# A comparison of the quality of care in accident and emergency departments in England and the Netherlands as experienced by patients

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## Abstract

**Background** Measuring patients' experiences to determine healthcare performance and quality of care from their perspective can provide valuable evidence for international improvements in the quality of care. We compare patients' experiences in Accident & Emergency departments (A&E) in England and the Netherlands and discuss the usefulness of this comparison.

**Methods** A cross-sectional survey was conducted among patients attending A&Es aged 18 years and older. In England, 134 A&Es were surveyed. In the Netherlands, nine hospitals participated in the study. Main outcome measures were patients' experiences represented by six domain scores aggregated on the country level or on the A&E level.

**Results** In England, 43 892 completed questionnaires were received (40%). In the Netherlands, 1865 completed questionnaires were received (42%). Three of six domain scores were significantly higher for patients in the Netherlands: 'waiting time' [mean scores of 73.8 (NL) versus 67.2 (ENG)], 'doctors and nurses' [mean scores of 85.7 (NL) versus 80.6 (ENG)] and 'your care and treatment' [mean scores of 82.6 (NL) and 80.2 (ENG)]. The variance among the English A&Es was large. The best and worst practices on five domains were English.

**Conclusions** The mean quality of care in the A&E appeared to be better in the Netherlands on three domains, but the best practices were English A&Es. The within-country differences between A&Es were much larger than differences between countries. Healthcare performance in the A&E can be compared between countries by surveying patients' experiences, and there seems much to learn across A&Es both within and among countries.

## Introduction

Recently, the importance of taking a patient perspective has been given greater prominence in emergency medicine.[1] Assessing patients' experiences is increasingly acknowledged as an integral part of evaluating healthcare.[2] Measuring their experiences with healthcare performance in different countries may add valuable input to the discussion about preferable models for the organization of emergency medicine. The Organization for Economic Cooperation and Development (OECD) emphasizes the importance of national and international surveys of patient experiences and actively promotes cross-country comparative surveys using standardized instruments.[3] Disease-specific questionnaires for patients with diabetes and cancer have already been developed and applied cross-country, anticipating the migration of patients and professionals.[4] The OECD believes the need for patient-reported outcome measurement will take a prominent position in healthcare over the next decade because healthcare systems around the world are still struggling with the seemingly intractable problems of high costs and suboptimal quality and are looking for new answers. In addition, the European Partnership for Supervisory Organisations in Health Services and Social Care (EPSO) has been a powerful driver for undertaking cross-European research, to take advantage of the access to international expertise about safety, effectiveness and patient experience.[5] The Commonwealth Fund already uses the benefits of cross-cultural comparisons of patients' experiences to explore the possibility of reducing national healthcare costs in the United States.[6]

One of the healthcare areas that may benefit from international comparison of patients' experiences is emergency medicine. Organization of, and access to, emergency medicine differs among countries. Whether healthcare performance in emergency medicine as experienced by patients differs between countries, and whether cross-country comparisons can be meaningful for optimization of the organization of emergency medicine should be researched.

We explore this topic by comparing patients' experiences with emergency care in accident and emergency departments (A&Es) in England and the Netherlands.

In England, understanding what patients think about their care and treatment is an important part of the Care Quality Commission's duty to assess and report on the quality and safety of services provided by the National Health Service (NHS). The NHS has a national patient experience survey programme that systematically gathers patients' views of the care they have recently received.[7] Improving patient experience is a key aim of the NHS. Although NHS trusts' participation in the programme is voluntary, it is universal. By asking for, monitoring and acting upon patient feedback, organizations are able to make improvements in the areas that patients say matter most to them. Within the survey programme, adults using A&E services were surveyed in 2003, 2004, 2008 and 2012. The survey was undertaken with the accident and emergency department questionnaire, which measures patients' experiences in the A&Es of NHS trusts. The questionnaire seeks to measure patients' experiences rather than their satisfaction. Satisfaction is based on two components: expectations (or 'needs') and experiences. Expectations are related to personal preferences, which make quality of care difficult to measure. Therefore, it is preferable to measure experiences, which have been shown to be more objective and to yield more detailed information for quality improvement.[8]

In the Netherlands, the Ministry of Health Care, Welfare and Sport promotes the measurement of patients' experiences for healthcare evaluations. Since 2006, several questionnaires for a variety of community services, care settings and conditions have been developed.[9] Healthcare organizations participate voluntarily in the majority of surveys. Until recently, there was no questionnaire for A&E patients in the Netherlands. A questionnaire development study was undertaken. As part of this study, the A&E department questionnaire used in the English National Patient Survey Programme[10]

was translated into Dutch, and surveys were undertaken in A&Es in the Netherlands, in 2009 and 2010.

The healthcare systems in the two countries differ. In England, a patient with an acute health problem can visit a variety of in office-hours and out-of-hours services. In primary care, a single phone call to NHS Direct (recently changed into NHS 111) provides a one-stop gateway to out-of-hours healthcare, passing on calls, where necessary, to the appropriate GP cooperative or deputizing service. Intermediate care services, such as walk-in clinics, are available in some places and more severe patients can be treated at A&Es in hospitals.[7] Generally, in England patients can be either self-referred or referred by GPs, by ambulance services or by referral from NHS-services. In the Netherlands, general practitioners are positioned as gatekeepers. Patients should consult a GP before referral to A&Es in hospitals, but direct access is also possible. So, similarly to England, patients can be either self-referred or referred by GPs or by ambulance services.

The aim of this study is to explore and compare the quality of care from the patient's perspective in the A&E in England and the Netherlands. We formulated the following research questions:

1. What are the summary scores of patient experiences reported on six domains in both countries?
2. Do case-mix adjusted mean summary scores differ between both countries and within countries?
3. What can be learned from these comparisons and what does this contribute to the discussion on comparing quality of care?

## Methods

### Study design

Cross-sectional surveys were conducted in England and the Netherlands.

### Data collection

In this study, we used data from the A&E survey of the National Patient Experiences Survey Programme in England run in 2008 where all eligible trusts voluntarily participated.[11] For each hospital trust, a random selection of 850 adult A&E attendees of a 1-month sample, with known postal address (and excluding known deaths) were selected, using a computer-generated numbers table. Trusts were able to select one of 3 months, January or February or March 2008, in case any particular month was 'atypical' – for example in case of large scale local emergencies that may have placed an unusual burden on the service. Participation in the survey was funded locally; all 134 eligible trusts took part. Annual patients' numbers attending A&E ranged from 11 058 to 306 689. Patients were not eligible if they were under the age of 16 years, had attended a minor injuries unit or walk-in centre, had been admitted to hospital via Medical or Surgical Admissions Units (and therefore, had not visited the A&E) or had a planned attendance at an outpatient clinic run within the A&E.

In the Netherlands, no national data was available. An announcement of the study was made in an online national medical newsletter. Nine hospitals of about ninety hospitals were interested in the study and voluntarily confirmed their participation. Annual A&E patients' numbers attending A&E ranged from 13 500 to 50 000. These are medium to large sized hospitals, varying in terms of bed numbers (384–785), patient throughput, geographical area (urban or rural) and teaching or non-teaching status. Overall quality of the participating hospitals ranged from best through worst on a national rank-order of hospital quality.[12] For the data collection, a sample of patients who attended the A&E was compiled in April 2009 (2 hospitals) and September 2010 (7 hospitals). In the 2009 samples, all patients who went to the A&E in 1 week were included (717 patients). In the 2010 samples, 600–800 patients per A&E were randomly selected out all patients

attending in three subsequent weeks. Patients were not eligible under the age of 16 years, if their postal address was unknown or if the hospital had reported their death. In England, the paper questionnaire and covering letter were sent by post up to 3 months after the A&E attendance. Up to two reminders were sent to non-respondents at two-weekly intervals. The recipients could return the questionnaire in a prepaid envelope or complete the survey by telephone or in a different language if they requested. In the Netherlands, the patients received the questionnaire and an information letter within 1 month of their attendance. Up to three reminders were sent to non-respondents: after 1, 4 and 6 weeks. The questionnaire could be returned in a postage-paid return envelope.

### The A&E department questionnaire

The A&E department questionnaire used in the 2008 survey in England was based on the questionnaire used for the national emergency department survey conducted in 2003. Stakeholders were consulted and focus groups were conducted with patients to test the face validity of the questionnaire.[13] The questionnaire was translated into Dutch by two independent researchers, according to the cross-cultural adaptation process.[14] Differences in the translations were discussed and translations were adapted by consensus. The questionnaire was translated back to English by a native speaker. Variations between the original questionnaire and the forward-backward translated questionnaire were resolved with the developer. The psychometric properties of the translated questionnaire were tested in a pilot study (internal consistency, construct validity). The results were in accordance with the original English questionnaire.[10]

The core questionnaire consisted of 50 questions divided into 11 different sections: arrival at the emergency department; waiting; doctors and nurses; your care and treatment; tests; pain; hospital environment and facilities; leaving the emergency department; overall; about you; any other comments. These sections were

introduced in an order that parallels the typical sequence of use of an A&E.

The English study protocol was approved by the North West Research Ethics Committee of the National Health Service (MREC 02/8/100) and the Dutch protocol by the Medical Ethical Committee of the University Medical Center Utrecht.

### Data analysis

Secondary analysis of the English data and primary analysis of the Dutch data were performed. Descriptive statistics were used to summarize the English and Dutch sample characteristics of the respondents, such as age, gender, referral and hospital admission after discharge from the A&E. Previous research[10] indicated that patients' experiences measured by the A&E department questionnaire could be represented with 6 domain scores (each with internal consistency, Cronbach's $\alpha$): 1. Waiting time ($\alpha = 0.634$); 2. Doctors and nurses ($\alpha = 0.877$); 3. Your care and treatment ($\alpha = 0.781$); 4. Hygiene ($\alpha = 0.815$); 5. Information before discharge ($\alpha = 0.800$); 6. Overall ($\alpha = 0.825$). To calculate the domain scores, the response categories of the questions that constitute the factor were recoded into 0 to 100 with intermediary options at equal intervals. Appendix A displays the domains and questions.

The data set was aggregated from A&E unit to national level to compute the domain scores that comprise the overall mean of the experience scores for each item contributing to the domains. Linear mixed effect models were used to examine the associations between countries and patients' experiences.[15] These models are appropriate to analyse the hierarchical structure of the data (patients within A&Es). A domain score was the dependent variable, and a random intercept per A&E was included in the model. Significant differences between countries for each of the six domain scores were determined using likelihood ratio tests. Differences with a $P < 0.01$ were considered significant. Adjusted mean scores were calculated to assess differences due to healthcare

performances between countries while controlling for potential confounding of the patient characteristics such as age, sex, referral and admission after discharge.[16] The question 'What was the main reason that you went to the emergency department for?' was used to assess the categories of the variable 'referral'. Referral was used as a proxy for differences between healthcare systems. Therefore, the question 'What happened at the end of your visit to the emergency department?' was used to determine the three discharge categories: 1. admission to the same hospital; 2. discharged to home or stayed with a friend or relative; 3. somewhere else, transferred to a different hospital or to a nursing home or stayed somewhere else. The question was used as a proxy for the severity of the patient's health problem.

To enhance the interpretation of the differences between countries' mean domain scores, effect sizes were calculated using the method proposed by Hedges for estimating δT.[17] An effect size expresses the differences between the means in standard deviation units and is an indicator for the practical relevance. The widely used threshold values for small, medium and large effect sizes are respectively 0.2, 0.5 and 0.8.[18]

Finally, to determine the variability of A&Es within countries the variance among A&Es was determined. Linear mixed effect models provide data to calculate the intraclass correlation coefficient (ICC), a general assessment of differences among A&Es.[19] ICCs were used to calculate the mean score of all A&Es and the 95% comparative confidence intervals (CI) of individual A&Es, adjusted for sex, age, admission after discharge and referral.

Data were analysed with R 2.10.1 (R Foundation for Statistical Computing, Vienna, Austria)[20,21] and SPSS 19.0 (IBM Corp., Poughkeepsie, NY, USA).

## Results

### Participants

In England, questionnaires were sent to 113 955 patients, and completed questionnaires were received from 43 892 respondents. This

**Table 1** Respondent characteristics

| | NL (N = 1865) | | ENG (N = 43 892) | |
|---|---|---|---|---|
| | Mean (SD) | N | Mean (SD) | N |
| Age | | | | |
| Years | 54.4 (19.9) | 1861 | 53.5 (20.6) | 43 872 |
| Missing | | 4 | | 20 |
| | % | | % | |
| Gender | | | | |
| Male | 49.0 | 891 | 44.9 | 19 716 |
| Female | 51.0 | 927 | 55.1 | 24 170 |
| Missing | | 47 | | 6 |
| Referral | | | | |
| Healthcare professional | 49.1 | 837 | 26.2 | 10 056 |
| Ambulance | 19.1 | 326 | 28.8 | 11 051 |
| Self-referral | 20.1 | 343 | 28.2 | 10 790 |
| Somebody else (friend, relative, colleague) | 11.6 | 198 | 16.8 | 6427 |
| Missing | | 161 | | 5568 |
| Admission from A&E | | | | |
| Admitted to the same hospital | 34.0 | 612 | 27.8 | 11 939 |
| Discharged to home | 63.6 | 1146 | 68.9 | 29 640 |
| Somewhere else | 2.4 | 43 | 3.3 | 1436 |
| Missing | | 64 | | 877 |

| | Experience domain scores mean (SE) | | | |
|---|---|---|---|---|
| | NL | EN | ICC | Effect size |
| Waiting time[1] | 73.8 (1.6) | 67.2 (0.4) | 0.049 | 0.31 |
| Doctors and nurses[1] | 85.7 (1.0) | 80.6 (0.3) | 0.010 | 0.22 |
| Your care and treatment[1] | 82.6 (1.1) | 80.2 (0.3) | 0.018 | 0.11 |
| Hygiene | 76.6 (2.0) | 74.1 (0.6) | 0.061 | 0.11 |
| Information before discharge | 57.9 (2.1) | 58.6 (1.2) | 0.013 | 0.02 |
| Overall | 83.6 (1.1) | 81.4 (0.3) | 0.022 | 0.10 |

**Table 2** Patients' experiences domain scores

Domain score models were adjusted for age, sex, referral and admission after discharge.
Threshold values for small, medium and large effect sizes are 0.2, 0.5 and 0.8.
[1]Domain scores were significantly different between the two countries (likelihood ratio test; $P < 0.01$).

represented an adjusted response rate of 40% when undelivered questionnaires, ineligible patients and deceased patients have been accounted for. The mean age of the respondents was 53.5 years, and 45% were male. For gender and age, the differences between respondents and non-respondents were small but significant ($P < 0.001$), as expected given the sample size. In the Netherlands, questionnaires were sent to 4464 patients, and completed questionnaires were received from 1865 respondents. This represented an adjusted response rate of 42% when undelivered questionnaires, ineligible patients and deceased patients have been accounted for. The mean age of the Dutch respondents was 54.4 years, and 49% were male. The non-respondents were younger (mean age 44 years) and more likely to be male

(55%). In the Dutch sample, most respondents (46%) were referred by a healthcare professional. English respondents were mostly referred by ambulance (29%), self-referred (28%) or by a healthcare professional (26%) (Table 1).

Aggregated domain scores (range 0–100) for patients in the Netherlands were higher (Table 2). Significant differences between the countries were observed for the domains 'waiting time' [mean scores of 73.8 (NL) versus 67.2 (ENG)], 'doctors and nurses' [mean scores of 85.7 (NL) versus 80.6 (ENG)] and 'your care and treatment' [mean scores of 82.6 (NL) and 80.2 (ENG)]. The mean scores for 'hygiene' and for 'overall' were also higher for Dutch patients, but differences were not significant between the two countries. The mean score for

| | Deviation of mean experience domain scores | | | |
|---|---|---|---|---|
| | NL | | EN | |
| | Lower limit | Upper limit | Lower limit | Upper limit |
| Waiting time | −0.3 | 8.9 | −14.1 | 9.8 |
| Doctors and nurses | 0.8 | 5.4 | −7.7 | 4.5 |
| Your care and treatment | −0.9 | 4.2 | −8.8 | 5.4 |
| Hygiene | −1.6 | 7.5 | −11.8 | 10.5 |
| Information before discharge | −3.0 | 3.2 | −7.3 | 6.7 |
| Overall | −2.9 | 4.2 | −6.7 | 5.0 |

**Table 3** Variance of patients' experiences domain scores

Domain score models were adjusted for age, sex, referral and admission after discharge.

**Figure 1** Patients' experiences on the domain waiting time of each A&E. The vertical axis plots the deviation of the mean score and the corresponding 95% confidence interval. In the upper left corner, the highest deviation of the mean score is presented. In the lower right corner, the lowest deviation of the mean score is displayed. The large black dots are estimates of Dutch A&Es. The smaller black diamonds are estimates of English A&Es.
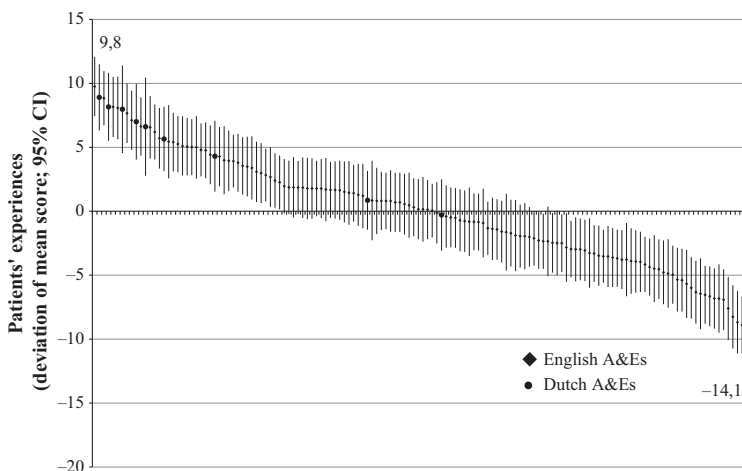


**Figure 2** Patients' experiences on the domain information before discharge of each A&E. The vertical axis plots the deviation of the mean score and the corresponding 95% confidence interval. In the upper left corner, the highest deviation of the mean score is presented. In the lower right corner, the lowest deviation of the mean score is displayed. The large black dots are estimates of Dutch A&Es. The smaller black diamonds are estimates of English A&Es.
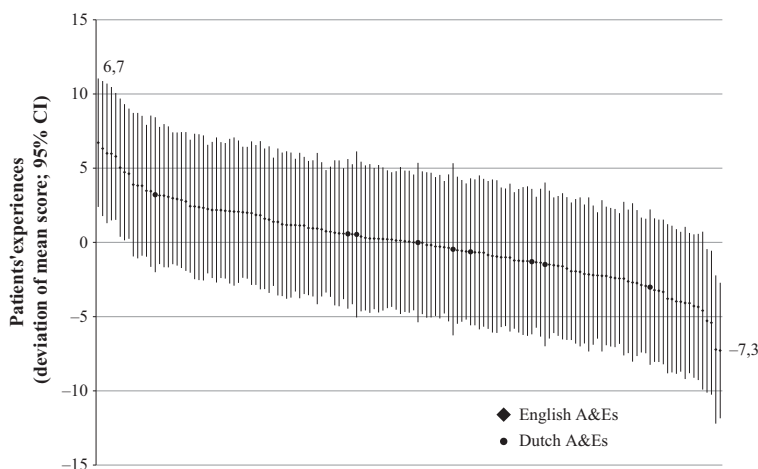
'information before discharge' was slightly, but non-significantly, higher for the English patients [59.4 (UK) versus 58.9 (NL)]. All effect sizes were smaller than 0.3. No effect was found for the domain 'information before discharge'. The largest effect size was computed for the domain 'waiting time'.

Table 3 shows the lower limit and the upper limit of the deviation of the mean domain score within both countries. The variance among the English A&Es was larger than the variance among the Dutch A&Es. The best and worst practices on five domains were English A&Es. On the domain 'doctors and nurses', the best practice was a Dutch A&E. We plotted deviations from the means, and corresponding 95% confidence intervals of the domains with the largest effect size 'waiting time' and the domain with the smallest effect size 'information before discharge' to visualize the variance among A&Es within a country, see caterpillar plots Figures 1 and 2.

## Discussion

This is the first study to compare quality aspects of healthcare performance, as experienced by patients in the A&E, between England and the Netherlands. The Dutch patients had significantly more positive experiences on the domains 'waiting time', 'doctors and nurses' and 'your care and treatment'. However, effect sizes were

small. This suggests that in daily practice, healthcare performance as experienced by patients does not differ substantially between these countries. The largest effect size was calculated for waiting time (i.e. small effect). In general, the differences between countries were smaller than the within-country differences between A&Es.

Despite the higher mean scores in the Netherlands, at the A&E level, the English A&Es performed better. Best practices on five of six domains were English A&Es. None of the best practice English A&Es performed consistently better on all domains, nor did a Dutch A&E.

It seems that in both countries, the quality of emergency care in most A&Es can be improved considerably, as there was a large range in quality, with a number of A&Es from England performing significantly below average. Despite the higher national-level score for the Netherlands, the best performing A&Es in the Netherlands in this study have not achieved the care standards of the best English A&Es. This indicates that A&Es in both England and the Netherlands can learn from the highest performing English A&Es. We suggest that the Dutch and lower scoring English A&Es should describe and analyse the work processes of these best performing A&Es, taking into account cultural and regional differences, as these may affect healthcare performance.

Across-country comparison of patients' experiences extends our knowledge and can be meaningful for optimization of the organization of emergency medicine. The OECD should continue its work on advocating the need to measure patient experiences. To stimulate the use of patient experiences, the OECD has developed a core set of questions which can be added to national questionnaires. These questions measure the three domains 'access', 'communication' and 'autonomy'. Further harmonizing initiatives are on-going for example, improving translations and adaptation of questions to specific country situations. Cognitive testing needs to be carried out in more countries and a method and a mode for data collection has to be chosen to ensure the national representativeness. Due to migration, populations are becoming more mixed with different ethnic groups. National surveys also have to adapt to cultural changes to remain representative for their population. This combination of international and national developments facilitates harmonization of measurement instruments.

In the Dutch sample, 46% of the respondents were referred by a healthcare professional, for English' respondents this percentage was 26%. We used the variable referral as a proxy to adjust for system differences in our models. This suggests that the A&E survey measures patients' experiences with care processes in the A&E instead of differences caused by different pre-hospital pathways for the Dutch and English emergency care systems.

The largest difference between the countries was found for the domain 'waiting time'. This is in line with the Commonwealth Fund International Health Policy Survey. In this survey, the wait in the emergency room before being treated was shorter in the Netherlands; 52% of the Dutch patients were treated within 30 minutes compared with 26% of the English patients.[22] A previous study showed the importance of waiting time on patients' experiences.[23] One review of patient satisfaction in the A&E suggested three points of interest for improvement projects as follows: (i) improvement of interpersonal, attitudinal and communication skills in staff; (ii) provision of more information and explanation; (iii) reduction of the perceived waiting time.[24] In the current study, patients in the Netherlands and England were also critical about the information provided before discharge and about waiting times. Overall, these were the lowest domain scores. However, in contrast to the review, in both countries, patients were positive about doctors and nurses and improvement of interpersonal, attitudinal and communication does not seem a priority.

The comparison of patients' experiences was based on two different samples. The Dutch data were collected in a subproject of a questionnaire development study according to the

National standard in the Netherlands. We had to apply their guidelines which are not completely in line with the English standards and some limitations arise as a consequence. The first, and major, limitation is the difference in the sample sizes and number of respondents. The English data were derived from a national survey in 2008, whereas the Dutch convenience sample consisted of the respondents of nine of about ninety hospitals surveyed in 2009 and 2010. In addition, the selection of hospitals varied. All eligible trusts in England voluntarily participated (no selection bias) versus a voluntary sample of the A&Es in the Netherlands. Selection bias could have occurred in two ways. An overestimation of the quality of care is possible if mainly well-performing A&Es, which were confident about their performance, volunteered for participation. In contrast, hospitals that were aware of a lack in their performance could have applied for this study, for example to measure their 'awareness'. We think that the potential influence of self-selection in the Netherlands on representativeness for all A&Es is limited: the hospitals vary in terms of area, size (384–785 beds), teaching or non-teaching status. Furthermore, according to a nation-wide rank-order of the overall quality of hospital care, these nine hospitals vary widely in overall quality of care.[12] Based on the comments of the participating A&E managers, we conclude that not only are those hospitals with the best quality of care interested in measuring and using patient experiences, but also those who are aware of a lack of quality of care and need evidence to help them focus improvement activity. The selected hospitals are not the best performers according to the experiences of patients on related wards of the hospital. No other standardized (process or outcome) measure or indicator is available.

At the time of undertaking the analysis for this paper, the 2008 data were the most recent available for England as the 2012 survey was still being processed. Similar surveys of A&E departments were also carried out in 2003, 2004 and 2008 in England. They are part of a wider programme of NHS patient surveys (which covers a range of topics including mental health services, adult inpatient and adult outpatient services). The 2012 findings were compared with the national results in 2004 and 2008.[25] Differences in summary scores between 2008 and 2012 were very small (about 1 point on a 1–100 scale).

A second limitation is the difference in study protocols between the two countries. In England, the hospitals could select one of 3 months; subsequently 850 patients were randomly selected. Patients received a questionnaire at home within 3 months of their A&E attendance, and up to two reminders were sent. The psychometric properties of the translated questionnaire were tested. Internal consistency and construct validity were assessed, but not the reproducibility and reliability, due to practical reasons.[26] Patient selection in the Netherlands varied in time and length of the measurement period and the number of patients. All patients received a questionnaire at home within a month of their visit, and up to three reminders were sent. The expected positive effects of a shorter time period between A&E visit and receiving the questionnaire, and an extra reminder on the response rate appeared to be small. Response rates (40–42%) were comparable to other postal surveys involving A&E patients.[27,28]

Despite the difference in study protocol, we assume that both patient samples were random, and therefore, representative for the total population.

Thirdly, patient characteristics were different between the two countries. Case-mix adjustment for age, gender and admission after discharge was applied in analyses to make a fairer comparison, but other differences in patient characteristics may account for the differences among A&Es and countries such as educational level and health status.[16] To take into account health status, a proxy was derived from the question 'What happened at the end of your visit to the emergency department?' There was no adjustment made for educational level, as no data were available.

We acknowledge that these methodological limitations may influence the findings of this study. However, the main finding of between- and within-country differences in patient experiences in A&Es should not be discarded. This study contributes to international research about quality of care and specifically to research on patients' experiences. We suggest that in future studies, the methodological pitfalls identified here should be avoided or reduced and should not be a barrier for international comparisons.

## Conclusion

In both the Netherlands and England, patients were positive about doctors and nurses, their care and treatment and the 'overall' care they had received. Patients were more critical about waiting time, hygiene and information before discharge. The mean quality of care in the A&E appeared to be better in the Netherlands on three domains. Yet, the best practices were English A&Es. Healthcare performance in the A&E can be compared between countries by surveying patients' experiences, and there is much to learn across A&Es (in)dependent of country.

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## Appendix A

### Domains of the A&E department questionnaire

We used the six domains which were presented in a previous study.[10] The six domains are composites of questions. Cronbach's alpha ($\alpha$), a measure of internal consistency, to estimate the reliability of the reported domains is represented. The mean domain score is the overall mean of the mean scores for each contributing question. The response categories were recoded from 0 to 100 with intermediary options at equal intervals to calculate the mean scores e.g. 'yes, definitely' = 100, 'yes, to some extent' = 50, 'no'=0. For the complete questionnaire visit: http://www.nhssurveys.org/surveys/.

### Waiting time ($\alpha$ = 0.634)

Q7      how long did you wait before you first spoke to a nurse or doctor?

Q8      from the time you first arrived at the emergency department, how long did you wait before being examined by a nurse or doctor?

Q10     overall, how long did your visit to the emergency department last?

### Doctors and nurses ($\alpha$ = 0.877)

Q11     did you have enough time to discuss your health or medical problem with the doctor or nurse?

Q12     while you were in the emergency department, did a doctor or nurse explain your condition and treatment in a way you could understand?

Q13     did the doctors and nurses listen to what you had to say?

Q14     if you had any anxieties or fears about your condition or treatment,

did a doctor or nurse discuss them with you?

Q15    did you have confidence and trust in the doctors and nurses examining and treating you?

## Your care and treatment (α = 0.781)

Q17    while you were in the emergency department, how much information about your condition or treatment was given to you?

Q18    were you given enough privacy when being examined or treated?

Q19    if you needed attention, were you able to get a member of the staff to help you?

Q21    were you involved as much as you wanted to be in the decisions about your care and treatment?

Q27    do you think the hospital staff did everything they could to help control your pain?

## Hygiene (α = 0.815)

Q28    in your opinion, how clean was the emergency department?

Q29    how clean were the toilets in the emergency department?

## Information before discharge (α = 0.800)

Q33    did a member of staff explain the purpose of the medication you

were to take at home in a way you could understand?

Q34    did a member of staff tell you about medication side-effects to watch for?

Q35    did a member of staff tell you when you could resume your daily activities, such as when to go back to work or drive a car?

Q36    did a member of staff tell you about danger signals regarding your illness or treatment to watch for after you went home?

Q37    did hospital staff tell you who to contact if you were worried about your condition or treatment after you left the emergency department?

## Overall (α = 0.825)

Q38    was the main reason you went to the emergency department dealt with to your satisfaction?

Q39    overall, did you feel you were treated with respect and dignity while you were in the emergency department?

Q40    overall, how would you rate the care you received in the emergency department?