Introduction

Over the years, monitoring quality of health care has become increasingly important for governments. For this purpose, health-care performance indicators are being developed. In the Dutch Health Care Performance Report, one of the indicators is public trust. Public trust in health care provides information of public views on performance of health-care institutions, caregivers and the system as a whole, as well as on how people might behave in future encounters with health-care providers.

However, in order for public trust to function as an effective performance indicator it has to be sensitive to changes. In previous research conducted on public trust in health care, measured over an 8-year period of time, only small changes were found, despite public debates on health-care quality and occurrence of incidents during that period. One explanation might be that at the time of the measurements of public trust, no incidents were particularly salient.

Incidents in health care happen every now and then and in every country and are often extensively covered in the media. In England, for example, in the late 1980s and early 1990s, an incident with extensive media covering, occurred at Bristol Royal Infirmary. At this hospital, a tragic sequence of events in paediatric cardiac surgery in which many young children lost their lives was reported. Another more recent incident in England, which was also extensively covered by the media, took place at the Mid-Staffordshire Hospitals Trust in 2009. High-mortality rates for admitted patients as emergencies at this hospital led to an investigation by the Healthcare Commission. For the 3 years that were examined (2005/6 to 2007/8), the investigation revealed that mortality rates in emergency care, next to poor standards of quality of care, were between 27% and 45% higher than expected. Media reported that, although it was not clear how many patients died as a direct result of failures, it supposedly equated to between 400 and 1200 excess deaths. These are major and rare incidents. However, more often, smaller incidents occur in health care, where no actual deaths are involved, although patients are exposed to risk. These incidents also can create a lot of media attention.

We expect that incidents that are extensively covered by the media influence public trust in health care, also those outside the circle of people who were affected by the incident. Media hypes on disasters, for example, result in an increasing number of persons who attribute their health problems to the disaster, even if not involved in the incident.

We expect incidents in health care to affect public trust in the involved health institutions and caregivers. Moreover, these incidents might lead to lower levels of trust in health institutions and caregivers in general and in the health-care system as a whole. However, the impact on trust is possibly influenced by the extent of involvement with the failing institution and caregivers. People living in the vicinity of the institution will be much more involved in comparison to the national population. Also, the level of trust might be influenced by the extent the population is informed about the incident by the media.

In this study, the impact of a media covered incident of a Dutch hospital in the Fall of 2008 on public trust is analysed in both the local and national population. Our research question is: to what extent is public trust in health care affected by a local-media-covered-hospital-incident? The hospital incident, the IJsselmeer hospitals (IJH) incident, is described in Box 1. First, we studied the impact of this incident on public trust in the specific hospital and caregivers involved, as expressed by the local population. Second, we studied the impact of the incident on public trust in hospitals and caregivers in general, again expressed by the local population. Third, we analysed the impact of the incident on public trust in the general population. Lastly, we studied the levels of public trust in relation to the amount of information on the incident people said to have received.

Public trust in health care

In the literature, two types of trust are described: interpersonal and public or institutional trust. Inter-personal trust involves direct interaction between two individuals, the trustee and the trusted, for example, a patient–provider relationship. Public/institutional trust characterizes or institutional trust. Inter-personal trust involves direct interaction between two individuals, the trustee and the trusted, for example, a patient–provider relationship. Public/institutional trust characterizes relationship with a collective. In previous research, we developed a model that distinguishes four groups of influences on public trust in health care: (i) institutional guarantees and availability of good quality care; (ii) news media; (iii) network knowledge; and (iv) personal
In sum, we will test the following hypotheses:

Hypothesis 1 (H1): Public trust in the involved hospital and caregivers, measured in the population living in the environment of the incident, is affected negatively.

Hypothesis 2 (H2): Public trust in hospitals, caregivers and the health-care system in general, measured in the population living in the environment of the incident, is affected negatively, but less so than trust in the specific hospital and its caregivers.

Hypothesis 3 (H3): Public trust in hospitals, caregivers and the health-care system in general, measured in the national population, is affected negatively, but less so than in the local population.

Hypothesis 4 (H4): The impact on public trust in hospitals, caregivers and the health-care system in general, is greater, the more extensively informed people are.

**Methods**

**Sample**

Three samples were used for this study. Two samples consist of participants of the ‘Dutch Health Care Consumer Panel’ (COPA). COPA has about 3000 members sampled from the general Dutch population aged ≥ 18 years. Every 2 years, one-third of this panel is renewed. This ensures that the panel remains a cross-section of the Dutch population, that members do not develop specific knowledge of and attention for health-care issues and that no ‘questionnaire-fatigue’ occurs. The panel is registered by the Dutch Data Protection Authority (no. 1262949).

Data of this study were collected in a COPA sample in October 2006 and in a sample in October 2008. In 2006, 1000 panel members and in 2008, 1368 panel members received a postal questionnaire with response rates of 84% (N = 840) and 73% (N = 997), respectively. Both samples consisted partly of the same persons (300).

The third sample consists of 1000 inhabitants aged ≥ 18 years in the catchment area of IJH. They were randomly sampled from Infobase® (www.acxiom.nl), a database containing addresses of more than 3.5 million people living in The Netherlands. Of this sample, 37% returned the questionnaire.

Table 1 shows sex and age of the respondents in the three samples, compared with the Dutch population and inhabitants of the region.

The samples slightly differ on the distribution of sex and age. This difference is corrected for in the analyses.

**Questionnaires**

Two questionnaires were used. The first questionnaire was sent to both COPA samples. This questionnaire consisted of two parts. In the first part of the questionnaire, respondents could give a mark ranging from 1 (no trust at all) to 10 (a lot of trust), indicating their present degree of trust in the health-care system. In the second part, trust in health-care professions, such as medical specialists, and trust in health-care organizations, such as hospitals, were measured. In

**Impact of the incident on local and national public trust**

We expect that the impact on trust will be greater in the local population because they are directly affected by poor quality of care in their hospital. Directly affected are those inhabitants who live in the adherence region of the hospital. They might be, when in need of care and especially in case of an emergency, in direct confrontation with the problems of the hospital. An estimated 65% of the regional population from which we took our sample, uses the IJH.

Moreover, the local population will be exposed to more information. They are informed by both national and local news media, whereas the national population is solely informed by the national news media. Also, for the local population, the incident might have been the ‘talk of the town’, exchanging information in their network.

The effect of the incident on the local population’s trust in IJH and caregivers in this hospital might also be generalized to the local population’s trust in hospitals and caregivers in general. However, the effect on trust in hospitals and caregivers in general will be smaller than on trust in the specific hospital and its caregivers.

The national population’s trust in hospitals and caregivers and the health-care system as a whole might also be affected by the incident. The national population has also been exposed to negative media information on this incident. Although this information concerns a particular hospital, they might generalize it to hospitals, caregivers and the health-care system in general. However, the impact on public trust in the national population will be lower in comparison to the local population. The national population is not directly affected by the problems in this hospital and they are not as extensively informed as the local population.

**Hypotheses**

In sum, we will test the following hypotheses:

Hypothesis 1 (H1): Public trust in the involved hospital and caregivers, measured in the population living in the environment of the incident, is affected negatively.

Hypothesis 2 (H2): Public trust in hospitals, caregivers and the health-care system in general, measured in the population living in the environment of the incident, is affected negatively, but less so than trust in the specific hospital and its caregivers.

Hypothesis 3 (H3): Public trust in hospitals, caregivers and the health-care system in general, measured in the national population, is affected negatively, but less so than in the local population.

Hypothesis 4 (H4): The impact on public trust in hospitals, caregivers and the health-care system in general, is greater, the more extensively informed people are.

**Box 1** Description incident IJsselmeer hospitals

The incident took place in the Netherlands at the IJsselmeer hospitals (IJH), a hospital organization with two nearby locations (in Emmeloord and Lelystad). In September 2008, visits of the Health Care Inspectorate to study the pre-operating process in the IJH led to a negative report. It was found that:

- The hospital did not meet the needs of conditions of good-quality care regarding the building as well as the quality system.
- The air handling system did not meet the needs of a mingling air handling system.
- There was no functioning quality system within the operating room complex.
- All workers in the operating room complex insufficiently acted according to guidelines.
- Guidelines were not translated into hospital protocols.
- Preventive maintenance of medical equipment and its visualization for the user was not accurate.
- Logistics of sterile medical aids was not in line with the law. Materials and instruments in wrong packages were encountered.
- Medication was insufficiently checked on the final date of usage. Some medication was over the date of usage.
- The antibiotics policy did not meet the national professional standards.
- The hospital could not provide information for the performance indicator ‘surveillance hospital infections’.

All these problems led to unsafe situations for patients, for example, increased infection risk. The report led to a forced closure of the operating rooms of the hospitals. Media reported that hospital management and specialists knew about the problems, but took no action.16–21 No operated patients were adversely affected by the situation, as far as known. Apart from the report, it was also exposed that the financial situation of the IJH was critical. The problems, as reported by the Inspectorate, as well as the financial situation of the IJH were covered extensively by local and national news media from mid-September to approximately end of December 2008. After December 2008, articles were still published but not as extensive as before. In figure 1, the articles published by the five leading national newspapers (AD, Trouw, Volkskrant, Telegraaf and NRC) are displayed. Also articles published in two local papers (Stentor and Flevopost) are displayed.

experiences with representatives of the health-care system. In this study, the emphasis lies on the influence of the news media on trust.

The sample slightly differs on the distribution of sex and age. This difference is corrected for in the analyses.
In this part, people could indicate their level of trust on a 4-point Likert scale with response options ranging from very low trust to very high trust. In this part of the questionnaire, the respondents were also able to state that they had ‘no opinion’. This option was added to ensure that questions were only answered when the respondents were actually able to express their degree of trust in that specific profession or institution. At the end of the questionnaire of 2008, a few questions were added on the extent to which one was informed on the IJH incident.

The second questionnaire, which was sent to the population in the region of the hospitals, was a derivative version of the other questionnaire. This questionnaire consisted of the two mentioned parts and a supplement. In this supplement, people could indicate the amount of trust they had in both separate locations of the IJH, their trust in the specialists and nurses working at both locations of the IJH and the IJH as a whole. Also, respondents were asked to which extent they were informed about the problems in the IJH.

The questionnaires were distributed during mid-October 2008. This was approximately a month after the first media coverings (figure 1). Both the local population and COPA received one reminder.

**Data analysis**

All public trust variables were non-normal distributed, leading to non-parametric testing. To test the hypotheses, the following analyses were performed.

**H1** To study the effect of the incident on the local population, trust of the local population in their hospital and on the caregivers is compared with public trust in hospitals and caregivers in general, as measured in the national population in October 2006. This sample was used while at that time in 2006 no incident occurred in health care. To note, there was, however, an incident in a university hospital in Spring 2006. Frequencies of both samples were compared.

**H2** To study the extent of the impact of the incident on generalized trust in hospitals, caregivers and health care among the local population, a comparison was made between the local population and the national population in 2006. Frequencies and Kruskal–Wallis tests with post hoc Mann–Whitney tests were performed.

**H3** To learn whether the incident did have an impact on public trust in the national population, a comparison of public trust in hospitals, caregivers and health care in general was made between both national samples (2006 and 2008). Although there is some overlap in the samples, data were analysed as if they constituted independent samples. Frequencies and Kruskal–Wallis tests with post hoc Mann–Whitney tests were performed.

**H4** To test the hypothesis on the effect of information on public trust, only the national population of 2008 was used. In contrast to the national population, almost all respondents among the local population indicated as being completely informed about the topic.
The local population is therefore left aside. The frequencies are displayed and Kruskal–Wallis tests with post hoc Mann–Whitney tests were used.

For all trust questions, the ‘no opinion’ answering option was excluded from the analysis. Information on raw data can be requested by the author. Correcting for sex and age was done by weighing.

**Results**

**Hypothesis 1: Local population and public trust in hospital and caregivers involved**

Table 2 shows that the percentage of the local population reporting high or very high trust in the IJH is low, at least when compared to the percentage of high trusters in hospitals among the general population in 2006. There is also a relatively small percentage in the local population placing trust on the specialists working in the IJH, compared to public trust in specialists in general reported by the national population in 2006. Nurses working in the IJH are trusted more than the IJH specialists. In comparison to trust in nurses in general, measured in the national population in 2006, the IJH nurses are trusted slightly less. These findings confirm Hypothesis 1.

**Hypothesis 2: Local population and public trust in institutions, caregivers and health care in general**

The local population displays significantly lower levels of trust in hospitals and specialists in general compared with the national population in 2006 (table 2). The local population displays equal levels of trust in nurses in general, compared with the national population. Also, no significant difference was found for trust in health care in general. Therefore, Hypothesis 2 is confirmed for hospitals and specialists in general, not for nurses and health care in general.

**Table 2 Percentage of (very) high trusters in local (2008) and national population (2006/08)**

<table>
<thead>
<tr>
<th>Public trust in</th>
<th>Local population 2008</th>
<th>The Netherlands 2006</th>
<th>The Netherlands 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>57.2**</td>
<td>74</td>
<td>72.1</td>
</tr>
<tr>
<td>IJH</td>
<td>38.8</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Location 1</td>
<td>41.4</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Location 2</td>
<td>41.3</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Specialists</td>
<td>78.6**</td>
<td>91.5</td>
<td>90.6</td>
</tr>
<tr>
<td>Local specialists</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location 1</td>
<td>52.8</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Location 2</td>
<td>57.3</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Nurses</td>
<td>87.4</td>
<td>87.4</td>
<td>88.9</td>
</tr>
<tr>
<td>Local nurses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location 1</td>
<td>74.5</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Location 2</td>
<td>79.4</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Health care in general</td>
<td>6.9</td>
<td>7</td>
<td>7.1</td>
</tr>
</tbody>
</table>

**Table 3 Percentage of (very) high trusters by level of information on the incident**

<table>
<thead>
<tr>
<th>The Netherlands 2008</th>
<th>Not informed on problems (N = 102)</th>
<th>Somewhat informed (N = 658)</th>
<th>Completely informed (N = 157)</th>
<th>Total (N = 917)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>76.3</td>
<td>72.8</td>
<td>66.9</td>
<td>72.1</td>
</tr>
<tr>
<td>Specialists</td>
<td>94.4</td>
<td>90.4</td>
<td>89.9</td>
<td>90.6</td>
</tr>
<tr>
<td>Nurses</td>
<td>90</td>
<td>89.2</td>
<td>87.3</td>
<td>88.9</td>
</tr>
<tr>
<td>Health care in general</td>
<td>7.2</td>
<td>7.1</td>
<td>7.1</td>
<td>7.1</td>
</tr>
</tbody>
</table>

**Hypothesis 3: National population and public trust in institutions, caregivers and health care in general**

There is no significant difference in public trust between the general population in 2006 and 2008 shown in table 2. The third hypothesis is not confirmed.

**Hypothesis 4: Information and the impact of a local incident on public trust**

No significant differences in trust were found between people who state that they were not informed about the accident or somewhat informed of completely informed, although the trend in the data is in the expected direction (table 3). However, these findings do not confirm the fourth hypothesis.

**Conclusion**

The research question in this article was: to what extent is public trust in health care influenced by a local incident? This is studied in both the population living in the vicinity of the incident and the national population.

In the local population, the incident had an impact on public trust in the IJH and specialists working in this hospital. Also, in this population, the impact of the incident was generalized to trust in hospitals and specialists in general. In the national population, no impact of the incident on the public’s trust was found.

**Strengths and weaknesses of the study**

This study has several strengths. First, we reacted quickly on the incident with our data collection. The data measure public trust immediately after the incident. Another strength of our study is that we gathered data in both the national and local population. By questioning both populations, we were able to indeed show that such an incident had an impact on public trust on a local level, but not in the general population.

However, the study has also several shortcomings. First, in this study, public trust among the local population was compared with public trust in the national population in 2006. In studies of local incidents, there is no way of having a pre-measurement. The comparison with the general population in 2006 is what comes closest to a pre-measurement. Therefore, the exact impact of the incident on the public’s trust in the local population can only be indicative. Possibly not only the impact of the incident, but also years of poor performance of the hospital in the region were measured in our study. There are indications that the hospital was performing poorly,23, 24 but it is unclear to what extent people were aware it.

Another issue is the use of different recruitment methods for the local and national population. The national population consists of health-care consumer panel members, who agreed to fill out questionnaires on health-care issues on a regular basis. They were recruited and could indicate whether or not they wanted to participate in the panel. If they agreed to participate, they generally have a high-response rate. The local population was a random sample that was sent a single questionnaire. By filling out the questionnaire, they participated in the study. Therefore, the non-response rate is higher in the local population when compared to the...
national population. In our view, there is not much difference between the combination of a low response to the invitation to participate in COPA and a high response to the separate measurements, on the one hand and the relatively low-response rate in the single questionnaire, on the other.

A final issue in our study is non-response bias. The analyses were weighted for sex and age in order to resemble the represented population. However, it cannot be ruled out that some features of the population, leading to non-response bias, could not be controlled for. For example, in the sample of the local population, it might be possible that proportionally more patients, treated in the IJH in the past year, have responded because of their interest in the hospital, compared with those who were not treated in this hospital.

**Meaning of the study**

Public trust levels of the national population were not influenced by the incident, although national news media devoted much attention to the incident. While the information on the incident was the same for both the national and local population, other mechanisms might explain the difference in impact of the incident on trust in both populations. A first possible explanation of this difference can be found in the perceived (un)trustworthiness of the media. The national population is solely informed by the media, whereas the local population is informed by media, network of family and friends living in the environment and, in some cases, personal experiences. If media, as their only source of information, is perceived as untrustworthy, this might explain why no decline of trust was reported in the national population. However, the Dutch population places more trust in media compared to the average European, with 77% of the population placing trust in radio and 61% in television and written media. Therefore, it can be assumed that the trustworthiness of the media did not play a role in the fact that the levels of trust were not affected in the national population. A second explanation of difference in impact in both populations can be found in the fact that populations differed in nearness to the incident. As was mentioned in the introduction, nearness to the incident involves greater exposure to information. However, as was found in our study, exposure to a greater amount of information has no impact on trust. Therefore, the difference in trust will be explained by the fact that nearness also involves that the local population is more directly affected by the incident than the national population. When people need hospital care, they usually attend the one closest to home. The national population might reason that it happens in other regions, but will not happen in ‘their’ hospital. This is expected to be the most reasonable explanation for the difference in trust between the national population and the local population. Another reason of the non-affected levels of trust in the national population, apart from the difference between the two populations, is the size of the incident. The IJH incident is a relatively small incident; no patients were injured or died, in contrast, to the incidents as described in the introduction. We expect that the effect of these much larger incidents would also lead to a decline in trust of the national population. However, in line with our previous reasoning, we expect that although the levels of trust will decline in the national population when a larger incident occurs, the impact of a larger incident will always be greater in the population living in the catchment area of the institution, still leading to a different impact between both populations.

**Health institutions and loss of public trust**

When a health institution is faced with an incident leading to loss of public trust, regaining trust is of importance for survival. How institutions best address a loss of trust can be derived from literature on complaint handling. People who have filed a complaint were confronted with an incident on a micro level. A study on complaint handling by Bismark et al. found that patients do not specifically want monetary compensation, they prefer other forms of accountability like explanations or lessons learned. Another study on complaint handling in hospitals learned that expectations with regard to the complaint handling process, shared by many complainants, were offering apologies and communication on how to prevent the incident that led to the complaint from happening again by hospitals and professionals. Complaint handling, in general, would improve when these expectations are met. These findings mean for incidents on a macro level that trust is expected to be regained when institutions openly explain why mistakes happened and communicate what they do to prevent this from reoccurring again in the future.

**Performance indicator: liable to change?**

In the introduction, we stated that a performance indicator should be liable to change. This study points out that a local incident might lead to changes in public trust on a local level and is useful as a performance indicator on this local level. However, it does question the usefulness of the measurement of public trust on a national level. Seldom such large incidents happen, affecting public trust in a specific institution/profession or institutions/professions in general on a national level. This leads to very small changes in public trust in health care through the years as was found in earlier research.

**Future research**

This is the first study on the impact of a local incident on public trust in health care in both a local and national population. On the basis of this study, other topics can be recommended for future research. First, losing trust is easier than building trust. Many people in the environment of the IJH have lost trust in ‘their’ hospital. To learn more on the development of trust over time, a new cross-sectional study among the population in the catchment area of IJH could be done. Second, the usefulness of measurement of public trust on a national level is questioned in this article. A study on the public’s trust in the health services in their direct environment as opposed to public trust in the national care system could provide insight in whether local or national measures will provide more useful performance information.

**Acknowledgement**

The authors thank the people who responded to the questionnaires.

**Conflicts of interest:** None declared.

**Key points**

- From studies on the impact of the media on public opinion, it is known that media may affect people.
- It is also known that when incidents in health care take place, they are extensively covered by the media.
- However, no information is available on the impact of a media covered incident in health care on public trust, measured directly after the incident took place.
- This study provides insight on the extent of the impact such a hospital incident may have on public trust in the national population as well as on people living in the vicinity of the hospital where the incident took place.
- On a local level, public trust in health care might be useful as a performance indicator.

**References**

Conclusion: comprised 259 participants. Participants were equally distributed among the centres and balanced in terms of age, gender and OSCE collected data and protocol adherence of the four centres was carried out by Generalized Linear Model (GLM).

Methods: The project GULiVer explores how lay people in Belgium (Gent), the Netherlands (Utrecht), the UK (Liverpool) and Italy (Verona) evaluate physicians’ communicative skills. The aims are to present the study design and to assess the quality of collected data.

Results: In each centre one out of two sets of four videotaped consultations involving medical students with varying communication skills were shown to eight lay panels of six to nine participants each (n = 259). The selection of lay participants was stratified by gender and age in order to obtain a heterogeneous sample. Background characteristics included socio-demographics, participants’ general physical (COOP-WONCA) and mental health (GHQ), communication preferences (QUOTE-com) and trust in doctors (TMP). Participants were asked to give quantitative and qualitative evaluations of the student doctors’ performance in a mixed-methods design. Quality assessment of the collected data and protocol adherence of the four centres was carried out by Generalized Linear Model (GLM).

Conclusion: The study design and the applied procedures will ensure a great richness of data allowing a wider European perspective on lay persons’ views, assessed both individually and through focus group discussion.