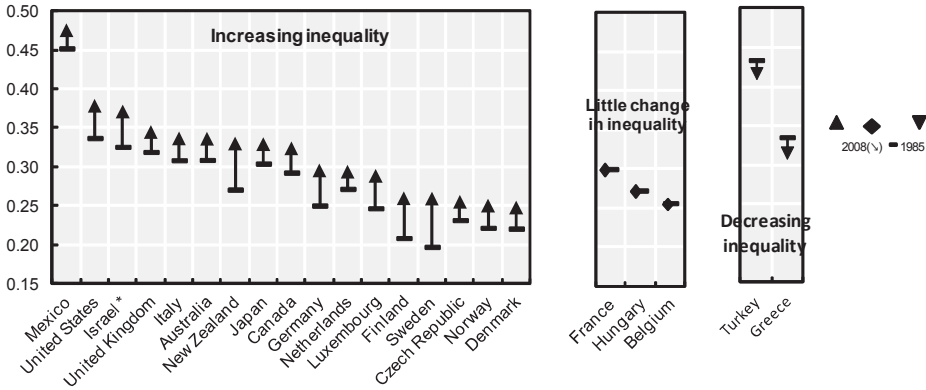
Denmark's commitment to equity in health care is underscored by universal health coverage, financed by general taxation, with co-payments limited to pharmaceuticals and some specialist services, notably dentistry and physiotherapy. Health financing in Denmark is a mix of proportional taxes at national and local level. State-transfers to regions, which make up the majority of Danish health care financing, include a large needs-based allocation, drawn from social and demographic indicators as well as some health indicators (Gundgaard, 2006; Olejaz et al., 2012). This is regarded as being a fair resource allocation system that takes into good account variation in need across localities. While there are differences in the fiscal capacity of individual regions, as is inherent in decentralised system of governance, the way resources are allocated reflect indicators of need (see also Chapter 1). Patients appear to enjoy good access to care and to be satisfied with the health system.

### *However, available evidence suggests increasing inequalities in health outcomes, despite income inequalities that remain very low relative to all other OECD countries*

Economic inequality in Denmark is amongst the lowest in the OECD. Even though income inequality, as measured by the Gini coefficient, has been rising in recent years, it is low even compared to other Nordic countries (see Figure 4.1), as inequality in Sweden and Finland has increased faster. Child poverty and household poverty rates in Denmark are consistently amongst the lowest in the OECD (*OECD Family Database 2011*).

**Figure 4.1. Inequality increased in most Nordic and Oceanic countries, including Denmark**

Gini coefficients of income inequality, mid-1980s and late 2000s



Note: For data years see Table 4.1. “Little change” in inequality refers to changes of less than 2 percentage points.

\*. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

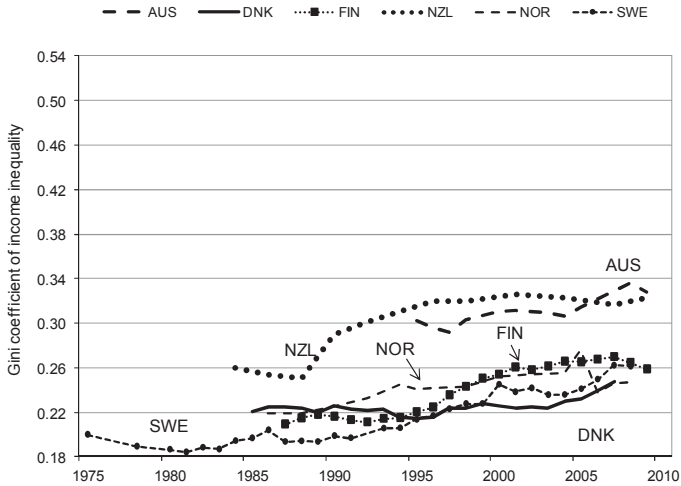
Source: OECD (2011), *Divided We Stand: Why Inequality Keeps Rising*, OECD Publishing, doi: 10.1787/9789264119536-en.

However, despite Denmark’s low rate of income inequality, high level of coverage of social policies, and a universal health care system, there is evidence of increasing socioeconomic inequalities in health outcomes, including in mortality. This difficulty of converting apparently good socioeconomic equality into equalities in health has previously been termed “The Scandinavian Welfare Paradox of Health” (Diderichsen et al., 2012), as this pattern seems to be repeated to varying extents across the Scandinavian countries.

For example, there is evidence that socioeconomic inequalities in mortality have widened between 1980 and 1995 (Mackenbach et al., 2003). As in many other OECD countries, the relationship between annual income and life expectancy, and between education and life expectancy suggest that higher incomes, and a higher level of education, are both predictors of a higher life expectancy and of remaining years of life spent in good health in Denmark (Figure 4.3 and Table 4.1).

**Figure 4.2. Increased Gini coefficients of income inequality in Nordic and Oceanic OECD countries, 1975-2008**

Gini coefficients of income inequality in 27 OECD countries, 1975-2008

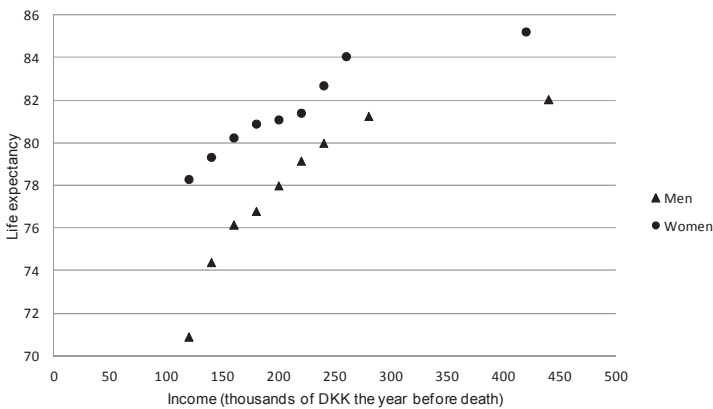


*Note:* National sources have been used to complement the standardised OECD data for Australia, Chile, Finland, Norway, New Zealand and Sweden. Their methodology is as close as possible to OECD definitions. Break in series between 2000 and 2004 for Austria, Belgium, Ireland, Portugal and Spain.

*Source:* OECD (2011), *Divided We Stand: Why Inequality Keeps Rising*, OECD Publishing, doi: 10.1787/9789264119536-en.

**Figure 4.3. Higher incomes is a predictor of a higher life expectancy, Denmark**

Relation between annual income (in thousands DKK) and life expectancy 2008/09



*Note:* Income is calculated the year prior to death for all age-specific mortality rates.

*Source:* Adapted from Diderichsen, F. et al. (2012), “Health Inequality – Determinants and Policies”, *Scandinavian Journal of Public Health*, Vol. 40, Suppl. 8, pp. 12-105, November.

**Table 4.1. Inequality in 30-year olds' remaining life expectancy and the percentage of the remaining life that can be expected to be in good health, 2004/05**

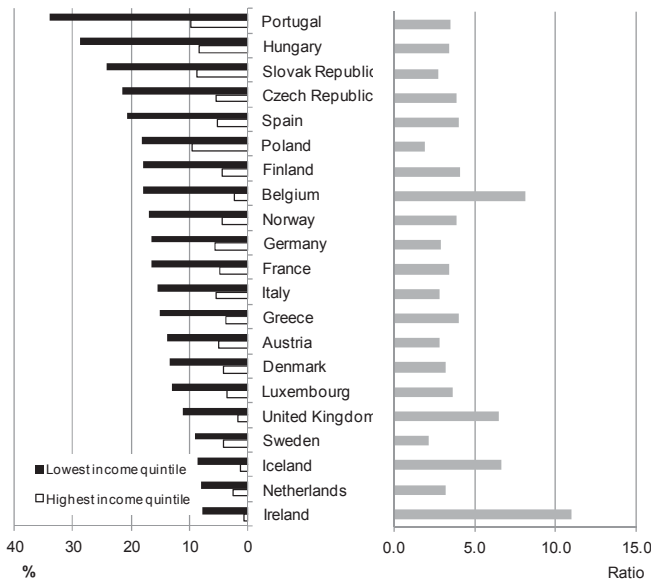
Educational level:	Males			Females		
	Long	Medium	Short	Long	Medium	Short
Remaining life expectancy (years)	49.3	47.1	44.4	52.7	51.5	49.5
Years in good health (%)	83%	80%	67%	82%	75%	61%

Source: Adapted from Diderichsen, F. et al. (2012), “Health Inequality – Determinants and Policies”, *Scandinavian Journal of Public Health, Vol. 40, Suppl. 8, pp. 12-105, November.*

As well as an observable relationship between mortality, income and level of education, there are inequalities in self-reported health along education and income gradients. Although a relatively small disparity compared to some other EU countries, there is nonetheless a lower percentage of people from the highest income quartile reporting “very bad” health as compared to the lowest quintile, with the ratio being lower than in Iceland and Norway, but higher than in Sweden (see Figure 4.4).

**Figure 4.4. Lower percentage of people from the highest income quartile report “very bad” health, Denmark**

Inequalities in persons reporting their health as “very bad”, by income quintile and rate ratio, selected EU countries, 2006

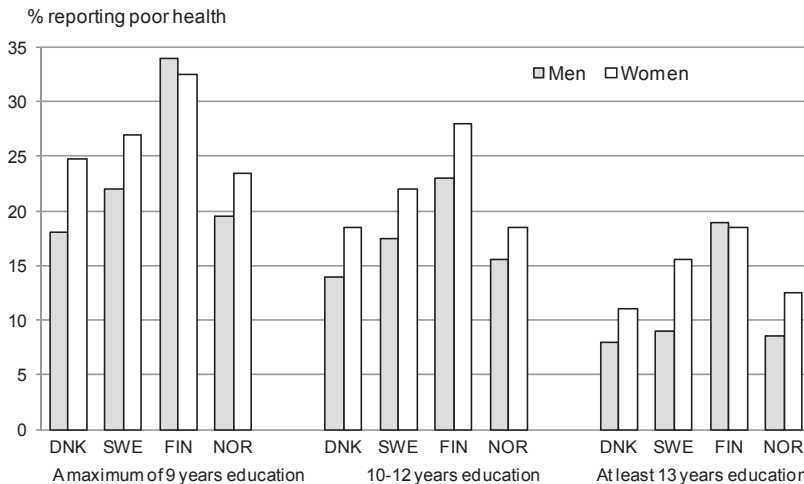


Source: de Looper, M. and G. Lafortune (2009), “Measuring Disparities in Health Status and in Access and Use of Health Care in OECD Countries”, *OECD Health Working Papers, No. 43, OECD Publishing, doi: 10.1787/225748084267.*

More significant is the gradient between people reporting poor health across different educational levels; there is a significant decline in the percentage of people reporting poor health as years of education increase. Whilst the overall share of people reporting poor health is smaller than in other Nordic countries, the gradient by educational level is no less pronounced (see Figure 4.5). Women also report poorer health across all levels of education. Furthermore, people with lower levels of education (no training or short training) are more likely to have a long-term illness (46.9% of respondents with no training, compared to 25.7% of respondents with 12 or more years education) or be very bothered by pain or discomfort (48% with no education and 37% with short training, compared with 24.7% of respondents with 12 or more years education) that people with 12 or more years of education. People with no training or short training were more likely to have taken long-term sick leave<sup>1</sup> (6.5% and 4.9%, respectively) than people with medium-term higher education (4.8%) and people with long-term higher education 2.5% (Sundhedsstyrelsen Danmark and Statens institut for Folkesundhed, 2010).

**Figure 4.5. Share of people reporting poor health is higher the lowest the educational level**

Percentage of people reporting poor health, by education and gender, Nordic countries, 2000-09



Source: de Looper, M. and G. Lafortune (2009), “Measuring Disparities in Health Status and in Access and Use of Health Care in OECD Countries”, *OECD Health Working Papers*, No. 43, OECD Publishing, doi: 10.1787/225748084267.

Finally, whilst immigrants from Denmark's close neighbours (Sweden, Norway) have a higher mortality, non-western immigrants have lower mortality than that of the local population (Diderichsen et al., 2012). Asylum seekers are not covered by regional health care, and therefore have fewer entitlements, and undocumented immigrants are only entitled to acute treatment (Olejaz et al., 2012). Despite these lower mortality rates for non-western immigrants, obstacles to care for asylums seekers and undocumented immigrants may merit further investigation.

***In comparison to other Nordic countries with similar commitments to health equity, Denmark's policy commitments to equity are late in arriving, although there are several valuable initiatives underway***

There are some clear indicators of inequity in health outcomes in Denmark. However, health inequalities have not historically been comprehensively measured, and only in recent years policy has attention to equity in health has increased. Despite similar commitments to equity in health, policy focus on equity came later in Denmark than in neighbouring Nordic countries. Strong equity agendas have been in place in Finland since the late 1960s and in Sweden since the early 1980s (Vallgård and Lehto, 2009). Conversely, despite widening socioeconomic inequalities in mortality between the early 1980s and the early 1990s (Mackenback et al., 2003), health inequalities in Denmark were not addressed on a national political level until 1998.

In recent years policy attention to equity in health in Denmark has increased, for example through the public health programmes *Folkesundhedsprogram 1999-2008* (Public Health Programme 1999-2008), and *Sund hele livet* (Healthy throughout Life) from 2002 (Diderichsen et al., 2012).

The *Folkesundhedsprogram 1999-2008* (Public Health Programme 1999-2008) had two core goals, which were to i) to increase longevity with higher quality of life and ii) to reduce social inequality in health (Diderichsen, 2012). This policy included a series of targets for the reduction of inequality in health, including a considerable reduction of inequality in health as indicated by both morbidity and mortality, initiatives addressing basic differences in health behaviour – including smoking and alcohol consumption – and living conditions for the most disadvantaged groups, and that it should be made possible to monitor morbidity and mortality in various social groups during the period of the programme (*Folkesundhedsprogram 1999-2008*; Diderichsen, 2008). There were no quantitative targets in this programme.

The *Folkesundhedsprogram 1999-2008* was replaced in 2002 with *Sund hele livet* (Healthy throughout Life), following the election of a new government, which retained health equity as a key priority, focusing on increasing life expectancy, number of health years lived, and minimising social inequality in health (Diderichsen, 2008 ; Diderichsen et al., 2012). Again, this plan focused on the “most vulnerable” social groups, for example, children of alcoholics, drug addicts and mentally ill parents, without focusing on the social gradient in health or detailing any interventions or policies to minimise inequalities in health (Diderichsen, 2008). The behaviour of these vulnerable groups was the focus of discussion of health inequalities in this strategy – looking at risk behaviour, and seven disease categories –, rather than addressing structural inequalities that may contribute to inequity in health (Vallgård, 2008).

Addressing inequalities in health has is a priority of the current government (Danish Government, 2011). Some recent changes to the health care system have been explicitly focused on improving equity; for example, in 2011 co-payments on interpretation services for health care were abolished (although there are still some charges for interpretation into minority languages depending on patient residency status), along with co-payments for fertility treatment, and annual co-payment reimbursement thresholds were adjusted. In addition, until a few years ago there were few systematic mechanisms for patients’ to have their voices heard, Danish Patients (an umbrella organisation grouping 16 patient associations and representing some 850 000 members) is now a regular member of all major health committees set up by the Ministry of Health. Patients are also part of many regional forums regarding hospital treatment and planning.

The Danish regions published in 2010 an overview of regional initiatives to address inequities and adjust health care services to the specific needs of different population groups, and there have been a number of regional seminars addressing inequalities in health. A government platform (“Equality in Health”) to address inequalities has been established, involving stakeholders from the regions, the central government three municipalities and some GPs, although policy interventions remain in their early stages. Ongoing initiatives include national clinical guidelines to reduce variation in quality of treatment and outcomes across regions. However, to date there is hardly any evaluation of such initiatives.

The Ministry of Health recently published a report on *Inequalities in Health* (2013), which underline the importance that the Ministry of Health is giving to promoting health equity. The report addressed the causes of inequalities in health and in life expectancy, including diet, smoking, physical activity and obesity, as well as self-rated health, stress, and used of services including preventative services, general practitioners services,



specialist services and dentistry services. The current Danish government plans to formulate national goals for health, including health promotion and prevention for children, young people and adults with the aim of reducing inequalities in health.

### **4.3. Measures of health inequities should be strengthened in Denmark**

***Denmark has the potential to measure inequalities in health through its solid data infrastructure, but this is not used as yet for regular measurement and reporting***

Denmark has an excellent data infrastructure and the potential to profile inequalities in health. The Danish civic registration system makes it possible to link age, ethnicity and socioeconomic variables with health status information. Every four years, the five regions and the Danish National Institute for Public Health conduct a national survey – the Danish National Health Profile (last published in 2010), which provides a picture of health status, quality of life and health behaviours. The data enable benchmarking across regions and municipalities and has the potential to be used for analysing inequities in health. Similarly, the data from National Health Interview Surveys carried out by the Danish National Institute for Public Health could be used for measuring health inequalities.

However, measurement of health inequities is not as yet carried out systematically. For example, while a report on health inequalities across Denmark was published in 2012 (Diderichsen et al., 2012), there is no regular report (i.e., a disparity report) focusing on inequalities in health. Periodic surveys do not allow for regular monitoring of variation in health utilisation and disease prevalence. There are no disaggregated quality indicators by population groups, especially with regard to community-based care. Given that period surveys show evidence of inequity across socioeconomic variables, and academic literature and the recent Diderichsen et al. (2012) report on health inequalities support such evidence, a better data infrastructure would leave Danish authorities better equipped to assure their declared commitment to health equity. Information available in national disease registries could be used for supporting monitoring of clinical information disaggregated by socioeconomic groups. The rich data infrastructure could be used for regular reporting on health utilisation and quality in hospital care disaggregated by socioeconomic groups. Critically, it will be important to ensure that information on inequalities in health is then effectively used to tackle inequalities at local and regional level.

In addition, data on health outcomes, such as mortality and morbidity, and behaviour, for example smoking and obesity, in Denmark is available broken down across age, sex, income and educational level, but exploration of dimensions of equity are broadly limited to income and educational level. There is far less granular exploration of equity across gender, for example looking at men’s health status and provision of care, including preventative care and screening, for men’s health. Data and discussion on equity for people with disabilities is also lacking, as is data on health status and outcomes across age groups. Some health inequities are apparent in Denmark, notably by socioeconomic group, but an overly narrow consideration of the question of equity may mean that other inequities are being overlooked.

***Ongoing surveys and data collection are key information resources that Danish municipalities could take advantage of, and build upon***

The administrative health care reform of 2007 created larger regions and municipalities, and changed the attribution of tasks and responsibilities, as is discussed in Chapter 1. One of the objectives of the 2007 structural reform was to create incentives for the municipalities to place more emphasis on prevention, health promotion and rehabilitation outside of hospitals (Olejaz et al., 2012); municipalities are responsible for preventative work aimed at the citizens in general, and for some parts also for initiatives aimed at patients. As such, municipalities are a key partner in preventing inequalities in health, and municipalities are responsible for initiatives that focus on the structural causes of inequalities. Given these allocations of responsibility, and given that there are some quite significant variations in health between municipalities – for example differences in life expectancy (Diderichsen et al., 2012) – the Danish municipalities will be centrally involved in efforts to address inequities in health.

There are a number of data resources that could be marshalled by municipalities in order to address problems around equity, both in ensuring that the equity amongst the population of a given region does not fall behind that of the rest of the nation, and in addressing areas of particular inequity that become apparent. Specifically, the Danish CPR registry, which makes it possible to connect place of residence, age, ethnicity and socioeconomic status, and other indicators to all other health data, is a particular strength of the Danish health system. Additionally, information gathered in the Danish National Health Profile 2010 (Den Nationale Sundhedsprofil 2010) can be used as a tool by municipalities in designing structural interventions around particular areas of need. To take an example, Diderichsen and his colleagues note that “there is a significant variation in life expectancy between the poorest and richest municipalities and areas of town” (Diderichsen et al.,

2012, p. 88); this, they stress, is because of the way in which labour markets and house prices distribute the population according to income, employment and health. Diderichsen et al. (2012) suggest that there is a particular risk to children and young people, and also to elderly populations who risk suffering disproportionately from poverty and isolation if local support networks are weak. As part of giving a full picture of health inequalities in Denmark strengthening of data gathered from municipalities, or making good use of data already gathered, should be a priority, and available data should inform policies implemented by municipalities.

***Diseases that are contributing to Danish inequality in burden of disease are increasingly treated in primary care, for which the data infrastructure is weak***

Work underway to improve the infrastructure for monitoring equality in health care should continue. Most efforts should go to addressing data gaps in primary care, for example data collection on variation in chronic diseases in general practice should be strengthened. Diseases that are contributing most to Danish inequality in burden of disease, such as diabetes and depression, are increasingly being treated in primary care settings (see Chapter 2 and Table 4.2). Given this, data collection in primary care is an appropriate way to monitor equitable health outcomes, and inform initiatives to address existing inequities.

**Table 4.2. The ten diseases contributing most to the Danish inequality in burden of disease**

The difference in disease burden between the two halves of the population with shortest and longest educations respectively is measured in DALY per 1 000

	Disease burden inequality DALY per 1 000	Disease burden in the total population (with total population ranking)
COPD	11.5	16.4 (2)
Heart disease	10.9	17.5 (1)
Alzheimer's disease	5.9	9 (5)
Lung cancer	3.5	9.5 (4)
Depression	3.3	7 (7)
Alcohol dependency	2.6	4 (12)
Hearing loss	2.4	7.3 (6)
Diabetes	2.2	5.3 (9)
Liver cirrhosis	1.7	3.5 (14)
Stroke	1.6	10.1 (3)
All diagnoses	54.5	192.8

Source: Adapted from Diderichsen, F. et al. (2012), "Health Inequality – Determinants and Policies", *Scandinavian Journal of Public Health*, Vol. 40, Suppl. 8, pp. 12-105, November.

### ***Data on health equity across age groups is scarce, despite the health needs of Denmark’s ageing population***

There is little available data on access to health care or health outcomes, adjusted for need, for Denmark’s elderly population. Excellent care for the elderly is a priority in Denmark, and data monitoring of health outcomes and health care provision for population groups by age would contribute to securing this priority. Linkage of population data by age with care delivery in primary care could be beneficial to monitoring equity for elderly populations and people with multiple chronic conditions in particular. For example, Denmark has a relatively poor record at vaccinating older people against influenza, which is a primary care function (OECD, 2011a; see Chapter 2).

### ***Measures of quality of care could be used to monitor equity***

There are some indications of inequitable quality of care in Denmark which could be investigated further. There is, for example, evidence that women with acute coronary syndrome are less invasively examined and subsequently less treated than men (Hvelplund et al., 2010). In addition, one study showed that elderly patients had higher mortality following an ischemic stroke compared to younger patients, and amongst the older patients receipt of secondary prophylaxis after hospital discharge, and continued drug use, were comparatively lower (Palnum et al., 2010). There could be closer examination of care quality for specific procedures, for example open heart surgery, and also for specific disciplines which are known to be vulnerable to inequities in quality and coverage, for example old age psychiatry.

Given these indications of inequalities in quality of care across a range of population groups, the equity dimension should make a greater priority in health care quality improvement initiatives, and data monitoring. Denmark’s unique patient identifiers could be used most fruitfully to further understanding of care quality across population groups.

## **4.4. Existing initiatives to tackle risk factors may be insufficient to address observable health inequities**

There is some evidence for decline in risky health behaviour, with falls in alcohol consumption and smoking. Indeed, Denmark is the only Nordic country for which alcohol consumption decreased between 1980 and 2010 (OECD, 2012b). Diderichsen et al. suggest that smoking, and inequity in smoking across educational level has decreased since 2005, whilst obesity and inactive leisure time has increased. Alcohol consumption is higher

amongst adults in higher income groups, but “binge” drinking (drinking heavily but more infrequently, excessive drinking on one occasion) is more common amongst lower income groups, and Denmark is the only Nordic country in which alcohol consumption has fallen. Compared to other European countries there are low levels of inequity in smoking rates and obesity across education level in Denmark (Mackenbach et al., 2008). Furthermore, a recently published report on social inequalities (Juel and Koch, 2013) suggests that 60-70% of the inequalities in life expectancy in Denmark are caused by smoking and alcohol consumption.

**Table 4.3. Some inequalities in health behaviour in Denmark rose between 1987 and 2010, notably obesity and inactive leisure time**

	1994	2000	2005	2010
Daily smoking	17.8	27.6	30.7	27.7
Population prevalence (%)	39	34	29.6	20.9
Alcohol > 14/21 units per week	-5.6	-5.7	-3.6	-1.5
Population prevalence (%)	10.7	11.7	14.3	10.6
Obesity	8.6	10.3	14.6	16.9
Population prevalence (%)	7.6	9.5	11.4	13.4
Inactive leisure time	16.4	17.6	18	18.7
Population prevalence (%)	15.5	16.3	12.9	15.9
Unhealthy diet	-	-	-	22.2
Population prevalence (%)				20.9

Source: Adapted from Diderichsen, F. et al. (2012), “Health Inequality – Determinants and Policies”, *Scandinavian Journal of Public Health*, Vol. 40, Suppl. 8, pp. 12-105, November.

In addressing inequalities in health, Vallgård and Lehto (2009) suggest that when compared to Finland, Norway and Sweden, Denmark’s efforts in the late 1990s and 2000s focused very much on individual responsibility and individually chosen behaviour, rather than pursuing targeted policy interventions. The *Folkesundhedsprogram 1999-2008* and *Sund hele livet* programmes do, indeed, focus on health behaviours such as smoking, alcohol consumption and obesity, and health education, promotion and voluntary initiatives that stress individual responsibility (Diderichsen, 2008). The Danish government, unlike other Nordic governments, has been explicitly liberal in imposing legislation or economic policy measures in relation to tobacco and alcohol. Furthermore, a belief in individual freedom and responsibility shared across the political spectrum in Denmark likely influences emphasis on individual responsibility for health behaviour for all but the most vulnerable groups, rather than a focus on the social gradient in

health care as seen in other Nordic countries, for example Sweden and Norway (Diderichsen, 2008).

There is strong commitment to address inequities starting from prevention in Denmark. However little is known to date about whether local initiatives to address risk factors in health and measures to change behavioural incentives such as through “sin taxes” have yielded any effect on populations most at risk. In 2007 a Prevention Commission was established to launch a national plan of preventative measures, of which the 2012 “fat tax” (see below) was a part. Higher taxes on cigarettes, unhealthy food, and alcohol were implemented nationally, following the 2011 government-commissioned report on determinants of health inequalities (Diderichsen et al., 2012; Commonwealth Fund, 2012). In recent years other OECD countries have also introduced fiscal measures designed to address population health; fiscal measures appear to have the most success and reducing alcohol consumption, whilst as already discussed the situation is trickier when addressing obesity (Sassi et al., forthcoming 2013; see Box 4.1).

The Danish Health and Medicine Authority published a number of “prevention packages” in 2012, which include recommendations for the use and organisation of preventive action in the municipalities. The packages include recommendations concerning the underlying determinants and risk factors – for example tobacco, inappropriate use of alcohol, physical inactivity and mental health – that focus *inter alia* on inequity in health. The recommendations in these packages is only consultative, but the packages have been well received by the municipalities and the government has funded a new health prevention center, which will provide the municipalities with advice and guidance on implementing the prevention packages. Municipalities and regions have established *ad hoc* projects to address risk factors in low socioeconomic groups. The focus of the majority programmes on prevention is to some extent appropriate given the disease categories that contribute to inequity in mortality (see above), and given that smoking and obesity show socioeconomic gradients similar to those in mortality and morbidity (Mackenbach, 2006; Diderichsen et al., 2012). Targets or indicators for measurement would track the success of these programmes in improving population health, and improving equity in population health. Closer examination and evaluation of policies targeting risk factors would be appropriate.

In 2012 Denmark’s tax on foods containing more than 2.3% saturated fat was repealed following widespread criticism, inflated food prices, and threats to Danish producers, for example cheese producers. Furthermore the administrative cost of implementing the tax was deemed to be unacceptably high. A plan to introduce a levy on sugar has also now been cancelled. Whilst fiscal measures to address health risks, such as alcohol consumption and obesity are very cost effective, Denmark’s experience with this tax

echos some of the findings of the OECD’s 2010 report on measures to tackle obesity. This publication suggests that tax increases tend to be controversial, and whilst cost-effective and effective in reducing consumption of targeted goods, risk having a regressive effect, weighing most heavily on the less well off (OECD, 2010). However, the health benefits of such “sin taxes” were also found to benefit people in low socioeconomic groups more, especially if coupled with targeted subsidies on healthy food such as fruit and vegetables, as this OECD report recommends.

Evidence regarding the efficacy of different interventions to reduce health risks suggests that combining several interventions to tackle unhealthy diet and physical inactivity – such as physician counselling, a mass media campaign, food taxes and subsidies, nutritional labelling and marketing restrictions – is an efficient way of improving population health. OECD research on measures to address obesity suggests that many interventions have a more significant impact upon lower income groups, and that all interventions had a favourable, although small, effect upon equity as measured by the Gini coefficient, with physician/dietician counselling having had the most significant positive impact on health equity (Sassi et al., 2009). In Denmark, a whole package of measures needs to be put in place to address health risks. There are a wide range of initiatives in place in OECD countries (see Box 4.1).

**Box 4.1. Preventative measures to address health risks  
across the OECD: alcohol and obesity**

- Fiscal measures to reduce alcohol consumption are in place virtually everywhere in the OECD, and evidence shows that increases in taxation reduce alcohol consumption, particularly for moderate drinkers, women, and young consumers. Fiscal measures appear to have the most success and reducing alcohol consumption, whilst as already discussed the situation is trickier when addressing obesity (Sassi et al., forthcoming 2013; OECD, 2010).
- Information, education and community actions have been shown to have some success in increasing awareness of alcohol consumption, although the impact on behavior is more limited.
- Health sector interventions, for example interventions in primary care and psychosocial treatments for alcohol dependence may significantly reduce alcohol-related morbidity.
- Targeted measures directed towards particular population groups were more effective in addressing obesity, and were not less cost-effectiveness than cross-population measures.
- Counselling in primary care to tackle obesity was found, across a study of six OECD countries, to lead to a gain of up to half million life years free of disability, although is more expensive than many other interventions (see also Machenbach et al., 2008).

**Box 4.1. Preventative measures to address health risks  
across the OECD: alcohol and obesity (cont.)**

- Several OECD countries introduced taxes on unhealthy foods and beverages in 2011 as part of their efforts to counter obesity:
  - Denmark introduced a tax on foods containing more than 2.3% saturated fats (meat, cheese, butter, edible oils, margarine, spreads, snacks, etc.) which has now been repealed.
  - Also in 2011, Hungary introduced a tax on selected manufactured foods with high sugar, salt or caffeine content and carbonated drink. The tax does not concern basic food stuffs and only affects products that have healthier alternatives. The Hungarian government is reportedly expecting to raise in excess of EUR 70 million per year from the tax.
  - In 2011 Finland also introduced a tax on confectionery products, while biscuits, buns and pastries remained exempt. The tax, originally intended to be set at almost EUR 1 per kilogram of product, was subsequently dropped to EUR 0.75 per kilogram. At the same time, the existing excise tax on soft drinks was raised from 4.5 cents to 7.5 cents per litre.
  - In France, a tax on soft drinks came into force in January 2012. The tax affects both drinks with added sugars and drinks with artificial sweeteners. It is set at EUR 7.16 per hectolitre (i.e., EUR 0.072 per litre or approximately EUR 0.024 for a 33 cl can) for both categories. It is payable by manufacturers established in France and importers. The tax is expected to generate revenues in the region of EUR 280 million per year.
  - Taxation of unhealthy foods or beverages is being discussed in a number of other countries. Ireland and the United Kingdom are among the countries actively considering a levy on unhealthy food and/or drinks. Debates are taking place in the United States.

*Source:* OECD (2010), *Obesity and the Economics of Prevention: Fit not Fat*, OECD Publishing, doi: 10.1787/9789264084865-en; OECD (2012), “Obesity Update 2012”; Sassi F. et al. (forthcoming 2013), “Harmful Alcohol Use: Trends and Prevention Policies”, *OECD Health Working Papers*, Paris, OECD.

***There is a role for municipalities in implementing initiatives that prevent inequality and promote health equity***

It is quite widely accepted that early intervention – intervention in early childhood, childhood and adolescence – is a key way of promoting good health outcomes across the lifecourse. Indeed, Diderichsen et al. show that there is some evidence of social disparities in disease occurrence and wellbeing in Denmark even in early childhood (Diderichsen et al., 2012, pp. 28-30). The recently published Ministry of Health report *Inequalities in Health* (Ulighed i sundhed, 2013) stressed that inequalities in health start at



childhood, and that fewer children of parents with low levels of education or training come to child health checks and complete vaccination programmes. The report also shows that newborns whose parents have little or no education are more likely to be readmitted to hospital following discharge than the babies of parents with more education. In the 2009 report *Doing Better for Children* the OECD stated that “Countries should invest more resources during the period from conception until entry into compulsory schooling when outcomes are more malleable and foundations for future success are laid. If interventions are well designed, concentrating on early childhood can enhance both social efficiency and social equity” (OECD, 2009, p. 179). Municipalities are well-placed to lead such initiatives, likely with support and co-ordination from regions. Initiatives might include preventative child health examinations in primary care, child health examinations in schools and educational programmes in schools and other day care facilities, targeting pre- school and early school years age groups. Some such initiatives have already been implemented – for example preventative child health examinations by general practitioners (Juhl et al., 2005; Michelsen et al., 2007) – and could be built upon (see Diderichsen, 2012, pp. 28-30). Multidisciplinary health centres in municipalities could be another key contact point, for example for pre-natal and ante-natal care.

Multidisciplinary health centres, and disease-specific management programmes that regions and municipalities are expected to jointly develop, offer opportunities for disease-specific interventions to promote equity in the Danish population’s health. Equity ought to be a priority in the organisation of both services, and well implemented prevention programmes can be seen as a way of promoting good health outcomes for the whole population. Disease-specific management programmes for cardiovascular disease, diabetes, COPD and musculoskeletal disorders, which have been established, might usefully include explicit attempts to promote equity, especially given that COPD, heart disease and diabetes all contribute quite significantly towards the difference in disease burdens across the population according to educational level, for example (see Table 4.2).

#### **4.5. Addressing inequitable utilisation and access to health care should be a priority**

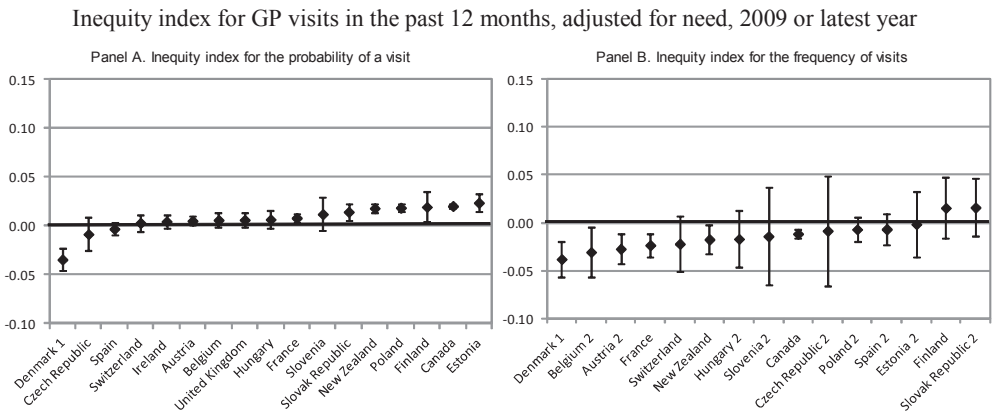
***Open access and no co-payments contribute to pro-poor inequities in primary care utilisation but there are small pro-rich inequities in utilisation of specialist services***

Access to care in Denmark is enhanced by the fact that there are no co-payments for most services, and whilst there is GP gatekeeping for specialist care, there is open access to GPs and primary care. This system design is

reflected in the pro-poor differentials in the use of GP services observable in Denmark, unlike in many other OECD countries.

In most countries, the worse-off tend to visit GPs more frequently than richer population groups, due to their greater health needs (Figure 4.6). However, according to an OECD study (Devaux and de Looper, 2012), once an adjustment for health needs has been made there is no significant difference in the probability of visiting a GP between the worse and the better off. Denmark, meanwhile, displays pro-poor inequalities in visits to GPs; for the same level of need, the worse-off are more likely to contact a GP. Whilst data issues – doctor visits for Denmark were recorded over the past three months rather than across the previous year – could lead to an over-estimate of pro-poor inequalities in Denmark, this finding is consistent with earlier studies (Van Doorslaer and Masseria, 2004). These findings suggest that, firstly, inequity is not a concern for GP-delivered primary care, and secondly, that GPs may be appropriate deliverers of any pro-equity initiatives that target disadvantaged populations.

**Figure 4.6. Poor patients have a higher probability of visiting a GP in Denmark, after adjusting for need**



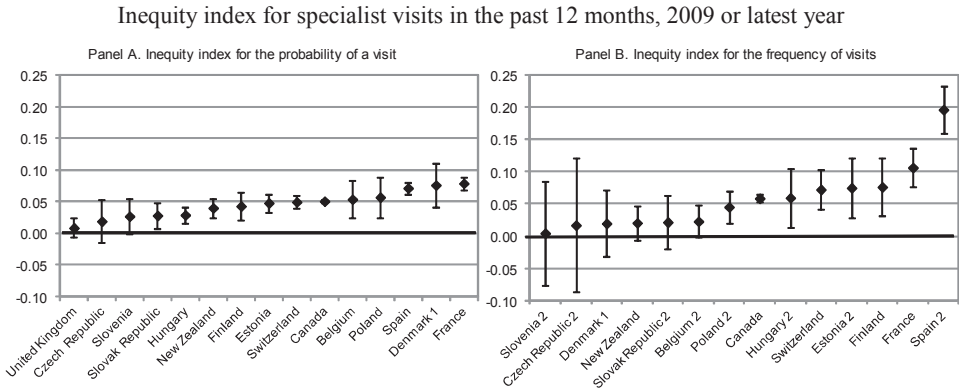
1. Visits in the past three months in Denmark.
2. Counts in the past four weeks in European Health Interview Survey (EHIS) countries (Czech Republic, Estonia, Hungary, Poland, Slovak Republic, Slovenia).

Source: Devaux, M. and M. de Looper (2012), “Income-Related Inequalities in Health Service Utilisation in 19 OECD Countries, 2008-2009”, *OECD Health Working Papers*, No. 58, OECD Publishing, doi: 10.1787/5k95xd6stnxt-en.

Whilst GP utilisation shows pro-poor inequalities, Denmark is more similar to other OECD countries in patterns of utilisation of specialist

services, showing use being skewed with strong pro-rich inequities. Although there are no co-payments for specialist visits in Denmark, and access is for the most part controlled through GP referrals, high-income groups are more likely to visit a specialist, and visit specialists more frequently than low income groups. The degree of this inequality in Denmark is elevated in comparison to other countries (Figure 4.7).

**Figure 4.7. Rich patients have a markedly higher probability of visiting a specialist in Denmark, after adjusting for need**



1. Visits in the past three months in Denmark.
2. Counts in the past four weeks in European Health Interview Survey (EHIS) countries (Czech Republic, Estonia, Hungary, Poland, Slovak Republic, Slovenia).

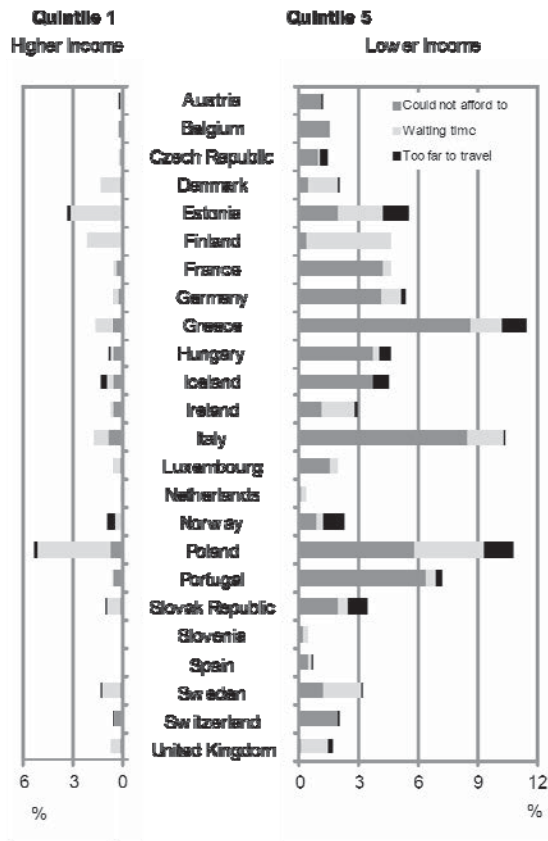
Source: Devaux, M. and M. de Looper (2012), “Income-Related Inequalities in Health Service Utilisation in 19 OECD Countries, 2008-2009”, *OECD Health Working Papers*, No. 58, OECD Publishing, doi: 10.1787/5k95xd6stnxt-en.

Finally, there are some inequalities in the utilisation of preventative services, with the percentage of low income women having had cancer screening in the past two years is only slightly over 10%, the lowest among 15 OECD countries. Data show that people from lower socioeconomic backgrounds are less likely to participate in breast cancer and uterus cancer screening, and are at higher risk of being readmitted to hospitals for preventable conditions (Devaux and de Looper, 2012).

***Waiting times seem to be the more important factor behind unmet need***

Unmet needs for medical examination are relatively low in Denmark compared to other European countries. Where there exist, they are most likely to be due to waiting times for services rather than cost or geographical distance (see Figure 4.8).

Figure 4.8. Unmet needs for medical examination are most often due to waiting times in Denmark



Source: OECD (2011), *Health at a Glance 2011 – OECD Indicators*, OECD Publishing, doi: 10.1787/health\_glance-2011-en.

Waiting times are an ongoing political challenge for the Danish health care system, especially for elective surgery, and have been monitored in hospitals since 1993 (OECD, 2013). Expected and experienced waiting times are regularly measured for 18 selected diagnoses and treatments, including hernia, prolapsed disk, tonsillitis, cataracts, and a range of other elective surgeries. Waiting times for elective surgery fell during the period 1998-2008, although there was a rise in waiting times from 2008. As part of the policy response to challenges around waiting times, *free choice of hospitals* was introduced in 1993, with extended free choice of hospital introduced in 2002 along with a waiting-time guarantee. The 2002 extended

choice meant that private hospitals were made available to patients if the hospital to which a patient is referred cannot foresee fulfilling the waiting times guarantee. In 2010, 4.8% of patients used extended free choice to select commercial private hospitals, whilst for some specialties the share of patients using extended free choice was as high as 10% (OECD, 2013). This policy appears to have had a positive impact upon depressing waiting times. The 2007 agreement between the government and the Danish regions to eventually develop integrated care pathways for the diagnosis and treatment of 34 defined types of cancer, and later four defined types of heart problems, is also likely to have contributed to reducing waiting times for related procedures by improving co-ordination and timely care delivery (Christiansen and Bech, 2013). The objective of these care pathways was to secure fast and well-organised treatment and avoid waiting times, and was supported by organisational and clinical standards and guidelines, clinical working groups, monitored hospital funding, and in some regions pay-for-performance schemes.

An evaluation of the consequences of policies to widen consumer and patient choice of health care providers, which includes the promotion of free-choice of provider amongst hospitals and municipalities for consumers, is underway but not yet available.

Whilst there is equal access for all and patients can seek treatment outside of their home region, patients are generally not reimbursed for additional travelling costs (OECD, 2013), which may mean that waiting times, travel, and cost intersect as barriers to treatment for some individuals. While cost and distance to travel are less important factors than waiting times, they are a more important reason explaining unmet medical needs for medical examination for lower income groups than for higher income groups. It is important to remember, however, that unmet need remains low compared to most other European countries, although there is evidence showing a strong pro-rich inequities in access to specialists in Denmark (Devaux and de Looper, 2012).

Maximum waiting time guarantees for life-threatening diseases are also defined, and regions are expected to find solutions to situations in which waiting time guarantees are not being met, staying within the maximum time guarantee. If regions cannot meet this waiting time, and dialogue and co-operation to provide treatment is primarily between the regions, contacting the National Board of Health is a last resort when no appropriate solution has been found, and the Board will then attempt to find a treatment offer. For alternative treatments the patient's home region pays the costs of transportation and stay for the treatment. The current government, elected in 2011, has proposed a change to the existing treatment guarantee to introduce an initial diagnosis guarantee (with some exceptions), which are due to

come into force in 2013. Some doubts have been raised about the capacity of the system to diagnose patients faster, and also about the monitoring and penalties for regions that do not meet these guarantees (OECD, 2013).

Whilst the increased use of private health care might have been expected to reduce unmet need for medical examination for higher income groups than lower income groups, 2009 data do not show significant differences between unmet need due to waiting time across income groups (see Figure 4.7). However, data on waiting time by income group, or socioeconomic group, is not readily available. Given that waiting times is a major factor behind unmet need, it would seem important to monitor the impact of waiting time guarantees and free choice of hospital on access to elective surgery by different socioeconomic groups.

### ***Initiatives addressing inequalities in health service utilisation across geographical areas can be strengthened***

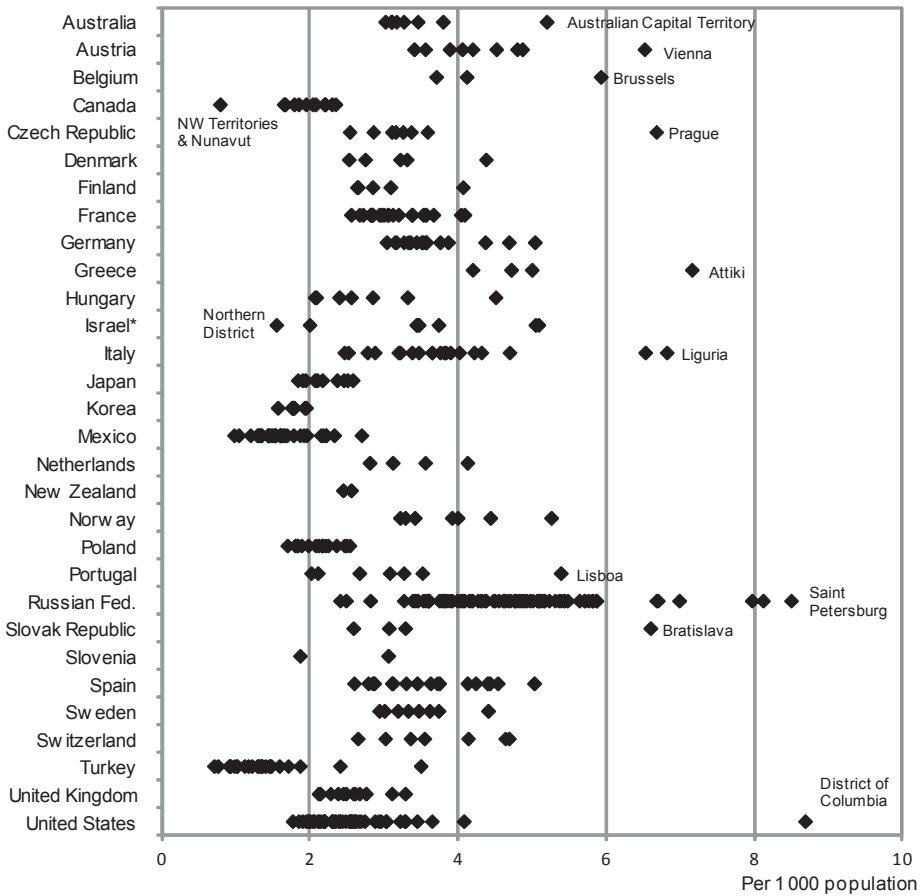
Access to health care services appears to be broadly equitable across regions, although limited reporting by regions and municipalities on inequalities inhibits deeper understanding and analysis. Whilst there is some clustering of physicians around urban centres, including the clustering of physicians specialised in primary care around larger towns, especially in Copenhagen and the northern suburbs of Copenhagen (Danish Regions, 2010), physician services are quite evenly distributed across regions compared to other OECD countries (Figure 4.9). That said it is important for Denmark to maintain policies to incentivise doctors to work in underserved areas. For example, the requirement for young doctors to practice in underserved areas during the first year of their medical practice is a good way to address geographical disparities. It is important to note, however, that in countries where inequalities in the distribution of medical doctors are more pronounced, such measures are unlikely to change incentives for young doctors to set their practice in these areas. Incentives to recruit health professionals from local communities where needs are the highest might have better payoffs on retention in underserved areas in the longer term.

There have also been concerns that the current hospital reforms, and the closure of small hospital departments, might lead to an increase in the concentration of specialist health services around urban centres (Vallgarda and Lehto, 2009). Given the small size of Denmark such clustering is unlikely to pose as big a challenge as in other Nordic countries, for example Sweden and Norway. That said, considering existing inequities in access to specialist services, and in reported reasons for unmet medical examination by low socioeconomic groups, the impact of these reforms on equitable access and service utilisation ought to be monitored. Initiatives to safeguard

against problems with access following the hospital reform have included out-reach teams, eHealth initiatives and telemedicine, and such approaches should continue to be monitored carefully to make sure that all population health needs are being met.

**Figure 4.9. Physician services are quite evenly distributed across regions in Denmark relative to other OECD countries**

Physician density, by Territorial Level 2 regions, 2008 or nearest year



\* Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Source: OECD (2011), *Health at a Glance 2011 – OECD Indicators*, OECD Publishing, doi: 10.1787/health\_glance-2011-en.

Last, if the government wants to address health inequities, it would be important for equity to be an explicit consideration in *health service planning decisions*, both at local and regional level. For example, the involvement of the Board of Health and Welfare in approvals of plans for highly specialised units in hospitals has been regarded as a way to address variation across localities, but thereafter there has not been close monitoring of variations in medical utilisation across localities. Hospital reforms may have reduced the degree of patients choice over where to receive care in exchange for higher safety deriving from hospitals performing higher volumes of procedures. It would seem important to continue to monitor variation in access to hospital and physician care and measures of unmet across localities.

***Municipalities can take a more prominent role in ensuring that the elderly population have equitable access to health care***

There is little available data on access to health care or health needs for Denmark’s elderly population, as noted earlier in this chapter, but even without better linked data Denmark’s municipalities can work to prioritise the health of older people. As noted in Chapter 2, nurses have taken on new roles managing elderly patients, particularly in the context of services provided by the municipalities. A comprehensive outreach service targeted at elderly populations, especially those with identified health needs and vulnerabilities, led by nurses working in the community would be an appropriate initiative at a municipal-level. Such an outreach service, or population-specific targeted campaigns led by municipal health centres, for example around seasonal influenza vaccinations, could be considered. Elderly populations are likely to be particularly vulnerable to changes in access to hospital and physician care with the current hospital reforms, as they are likely to be less able to travel, and have more regular health needs, and hospital visits. Efforts to identify unmet needs of the elderly population should be made, including efforts to consider mental and physical wellbeing of elderly populations, both in the community and in residential care-settings. Good health care in nursing homes and long-term-care settings is a further dimension of equity in health care access that should be considered by municipalities. Once identified, gaps could be addressed either through an effective community nurse outreach scheme, or through appropriate training for care providers in long-term care settings.

***Despite high utilisation of GP services, low-income patients still have worse outcomes, suggesting that adherence to clinical practice guidelines could be better***

Whilst data issues – doctor visits for Denmark were recorded over the past three months rather than across the previous year – could lead to an over-estimate of pro-poor inequalities in Denmark, this finding is consistent



with earlier studies (Van Doorslaer and Masseria, 2004). However, despite more frequent GP visits, low income patients still have worse health outcomes. Given the high access to GP services, this is likely to be due to lifestyle factors, treatment adherence, delays in diagnosis and referral. Considering that low-income groups are less likely to see a specialist in Denmark (see above), there may be disparities in referrals and treatment from GPs that warrants further examination. Clinical guidelines in primary care could be used as one way of helping to standardise care equality across all patient groups, and further promote equity. Where clinical guidelines do exist, incentives or penalties to improve adherence could improve their efficacy, and the impact that guidelines do and could have on equity of care and outcomes should be considered.

Whilst there appears to be, overall, good access to GP services in Denmark, monitoring of access to GP care and utilisation across population groups would be desirable, to track, for example, the utilisation of primary care by elderly groups relative to need, or by immigrant populations. Given some evidence that health outcomes are poorer amongst low-income groups, despite higher GP service utilisation when adjusted for health needs, wider investigation of equity in primary care delivery could be considered. It would be desirable to ensure both that groups such as the elderly have good access to GP services, but also that they have equally good quality of care in primary care, including diagnosis and referral. Current and future efforts to strengthen the quality of primary care in Denmark (see Chapter 2) should include considerations of possible impact on equity.

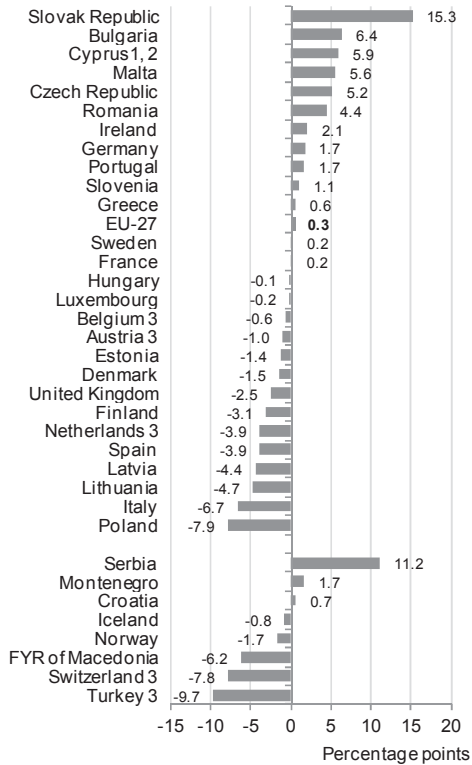
#### **4.6. Steps to reduce the financial burden of low-income people will protect vulnerable groups but should be especially targeted to primary care and prevention**

Denmark's universal health coverage, financed by general taxation, aims to alleviate financial burdens for disadvantaged populations. Data showing a pro-poor inequities in GP utilisation suggest that the lack of financial barriers have a positive effect on equity in health utilisation, and the high level of public financing of health care in Denmark generally has the desired effect in promoting equitable access to health care for all. Progressive tax financing for the health system means that the aim of universal equitable financing to the health system is largely guaranteed across all different localities. There are no co-payments for the majority of health services in Denmark, including primary care, specialist and hospital care, and long-term care. In 2011 the government also reduced cost sharing by eliminating user charges on hospital services for fertilisation treatment that had been introduced in 2010. Furthermore, there are no co-payments on prescription drugs for chronically ill patients, and there is a cap on co-payments

exceeding EUR 2 267 within one year. The recent reduction in cost sharing will help low-income groups improve access to care. Furthermore, out-of-pocket spending in Denmark fell between 2000 and 2010, unlike in many other European countries (see Figure 4.10).

**Figure 4.10. Out-of-pocket spending in Denmark fell between 2000 and 2010**

Change in share of out-of-pocket spending in total health spending, 2000 to 2010 or nearest year



1. Note by Turkey: The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

2. Note by all the European Union Member States of the OECD and the European Commission: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

3. Data refer to current expenditure.

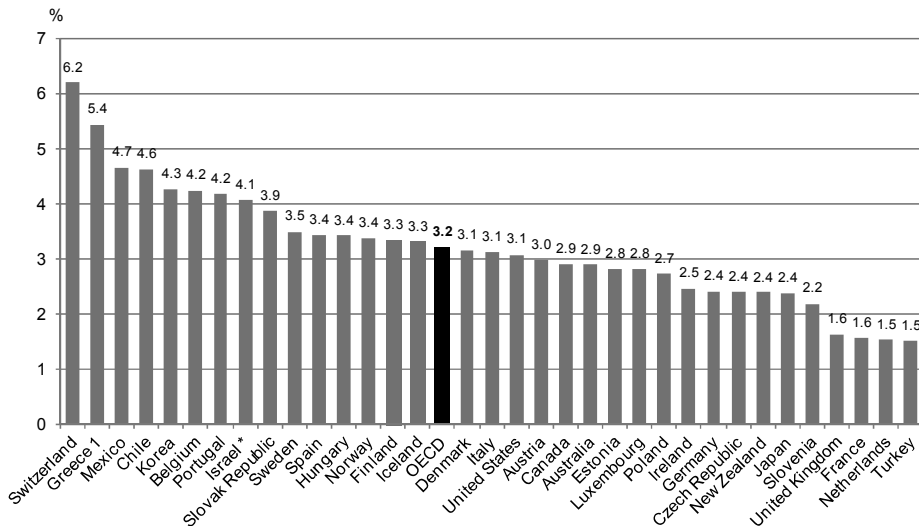
Source: OECD (2012), *Health at a Glance – Europe 2012*, OECD Publishing, doi: 10.1787/9789264183896-en.

***Universal access with no co-payments for most services assures largely equitable health financing, but high co-payments for a small number of services may put a large financial burden on low-income groups***

Whilst there are no co-payments for the majority of health services in Denmark, there are co-payments on pharmaceuticals and some specialist services, notably dentistry and physiotherapy. Furthermore, despite a low number of services for which out-of-pocket payments are required, out-of-pocket expenditure makes up a surprisingly high share of 3.1% of final household consumption, in Denmark, just below the OECD average of 3.2% (Figure 4.11). Dental care and eye glasses and contact lenses are not covered for adults unless they are subject to special exemptions. For an adult not subject to any exemption, there is no coverage for pharmaceuticals up to an annual expenditure of EUR 115, beyond which cost sharing percentage decreased incrementally (50%, 25%, 15%). Relatively high co-payments for pharmaceuticals, dental care, physiotherapy and eye products are likely to impact disproportionately upon low-income groups.

**Figure 4.11. Households out-of-pocket expenditure as a share of household consumption is only just below the OECD average in Denmark**

Out-of-pocket expenditure as a share of final household consumption, 2009 or nearest year



\* Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

1. Private sector total.

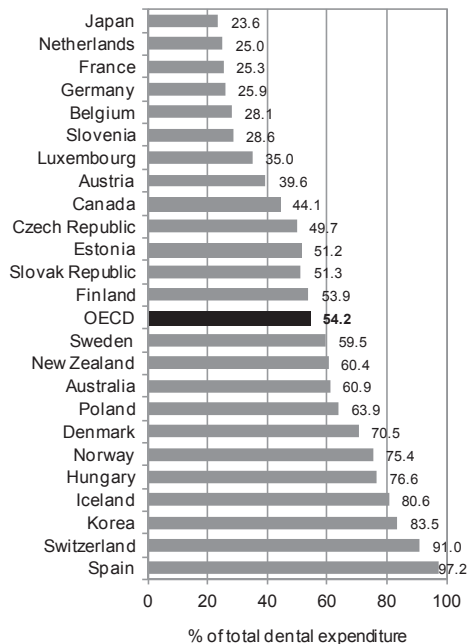
Source: OECD Health Data 2011, OECD Publishing, doi: 10.1787/health-data-en.

High out-of-pocket costs for some services are reflected in patterns of expenditure, and in access to care. Whilst exemptions for out-of-pocket payments exist, they are limited to those with certain medical conditions or disabilities and for children. There are no exemptions for those with incomes under designated thresholds, beneficiaries of social benefits, or seniors, which may present a risk of growing inequities in access to some services.

For example, there is some evidence of inequalities around access to dental care for adults. Unlike access to GP services, for which there is open access with no co-payments and which show pro-poor inequities, unmet need for dental consultation was significantly higher for low-income than for high-income groups in Denmark in 2009 (see Figure 4.12). Whilst the average number of dental consultations per capita, at 0.9 in 2009, was below the OECD average of 1.3 the share of out-of-pocket dental expenditure was quite significantly higher than the OECD average (70.5% compared to 54.2%).

**Figure 4.12. Out-of-pocket dental spending in Denmark is quite significantly higher than the OECD average**

Out-of-pocket dental expenditure, 2009 or nearest year



Source: OECD (2011), *Health at a Glance 2011 – OECD Indicators*, OECD Publishing, doi: 10.1787/health\_glance-2011-en.

Although inequity in unmet need for a dental examination by income quintile in Denmark is lower than in most other European countries, and than the European average, disparities between income groups are nonetheless more pronounced than the utilisation of other health services, which could suggest the prohibitive effect of the cost of dental treatments for low-income groups in Denmark (Figure 4 13). A new law, Act No. 1380 passed on 23 December 2012, gives young people (aged 18-24) and some recipients of social benefits access to dental care with a more limited co-payment, and should impact positively on access to dental examination.

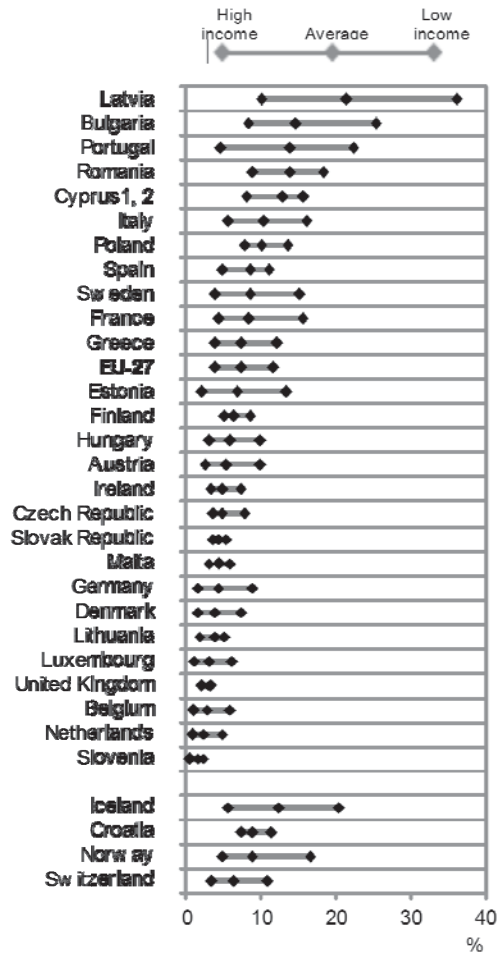
Another possible source of financial barriers concerns the cost for interpreters for immigrants that are not fluent in Danish. A new law regarding the right to interpretation into minority languages that was passed in Denmark and took effect in June 2011 means that refugees and immigrants who have resided in Denmark for more than four years have to pay for any assistance needed from an interpreter themselves (Olejaz et al., 2012). Previously, the limit was set at seven years, after which there was a fee for using interpreters. Given existing inequalities in health between the native Danish population and some immigrant groups, this additional fee may present an obstacle for some patients, although it is unclear how large a population group would be affected by the measure.

Overall, it is important to bear in mind that financial barriers do not seem to be the main barrier to access health care in Denmark, and that cost-sharing still remains low by OECD standards. The recent reduction in cost-sharing will also help low-income groups improve access to care. That said, cost-sharing remains the most repressive form of financing health systems. International evidence shows that cost sharing applied indiscriminately is a blunt instrument for controlling cost, because it reduces both desirable as undesirable health service utilisation. There are three possible issues for Denmark to focus their efforts upon:

- First, there is scope for improving the current system of exceptions which at the moment include people with chronic conditions but excludes low-income people, beneficiaries of social benefits, and elderly people. A starting point would be to review the effectiveness of current exemption policies and monitor health utilisation patterns and out-of-pocket expenditure for other vulnerable categories not currently benefiting from exemptions.

**Figure 4.13. Unmet need for dental consultation is higher for poor people in Denmark**

Unmet need for a dental examination, by income quintile, 2010



1. Note by Turkey: The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

2. Note by all the European Union Member States of the OECD and the European Commission: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

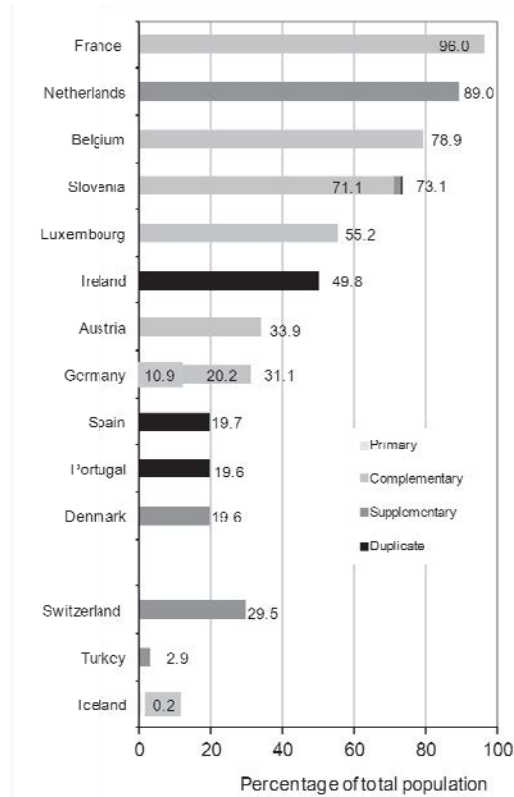
Source: OECD (2012), *Health at a Glance – Europe 2012*, OECD Publishing, doi: 10.1787/9789264183896-en.

- Second, given that Denmark public share of health financing is high by OECD standards, there are opportunities to design cost sharing policies intelligently, for example to steer health behaviours towards desired direction (e.g., to encourage compliance with prescribed medical treatment, utilisation of cost-effective drugs or preventative care – or to discourage certain unwanted behaviour (e.g., choice of branded pharmaceutical products when a cheaper bioequivalent is available). There are some good examples of this to be taken from other OECD countries. In France, from 2009, patients who did not follow the agreed medical pathway faced a 40% higher co-payment for treatment. There are several instances where cost sharing is higher for patients when they select branded pharmaceuticals rather than generic bioequivalents, for example in Switzerland.
- Third, there is possibly scope for more transparent review of criteria (e.g., cost effectiveness) for inclusion or exclusion of specific services from the public benefit package. There is no clear pattern in the establishment of user charge exemptions, nor is there a policy in place that covers user charges (Olejaz et al., 2012). For example, any OECD countries have cost sharing across a wider range of service, but frequently have exemptions for low income groups or benefit recipients, which Denmark does not have.

### ***Increasing private health care coverage risks increasing existing inequities***

Private health insurance supplements public coverage for services not or only partially reimbursed by the public system (e.g., dental care for adults, pharmaceuticals, physiotherapists). It also offers a means to access the private sector and to obtain faster access to treatment for which there are long waiting times in the public sector.

In 2002, the government sought to encourage PHI through favourable tax advantages for group-based policies in an effort to increase choice and allow faster access to treatment, especially given concerns around long waiting times for elective surgery. There was also interest in complementary health insurance to offset high out-of-pocket costs for some services (Olejaz et al., 2012; OECD, 2013). Following the introduction of the preferential tax benefits for employees health private health insurance doubled between 2003 and 2006, and coverage reached 17% of the employed population in 2006 (OECD, 2008). As of 2010, supplementary or complementary health insurance in Denmark covered nearly one every five persons (Figure 4.14; OECD, 2012b). Preferential tax incentives around private health insurance were abolished in 2012 to improve financing equity (OECD, 2013).

**Figure 4.14. One in five Danish has supplementary health insurance**

*Note:* Private health insurance can fulfil several roles. In Denmark, for example, it can be both complementary and supplementary.

*Source:* OECD (2012), *Health at a Glance – Europe 2012*, OECD Publishing, doi: 10.1787/9789264183896-en.

This growing role of PHI has raised concern that inequities in prompt access to services would widen, although significant efforts have been made to reduce waiting time for elective surgery. There have been concerns that the growth of voluntary health insurance divides patients, especially when tied to employment, leaving patients with employment better access to health care than unemployed or retired citizens (Olejz et al., 2012). Other countries have seen inequities emerge linked to differences in coverage between the employed population and other population groups. For example, disparities in access to health care linked to private health insurance coverage have emerged in Finland between people in



employment, and unemployed and retired populations, despite a similar commitment to universal coverage and equity (OECD, 2012c). An evaluation of private health insurance policies across OECD countries has revealed that private health insurance remains more frequently purchased by higher-income population groups and is associated with inequities in access to care and speed of access to care between those with and without private health insurance (Colombo and Tapay, 2004; Thomson and Mossialos, 2010). Private health insurance generally results in differences in access to care and care coverage according to insurance type, although the degree of differential and the extent to which this differential is considered a problem varies from country to country. Because private health insurance is mainly purchased by high-income individuals, subsidies to stimulate private cover tend to be regressive. Countries that grant significant public subsidies to private health insurance, as Australia and the United States, have seen a reduction in government revenue or an increase in public cost (Colombo and Tapay, 2004).

#### **4.7. Conclusions**

Compared to most OECD countries, health inequalities in Denmark are low. The commitment that Denmark has made to providing comprehensive, accessible, equitable health care for the whole population has broadly translated into equitable health outcomes for the Danish population. Unmet health consultation needs are low, and although there is some evidence that low income groups use specialist services less frequently, following adjustment for need, and have a higher unmet need for dental care. Out-of-pocket payments are generally low, reducing the burden on low income groups, although high co-payments and few payment exemptions on a small group of services – notably dental care, eye products and pharmaceuticals – are likely to have an inequitable impact on certain population groups. Falls in health risk behaviour such as smoking and alcohol consumption are highly encouraging, but there is still evidence that such behaviour, and rising obesity, is more prevalent amongst lower socioeconomic groups.

At present, available information suggests that health inequities are low in Denmark, but limitations in data collection make it difficult to consistently monitor inequalities. Denmark cannot take for granted that its well-established principle of equal access and a high share of public spending on health that will lead automatically to equity in health utilisation and outcomes. A better data infrastructure would leave Danish authorities better equipped to assure their declared commitment to health equity. Information available in national disease registries could be used for supporting monitoring of clinical information disaggregated by socioeconomic groups. The rich data infrastructure could be used for regular

reporting on health utilisation and quality in hospital care disaggregated by socioeconomic groups. Critically, it will be important to ensure that information on inequalities in health is then effectively used to tackle inequalities at local and regional level. Unique patient identifiers, an incredibly rich source of information for Denmark, could be marshalled so as to better monitor health care equity across population groups. When addressing ways to improve monitoring of equity in Denmark a deliberately wide notion of equity should be considered, moving beyond looking predominantly at socioeconomic gradients, and examining other factors such as age, gender, ethnicity and disabilities. Additionally, given some indications of inequalities in quality of care across a range of population groups, the equity dimension should be made a greater priority in health care quality improvement initiatives, and data monitoring.

Given the ongoing and increasing role of primary care in managing chronic diseases such as diabetes and chronic obstructive pulmonary heart disease (see Chapter 2), and the socioeconomic gradient in risk factors such as obesity and smoking and the contribution to inequities in mortality across socioeconomic groups from these diseases, better data gathered from GPs that captures care quality and outcomes across socioeconomic groups could be used to inform interventions that address existing inequities, and prevent growing disparities in health outcomes in Denmark. Monitoring could cover the care spectrum, from collecting data on risk factors such as smoking and obesity, coverage of preventative screening for example breast and cervical screening, screening for depression or diabetes management. As part of giving a full picture of health inequalities in Denmark strengthening of data gathered from municipalities should also be a priority, and existing data should be fully exploited.

Access to specialists services in Denmark shows pro-rich inequity; this could be due to a number of different factors, but at present it is not exactly clear which ones are most important. Waiting times are the most important factor behind unmet need for medical examinations, but travel and cost affect disproportionately the poor and could explain part of the pro rich utilisation of specialists services. Other factors may also influence this trend, e.g. poor education, lack of information, inequities in referral patterns from primary care. It may be interesting for Denmark to monitor this trend more closely, for example using surveys, to ascertain the extent to which distance, cost and other factors such as lack of information impact on inequities in access to specialists care. Given the current reorganisation of hospital care, and the closure of smaller local hospitals, a closer examination of equity in utilisation of specialist services would seem timely.

If the government wishes to address health inequities, it would be important for equity to be an explicit consideration in *health service*

*planning decisions*, both at local and regional level. For example, the involvement of the Board of Health and Welfare in approvals of plans for highly specialised units in hospitals has been regarded as a way to address variation across localities, but thereafter there has not been close monitoring of variations in medical utilisation across localities. Municipalities ought also to be centrally involved, and interventions to address structural inequalities should be part of their responsibility for health risk prevention and health promotion. The role of the municipalities will be especially important, and has the potential to bring the greatest return, around interventions aimed at children and young people, and elderly populations.

An evaluation of the consequences of policies to widen consumer and patient choice of health care providers in responses to concerns around long waiting times in Denmark, which includes the promotion of free-choice of provider amongst hospitals and municipalities for consumers, is underway but not yet available. Such an evaluation could usefully include considerations of the impact of the expansion of patient choice on equity, and whether there are differences in waiting times or taking advantage of patient choice possibilities by population group. In addition, there is an intersection between waiting times, travel and cost that could impact upon health care equity. Whilst there is equal access for all and patients can seek treatment outside of their home region, patients are generally not reimbursed for additional travelling costs (OECD, 2013), which may mean that waiting times, travel, and cost intersect as barriers to treatment for some individuals. Data on waiting time by income group, or socioeconomic group, is not readily available. Given that waiting times is a major factor behind unmet need, it would seem important to monitor the impact of waiting time guarantees and free choice of hospital on access to elective surgery by different socioeconomic groups.

The factors of cost, distance to travel and waiting time, especially when combined, could be contributing towards observable pro-rich inequities in utilisation of specialist services. The impact of current hospital reform on these factors, especially for lower income groups, should be monitored.

The impact of these reforms on equitable access and service utilisation ought also to be monitored as part of considerations of equitable access to services across regions. At present, access to health care services appears to be broadly equitable across regions, although limited reporting by regions and municipalities on inequalities inhibits deeper understanding and analysis. The increasing centralisation of specialist hospital services could exacerbate small inequalities in the current geographical distribution of physicians across Denmark. Municipalities will need to ensure that elderly patients are not disadvantaged potential problems in access caused by the closure of smaller local hospitals. Health care needs and regional

distribution of physicians could be examined concurrently. Incentives to recruit health professionals from local communities where needs are the highest might have better payoffs on retention in underserved areas in the longer term.

With very few co-payments for services, there are for the most part no financial obstacles to accessing health care in Denmark. Furthermore, out-of-pocket spending has fallen in recent years in Denmark, and the current government has abolished a selection of user charges, for example for fertilisation treatments. However, user charges with limited exemptions may be contributing to observable inequities in unmet need for dental treatment. The impact of user charges for pharmaceuticals, eye products and services such as physiotherapy upon equity could be better examined. There are no exemptions for those with incomes under designated thresholds, beneficiaries of social benefits, or seniors, which may present a risk of growing inequities in access to some services. One starting point would be to review the effectiveness of current exemption policies and monitor health utilisation patterns and out-of-pocket expenditure for other vulnerable categories not currently benefiting from exemptions, and there is possibly scope for more transparent review of criteria (e.g., cost effectiveness) for inclusion or exclusion of specific services from the public benefit package. Further to this, Denmark could use those cost sharing policies that it has intelligently, for example to steer health behaviours towards desired direction (e.g., to encourage compliance with prescribed medical treatment, utilisation of cost-effective drugs or preventative care) or to discourage certain unwanted behaviour (e.g., choice of branded pharmaceutical products when a cheaper bioequivalent is available).

## Note

1. More than 25 sick days within the past year.

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## OECD Reviews of Health Care Quality

# DENMARK

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### Contents

Executive summary

Assessment and recommendations

Chapter 1. Quality of care policies in Denmark

Chapter 2. Primary care and integrated care in Denmark

Chapter 3. Hospital specialisation in Denmark

Chapter 4. Promoting equity in health and health care in Denmark

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