Prospects for comparing European hospitals in terms of quality and safety: lessons from a comparative study in five countries

SUSAN BURNETT1, ANNA RENZ1, SIRI WIIG2, ALEXANDRA FERNANDES3, ANNE MARIE WEGGELAAR4, JOHAN CALLTORP5, JANET E. ANDERSON6, GLENN ROBERT7, CHARLES VINCENT8 AND NAOMI FULOP9

1Centre for Patient Safety and Service Quality (CPSSQ), Division of Surgery and Cancer, Department of Surgery, Faculty of Medicine, Imperial College London, Room 508 Medical School Building, St Mary’s Campus, Norfolk Place, W2 1PG London, UK, 2Department of Health Studies, Faculty of Social Sciences, University of Stavanger, N-4036 Stavanger, Norway, 3Department of Marketing, Operations and Management, ISCTE Lisbon University Institute, 1649-026 Lisbon, Portugal, 4Department of Health Policy and Management, Erasmus University, Campus Woudenstein, PO Box 1738, 3000 DR Rotterdam, The Netherlands, 5The Jönköping Academy for Improvement of Health and Welfare, School of Health Sciences, Jönköping University, PO Box 1026, S-551 11 Jönköping, Sweden, 6Florence Nightingale School of Nursing and Midwifery, James Clerk Maxwell Building, 57 Waterloo Rd, SE1 8WA London, UK, 7National Nursing Research Unit, King’s College London, James Clerk Maxwell Building, 57 Waterloo Road, SE1 8WA London, UK, 8Division of Surgery and Cancer, Department of Surgery, Faculty of Medicine, St Mary’s Hospital, Imperial College London, 10th Floor QEQM Wing, W2 1NY London, UK, and 9Department of Applied Health Research, University College London, 1-19 Torrington Place, WC1E 7HB London, UK

Address reprint requests to: Susan Burnett, Centre for Patient Safety and Service Quality, Faculty of Medicine, Imperial College London, Room 508 Medical School Building, St Mary’s Campus, Norfolk Place, W2 1PG London, UK. Tel: +07802-755865; Fax: +0207+5943137; E-mail: s.burnett@imperial.ac.uk

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Abstract

Purpose. Being able to compare hospitals in terms of quality and safety between countries is important for a number of reasons. For example, the 2011 European Union directive on patients’ rights to cross-border health care places a requirement on all member states to provide patients with comparable information on health-care quality, so that they can make an informed choice. Here, we report on the feasibility of using common process and outcome indicators to compare hospitals for quality and safety in five countries (England, Portugal, The Netherlands, Sweden and Norway).

Main Challenges Identified. The cross-country comparison identified the following seven challenges with respect to comparing the quality of hospitals across Europe: different indicators are collected in each country; different definitions of the same indicators are used; different mandatory versus voluntary data collection requirements are in place; different types of organizations oversee data collection; different levels of aggregation of data exist (country, region and hospital); different levels of public access to data exist; and finally, hospital accreditation and licensing systems differ in each country.

Conclusion. Our findings indicate that if patients and policymakers are to compare the quality and safety of hospitals across Europe, then further work is urgently needed to agree the way forward. Until then, patients will not be able to make informed choices about where they receive their health care in different countries, and some governments will remain in the dark about the quality and safety of care available to their citizens as compared to that available in neighbouring countries.

Keywords: measurement of quality, external quality assessment, health-care system

Introduction

There are many reasons why it is important to be able to assess and compare hospitals in terms of quality and safety both within and between countries, for example to help hospitals improve their services and for governments to understand the impact of their policies. As it becomes more common for patients to seek health care in different countries [1], the need for comparative information to enable choice is becoming more important. This has been
recognized by the recent European Union (EU) directive on
cross-border care [2], placing responsibility on countries to
provide relevant information about the health care they
provide to help patients make a choice based on the availabil-
ity, safety and quality.

Here, we report on the challenges identified in developing
a framework of available indicators and information that
could be used to assess hospitals based on the quality and
safety in five European countries, considering the issue
involved and making recommendations for the future. The
countries are England, Portugal, The Netherlands, Sweden
and Norway; countries representing variation in important
aspects of health care, for example, funding arrangements
and health-care quality [3]. Health services research teams
working in leading universities in these countries are partici-
ating in the EU-funded Quality and Safety in European
Hospitals research study [4, 5], a study in 10 hospitals, 2 in
each country [6] exploring the organizational and contextual
factors affecting how hospitals implement quality improve-
ment. The purpose of the selection process for the study
was to find hospitals at different stages of the quality
journey, rather than only those seen to be doing well.

**Indicators available in each country to assess and compare hospitals**

Ten commonly used quality and safety process and outcome
indicators were proposed to identify hospitals with different
levels of performance in each country, indicators that are
widely regarded in the medical field as good practice
(Table 1), including operating on hip fractures within 48 h.
The research teams were asked whether the indicators were
available; who had access; were they available for every hos-
pital; how robust were the data (including definitions); and
what other indicators were available?

Table 1 summarizes the responses received, with only three
outcome indicators available in all countries: infection
rates; a range of condition-specific mortality rates; and
Caesarean section rates and only one process indicator: hip
fractures treated in a set period. In general, these indicators
were publicly available, but in Portugal, this was more com-
plicated as described later in this paper, and in all cases, the
researchers had to know where to look for the information
from different organizations and websites.

The data for methicillin-resistant Staphylococcus aureus
(MRSA) bacteraemia were not considered to be helpful in
the Netherlands and Sweden, where the rates are very low as
compared to the UK, where this indicator is considered very
relevant and where until recently, the numbers have been
much higher. It was apparent that although available in all
countries, these indicators were not directly comparable
because of differences in definitions (Table 2). For example,
the surgical site infection rates in some countries are based
on 1 day prevalence surveys, whereas in others, surveillance
systems operate, which include every patient, and in each
country, different surgical procedures are included, some are
mandatory, whereas others are voluntary. The indicator of
hip fracture treatment ranged from operating within 18 h in
Sweden to 48 h in England and was only available for people
aged over 65 in Norway.

The following sections provide more detail by country.

**England**

In England, data are collected centrally from each hospital
organization through the Hospital Episode Statistics data-
bases. These data are analysed by Dr Foster Intelligence (a
partnership between the UK Department of Health and a
commercial provider of health-care information), and each
year, a hospital guide is made available to the public, setting
out the position of each hospital against a range of indicators
[7]. Data on every patient with a blood stream MRSA infec-
tion are collected with aggregated figures for each hospital
made available on a public website [8].

**Portugal**

Since 2001, the Health Minister has provided the
Organisation for Economic Co-operation and Development
(OECD) with process and outcome indicators similar to
those in Table 1. However, it is not possible to disaggregate
the data into regions and hospitals, making individual hos-
pital comparisons impossible. In the last decade, various
reforms, such as the merger of hospitals into clusters and
changes in the mix of public–private ownership, have led to
past performance data being lost in the merged groups,
and some are only now producing group wide data. Further-
more, hospital organizations have autonomy to choose the
processes and outcomes indicators that they use, and
these are their exclusive property. In this context, access
to good quality performance data was almost impossible in
Portugal, and the indicators included in the Performance
Evaluation Reports of Public Portuguese Hospitals [9] were
used as a proxy. These reports of raw data have been pub-
lished annually since 2005 by the National School of Public
Health [10], but are not adjusted for age or case mix.

**Netherlands**

In the Netherlands, there was a wealth of publicly available
data about quality in hospitals, predominantly derived from
the information of the Dutch Health Care Inspectorate
(IGZ) [11] and listed by a newspaper in an annual top 100
hospitals [12]. This is supported by further information of
the Dutch Association of Hospitals (NVZ) [13] such as hos-
pital mortality rates. Infection data are separately collected
for all hospitals, but presented in a combined way on a
health-care comparison website [14]. Process measures were
chosen from a wide range of publicly available information,
including pressure ulcers and eye examination for diabetes,
measures collected by the hospitals, but not externally
validated.
Sweden has a tradition of collecting data nationally; however, more quality data have been collected over time by county councils (who manage hospitals in Sweden) and private health organizations. There are also many disease-specific quality registries. One of the key issues in Sweden is that most data so far have been published at a county council level, but there were enough data published at a hospital level to satisfy the needs of the project. An increasing number of hospital-specific quality indicators are now being published, and a process is ongoing between the Swedish Association of County Councils and Regions [15] and the National Board of Health and Welfare [16] to analyse and make available national information in an accessible way and for comparative purposes.
Norway

In Norway, hospital indicator data are reported by the hospitals to the Norwegian Patient Register and the Norwegian Institute of Public Health and published on a website called ‘Free Hospital Choice’ [17]. The Norwegian Directorate of Health [18] publishes data on a growing number of national quality indicators in acute care. It is mandatory in Norway to report MRSA infections, but this information is not available for each hospital. The process indicators available were different here to other countries and included the number of patients placed on a bed in a corridor, bathroom, laundry room or living room at 7 a.m. and the proportion of patient discharge letters transferred within 7 days to the general practitioner.

Table 2 Examples of differences in the definition of indicators between countries

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<td>Surveillance methodology used. Hospitals are able to choose from 14 categories of surgical procedures. Data are collected on each patient who has a procedure in the category under surveillance. SSIs that meet standard case definitions are identified through active follow-up during the post-operative stay or through readmission.</td>
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<td>Netherlands</td>
<td>Percentage of patients with post-operative site infection within 30 days after surgery with at least one of the following symptoms: pain, redness, local swelling and heat. (based on the definitions of European Centre for Disease Prevention and Control)</td>
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<td>Proportion of stroke patients who have a brain scan (CT or MRI) performed on the day of admission and within 1 day of admission.</td>
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<td>Average time between the admission by TIA or Stroke and the completion of standard diagnostic tests—blood tests, brain imaging, ECG and imaging of the neck vessels.</td>
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ASA, American society of anesthesiologists; SSIs, surgical site infections; TIA, trans ischaemic attack.

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Hospital accreditation or licensing schemes in each country

Table 3 describes the hospital licensing, accreditation or similar schemes in each country showing that this type of information is not available to be used to assess or compare the quality of hospital care in Europe.

Only in England is there a statutory licensing scheme for all hospitals [19]. In the other countries, accreditation or certification is voluntary, and quality award schemes are often based on the Baldrige Award [20].

Challenges and potential solutions

These findings highlight the differences between countries in the data and information available about the quality and safety of hospital care. In England, the Netherlands and Norway, various hospital data are submitted to national organizations that conduct analysis and make them available to the public by hospitals. In Sweden, the level of aggregation of the data is stronger at the county council level and in the disease-specific quality registries. In Portugal, the information that is collected at the national level is not easy to obtain by region or hospital. In all countries, data on specific procedures or conditions are collected by organizations, including medical societies, but not all make this available to the public.

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Table 3 Accreditation or licensing systems for hospitals in each country

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<td>England</td>
<td>Care Quality Commission licensing scheme [19] statutory requirement with ‘Annual Health Check’ of all hospitals producing publicly reported quality ratings for each hospital organization [27].</td>
</tr>
<tr>
<td>Portugal</td>
<td>No national accreditation scheme, but one is in the validation phase—some hospitals voluntarily accredited with Joint Commission [28] and the Health Quality Service (formerly Kings’ Fund) [29].</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Voluntary accreditation, so not all hospitals are involved. Accreditation undertaken by the Netherlands Institute for Accreditation in Healthcare [30] based on the Baldridge Award [20]. Some hospitals use other accreditation systems, i.e. ISO and INK (Institute for Dutch Quality).</td>
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<td>Sweden</td>
<td>No formal hospital accreditation system. ‘Baldridge’ type award scheme in operation [20].</td>
</tr>
<tr>
<td>Norway</td>
<td>No formal hospital accreditation system. A small number of institutions providing clinical services are certified according to ISO 9000 by accredited certification bodies.</td>
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The differences in the indicators collected by countries highlight the different policy concerns of those countries. In England, for example, data are available on MRSA infections for each hospital, whereas in Norway, no MRSA hospital level data are available, but data are available on the proportion of patients placed in a bed in a corridor or living room at 7 a.m. Each country also has a different approach to the assessment of hospitals in terms of accreditation or licensing with most having voluntary schemes. Only England has statutory licensing and an ‘annual health check’ of hospitals.

Discussion/conclusions

The increasing movement of people across borders for health care, whether by choice or circumstance, is driving the need for more transparency about the quality and safety of health care in European hospitals. The new EU directive on patients’ rights [2] places a responsibility on member states to ‘provide relevant information to help individual patients to make an informed choice, including on treatment options, on the availability, quality and safety of the health care they provide’[21].

In recognition of the requirement for all citizens to have access to high-quality, safe health care, the EU has been engaged in a number of projects to support hospitals in this quest and to find ways of monitoring and measuring this. These include the SIMPATIE project [22] that reported in 2007 on the development of indicators and outcome measures and a vocabulary for patient safety across Europe. The OECD [23] and WHO [24] have also funded projects to develop indicators for hospital quality and safety. However, the findings here show that despite all this important work, there are very little data available on the quality and safety of hospital care that is comparable between these five countries in Europe, and we anticipate that this is likely to be the case across the EU and in countries outside Europe, where citizens also travel for health care.

In 2008, the European Observatory on Health Systems and Policies [25] reported that the EU needs to answer the question of how citizens of Europe can be assured that they will receive high-quality care if they need health care beyond their national frontiers. Both OECD [26] and the SIMPATIE [22] project have recommended that the quality of administrative data for health services in the EU needed to improve. Our study indicates that to date these issues have not been addressed and that further work is urgently needed to find a way forward if patients are to have any information to make choices between health-care providers when they travel for treatment in Europe. Clearly, the solution will need to be of low cost with the information easily kept up-to-date. The first step may be for those countries without comparative data about the safety and quality of their hospitals to be required to assemble available information from hospitals within their borders, to analyse this information and place it in the public domain. In the longer term to provide information for comparison between countries, the solution may be to agree to a small set of well-defined indicators to be collected by each hospital organization in Europe with some common standards and methods for assessing these. Alternatively, the solution may be a patient-led hospital equivalent of an internet hotel comparison website such as ‘Trip Advisor’ (www.tripadvisor.com). In the meantime, patients travelling across the borders for their health care in Europe will not be able to make informed choices about where they receive their health care on any other basis than access, and many governments in Europe will remain in the dark about the quality and safety of care currently available to their citizens in their hospitals as compared to that available elsewhere.

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Conflict of interest statement

All authors have completed the Conflict of Interest form, available on request from the corresponding author and declare that there is no conflict of interest with regard to this work.

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