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TECHNICAL
REPORT

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How health systems make available information on service providers

Experience in seven countries

Mirella Cacace, Stefanie Ettelt, Laura Brereton,
Janice Pedersen, Ellen Nolte

Prepared for the Department of Health within the PRP project
"An 'On-call' Facility for International Healthcare Comparisons"

The research described in this report was prepared for the Department of Health within the PRP project "An 'On-call' Facility for International Healthcare Comparisons".

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Preface

This report reviews information systems that report on the quality or performance of providers of healthcare in seven countries to inform the use and further development of quality information systems in the English NHS.

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The project comprises a programme of work on international healthcare comparisons that provides intelligence on new developments in other countries, involving a network of experts in a range of countries in the Organisation for Economic Co-operation and Development (OECD) to inform health (care) policy development in England. It is conducted by RAND Europe, in conjunction with the London School of Hygiene & Tropical Medicine. For more information on the project please see www.international-comparisons.org.uk.

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For more information about RAND Europe or this report, please contact:

> Dr Ellen Nolte
> Director, Health and Healthcare
> RAND Europe
> Westbrook Centre
> Milton Road
> Cambridge CB4 1YG
> United Kingdom
> Email: enolte@rand.org
> Tel: +44 (0)1223 273853

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Executive summary

There is growing interest in the public release of information on the performance of healthcare providers as a means to improve the quality of care and promote transparency and accountability. Countries have made considerable investments in creating systems to make available such information. However, there is lack of systematic comparative assessment of such systems. Thus, there is a need to better understand the drivers behind and leaders of initiatives and their aims and objectives; the nature, frequency and source of information provided; their availability to and usability by the public, and, finally, whether and how these systems might have an impact on the quality of care.

This report aims to contribute to filling these gaps by reviewing information systems reporting on the quality or performance of providers of healthcare ('quality information systems') in seven countries: Denmark, England, Germany, Italy, the Netherlands, Sweden and the United States. Data collection involved a review of the published and grey literature, complemented by information provided by key informants in the selected countries using a detailed questionnaire.

The review highlights that as the policy context for quality reporting in countries varies, so also does the nature and scope of quality information systems within and between countries. Systems often pursue multiple aims and objectives, which typically are:

- to support patient choice

- to influence provider behaviour to enhance the quality of care

- to strengthen transparency of the provider–commissioner relationship and the healthcare system as a whole

- to hold healthcare providers and commissioners to account for the quality of care they provide and the purchasing decisions they make.

However, system objectives are not always well defined and documented, which makes it difficult to assess whether, and how well, systems achieve their intended aims.

Similarly, quality information systems typically address a number of audiences, including patients (or respectively the general public before receiving services and becoming patients), commissioners, purchasers and regulators. Ultimately, however, the main users of information systems are the providers themselves as the publication of information provides an incentive for improving the quality of care. Most systems have the stated aim to make information on provider performance available to patients thus supporting choice of provider. Yet there are examples of systems that, in their present format, seem to be ill-

suited to meet patients' information needs as the nature of information collected and their presentation might require specialist knowledge in order to be usable and useful. This reflects, to a certain extent, the origins of several of the information systems reviewed here, which have developed gradually, often through a combination of some form of 'bottom up' initiatives and 'top down' regulation. In Sweden, for example, the national quality registries were initially developed by clinicians and professional networks, while requirements for quality reporting for hospitals in Germany were defined by the legislator. The *Weisse Liste* in Germany is developed by a private foundation in collaboration with associations of patient and consumer organisations.

As quality information systems vary in their objectives and target audiences, so does the nature and scope of data provided. In most countries, several systems co-exist, frequently, although not always, serving slightly different purposes. The scope ranges from those whose sole purpose it is to inform about one aspect of performance, typically waiting times (e.g. *Ventetider* in Denmark and *Väntetider i Vården* in Sweden), to systems that give users access to detailed information about the quality of care delivered by individual providers. Where detailed information on provider performance is available, it tends to focus on hospitals with only a minority of systems also providing information on the quality of primary and/or preventive care (e.g. NHS Choices in England, *Zichtbare Zorg* in the Netherlands, and *Öppna jämförelser* in Sweden). Furthermore, only a few systems provide patient ratings based on systematic surveys, including patients' experience (e.g. NHS Choices, Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) in the United States (US), and KiesBeter in the Netherlands), patient satisfaction (*Qualitätskliniken* in Germany) or provide an opportunity for direct feedback from patients (e.g. the ongoing pilot project by *AOK-Gesundheitsnavigator* in Germany).

Governments and health authorities play a key role in operating and funding quality information systems. Where healthcare governance has been devolved to regions or countries, quality reporting typically also involves regional governments. Furthermore, professional groups are involved, for example by operating the databases on clinical quality in Denmark or the national quality registries in Sweden. Dr Foster Intelligence in England has originated in the private for profit sector and is operated as a public–private partnership.

Although countries reviewed here have developed a variety of quality information systems for a range of different audiences, the evidence about the impact of these systems is fairly limited. Systematic evaluative work is mainly available for the US, suggesting that public reporting can improve the quality of care in some areas. However, the effects of information systems on quality of care are difficult to isolate as these frequently are part of broader quality initiatives. Also, the requirements for increased reporting necessitate improved documentation, which may explain some of the (initially) observed effects of quality reporting on improvements.

Quality improvement can result from selection and/or as a consequence of provider behaviour change. These mechanisms are however difficult to disentangle. Findings from six of the seven countries reviewed here suggest that patients rarely search out information about healthcare providers. Low uptake of published information suggests that the available data does not sufficiently meet patients' information needs, also highlighting lack

of systematic involvement of patients in the development of quality information systems (with NHS Choices in England being a notable exception). Growing evidence suggests that other user groups, such as managers and providers, indeed use comparative information to improve care where public reporting occurred. It is important to note that information systems can encourage changes in provider behaviour even if the public makes limited use of them. This supports the notion of an association between public reporting and quality improvement, which operates largely through provider behaviour change. More systematic research is needed, however, to understand the underlying mechanisms.

Based on the evidence reviewed here, we identify a number of considerations for the design of quality information systems. Thus, the purpose of publishing information on the quality of service providers needs to be well defined, as does the primary target groups that are supposed to be using the system. Where patients or the public are the main intended users, information systems must ensure access and usability so as to minimise the possibility of unequal access to web-based resources. Stakeholder involvement can improve acceptance of information systems and therefore potentially increase its use. It will therefore be necessary to decide early on which stakeholders to include and at what stage of the process.

Several findings highlighted the necessity to improve and ensure the high quality of data provided. Mechanisms for ensuring validity, reliability and consistency of reported data should go hand in hand with safeguarding the completeness of data. Mandatory approaches can be effective, but also incentive-driven schemes, for example 'pay-for-reporting' (Hospital Compare, US) can be successful in achieving high participation of healthcare providers. As there might be an incentive for some providers to manipulate data, control mechanisms are indicated. Finally, and perhaps most challenging, there is a need for systematic evaluation of information systems to assess the cost–benefit relation of information systems as well as their overall value for money. This includes rigorous measurement of potential impacts on provider behaviour and detailed understanding of the mechanisms at work. Further learning from international experience can be helpful in achieving these aims.

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Author	Country	Affiliation
Anders Anell*	Sweden	Sweden Institute of Economic Research, University of Lund
Saskia Drösler	Germany	University of Applied Sciences Niederrhein, Krefeld
Niek Klazinga*	The Netherlands	Department of Social Medicine, Academic Medical Centre, University of Amsterdam
Allan Krasnik*	Denmark	Denmark Institute of Public Health, University of Copenhagen
Walter Ricciardi*	Italy	Department of Hygiene and Public Health at the Catholic University of the Sacred Heart in Rome, Italy

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CHAPTER 1   **Introduction**

1.1   Background

There is growing interest in the public release of information on the quality of healthcare delivered by identified providers.[1] This development can be seen to be located within broader concerns about accountability of health systems. Reporting on performance aims to help hold the various actors in a given health system to account by informing stakeholders and so enable them to make decisions,[2,3] and to facilitate the selection and choice of providers by service users and purchasers of healthcare. Other objectives of reporting on performance include enabling the identification of areas of poor performance and centres of excellence as well as encouraging provider behaviour change.[4]

Many countries are implementing national quality or performance assessment frameworks to strengthen the accountability of the health system through benchmarking.[5] Many of these frameworks or initiatives have involved the development and implementation of information systems which report on the quality or performance of providers of healthcare in order to support quality improvement strategies.[6-9] In England, in the 2010 White Paper *Equity and excellence: Liberating the NHS*, the Coalition Government has expressed a commitment to bring about "an NHS information revolution" that gives people "access to comprehensive, trustworthy and easy to understand information from a range of sources on conditions, treatments, lifestyle choices and how to look after their own and their family's health".[10]

Several recent reviews have provided overviews of national quality or performance assessment initiatives.[1 5 11-12] However, there is lack of systematic comparative assessment of the nature and scope of such initiatives, in particular as it relates to the implementation of information systems that report on healthcare quality or performance. There is a need to better understand the drivers behind and leaders of initiatives; their overarching aims and objectives; their target audience(s); the type, frequency and presentation of information gathered; the nature and source of data underlying the information provided; level of aggregation (national, regional, local); whether the information is made available to the public and in what format; and evidence on use of the information and of its impact.

This report aims to contribute to filling some of these gaps by reviewing information systems reporting on the quality or performance of providers of healthcare ('quality information systems') in seven countries.

1.2   Public reporting and quality improvement

Public reporting is meant to promote high quality, efficient healthcare delivery and to increase the transparency of quality information given that disparities in access to such information may exist in the absence of public reporting.[13] Although information systems involve third parties since information is released into the public sphere, the providers themselves are the main addressees as the intention is to induce behaviour change.

Provider behaviour change is considered a key means to help improving the overall quality of care.[1] Berwick et al. (2003)[14] identified two principal pathways through which measurement and reporting can induce behaviour change. In one pathway ('improvement through selection') information on quality provides different users with knowledge that will enable them to select providers according to quality criteria. For patients, this information provides a prerequisite to exercise informed choice of provider,[15] while commissioners and regulators may use the knowledge to inform decisions on payment, including rewarding high or penalising low performers. Information can also indirectly act as a means to promote trust among users. In the second pathway ('improvement through change'), quality improvement is achieved through changes in provider behaviour; here, information on the quality of care is expected to help providers to identify areas of underperformance. Reporting can then act as a stimulus for improvement, motivating providers to compete on quality. These pathways are linked through a provider's intention to maintain or increase reputation and, in a competitive context, market share.[16-17] Quality improvement may therefore occur even if patients make limited use of information systems and provider choice.[18]

Providers therefore have a double function; one is as direct users of information, for example to inform their decision at the point of referral, the other is as the main target audience of information systems, as their responsiveness is decisive for potential improvements in the quality of care. It is also worth noting that providers do not only react on the output of information systems, such as indicators on procedural, structural and outcome-related quality, they also provide the major inputs into these comparisons. Particularly in healthcare systems where reporting is not mandatory, this also means there are many opportunities to avoid reporting.

Several authors have highlighted the risk of unintended consequences of the systematic reporting of information on quality of care delivered by healthcare providers. One example includes providers avoiding high-risk cases in an attempt to improve their quality ranking, a phenomenon already documented by Florence Nightingale in the 19th century. Also, public reporting may result in providers focusing on improving those indicators that are reported on, such as waiting times, while diverting attention away from other, non-reported areas.[3] As a consequence, public reporting may inadvertently reduce, rather than improve, quality.[16]

1.3   Methodology

1.3.1   Conceptualising 'quality information systems'

We define 'quality information systems' as systems that provide information on the quality of care delivered by identified providers. The term 'information system' is interpreted broadly as any systematic attempt to report on quality or performance indicators and one that permits comparison across healthcare providers. Information systems as defined here therefore include regular reporting mechanisms (such as quality reports), registries and databases (online and offline). Quality information systems include both those that release data into the public domain as well as those that restrict access to a select set of users only, such as regulators and healthcare providers.

We interpret 'quality' as a dimension of performance, adopting a broad definition put forward by Girard & Minvielle (2002), which sees performance as a multidimensional concept that, along with efficiency, also incorporates dimensions of quality such as safety, effectiveness, quality of services rendered (for example appropriateness and timeliness) and perceived quality of services, as well as equity.[19]

Therefore, quality information systems as conceptualised here may report on a wide range of indicators, stretching from structural measures such as the availability of a given provider or service in a defined geographical area to indicators of care processes such as intervention rates, length of stay or waiting times, to outcome measures such as complication rates, 30-days in-hospital mortality, and others, as well as measures of patient experience (Box 1.1).

Box 1.1 Conceptualising patient experience

The Department of Health has defined patient experience as a multidimensional concept that includes attributes of the caring environment and of the interaction of the patient with professionals and providers, touching on physical and emotional needs during the care process.[20] Similarly, the World Health Organisation advanced the notion of 'responsiveness', distinguishing two dimensions: respect for persons (dignity, individual autonomy, confidentiality) and client orientation (prompt attention to health needs, basic amenities, choice).[21] The notion of 'patient experience', however, is often used interchangeably with 'patient satisfaction', and is sometimes also confused with other quality measures such as patient-reported outcome measures (PROMs). *Patient satisfaction* reflects the patient's views or opinion on the care provided, often by using general evaluation categories (e.g. excellent, very good, good, fair, poor). It is influenced by personal characteristics, preferences, expectations and the patient's disposition. As it is a judgement about whether expectations are met, it is subjective and often non-specific.[22] Measurement of *patient experience*, by contrast, may elicit reports on what actually occurred. It is aiming to avoid value judgements and the effect of existing expectations.[23] *PROMs*, finally, are standardised validated instruments (question sets) to assess patients' perceptions of their health status (impairment), their functional status (disability) and their health-related quality of life (well-being).[24]

The purpose of providing information on healthcare quality and provider performance will differ among actors and stakeholders including commissioners or purchasers of health services, regulators, healthcare providers, patients and the general public.[3] Thus, citizens, in their role as service users, may need detailed information on the performance of local providers to inform their choice of care. Commissioners of services or purchaser

organisations (such as insurance funds, national or local governments, health authorities) require the information to ensure that contracted services meet the needs and expectations of the populations in their responsibility whereas governments or regulators will emphasise protecting public safety and welfare and ensuring broader consumer protection.

We here distinguish three groups of (potential) users of quality information systems:

- patients or the general public, who need information to choose a provider (general practitioner or doctor; hospital)

- commissioners or purchasers, who need information to select and performance manage a provider

- regulators, who need information to monitor providers.

We focus on systems reporting on providers in inpatient and outpatient care including primary and secondary care providers. Regarding information aimed at patients we will only consider those systems that are directed at the patient at the point of service use. Consequentially, we exclude systems aimed at informing patients on payers or commissioners of services such as insurance funds (US: health plans). In our country sample (see below), the Netherlands and the US allow health insurers to contract selectively with providers. In these countries there are information systems releasing performance-related data on the contracted network of providers at the insurers' level. The Healthcare Effectiveness Data and Information Set (HEDIS) operated by the National Committee on Quality Assurance (NCQA) is one well known example, along with the Consumer Assessment of Health Plans (CAHPS),[18] [25] and similar efforts in the Netherlands.[26] The quality of the contracted network of providers is one important dimension of the performance of health plans, but it is not possible to disaggregate this information to identifiable providers, such as single general practitioners or hospitals, which however is our intention. We therefore refrain from reviewing information systems at the insurer level.

Our focus is further on quality information systems that are funded through public sources or are 'owned' by public agencies or corporate actors. Only where feasible and appropriate we also consider information systems made available through patient or consumer associations and commercial organisations insofar as these report on providers in the statutory system. We recognise that several information systems reviewed here also provide general information on health such as on recognising symptoms, when to seek professional advice, lifestyle advice and other health-related information. This is however not the focus of the present report; a review of the use of this type of information is available elsewhere.[27]

1.3.2   Selection of countries

The selection of countries to be reviewed for this report was informed by our previous work.[5] [12] We consider seven countries: Denmark, Germany, Italy, the Netherlands, Sweden and the US, with England included for comparison. These countries were chosen because they have introduced quality information systems in the early to mid-2000s and so are likely to have documented experience on the use and potential impact of relevant systems.

Countries reviewed here also provide a fairly broad range of approaches to healthcare organisation and financing. Thus Denmark, England, Italy and Sweden operate mostly tax

funded, largely public systems. While the English National Health Service (NHS) is mainly financed through central taxes, local taxation constitutes an important contributor in Denmark, Italy and Sweden. The healthcare systems in Germany and the Netherlands are mostly funded through statutory (social) insurance with multiple health insurance funds. In contrast the US is a mixed system, with private sources dominating.

Countries also represent different approaches to govern healthcare, with England being perceived as traditionally more centralist while administrative and political responsibility in Denmark, Italy and Sweden is partly devolved to regional authorities. In the Netherlands, responsibility for the health system is shared by central government and corporatist actors, and in Germany regional and local authorities also play a role. In the US, healthcare regulation is shared between the federal government and the states.

1.3.3 Data collection

Data collection involved a review of the published and grey literature as identified from bibliographic databases (PubMed, Web of Knowledge); the World Wide Web using common search engines (Google Scholar); and governmental and non-governmental agencies and organisations on quality information systems and initiatives in the countries under review.

The report was further informed by country informants participating in the network of the 'On-call' facility for international healthcare comparisons ('IHC network') and additional experts in the field of healthcare quality and/or benchmarking to provide information about specific approaches. Experts were asked to complete a detailed questionnaire (see Appendix). The questionnaire aimed to collect data on the range and characteristics of quality information systems in the respective country, focusing on ownership, aims and objectives, target audiences, data and indicators compiled as well as information on experiences of information systems including evidence on evaluations.

1.4 This report

This report proceeds as follows: Chapter 2 reports on the key findings of quality information systems in seven countries, using a comparative approach. Chapter 3 to Chapter 9 are individual reports of each of the seven countries reviewed here. The country reports follow a similar structure: setting the health system context and describing the institutional context in which information systems are embedded, followed by a detailed account of quality information systems distinguishing two target audiences: patients and regulators/commissioners.

CHAPTER 2   **Overview of findings**

This chapter presents an overview of the key findings on quality information systems in Denmark, England, Germany, Italy, the Netherlands, Sweden and the US. We distinguish information systems available to patients and those primarily targeted at commissioners/purchasers and regulators. It needs to be taken into account, however, that all systems reviewed here finally target healthcare providers by motivating them to improve quality. The provider as a direct user of information, which for example can be the case when referring patients, is included in the second group (commissioners/purchasers). We begin by setting out the institutional and policy context in which quality information systems are embedded and identify their aims and objectives. We then assess the range and characteristics of data and indicators that are used by each information system in different countries, along with evidence from evaluations on the impact of systems where they are available. We finally subsume considerations for the design of quality information systems.

2.1   Institutional and policy context of quality information systems

The development of quality information systems has to be understood in relation to the health system context in which they are embedded. By institutional context we mean the broader arrangements for financing, organising and regulating healthcare. The policy context, in particular efforts to improve quality of care and to strengthen choice and competition (often framed as market-based reforms), also has a bearing on quality reporting.

Countries reviewed here vary markedly in their healthcare funding arrangements, public–private mix of providers and the overall arrangements for health system governance, including responsibility for (and oversight of) the quality of healthcare provision. In most countries (e.g. Denmark, England, Italy, Sweden), healthcare is largely, although not exclusively, funded through public mechanisms, such as national or regional taxation and/or social health insurance (Germany). In the Netherlands, healthcare is publicly funded. Insurance is provided by regulated private health insurers. Healthcare funding in the US relies on a complicated mix of private health insurance and public schemes, such as Medicaid and Medicare, as well as direct payments.

The mix of public and private (for-profit and not-for-profit) providers is equally diverse, with healthcare in England, Denmark and Sweden largely delivered by public providers (although there are exceptions as well as variation, for example, in the provision of ambulatory/primary care). Germany, the Netherlands and the US, in contrast, have

traditionally been characterised by a larger proportion of private provision, although there are marked differences over individual arrangements (e.g. very few hospitals in the Netherlands are currently for profit, while the proportion of for-profit hospitals has increased substantially in Germany in recent years).

In all countries, the central government and/or parliament have key roles in overseeing the healthcare system. However, the extent to which quality of care is within the remit of the government varies. In the US, the Department of Health and Human Services has been a key driver of efforts to develop a national framework for quality measurement and reporting, although the Department is not directly responsible for overseeing (or managing) provider performance. In Germany, federal legislation requires hospitals to engage in external quality assurance and to produce biannual quality reports. Hospitals that are found to underperform on selected indicators are asked to explain irregular results in a 'structured dialogue'. However, this approach does not involve direct performance management or penalties. In Denmark, parliament has legislated a waiting time guarantee and patient rights bill. The central government is involved in several national quality improvement and reporting initiatives, but is not directly responsible for enforcing standards of provider performance (with the exception of cases such as professional misconduct). In England, in contrast, central government and arm's length bodies, such as Monitor (the regulator of NHS foundation trusts) and the Care Quality Commission (the quality regulator), have assumed a number of key regulatory and quality assurance functions, including monitoring provider performance, and issuing national guidelines and standards for quality.

Countries also differ in relation to the policy context for quality reporting, for example, as it relates to choice and competition and efforts to promote quality of care. In the US, competition and choice of provider form core elements of the healthcare system. In Germany and the Netherlands, patients are traditionally free to choose their primary care provider, and in Germany patients can choose their secondary care provider in ambulatory care; some choice of hospital is possible upon referral. More recently, in NHS-type systems in Denmark and Sweden, the development of quality information systems has been part of a wider move towards market-based reforms, introducing (or expanding) patient choice of provider and competition among providers. Similar to England, increasing the options available to patients to choose a provider is also seen as a means to address the long-standing waiting time problem. In addition, in England, an increasing focus on performance measurement has been part of wider public sector management reform of the 1980s, with performance monitoring and reporting introduced to measure the processes and outcomes of public services and to improve public accountability by the government for its stewardship of public resources, including those devoted to the NHS.[28]

In Italy, in contrast, reporting on quality information aimed at patients was primarily initiated by the citizens' rights movement Tribunal for Patients Rights in the 1980s to protect patients' rights. More recently, central and regional governments (such as in Tuscany) have begun to develop initiatives aimed at measuring and improving provider performance, with the added objective of addressing variation of care quality among providers, local health units (in Tuscany) and regions.

In all countries reviewed here, governments have made conscious efforts to promote quality of care through a range of measures, including by devising (or supporting the development of) systems of quality reporting. However, the extent to which these efforts have translated into comprehensive reporting systems available to patients varies. Likewise, the level of involvement of governments in these systems varies, reflecting variation in institutional arrangements and policy direction in each country as outlined above.

It is perhaps fair to say that most information systems reviewed here are still evolving the indicators and data presented (the 'technical' dimension of quality reporting) and the arrangements underpinning these systems, as they relate for example to financing and ownership of quality information systems. In many countries, information systems have developed gradually, often through a combination of some form of 'bottom up' initiatives, such as national quality registries in Sweden, which were initially developed by clinicians and professional networks, and 'top down' regulation, involving for example legislating requirements for quality reporting (e.g. in Germany). In some settings, initiatives set up by organisations outside the formal healthcare system, such as Dr Foster in England and the Bertelsmann Foundation in Germany, have also played a role. Arguably, there is some convergence of direction across countries, with initiatives in most countries having become more formalised and comprehensive during recent years.

2.2   Quality information systems available to patients

All countries reviewed here have established some form of quality reporting that is available to patients. Table 2.1 provides an overview of selected information systems available to patients. We here focus on systems that inform on providers in primary/ambulatory and secondary/hospital care. Some systems also provide data on, for example, nursing homes and home care arrangements and we have included this information. However, it is important to note that this report has not collected this data systematically.

Table 2.1: Selected quality information systems available to patients in seven countries

Country	Primary/ambulatory care	Secondary/hospital care	Other
Denmark	*Choosing a general practitioner*	*Sygehusvalg.dk* ('Hospitalchoice.dk') *Ventetider* ('Waiting times') *Sundhedskvalitet* ('Compare hospitals and clinics') *Det Nationale Indikatorprojekt* (National Indicator Project)	
England	*NHS Choices – GPs**	*NHS Choices – Hospitals*	
Germany	*AOK Gesundheitsnavigator* (pilot projects in three regions)	*Weisse Liste* ('White list') Various information systems operated by a range of social health insurance funds, largely based on the Weisse Liste, such as *AOK Gesundheitsnavigator* and initiatives of private hospitals such as *Qualitätskliniken.de* *Various individual hospital quality reports* (providing the data for the Weisse Liste and other information systems) *Deutsches Krankenhaus Verzeichnis* ('German hospital directory')	*AOK Gesundheitsnavigator* (pharmaceuticals; pharmacies; nursing home care)
Italy	*Tribunale per i Diritti del Malato* (Tribunal for Patient Rights)*	*Tribunale per i Diritti del Malato* (Tribunal for Patient Rights)**	
Netherlands	*Zichtbare Zorg* ('Transparent care')	*Zichtbare Zorg* ('Transparent care') *KiesBeter* ('Choose better')	*Zichtbare Zorg* (e.g. mental health care; nursing and home care; maternity services) *KiesBeter* (nursing and home care; disability services)
Sweden	Various county council-operated systems	*Väntetider i Vården* ('Waiting times')	
United States	*Healthfinder*	*Hospital Compare* *Hospital Consumer Assessment of Healthcare Providers and Systems**** *VHA Quality of Care* *Quality Check*	*Nursing Home Compare*

NOTE: * GPs=General practitioner; ** The Tribunal for Patient Rights (Italy) reports only on cases that have been brought to the attention of the Tribunal; *** HCAHPS measures inpatients' experience and perception of care; these are presented as part of Hospital Compare.

Quality information systems available to patients vary substantially in their ownership, aims and objectives, the types of audiences they serve, their patients (e.g. general practitioners, carers, individuals as 'insurees' or 'citizens'), their selection of data, the indicators and information they provide, and the ways this information is displayed and made available to patients.

In most countries reviewed here, governments and health authorities play a key role in funding and operating quality information systems. In Denmark, for example, the municipalities and regions, the National Board of Health and the Ministry of the Interior and Health are all involved in making information on provider performance available to patients (citizens). In the Netherlands, the portal *KiesBeter* ('Choose better') is operated by the National Institute of Public Health and the Environment. A second system, *Zichtbare Zorg* ('Transparent care'), is operated by the Health Care Inspectorate and expected to be transferred to the yet-to-be-established national quality institute. In the US, the federal government has had a key role in creating quality information systems for patients; it operates the portal Hospital Compare. In Italy, in contrast, the main driver of patient information about the quality of healthcare provision originated as part of the citizens' rights movement (creating a reporting mechanism through a 'Tribunal for Patient Rights'). Germany provides an example where several quality information systems that are run by statutory health insurance funds draw on a project, the *Weisse Liste* ('White list'), jointly created by a private not-for-profit foundation, the Bertelsmann Foundation, and associations of patients and consumer organisations. However, all of these systems use data provided through quality reports, which hospitals are legally required to produce every two years.

The (stated) main motivation for establishing quality information systems for patients is to support them in exercising their choice of provider in most systems reviewed here. Thus, it may reasonably be expected that countries where choice and competition of providers form a key element of the healthcare system have the strongest interest in developing quality information systems for patients. Indeed, of those reviewed here the US has the longest tradition of providing this information and developing quality information systems aimed at supporting user choice. In the Netherlands, performance information for patients – and commissioners (health insurers) and regulators (government) – is expected to play a key role in further developing recently introduced market-based reforms. Similar efforts are made in the English NHS. Yet, in countries such as Germany where patient choice of provider forms a core component of the healthcare system, initiation of quality information systems has resulted, mainly, from major quality assurance initiatives that were largely unrelated to choice and competition, although this link may become increasingly relevant. In some countries (e.g. Denmark, England and Sweden), concerns about waiting times and the general availability of providers has been an important (additional) driver.

Quality information systems vary considerably in the nature and scope of the information they provide. It may be helpful to consider information systems to lie on a spectrum which, at one end, are characterised by those whose sole purpose is to inform about the availability of providers and data displayed is limited to a few select indicators (e.g. the Danish 'Choosing a general practitioner' information system, data published by the local health units in Italy or systems operated by selected social health insurance funds in Germany reporting on the availability of office-based doctors in ambulatory care). Likewise, systems that only inform about waiting times for interventions in hospital would fall into this category (e.g. *Ventetider* in Denmark and *Väntetider i Vården* in Sweden).

At the other end of the spectrum are systems that allow patients to access more detailed information about the performance and quality of care provided by individual providers. These may allow users direct comparisons of hospitals by using a range of indicators across

a spectrum of relevant areas, such as treatment outcomes, patient safety and patient experience. These systems often, although not always, include some form of comparative composite index or performance rating (using a 'star' rating or traffic light system) to simplify the often complex information and so facilitate direct comparison. Examples are *Sundhedskvalitet* in Denmark, NHS Choices – Hospitals in England, the *Weisse Liste* in Germany (currently not systematically including patient experience) and Hospital Compare in the US (see section 2.4).

It is important to emphasise that systems that provide detailed quality and performance information are almost exclusively focused on the hospital/secondary care sector. Notable exceptions include NHS Choices – GPs, some initiatives of county councils in Sweden (e.g. in Stockholm) and selected efforts in Germany (e.g. pilot projects of the *AOK Gesundheitsnavigator*).

It is further worth noting that quality information systems available to patients largely present information in the form of website and internet tools, such as online databases. There are a few examples of other forms of information distribution, such as leaflets and reports, although these seem to be the exception, as well as information provided by telephone services/hotlines.

2.3 Quality information aimed at commissioners, regulators and healthcare providers

In most countries reviewed information systems available to patients have emerged from quality assurance initiatives launched by government and/or regulators or their respective agencies. Quality information systems for commissioners, regulators and healthcare providers typically serve a number of audiences, often with diverse interests and forms of usage. Frequently, systems serve multiple (short-term and long-term) aims, for example, to enhance the quality of care of individual providers and/or of entire systems, to strengthen the transparency of the provider–commissioner relationship and/or the system as a whole, and, in some instances, to hold healthcare providers and/or their commissioners to account for the quality of care they provide and/or the purchasing decisions they make, respectively.

Given the diverse origins and stakeholders involved in developing and operating these information systems, those identified here are somewhat difficult to classify. Table 2.2 provides an overview of selected quality information systems aimed at commissioners, regulators and healthcare providers.

Table 2.2: Selected quality information systems aimed at commissioners, regulators and healthcare providers in seven countries

Country	Operated by governments (local, regional or central) and related organisations	Other operators (e.g. professional associations, charitable foundations, corporatist actors)
Denmark	*Det Nationale Indikatorprojekt* (National Indicator Project) *Tilsynslisten* (professional misconduct) *Ventetider* (hospital waiting times) Several public information registries	*Kliniske Kvalitetsdatabaser* (clinical quality databases)
England	Information provided by - the *Care Quality Commission* (e.g. annual assessments) - *Monitor* (performance of foundation trusts) - *NHS Information Centre for Health and Social Care* (e.g. audits and performance information, Quality and Outcomes Framework, NHS Comparators)	*Dr Foster Intelligence* (e.g. information support for commissioners)
Germany	*Qualitätsberichte der Krankenhäuser* (Hospital quality reports; legally defined reporting requirement for hospitals)	
Italy	*Il Sistema di valutazione della performance dei sistemi sanitari regionali* (Evaluation of the performance of regional health systems) *Il Sistema di valutazione della performance della sanità toscana* (Measuring performance of local health units in Tuscany) *Programma regionale di valutazione degli esiti degli interventi sanitari* (Regional programme of measuring outcomes of healthcare interventions in Lazio)	*Osservatorio Nazionale sulla Salute nelle Regioni Italiane* (National Observatory on Health in the Regions of Italy)
Netherlands	None documented	None documented
Sweden	*Nationella Kvalitetsregister* (National Quality Registries) Information provided by the Swedish Association of Local Authorities (e.g. *Väntetider i Vården* ('waiting times'), *Öppna jämförelser* ('open comparisons'))	None documented
United States	Veterans Administration National Surgical Quality Program *New York State Cardiac Surgery Reporting System*	None documented

With a few exceptions (and as a result of the selection criteria guiding this report as outlined in Section 1.3), quality information systems reviewed here are owned and operated by public organisations, notably governments, government agencies and public health sector organisations (such as quality regulators and health service commissioners in England). However, some systems are run by professional associations (databases on clinical quality in Denmark), have originated in the private for profit sector and are operated as a public–private partnership (Dr Foster Intelligence in England) or are co-ordinated by an academic research body (National Observatory on Health in Italy).

The Swedish national quality registries have developed an initiative by clinicians. They are aimed at improving data on quality of care to inform research and clinical development. Initially operated by clinicians and their associations, the operation and financing of the currently 70 quality registers has been moved to local authorities and regions, indicating that they are increasingly used for a wider range of purposes, for example, internal benchmarking of providers; however, naming of providers in published reports remains rare. The vision for these registers is, although not uncontested, to provide a comprehensive knowledge system for multiple users, including clinicians, researchers, provider organisations, regulators and commissioners.

In Italy, a number of initiatives have been launched both at national and regional level. The Ministry of Health has started a larger initiative, the Evaluation of the Performance of Regional Health Systems, which compares provider performance across eight dimensions (e.g. efficiency, clinical quality and medical appropriateness of hospital care) and aims to support regional authorities in improving the quality, efficiency and effectiveness of care.

In Denmark, the National Indicator Project, run jointly by governmental and non-governmental organisations, provides information about quality for currently nine conditions (e.g. acute stroke, schizophrenia). The project is aimed at improving quality by informing clinicians and hospital managers.

Unsurprisingly, given the history of public quality reporting, several of the most established systems have been developed in the US. The National Surgical Quality Improvement Program (NSQIP), operated by the Veterans Administration, aims to develop 'best practice' examples; however, the system does not allow (or indeed aim at) public identification of individual providers. The New York State Cardiac Surgery Reporting System is among the longest-running and most researched systems of its kind. It provides an example of a system that, aimed at informing both patients and providers, initially sought to inform on hospital performance in cardiac surgery only (using mortality after cardiac surgery). However, following public pressure, the system subsequently also published performance data on identified individual cardiac surgeons – an initiative subsequently taken up by the UK Society of Cardiothoracic Surgeons, which, jointly with the then Healthcare Commission, has made similar data publicly available for the UK.[a]

This review did not identify quality information systems solely aimed at commissioners or regulators for the Netherlands. However, two systems are aimed at patients (*KiesBeter* and *Zichtbare Zorg*) and may be used by other audiences as well. In addition, the government commissions a regular detailed report on healthcare system performance, although this does not provide information at individual provider level.

In some instances, it is not clear which target group information systems are aimed at. This may be because systems tend to evolve and change over time. However, it also appears that the boundary between 'publicly available', 'available to the public', patients' systems and systems 'aimed at commissioners, regulators and providers' is unclear conceptually and practically. Many systems classified as primarily aimed at commissioners, regulators and are publicly providers available and thus available to patients. However, the distinction is

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[a] At the time of writing, this system had been discontinued for the time being; we have not included it in the country report on England.

made as this information is often not presented in a way that is meaningful or accessible to patients. On the other hand, systems aimed at patients also vary in their user and/or costumer friendliness and may be more or less successful in achieving their aim to inform patients and indeed support patient choice.

These problems may be illustrated by examples from Germany, where legislation requires hospitals to produce a detailed quality report every two years. These reports are used by regulators to provide hospitals with feedback on 'room for improvement'. Reports are in the public domain (e.g. through individual hospitals' websites), but do not allow for direct comparison. The development of direct comparative tools based on quality reports has only more recently been realised through private (non-profit) sector initiatives, social health insurance funds and provider associations. One information system provided in Germany states that it is aimed at informing patients, but is too complicated to be used by lay persons. It requires knowledge of coding of interventions and/or conditions according to classification systems such as the International Classification of Diseases (ICD) as a means to identify the procedure of interest; such a system is therefore more likely to be accessible to and usable by healthcare professionals rather than patients (e.g. *Deutsches Krankenhaus Verzeichnis*, 'German hospital directory').

Finally, as observed in relation to quality information systems available to patients, those aimed at commissioners, regulators and healthcare providers also tend to focus on the hospital/secondary care sector. Notable exceptions include the Quality and Outcomes Framework (QoF), the pay for performance scheme aimed at improving the quality of care provided by general practitioners in the UK, data of which are being made available through the NHS Information Centre for Health and Social Care; *Il Sistema di valutazione della performance dei sistemi sanitari regionali* ('Evaluation of the Performance of Regional Health Systems') in Italy, which also includes indicators aimed at assessing the quality of public health and preventive services, such as vaccination and screening; *Zichtbare Zorg* ('Transparent care') in the Netherlands, which is in the process of developing a reporting process for primary and chronic care; and *Öppna jämförelser* ('Open comparisons'), reported by the Swedish Association of Local Authorities, which compares Swedish county councils on measures of quality such as prevention, alongside indicators of hospital performance.

2.4   Data and indicators used by quality information systems

The type and number of data and indicators used in quality information systems available to patients and those aimed at commissioners, regulators and providers vary widely.

In line with the literature on assessing the quality of care we here distinguish indicators of structure, process and outcome. Structural measures reflect actual inputs or resources such as the availability of a given provider or service; process measures refer to the use of resources or activity such as intervention rates; and outcome measures are defined as the effects of healthcare on the health status of patients and populations, such as morbidity or mortality.

As noted in Section 2.2, quality information systems reviewed here may be seen to lie on a spectrum between those providing basic information on availability of providers at one end

to those providing more detailed information about the performance and quality of care provided by individual providers at the other. However, some systems incorporate all of this information into broader systems (e.g. *KiesBeter* in the Netherlands).

Focusing on systems that inform on actual provider performance, the review finds wide variation in the nature and scope of data covered as well as in the extent to which relevant data are released into the public domain and made available to patients and citizens. These quality information systems tend to use a combination of structure, process and outcome measures, with process measures dominating. The range of process and outcomes measures reflects the focus of the system in question and the availability of data in a given area, with an emphasis on hospital care as noted earlier. Examples include *Sundhedskvalitet* ('Benchmarking hospitals') and the 'National Indicator Project' in Denmark; the English 'NHS Choices – Hospitals' system; the *Weisse Liste* ('White list') in Germany; *Il Sistema di valutazione della performance dei sistemi sanitari regionali* ('The Evaluation of the Performance of Regional Health Systems') in Italy; *Zichtbare Zorg* ('Transparent care') and *KiesBeter* ('Choose better') in the Netherlands; and 'Hospital Compare' in the US. The New York State Cardiac Surgery Reporting System, in contrast, uses one outcome indicator only: inpatient mortality following cardiac surgery.

In several instances, systems also report on patient experience of care as a separate indicator. For example, information from the Survey of Patients' Hospital Experiences entering the HCAHPS in the US; the national inpatient surveys and the GP patient survey in England with findings made available through NHS Choices; and the newly developed 'Quality Consumer Index' in the Netherlands, which is reported in *KiesBeter*. The Tribunal for Patient Rights in Italy also reports on patient experience with malpractice although on selected cases only, i.e. those that have been brought to the attention of the Tribunal.

Table 2.3 gives examples of indicators used to describe the quality of care provided by identified hospitals in the seven countries under review, distinguishing structure, process and outcomes measures along with indicators of patient experience/satisfaction (see Box 1.1 for the conceptual difference between these) and composite indices where relevant. It is important to note that this overview only includes systems available to patients. It does not present an exhaustive inventory of all indicators used by the systems under review; further detail is provided in individual country reports (Chapters 3–9).

Table 2.3: Examples of indicators of quality of care provided by hospitals as presented in public quality information systems aimed at patients in seven countries

Country and system	Structure	Process	Outcome	Patient experience/satisfaction	Composite indices, rating
Denmark					
Ventetider	Waiting times per hospital / per intervention	None documented	None documented	None documented	None documented
Sundhedskvalitet	Physical environment, e.g. average number of beds per room, average number of beds per bathroom	Patient safety, e.g. reporting of medication error; timeliness e.g. proportion of patients with life-threatening illness treated within designated time frame	Patient safety, e.g. surgical infection rates	Patient satisfaction, e.g. in- or outpatients satisfied or very satisfied with their treatment; patient experience, e.g. reporting being involved in treatment decisions	Single composite index (star): five stars indicating 'excellent' performance (algorithm used to calculate rating not published)
National Indicator Project (accessible through www.sundhed.dk)	None / not clear	Acute stroke: e.g. % patients admitted to a stroke unit, % patients treated with anticoagulants, % patients receiving CT/MRI* scan	e.g. for acute stroke: 30 days' mortality	None / not clear	None / not clear
England					
NHS Choices – Hospital	e.g. quality of hospital environment; food; disabled access; number and type of departments, facilities and services available (incl. counselling and support)	Patient safety, e.g. reporting of patient safety incidents	Hospital standardised mortality ratio (compared with national average); patient safety e.g. MRSA and C. difficile infection rates; number of weeks MRSA free	Patient survey scores, e.g. cleanliness of wards, overall care; NHS Choices user ratings; provides spaces for patients to comment on the website ('what I like', 'what could be improved', 'anything else to add')	Overall quality score rating per NHS Trust given as 'excellent', 'good', 'fair' or 'weak'
NHS Choices – GPs	Characteristics of general practices, e.g. number of male and female general practitioners; additional languages; opening hours	e.g. quality of clinical care provided; organisation of practice; care provided for asthma, coronary heart disease etc. (using data collected through the QOF**)	None documented	e.g. overall care at general practice; involvement in decisions about treatment; helpfulness of receptionist; appointment ahead	Summary scores on a set of indicators collected through the QOF** and measured against average level of achievement within PCT and nationally

Table 2.3: Examples of indicators of quality of care provided by hospitals as presented in public quality information systems aimed at patients in seven countries

Country and system	Structure	Process	Outcome	Patient experience/satisfaction	Composite indices, rating
Germany					
'Weisse Liste' / AOK Gesundheitsnavigator	e.g. number and type of hospital departments, treatment units, diagnostic facilities and equipment; number of beds; amenities	e.g. frequency and volume of diagnoses and procedures for a number of surgical and medical invasive procedures	e.g. survival rates after heart surgery, complication rates; in-hospital mortality following coronary artery bypass grafting	None	Outcome indicators presented through a traffic light system, with green indicating 'within normal limits' and red indicating 'outside expected limits'
Deutsches Krankenhaus Verzeichnis	As above	As above	As above	None	None
Italy					
Il Sistema di valutazione della performance dei sistemi sanitari regionali	None documented	Appropriateness, e.g. % of medical DRGs*** in surgical wards; % of laparoscopic cystectomies in day surgery and hospitalisations of 0 to 1 days; clinical quality of hospital care, e.g. % caesarean sections of all deliveries	None documented	None documented	None documented
The Netherlands					
Zichtbare Zorg	e.g. capacity, existence of event-specific protocol	e.g. number of procedures carried out, referral to treatment times	e.g. disease/treatment specific mortality	Patient experience (currently 10 conditions)	None
KiesBeter	e.g. availability of services and specialties, waiting times	e.g. % cancelled operations, incidence of bedsores, % admitted patients screened for malnutrition, % patients given a standardised pain assessment after surgery, infection rates	e.g. % patients with cancerous tissue remaining after breast cancer surgery; death rate following myocardial infarction; infection rates after admission for cardiac surgery	Patient experience (Consumer Quality Index survey)	Hospital overall score and scores and star ratings for indicators per condition

Table 2.3: Examples of indicators of quality of care provided by hospitals as presented in public quality information systems aimed at patients in seven countries

Country and system	Structure	Process	Outcome	Patient experience/satisfaction	Composite indices, rating
Sweden					
Väntetider i Vården	Waiting times (incl. telephone consultations)	None documented	None documented	None documented	None documented
United States					
Hospital Compare including Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)	Availability of type of healthcare service; distance to hospital	e.g. % surgery patients who were given an antibiotic within one hour before surgery to help prevent infection; % heart failure patients given discharge instructions	e.g. 30-day mortality and 30 day readmission rate following treatment of heart attack, heart failure and pneumonia	Patient experience, e.g. % patients reporting that their nurse 'always' communicated well; % patients reporting that staff 'always' explained about medicines before giving it to them; % patients reporting that their room and bathroom were 'always' clean	None documented
Veteran Administration Quality Targets	None documented	e.g. % patients aged 65 years and over who were given a flu shot; oxygen assessment within 24 hours of hospital arrival of patients with pneumonia	e.g. % diabetes patients receiving treatment to control haemoglobin A1C, low density lipoprotein cholesterol and blood pressure; % patients who were given beta-blocker treatment at hospital discharge following a heart attack	None documented	None documented

NOTE: * CT/MRI: Computer Tomography /Magnetic Resonance Imaging; ** QOF: Quality and Outcomes Framework; *** DRGs: Diagnosis-related groups

2.5   Evidence of the use of quality information systems

Assessments of the use of quality information systems include studies of the accessibility and usability of information made available to the public, most frequently through the World Wide Web. A second set of studies focuses on whether patients indeed make use of information systems, or where else they tend to turn to when seeking information on the quality of care delivered by identified providers. Our review identified country-specific information on these two types of studies, which we summarise below.

From the outset it may be worthwhile noting that much of the information reported by quality information systems is accessible through the World Wide Web only. A concern arising from the heavy reliance on online sources may be inequitable access to such sources, which is likely to disadvantage those without access to these and so potentially increase inequity in service utilisation. Data for 2008 suggests that the use of the internet in countries under review ranges from just over 40% in Italy to over 80% in Denmark, the Netherlands and Sweden (Table 2.4).[29]

Table 2.4: Proportion of the population using the internet in seven countries (2008)

Country	Proportion using the internet
Denmark	84%
England (UK)	76%
Germany	75%
Italy	42%
Netherlands	87%
Sweden	88%
United States	74%

SOURCE: UN Millennium Development Goals Indicators[29]

Available evidence from the US and Germany further suggests that older people and those with lower levels of education are less likely to seek out information online. This is of concern given that these groups generally tend to be in poorer health and therefore in greater need of healthcare[30] and thus also of provider information. Overall, knowledge about the socio-demographic characteristics of those who use the internet to access information on providers is fairly limited.

However, while access to online sources is a necessary condition for those who wish to access information on providers, it is by no means sufficient, with usability and user friendliness important determinants of the actual use of quality information systems. Evidence from the US and Germany suggests that systems vary widely in their accessibility, data transparency, appropriateness and timeliness. Concern about the variability of results from provider quality assessments produced by different organisations is also documented from England, the Netherlands and Sweden. Variability of results can be confusing for users searching more than one website, and provides a potential source of bias and

unfairness towards providers when used by regulators, commissioners or, indeed, patients. This raises the broader question about the crucial requirement of information systems to draw on valid and reliable data, highlighting the need for further development and continuous quality control of information systems themselves. Where reporting systems are largely operated by regional or local agencies, there is also the risk of regional disparities across regions in the scope of information provided, as has been observed in Sweden.

As illustrated in Table 2.3, the range of information and indicators reported by quality systems reviewed here varies widely. This variation reflects, to a considerable degree, the process of selecting indicators for reporting, including the range of stakeholders involved and the methods used. There is some concern in countries such as Germany about the lack of involvement of patients in the development and selection of quality indicators, which may in turn explain low uptake of relevant information. Evidence from Denmark suggests that the low uptake of published information likely reflects that the available data are not sufficient to meet patients' need for information, a concern also documented in the Netherlands. Few systems systematically involve patients or the wider public in the design of systems including the selection of information to be reported on, one notable exception being NHS Choices in England. In Germany, one major information system, the *Weisse Liste*, was developed jointly by a private non-profit foundation and the associations of patients and consumer organisations. However, as noted earlier, the system largely draws on legally mandated quality reports produced by hospitals.

At the same time there is concern in a number of countries about the validity and reliability of indicators used, although this concern tends to be voiced mainly by providers (Netherlands) while regulators/commissioners tend to be more concerned about the potential for data manipulation by providers (Denmark). As the Danish example shows, collecting and comparing data at the regional level rather than at the level of individual hospitals potentially reduces the risk of data manipulation. Such an approach is also pursued by the Veterans Administration National Surgical Quality Improvement Programme and, initially, by the quality indicators reported within the external quality assurance system of hospitals in Germany.

Country-specific evidence on whether patients indeed use such systems to inform decision making, which is stated as an explicit aim of a number of systems reviewed here, is fairly limited. Findings from Denmark, England, Germany, the Netherlands and Sweden suggest that patients tend to rely, mostly, on their own experiences, recommendations from their general practitioner or experience of relatives and friends while only a small proportion uses published information. Evidence from the US suggests that users and purchasers or payers rarely search out publicly available information and do not understand or trust it.[31-32]

Whether published information, where it is sought, does influence decision making remains largely unclear, although one study in the US demonstrated that quality reporting impacted the selection of providers by patients. However, there is still lack of knowledge about whether and how information is understood by individual patients and in what circumstances they would use this information.

2.6   Impact of information systems on provider quality

The core question remains as to whether and to what extent public reporting indeed influences the quality of care delivered by providers. Perhaps not surprisingly, systematic, continuous and formalised evaluation of quality information systems, especially of those that are available to patients, that would help answer this core question are lacking in all countries reviewed here.

As described above, there is some empirical evidence that so far patients make little use of information systems. This indicates that evidence in support of the 'improvement through selection' pathway is less well established. On the other hand, there is growing empirical evidence in support of the 'changes in care' pathway, suggesting that providers indeed use comparative information. Data from the US indicate that hospitals have been most responsive to publicised data with some evidence pointing towards improvements in care where public reporting occurred.[31] For example, Hibbard et al. (2005) demonstrated how hospitals improved in clinical areas following the public release of performance data on those areas.[33] They further showed that reporting impacted on hospitals' reputation among service users. More recently, Hollenbeak et al. (2008) demonstrated how patients receiving treatment in hospitals that were subject to intensive public reporting of provider performance had a significantly lower risk of in-hospital mortality for a range of frequent, high mortality conditions compared with those receiving treatment in other areas with limited or no public reporting,[34] although selection effects cannot be excluded. Further evidence suggests links between public reporting and quality improvement extending even beyond improvements in the assessed measures.[35]

The overall evidence of the effect of public release of performance data on the quality of care still remains suboptimal, mainly because of the lack of rigorous evaluation of many major public reporting systems.[17, 35-36] However, these findings generally support the notion that providers indeed do respond to quality reporting, although the actual use of information by patients and the general public remains low. This observation supports the notion that public reporting contributes to improving the quality of care, although the underlying mechanisms are largely unknown.

We conclude from our observations that establishing a causal link between public reporting and quality improvement remains a challenge. While available evidence indeed points to the association between public reporting and quality improvement operating largely through provider behaviour change, the precise mechanisms remain poorly understood. This is mainly because the impact of information systems on the quality of care is difficult to isolate, as corresponding activities are usually part of broader set initiatives aimed at improving the quality of care. Improved documentation, as in Sweden following the publication of findings from *Öppna jämförelser* ('Open comparisons'), might be another confounding factor that could affect the evaluation of information systems.

2.7   Considerations for the design of quality information systems

One motivation behind this review is that there is a need for more systematic research to help inform the design of systems so as to ensure that reporting indeed leads to quality improvement in line with aims and objectives.[15, 18] Based on the evidence reviewed here,

we identify a number of considerations for the design of quality information systems. Key questions when designing an information system are:

- Who and what are information systems for (what is the purpose of collecting and reporting performance information)?

- Who should be involved in the development of the system (and at what stages)?

- How will patients be involved to ensure usability of the information? (e.g. Users' Council, NHS Choices)

- What are the mechanisms for ensuring high quality of data provided?

    o Mechanisms for ensuring validity, reliability and consistency of reported data

    o Safeguarding data completeness, for example mandatory reporting (hospital quality reports in Germany), pay for reporting (in the US)

    o Mechanisms for minimising data manipulation

- How will the impact of the system be assessed?

While not an exhaustive list of criteria, these questions can provide a means to guide the development of systems aimed at reporting on quality so as to ensure that reporting indeed leads to quality improvement.

CHAPTER 3   **Denmark**

3.1   The Danish healthcare system

Healthcare in Denmark is largely funded through national and local taxation. It provides universal coverage to all Danish residents and access to health care services is principally free at the point of use although there is a modest co-payment requirement, mostly for pharmaceuticals and dental services. Healthcare is provided mainly through general practitioners and specialists in private practices and public hospitals, owned by the regions.

The Danish health system is highly decentralised, with five regions and 98 municipalities mainly responsible for organising health care.[37] Regions own and run hospitals and prenatal care clinics and fund general practitioners, specialists, physiotherapists, dentists and pharmaceuticals.[38] Municipalities are responsible for services such as nursing homes, home nursing services, prevention and health promotion. Regions and municipalities are represented at the national level by the Danish Regions and the National Association of Local Authorities respectively. They are regulated by national legislation and, to some extent, overseen by central bodies.

The Ministry of the Interior and Health (*Indenrigs og Sundhedsministeriet*, MIH) provides the overall regulatory framework for the health sector as it relates to organising and financing healthcare. The National Board of Health (*Sundhedsstyrelsen*, NBH) is subordinate to the ministry and has administrative functions such as hospital planning, advises the ministry and other authorities, and is responsible for monitoring and evaluation.

In 1993, in a move to improve efficiency of the healthcare system, the government introduced user choice of hospital. In 2002, the government introduced a waiting time guarantee ('extended free choice') of two months from referral, subsequently reduced to one month (2007). Patient rights are secured under the 1998 act passed by the Danish Government; it sets out comprehensive legislation and regulates the principles for the individual's patient rights. Patient rights have been extended and formalised subsequently and there are mechanisms for sanctioning professional misconduct and abuse.[37]

There is a range of national quality improvement initiatives within the Danish healthcare system. Thus, national strategies for quality improvement in healthcare have been published since 1993, with a renewed three-year National Strategy for Quality Improvement, introduced in 2003 with a mandate for quality improvement to be linked to standards and indicators.[12] Other initiatives include the Danish Health Care Quality

Programme (*Den Danske Kvalitetsmodel*, DDKM), introduced in 2002 with the main objective to monitor all publicly financed healthcare activities, and implemented by the Danish Institute for Quality and Accreditation in Health Care (IKAS) and the Danish National Indicator Project (*Det Nationale Indikatorprojekt*, NIP).

3.2   Quality information systems available to patients

The majority of quality information systems in the Danish healthcare system are intended to provide information for patients in order to allow them to take full advantage of their right to choose a provider, and to increase transparency in the healthcare system. For the majority of quality information systems it is the responsibility of the system operator, in collaboration with individual providers collecting the information, to ensure regular updating of the data.

Patients can obtain information and guidance on healthcare providers in various ways, including through their general practitioner, patient offices in each region and a number of websites operated by the National Board of Health, the Danish Regions and the Ministry of the Interior and Health. The latter includes the e-health portal 'www.sundhed.dk', which was set up, in 2001, by the former Association of County Councils (now the 'Danish Regions') with the aim to provide a single point of access to information about health services in Denmark, to collect information about health services, and to facilitate communication with the general public and healthcare professionals. The portal features online services enabling the public to access general health information, book appointments with their general practitioner and renew prescriptions, and access their medication data.[39] The portal also provides access to data on quality of care delivered by hospitals for selected conditions, using data from the National Indicator Project (Chapter 3.2.5).

3.2.1   *Choosing a general practitioner*

In the Danish health system, citizens usually register with a general practitioner who acts as the gatekeeper (Group 1 option). Within this group, which covers most of the Danish population, patients may register with a general practitioner of their choice, provided the general practitioner is practising within 10 km of their home (5 km in the Copenhagen area).[40] Patients can change their general practitioner after six months, after contacting the local authority or when they move outside the catchment area of the general practice they are currently registered with. There is also the option of a choice model (Group 2 option), which allows free choice of any general practitioner but patients have to pay extra.

Information about general practitioners is available through a website run by municipalities (*www.borger.dk*).[41] The website is intended to inform local residents about public services in their municipality and region, including their healthcare options, health-related rights and access to healthcare services. However, the website does not contain information on the quality of care provided by general practitioners. Residents can log on to the system in order to access and change their personal information, and also to communicate with the municipality office.

Information provided can include:

- practice size (partnership; solo practice)
- whether the practice is accepting new patients
- amenities (e.g. provision of disabled access)
- socio-demographic and professional characteristics of general practitioner(s) (e.g. age, sex, years in practice, specialisation)
- support staff (e.g. nurses)
- services provided (e.g. blood tests, immunisations)
- whether the practice participates in the training of physicians.

3.2.2 *Sygehusvalg.dk*

Information on hospitals is available through the website 'sygehusvalg.dk' ('hospitalchoice.dk') set up by the Danish Regions.[42]

The website provides information about the rules regarding choice of hospitals in elective care, the right to receive check-up and treatment in child and youth psychiatry, and the right to treatment in adult psychiatry. The waiting time guarantee allows patients to seek care from a private hospital if treatment cannot be provided in a public hospital within one month from referral. This is conditional on there being an agreement between the Danish Regions and a private provider. The website provides a list of providers with whom such agreements are in place.

The list of providers is arranged alphabetically for hospital treatment, child and youth psychiatry and adult psychiatry, as well as geographically, by treatment type, and by medical speciality, procedure or treatment code.

The information provided refers solely to the types of care available at each hospital/clinic and whether they are accepting new patients. There is no information about the relative standard of care. For further information about the waiting time guarantee, patients are referred to the regional patient offices.[42]

3.2.3 *Ventetider*

In addition to the general information provided by Danish Regions, the Danish National Board of Health makes available, on its website, information on waiting times for specific interventions (*www.venteinfo.dk*).[43] This information system aims to support decision-making when patients exercise their choice of hospital. It is aimed at patients, each region's patient advisors, and general practitioners. Information provided online presents an approximation only, thus patients are advised to consult their general practitioner, the regional patient office or hospital staff about the actual waiting time. Information includes waiting times for each hospital (public, private, clinic), for each intervention or part of an intervention (examination and treatment), and by region. Hospital departments and clinics provide and update information as and when considered necessary.

Waiting times are given as weeks and indicate the maximal waiting time expected for a typical patient. Information dating back more than 30 days will be highlighted with the date of the latest update stated for each hospital or clinic. Information on waiting times covers, in addition to elective surgery, a wide range of services, outpatient appointments, follow-up consultation, follow-up treatment and specialist rehabilitation.

3.2.4   *Sundhedskvalitet*

Information on the quality of care delivered by hospitals can be accessed through a website operated by the Ministry of the Interior and Health (*www.sundhedskvalitet.dk*).[44] Its primary purpose is to give patients easy access to relevant information and so inform hospital choice. Data were first published in November 2006. The information includes a system of ratings of a series of indicators of healthcare quality and, linked to this, a mandatory system for reporting adverse medical events, which is part of the Patient Safety Act (in place since 2004).[12]

Information on quality is presented in form of single indicators relating to amenities (e.g. room-sharing), hygiene (e.g. number of hand hygiene equipment per number of staff), timeliness (e.g. proportion of patients with life-threatening illness treated within the designated time frame), patient safety (e.g. medication errors, surgical infection rates), patient experience (e.g. proportion of patients reporting to be always involved in treatment decisions) and satisfaction (e.g. satisfaction with overall care) (Box 3.1). Indicators are given for each hospital, with the national average displayed for comparison.

Indicators are also brought together in a single composite index indicating the overall quality of care provided by each hospital. The index is presented in the form of a star rating, on a scale from one to five, with five stars indicating excellent performance. The algorithm used to calculate the ratings is not available to the public, the regions or the hospitals.

In addition, users can access data on individual treatments and interventions although the range of indicators available for the set of interventions and procedures varies, ranging from measures of in-hospital mortality following heart surgery to waiting times for different forms of treatment of breast cancer. This information is displayed for each hospital providing the relevant service, with the national average included to allow for comparison. Hospital ratings are currently only available for public, non-psychiatric hospitals/clinics (currently 112 hospitals/clinics).

The information presented draws mainly on data that is publicly available through the National Patient Registry (*Landspatientregisteret*, LPR), the National Board of Health (www.patientinfo.sst.dk), the National Indicator Project (*Det Nationale Indikatorprojekt*, NIP) and the National Investigations of Patient Experiences (*Landsdaekkende Undersoegelser af Patientooplevelser*, LUP), complemented by information provided by individual hospitals and clinics. Information is made accessible through a search engine which allows users to access data on specific interventions as well as overall hospital characteristics, including geographic location or distance. Video clips demonstrate how to use the website. Users are encouraged to discuss the information with their general practitioner or regional patient advisor before making a final choice of hospital or clinic.

Data are continuously updated although the frequency differs for different sources, with for example registry data updated continuously while data on patients' experiences are only updated bi-annually.

Box 3.1 Quality of hospital care indicators reported through *Sundhedskvalitet*

Physical environment
- Average number of beds per room
- Average number of beds per bathroom

Hygiene
- Number of full-time healthcare staff per fixed installations for hand hygiene (washbasins, dispensers)
- Proportion of patients reporting wound infection after surgery
- Distribution of personal hand-held alcohol and external verification of cleaning conditions

Timeliness
- Proportion of inpatients (and long-term outpatients) for which a contact is appointed
- Proportion of patients with life threatening illness who are treated within the time limit
- Proportion of patients with non-life threatening illness who are treated within four weeks after referral.

Patient safety
- Proportion of patients reporting medication error at least once during hospital stay
- Proportion of inpatients reporting injury during a surgical intervention during their stay

Inpatient s' satisfaction and experience
- Proportion of patients reporting that they were satisfied or very satisfied with their treatment.
- Proportion of patients reporting to have been involved in decision making about their treatment and care
- Proportion of patients reporting to feeling secure about being discharged at the time of discharge

Outpatients' satisfaction and experience
- Proportion of patients reporting to be satisfied or very satisfied with their treatment
- Proportion of patients reporting that their general practitioner was informed sufficiently by the outpatient clinic about their treatment
- Proportion of patients reporting that their treatment was prolonged because they experienced unnecessary waiting time in the outpatient clinic

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3.2.5 *Det Nationale Indikatorprojekt*

The National Indicator Project (NIP) assesses the quality of care provided by hospitals for patients with selected medical conditions.[45] The project is operated by the Danish Regions. It was set up in 1999 as a concerted effort of Danish governmental and non-governmental institutions, including health professional associations, at national, regional and local level. Its overarching aim is to facilitate and promote quality improvement in hospital and to provide information about the quality of care provided by hospitals in selected areas. It is aimed at clinicians and hospital managers as well as the general public, so informing the debate on clinical quality.

Information on quality is currently provided for nine conditions: acute stroke, hip fractures, schizophrenia (children, adults), heart failure, acute upper gastrointestinal bleeding/perforation; lung cancer, diabetes, chronic obstructive pulmonary disease (COPD) and low back pain, with indicators for depression and birth under development.

Indicator development follows a structured process, from problem identification and priority setting through to data collection, analysis and interpretation, feedback and audit to the eventual public release of the data.[46] Indicators include structure, process and outcome measures; each of the conditions currently covered by the project is described by

between six to ten indicators. Table 3.1 provides an overview of indicators, using the example of acute stroke.

Information is made available through the Danish e-health portal 'www.sundhed.dk' described earlier. Data are displayed in tabular format, comprising information on each of the indicators for each condition currently covered by the NIP, by region and hospital department. For each condition, a yearly report on quality of care is made available to the general public, with a corresponding report for health professionals. Links provide further information about how to interpret the data and how quality is measured.

Table 3.1: Danish National Indicator Project: indicators and standards for acute stroke

Indicator domain	Indicator	Type	Standard	Time reference
Organisation of treatment, care and rehabilitation	Proportion of patients admitted to a stroke unit	Process	≥ 90%	Second day of hospitalisation
Secondary prophylactic treatment	Antiplatelet therapy: proportion of patients with acute ischemic stroke without atrial fibrillation, where platelet inhibitor treatment is not contraindicated, treated with platelet inhibitor	Process	≥ 95%	Second day of hospitalisation
	Oral anticoagulant therapy: proportion of patients treated with anticoagulants	Process	≥ 95%	14th day of hospitalisation
Early examination diagnostics with CT/MRI scan	Proportion of patients who undergo a CT/MRI scan	Process	≥ 80%	First day of hospitalisation
Assessment by a physiotherapist	Proportion of patients assessed by a physiotherapist	Process	≥ 90%	Second day of hospitalisation <48 hours after admission
Assessment by an occupational therapist	Proportion of patients assessed by an occupational therapist	Process	≥ 90%	Second day of hospitalisation
Assessment of nutritional status	Proportion of patients who have their nutritional status evaluated	Process	≥ 90%	First day of hospitalisation
Early dysphagia screening	Proportion of patients assessed by dysphagia bedside screening in order to determine the extent of aspiration and the severity of swallow dysfunction	Process	≥ 90%	First day of hospitalisation
Examination with ultrasound/CT-angiography of carotid artery	Proportion of patients who undergo ultrasound/CT-angiography of their carotid artery	Process	≥ 90%	Fourth day of hospitalisation
Mortality	30 days mortality	Outcome	30 days mortality max 15%	340 days after hospitalisation

SOURCE: adapted from the National Indicator Project[47]

3.3 Quality information aimed at commissioners, regulators and healthcare providers

As noted above, in Denmark, public hospitals are owned and managed by the regions. The provision of highly specialised services is restricted to certain hospitals, for which they have to seek permission from by the National Board of Health.

Individual hospital management and management at the regional level rely on a variety of performance data including financial data and data on throughput, waiting times and clinical quality (including the clinical quality databases, see below). Some of these data, specifically financial data and data on healthcare quality such as those provided by the National Indicator Project, are utilised systematically, while other data sources are utilised opportunistically when the administration or the management becomes aware of relevant data.

Regions are putting an increasing number of services out for tender, inviting private clinics or hospitals to bid for a specified volume of standardised interventions (e.g. hip replacements). More recently, regions have begun to include quality measures in these bids but these initiatives are at an early stage. Thus far, the tendering process has depended on professionals and the National Board of Health to ensure that quality of care is sufficient.

The National Board of Health relies on a large number of official and unofficial sources of information about quality of care. It provides links to a number of digital services on its website, which are primarily aimed at providers and regulators. These include:

- a monitoring list of health professionals with questionable behaviour (*tilsynslisten*) (see 3.3.1)

- waiting times in public and private hospitals and regions (*ventetider*) (see 3.2.3)

- a list of databases on clinical quality databases (see 3.3.2).

3.3.1 *Tilsynslisten*

The National Board of Health monitoring list *Tilsynslisten* provides information on healthcare professionals who are under scrutiny because of evidence of medical misconduct.

This information system is part of the NBH's commitment to protect patient rights and wellbeing, under a 2008 law (no. 1350) regarding the authorisation of health personnel and health-related activities. The NBH monitors the performance of health practitioners, as well as the state of information available in the field. It informs the relevant regulatory body (at local, regional or national level) and, in some cases, the general public of transgressions or areas needing attention.

The information is made available via the main NBH website.[48] The list provides information on the name of the healthcare professional under observation, the level of observation they are under, and the nature and scope of action against the practitioner (e.g. warning, prohibition of medical practice, revocation of licence), the information about which quality assurance/regulatory bodies are involved, why the relevant action has been

taken, and how long restrictions will be in place. Data draw on information collected by the Patient Complaints Body (*Patientklagenævn*).

3.3.2 *Kliniske Kvalitetsdatabaser*

A number of clinical quality databases provide information collected by medical specialist societies, with the aim of improving the clinical quality of care.[49] These databases are operated by and targeted at clinicians to allow them to compare the quality of the care they provide with that of their peers and with national quality standards. There are presently 32 nationwide databases covering a range of conditions including various cancers, heart disease, multiple sclerosis and chronic kidney disease; individual procedures such as knee replacement, hip arthroplasty and hysterectomy; and service areas such as geriatrics, intensive care, transfusion medicine, and child and adolescent psychiatry.

Regions support these databases financially as a tool for monitoring healthcare provision within regions and to allow citizens to compare and choose providers. Regions only provide funding for databases if the data on clinical quality at the provider level are made available to the public and if they cover the entire country. However, despite the information being in the public domain, the topics and language used indicate that databases are mostly aimed at a specialised (clinical) readership. Data for the databases are collected by individual hospital departments, and are different for each database. They are collected continuously, but are usually published annually, online and as written reports. Information on and links to individual databases are made available through www.sundhed.dk.

3.3.3 Other sources of information

In addition to information systems that report specifically on healthcare providers and the quality of care delivered, government agencies operate a range of registries and routine administrative data collection systems to inform on the healthcare system. These include routine statistics such as vital statistics, collected through Statistics Denmark,[50] disease registries and hospital admissions data. These data are generally available publicly although mostly targeted at regulators and providers in the healthcare system. Data collected through these registries face the typical problems posed by any routine monitoring system, such as coding of diagnoses and treatments. Box 3.2 provides an overview of a selection of public information registers in Denmark.

As part of its monitoring function, the National Board of Health operates a range of disease registries including for cancer and diabetes, as well as service-specific registers, for example reporting on the use of coercion in psychiatric care or the national register for the treatment of alcohol misuse.[51] In collaboration with the Danish Society of Obstetricians it also operates an information system reporting on the quality of perinatal care in Denmark.

The information is made available on the NBH's homepage although the target audience is not specified. The data comprises standardised registry data, continuously reported to the NBH by hospital departments. Various quantitative or binary measures of clinical quality are used in the database (e.g. survival, postpartum bleeding, and proportion of caesarean sections of all deliveries).

Box 3.2 Overview of public information registers in Denmark

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Registers based on contact with the hospital system
- National Patient Registry (NPR), a unique register containing all hospital admissions, outpatient treatments and casualty department visits in all the public and private hospitals in the country
- Medical Birth Register
- National Board of Health Register for Legal Abortions

Registers concerning the population's health status in general
- Causes of Death Register
- Work Accident Register

Administrative registers with relevance to the health sector
- Central Person Register (CPR)
- Health Reimbursement Register (information about health services provided by e.g. general practitioners, practising specialists, dentists, physiotherapists, psychologists)
- Sickness Benefit Register

Other registers of importance for public health science include
- Demographic Database (DDB)
- Prevention Register (FBR)
- Hospital Use Statistics Register (SBR) – hospital admission
- Fertility Database (FTDB)

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3.4 Evaluation of information systems

Documented evidence of formal evaluation of the use and impact of quality information systems on the quality of care in the Danish healthcare system could not be identified.

Concerns about the current systems mostly relate to issues around timeliness of data and the tendency to rely on proxy measures. There is also concern, particularly among regulators, about the potential unintended consequences of the public release of data on healthcare quality, such as the possible manipulation of data by clinicians or hospital managers to improve their ratings, an issue which may be particularly relevant to the star-rating of hospitals (and indeed a phenomenon previously observed in the English NHS[52]). The use of proxy measures in the current system may lower the risk for manipulation though. Likewise, in the National Indicator Project, data are collected regionally rather than by individual hospitals, therefore also potentially reducing the risk of data manipulation at provider level.

The government has expressed surprise about the relatively low number of patients who have exercised free choice of public hospital, interpreting the low uptake as an indication that the data available may not be sufficient to meet patients' need for information (or that regions and hospitals may be obstructing utilisation of free choice). Strandberg-Larsen et al. (2007) suggest that patient choice appears to favour those with a higher level of education and in stable employment.[37]

CHAPTER 4 **England**

4.1 The English healthcare system

Healthcare in England is largely organised and delivered through the National Health Service (NHS). Health services provided by the NHS are funded through general taxation, with a small national insurance (NI) contribution. The NHS covers all residents; health services are free at the point of use (with few exceptions such as prescription drugs and dental care).

The NHS is overseen by the Department of Health, which is responsible for developing the overall policy framework. Currently, strategic health authorities (SHAs, created in 2002) provide regional strategic leadership. Primary care trusts (PCTs, also established in 2002) are responsible for organising the delivery of care locally for geographically defined populations through a mix of direct service provision and commissioning of primary, secondary and community care within their local communities. More recently, the commissioning function was devolved in part to the level of general practices under the Practice-Based Commissioning (PBC) scheme, although PCTs typically hold the resultant contracts and retain ultimate financial responsibility. In the hospital sector, the creation of foundation trusts has led to greater financial and managerial autonomy of selected NHS hospitals.

The present structure[b] is expected to change from 2012/13 with the establishment of GP practice consortia taking on responsibility for 80% of the budget to commission the majority of NHS services, a newly created independent NHS Commissioning Board to oversee the new structures, and PCTs and SHAs to be abolished in due course.[10]

During the past decade, newly created bodies at arm's length from the Department of Health such as the National Institute for Health and Clinical Excellence (NICE), Monitor (the regulator of NHS foundation trusts) and the Care Quality Commission (previously Healthcare Commission) have assumed a range of key regulatory and quality assurance functions, including monitoring provider performance, issuing national guidelines and developing national standards.

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[b] The description of quality information systems in the English healthcare system largely reflects approaches in place as of May 2010. Where appropriate and feasible, changes proposed and/or implemented by the new coalition government, in place from May 2010, are referred to.

An increasing focus on performance measurement has been part of wider public sector management reform, with performance monitoring and reporting first introduced in the 1980s as a means to measure the processes and outcomes of a wide range of public services and so enhance public accountability by the government for their stewardship of the public services, including the NHS. This trend was further supported by a programme of market-based reforms, aimed at strengthening provider competition, which included the introduction of activity-based reimbursement ('payment by results') of hospitals, the diversification of provider organisations and introduction (and gradual expansions) of patient choice of provider.[53]

4.2   Quality information systems available to patients

Following a series of pilots launched in 2002, from 2006 all patients in England referred for elective surgery by a general practitioner have been offered a choice of four or five providers of secondary care at the time of referral.[54] Since 2008, patients who are referred for non-urgent treatment have free choice of provider for a consultant led first outpatient appointment, provided the provider meets standards and prices, which, for independent sector providers is under a standard NHS contractual arrangement. 'Free choice' of any provider became a patient right in the 2009 NHS Constitution,[55] with government plans to extend existing options further by giving patients the right to register with any general practitioner practice,[10] an option which is presently restricted to choice within a defined geographical area where they live. General practitioners are expected to advise patients about treatment and provider options, relaying information on quality, location and waiting times.

4.2.1   *NHS Choices*

NHS Choices (www.nhs.uk) is a public information service owned by the Department of Health as stated on the website. It is primarily intended to provide easily understandable, readily accessible information on health and NHS healthcare services for patients. In 2008, NHS Choices integrated the online arm of NHS Direct, a telephone and online information service on health, so bringing together all NHS online services.[56]

The website is aimed at patients, carers and the general public. Available tools provide users with a range of options and services, including general information on health and social care; medical advice including self-help guides and an online enquiry service; and a 'find and choose' service for a range of providers in primary and secondary care, dentists, specialist and community services, including the option to compare hospitals on a range of (performance) indicators. It also contains a link to enable online booking of a hospital appointment ('Choose and Book', set up in 2005[57]) via 'HealthSpace', which provides users with the option to create a 'personal health organiser' online.

The site is governed by the NHS Choices Board and NHS Choices Operations Board, supported by a Clinical Information Advisory Group and a User's Council to ensure high quality of data presented and responsiveness to patient and public needs.[56] NHS Choices has been certified by the Information Standard as a producer of reliable health and social care information (Box 4.1).

Box 4.1 The Information Standard

The Information Standard is a certification scheme for health and social care information.[58] It was launched in 2009 by the Department of Health as a mechanism to raise the general standard and reliability of information provided to the public. Organisations that produce health and social care information, whether in print, online or scripted, can apply for certification through the Information Standard. They will be reviewed according to a set of criteria that define good quality health or social care information and the methods needed to produce it. Organisations that meet the requirements will be certified for a period of three years, with check-ups at regular intervals. They may then use the quality mark on materials they produce to convey the reliability of the information to the public.

Because of its recent introduction, little is known about its use and impact on the quality of information provided. However, a wide range of organisations have been certified, including arm's length bodies such as the National Institute for Health and Clinical Excellence (NICE), NHS acute trusts, foundation trusts and primary care trusts.

Information presented by NHS Choices draws on information compiled by NHS Evidence (formerly National Library for Health), the Information Centre for Health and Social Care, the Care Quality Commission (CQC) and others (see 4.3). Below we describe selected options offered to users of NHS Choices, focusing on those that provide information on the quality of care delivered by identified providers.

NHS Choices – Hospitals

This option allows users to compare the performance of hospitals online on a range of indicators, by location, service area or intervention. Information presented includes data on overall hospital performance, relating to quality of care and total hospital mortality, indicators of patient experience, hospital staff satisfaction and experience, indicators of patient safety and a range of indicators of the physical environment and amenities such disability access, car parking and others (Box 4.2).

Additional information is presented on individual hospitals, including structural data such as the range of services provided, number of clinical and non-clinical staff per hospital, and process and selected outcome indicators. Information can include data on average waiting times for specific procedures, length of stay, readmission rates, number of operations performed and survival rates following surgery. However, the availability and detail of information on outcome indicators tends to vary among hospital trusts and among departments within trusts. Patients can post personal comments on individual providers to which providers can publish responses online.

As noted above, the information presented is compiled from a range of sources, therefore the timeliness of data and frequency of updates is likely to vary, in particular for data that are not collected routinely (e.g. patient surveys of independent sector treatment centres).

Box 4.2 Information presented by NHS Choices – Hospitals

Overall hospital performance - Overall quality score rating of the NHS trust that the individual hospital operates under; these data are given as 'excellent', 'good', 'fair' or 'weak', obtained from the annual review conducted by the Care Quality Commission (CQC) - Hospital standardised mortality ratio in comparison with the national average, given as higher, lower or similar **Patient experience** - Patient survey scores for a range of indicators of patient experience, including overall care, dignity and respect, involvement in decisions about treatment, cleanliness of wards, and availability of same sex accommodation. Data are obtained from the national NHS inpatient survey (CQC) and the Independent Sector Treatment Centre survey (Department of Health) - NHS Choices user ratings obtained from postings of users of the NHS Choices website on whether they would recommend the hospital to a friend (updated daily) **Hospital staff rating** on the standard of care and recommendations of the trust as place to work, satisfaction with the quality of work and patient care, experience with receiving job-relevant training, learning or development; data are obtained from the national NHS staff survey (CQC) **Patient safety** - MRSA and *C. difficile* infection rates, obtained from the Health Protection Agency - Reporting of patient safety incidents, obtained from the National Patient Safety Agency **Quality of the hospital environment** **Quality of food provided** **Other**: availability of car parking, disabled access, translation and signing services

NHS Choices – GPs

This option allows users to identify general practices by location, and compare them on a range of structural and process indicators. Information includes data on practice size, the range of clinics and services offered, and whether the practice 'accepts' new patients, along with data on patient experience (Box 4.3).

Box 4.3 Information presented by NHS Choices – GPs

Characteristics of general practices - Number of male and female general practitioners at practice, additional languages spoken by general practitioners - Clinics and other services offered at the practice - Opening hours, registration with practice **Patient experience** Patient survey scores for a range of indicators of patient experience, including overall care at general practice, involvement in decisions about treatment, helpfulness of receptionists, cleanliness of the practice, ease of getting through on the phone, satisfaction with opening hours, ability to book appointments ahead or within 48 hours, frequency of seeing preferred general practitioner, ease of getting into the building. Data are obtained from the national *GP patient survey*. NHS Choices user ratings obtained from postings of users of the NHS Choices website on whether they would recommend the practice to a friend (updated daily) **Other**: location, transport and parking

In addition to the direct comparison of practices, detailed practice profiles also include information on performance as assessed using data collected from the Quality and Outcomes Framework (QOF) (Box 4.4). Specifically, performance data present the summary scores of a given general practice on a set of indicators about the quality of the clinical care and organisation of the practice against the average level of achievement of general practices overseen by a given primary care trust and against the national (England) average. Data include the quality of practice organisation and quality of clinical care provided for asthma, coronary heart disease, diabetes and hypertension (determined by percentage of process and intermediate outcome targets met).

Box 4.4 The Quality and Outcomes Framework

The Quality and Outcomes Framework (QOF) is a pay for performance scheme aimed at improving the quality of care provided by general practitioners. The QOF was introduced in 2004 as part of the national (UK-wide) GP contract. Participation in the programme is voluntary although participation is high.

The 2008/09 QOF comprises four domains: clinical, organisational, patient care experience and additional services. Each domain consists of a set of measures of achievement (indicators), against which general practices score points; practices can score a maximum of 1000 points. For example, the clinical domain currently comprises 80 indicators across 19 clinical areas: coronary heart disease; heart failure; stroke and transient ischaemic attacks; hypertension; diabetes mellitus; chronic obstructive pulmonary disease; epilepsy; hypothyroidism; cancer; palliative care; mental health; asthma; dementia; depression; chronic kidney disease; atrial fibrillation; obesity; learning disabilities; and smoking. The organisational domain comprises 43 indicators across five organisational areas, including records and information; information for patients; education and training; practice management; and medicine management. Patient experience is assessed through four indicators that relate to length of consultations and information derived from patient surveys. Additional services include eight indicators across four service areas, which include cervical screening, child health surveillance, maternity services and contraceptive services.

Data are collected through the Quality Management Analysis System (QMAS), a national IT system developed by NHS Connecting for Health; NHS Information Centre for Health and Social Care (NHS IC) has access to extracts from the QMAS to support the publication of QOF information. Its aim is to make the information more relevant and accessible to the public, regulators, health and social care professionals and policy makers.

4.3 Quality information aimed at commissioners, regulators and healthcare providers

The formal sources of information on provider performance currently available to commissioners (PCTs) to compare and select services are broadly the same sources used by regulators to monitor provider performance. Some PCTs have begun to write performance targets into contracts with providers and can monitor locally negotiated metrics through related transactions (e.g. through the Commissioning for Quality and Innovation (CQUIN) payment for quality framework). Primary sources of information on provider quality are listed below (sections 4.3.1–4.3.4).

4.3.1 Information provided by the *Care Quality Commission*

The Care Quality Commission (CQC) is the independent regulator of all health and adult social care services provided by the NHS, local authorities, private companies and voluntary organisations in England. Its remit is threefold: monitoring standards of quality and safety; improving health and social care; and reporting health and social care information.

All health and social care providers in England are required to register with the CQC and are subsequently assessed regularly. The CQC has the power to impose fines and public warnings or to enforce closures if standards are not being met. Reports of the assessments are made publicly available through the CQC website and provide information to a wide audience of commissioners, providers and the public.

Annual assessments (previously 'The Annual Health Check') are carried out to assess the quality of services provided by NHS trusts. The service quality component assesses performance against core standards, national priorities, and existing commitments identified by the Department of Health for each type of organisation (acute and specialist trusts, ambulance trusts, learning disability trusts, mental health trusts and primary care trusts).[59]

Each core standard and existing commitment is given a score ranging from 'fully met', 'almost met', 'partly met' to 'not met', with national priority indicators assessed to be 'excellent', 'good', 'fair' or 'weak'. Data are generally obtained from existing, mandatory data collections such as the hospital episode statistics with special data collection requested where necessary. The data are supplied by providers and it is the providers' responsibility to ensure accurate and good quality data; the CQC may undertake spot checks to ensure data quality. Declarations on core standards are submitted by providers directly to the CQC. Individual NHS organisation's component level scores are then combined to form the overall score for quality of services provided (or, in case of primary care trusts, also services commissioned).

Annual assessments also involve a review of the financial management of providers. Financial management scores are given a rating of 'excellent', 'good', 'fair' or 'weak'. Data for this assessment are derived from other regulators, such as Monitor (for foundation trusts) and the Audit Commission (for other trusts).

The results of the annual assessments are made publicly available as reports that are available for download from the CQC website; these are mainly targeted at provider organisations, commissioners and other regulators (e.g. Monitor). Selected findings are further made available through the NHS Choices websites to help patients and their carers make decisions.

Occasionally, the CQC undertakes reviews of specific national or local service types or of particular NHS organisations when performance is called into question. These one-off assessments do not directly contribute to the performance ratings of individual organisations. Reviews are also available on the CQC website.

4.3.2   Information provided by *Monitor*

Monitor is an independent regulator accountable to parliament and responsible for overseeing the performance of NHS foundation trusts (currently 130) in relation to finance and quality of care.[60]

In addition to its regulatory tasks, Monitor provides information about provider performance to serve the information needs of a number of audiences, including the Department of Health, service commissioners at PCTs, providers and patients.

Monitor publishes quarterly and annual reports on foundation trusts' organisational performance, based on mandatory submissions from trusts. Monitor also assigns each foundation trust an annual and quarterly risk rating. These risk ratings are intended to indicate the risk of failure to comply with the terms of authorisation – the conditions under which a NHS trust has received foundation status. Risks are rated as follows:

- risk of governance failure (rated red, amber or green)

- risk of financial failure (rated 1–5, with 1 representing the highest risk)

- risk of failing to deliver agreed goods and services (rated red, amber or green), as set out in the terms of authorisation.

Results from these (routine) risk ratings determine the intensity of monitoring undertaken by Monitor. This also applies to well performing foundation trusts and may, for example, allow trusts to progress from the usual quarterly to six-monthly performance monitoring. Potential need for regulatory action is identified on a case-by-case basis.

Monitor does not provide information on any specific strategies used to validate its data. However, questions have been raised in recent years about the quality of the organisation's regulatory processes, particularly in cases in which trusts had been granted foundation status through Monitor's application process, but which subsequently were found at fault, for example, in clinical safety.[61-62]

4.3.3   *NHS Information Centre for Health and Social Care*

NHS IC is an independent and special health authority. Its strategic objectives are to improve the quality and standards of information and data about health and social care in England; to improve access to and interpretation of information through presentation and reporting; and to be the source of data for official statistics published by the Department of Health, the Care Quality Commission and other bodies as a means to enhance accountability.[63]

Data collected and held by the NHS Information Centre are primarily intended for use by NHS health and social care commissioners and providers. Much of the information is publicly available through the NHS IC website (www.ic.nhs.uk), although access to some data collections requires registration and is only available to NHS-affiliated organisations.

In future, NHS IC plans to gradually shift its focus from providing aggregated data for statistical use at a national level to providing disaggregated person-level data to assist more efficient and effective commissioning and delivery of health and social care at a local level.

We here present a selection of information provided by the NHS IC relating to provider performance, including some activities that are now starting to be implemented by the

NHS IC, such as the Indicators for Quality Improvement and the Independent Sector Information Programme.

Audit and performance information[64]

Audit and performance information includes:

- data from ambulance services, covering annual national and regional volumes of activity and performance levels against required standards, such as response times and numbers of patient journeys

- data from the National Clinical Audit Support Programme (NSCAP), managed by NHS IC, including annual audits of cancer (bowel, head and neck, lung, mastectomy and breast reconstruction, oesophago-gastric cancer), diabetes, heart disease and kidney care services, as well as a national hip fracture database; healthcare providers are asked to submit an agreed set of data for each audit; findings are fed back to providers, along with recommendations for improvement; feedback is provided through annual reports made available to patients, clinicians and others

- complaints, such as the number and content of complaints and the time it took to resolve them.

- data from the Quality and Outcomes Framework (QOF), the annual reward and incentive programme detailing general practice achievement results (Box 4.4).

Patient Reported Outcome Measures

Patient Reported Outcome Measures (PROMs) have recently been added to the Hospital Episode Statistics (HES), which provide routinely collected data on activity of NHS hospitals in England.[65] PROMs enable the measurement of effectiveness of procedures delivered to NHS patients by comparing their self-reported health status before and after undergoing surgical procedures. The PROMs monthly summary, first published in April 2010, is an update of information collected for the national PROMs programme, currently covering four common elective surgical procedures: groin hernias, hip replacements, knee replacements and varicose veins.

Data are being collected independently from HES data but have been linked to HES. The data collection is still at an experimental stage and is currently undergoing evaluation. Patient feedback is presented in aggregate form: nationally, by provider and by PCT. Currently only pre-operative feedback is available, which includes numbers of patients responding (by procedure to be undertaken) and health status measurement. In the future, HES intends to publish post-operative data as well.

NHS Comparators

NHS Comparators is a free comparative analytical tool that enables commissioners and providers to benchmark and compare activity and costs at local, regional and national level. This includes activity and cost data collected through the Payment by Results (PbR) system of pricing and measuring hospital activity, together with Quality and Outcomes

Framework (QOF) information, general practice demographic profile data, and prescribing data.

Commissioners can use NHS Comparators to identify and investigate differences in referral and access rates to secondary care by costs and activity. The website notes that "local knowledge is needed for interpretation", but states that comparators may indicate areas where activity or clinical practice is out of line with peers or areas where there are potential cost savings to be made.[66] NHS Comparators enables review of a wide range of comparator measures including inpatient, outpatient and disease-specific activity.

The tool is intended to make data available and understandable to all health professionals, not just information specialists. Users can access aggregate data by provider, general practice and PCT. Access to this tool is restricted to NHS organisations.

4.3.4   Dr Foster Intelligence

Dr Foster Intelligence is a public–private partnership jointly run since 2006 by the NHS Information Centre for Health and Social Care and Dr Foster Holdings LLP; it develops (and sells) services and tools for commissioners and provider managers.[67] These tend to focus on analysing local population data and tracking patient need and preferences. There are two services that provide information on provider performance: 'Performance Monitor' and 'Real Time Monitoring.'

'Performance Monitor' is marketed as a tool intended to inform effective strategy and performance management decisions across an entire health economy (it is available to SHAs, PCTs and acute trusts). Using the Hospital Episode Statistics, this tool produces a number of reports allowing users to benchmark against peers at a national and local level on a variety of parameters (Box 4.5).

Box 4.5 Indicators assessed by 'Performance Monitor', Dr Foster Intelligence

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Length of stay
- Analysis by organisation type, time period, diagnosis, procedure, Healthcare Resource Group or admission type
- View spells, superspells, bed days, expected length of stay, actual length of stay, and potential bed days saved or relative risk

Activity
- Analysis by organisation type, time period, diagnosis, procedure, healthcare resource group (HRG), episodes, standardised admissions ratios (SARs), waiting times
- View episodes, SARs, spells, superspells and waiting times

Day case rate
- Analyse by organisation type, time period, diagnosis, procedure, HRG, admission type
- View episodes, day case rate, spells, superspells

Mortality
- As above, but in addition mortality rates and relative risk can be viewed as hospital standardised mortality ratios (HSMR)

Readmissions
- As above, but with the ability to view readmission rate and relative risk

Tariff
- As above, but with the ability to view tariff, tariff average and tariff per bed day

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'*Real Time Monitoring*' is a web-based tool enabling commissioners to monitor and benchmark providers' clinical outcomes in near real time. Functionalities include:

- near real-time information on patient outcomes such as mortality, length of stay, day case rates, emergency readmissions and patient safety indicators for all inpatient activity

- benchmarking clinical outcomes of local providers against the national average

- automatic alerts to users of significant divergence in clinical performance

- an automated system to instantly highlight possible causes of poor performance.

An additional performance-related resource is '*Clinician Outcomes and Benchmarking*', targeted specifically at providers. This resource allows consultants to monitor their own performance and quality of outcomes, and those of their departments, benchmarked against national data.

4.4 Evaluation of information systems

There is evidence that choice is important to patients of all backgrounds. For example, a 2009 systematic review of the impact of patient choice of provider in the English NHS found that patients tend to prefer alternative (non NHS) providers if this reduces their waiting time.[68] However, in a recent study of patient choice of hospital in England, Dixon et al. (2010) demonstrated that a majority of patients choose their local NHS hospital regardless of ability to choose elsewhere.[54] This study also suggests that despite the wide range of information provided by NHS Choices, there are concerns that the website is insufficiently used by patient, with just 4% of those offered a choice of provider having consulted the NHS Choices website and 6% having looked at PCT leaflets. Instead patients relied heavily on their own experience (41%), that of friends and family (10%) or the advice of their general practitioner (36%). General practitioners interviewed for the study did not think patients were interested in information about comparative performance and distrusted it themselves.

Concerns have been expressed over the variability of provider quality assessments produced by different organisations and methodologies. A December 2009 briefing to the House of Commons noted differences in rankings given to the same providers by Dr Foster and the Care Quality Commission, and ultimately links it to differences in methodology.[69]

Germany

5.1 The German healthcare system

In the German federal system, regulation of the healthcare system is shared between the federal and 16 state governments (*Länder*). About 90% of the population are covered by statutory social health insurance (SHI), with the remainder covered by substitutive private health insurance.[70] Since 2009, all residents are required to take out health insurance. In the SHI system, the Joint Federal Committee (*Gemeinsamer Bundesausschuss*, G-BA) is the highest decision-making body. It is composed of the federal association of social health insurance funds, the federal associations of healthcare providers (including physicians, dentists, psychotherapists and hospitals); patient representatives are involved in an advisory role. Regulation of the health care system is embedded in legislation, set out in Social Code Book V (*Sozialgesetzbuch*, SGBV).

Healthcare services are provided through a mix of public and private providers. Ambulatory care is mainly provided by office-based primary and specialist care physicians who have been granted a monopoly to provide care outside hospital; patients generally have free choice of any provider in the ambulatory care sector; and some choice of hospital upon referral. Hospitals are public (e.g. owned by a state, district or city), private for-profit and private not-for-profit (e.g. owned by a church based charitable organisation).

Under social health insurance, patients are entitled to access a comprehensive set of healthcare services, defined by law. For private insurance, the range of services covered is subject to contractual agreements between insurer and insured. Social and private health insurers act as payers rather than purchasers of care as contracts with providers are formed collectively. Selective contracting is only permitted in a few areas, for example in relation to integrated care.

Quality assurance measures have been a mandatory element in contracts between hospitals and social health insurance funds since the 1989 Health Care Reform Act. A legal obligation for the hospital and ambulatory care sectors to engage in external quality assurance and internal quality management was only introduced in the early 2000s.[12] This was accompanied by a range of measures, including the introduction of activity-based payment of hospital care, using diagnosis-related groups (DRGs).[71]

Since 2003, hospitals have been legally required to produce and publish quality reports every two years. In addition, in 2004, the government introduced mandatory minimum volume targets for a range of specific services which have to be met by hospitals if they

wish to qualify for reimbursement through SHI. Providers in the ambulatory care sector are required to implement internal quality management systems according to minimum standards determined by the Joint Federal Committee in 2006.[72]

5.2   Quality information systems available to patients

5.2.1   *Weisse Liste* and systems operated by social insurance funds

Weisse Liste ('White list') (www.weisse-liste.de) is an information system initiated and operated by the Bertelsmann Foundation, a private institution, in collaboration with associations of patients and consumer organisations.[73] The system draws on data from the statutory quality reports and was launched in June 2008 with the aim to enhance transparency of the healthcare system and to provide patients and service users with information on healthcare providers to support patient choice. However, patients are encouraged to use the information provided as a basis for discussion with their doctor.

The *Weisse Liste* offers a search engine for hospitals according to diagnosis, procedure or intervention, by geographical area, based on hospitals' quality reporting system. Information presented includes structural characteristics such as indicators of capacity (e.g. number and type of health care staff; number of beds; number and type of hospital departments, treatment units, diagnostic facilities and equipment (e.g. magnetic resonance imaging) as well as selected process indicators (e.g. frequency and volume of diagnoses and procedures). Information also includes a range of quality indicators, along with information on hotel features. Quality indicators cover a set of surgical and medical invasive procedures such as hip or knee replacement, hernia surgery, cataract surgery, gynaecological surgery (including breast surgery), coronary artery bypass grafting (CABG) and surgery of the carotid artery. The number and scope of indicators vary for individual indications or treatments and may include process and outcome measures such as survival rates after heart surgery, complication rates or in-hospital mortality. Where data on outcomes is provided (e.g. in-hospital death following CABG), it is presented according to a traffic light system, with green indicating 'within normal limits' (compared to the national average) and red indicating 'conspicuous' (outside expected limits), with information on actual rates also provided where available.

The *Weisse Liste* does not undertake quality checks of the data provided by hospitals. As noted above, the information presented is mostly based on data collected by hospitals as part of their legal obligation to document quality indicators in the form of regular quality reports (see below). The information is complemented by data on patient experience, collected through a patient questionnaire specifically developed for the system (the Patients' Experience Questionnaire, PEQ). The availability of this information is limited to those hospitals that have used the questionnaire to collect data on patient experience. The number of hospitals participating in surveying patients using the PEQ is not documented. The system also provides additional information submitted by individual hospitals, such as access through public transport and accommodation for relatives.

Social health insurance[c] funds operate a number of systems that provide information for patients to support their choice of provider and to improve transparency in the healthcare system. These information systems tend to focus on inpatient care and largely draw on the legally mandated quality reports mentioned above. These include the *AOK-Gesundheitsnavigator*, operated by the general regional funds (*Allgemeine Ortskrankenkassen*, AOK),[74] and the systems operated by selected individual substitute funds.[75-76]

Others have developed their own systems, which are based almost exclusively on data provided by the hospital reporting system such as the *Kliniklotse* ('hospital navigator'), operated by the Association of the Substitute Sickness Funds (*Verband der Ersatzkassen*,[77] also *BKK Klinikfinder*[78]), in some cases supplemented by patient satisfaction data collected by the fund, for example the *TK-Klinikführer* operated by the Techniker Krankenkasse, a substitute fund.[79]

The *AOK-Gesundheitsnavigator* also provides information on long-term outcomes of selected interventions and procedures, based on a pilot programme operated by the AOK (*Qualitätsicherung der stationären Versorgung mit Routinedaten*, QSR).[80] Information is currently limited to three procedures related to hip and knee replacement, with reported outcomes including, for example, unplanned surgery within 12 months, complication rates, and death within 90 days following the procedure. Hospitals are given a rating based on whether the given outcome lies within or outside the average rate, with all indicators combined to form an overall point index (three points: quality above average; one point: quality below average).

Most SHI funds also provide data on office-based doctors, but these tend to focus on basic structural information such as availability and range of services provided. However, there are efforts within the *Weisse Liste* to extend the information to also include the ambulatory care system, with a pilot project launched, in collaboration with the AOK, in three regions in Germany focusing on patient experience with office-based doctors in ambulatory care. This information is expected to be made available online from autumn 2010.[81]

Some information systems further provide data on pharmaceuticals and pharmacies, with the *AOK Gesundheitsnavigator* further informing on nursing homes and home care. In addition, most social health insurance funds provide telephone hotlines to assist patients requesting information about hospital providers.

5.2.2   **Information systems operated by healthcare providers**
Associations of healthcare providers also operate a number of quality information systems, again mainly focusing on hospital care. The German Hospital Federation (*Deutsche Krankenhausgesellschaft*), in collaboration with the regional hospital associations (*Landeskrankenhausgesellschaften*), operates the *Deutsches Krankenhaus Verzeichnis* (German Hospital Directory, DKV), aimed at informing patients and their doctors about the range of hospital services available.[82] The system went online in December 2008 and, since

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[c] There are different types of SHI funds, such as guild funds, general regional funds, company-based funds and substitutive funds. Historically, residents were automatically allocated to a fund in their region, reflecting their profession or type of employment. However, since 1993, individuals are allowed to choose any fund (although a few have remained closed), with a risk-equalisation mechanism aimed at compensating for differences in populations insured by different funds. Since 2009 funds receive centrally allocated risk adjusted contributions.

March 2010, also presents an *English language version*. Similar to information systems operated by the social health insurance funds described above, information presented in the *Deutsches Krankenhaus Verzeichnis* is based on the legally mandated quality documentation provided by hospitals. However, while SHI-operated systems rely on the actual quality reports that are published every two years, information provided through the DKV online portal can be updated by hospitals directly (*Internet Portal Qualitätsbericht*, IPQ) so data presented may be more recent than those reported by other systems. Also, as the DKV is operated the associations of hospitals it can provide additional information on hospitals that are not documented in the regular quality reports, such as information on quality management activities undertaken by individual hospitals.

Apart from these differences the information provided through the DKV portal is broadly identical with information provided through information systems run by social health insurance funds. Patients and other users can search for hospitals according to diagnosis, procedure or intervention and by geographical area. In addition, the portal provides a search function that allows for direct information on quality indicators for selected procedures. Again, the quality of the data presented reflects on the quality of data submitted by individual hospitals.

Private for-profit hospitals have recently launched additional online information systems that provide information on the quality of hospital care. One example is the online portal *Qualitätskliniken.de*, initiated by three private for-profit hospital chains, Sana Kliniken, Asklepios Kliniken and Rhön Klinikum, supported by the Federal Association of Private Hospitals (*Bundesverband der Privatkliniken*).[83] The website was formally launched in June 2010; hospitals, whether public or private, are invited to join and participate in the future development of the project. It provides information on four domains of quality of care:

- **Clinical quality** comprises about 340 indicators of processes and outcomes, such as postoperative sepsis, mortality and revision rates after treatment, and postoperative pulmonary embolism. Data are derived from administrative data and quality indicators covered in hospitals' statutory quality reports.

- **Patient safety** comprises 21 indicators, including hand hygiene, prevention of inpatient falls and decubitus ulcer, and medication safety.

- **Patient satisfaction** is assessed through 10 indicators. Data are collected through patient surveys, using 15 questions.

- **Satisfaction of referring physician** currently comprises 10 indicators, using survey data.

The website also provides links to individual hospital websites and information about certificates and accreditation received by hospitals.

Another initiative was launched in April 2010 by the (competitor) private for-profit hospital chain Helios Kliniken (about 40 hospitals), in co-operation with about 50 publicly owned hospitals (including three large university hospitals).[84] This website (*www.initiative-qualitaetsmedizin.de*) presents information on administrative data, such as volume of services and mortality following treatment, as well as selected quality indicators, such as obstetric trauma and conversion rate from laparoscopic to open cholecystectomy.

5.3   Quality information aimed at commissioners, regulators and healthcare providers

As noted above, existing patient information systems on quality of care provided by hospitals are to a large extent based on the quality reports hospitals in Germany are required by law to produce every two years. This legal obligation applies to all hospitals that are included in a regional hospital plan and that have a contractual relationship with regional associations of social health insurance funds.

The introduction of a statutory requirement for quality reporting was part of a wider governmental effort to strengthen quality assurance in the German healthcare system, which also required hospitals since 2000 to implement external quality assurance mechanisms. The external system has involved the documentation of quality indicators, a process supported by the regional offices for quality assurance (LQS). These data were initially compiled and analysed at national level by the Federal Office for Quality Assurance (*Bundesgeschåftsstelle Qualitätssicherung*, BQS), established in 2001, with findings fed back to individual hospitals in the form of reports and recommendations.[85] Reporting is on single indications; quality indicators include process measures (e.g. surgical intervention rates) and outcome measures (e.g. survival following heart surgery). This system was initially designed for use by providers. Thus, data and indices were published at the aggregate level only; data on individual hospitals were not available in the public domain. However, hospitals were able to view their own performance data and those found to be underperforming on a given indicator ('outliers') were required to explain their results to the BQS. In January 2010, these tasks were transferred to the AQUA-Institute (*AQUA-Institut fuer angewandte Qualitaetsförderung und Forschung im Gesundheitswesen*), a private for-profit research institute. The institute has been commissioned by the Joint Federal Committee to further conceptually develop and implement quality assurance measure, with the aim to span both secondary/hospital and primary/ambulatory care in future.

Mandatory hospital quality reports were introduced in 2003 (with 2005 being the first reporting year on 2004 data). Their purpose is to provide:

* information to and support decision making of all interested parties in relation to hospital services

* guidance for doctors in ambulatory care on referral and follow-up treatment of patients

* hospitals with the opportunity to publish information on quantity and quality of services provided and so help improving transparency.[86]

The Joint Federal Committee determines the format and content of data to be documented by hospitals.[86] Initially, it only provided information on the scope and volume of services provided. More recently, further structural, process and outcome measures have been added to the reporting portfolio, derived from the BQS reporting system described above, with national averages provided to allow for comparison.[86] Table 5.1 provides an overview of the overall structure of the hospital quality reports.

Quality reports have to be submitted to social health insurance and private insurers and their respective associations, which are required to make these available online.

Table 5.1: Content and structure of hospital quality reports, Germany

Chapter	Section	Indicator
A	General structural data and information on service provision (hospital)	Location Hospital ownership Organisational structure Mandate to provide psychiatric care Services structure, incl. specialisation (e.g. oncology) Non-medical services Number of beds Number of admissions/cases
B	Structural data of hospital departments and information on service provision by department/unit	Core services provided Medical-nursing services Non-medical services Number of cases Top-10 diagnoses by ICD code Top-10 procedures performed Facilities for the provision of outpatient care Top-10 day surgery procedures Medical equipment Staffing
C	Quality assurance	Participation in external comparative quality assurance (mandatory) Documentation Reporting on selected quality indicators (BQS-method) External quality assurance measures according to *Land* legislation Quality assurance in disease management programmes (where relevant) Other quality assurance measures Implementation of minimum volumes requirement Additional information on minimum volumes requirement
D	Quality management (QM)	Aims and objectives Strategic and operational objectives of QM Structure of QM QM tools (indictors, patient surveys, complaint management, risk management, standards and guidelines used, interdisciplinary conferences, patient information) QM projects Assessment of QM (e.g. certification, peer review)

SOURCE: Gemeinsamer Bundesausschuss[87]

5.4 Evaluation of information systems

We could not identify documented, systematic evaluations of quality information systems in Germany. However, hospital quality reports have occasionally been assessed, with several studies analysing the content and structure of reports and their usefulness to patients and physicians.[88-90] Where they have been undertaken, assessments of initiatives have largely focused on the user-friendliness of the information provided (e.g. by *Stiftung Warentest*, Germany's leading consumer protection group).[91]

Geraedts (2006) highlighted concern that the development of the quality reporting system did not systematically involve patients.[89] In 2006, following the first year of obligatory

reporting, only 19% of respondents to a representative population survey knew about the availability of quality reports through the internet. Those who were aware of the reports tended to be privately insured and had higher levels of education. Survey data further suggested a desire for more information about providers, accessible through the internet, but also the active participation of consumer organisations in development of the information system. Qualification of doctors, hospital cleanliness and qualification of nurses ranked highest among the priorities for patients in relation to quality but this information is currently not presented in the quality reports, suggesting that current quality reporting does not (fully) meet patient information needs.[89-90]

More recently, a survey commissioned by the National Association of Statutory Health Insurance Physicians (2010) demonstrated that patients and the public indeed access web-based information on healthcare providers.[92] About 14% reported having used the internet to search for a primary care doctor in ambulatory care whereas the majority would rely on their relatives and friends for recommendations (60%). Those using the internet as a source of information tended to be younger, live in urban areas and had higher educational levels. Importantly, however, only a small proportion (6%) makes used of web-based systems that provide a rating of doctors in ambulatory care. Of those who have used such systems, just under half (47%) reported to have found them helpful, whereas the remainder did not. Those who accessed relevant systems tended to be younger and had higher educational levels; over half of those under 35 years accessing such systems reported having found the information helpful; among those aged 60 years and over this proportion was less than one-third.

CHAPTER 6   **Italy**

6.1   The Italian health care system

Healthcare in Italy is provided through the National Health Service (*Servizio Sanitario Nazionale*, SSN), governed at regional level and organised at local level through local health units (*aziende sanitarie locali*).[93] The state is responsible for setting the legislative framework and ensuring that regional and local SSN organisations observe centrally set principles (e.g. safeguarding quality and equity) and objectives (e.g. national planning goals).

Healthcare is largely funded through a combination of national and regional taxation. Thus the 20 regional governments play a key role in funding and regulating healthcare. They are also required to ensure that the population has access to a centrally defined minimum level of services (*Livelli Essenziali Di Assistenza*).[93] Local health units organise primary, secondary and tertiary healthcare, by contracting with public and private hospitals and overseeing office-based general practitioners. Private hospitals require accreditation to be eligible for SSN reimbursement. Public hospitals are either owned by local health authorities or operate at arm's length from the SSN, with a larger degree of autonomy.

In most regions, regional governments act as purchasers of care, although this role has been delegated to local health units in some regions. There is no formal separation of purchaser and regulatory roles, with regional governments in many regions exercising both roles.

6.2   Quality information systems available to patients

In Italy, patients can choose any qualified physician within the SSN (hospital and general practice); however, general practitioners act as gatekeepers to secondary care.[93] A 2002 telephone survey conducted in eight European countries demonstrated that Italian citizens perceived their level of choice as quite high, comparable to most other European countries.[94] Local health units are legally required to publish information about the general practitioners working in their area, including personal and professional curricula vitae, office hours, availability of computer-based data systems, contact details and details on healthcare staff.

6.2.1   *Tribunale per i Diritti del Malato*

In Italy, the promotion of patients' rights has almost entirely been driven by bottom-up, citizens' initiatives.[95] The Tribunal for Patient Rights (*Tribunale per i Diritti del Malato*) was established in 1980 with the aim to promote patient rights, to provide information to both the public and public authorities and to improve the quality and equity of healthcare provision.

The Tribunal is organised by *Cittadinanzattiva* ('Active Citizenship'), an Italian non-profit organisation founded in 1978 by a number of Roman Catholic youth groups to promote civic participation and democracy, and to protect citizens' rights. *Cittadinanzattiva* is independent from political parties, trade unions, private companies and public organisations and has been a recognised consumer organisation since 2005.[96]

One of the main activities of the Tribunal is the publication of an annual report, the Tribunal for Patient Rights Health Report (*PIT Salute*), which presents information about cases in which the tribunal assisted patients in defending their rights. The Tribunal is run by over 10,000 volunteers, recruited from the general public and the health sector, and has representations in each region which patients can seek assistance from in defending their rights as patients, for example in cases of provider negligence. The report is available online from the Tribunal's website and in hard copy.

Information is reported individually based on cases brought forward by patients. Thus, the report is selective and its sample is not representative. Cases tend to fall into one of the following three categories: sentinel events, which point to the existence of an underlying problem or emergency; cases that help to detect newly emerging problems; and cases that help to assess the state of patient rights.[97]

The stated goal of the publication of the report is "to provide the public, citizens and those holding influential positions in the National Health Service and in the welfare system in general with data and information about the relationship between citizens and the health service, using the experience of the users of health services".[97]

The tribunal also systematically monitors the waiting lists for a large number of services and assesses the provider data that are publicly available in each region. These data are periodically publicised through media events (e.g. press conferences), interviews with representatives of *Cittadinanzattiva* and the Tribunal, and at meetings with public authorities, such as representatives of regional governments.

There is indication that both the report and information on waiting times are used by a range of audiences including patients and public authorities. However, the work and impact of the Tribunal has yet not been formally evaluated. It is now known whether and how the information provided in the report is quality assured or validated.

More recently, a number of publicly funded initiatives have been initiated that collect data on provider performance, which are then made publicly available. However, these initiatives appear to be predominantly addressing the information needs of policy makers, regulators and, as far as this applies, commissioners, thus providing information for the purpose of comparative analysis and benchmarking rather than patient choice. These initiatives will be discussed in the section that follows.

6.3   Quality information aimed at commissioners, regulators and providers

Here we describe four initiatives – two at national and two at regional level – aimed at improving the availability of information on, and comparability of, healthcare provider performance. These initiatives mainly address information needs of the SSN and its regulators. However, information has been made publicly available and efforts are being made to make these systems accessible and useful to patients through, for example avoiding jargon, providing visualisation and limiting technical detail, which can be accessed separately, for example for research purposes.

6.3.1   *Il Sistema di valutazione della performance dei sistemi sanitari regionali*

In 2006, the Ministry of Health established a project called 'Evaluation of the Performance of Regional Health Systems' (*Il Sistema di valutazione della performance dei sistemi sanitari regionali*.[98] The project builds on the Mattoni ('Bricks') project, launched by the ministry in 2004, in co-operation with the regions. The Mattoni project created a series of standardised instruments and datasets aimed at developing a coherent foundation for the collection and classification of data across all regions as one of several building blocks for a future SSN information system.

The evaluation project is also linked to the project *Sistema nazionale di verifica e controllo sull' assistenza sanitaria* (National System of Evaluation and Control in Healthcare, SiVeAS), which represents one of the government's key initiatives to improve the quality of healthcare. The aim of the project is to support regions in improving the efficacy, efficiency and quality of healthcare and it mainly does so by monitoring healthcare provision and by systematically comparing performance across providers and regions.[99]

The project is publicly funded, led by the Ministry of Health and implemented in co-operation with the *Scuola Superiore Sant'Anna* of Pisa (Management and Healthcare Laboratory, Department of Economics).

Provider performance is reported using a set of 34 indicators. Indicators were selected to represent eight dimensions of performance, including demand management, efficiency, appropriateness of medical and surgical interventions, and clinical quality in hospital care; efficacy of chronic care; pharmaceutical care; and public health and preventative medicine (Box 6.1).

Box 6.1 Indicators for the evaluation of the performance of regional health systems

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Demand management of hospitals
- Rate of acute regular hospitalisations* per 1,000 residents
- Rate of acute day hospital hospitalisations per 1,000 residents
- Mean weight of DRGs for regular hospitalisations

Efficiency of hospital care provision
- Performance index of mean length of stay of acute patients (surgical DRGs)
- Performance index of mean length of stay of acute patients (medical DRGs)
- Mean pre-surgery waiting time for elective surgery

Surgical appropriateness of hospital care
- Percentage of medical DRGs in surgical wards
- Percentage of laparoscopic cystectomies in day surgery and ordinary hospitalisations 0–1 days

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- Surgical DRGs for the Essential Levels of Care**: percentage of hospitalisations in day surgery and ordinary hospitalisations 0–1 days

Medical appropriateness of hospital care
- Hospitalisation rate for medical DRGs for Essential Levels of Care** per 1,000 residents
- Percentage of short regular medical hospitalisations
- Percentage of hospitalisations in medical day hospital for diagnostic purposes

Clinical quality of hospital care
- Percentage of caesarean sections of all deliveries
- Percentage of repeat hospitalisations within the same major diagnostic category (MDC – a larger grouping of DRGs) within 30 days, adjusted by hospitalisation rate
- Percentage of repeat hospitalisations within the same medical MDC within 30 days, adjusted by hospitalisation rate
- Percentage of repeated hospitalisations within the same surgical MDC within 30 days, adjusted by hospitalisation rate
- Percentage of femur fractures undergoing surgery within 2 days
- Percentage of interventions provided in regions different from the one the patient resides in (as DRG points)

District care – efficacy of care for chronic pathologies
- Rate of hospitalisation for heart failure per 100,000 residents aged 50–74 years
- Rate of hospitalisation for diabetes per 100,000 residents aged 20–74 years
- Rate of hospitalisation for chronic obstructive pulmonary disease (COPD) per 100,000 residents aged 50–74 years

Pharmaceutical care
- Crude primary care drug expenditure per person
- Difference between regional and national median consumption of drugs of class A measured as defined daily doses per 1,000 residents per day***
- Percentage of regional expenditure of equivalents of drugs of class A (unbranded generica) of total net expenditure for pharmaceuticals
- Percentage of regional consumption of equivalents of drugs of class A of total of defined daily doses provided.

Public health and preventive medicine
- Coverage of anti-influenza vaccine per 100 residents aged 65 year and over
- Coverage of measles-rubella-pertussis vaccine per 100 residents aged 2 years or under
- Percentage of women invited to mammographic screening among resident women aged 50–69 years
- Crude rate of compliance to mammographic screening among residents aged 50–69 years (based on the number of women who underwent screening of those invited)
- Percentage of patients invited to colon–rectum cancer screening among residents aged 50–69 years
- Crude rate of compliance to colon–rectum cancer screening among residents aged 50–69 years (based on the number of patients participating screening of those invited).

SOURCE: adapted from Ministero della Salute[98]
NOTE: * Regular hospitalisations refer to all hospitalisations that require more than one day in hospital (as opposed to outpatient treatment or day surgery); ** Essential Levels of Care is the guaranteed minimum of service to which all residents have access in the SSN in all regions; *** Pharmaceuticals classified as 'class A' are fully or partially subsidised by the Italian SSN

Data are collected annually and published with a two year delay, so data published in 2010 were collected in 2007/08; they are published mainly through the website of the Ministry of Health. For each indicator, regional data are compared with the average of all regions;

performance data for providers are presented in comparison with the average of all providers in a region and the average of all providers in that region that are similar to the provider in question (e.g. large teaching hospitals).

The project draws on a range of data sources, including the database of hospital discharge forms (*Scheda di Dimissione Ospedaliera*) run by the Ministry of Health, reports of the National Observatory on the Use of Drugs (*Osservatorio nazionale sull'impiego dei Medicinali*) and the Ministry's own reports (screening) and databases (vaccination). Hospital discharge forms comprise patient-based clinical information on discharge (e.g. main and secondary diagnoses; procedures performed); time of hospitalisation; type of healthcare/wards; transfer between wards; and time and type of discharge. The National Observatory on the Use of Drugs, established in 1998, monitors drug consumption by collecting data from pharmacies.

Indicators have been validated by a scientific committee co-ordinated by the *Scuola Superiore Sant'Anna* of Pisa.

Since the project has been introduced only recently, no formal evaluation of its effectiveness has been undertaken as yet. It is the first project in Italy that aims formally to evaluate the quality of healthcare providers and to make this information publicly available to promote patient choice. There is a clear expectation that the evaluation system will be used to underpin incentives for providers; however, the precise approach to linking indicators and incentives has yet to be agreed upon.

6.3.2   *Il Sistema di valutazione della performance della sanità Toscana*

In 2001, the government of Tuscany commissioned the *Scuola Superiore Sant'Anna* of Pisa to develop a system for measuring the performance of local health units in Tuscany. The system was piloted by three local health units in 2004 and rolled out to all units in Tuscany in 2005. The system builds on experience from Ontario, the Netherlands and the UK.

The main objectives of the system are to provide synthesised information about the performance of local health units, to monitor achieved results and to identify 'best practice' and 'room for improvement' through comparison between units.[100] The system is intended to support planning and programming at local and regional level, to inform budget decisions of local health units and to align with incentives for directors of local health units. Currently, 20% of the salary of general directors of local health units and independent hospitals is based on their performance. While this incentive was initially designed to only award directors for achieving financial stability of the unit or hospital, since 2006, a proportion of the performance-related salary component has been based on a number of objectives, which are agreed annually. Progress towards these objectives is measured through the evaluation system, with different weights and indicators applying to different types of organisations (e.g. units, independent hospitals, teaching hospitals). The proportion to which the performance-related salary component of 20% reflects achievement of these objectives has varied over time, but now considerably exceeds 50% (e.g. 78% in 2008).

The system comprises about 200 indicators, grouped into six 'dimensions': population health; ability to pursue regional strategies; clinical evaluation; external evaluation

(citizen/patient satisfaction); internal evaluation (e.g. satisfaction of healthcare personnel); and economic and financial performance, including economic efficiency.

The system draws on a variety of data sources, including the regional information system, which routinely collects data on hospital utilisation and a number of other aspects of healthcare provision (e.g. financial data); financial data collected by local health units; data collected by the *Scuola* (e.g. patients' satisfaction with services assessed through focus group discussions, structured interviews and observation); the regional health agency (population health data); and by local health units and independent hospitals (e.g. absence from work and work accidents).

Data are presented annually in a published report, available from the website of the government of Tuscany.[100] Three reports have been published so far, using data for the years 2006, 2007 and 2008.

Indicators were validated through a scientific committee co-ordinated by the *Scuola*. The system has not been formally evaluated.

6.3.3 *Programma Regionale di Valutazione degli Esiti degli interventi sanitari* in Lazio

In 2009, the region of Lazio initiated the regional programme of measuring outcomes of healthcare interventions, *Programma Regionale di Valutazione degli Esiti degli interventi sanitari* (P.Re.Val.E).[101]

The aim of the project is to improve quality of care of providers by measuring and comparing quality, using a range of indicators. Specific objectives are to evaluate the effectiveness of healthcare interventions for which randomised controlled trials (RCTs) are not available; to evaluate the effectiveness of interventions for which RCTs are available in their local context; to compare outcomes across providers, professionals and local health units; to compare the effectiveness of interventions for different population groups, with a view to improve equity; to identify process related factors that influence the effectiveness of interventions (e.g. minimum volumes); to allow for internal and external auditing; and to monitor provision of healthcare.

The project uses data from a variety of sources, including the Hospital Information System (*Sistema Informativo Ospedaliero*, SIO), the Information System on Emergency (*Sistema Informativo dell'Emergenza Sanitaria*, SIES), the Nominal Registry of Causes of Death (*Registro Nominativo delle Cause di Morte*, ReNCaM) and the Report on Admissions and Discharges in Rehabilitation (*Rapporto Accetazione-Dimissione per la Riabilitazione*).[101]

The results are published on the website of the government of Lazio.[101] Data are presented through an interactive database, through which results can be viewed by variable, hospital or area of residence.

The project is yet to be formally evaluated. Debate about the value and utility of the project is ongoing.

6.3.4 Other sources of information

Purchasers and commissioners draw on a number of other sources of statistical data and information. On occasion, these are also used by the media, researchers and consumers' associations. There is no evidence whether these sources are used by individual patients.

However, as they largely provide technical data that is difficult to interpret, these sources do not lend themselves to support provider choice directly.

Sources include:

- The *Osservatorio Nazionale sulla Salute nelle Regioni Italiane* (National Observatory on Health in the Regions of Italy), established in 2001 and co-ordinated by the Institute of Hygiene at the Catholic University of Rome, constitutes a joint collaborative effort of the Institutes of Hygiene, several universities, and a number of national and regional public institutions and agencies, including the ministry of health.[102] The aim of the Observatory is to monitor the health status of the population in all regions and to collect, compare and disseminate these data to a number of audiences, notably policy makers. The Observatory annually publishes a report on health and healthcare in Italy (*Rapporto Osservasalute*).[102] The aim of the report is to provide information about the state of healthcare provision in Italian regions to regulators and patients. The report is published in hard copy and can be downloaded from the Observatory's website.[d]

- The Healthcare Information System (*Sistema Informativo Sanitario*), introduced in 1984, collects administrative data across all organisations of the SSN, including regional administrative offices, local health units and hospital trusts. The data system is owned by the ministry of health. Data are freely accessible through the internet. The ministry uses the data to publish regular bulletins and reports (e.g. on provider activity and healthcare outcomes).

- The Statistical Yearbook of the National Health System (*Annuario statistico del servizio sanitario nazionale*) provides administrative and financial data of local health authorities and hospital trusts, such as the type of services provided by each provider; the distribution of medical equipment; working hours of professionals per discipline and per service; and the number, type and utilisation of hospital beds.

- The Certificate of Assistance at Birth (*Certificato di Assistenza al Parto*, CeDAP) provides health-related, epidemiological and demographic data on deliveries and maternity services.

- The Database of Regional Economic and Financial Data (*Banca dei dati economico-finanziari regionali*) provides financial data by region, local health unit and hospital trust.

- The Personnel of Local Health Units and Public Health Care Institutes (*Personale delle ASL e degli Istituti di Cura Pubblici*) provides data on the healthcare workforce in the form of an annual publication.

- The Compendium of the National Health System (*Compendio del Servizio Sanitario Nazionale*) provides a summary of data from a range of data sources.

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[d] The download is free of charge, but requires registration.

- The Atlas of Health Geography (*Atlante di Geografia Sanitaria*) provides information about the distribution and activity of highly specialized healthcare providers, such as teaching hospitals, research hospitals, poison centres, spinal surgery and neurosurgery units, and emergency departments. The Atlas was published in 1998 and updated in 2004.

The Netherlands

7.1 The Dutch healthcare system

In the Netherlands, governance of the healthcare system is shared by the government and the corporatist (self-governance) sector. The role of government is largely restricted to overseeing and defining the rules for the healthcare system, following a move to strengthen market elements in healthcare with the 2006 health reform.[103] However, the government has reserved the right to intervene in the healthcare system if it finds the systems in place underperforming. Hospitals are private not-for-profit organisations. Private for-profit hospitals have as yet been legally prohibited. Office-based general practitioners act as gatekeepers to secondary (hospital) care.

Since 2006, all residents are required to take out (basic) private health insurance. Health insurers are private not-for-profit organisations[e] and heavily regulated; they cannot reject application for membership and have to provide coverage irrespective of individual risk. Insurers are not permitted to introduce waivers or adjust premiums to reflect individual risk.[104] All health insurers are required to offer access to a basic, but comprehensive, centrally defined 'package' of health services to each enrolee.[103]

Insurers purchase services from providers and are free to contract with any hospital individually (selective contracting). However, negotiations of price and quality are regulated, with only a limited number of hospital services subject to price negotiation; these account for about one-third of hospital revenues. The use of quality indicators in negotiations is indented but remains underdeveloped.[105]

The Dutch Health Care Authority (*Nederlandse Zorgautoriteit*, NZa), an independent administrative authority established in 2006, is responsible for supervising the healthcare market, by monitoring competition among insurers and providers. It also has the authority to impose regulation and set prices if market mechanisms are found to be insufficient or inappropriate to deliver good quality care efficiently.

The 1996 Care Institutions Quality Act (*Kwaliteitswet Zorginstellingen*, KZI) mandated a functioning quality system for all health care institutions, based on quality standards set by representatives of health professional associations. This includes the enforcement of various

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[e] For profit insurance companies may sell basic private health insurance but most have chosen to exit the market following the introduction of the new health insurance scheme. All remaining insurers are either mutual or not-for-profit organisations.

initiatives for internal quality system development as well as external quality reporting and monitoring, including the publication of reports of the quality of care delivered.[106] The Health Care Inspectorate (*Inspectie voor de Gezondheidszorg*, IGZ) supervises the quality and accessibility of healthcare. Independent from the Ministry of Health, Welfare and Sport it is responsible for the enforcement of statutory regulations on public health and investigates complaints and accidents in health care.[103]

The gradual introduction of managed competition in the Dutch healthcare system has created a need for transparent information about provider performance for patients, commissioners (health insurers) and regulators.[26] A range of parallel initiatives has been taken by government and governmental agencies, insurers and provider organisations to provide performance information on healthcare providers.

7.2   Quality information systems available to patients

There are two major national initiatives that have been launched to provide patients with information about provider performance. Both involve the development of indicators at national level. Participation is mandatory for providers. In addition to these initiatives, which provide information largely through websites, a substantial amount of information is available in print format and through the media.

7.2.1   *Zichtbare Zorg*

Zichtbare Zorg ('Transparent care'), established in 2007 and operated through the Health Care Inspectorate, is a national programme aimed at standardising the development, monitoring and maintenance of quality indicators throughout the healthcare sector.[107] It covers hospitals; various areas in primary care including general practice, maternity care, oral health, physiotherapy, chronic care; as well as pharmaceutical care, mental health, disabled care and nursing care and home care.[108] Activities are co-ordinated through steering groups and projects in each sector with representatives from all stakeholder groups (patients, providers, insurers), supported by a Health Care Transparency Programme Bureau.[107] The programme is expected to become part of a national quality institute that has recently been announced, although the institute has not yet been established.

Since its inception, *Zichtbare Zorg* has developed and released several sets of indicators for measuring healthcare quality in hospital and other providers. There are currently indicators developed for the hospital sector related to 80 conditions.[108] Indicators differ for each condition but include structural measures, such as capacity or existence of an event-specific protocol; process measures, such as number of procedures carried out (e.g. percentage of hernia operations in an outpatient setting or referral-to-treatment times); and outcome measures (e.g. local recurrence rate five years after breast conserving surgery or mortality rates).

Indicator development follows a structured protocol set out in a framework, involving the definition of basic principles such as rationale for developing quality indicators for the corresponding sector or area within a sector; determining and defining indicator sets to be measured; implementation; data registration, collection and processing; and public release.[107] In the hospital sector, indictor development has been subdivided into four

'tranches' with different timelines for the development, testing and release of indicators. The first tranche for example covers ten conditions for which data collection commenced in 2008 and the data are being released in 2010. Conditions covered are: *bladder cancer*, *cataract*, *diabetes*, *hip- and knee replacement*, *inguinal hernia surgery*, *sciatic syndrome*, *breast cancer*, *stress incontinence in women*, *varices* and *diseases of tonsils and adenoid*. The second tranche covers another 13 conditions including for example stroke, cystic fibrosis, colorectal cancer and rheumatoid arthritis. Indicators have been developed and data are currently (2010) being collected by hospitals voluntarily; data collection will however become mandatory for 2011 when data are also being released into the public domain.[108] Indicator development and reporting in areas other than hospital care such as primary and chronic care is in progress.

Detailed information is provided on the development of these indicators, including methods used, assessment of validity and reliability, and practical applicability. *Zichtbare Zorg* states that this information is provided for interested professionals and is presented in a format that is not necessarily accessible to patients.

In the hospital sector, indicators are closely linked to diagnosis and treatment combinations (*Diagnose behandel combinaties*, DBCs), the Dutch equivalent of DRGs, especially those DBCs for which hospitals and insurers are permitted to negotiate prices bilaterally.[f]

Data are made available online. *Zichtbare Zorg*'s stated aim is to inform patient choice; inform care purchasing; provide data for general reference; enhance accountability; improve information control; and allow monitoring and regulation. The website publishes 'warnings' to alert users to the limitations of the available data.

Although the database is owned by *Zichtbare Zorg*, primary data remain the property of providers who are therefore responsible for ensuring that the data provided are of high quality. A range of studies have been undertaken to enhance reliability and comparability of information presented in *Zichtbare Zorg*.

7.2.2   *KiesBeter*

KiesBeter ('Choose better') is a publicly available health portal operated by the National Institute for Public Health and the Environment (*Rijksinstituut voor de Volksgezondheid en Milieu*, RIVM),[109] designed to assist users to choose between different healthcare providers.[103] The portal is funded through the Ministry of Health, Welfare and Sports and explicitly states that it does not participate in commercial advertising.

The website offers general information on hospital facilities, availability of services and specialities, waiting times, and a range of quality indicators. These include hospital-wide process measures such as percentage of cancelled operations; percentage of admitted patients screened for malnutrition; percentage of patients given a standardised pain assessment after surgery; and outcome measures such as incidence of bedsores or rates of

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[f] Introduced in 2005, the Dutch system of DBCs classifies patient groups according to each diagnosis and each type of treatment they receive (different from DRGs). DBCs are split into two groups: segment A for which prices are non-negotiable and segment B for which hospitals and insurers can negotiate prices individually. The proportion of segment B has increased since 2005 from 10% to 33%.

hospital-acquired infections. The percentage of patient data stored and available to clinicians electronically is also presented. Each indicator presented is assigned a 'star' rating, with better performance awarded a higher score in the form of stars (a maximum of three stars can be assigned in each category). The range of indicators for specific conditions varies, with some assessed further using process and outcome measures such as rates of revision surgery, infection rate following cardiac surgery or death following heart surgery. Patients and their carers can search for hospitals by name or postcode and compare them on all indicators directly.

KiesBeter mainly draws on data collected by the Health Care Inspectorate (see above) and data on patient experience, collected through the Consumer Quality Index (CQI) instrument (Box 7.1). This information is used to assign scores to healthcare providers and the services they provide and is available online. However, the availability of this type of information differs for service area and provider, depending on whether a CQI instrument has been developed and corresponding data collected.[103]

Particular attention has been given to making the information accessible to the elderly and other groups, for example those with visual impairments. Users who do not have access to the internet are referred to special information points in local libraries for further assistance.

Box 7.1 The Consumer Quality Index

The Consumer Quality Index (CQI) is not considered a quality information system as defined in this report; however, the initiative presents an important means of contributing to the standardised collection of patient experience data across different sectors in the Dutch healthcare system that ultimately feeds into public reporting on provider performance.

The CQI is a standardised instrument for measuring patient experience with healthcare providers and insurers.[110] Its development is co-ordinated by the Centre for Consumer Experience in Health Care (*Centrum Klantervaring Zorg*, CKZ), the national centre for the systematic measurement of patient experiences in health care.[111] The CKZ is an independent foundation, funded by the Ministry of Health, Welfare and Sports, and governed by a tripartite board representing patient/consumer organisations, health insurers and healthcare providers, with an independent chairperson.

The CQI is a registered trademark; so far 16 CQI questionnaires have been developed, covering a range of curative services such as cataract surgery, chronic diseases such as diabetes, and for general practice, health insurance and others, with further questionnaires under development. Instruments for measuring performance are approved by the CKZ; the CQI trademark is to certify that information collected using the CQI instrument is valid, reliable and comparable. CQI surveys are developed with public and private funding, with the former usually funding the development element while the latter, mostly health insurers or healthcare providers, tend to fund the actual data collection. Consequently, data are owned by the private organisations although all findings are publicly reported.

7.3   Other sources of information

There are other sources of information, which are mainly addressing purchasers and regulators, but do not report about single providers. The Dutch Healthcare Performance Report measures performance at system level, with the RIVM publishing the Dutch

Healthcare Performance Report every two years, since 2006.[112] The overarching aim is to assess the performance of the Dutch healthcare system according to three system goals: quality, access and costs.[5] Specifically, the Dutch healthcare performance report (*Zorgbalans*) aims to provide an overview of the performance of the Dutch healthcare system at the national level to enable policy appraisal of the system through time trends, international comparisons and comparison with policy norms and objectives and so contribute to strategic policy development in healthcare. Thus the report is mainly targeted at decision makers at the Ministry of Health, Welfare and Sports. It is made publicly available through the website of the RIVM. The third edition was published in May 2010. However, the report does not measure performance of providers individually and thus does not allow for comparisons of quality of care at provider level.

7.4   Evaluation of quality information systems

Documented evidence of formal evaluation of current quality information systems is not available. However, there is some evidence of the type of sources patients seek out for the purpose of accessing information on the healthcare system. For example, Schäfer et al. (2010) report on a study that demonstrated that over 40% of patients seeking information on hospital quality would consult their general practitioner, followed by friends and relatives (11%) and booklets and leaflets (just under 8%). About 7.5% would seek information directly from the hospital's website, while just 3% would use the internet.[103]

Overall there is concern among patients and insurers in the Dutch system about the speed of making quality information available to the public given that this information is a prerequisite for exercising informed choices. There is also debate about the limitations of information on provider performance that is currently being provided, as for example through the RIVM health portal *KiesBeter*, such as variation of data availability among providers and insurers. It has also been noted that the information available does not sufficiently address the information needs of patients.[113]

A recent study which examined the effects of competition on the quality of care provided by hospitals found that that participation in quality reporting by individual hospitals was driven by (expected) pressures from policy makers rather than the market.[114] Reluctance of healthcare providers to participate in reporting activities is frequently explained by concerns about the validity and reliability of indicators. As diverse interests are at stake, the process of further developing these initiatives is highly political.

Sweden

8.1   The Swedish healthcare system

In Sweden, healthcare is organised by counties and municipalities. Healthcare is predominantly financed through regional and local taxes, supplemented by global and earmarked grants from the national government, accounting for between 15% and 20% of each county's annual income. All residents are covered and there is no substitutive private coverage available. A mandatory national-level social insurance system covers sick leave and pensions, funded through payroll taxes and administered by the state.

The Swedish Ministry of Health and Social Affairs is the government department with overarching responsibility for the health system. The National Board of Health and Welfare (NBHW) is a semi-independent advisory and supervisory agency for health services, health protection and social services. It is responsible for monitoring health and healthcare and supervises the implementation of public policy and legislation.

Under the Health and Medical Services Act (1982), 19 county councils, two regions and one municipality (Gotland) are responsible for providing healthcare and for public health services for all residents who are entitled to use the services at subsidised prices.[115] The counties are responsible for primary healthcare, which is mainly publicly provided at local health centres and family physicians' surgeries; they own, finance and run the acute care hospitals, including psychiatric care. In addition, counties have long held financial responsibility for prescription drugs although state subsidies for drugs are still substantial. Municipalities are financially and organisationally responsible for the provision of all forms of nursing care for persons above the age of 65, and also for chronic psychiatric care.

Swedish patients are formally entitled to freely choose primary and specialist care providers since 1991. Initially, choice of primary care provider was limited to within residents' home county; from 2003 this was extended to the entire country.[116] Beginning in January 2010, the Government has made it compulsory for county councils to provide patients with a choice of primary care provider and freedom of establishment for those private units that accept requirements and payment principles determined by county councils. Patients must be given the option of a public or private provider, with county council funding allocated according to the individual patient's choice.[117]

Quality assurance in healthcare became a government focus in Sweden from the late 1980s, with the aim to collect and compare healthcare provider performance information. In 1994, the NBHW issued a set of regulations on quality assurance, which were revised in

1997 and 2005.[118] Accordingly, all health services in Sweden must include a system for continuous, target-oriented quality improvement, emphasising monitoring, systematic improvement measures and technical quality, while also focusing on patient experience.[12]

In addition, the NBHW, in collaboration with the Swedish Association of Local Authorities and Regions (SALAR), develops national quality indicators in health and social care. Health professionals are responsible for reporting information required to generate these indicators to the NBHW. These are currently working to develop a model that will enable them to better compare local and regional performance metrics.[12]

8.2   Quality information systems available to patients

Decentralisation of the Swedish health system since the early 1980s has meant that there is limited national level data available on provider performance. Instead, there is a growing body of data at county level on provider performance, which has highlighted large variations in access to medicines and in clinical outcomes between counties, particularly those of cancer and stroke care. Information on individual provider performance is also lacking.

Patients can change provider if they so wish. However, at present, there are few information sources that are available to support patients in making this decision, other than national websites comparing waiting times. County councils are beginning to provide further information to patients with additional information sources expected for later in 2010. The following is a brief overview of the sources patients can currently use to obtain information on healthcare provider performance.

8.2.1   *Väntetider i Vården*

The public release of information on healthcare provider performance began with information on waiting times. Patients can browse primary care clinics and hospitals online through a website developed and owned by SALAR (www.vantetider.se). The website has been in operation since April 2000; it is based on data provided by county councils and regions and the national common database on waiting times. It is aimed at supporting patients wishing to use the opportunity to choose healthcare providers through comparing waiting times. It also serves a resource to providers to inform referral under the care guarantee. Search options allow patients to view current waiting times by type of care needed (e.g. general appointment, procedure, elective surgery) and availability of providers. The website shows the user the date the information was last updated. Patients can also obtain information about waiting times for telephone consultations. No other information on provider quality or performance is provided on *Väntetider i Vården*.

8.2.2   County councils

As county councils have just begun to implement patient choice of primary care provider in January 2010, many are in the process of developing approaches to collect and present information on provider performance to guide this choice. Kronoberg County Council, for example, plans to publish in 2010 information relating to how each clinic follows national guidelines and adheres to wider quality programmes, along with information on hospital waiting times.

Currently, the type and detail of the information provided by county councils varies. Some (e.g. Stockholm) present provider quality information based on local patient surveys. Other county councils (e.g. Halland) provide additional performance indicators such as adherence to national clinical guidance. Additionally, an effort is under way by SALAR to produce a national primary care patient survey, which should make it possible to compare provider feedback at some point in 2010.

A recent study by SALAR came to the conclusion that county councils can improve the information provided for comparison of primary care providers. The presentation of data, and the provision of information other than waiting times and patient survey results, varies widely.

8.3   Quality information aimed at commissioners, regulators and healthcare providers

Information on healthcare provider performance aimed at commissioners (counties and municipalities) and regulators tends to be more common than that for patients. Again, data on individual providers is scarce; the information available to the public pertains mostly to county level provision and is focused conceptually on quality. Political interest in local, intra-county level data for comparison is growing. The following sources are available at present.

8.3.1   *Nationella Kvalitetsregister*

Sweden operates an extensive system of national quality registries (*Nationella Kvalitetsregister*) that collect information on diagnoses, treatments and outcomes.[119] The first quality registries were set up in the early 1990s, at the initiative of local clinicians; they are managed and operated by the clinician's department, with other hospital departments across the country subsequently joining in, thus leading to a highly decentralised system of registries. From 2007, operation, development and financing of quality registries have been taken on by local authorities and regions. The development and use of quality registries has been supported by the SALAR and the NBHW. Financial support through the centre is approved by an 'Executive Committee for National Quality Registries', which includes representatives from SALAR, the NBHW, the Swedish Society of Medicine and the Swedish Society of Nursing.

In practice, the registries are developed and managed by representatives of the professional groups that use them. Five 'competence centres' have recently been created to support the development of new registries.[120] Within these centres, several registries share costs for staff and analytical systems that a single registry could not afford.

There is debate among politicians and academic clinicians in Sweden over whether a strong policy focus on provider performance information will have a negative impact on the original purpose of the quality registries, which was to facilitate research and development within specialist clinical areas. However, the current vision for these registries is to constitute a comprehensive knowledge system that is actively used by multiple research, commissioner, provider and regulatory audiences, so enabling continuous learning, quality improvement and management of healthcare services.

In addition to their application at county level, the registries are used for general planning and management. Providers, too, use these registries for internal benchmarking, particularly to inform the development of elective and outpatient services such as hip replacement, cataract surgery, diabetes care and, more recently, the treatment of rheumatoid arthritis.

In 2009, there were about 70 national quality registries.[120] Each registry presents information by provider within each county. Data type varies between registries but generally includes numbers of procedures, outcomes (including survival rates), complication rates, and revisions and/or readmission within 30 days. Many registries provide additional data on best-practice guidelines and analysis of variation between counties. Increasingly, registries have begun to move beyond clinical outcomes data to include patient-perceived quality and related quality of life measures. There is now also a trend towards naming the providers in connection with the publication of results, although this is still rare.

8.3.2 Information provided by the Swedish Association of Local Authorities and Regions

The Swedish Association of Local Authorities and Regions (SALAR) produces a large number of healthcare provider statistics, which enable comparison between providers, particularly on costs and numbers of procedures carried out, including *Väntetider i Vården* described above. Most data collected and reported by SALAR is at a regional level. One set of data reports on the costs and productivity of hospitals and clinics (Box 8.1), published on the SALAR website.[121] There are data for 60 hospitals and 15 medical activities. Information is based on three data sources: a survey of hospitals based on cost accounts, patient registries and patient-related expenditures. Some of the processes data (e.g. waiting times) are recorded and sent directly from providers to SALAR through online systems.[122]

Box 8.1 Healthcare provider indicators: *costs and productivity*

Hospital care

- Cost per DRG point per care episode, per hospital day

- The average patient length of stay

- DRG points per care episode

- The top ten DRGs used (along with patients' age and sex)

- Staff costs as percentage of hospital total costs

- Number of patients in specialised care units

- Number of completed medical treatments

- Cost per patient (KPP). KPP is a method for calculating the cost of each patient contact and care episode. With KPP it is possible to get a picture of cost distribution in different disease groups, age groups, diagnoses and actions.

Primary care

- Cost per patient consultation

SOURCE: adapted from SALAR[121]

Vårdbarometern

SALAR further makes available the *Vårdbarometern* ('healthcare barometer'), an annual consumer survey of knowledge, experiences and attitudes to healthcare among a 0.5% sample of the adult Swedish population.[122] Data have been collected by the research company Ipsos on SALAR's behalf since 2001. Data are collected through telephone interviews with a sample of the adult population (age 18 or older). Collected data are stored in a common online database to which each county has access; they are made available to the public at www.vardbarometern.nu.

Vårdbarometern aims to provide information to policy makers and providers on the public's perception of Swedish health care. Similar to most other published sources on provider performance in Sweden, *Vårdbarometern* reports on healthcare provided within counties, but not on individual providers.

Öppna jämförelser

Öppna jämförelser ('Open Comparison') is probably the most comprehensive source of information available on provider performance in Sweden to date. Over the last few years, SALAR has been working to increase availability of and access to comparable information on costs, quality and outcomes within public services for which municipalities, county councils and regions are responsible. Since 2006, Open Comparison reports have been published for six public service areas, including healthcare.

Each municipality and county council is ranked according to a number of indicators, from best value for money (ranking 1) to the worst value (ranking 290 for municipalities; 21 for counties). Red, amber and green symbols are used to group counties based on performance. Comparisons to date suggest there are relatively large differences in the value of services provided among municipalities and county councils with similar funding and demographic structures.

Open Comparison mainly draws on healthcare data collected through other sources described above such as the national quality registries, waiting times from *Väntetider i Vården*, information on provider expenditures/costs from SALAR collections, and patient experience from the *Vårdbarometern* and other national patient surveys.

The presentation of data has evolved since the first Open Comparison publication in 2006. Beginning with a comparison of county level indicators and focusing on specialist services, subsequent editions have been extended to include additional themes such as elderly care services (provided by municipalities) and psychiatric and primary care services. There is currently a strong policy focus to increase the level of information coverage of primary care and psychiatric indicators. However, this will require the development of new data collection methods as primary care data are not commonly available through for example national quality registries. Development of a national primary care quality register is seen as a priority and is supported by most clinicians, policy makers and regulatory agencies.

In 2008, Open Comparison Healthcare and Medical Care presented 101 indicators at county council level (19 of which report on hospital level data), and measures of quality within four categories: clinical outcomes, patient experiences, availability and costs.[123] The

2009 Open Comparison for healthcare services reports on a total of 124 indicators in 18 categories, with about 40 indicators at hospital level; see Box 8.2.

Box 8.2 Healthcare indicators reported by Open Comparisons (2009)

- Health status and mortality
- Prevention (e.g. childhood immunisation, influenza immunisation, mammography, gynaecologic exams)
- Patient satisfaction and trust (from new national patient survey)
- Access (patient surveys)
- Costs (e.g. per hospital stay, visit in primary care, DRG)
- Maternity care, delivery, neonatal care
- Gynaecology
- Hip and knee plus rheumatoid arthritis (15 indicators)
- Diabetes (6 indicators)
- Ischemic heart disease (11 indicators)
- Stroke (8 indicators)
- Dialysis, kidney transplantation
- Cancer (survival for 4 major types plus 3 other indicators)
- Psychiatric care (7 indicators such as suicide rate, drug treatment, waiting times)
- Surgical treatment (e.g. complications, re-operations for common procedures)
- Intensive care
- Drug treatment (e.g. use of antibiotics, more than 10 drugs)
- Other (3 indicators related to HIC and care of terminal ill)

Quality assurance of Open Comparison is carried out by SALAR and NBHW, but they rely on validation exercises within the many quality registries from which data are extracted. This can pose challenges because although these registries are all supported by national funding, data processing, presentation and ownership vary.

8.4   Evaluation of information systems

A survey undertaken in spring 2010 by Anell and Glenngård (forthcoming) found that patients do not tend to use the information produced by county councils and are instead more likely to obtain information from existing provider contacts or from friends and family.

Information provided through Open Comparison has so far been of limited use to patients because of the limited extent to which the reports provide intra-county data. Additionally, provider contribution to Open Comparison (and the National Quality Registries) varies widely, suggesting that there may be concerns among providers about the validity of data on direct provider comparison. At county level, there is some evidence that county councils with low performance scores in the first few years of Open Comparison publications have improved these scores in the most recent versions. Still, there is some concern about whether this indicates provider quality improvement, or simply reflects improved documentation and data provided to registries.

A study by Vrangbæk et al. (2007), comparing patient choice of hospital in Sweden, Denmark and Norway, showed that the use of patient choice is still comparatively limited in Sweden, with 5.7 % of patients choosing emergency and elective treatment in a hospital

outside their home county in 2006 (cross-county data were the only data available on patient mobility).[124] For certain specialties this percentage was somewhat higher, at about 8% (2004). This same year, only about half of all residents (51%) were aware of their right to choose a hospital. The authors suggested that public knowledge about specific rules on patient choice (e.g. inclusion of private care or arrangements for the payment of travel costs) could be even more limited. Also, there is some evidence that the waiting time guarantees are not particularly popular among specialists, which may explain further the relative lack of awareness of the rules on patient choice among the general population.

A 2008 study showed that county councils varied substantially on the extent to which they supported patient choice, highlighting the consequences of a decentralised approach to patient choice implementation as opposed to national legislation.[125]

CHAPTER 9   **United States**

9.1   **The US healthcare system**

The US healthcare system is a composite of multiple sub-systems, comprising a mix of overlapping public and private elements. Health policy and administration is in the remit of the US Department for Health and Human Services (DHHS), with the Centers for Medicare & Medicaid Services (CMS) responsible for administering the public health insurance programmes. In 2008, about 67% of the US population held private insurance, primarily through employment.[126] The public programmes Medicare, Medicaid and the Children's Health Insurance Program (CHIP) cover, respectively, people aged 65 years and older and the disabled, and adults and children under a specified income threshold. The Veteran's Administration covers members of the military and their dependants. In 2008, about 15% of the US population did not have health insurance. Those without insurance coverage and unable to pay can still receive emergency treatment in hospitals without being charged.

About half of total healthcare financing is derived from public funds.[127] Service provision is largely private, with hospitals mainly operating as private, non-profit providers. The majority of physicians are self-employed in private practice, either independently or in a medical group.[128] In general, physicians in ambulatory care refer their patients to hospitals with which they are affiliated. With the exception of the Medicare programme, most healthcare is delivered in some form of managed care arrangement that integrates financing and delivery of care.[129]

In recent years, the US has seen a growth in demand for information on provider performance, mainly because transparency has come to be seen as essential to promote competition.[128] [130] In addition, several high-profile reports by the Institute of Medicine, such as *To err is human* (1999)[131] and others,[132] highlighted the need for quality improvement. The increasing awareness of variation in the quality of healthcare across geographic areas further emphasised the need for enhanced quality improvement activity.[133]

From an institutional perspective, the creation of the National Forum for Health Care Quality Measurement and Reporting, and the National Advisory Council for Healthcare Research and Quality, at the Agency for Healthcare Research and Quality (AHRQ), both within the US Department of Health and Human Services, were important steps towards developing a national framework for quality measurement and reporting. These groups

work to endorse core sets of measures and methods for how quality data should be collected and publicly reported, and set a research and development agenda for the nation.[134]

It is important to note that, given the importance of choice of private health insurer ('health plan') in the US, there is also a drive to provide information on the quality of such plans, first and foremost by the National Committee on Quality Assurance (NCQA), a private non-profit organisation.[25] Its Healthcare Effectiveness Data and Information Set (HEDIS) provides information on the quality of health plans offered by private insurers. HEDIS' main target group are employers. Other systems designed to support user choice of health insurer include the Consumer Assessment of Health Plans Study (CAHPS) Decision Helper.[135-136] While recognising that choice of health insurer implies a choice of (a range of) provider(s), we do not review such systems here as they generally do not allow identification of individual providers but provide aggregate level information only. We therefore also exclude the HEDIS Physician and Hospital Quality Report Cards.[137]

9.2 Quality information systems available to patients

Starting in the mid 1980s, the publication of hospital mortality rates by the Health Care Financing Administration (HCFA, now CMS), initiated the modern era of public reporting on the quality of providers.[138-139] The diffusion of personal computers and technological advancements since the 1990s has accelerated this development.

The number of information systems aimed at patients is extensive as there is a rich array of state-wide governmental initiatives of public reporting on quality and availability of providers.[31] This report focuses on nationwide initiatives, with one exception (the New York State Cardiac Surgery Reporting System, NY CSRS).

9.2.1 *Healthfinder*

Healthfinder.gov is the public website of 'Healthy People 2010', a public–private partnership initiated by the Office of Disease Prevention and Health Promotion (ODPHP), an agency within the US Department of Health and Human Services, to promote public health through 'Healthy People 2010 Partnerships'.[140] Healthy People 2010 provides comprehensive consumer information on health-related issues, including providers.[141]

The initiative involves a wide range of federal agencies, strategic partnerships with private entities, with the Healthy People Consortium bringing together more than 400 national membership organisations and state and territorial health departments. Strategic partnerships include alliances with the DHHS and the American Medical Association (AMA), several other medical associations and the National Recreation and Parks Association (NRPA).

The overarching goals of the Healthy People initiative is to increase the quality and length of life lived in good health and to eliminate health disparities through improved communication, co-ordination, and collaboration on a range of services and programmes. The targets of the programme relate to the national and the sub-national level.

The website www.healthfinder.gov is branded as a government website. It provides information on service providers as well as general advice for maintaining a healthy life style and disease-related health information. However, the main focus of this website is the availability of providers. Providers are broadly defined; information is presented on individual physicians (doctors, dentists and other individual providers), health centres and health organisations in general. Even a directory of public libraries is included as a source for health information. The term 'health centres' comprises a broad range of organisations, including community health centres, home health, hospice, hospitals, long-term care, nursing homes and others. The website provides links to provider associations.

9.2.2 *Hospital Compare*

Hospital Compare was created by the Hospital Quality Alliance (HQA) and launched in December 2002 as a national collaboration of public and private actors.[142] Members are the CMS, the DHHS, the American Hospital Association (AHA), the Federation of American Hospitals (FAH) and the Association of American Medical Colleges (AAMC).

The aim of Hospital Compare is to enable consumers, especially Medicare beneficiaries, to assess the quality of care delivered by their local hospitals. It addresses a wide range of users and is considered particularly suitable for lay-persons, as the website provides a glossary[142] of all medical terms and also explains the indicators used.[143] It further provides detailed information for healthcare professionals on data collection and structure, process and outcome measures. Hospital Compare draws on data from hospitals that have agreed to publish quality information. Hospitals collect and report quality performance information voluntarily.

The website is accessible either directly (www.hospitalcompare.hhs.gov) or via *HealthCare.gov*, which simultaneously provides access to Nursing Home Compare (see section 9.2.2) and Dialysis Facility Compare. Hospital Compare provides the option to search for information on a specific hospital by name, by area or region, and by medical condition or surgical procedure. Medical conditions covered are heart attack, heart failure, chronic lung disease, pneumonia, diabetes in adults, and chest pain. Published data include information on whether the hospital provides emergency services, whether the individual hospital reports on a variety of quality and cost indicators or service volumes (the number of Medicare patients treated). The system further provides information on condition- and treatment-specific process measures, for example, for heart attack and pneumonia care. Indicators include process measures drawing on the Surgical Care Improvement Project (SCIP), a national quality partnership of organisations aimed at improving surgical care through reducing complications.[144] Since its recent relaunch, Hospital Compare distinguishes inpatient care delivered in hospitals from outpatient care. Box 9.1 overleaf provides an overview of the measures and indicators used.

Hospital Compare allows users to choose up to three individual hospitals for which to view indicators of process and outcome of care, along with HCAHPS measures (see below). Online, the data are displayed in a table, comparing the selected hospitals with national and local averages. For ease of interpretation, the user can choose graphical representation or a table presenting further comparative data.[142]

Box 9.1 Measures and indicators used by Hospital Compare

Inpatient care:
Structural measures, for example participation in
- Systematic Database for Cardiac Surgery
- Systematic Clinical Database Registry for Stroke Care
- Systematic Clinical Database Registry for Nursing Sensitive Care
Clinical process measures
- Acute myocardial infarction (AMI)
- Heart failure pneumonia
- Surgical Care Improvement Project (SCIP)
Hospital consumer assessment of healthcare providers and systems
(HCAHPS see section 9.2.3 on survey measures)
Outcome measures
- 30-day risk-standardised mortality measures
- 30-day risk-standardised readmission rates for heart attack, heart failure and pneumonia patients

Outpatient care:
Clinical process measures
- AMI cardiac care
- Surgical care
Imaging efficiency measures

SOURCE: Quality Net[145]

Hospital Compare is unique among other public reporting systems within the US as it also reports on prices for treatments – median payments for a particular Medicare Severity-Diagnosis Related Group (MS-DRG). Price differences between hospitals are substantial; for example, for heart failure intervention prices range between just over USD 7,000 to almost USD 16,000. Differences are determined by the nature of the hospital (e.g. classified as teaching hospital), location (high cost area), proportion of patients on low income and/or case-mix (volume of complex/expensive cases).[142] To facilitate interpretation, prices of the selected hospitals are shown in comparison with national and regional or local averages. However, as prices are not risk-adjusted comparison is difficult.

9.2.3 *Hospital Consumer Assessment of Healthcare Providers and Systems*

As noted in the preceding section, Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) measures are an integrated part of Hospital Compare. They are based on the *Survey of Patients' Hospital Experience*, thus drawing on inpatients' experiences of care. HCAHPS was developed jointly by AHRQ and the CMS and implemented nationwide from 2006.[146, 147, 35] The survey results are posted on the Hospital Compare website, published for the first time in March 2008.

The HCAHPS initiative aims to provide a standardised survey instrument and data collection methodology for measuring patients' perspectives on hospital care and so enable valid, objective and meaningful comparisons across all hospitals on domains that are important to users and support informed decision making. The publication of survey results is also designed to create incentives for hospitals to improve their quality of care and to enhance public accountability in healthcare by increasing the transparency of the quality of hospital care provided.[35] The HCAHPS survey is administered by participating hospitals as 'stand-alone' or integrated with existing patient surveys. The core set of questions can be

combined with a broader, customised set of hospital-specific items, such as other clinical and outcome measures. The HCAHPS survey consists of four screener questions, five demographic items for patient-mix adjustment and 18 so-called 'substantive' items.

For each participating hospital, ten HCAHPS measures are publicly reported on Hospital Compare (Box 9.2). Survey response rate and the number of completed surveys, in broad ranges, are also publicly reported. HCAHPS results are adjusted for mode of survey administration and patient-mix.[148-149] Data are updated quarterly on the website and are reported for a rolling 12-month reporting period.[35]

Box 9.2 Measures and indicators in the Hospital Consumer Assessment of Healthcare Providers

> **Summary/composite measures**
> - Communication with nurses
> - Communication with doctors
> - Responsiveness of hospital staff
> - Pain management
> - Communication about medicines
> - Discharge information
> **Individual items**
> - Cleanliness of hospital
> - Environment and quietness of hospital environment
> **Global ratings**
> - Overall rating of hospital
> - Willingness to recommend the hospital

SOURCE: HCAHPS fact sheet[150]

Participation of hospitals in HCAHPS is high, with 3,900 general acute care hospitals or 90% of all US hospitals participating in 2009. High participation rates are achieved as compliance with HCAHPS is a prerequisite for annual payment updates ('pay-for-reporting').[35] Hospitals failing to report the required quality data may be subject to a 2% reduction in their Annual Payment Update (APU).

9.2.1 *Veterans Health Administration*

The US Department of Veterans Affairs (VA) is responsible for the Veterans Health Administration (VHA), which provides healthcare for veterans (including reservists and National Guard) who served on active duty and meet eligibility requirements. The website '*www.qualityofcare.va.gov*' provides information about the quality of care provided in VHA medical centres. Data include ten quality measures and target values for the achievement of high quality of care (Box 9.3).[151]

Box 9.3 Veterans Health Administration quality targets

> 1. Diabetes – control of hemoglobin A1C control (<9)
> 2. Diabetes – control of low density lipoprotein cholesterol (LDL-C) (<100)
> 3. Diabetes – control of blood pressure (<140/90)
> 4. Flu shots, adults aged 50–64 years
> 5. Flu shots, adults aged 65+ years
> 6. Pneumonia – oxygen assessment within 24 hours of hospital arrival
> 7. Coronary heart disease – control of low density lipoprotein cholesterol (LDL-C) (<100)
> 8. Coronary heart disease – beta-blocker treatment at hospital discharge following a heart attack
> 9. Blood pressure control in hypertension (<140/90)

10. Pneumonia vaccination among patients aged 65+ years

SOURCE: Veterans Health Administration[151]

The website allows for a comparison of the performance of the selected VHA Medical Centers for a given quality indicator. It is aimed at all individuals insured under the VHA and provides information on how to interpret the value of the quality indicators. Quality comparison is possible between individual providers and with averages such as the national average of all VHA Medical Centers and/or aggregate HEDIS measures. No information is given whether these averages control for the case-mix.

9.2.2 *Nursing Home Compare*

The governmental Medicare website also provides and maintains Nursing Home Compare at www.medicare.gov/NHCompare, a web-based tool for the comparison of nursing homes.[152] It allows searching and comparing nursing homes by name, city, county, state or postcode. The database is also downloadable by individual users. Furthermore, as a decision-making support tool, this website also offers a checklist of points to be considered when selecting a nursing home.[153]

The Nursing Home Compare Website features a quality rating system that assigns each nursing home a rating of between 1 and 5 stars (5 stars = quality much above average, 1 star = quality much below average).[154] In addition to the overall rating, homes are rated on the following three individual areas:

- The *health inspection rating* contains information from the last three years of onsite inspections including standard and complaint surveys, compiled from site visits that follow a specific process to determine the extent to which a nursing home has met Medicare's minimum quality requirements (currently >200,000 onsite reviews). Certification surveys provide a comprehensive assessment of the nursing home, including assessment of areas such as medication management, skin care, assessment of resident needs, nursing home administration, environment, kitchen and food services, resident rights and quality of life.[154]

- The *staffing rating* informs about the average number of hours of care provided to each resident each day by nursing staff. The rating is adjusted to differences in the level of need of care of residents.

- The *quality measure rating* informs about how well nursing homes are caring for their residents' physical and clinical needs. It reports on ten physical and clinical measures for nursing home residents. Measures combine long-stay prevalence measures, including ability of daily living (ADL) change, mobility change, high-risk pressure ulcers, long-term catheters, physical restraints, urinary tract infection (UTIs) and pain along with short-stay prevalence measures covering delirium, pain and pressure ulcers. This information is collected by the nursing home for all residents.

9.2.3 *Quality Check* by the Joint Commission on Accreditation of Healthcare Organizations

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) is a private non-profit organisation composed of members of medical associations; it is effectively a self-regulatory structure. It currently accredits more than 18,000 hospitals,

long-term and ambulatory care facilities, home care organisations, and clinical laboratories; accreditation is voluntary. In the voluntary sector, the JCAHO is the major quality review body for hospitals and some other providers.[155]

In 1997, JCAHO initiated 'ORYX', a programme designed to incorporate quality measurement and performance improvement into the accreditation process.[139] It has identified more than 200 performance measurement systems that allow hospitals and long-term care facilities to measure their performance on quality indicators, assess how that performance changes over time, and compare performance with that of other institutions. Since 1998, all hospitals and long-term care facilities applying for accreditation were required to choose, initially, at least two quality (now four) indicators from one of the approved systems and report performance on those indicators to JCAHO, which will monitor improvement over time.

In 2004, the JCAHO began working with the CMS to develop standardised common measures, the National Hospital Quality Measures. These are documented on the JCAHO website as Quality Check (www.qualitycheck.org), which reports on all hospitals accredited by the JCAHO although reporting on quality is voluntary.[156] Hospitals report on the accreditation programme indicators including advanced certification programmes, indicating the specialisation of the particular hospital. The system also informs on the achievement of '2010 National Patient Safety Goals':[157]

- improve the accuracy of patient identification

- improve the effectiveness of communication among caregivers

- improve the safety of using medications

- reduce the risk of health-care-associated infections

- accurately and completely reconcile medications across the continuum of care

- the organisation to identify safety risks inherent in its patient population

- complete a 'Universal Protocol', documenting for example whether a pre-procedure process has been conducted.

Each of these objectives is assessed by a set of indicators, for example 'reduce the risk of health-care-associated infections' is measured by the extent to which hand hygiene guidelines are being met, the prevention of multi-drug resistant organism infections, the prevention of central-line associated blood stream infections and the prevention of surgical site infections.

9.3 Quality information systems aimed at commissioners, regulators and providers

One consequence of the fragmentation of the US health system is that providers face different regulations when treating patients insured by public or private schemes.[128] This also relates to the requirement to submit information to the regulator. The CMS, for example, require that hospitals in all states must submit information regarding procedures

and diagnostic tests on all Medicare patients.[158] This is not the case for patients covered under the private scheme.

9.3.1 Veterans Health Administration National Surgical Quality Improvement Program

In 1986, the VHA was mandated by public law to compare surgical outcomes with those in the private sector. This led to the National Surgical Quality Improvement Program (NSQIP), in which all the medical centres performing major surgery participated.[159] The NSQIP reports 30-day morbidity and 30-day postoperative mortality after major surgery for all Veterans' Administration hospitals. Although data are generally available to the public, their format is such that it is not easily accessible and targeted primarily at regulators within the VA.[158]

In the late 1990s, the NSQIP was seen to be the first national, validated, outcome-based, risk-adjusted and peer-controlled programme for the measurement and enhancement of the quality of surgical care.[160] Patient risk-adjusted surgical outcomes permit valid comparisons with other programmes. Data are provided at hospital levels but the identity of individual providers is not revealed. It is, however, possible to identify best practice examples, which is seen as a core function of these reports. Overall, the NSQIP aims to provide reliable, believable data; empower surgeons to review quality of their work and make improvements; develop performance measures for surgery for quality improvement; and maintain a registry of major operations and so improve surgical health care.

The NSQIP comprises comparative, site-specific, and outcome-based annual reports; periodic assessment of performance; self-assessment tools; structured site visits; and dissemination of best practices. The quality improvement function of the NSQIP is primarily undertaken through annual reporting for each surgical centre. The report contains risk-adjusted outcomes of all the participating hospitals, including an assessment of high and low outlier institutions. Although, as noted above, individual hospitals are not identified, as reports are centre-specific, hospitals can compare their performance with others and with national averages. Hospitals that have significantly improved their performance are encouraged to report back to the NSQIP on the methods and procedures that they have used to improve or sustain good risk-adjusted outcomes. This feedback is published regularly in the NSQIP's annual report.

9.3.2 *The New York State Cardiac Surgery Reporting System*

Although this report focuses on national efforts of public reporting, it is worth briefly highlighting a specific state initiative, the New York State Cardiac Surgery Reporting System (NY CSRS), which is among the most researched and evaluated public reporting systems in the US (for example[161-162]). Also, the initiative is worth describing because of the considerable support it received by a wide range of actors, including an advisory board composed of some of the leading cardiac surgeons, statisticians and health policy researchers.[161]

In brief, since 1989 the New York State Department of Health (DoH) has been collecting data to assess the quality of care provided to patients undergoing coronary artery bypass grafting (CABG), using a registry.[163] Each hospital collects relevant data and forwards them to the DoH each quarter. The data are then processed to produce mortality rates for each hospital and surgeon that take into account the severity of each patient's presenting illness

and coexisting conditions, considering about 40 different risk factors. These data were published, for the first time, in 1990, reporting on crude, expected and risk-adjusted mortality rates as well as volume of CABG procedures performed at each hospital in New York State. Importantly, although surgeon-specific death rates are calculated, these were (initially) not made available to the public on the grounds that low volume of operations would lead to substantial variation in mortality rates and therefore be susceptible to misinterpretation. However, on release of the hospital-specific death rates a newspaper, the *Newsday*, issued a lawsuit against the DoH under the Freedom of Information Law to also gain access to surgeon-specific data. The DoH lost the case and had to publish the data in 1991. Surgeon-specific death rates have now been published annually since 1992.[164]

9.4   Evaluation

9.4.1   Website-based information systems

In an analysis of publicly available hospital comparisons on the internet, Leonardi et al. (2007) compared two government owned, two non-profit and three proprietary websites.[158] Websites were examined for their accessibility, data transparency, appropriateness, timeliness and consistency. They were considered most accessible if they were free of charge, did not require signup and were highly visible. They were considered most transparent if they disclosed the source of data reported on, described the statistical and analytical methods used where appropriate, and used reliable measurements. Websites that used a greater variety of process, structure and outcome measures were considered more appropriate, while timeliness was assessed by measuring time lags in reporting data and consistency by assessing procedure-specific sample searches. Using these criteria, the authors found Hospital Compare and the JCAHO's Quality Check to be the most accessible overall and the most transparent.[158] Hospital Compare was rated the less appropriate system, although by the time of the study (2007) the range of quality indicators used by Hospital Compare was limited to a select set of process measures on surgical infection prevention processes; Hospital Compare has expanded the range of indicators since then. Similar issues applied to the Quality Check website. Provision of real-time data was a concern for all websites under review although again this is changing for some (e.g. HCAPS measures are now updated each quarter). Overall, although this study provides useful information about the quality of web-based public reporting systems, it provides little insight into the intensity of their use or their impact on patient care.[158]

Evidence on the characteristics of internet users searching for provider information on the internet is scant. Pew Internet & American Life Project (2006) analysed how many users specifically searched for provider-related information as a proportion of all users searching for health-related information online and found this figure to have increased from 21% in 2002 to 29% in 2006.[165] Users were mostly women (31%), aged between 30 and 49 years (33%), who tended to have a higher education qualification (40%), while among those aged 65+ years, only 18% looked for information on hospitals and doctors. The notion that older people and those educated to a lower level appear to be less likely to search for information about providers is corroborated by other studies that explore internet use for searching for health information in general. These demonstrate that use varies by income, ethnicity and educational level as well as age and gender.[166] Disparities in access to the

internet may therefore exacerbate the already existing differential access to health services.[166]

At the same time, there is a trend of older people picking up on using the internet, with proportions rising from just over 25% among those aged 70 to 75 years in 2005 to 45% in 2009.[167] In addition, broadband use in this age group has more than tripled between 2005 and 2009, which is the largest increase among all age groups included in the reference survey. Nevertheless, the percentage with broadband at home is still at a low of 16%.

9.4.2 Evidence on information systems available to patients

As mentioned above, the HCAHPS went public in spring 2008. Although the impact of the release of this data into the public domain has so far not been evaluated systematically, the data has been used for some secondary studies. These examined for example patients' views on aspects of provision that should be improved such as nurse staffing levels[162] [168] and noise[169] in hospitals. However, it is too early to ascertain an effect on hospital quality from the awareness of these deficits, if possible at all.

More recently, Werner and Bradlow (2010) evaluated the effect of public reporting through Hospital Compare from 2004 to 2006, years associated with better patient outcomes and other quality improvements such as readmission rates. Particularly, hospitals with low baseline performance recorded the largest gains in improving quality of care.[170] However, as the authors emphasised it not possible to conclude that public reporting caused observed quality improvements.

Werner et al. (2009) found that public reporting of nursing home performance on the Nursing Home Compare website of CMS was associated with improved performance.[171] Performance improvement was measured on reported and unreported measures.[35]

9.4.3 Evidence on information systems aimed at commissioners, regulators and healthcare providers

Evaluations of the NY CSRS found considerable improvements in the quality of CABG surgery as measured by survival following surgery. Hannan et al. (1994) reported a fall risk-adjusted mortality of about 40% between 1989 (4.2%) and 1992 (2.5%)[172] while Cutler et al. (2004) found evidence that public reports of low quality were associated with a subsequent 10% fall in surgery in corresponding hospitals. [173] The public release of quality information was found to be associated with improvements of previously poor performing hospitals. The NSQIP of the VHA also reported substantial declines in 30-day mortality (27%) and 30-day morbidity (45%) within the first ten years of the introduction of the programme.[159] It is noteworthy though that in contrast with the New York experience the NSQIP does not make available data on individual providers.

Chassin (2002) concluded that releasing quality data into the public domain can drive quality improvement.[161] However, although a considerable body of work has explored the benefits of public reporting by NY CSRS, much less is known about the actual mechanisms behind these effects.[173] When interviewing Medicare patients in New York with a free choice of provider, Mukamel et al. (2004) found that the publication of surgeon-specific quality measures had a direct influence on patients' selection of surgeon, outweighing the importance of information on surgeon experience and price.[13]

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APPENDICES

Appendix A: Questionnaire

'On-call' Facility for International Healthcare Comparisons
– Comparisons of health systems on provider performance –

There is growing interest in the public release of information on the quality of healthcare delivered by identified providers. This development is located within broader concerns about accountability of health systems. Reporting on performance aims to help holding the various actors in a given health system to account by informing stakeholders and so enabling them to make decisions, including facilitating the selection and choice of providers by service users and purchasers of health care.

Countries are increasingly developing national quality assessment frameworks to strengthen the accountability of the health system through benchmarking. Many of these frameworks or initiatives have involved the development and implementation of information systems of quality and/or performance indicators to support quality improvement strategies.

This request focuses on information systems that aim to collect and provide information on provider performance to (1) **patients**, (2) **health service commissioners/purchasers**, and (3) **regulators**, for the purpose of enabling choice (for patients and purchasers) and performance management (through purchasers and regulators).

In your response, please consider information systems that are funded through public sources and/or 'owned' by public providers/corporatist actors. Where feasible and appropriate, please include information made available by, for example, patient/consumer associations (as appropriate). If separate systems are in place for patients, purchasers and regulators, please specify the target audience. Please also indicate if there are separate systems in place for primary/specialist and inpatient/outpatient care providers.

1. What systems are in place to provide information on provider performance? Please describe the key characteristics for each system, including target audience (patients, purchasers, regulators), status of ownership (e.g. public, private not for-profit), type of data collected, indicators used, frequency of collection (e.g. per month/ year), level of aggregation (e.g. local, regional, national).

2. Is/are the information system/s part of a wider quality/performance improvement initiative? If so, please describe the initiative/s. Please consider the following points
   a. Who are the drivers behind the initiative/s?
   b. Who leads the initiative/s?

Examples may include national or regional governments; consumer/patient organisations; not-for-profit think tanks; provider associations; payers

3. What are the aims and objectives of the information system/s?

4. What is the intended use of the information system/s?

5. What is the source of the information/data provided?

6. How is the information quality assured/validated?

7. Is all the information collected on provider performance made available to the public, and if so, in what format is the data presented?

8. What is the evidence of the effectiveness of the system (e.g. through a formal evaluation)? What mechanisms are in place to assess effectiveness (and how is 'effectiveness' defined)?

9. If information systems in place are not formally evaluated, what other source are there that provide information on whether and how the information is used by patients, purchasers and regulators (e.g. reports)?

10. If there are no formal information systems in place, or if these are considered not effective, what other sources are available to
    a. patients to inform decisions about where to seek healthcare?
    b. purchasers to inform purchasing decisions?
    c. regulators to assess the performance of provider organisations?

11. What are the concerns or debates about the information system/s in place? Please consider potential concerns regarding
    a. the nature/scope of the data/information provided?
    b. the use of this data?

Please describe the experience in [country] so far.