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# The WHO surgical safety checklist: survey of patients' views

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## ABSTRACT

**Background** Evidence suggests that full implementation of the WHO surgical safety checklist across NHS operating theatres is still proving a challenge for many surgical teams. The aim of the current study was to assess patients' views of the checklist, which have yet to be considered and could inform its appropriate use, and influence clinical buy-in.

**Method** Postoperative patients were sampled from surgical wards at two large London teaching hospitals. Patients were shown two professionally produced videos, one demonstrating use of the WHO surgical safety checklist, and one demonstrating the equivalent periods of their operation before its introduction. Patients' views of the checklist, its use in practice, and their involvement in safety improvement more generally were captured using a bespoke 19-item questionnaire.

**Results** 141 patients participated. Patients were positive towards the checklist, strongly agreeing that it would impact positively on their safety and on surgical team performance. Those worried about coming to harm in hospital were particularly supportive. Views were divided regarding hearing discussions around blood loss/airway before their procedure, supporting appropriate modifications to the tool. Patients did not feel they had a strong role to play in safety improvement more broadly.

**Conclusions** It is feasible and instructive to capture patients' views of the delivery of safety improvements like the checklist. We have demonstrated strong support for the checklist in a sample of surgical patients, presenting a challenge to those resistant to its use.

## INTRODUCTION

The introduction of the WHO surgical safety checklist into National Health Service (NHS) operating theatres in 2009 represented the first move towards *mandatory* action for improving surgical safety in the UK for some time.<sup>1</sup> The potential for safety checklists to improve

surgical outcomes and team performance is largely supported across the surgical literature<sup>2–8</sup>; however, their ability to bring about such improvements appears to be related to the *style* of implementation adopted, and the buy-in fostered by clinical teams, rather than their introduction per se. Indeed, the lack of a focussed implementation programme to support checklist introduction (including aspects such as training, feedback, local adaptation and involvement from all levels of the organisation), might explain reports that have not detected an effect of checklists on outcomes.<sup>9–10</sup>

In the UK, implementation of the WHO checklist has not been entirely straightforward. Several barriers to implementation have been described, including some very practical issues (eg, bringing the whole team together at one time),<sup>8–11</sup> other tool-specific concerns (eg, the applicability of the checks to certain surgical contexts),<sup>12</sup> and certain team-based challenges (eg, checklist fatigue and blurred lines of accountability).<sup>13</sup> While some clinicians have been quick to see the benefits and have embraced the use of checklists, others have strongly resisted their implementation, seeing it as an attack on clinical autonomy or a slur on their professionalism.<sup>12–16</sup>

This discussion of the introduction and use of surgical checklists has so far been conducted entirely from the standpoint of the professionals involved. But perhaps patients, being the recipients of care as well as the payers, should have a voice in the weight given to safety in healthcare systems and in the introduction of novel safety measures. At a time when the fallibility of hospital care is very much in the public eye (with the release of publications such as the Francis report in the UK),<sup>17</sup> this question becomes particularly pertinent. In many



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cases, such as controls on radiation levels or chemotherapy dosing, only a small number of healthcare experts have the requisite expertise to formulate and assess safety measures. In other cases however, such as using a checklist, patients might be able to come to a view and potentially influence implementation.<sup>18</sup> By contrast with aviation, where safety checklists are very much engrained standard operating procedure and directly involve crew members only, in surgery, patients are part of the process and there are still questions regarding how they will respond to the checklist, if they will feel more vulnerable to errors, whether they would be agitated hearing some of the checks discussed and so on.

This study sought to address these questions which, to the best of our knowledge, have not been addressed before:

- ▶ What views do patients have about the use of the WHO surgical safety checklist in NHS hospitals?
- ▶ Does the previous experience of error in hospital or other experiential/patient characteristics influence these views?

As a secondary aim, we also explored the views patients have towards being involved in decisions around improvements in safety and the care they receive more generally, and sought to begin to understand how best to assess such patient views on safety measures in healthcare from a methodological perspective. Specifically, we tested the feasibility of using videos to communicate safety concepts to patients on hospital wards.

## METHODS

### Sample

Patients were recruited from surgical wards at two large teaching hospitals in London, UK, between June and November 2011. Sampling was opportunistic based on the permission of a senior nurse, and within the constraints of the following inclusion criteria: all patients were over 18 years of age, were able and willing to provide informed consent to participate, could fully understand and express themselves in English, were not in any distress or suffering from a serious mental illness, and did not have a clinical occupation. Clinicians were excluded from the sample as they might have had previous experience and views on the use of the WHO checklist. All patients had undergone a surgical procedure during their current period of in-hospital stay. We visited day surgery wards and standard surgical wards with the aim of including a mix of patients who had undergone minor and more serious procedures. Patient characteristics are displayed in [table 1](#).

### Design

To assess patients' views of the WHO checklist and their involvement in safety improvement, a methodology was required which was feasible to deliver on

**Table 1** Patients' characteristics (N=141)

	n (%)
Sex: male	74 (52.7)
Ethnicity	
British	87 (61.7)
Other	39 (27.7)
Age group:	
50 years or under	62 (44)
Over 50 years	78 (55.3)
Number of previous operations:	
0	37 (26)
1–2	58 (41)
3 or more	46 (33)
Previous errors in care: yes	12 (8.7)
Length of current stay in days:	
1–2 (day surgery)	113 (80.3)
3 or more	28 (19.9)
I worry about coming to harm in hospital: yes	74 (52.5)

hospital wards. It was necessary to ensure that patients were informed about the checklist without bias—what it is, how it is used, how it differs from previous practice, and how it is relevant to their care journey. We needed to conduct this in a standardised, comprehensive and valid manner, while avoiding unnecessary confusion or anxiety caused to patients still receiving care.

This was achieved by demonstrating use of the checklist to patients visually using two professionally produced videos. The videos were produced in collaboration with clinical teams (to ensure a realistic and unstaged portrayal of operating room procedures), and patient safety experts. The videos captured the peri-operative safety procedures undertaken preintroduction (video 1) and postintroduction (video 2) of the WHO surgical safety checklist. This enabled patients viewing the videos to compare the relevant periods of the operations before and after introduction of the checklist. Patients were also given a laminated version of the WHO checklist for reference. To measure patients' attitudes and to record patient characteristics, a simple questionnaire was designed for completion by the patient after the videos had been viewed. Ethical approval for the study was granted by the participating NHS Trust and the local research ethics committee before data collection commenced.

### Materials

**Videos:** The 'pre-checklist' video (shown first) depicted the typical safety checks occurring before introduction of the checklist at equivalent stages to which the 'sign-in', 'time-out', and 'sign-out' portions of the WHO checklist are completed (ie, when the patient enters the anaesthetic room and is checked in, the final stage of set up before incision, and post-operatively before the patient leaves the operating

theatre, respectively). The 'post-checklist' video (shown second) depicted the process of completing the formal 'sign-in', 'time-out' and 'sign-out' sections of the WHO surgical safety checklist in a manner that adhered to recommended good practice.<sup>17</sup> The 'sign-in' phase of the two videos was fairly similar (given that majority of the preanaesthetic checks listed in the checklist were already routinely taking place); however, the 'time-out' phase of the prechecklist video was shorter (including an identification (ID), procedure and antibiotic check, but no formal team discussion), and the 'sign-out' phase of the prechecklist video was shorter still (including a brief discussion between the surgical team only). The two videos were shot in an operating theatre complex out of hours, with a professional actor playing the role of the patient and a complete operating theatre team running the two different scenarios. The 'sign-in' (and equivalent prechecklist checks) was filmed in an anaesthetic room with an anaesthetist, operating department practitioner and the patient, while the 'time-out' and 'sign-out' (and equivalent prechecklist checks) were filmed in an operating theatre with the full operating theatre team. No scenes of the operation were included, only the safety checks and related conversations at each of the three perioperative phases were shown. Each video lasted between 3 and 4 min; edited clips are available from the authors on request.

**Questionnaire:** A 19-item questionnaire was designed to assess the following constructs: attitudes towards the WHO surgical safety checklist (eight items), attitudes regarding how the checklist is used in

practice (six items), attitudes towards involvement in safety improvement efforts in hospitals more generally (four items), and the degree of anxiety that one might come to some harm in hospital (one item). Each item was phrased as a statement, for example, 'Using the checklist would make me feel safer', 'I would rather a surgeon took charge of the checklist than a nurse', 'Given the opportunity, I would like to be more involved in efforts to reduce patient harm'. Respondents rated the degree to which they agreed with each statement on a Likert scale (1=strongly disagree, 7=strongly agree). Patient characteristics (including basic demographics and patient experience of hospital care) that might be associated with such attitudes were also recorded (ie, age, sex, ethnicity, occupation, surgical procedure admitted for, general or local anaesthetic, number of previous operations, and any previous experience of medical error). The questionnaire was piloted on a sample of 20 patients before data collection commenced; this process identified one question that was consequently rephrased to improve comprehension (see tables 2 and 3 for questionnaire items).

#### Procedure

A senior ward nurse was consulted before approaching patients, to identify (1) those who had already undergone their surgical procedure (patients who had not yet undergone their surgery were excluded to avoid provoking unnecessary anxiety) and (2) those who were deemed well enough to participate. The study was explained verbally with the aid of a written information sheet and informed consent was

**Table 2** Patients' views of the checklist (N=141)

Questionnaire item	Disagree (1–2) %* (95% CI)	Neither agree or disagree (3–5) %* (95% CI)	Agree (6–7) %* (95% CI)
Attitudes towards the WHO checklist			
I want the checklist to be used if I have an operation	4% (2% to 9%)	18% (12% to 25%)	78% (70% to 84%)
The checklist seems like an unnecessary tick-box exercise	61% (53% to 69%)	25% (18% to 33%)	14% (9% to 21%)
I assumed a surgical checklist like this had always been in place	9% (5% to 15%)	38% (31% to 47%)	53% (45% to 61%)
I trust operating room staff to take care of me <i>without</i> having to use the checklist	24% (18% to 32%)	36% (29% to 44%)	40% (32% to 48%)
Using the checklist would make me feel safer	6% (3% to 11%)	20% (14% to 27%)	74% (66% to 80%)
Errors during an operation would be reduced if the checklist were used	11% (7% to 18%)	22% (16% to 30%)	67% (59% to 74%)
The checklist undermines the competence of the operating room staff	57% (48% to 65%)	27% (20% to 35%)	16% (11% to 23%)
The checklist would improve communication between staff in the operating room	4% (2% to 9%)	27% (20% to 35%)	69% (61% to 76%)
Attitudes towards how the checklist is used in practice			
Hearing staff discussing blood loss before my operation would make me anxious	26% (20% to 34%)	44% (36% to 52%)	30% (23% to 38%)
I'm worried that busy staff won't complete the checklist correctly	41% (33% to 49%)	30% (23% to 38%)	29% (22% to 37%)
I would feel comfortable with a nurse carrying out the checklist	6% (3% to 11%)	26% (20% to 34%)	68% (60% to 75%)
I understand why I need to confirm my identity and the procedure I am having just before my operation	13% (8% to 19%)	3% (1% to 7%)	84% (77% to 89%)
I would want some proof that the checklist is being used for my operation	23% (17% to 30%)	40% (32% to 48%)	37% (29% to 45%)
I would rather a surgeon took charge of the checklist than a nurse	24% (18% to 32%)	57% (48% to 65%)	19% (14% to 26%)

\*% of total sample.

**Table 3** Patients' views of involvement in safety improvement in healthcare (N=141)

Questionnaire item	Disagree (1–2) %* (95% CI)	Neither agree or disagree (3–5) %* (95% CI)	Agree (6–7) %* (95% CI)
Attitudes towards involvement in safety improvement			
Patient feedback should be used to identify areas for improvement in patient safety	48% (40% to 56%)	24% (18% to 32%)	38% (31% to 47%)
It is best to leave decisions about patient safety to healthcare professionals	14% (9% to 21%)	35% (27% to 43%)	51% (43% to 59%)
Given the opportunity, I would like to be more involved in efforts to reduce patient harm	12% (8% to 18%)	43% (35% to 52%)	45% (37% to 53%)
I think that I could help to reduce errors in my care by being more involved	51% (43% to 59%)	35% (27% to 43%)	14% (9% to 21%)

\*% of total sample.

obtained. Patients were shown a laminated version of the WHO checklist (UK's National Patient Safety Agency standard version).<sup>19</sup> The checklist was described as a 'change in process during surgery' about which it was important to collect patients' views. Care was taken not to provide more detail than this so as to avoid biasing patients' towards the checklist from the outset. Patients were instructed that they would view two videos, the first depicting what happened before the checklist was introduced ('prechecklist' video) and the second depicting what happens when the checklist is used, that is, currently ('post-checklist' video). Videos were displayed on a laptop at the patient's bedside, with sufficient sound quality for the patient to hear the videos without headphones (they could use their own headphones if they wished). Patients were then asked to fill in the questionnaire. The Likert scale was explained and they were assured that there were no right or wrong answers. It took

around 30 minutes to collect data from each patient (see [box 1](#), for a breakdown of the procedure).

#### Statistical analyses

Data were analysed using the IBM SPSS Statistics 20 software. Responses to each of the items on the questionnaire were grouped into the following categories: disagree (scores of 1–2), neither agree nor disagree (scores of 3–5) and agree (scores of 6–7). The percentage of patients falling into these three categories was computed separately for each item and tabulated. The final item ('I worry that I will come to unnecessary harm in hospital') was reduced to a binary variable—those who agreed that they were worried (ie, scored 6 or 7) formed one group, and all others formed another group.  $\chi^2$  Analysis was then used to determine whether this and any of the other demographic/patient variables (age, sex, ethnicity, length of stay, number of previous surgical procedures, past experience of an error in care) were associated with patients' attitudes.

#### Box 1 Data collection procedure

- ▶ Senior ward nurse identified postoperative patients who were sufficiently recovered to participate.
- ▶ Patient approached by nurse and researchers and informed about the study. Information sheet provided (5 min).
- ▶ If willing to take part, patient consent obtained (3 min).
- ▶ Patient informed about the introduction of the surgical safety checklist and shown a laminated copy of the tool (1 min).
- ▶ Patient viewed video of what used to happen before introduction of checklist (at equivalent perioperative phases) (3 min).
- ▶ Patient viewed video of checklist being used at 'sign-in', 'time-out', and 'sign-out' (5 min).
- ▶ Patient completed questionnaire (10 min).
- ▶ Patient debriefed (3 min).

Total time=30 min.

#### RESULTS

Totally, 180 patients were approached to take part in the study. Thirty-nine refused to participate for reasons including not feeling well enough, waiting for visitors, waiting for lunch, and inadequate understanding of English. This meant that data were available for 141 patients.

#### Patient characteristics

A wide age range was represented in the sample (median=52 years, range=18–87 years), and while the majority of patients (61%, N=86) were British, the remaining patients varied widely in ethnic origin ([table 1](#)). The sample was evenly spread with regards to sex, the number of previous operations they had experienced (0, 1–2, 3 or more), and whether or not they were worried that they would come to harm in hospital. Eighty per cent of the patients (N=113) had been admitted for day surgery procedures (including hernia repair, arthroscopy, laparoscopic cholecystectomy, hysterectomy, varicose veins), while the

remaining 20% of patients (N=28) had been admitted for a longer period of days or weeks for major surgical procedures (including prostatectomy, colectomy, oesophagectomy, lower limb amputation, nephrectomy). Finally, 8.7% of the patients (N=12) reported that they had experienced a previous adverse event in hospital (eg, medication error, surgical site infection).

#### Attitudes towards the WHO checklist

The majority of patients agreed that they would like the checklist to be used if they were having an operation (78%), compared with a very small number of patients who were not in favour of its use (4.3%) (table 2). In line with this positive perception of the checklist, patients largely agreed that use of the checklist would make them feel safer (74%), that it would improve communication between staff in theatre (69%), and that it would reduce the number of errors during surgery (67%). Most patients (61%) did not agree with the view that the checklist was an unnecessary 'tick-box' exercise, or that it would undermine the competence of front-line staff (57%). Patients over 50 years of age were slightly less positive: they were more likely to agree that it was an unnecessary 'tick-box' exercise (18% vs 10%) ( $\chi^2=7.72$ ,  $df=2$ ,  $p=0.021$ ) and less persuaded that it would reduce errors (17% vs 3%) ( $\chi^2=7.26$ ,  $df=2$ ,  $p=0.027$ ). However, their views were overall still more positive towards the checklist than not.

Those who reported that they were worried about coming to unnecessary harm in hospital were more positive than the rest, being significantly more likely to agree that they would like the checklist to be used (87% vs 69%) ( $\chi^2=7.18$ ,  $df=2$ ,  $p=0.028$ ), that it would make them feel safer (89% vs 57%) ( $\chi^2=21.35$ ,  $df=2$ ,  $p<0.001$ ), and that it would improve communication in the operating theatre (80% vs 57%) ( $\chi^2=9.91$ ,  $df=2$ ,  $p=0.007$ ). Over half the participating patients (53%) assumed that a checklist like this had always been in place.

#### Attitudes towards use of the checklist in practice

Overall, patients did not seem to mind which member of their care team took charge of the checklist: 68% agreed that they would feel comfortable with a nurse carrying out the checks and 57% neither agreed nor disagreed that they would rather a surgeon lead them (table 2). Those who had been in hospital for 3 or more days, however, were significantly more likely to agree that they would like the surgeon to lead the checklist (40% vs 14%) ( $\chi^2=9.38$ ,  $df=2$ ,  $p=0.009$ ). Overall, most patients trusted that their care team would carry out the checklist correctly: less than a third (29%) were worried that staff would not complete it correctly, and most (63%) did not want any specific assurance of it having been used, or were impartial. Those who reported that they were worried about coming to unnecessary harm in hospital were

significantly more likely to agree that they would like some assurance that the checklist had been used compared with those who were not worried (46% vs 25%) ( $\chi^2=6.99$ ,  $df=2$ ,  $p=0.03$ ). Overall, patients were divided with regards to whether they felt that hearing discussions around blood loss prior to their surgery (part of the 'sign-in' portion of the checklist) would make them feel anxious: 30% agreed that it would, 26% said that it would not, and 44% were impartial. Those who had experienced a previous error in care (8.7% of participants) were significantly less likely to disagree that such discussions would make them feel anxious (0% vs 28%) ( $\chi^2=6.35$ ,  $df=2$ ,  $p=0.042$ ). Almost all patients, however, agreed that they understood why they needed to confirm their identity and procedure before their surgery (84%), particularly those who were less than 50 years of age (92%), and those who were worried about coming to harm (96%) ( $\chi^2=9.46$ ,  $df=2$ ,  $p=0.009$ ,  $\chi^2=18.40$ ,  $df=2$ ,  $p<0.001$ ).

#### Attitudes towards involvement in safety improvement in healthcare

Although all patients who agreed to take part felt able to give their views on the surgical checklist, most did not feel that they had a major part to play in safety improvement work in general (table 3). Over half the participants (51%) agreed that it was best to leave decisions about patient safety to healthcare professionals and the same proportion disagreed that they could help to reduce errors in their care if they were more involved. Similarly, only 38% of patients agreed that patient feedback should be used to identify areas for improvement in patient safety (48% disagreed). This figure decreased to 24% after excluding those who had experienced a previous error in care, who were significantly more likely to agree that patient feedback should be used (66% vs 24%) ( $\chi^2=11.32$ ,  $df=2$ ,  $p=0.003$ ). Patients who were more worried about coming to harm in hospital were significantly more likely to agree that they would like to become involved in efforts to reduce patient harm (60% vs 29%) ( $\chi^2=13.73$ ,  $df=2$ ,  $p=0.001$ ).

#### DISCUSSION

The importance of patient involvement in healthcare delivery and quality improvement is being increasingly acknowledged and addressed in clinical practice and in research. This study offers some understanding around the feasibility of capturing patients' views of the implementation of safety measures, like the WHO surgical safety checklist, and also insight into patients' impressions of the checklist, as well as their involvement in quality improvement efforts more generally.

We found that patients were very receptive towards the checklist; most were in fact surprised that the tool was only a recent introduction to surgical care. While there was heterogeneity in the results, patients were

generally positive about the beneficial impact the checklist could have on communication and safety in theatre, and they understood why such basic checks were necessary. Most patients disagreed that the checks undermined the competence of staff, and were confident that the checklist would be used correctly by their care team. This contrasts with evidence that suggests that there is, in fact, a high degree of variability in how well the checklist is used in practice.<sup>8</sup> Patients did not have strong preferences with regards to whom (ie, surgeon vs nurse) should take responsibility for the checklist. Different views were expressed on the experience of hearing discussion about potential blood loss just before surgery. Some felt that this would reassure them that all eventualities were being taken into consideration, whereas, a quarter of those asked felt that it would make them feel anxious and worried. This clearly requires further investigation and, potentially, some adjustment to how the checklist is used.

Demographic characteristics had minimal impact on patients' views. No differences were found according to sex or ethnicity and age (over 50 vs under 50 years) had an impact on responses for only three of the questionnaire items: older participants were slightly less likely to agree that such checks were necessary but were still positive overall about the checklist.

Factors relating to an individual's previous or current experience in hospital and the level of worry that they have about coming to unnecessary harm had a greater impact on their views. In line with previously established prevalence rates, 8.7% of patients reported a previous adverse event in hospital (eg, medication error, surgical site infection).<sup>20</sup> These individuals, and those who had been in hospital for three or more days for their surgery at the time of participating, were less likely to want to hear discussions around blood loss prior to their surgery and were more likely to want a surgeon to conduct the checklist, respectively. Patients who were worried that they would come to unnecessary harm in hospital were significantly more positive about the checklist. These individuals, arguably, have a more realistic view of the extent of error and harm in hospitals, and if patients in the study were provided with background material about safety problems in healthcare, their attitudes towards the checklist might be stronger than those expressed here. Patients in this study were, for the most part, having relatively straightforward day surgery, and many had comparatively little experience of healthcare. Future studies should address a wider variety of patients to assess whether patients with longstanding problems and more experience of healthcare have a different attitude to safety measures than those with less experience.

Although patients felt able to provide views on the surgical checklist, it was noteworthy that they did not

feel they had a strong role to play in safety improvement more generally. Those who had experienced a previous error in their care were more likely to agree that patient feedback should be used to try to improve services and those who worried about experiencing harm were more likely to agree that they would like to become involved in efforts to reduce patient harm. This fits with previous research into patient perceptions following adverse events.<sup>21</sup> The majority, however, were willing to leave the responsibility for safety improvement to the healthcare professionals. This may again reflect the characteristics of our sample; since the majority of patients (80%) had been admitted for minor procedures, they were, on the whole, relatively low-risk. Perhaps patients with more serious conditions, comorbidities and chronic problems would be more motivated to, and more aware of, their ability to play a role in decisions around the process and delivery of their care.<sup>22</sup> There are likely to be additional barriers to patient involvement in general quality improvement, however, including perceived patient/doctor authority gradients, willingness (or lack of) to commit time and energy to quality improvement in the context of one's own health problems, and a fear that unwanted involvement might jeopardise the quality of their own care.<sup>18 23</sup> Added to this, a patient's *capacity* to become involved will likely be influenced by their underlying intellectual, moral and behavioural profile.<sup>24</sup> Patient involvement in quality improvement is still a relatively new and rapidly evolving concept in the NHS, and these findings highlight a need for raising awareness and educating the public around opportunities to become involved, and the benefits that can be gained.

#### Limitations

This study has certain limitations. First, only surgical patients (and largely day surgery patients who were generally more able and willing to participate) were included in the sample. A wider sample, including patients from other specialities or, indeed, members of the public (who are all potential patients), might generate different views. Second, although the questionnaire methodology undertaken was ideal for an initial survey, there is clearly a need to further explore and understand the beliefs underlying these views. Additional qualitative studies are needed to explore the views of patients on the surgical checklist and safety measures more generally. Finally, with regard to the design of the questionnaire, it can be argued that we have omitted the important role played by anaesthetists in leadership and implementation of the checklist. While we asked patients whether they would prefer a surgeon or nurse to lead the checks, no reference to the anaesthetist was made. The reason behind this was to aid comprehension and to account for the fact that patients are often unfamiliar with the role an anaesthetist plays during surgery; however, it is a clear

limitation in the study and should be addressed in future work. This, in itself, highlights the challenges inherent in designing tools for use with patient cohorts.

### Implications

The current work has implications for patient safety research, healthcare improvement and clinical practice. First, we have shown that our sample of patients was largely in favour of the WHO checklist. While it may not seem surprising that patients would be positive towards extra safety checks, we believe that the current findings provide a persuasive argument for the use of the checklist and a challenge to those who are reluctant to its use or who do not complete parts of the checks on the grounds that patients might not feel comfortable. This is an important addition to the work around safety checklist implementation to date.

Second, the study has suggested ways in which the use of the checklist might be adjusted to take into account the sensitivities of the patient experience. For example, we found that almost a third of patients expressed that they would feel anxious upon hearing discussions around blood loss prior to their surgery (part of the 'sign-in' checks). This information could be used to inform modification of the tool (which was endorsed by the National Patient Safety Agency when the checklist was introduced).<sup>19</sup> The wording of the 'blood loss' item might be altered (eg, maybe by referring to the need for a 'group and save' instead), or this check could be completed at a different time-point entirely (eg, blood loss is also checked at 'time-out' when the patient is asleep, which could be sufficient). From our experience, this kind of modification is already happening in a large number of hospitals, but here we have provided support for doing so from a patient perspective. This is a simple demonstration of how patient experience might be improved (or at the very least not unnecessarily compromised) by gaining patient input into the delivery of safety interventions, and the research question can certainly be extended to additional interventions beyond the checklist.

Third, this work informs the *methodological* approach we might take to involve patients in quality and safety improvement in healthcare, which is an area that requires consideration. We have presented a feasible methodology for informing patients about safety interventions that they themselves would not necessarily otherwise be aware of or witness, which provides them with the opportunity to share their views surrounding its implementation. The use of videos was an efficient, and well received effective means of visually demonstrating the use of the checklist and equivalent prechecklist practices, and made these concepts easy to grasp and relevant to the individual patient. This methodology was entirely feasible for use on a hospital ward. The survey instrument was

also a quick and simple way of collecting a large amount of data—participants could answer the questions at their own pace and rarely required assistance. This methodology allows standardised presentation of information and can be adapted to satisfy a range of research questions. Patients were generally very happy to participate and, in fact, valued the distraction from their environment.

### CONCLUSION

We have demonstrated a high level of patient support for use of the WHO surgical safety checklist in our sample. We have also shown that it is feasible to gain patient insight into the delivery of safety tools like the checklist, and that such feedback can inform appropriate tool modifications. We highlight the need for better patient and public education around opportunities for becoming more actively involved in safety improvement in healthcare, and the continued development of approaches that allow feedback to be provided in a non-threatening and accessible manner.

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