

# Patient expectations of minor injury care: a cross-sectional survey

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## ABSTRACT

**Background and objective** Little is known about the expectations of patients attending the emergency department (ED) with minor injuries. Failure to address expectations may lead to dissatisfaction and poor compliance. We aimed to describe patient expectations of minor injury care and explore the association between unmet expectations and patient satisfaction.

**Methods** We undertook a cross-sectional questionnaire survey of 300 patients attending the ED with minor injuries on weekdays between 9:00 and 17:00. Participants completed a questionnaire asking which tests and treatments they expected, which they consequently received, whether explanations were given for tests and treatments, and how they rated satisfaction with care.

**Results** The most frequently expected interventions were x-ray, analgesia and bandage/strapping. In each case the proportion expecting intervention was significantly higher than the proportion receiving intervention: x-ray (58% vs 47%,  $p < 0.001$ ); analgesia (40% vs 20%,  $p < 0.001$ ); bandage/strapping (39% vs 22%,  $p < 0.001$ ). There were no significant differences between the proportions expecting and receiving other interventions. At least one unmet expectation was reported by 208/300 patients (69%) but an explanation was received in 151/208 cases (73%). Conversely, 106 (35%) received an unexpected intervention, of whom 79/106 (74%) received an explanation. Patients with unmet expectations tended to rate the satisfaction lower, but the difference was not statistically significant ( $p = 0.187$ ).

**Conclusions** Patients often expect interventions for minor injuries that they do not receive, but in most cases an explanation was given. We were unable to demonstrate an association between unmet expectations and reduced satisfaction with care.

## BACKGROUND

Minor injuries are responsible for a substantial number of attendances at emergency departments (EDs) and minor injuries units. Hospital Episodes Statistics for England 2010–2011<sup>1</sup> report 76 176 attendances with bites/stings, 96 846 with burns or scalds, 475 360 with contusion/abrasion, 757 122 with dislocation/fracture/joint injury/amputation, 121 025 with foreign body, 363 187 with head injury, 625 144 with laceration, 224 408 with muscle/tendon injury and 552 500 with soft tissue inflammation. Patients may attend because they anticipate needing investigations (such as x-rays) or treatments (such as suturing) that are not ultimately required. This can be frustrating for patients, unrewarding for staff and a waste of healthcare resources. It can also lead to dissatisfaction if staff

are not aware of patient expectations and do not address them appropriately.<sup>2</sup> Lack of satisfaction with care can in turn lead to poor compliance.<sup>3</sup>

Few studies have tried to identify the specific interventions patients expect when they seek minor injury care. A study of self-referred patients in Kent with minor injuries reported that 29% expected an x-ray, 30% expected suturing and 31% were not sure of their expectations.<sup>4</sup> A study of patients in South London who self-referred to an emergency department found that 23% reported the need for an x-ray as their reason for attendance.<sup>5</sup> Other studies have explored why patients attend emergency departments.<sup>6–8</sup> These studies classified reasons in more general terms, such as whether patients felt the emergency department to be most appropriate to their needs, but a Dutch study of self-referrals to an emergency department<sup>8</sup> found that 36% reported a need for investigation (eg, x-ray) as being the reason.

Research is required to determine what interventions patients expect when they seek help for a minor injury, whether their expectations are met and, if not, whether they are given an adequate explanation. This will help staff in emergency departments and minor injury units to address patient expectations appropriately and may be used to develop public information to promote more appropriate expectations of emergency department and minor injury unit care.

We aimed to measure the proportion of patients attending the emergency department with a minor injury who expected various common elements of care and compare these proportions to the proportions who actually received each element of care. We also aimed to determine whether patients who did not receive an expected intervention received an explanation and whether unmet expectations were associated with reduced satisfaction with care.

## METHODS

We undertook a cross-sectional survey of patients attending the Northern General Hospital Emergency Department, Sheffield Teaching Hospitals Foundation Trust. Adults attending the emergency department with a minor injury between 9:00 and 17:00 on weekdays were identified by a researcher (JW) reviewing their ED notes and asked to participate. We excluded prisoners and anyone with potentially life or limb threatening injury, inability to understand English, cognitive impairment, drug or alcohol intoxication, deliberate self-harm, or any other condition that threatened their mental capacity. Potential participants were given an information sheet about the study and asked to complete the questionnaire if they were willing to participate.



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Written consent was not requested on the advice of the ethics committee.

The questionnaire was in two parts and is shown in online supplementary appendix 1. Participants were asked to complete part 1 of the questionnaire while they were waiting to be seen by a doctor or nurse practitioner and part 2 after they had completed treatment. Part 1 asked about their expectations of tests and treatments before assessment by a doctor or nurse practitioner, but after triage assessment. Part 2 of the questionnaire asked what tests and treatments were actually provided and whether they had received an explanation for why tests or treatments they expected were not provided or why tests or treatments they did not expect were advised. Finally, the participants were asked to rate their satisfaction with care on a five-point Likert scale. This scale has been used to assess overall patient satisfaction in previous studies of emergency care.<sup>9–10</sup> The questionnaire was self-completed but the researcher was available to answer queries.

The questionnaire was developed by SG and JW, and was designed to optimise ease of completion and response rate.<sup>11</sup> The initial draft of the questionnaire was reviewed by the Sheffield Emergency Care Forum (a patient and public representative group that advises on emergency care research) and was then piloted by JW with 17 patients to ensure comprehension and acceptability.

We planned to recruit participants until 300 completed questionnaires were received. This would allow us to estimate a typical proportion of around 20% with a reasonable degree of precision (ie, a 95% CI of 16% to 25%). Primary data analysis was descriptive, reporting the proportion of participants giving each response with a 95% CI. We planned a priori to test two hypotheses: (1) those with unmet expectations will have lower satisfaction than those without; and (2) those expecting analgesia who did not receive it will have lower satisfaction than those who expect and receive analgesia. Mann–Whitney tests were used to compare the distribution of satisfaction ratings between groups. We also used  $\chi^2$  tests in a post hoc analysis to compare the proportion expecting each intervention to the proportion receiving that intervention. Statistical significance ( $\alpha$ ) was set at 0.05 but a Bonferroni correction ( $\alpha/n$ ) was made to allow for multiple post hoc comparisons between the proportions expecting and receiving intervention.

The project was approved by the Sheffield Research Ethics Committee, with the final piloted questionnaire being approved as a substantial protocol amendment.

## RESULTS

Between 30 January 2012 and 29 March 2012 we assessed 892 patients for eligibility and identified 559 who met the inclusion criteria. Of the 559 eligible patients, 428 were given a questionnaire and 300 (70%) returned a completed questionnaire. The analysable sample consisted of 167 (56%) men and 133 (44%) women, with a median age of 35 years; 266 (88.7%) were of white British ethnicity. The 259 eligible patients who were either not recruited or did not return the completed questionnaire included 143 (55%) men and 116 (45%) women with a median age of 38 years.

Table 1 shows the proportion of patients who expected each intervention prior to assessment by the doctor or nurse practitioner, the proportion who received each intervention and a p value ( $\chi^2$  test) for the comparison of these proportions. This information is presented graphically in figure 1. The most frequently expected interventions were x-ray (58%), analgesia (40%) and bandage/strapping (39%). Application of the

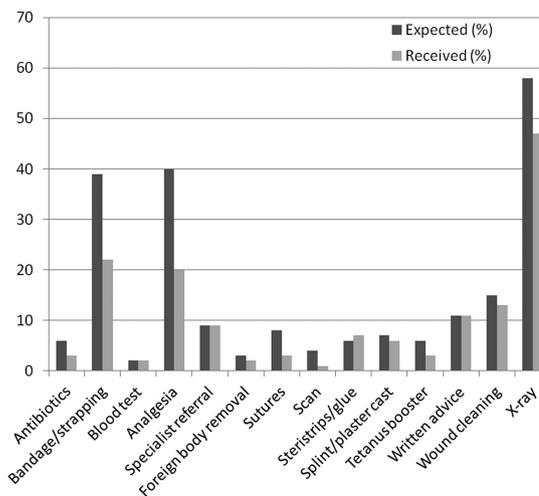
**Table 1** Comparison of the proportions of patients expecting and receiving interventions

	Expected, N (%; 95% CI)	Received, N (%; 95% CI)	p Value ( $\chi^2$ )
Antibiotics	19 (6, 4 to 10)	8 (3, 1 to 5)	0.030
Bandage/strapping	118 (39, 34 to 45)	67 (22, 18 to 27)	<0.001*
Blood test	6 (2, 1 to 4)	7 (2, 1 to 5)	0.779
Analgesia	121 (40, 35 to 46)	61 (20, 16 to 25)	<0.001*
Specialist referral	27 (9, 6 to 13)	28 (9, 6 to 13)	0.886
Foreign body removal	10 (3, 2 to 6)	5 (2, 1 to 4)	0.191
Sutures	25 (8, 6 to 12)	10 (3, 2 to 6)	0.009
Scan	13 (4, 3 to 7)	2 (1, 0 to 3)	0.004
Steristrips/glue	17 (6, 4 to 9)	22 (7, 5 to 11)	0.408
Splint/plaster cast	21 (7, 5 to 11)	18 (6, 4 to 9)	0.619
Tetanus booster	17 (6, 4 to 9)	9 (3, 2 to 6)	0.109
Written advice	33 (11, 8 to 15)	33 (11, 8 to 15)	1
Wound cleaning	45 (15, 11 to 20)	39 (13, 10 to 17)	0.480
x-Ray	175 (58, 53 to 64)	140 (47, 41 to 52)	0.001*

\*Statistically significant (set at 0.0035 with Bonferroni correction).

Bonferroni correction to these 14 hypothesis tests meant that statistical significance was set at 0.0035, so although the proportion expecting intervention was higher than the proportion receiving intervention for most interventions, this difference was only statistically significant for x-ray (58% vs 47%,  $p<0.001$ ), analgesia (40% vs 20%,  $p<0.001$ ) and bandage/strapping (39% vs 22%,  $p<0.001$ ).

Ninety-two patients (31%) either did not expect any of the interventions or received all the interventions they expected, while 116 (39%) expected one intervention they did not receive, 68 (23%) expected two, 15 (5%) expected three and 9 (3%) expected four interventions or more that they did not receive. Of the 208 patients who expected interventions they did not receive, 151 (73%) received an explanation, 44 (21%) did not and 13 (6%) did not answer the question. A total of 106 patients (35%) received interventions they were not expecting. Of these, 79 (74%) received an explanation for why the intervention was required, 14 (13%) did not and 13 (12%) did not answer the question.



**Figure 1** Comparison of the proportion of patients expecting and receiving each intervention.

Table 2 shows the number and proportion of cases where patients were advised what tests or treatments to expect. A wide range of different sources provided such advice but most patients did not report being advised by another.

The responses to the satisfaction assessment were: excellent 128 (43%), very good 94 (31%), good 57 (19%), satisfactory 19 (6%), and poor 2 (1%). Table 3 compares the responses to this question from patients who did not receive interventions that they expected to those who either received all the interventions they expected or did not expect any interventions. Although patients who had unmet expectations tended to have lower satisfaction with care, this was not statistically significant ( $p=0.187$ ). Table 4 shows a similar comparison between patients who expected analgesia but did not receive it and those who expected and received analgesia. Again, although there was some difference in the distribution of scores this was not statistically significant ( $p=0.201$ ).

## DISCUSSION

This study has shown that high proportions of patients attending with minor injuries expect x-ray, analgesia or bandage/strapping, while significantly lower proportions actually receive these interventions. It is probably inevitable and may be appropriate that there will be some discrepancy between patient expectations and receipt of interventions such as x-ray or bandage/strapping. Attendance at the ED or minor injury unit is often precipitated by patient perception of a need for investigation or treatment, which may not actually be required. Awareness of patient expectations allows clinicians to address misconceptions and improve patient satisfaction and compliance. In the case of analgesia, however, the patient's perception and expectation is paramount. Any discrepancy between expectations and actual treatment suggests a failure to meet patient need. Failure to provide adequate analgesia has frequently been identified in emergency care<sup>12</sup> and our data suggest that this problem persists.

About two-thirds of patients did not receive an intervention that they expected and around one-third received an intervention they were not expecting. However, most patients received an explanation for either their unmet expectation or their unexpected intervention. The provision of explanations may explain why patients with unmet expectations did not have lower satisfaction with care than those without. Only a minority of patients were given advice from another source about what intervention to expect and those who were advised received this advice from a

**Table 2** Sources of advice for patient expectations

Source of advice	N (%)
None	232 (77%)
Not answered	2 (1%)
Family member	15 (5%)
Work colleague	7 (2%)
General practitioner	17 (6%)
NHS Direct	2 (1%)
Nurse	6 (2%)
First aider	8 (3%)
Internet search	1 (<1%)
Pharmacist	2 (1%)
Friend	6 (2%)
Paramedic	1 (<1%)
Physiotherapist	1 (<1%)

**Table 3** Comparison of satisfaction between those with unmet expectations and those without

Satisfaction	Patients with unmet expectations	Patients without unmet expectations
Excellent	83 (40%)	45 (49%)
Very good	65 (31%)	29 (31%)
Good	44 (21%)	13 (14%)
Satisfactory	15 (7%)	4 (4%)
Poor	1 (<1%)	1 (1%)

range of sources. It therefore seems that there is no single source of advice responsible for generating a substantial proportion of patient expectations regarding minor injury care.

As outlined in the introduction, few studies have evaluated the expectations of patients attending hospital with minor injuries and those that have been undertaken had varied aims, patient selection criteria and variables measured. The proportion expecting an x-ray in our study (58%) was markedly higher than previously reported in other studies (23–29%),<sup>4 5</sup> but this may be due to differences in setting, patient selection or the way the question was framed.

This study has a number of strengths and weaknesses. The questionnaire was developed with assistance from patient and public representatives, and was tested with patients in a pilot study. This means that, although a fully validated questionnaire was not available, we were able to take reasonable steps to ensure comprehensibility and face validity. The study achieved the pre-planned sample size ensuring that proportions were estimated with reasonable precision. However, the sample size was only planned on the basis of the precision of estimates so the study was not powered for the hypothesis tests undertaken. This means that the failure to show an association between unmet expectations and satisfaction may reflect lack of power rather than absence of any association. Survey data are often subject to multiple hypothesis tests with the consequence that apparently 'significant' findings may have arisen by chance. We reduced this risk by selecting a limited number of pre-planned hypotheses and then applying a Bonferroni correction to post hoc comparisons.

Other limitations included the need to restrict recruitment to daytime hours, failure to recruit 30% of potentially eligible patients and application of exclusion criteria, all of which may have reduced the representativeness of the sample. The restriction of recruitment was imposed in part by concerns from the ethics committee that a student researcher should not be working out-of-hours with limited support and pragmatic concerns that many fewer eligible patients would be encountered outside daytime hours. The exclusion criteria also reflected ethical and pragmatic concerns and mean that the findings do

**Table 4** Comparison of satisfaction between those receiving and not receiving analgesia

Satisfaction	Patients who did not receive pain relief	Patients who received pain relief
Excellent	23 (31%)	21 (45%)
Very good	30 (40%)	16 (34%)
Good	16 (22%)	5 (11%)
Satisfactory	5 (7%)	5 (11%)

not apply to more challenging patients with minor injuries, such as those with intoxication or deliberate self-harm.

Although a quantitative survey provides representative estimates that can be generalised to the patient population with minor injuries, it does not allow in-depth exploration of patient perceptions and expectations. We are therefore unable to judge how important expectations are to patients and the extent to which failure to meet expectations or provide explanations affects their experience of minor injury care. Future research could use qualitative methods to explore these issues.

The implications of our study are that clinicians should be aware that substantial proportions of patients attending with minor injuries expect to receive an x-ray, bandaging/strapping and/or analgesia. Although we were unable to demonstrate that failure to meet these expectations was associated with lower satisfaction with care, this may be because most patients received an explanation for why they did not receive an expected intervention. Awareness of likely patient expectations from minor injury can help clinicians direct their explanations for management decisions, so patients understand why expected tests or treatments are not received.

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**Contributors** JW developed, piloted and administered the questionnaire, analysed the data and wrote the content for the paper. SG conceived and designed the study, supervised JW, and wrote the first draft of the paper. Both authors contributed to redrafting the paper and approved the final draft.

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**Competing interests** None.

**Ethics approval** Sheffield Research Ethics Committee.

**Provenance and peer review** Not commissioned; internally peer reviewed.

**Data sharing statement** Unpublished data are available from the corresponding author by email.

## REFERENCES

- 1 The NHS Health and Social Care Information Centre. Hospital Episodes Statistics for England, 1998–2012 <http://www.hesonline.nhs.uk/> (accessed 14 Jan 2013).
- 2 Taylor C, Bengler JR. Patient satisfaction in emergency medicine. *Emerg Med J* 2004;21:528–32.
- 3 Ley P. Satisfaction, compliance and communication. *Br J Clin Psychol* 1982;21:241–54.
- 4 Dolan B, Dale J. Characteristics of self-referred patients attending minor injury units. *J Accid Emerg Med* 1997;14:212–14.
- 5 Singh S. Self referral to accident and emergency department: patients' perceptions. *BMJ* 1988;297:1179–80.
- 6 Palmer CD, Jones KH, Jones PA, *et al*. Urban legend versus rural reality: patients' experience of attendance at accident and emergency departments in west Wales. *Emerg Med J* 2005;22:165–70.
- 7 Walsh M. The health belief model and use of accident and emergency services by the general public. *J Adv Nurs* 1995;22:694–9.
- 8 Moll van Charante EP, ter Riet G, Bindels P. Self-referrals to the A&E department during out-of-hours: patients' motives and characteristics. *Patient Educ Couns* 2008;70:256–65.
- 9 Goodacre SW, Quinney D, Revill S, *et al*. Patient and primary care physician satisfaction with chest pain unit and routine care. *Acad Emerg Med* 2004;11:827–33.
- 10 Cross E, Goodacre S, on behalf of the ECSAPE research team. Patient satisfaction with chest pain unit care: findings from the Effectiveness and Safety of Chest Pain Assessment to Prevent Emergency Admissions (ESCAPE) cluster randomised trial. *Emerg Med J* 2010;27:774–8.
- 11 Edwards P, Roberts I, Clarke M, *et al*. Increasing response rates to postal questionnaires: systematic review. *BMJ* 2002;324:1183–5.
- 12 Rupp T, Delaney KA. Inadequate analgesia in emergency medicine. *Ann Emerg Med* 2004;43:494–503.