Public reporting of healthcare-associated infection data in Europe. What are the views of infection prevention opinion leaders?

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SUMMARY

Background: There is increasing interest in public reporting of healthcare-associated infection (HAI) data in Europe, mostly for patient safety reasons. But it is uncertain whether patients and other stakeholders benefit from them.

Aim: To obtain the views of European infection control opinion leaders and provide information about public reporting of HAI in Europe.

Methods: European Centre for Disease Prevention and Control HAI surveillance National Contact Points and other opinion leaders in infection control from 34 European countries were invited to complete questionnaires about HAI reporting in their countries and to provide their personal views about public reporting. The issue was discussed during two discussion rounds in 2010 and 2012.

Findings: Response rates were 100% and 93.9% for the two surveys. Current practices on publishing HAI data vary widely across Europe. Many experts support the idea of publishing HAI data. All representatives from the seven countries with established public reporting were in favour of such practice. After the first discussion round, 12 experts changed their opinion. Finally, the majority of the experts acknowledged the positive influence on hospitals by increasing competition on the basis of quality, but they are hesitant about publishing infection rates as these can be misinterpreted by patients and need standardization and validation.

Conclusion: Opinion leaders in infection control in Europe acknowledged the positive influence of public reporting on hospital performance and resulting efforts to reduce...
Introduction

Healthcare-associated infection (HAI) is a public health concern and a major risk for patients being treated in hospitals. The European Centre for Disease Prevention and Control (ECDC) estimates that about 37,000 deaths per year are directly associated with HAI in Europe (www.ecdc.europa.eu). Most European countries have implemented national programmes for HAI prevention and public pressure has resulted in mandatory public reporting of HAI data in several of them. There is substantial variation in what information hospitals are required to disclose and how the data are presented to the public. Currently, there is debate about the extent to which the public is interested in indicators of individual hospital performance, and whether consumers/patients, general practitioners and other healthcare providers would use such information to select among hospitals. Another controversy is about the type of data to be reported to the public: should these be indicators of structure, process or outcome? The aim of this study was to obtain information about public reporting of HAI in Europe and the opinions of experts in the field of infection prevention and control about the topic.

Methods

In August 2010, the ECDC HAI surveillance National Contact Points (NCP) and experts from 34 countries (27 EU member states, whereby UK counts as four countries: England, Northern Ireland, Scotland and Wales; plus Croatia, Iceland, Norway and Switzerland) who are opinion leaders in infection prevention and control were invited to complete a questionnaire (Q-I) about current reporting practices in their countries, and to provide their personal opinion about the role of public reporting of HAI data for stakeholders in the healthcare system (e.g. patients, healthcare providers, hospitals). All experts either represented the official ECDC NCPs working at national Public Health institutions or, if this was not available, were recognized experts and opinion leaders in the field of infection control in their countries. The results of Q-I were discussed by the experts during a first consensus meeting in December 2010. In March 2011, a second questionnaire (Q-II) was sent to the experts in which they were invited again to supply their opinion about public reporting. The results of Q-I and Q-II were discussed at a second consensus meeting in April 2012. Experts who changed their opinion (from Q-I to Q-II) about the benefits of public reporting for the stakeholders were contacted by telephone and interviewed in order to understand the reasons for changing their opinion. For subgroup analysis, chi-square test was used. All statistical analyses were conducted with Stata software, version 10.0 (StataCorp., College Station, TX, USA).

Results

The response rates of Q-I and Q-II were 100% and 93.9%, respectively. One expert withdrew her statements after the survey had been completed.

In 2010, 48% of the countries (16/33) had established a scheme for the reporting of HAI data by individual hospitals to national healthcare authorities. In seven of these countries (four UK countries, Ireland, Norway and France), there was mandatory public reporting of HAI data from individual hospitals. In France, hospitals are publicly ranked based on structure and process indicators such as the percentage of surgical wards participating in a surveillance system, alcohol-based hand-rub consumption and whether there is an infection control committee (www.icalin.sante.gouv.fr). In Norway, biannual HAI prevalence data are published for each hospital on a website (http://www.fritsykehusvalg.no/start/). The Health Protection and Surveillance Centre of Ireland publishes annual individual hospital data about Staphylococcus aureus bloodstream infections (stratified by meticillin-susceptible/resistant Staphylococcus aureus (MSSA/MRSA)) and antibiotic consumption, and quarterly reports on alcohol-based hand-rub consumption. Reporting of Clostridium difficile infection (CDI) data is mandatory for both hospitals and all healthcare providers. CDI data are aggregated on a regional basis and published weekly (www.hpsc.ie/hpsc/). In the four UK countries, hospitals must report data such as the number of MRSA and MSSA bloodstream infections, CDI, and surgical site infection rates, especially for orthopaedic surgery (England: http://www.hpa.org.uk; Northern Ireland: www.cdscni.org.uk; Wales: http://www.wales.nhs.uk; Scotland: www.hps.scot.nhs.uk).

In Q-I and during the first consensus meeting, most experts (69.2%) expressed concern about the benefit to patients of public reporting of HAI data, but 50% and 44% considered such reporting useful for hospitals and other healthcare providers, respectively (Figure 1). Subgroup analysis showed that experts from countries with established public reporting schemes were more likely to believe in benefits for stakeholders compared with experts from countries without established public reporting (Table I).

After the first discussion round, 12 experts changed their opinion about the role of public reporting for the different stakeholders. In Q-II, 50% thought that patients would benefit from public reporting, 78.6% considered such activities beneficial for individual hospitals and 55.6% for other healthcare providers (Figure 1). The reasons for opinion change varied, but two views were expressed repeatedly during the follow-up telephone interviews: (i) that initiating competition among hospitals would improve quality, and (ii) the strengthening of infection prevention activities. Most experts reported ongoing political and public discussion in their countries about the reporting of quality and/or HAI data from individual hospitals.

In the controversy over whether outcome or process data should be published, most experts favoured the strategy of reporting structure and process indicators combined with audits in the hospitals, as is the case in France. The experts were concerned about reporting outcome data such as numbers or incidence/incidence densities of HAs. They were concerned that outcome reporting might interfere with infection prevention efforts in hospitals, creating an incentive for...
underreporting, and that published reports could be misinterpreted by patients.

**Discussion**

This study of public reporting of HAI data by individual hospitals revealed that reporting varies widely across Europe. The UK and Ireland decided to publish outcome parameters, and in England this is now done on a weekly basis. France publishes rankings of individual hospital performance based on a series of structure and process indicators. In Norway, results of prevalence studies are published biannually. In recent years there has been both political and public discussion in many European countries about the *raison d’être* of public reporting, clearing the way towards more transparency. For example, Germany put into force an amendment to the Infection Protection Act in 2011 to establish mandatory public reporting of HAI data. Similar discussions were reported by experts from other European countries.

Although there was wide consensus within this expert group to support the general concept of public reporting of HAI data, there was considerable disagreement about the benefits of such reporting for stakeholders, and about types of data and the format of reports. Concerns about the format and understanding of data reporting are supported by studies from the USA and France. Although patients are arguably the primary stakeholders in the reporting of hospital quality data, these data can only be useful if reports are easy to locate, brief and comprehensible. Presenting HAI rates may frighten patients if they are not explained accurately and succinctly. In addition, information about prevention strategies of hospitals and advice on what patients can do to protect themselves were found to be useful as supplemental information in such reports. However, previous studies suggest that the individual choice or recommendation of a specific hospital depends on previous personal experience or advice coming from a trusted physician, rather than from published data.

One intended and primary mechanism of public reporting to improve patient safety is that it can help to initiate quality competition between hospitals. A systematic review of the evidence linking publication of performance data to the initiation of internal quality improvement and competition between hospitals was not conclusive. Our expert group acknowledged public reporting as an instrument to drive

**Table I**

<table>
<thead>
<tr>
<th>Public reporting beneficial for:</th>
<th>Public reporting already practised in own country</th>
<th>P-value</th>
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<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Patients</td>
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<tr>
<td>Yes</td>
<td>3</td>
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<tr>
<td>Hospitals</td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>No</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Stakeholders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>14</td>
</tr>
</tbody>
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**Figure 1.** Responses from National Contact Points and infection prevention experts about the benefit of public reporting of healthcare-associated infection rates for different stakeholders in two subsequent surveys (August 2010 and March 2011); numbers given as percentage of all answers (PROHIBIT study group). White bars, ‘no’; black bars, ‘yes’.
competition and strengthen infection prevention in hospitals. They agreed that this would not necessarily require outcome data such as infection rates, but that it might be achieved by measuring process or structure indicators, which are less prone to detection bias. This thinking is in line with the conclusion of an expert group from the ‘Improving Patient Safety in Europe’ (IPSE) project in 2008.²

The true impact of public reporting of HAI data on patient safety and HAI reduction remains unclear. UK experts judged that public reporting has had an important impact on infection prevention efforts. Although this view is supported by published data, strong evidence is lacking that healthcare is becoming safer due to public reporting.⁹,¹⁰ It can also be argued that public reporting may have the unintended result of leading to deliberate underreporting, as well as the selection of low-risk patients by the hospitals.⁸ Therefore, public reporting needs to be accompanied by data validation and on-site audits.¹¹ In addition, the methods of obtaining the data must be consistent across hospitals.¹² The consensus of the experts was that healthy competition and fair benchmarking among hospitals can only be provided if data are standardized and validated regularly.¹³

In some countries patient organizations and patients’ advocacy groups are working towards the disclosure of outcome data from individual hospitals. The UK, Germany and the USA are examples where voluntary and anonymous HAI surveillance data has resulted in open-outcome benchmarking. Experts from our group who have followed closely the discussion in European countries raised the issue that once the pressure was too high, politicians were more inclined to please such groups rather than accepting advice from infection control experts to keep benchmarking confidential. The implications of open benchmarking on patient safety remain unclear and studies demonstrated several difficulties in the comparison of HAI rates.¹³,¹⁴ Apart from a concordant method for capturing data in the hospitals, appropriate indicators have to be selected and need to be risk adjusted.¹⁵,¹⁶ To run a useful benchmarking system, resources and infrastructure are needed at national as well as hospital level.¹⁶ Moreover, a model by Gravelle and Sivey illustrates that increased provision of hospital data may not necessarily result in quality improvement. Substantial differences in resource access and heterogeneous cost structures are limitations that cannot be overcome by public quality reporting. The authors conclude that governments should ensure that hospitals have equal access to markets and capital if quality improvement is aimed by publishing hospital performance data.⁷

The scientific evidence for mandatory public reporting and benchmarking to reduce HAIIs is currently limited, but in today’s environment, it is necessary to provide information to the public to enhance patient empowerment. This expert group was in favour of public reporting of individual hospital data if (i) process indicators rather than infection rates (outcome data) are reported, and (ii) delivery of surveillance data is monitored by external audits, especially when outcome data are presented.

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Conflict of interest statement

None declared.

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