Perspectives on Quality

**Quality improvement and accountability in the Danish health care system**

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**Abstract**

Denmark has unique opportunities for quality measurement and benchmarking since Denmark has well-developed health registries and unique patient identifier that allow all registries to include patient-level data and combine data into sophisticated quality performance monitoring. Over decades, Denmark has developed and implemented national quality and patient safety initiatives in the health care system in terms of national clinical guidelines, performance and outcome measurement integrated in clinical databases for important diseases and clinical conditions, measurement of patient experiences, reporting of adverse events, national handling of patient complaints, national accreditation and public disclosure of all data on the quality of care. Over the years, Denmark has worked up a progressive and transparent just culture in quality management; the different actors at the different levels of the healthcare system are mutually attentive and responsive in a coordinated effort for quality of the healthcare services. At national, regional, local and hospital level, it is mandatory to participate in the quality initiatives and to use data and results for quality management, quality improvement, transparency in health care and accountability. To further develop the Danish governance model, it is important to expand the model to the primary care sector. Furthermore, a national quality health programme 2015–18 recently launched by the government supports a new development in health care focusing upon delivering high-quality health care—high quality is defined by results of value to the patients.

**Key words:** healthcare system, quality management, external quality assessment, measurement of quality, patient safety

**Introduction**

Quality improvement and patient safety have been important topics on the agenda in the Danish health care system for >20 years. Over the years, Denmark has developed an array of national quality and patient safety initiatives. The Danish health care system is mainly publicly owned, and it is run and organized across three administrative levels: the state, the regions and municipalities [1, 2]. The Danish state is responsible for establishment of political values and goals for public healthcare services nationwide and overall regulatory functions in terms of legislation, the distribution of medical specialties at hospital level, quality monitoring, etc. [3]. The five Danish regions are responsible for hospitals and self-employed healthcare professionals in terms of general practitioners (GPs), specialists, dentists, etc. The 98 Danish municipalities are mainly responsible for home nursing, disease prevention and health promotion [1, 2].

Denmark spends 11% of the gross domestic product on health care and is as such the fifth highest among Organisation for Economic Co-operation and Development (OECD) countries. The Danish health care system is mainly financed by taxes. Public expenditures account for 85% of the total health expenditure. Out-of-pocket payments account for the remaining financing mainly related to payment for dentist treatment and medication [4, 5].
Since 1993, Denmark has had a national strategy on quality of care, followed by a revised version in 2002 that describes the framework and responsibilities for quality improvement in the Danish health care system [6]. In 2015, the government launched a national quality programme for health care 2015–18, which puts emphasis on the reduction of documentation. The programme represents a turning point [7].

This paper aims to describe how quality improvement and patient safety initiatives have been organized in the Danish health care system and highlight how accountability has been achieved.

**Values in the Danish health care system**

The Danish health care system rests upon three basic values. Firstly, it is the responsibility of the society to help the residents with their health problems. It is a fundamental principle in the Danish health care system that all citizens should have free and equal access to healthcare services. Access to health services is therefore largely free of charge for all Danish residents; 86% of health spending was funded by public sources in 2012. Secondly, providing health care should be solved within the public healthcare system. The third value is self-determination for the majority of healthcare services and freedom of choice. By legislation, the Danish residents have the right to treatment at GPs and to choose [after referral] treatment at any hospital in the country, and the Danish residents have improved options to choose GPs [3].

**The basis of quality improvement and patient safety initiatives**

Denmark has unique opportunities for quality measurement and benchmarking since Denmark has well-developed health registries and unique patient identifier that allow all registries to include patient-level data using the patients’ unique patient identifier. Each patient contact with the healthcare system is recorded in administrative and medical registers using the patient’s unique, 10-digit civil registration number to ensure monitoring and regulation of the healthcare system (M. Joergensen et al., Unpublished results). In general, digitally stored data open great potential for research, system level and everyday improvement in quality and safety. When shared, communicated and lived out extensively, the processes data are the basis for accountability.

**National-level quality improvement initiatives in the Danish health care system**

In the following, national-level quality initiatives are presented according to fact in **Box 1** below.

**Box 1** Examples of national quality initiatives in the Danish health care system

- National clinical guidelines, disease management programmes and pathway initiatives
- Danish National Survey of Patient Experiences
- National Agency for Patients’ Rights and Complaints and reporting for adverse events
- The Danish Health Quality Programme
- National health system monitoring using clinical databases
- Public reporting on quality of care

**National clinical guidelines, disease management programmes and pathway initiatives**

In the Danish health care system, national clinical guidelines have been developed for different diseases and clinical conditions. The national clinical guidelines have been developed in cooperation between the national health authorities, the Danish Health and Medicines Authority and the Organisation of Danish Medical Societies that organize 117 scientific societies within the field of biomedicine in Denmark. Alongside clinical guidelines, disease management programmes and patient pathways have also been developed. The clinical guidelines, disease management programmes and patient pathways aim at standardizing the delivery of health care. They ensure that health practice at all levels of the Danish health care system follows the principles of evidence-based medicine, and that medical treatment is carried out at the same high standard nationwide and thereby reducing processing times and variations in health care and quality of care [3]. The guidelines are disease or specialty based, and they describe ‘what should be done’. The disease management programmes and the patient pathways describe systematically the steps that a patient should go through when exposed with a specific disease or medical problem. Disease management programmes and pathways are anchored in clinical guidelines but describe in addition to ‘what should be done’ also ‘who should do what, when and where’ in terms of the combined interdisciplinary, intersectional and coordinated efforts for specific diseases and medical conditions [8].

**National surveys on patient experiences of health care**

It is a key quality of care policy reflected in the Danish legislation on health care, to measure and report patient experiences to further develop healthcare services for the benefit of the patients. Since 2000, Danish National Surveys of Patient Experiences on somatic hospitals have been implemented. In addition, national surveys on patients and relatives’ experiences with mental health have been implemented since 2002 [9]. Surveys of patient satisfaction in GPs and in the municipalities are currently voluntary [10, 11].

The Danish National Survey of Patient Experiences was established in cooperation between the Ministry of health and the Danish Regions. The surveys are conducted as annual nationwide surveys among inpatients and outpatients in the Danish hospitals investigating experiences related to: clinical services, patient safety, patient and staff member continuity, co-involvement and communication, information, course of treatment, discharge, inter-sectoral cooperation. Results are presented at unit, hospital, regional and national level, and they are available for the public on the official portal for the public Danish health care services, Sundhed.dk [9]. At the unit level, the results are used for identification of improvement areas, benchmarking and monitoring of development over time.

**National Agency for Patients’ Rights and Complaints and reporting of Adverse Events**

The National Agency for Patients’ Rights and Complaints and reporting of Adverse Events acts as a one door point of access for patients wishing to file a complaint about the professional prevention, diagnostics, care, treatment and rehabilitation in the Danish health care system or report an adverse event.

When a patient submits a complaint, the patient is offered a dialogue with the hospital. After this local dialogue, it is up to the patient to decide whether to keep the complaint and have it put on a trail at the agency. In addition, the agency is also responsible for the administration of the system for reporting adverse events within the healthcare
system. The agency works on ensuring that the knowledge gained from all incidents are used in the healthcare system to improve the quality of care [12].

The National Reporting System for Adverse Events was established in 2004 as part of the Danish patient safety legislation. The purpose of the system is to improve patient safety. Today, the system comprises the reporting of adverse events in hospitals, GP’s, specialists, pharmacies and the community healthcare system. According to the Danish patient safety legislation, it is mandatory for Danish healthcare professionals to report adverse events that they become aware of in connection with treatment and care. It is a principle that healthcare professionals as a result of reporting adverse events will not be subject to disciplinary investigations by their employer, supervisory reactions from the national health authorities or criminal sanctions by courts. The system is in other words sanction free and can be regarded as a no blame system. In addition, patients and relatives have the opportunity to report adverse events that they have experienced in the healthcare system [13–15].

As part of the reporting system, adverse events are reported, collected and analysed on hospital level or at management unit levels in the primary healthcare sector. The idea is that adverse events that occur locally should be analysed and corrected locally. The responsible authorities at regional or municipality level are obliged to receive and analyse reports on adverse events and thereafter forward the information to the agency. On local level, the responsible organizations are obliged to analyse adverse events and develop action plans to implement relevant improvement activities [13].

The Danish Health Quality Programme

The Danish Institute for Quality and Accreditation (IKAS) was founded in 2005 to develop and manage the Danish accreditation model, which was one of the initiatives described in the 2002 national strategy for quality in the Danish health care system [6].

The Danish Health Quality Programme is a national and interdisciplinary accreditation system that emphasizes hospitals, pharmacies and prehospital units. In primary care, some municipalities have adapted the model. The objectives are to ensure continuous development of the quality of care to create better patient pathways and the prevent errors and unintended events in the healthcare system.

The accreditation standards have been developed in collaboration with representatives from the Danish regions, municipalities and other stakeholders on the Danish healthcare scene. The accreditation model was introduced in 2010.

The Danish accreditation model is mandatory for hospitals, pharmacies and prehospital units, which have to undergo accreditation process according to the accreditation standards every third year. However, with the recent national quality programme, the Ministry of Health has announced that hospital accreditation will be phased out as of 2016 [7].

National healthcare system monitoring using clinical databases

Over nearly 40 years, Denmark has developed clinical databases measuring the clinical quality in terms of prevention, diagnostics, treatment, care and rehabilitation. The first national clinical database was established in 1976 focusing on breast cancer [16].

In 1999, a concerted action between the Ministry of Health, the National Board of Health (later changed to Danish Health and Medicines Authority), the County Councils Association (later changed to Danish Regions), the Danish Medical Association, The Danish Nurse Association, the Organization of Danish Medical Societies, the Danish Physiotherapist Association and the Danish Occupational Association was organized. As a result, the Danish National Indicator Project (NIP) was established in 2000 [3, 16, 17]. The specific aims of NIP were to:

- improve prevention, diagnostics, treatment, care and rehabilitation
- provide documentation for clinical governance and priority setting
- create information on the quality of care for patients and consumers of health care

For each disease or clinical condition, evidence-based specific clinical process and outcome indicators and quality standards, reflecting the national clinical guidelines, were developed by relevant health professionals (physicians, nurses, physiotherapists, etc.) appointed by the scientific societies and professional organizations at national level [3, 16, 17].

In 2010, the Danish Clinical Registries (RKKP) were established. RKKP adopted the principles of NIP. Today RKKP provides a framework for the infrastructure around all the clinical registries in the Danish healthcare system. Standardization of >70 national-level clinical registries has secured efficient data collection and rational use of data and provided a good basis for improvement of the quality of care [18]. See Table 1 for the topics and number of the databases.

<table>
<thead>
<tr>
<th>Number</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Clinical cancer registries, including quality of palliative care</td>
</tr>
<tr>
<td>12</td>
<td>Intervention related (e.g. renal dialysis, intensive care, emergency medicine)</td>
</tr>
<tr>
<td>8</td>
<td>Non-neoplastic elective surgery/orthopaedic surgery, gynaecology</td>
</tr>
<tr>
<td>8</td>
<td>Major chronic diseases (e.g. chronic obstructive pulmonary disease, diabetes, asthma)</td>
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<tr>
<td>6</td>
<td>Cardiovascular diseases</td>
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<td>3</td>
<td>Psychiatry</td>
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<td>3</td>
<td>Obstetrics</td>
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<tr>
<td>3</td>
<td>Paediatric diseases</td>
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<tr>
<td>2</td>
<td>Emergency surgery</td>
</tr>
<tr>
<td>1</td>
<td>Primary care (expanding presently to four chronic diseases)</td>
</tr>
</tbody>
</table>

Table 1 Number and topic of national clinical registries in Denmark

Participation is mandatory for all hospitals, relevant clinical departments and clinical units treating patients with diseases and clinical conditions included in the databases.

In primary care, participation in quality improvement using the clinical registries is in early days; 95% of the GPs register voluntarily data on diabetes, COPD, depression and heart failure, whereas the municipalities do not participate yet.

All the databases include patient-level data using patients’ unique patient identifier. Data are transmitted electronically and collected in clinical databases, so that trends and patterns of change, and types of improvements can be documented over time. Results are adjusted for case mix to secure the comparability of data at unit, hospital, region and national levels [3, 16, 17]. Clinicians and responsible managers on hospital level receive their results on a monthly basis and conduct local audits.

When data have been collected and analysed, interpretation and evaluation of the results take place nationally, regionally and locally in each region, at each hospital and in the clinical units. For this purpose, a structured audit process is initiated, the audit includes specific
professional interpretations of the results, evaluation of the results in relation to critical incidents and suggestions for implementation of improvements. [3, 16, 17]. After auditing, the results are released publicly on the Danish e-health portal, described below.

Figure 1 illustrates data registration, feedback, clinical audit and public disclosure in RKKP.

Public reporting on quality of care
In the Danish health care system, there is transparency in relation to the quality care. All data and results achieved in the national quality improvement initiatives described in this paper are available on the Danish e-health portal; Sundhed.dk. This enables patients, healthcare professionals, planners and politicians to access information.

The Danish e-health portal is a public, internet-based portal that collects and distributes healthcare information and information on the quality of care, including waiting times at all hospitals and ratings of hospitals, among the Danish residents and healthcare professionals [19].

In a secure part of the portal, the patients have also access to personal data on treatments from medical records in hospitals and GPs. [19].

The Danish e-health portal is aiming at bringing the entire Danish health care system together on the internet and provide an accessible setting for citizens and healthcare professionals to meet and exchange information. In this way, the portal is a mean to accountability; it enables cooperation between patients and healthcare professionals based on the same data. This should support empowerment of patients and give health professionals better tools for improving the quality of care [19].

Accountability in the Danish health care system is expressed in a dialogue-based governance model. National visions, values, targets and financing are given from the political level, creating the basis for quality assessment, improvement and outlining the expectations for the quality of the services. Supported by the administrative level in the healthcare system, the professionals realize the quality assessments and exercise cyclic improvement activities incl. data collection, auditing and learning activities, implementation of improvement and follow-up activities. It is fundamental for clinical quality management that clinicians and responsible managements receive and review their results, and that aggregated results are openly disclosed to the public.

Thus, the Danish model is characterized by flat bureaucratic structures, whereby top-down and bottom-up knowledge, opinions, decisions and actions originating from the political, administrative/bureaucratic and professional level of the healthcare system are integrated.

Perspectives on quality improvement in health care in Denmark
OECD has recently evaluated quality improvement in the Danish health care system [4]. As part of the conclusion it is stated: ‘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. . . . Denmark has impressive quality monitoring and improvement initiatives. It has extensive databases on 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.’ This can be regarded as a positive evaluation.

Over 20 years, Denmark has been shifting its focus from a governance model that has been based on cost control toward a governance model that is focused on the quality of care and quality management alongside cost control.
Currently, however, quality improvement and quality management are focused on hospital care, which are also emphasized in the OECD review of the Danish health care system [5].

To further develop the Danish governance model focusing on quality of care and quality management, it is important to expand the model to the primary care sector by ensuring a transparent all-round quality improvement culture like the one present in the hospital sector with guidelines, disease management programmes and pathway initiatives, implementation of the Danish Health Quality Programme and participation in the clinical registries.

To meet the requirements in the 2015–18 National Quality Programme [7], cross-sector patient-reported outcome measures should be utilized along with quality improvement in partner shaft with patients using real-time data. The later challenges the current model and it will be essential to ensure valid, reliable data to guide development, decision-making, sound evaluation and research.

References


18. [Accessed 10 April 2015].


20. [Accessed 10 April 2015].