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Clinical Investigation

QUALITY AND PATIENT SAFETY

Implementation of the TALK© clinical self-debriefing tool in operating theatres: a single-centre interventional study

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Abstract

Background: Debriefing in operating theatre environments leads to benefits in mortality, efficiency, productivity, and safety culture; however, it is still not regularly performed. TALK© is a simple and widely applicable team self-debriefing method to collaboratively learn and improve.
Methods: An interventional study introducing TALK© for voluntary clinical debriefing was carried out in operating theatre environments in a UK National Health Service hospital over 18 months. It explored compliance with the Five Steps to Safer Surgery and changes in behaviour in surgical teams regarding consideration and completion of debriefing.
Results: Team briefing and compliance with the WHO surgical safety checklist were performed consistently (>95% and >98%, respectively) throughout the study, which included 460 surgical lists. Consideration of debriefing increased at all data collection periods after intervention, from 35.6% to 60.3–97.4% ($P \leq 0.003$). Performance of debriefing, which was 23.3% at baseline, reached 39% at 6 months ($P=0.039$). Team planning of actions for improvement during debriefing also increased ($P<0.001$). A decline in performance of debriefing and subsequent improvement actions was observed after 6 months, albeit rates were above baseline at 18 months. The most reported reason not to carry out a debriefing was 'lack of issues'. After implementation, nurses and allied healthcare professionals increased their contribution to initiating and leading debriefing. Reported barriers were <18% at baseline, and decreased after intervention.
Conclusions: A simple intervention introducing TALK© for voluntary debriefing in theatres prompted significant changes in team behaviour and sustained growth regarding consideration and performance of debriefing, especially in the first 6 months.

Keywords: clinical debriefing; continuous improvement; operating theatre; patient safety; Safety II; WHO surgical safety checklist

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Editor's key points

- Debriefing in operating theatres can improve mortality, efficiency, productivity, and safety culture, but is not routinely performed.
- This study explored the introduction of TALK©, a simple team self-debriefing method, over an 18-month period to surgical teams in a UK hospital.
- After the intervention, consideration and performance of debriefing and team planning for improvement all increased, peaking at 6 months with some decline by 18 months.
- This simple intervention for voluntary structured debriefing in operating theatres promoted changes in team behaviour and sustained growth regarding consideration and performance of debriefing.

Operating theatres are complex and high-risk environments where teams need to observe safety behaviours in order to facilitate optimal patient outcomes.[1] Clinical debriefing, a well-recognised element of safe practice in theatre environments,[2,3] was introduced in the UK as the fifth action of the 'Five Steps to Safer Surgery' (2009).[4]

Debriefing allows clinicians to reflect on their everyday practice, learn, and improve.[5] It improves team performance in high-stakes environments and patient outcomes in critical care settings,[6,7] and survival and neurological outcomes in post-resuscitation patients.[8] Debriefing explicitly aiming to encourage learning and improvement promotes safe conversations that lead to enhanced team coordination, shared understanding, clinical performance, and patient outcomes, in contrast with debriefings intending to treat psychological trauma which can negatively impact vulnerable individuals.[9] By enabling team members to speak up, debriefing can reduce hierarchy gradients and foster open and inclusive multiprofessional communication.[10,11] Use of an operating theatre debriefing checklist has previously been shown to encourage iterative surgical team adaptations and lead to quantifiable benefits in mortality, efficiency, productivity, and safety culture.[12]

However, performance of regular debriefing in theatre environments is still not common practice, either as an approach to everyday learning and improvement or after untoward events. Previously identified barriers include lack of time and structure, conflicting priorities, and inadequate leadership and organisational buy-in.[13,14] Furthermore, socio-cognitive factors can limit the translation of an intention to debrief into action, creating an 'intention–behaviour gap'.[15,16] Additionally, the effects of successfully implemented interventions often experience a fade-out phenomenon over time.[17]

Enablers for implementation of debriefing include standardisation of a debriefing approach, cost-effectiveness, and cultural alignment.[18] In addition, the use of cognitive aids can support healthcare staff to achieve safety outcomes reliably.[19] Most clinical debriefing tools have been developed for use after clinical events, cardiac arrest episodes, or adverse outcomes within specific contexts such as emergency, paediatric, or critical care.[20] Current safety thinking has shifted from a Safety I approach (learning from 'what goes wrong') to a Safety II approach, aiming to learn from variations in practice and to 'make everything go well' all the time.[21] Therefore, a Safety II emphasis on debriefing would involve highlighting positive daily adaptations in behaviour, and reinforcement of small but beneficial actions and strategies, hence moving away from incidents as the predominant motivation for discussion and focussing on the identification and implementation of 'marginal gains'.[22]

The TALK© approach (www.talkdebrief.org) is a simple self-debriefing method applicable across any area of clinical practice that enables teams to learn and improve together by having everyday debriefing conversations with a Safety II approach.[5] Emotionally complex situations might require a different debriefing approach supported by an experienced facilitator or a psychological debriefing expert. Supported by explicit values, TALK© acknowledges the importance of inclusive, self-directed, and solution-focussed interactions in multiprofessional teams. Its four steps consist of establishing a relevant target for discussion, analyse the agreed theme, identify learning points, and agree on key actions to improve and maintain patient care. Anyone familiar with TALK© can initiate or lead a debriefing following the script provided through cognitive aids. These conversations should be carried out in quiet and private environments and last no more than 10 min (Fig. 1).

This study explored how implementing TALK© for voluntary clinical debriefing impacted communication behaviours of operating theatre teams, and how it naturally evolved without further intervention over an 18-month period. The primary outcome considered was changes in performance of debriefing.

Methods

This interventional study explored changes in behaviour in surgical teams after the introduction of TALK© for clinical debriefing at the University Hospital of Wales in, Cardiff, UK. It belongs to the publicly funded National Health System (NHS), provides care for nearly half a million local residents, and serves a wider population across Wales as a tertiary referral and major trauma centre. In the operating theatres, >2000 surgical procedures are carried out each year, with a third of them urgent or emergency cases.

The intervention consisted of introducing TALK© into main theatres and short surgical stay unit (SSSU) as part of an international collaboration funded by a Marie Sklodowska-Curie Actions grant of the European Commission.

We aimed to include all elective surgical lists taking place in main and SSSU theatres from Monday to Friday during each data collection week. A 'surgical list' is the programme of operations planned to be carried out by the same team during a morning, afternoon, or whole day. Team members coalescing to deliver surgical and anaesthetic care in theatre environments vary in composition depending on location, specialty, and shift allocation. A theatre team typically comprises at least one surgeon, two scrub nurses, one theatre assistant, an anaesthetist, and an anaesthetic assistant. Emergency lists were not considered, as team composition usually changes from case to case. Lists in which patients did not arrive to recovery areas necessitated exclusion because of logistical reasons. Therefore, cardiac lists were excluded, as patients were taken directly to the cardiac intensive care unit, and lists consisting only of patients directly discharged to the ward, such as minor operations under local anaesthesia, were also excluded.

Fig 1. TALK© debriefing cognitive aid (card), available from www.talkdebrief.org.

The data collection instrument was a structured questionnaire designed to guide theatre team interviews exploring behaviours demonstrated by the theatre team. It assessed compliance with the Five Steps to Safer Surgery, which were grouped into briefing, WHO surgical safety checklist (sign in, time out, and sign out), and debriefing.[4] Changes prompted by

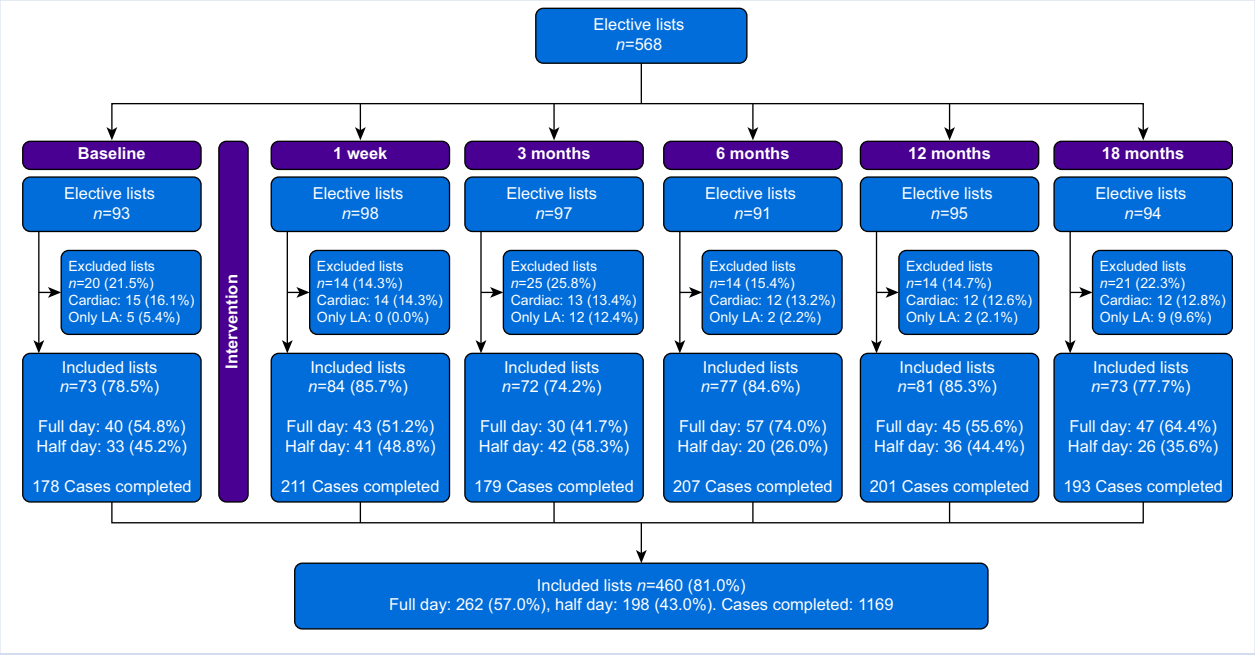

Fig 2. Flowchart of the interventional study. LA, local anaesthesia. *The scheduled time for full day lists was 9 h, and for half day lists was 4 h.

team briefing were recorded, and also barriers encountered, with specific variables being time constraints, lack of engagement, clinical urgency, and other. Regarding debriefing, questions included whether the teams had considered the option to debrief or carried out a debriefing. A debriefing was documented as 'performed' if it had been completed. In that case, open fields recorded planned actions for improvement, evidencing attainment of the fourth step. If debriefing had been contemplated by the team but not finished, it was recorded as 'considered', and the rationale not to continue was recorded and grouped into 'no issues to discuss', 'time constraints', 'lack of engagement', 'clinical urgency', or 'other'. Barriers encountered during briefing and debriefing were recorded and classified into 'time constraints', 'lack of engagement', 'clinical urgency', and 'other'. Debriefing team composition was explored by enquiring about any team members absent during debriefing. The professional backgrounds of the team members initiating and leading the debrief were noted.

The initial implementation of TALK© debriefing was carried out following Kotter's eight steps for leading change[23]: a sense of urgency was created by the need to fulfil the 'Five Steps for Safer Surgery', which highlight debriefing as an essential safety element; a multiprofessional guiding coalition was formed, which included managers, clinical leads, educators, and researchers; their strategic vision was established and volunteer champions were identified.

The study intervention was multimodal and included four approaches. (1) The TALK© debriefing method was shared during *ad hoc* informal semi-structured reflective discussions with multiprofessional theatre teams during quiet periods over 3 days. These conversations emphasised that debriefing is the fifth 'step to safer surgery' and invited to consider how debriefing could be helpful to their team, what could trigger a debrief, the most convenient time to debrief, potential barriers and their possible solutions, and how to follow up after agreement on actions for improvement had been reached. The TALK© structure was shared, and the definition of clinical debriefing as 'a team conversation about what has happened during a case about any aspects of patient care; clinical debriefing allows the team to analyse together what happened and identify ways to learn and improve'. It was highlighted that debriefing would be voluntary, it could address any aspects of patient care, and the importance of valuing everybody's perspective. (2) Emails were disseminated to all theatre personnel, including surgeons, anaesthetists, nurses, and allied healthcare staff, providing details of this initiative, TALK© posters and cards, and signposting to further online information, via the website www.talkdebrief.org. (3) Short standardised training sessions were organised during quality and safety meetings, supported by presentation slides and focussing on defining clinical debriefing, gaining familiarity with the TALK© values and structure, discussing opportunities and timing to debrief, and strategies to complete and consolidate key actions agreed upon during the conversation. Debriefing was encouraged for those occasions in which any team member considered it necessary. It was highlighted that debriefing was not mandatory and that it was up to the team to use it when they felt it would be beneficial. (4) Cognitive aids, such as laminated posters and cards, were provided to multiprofessional theatre staff.

In order to explore the natural course of the initial implementation, no reinforcements were carried out, therefore, no further debriefing training was provided to existing or new staff, no reminder emails were sent out, and further cognitive aids were not supplied. Team briefing and use of the WHO

Table 1 Performance of team briefing and compliance with World Health Organisation surgical safety checklist. Values are expressed as absolute value and percentage. *P*-values refer to comparison with baseline. WHO, World Health Organization. *More than one answer was possible. Statistically significant results have been highlihted in bold.

	Baseline *n*=73	1 week *n*=84	3 months *n*=72	6 months *n*=77	12 months *n*=81	18 months *n*=73	Total *n*=460
WHO checklist compliance	73 (100)	84 (100) *P*=1	72 (100) *P*=1	76 (98.7) *P*=0.329	80 (98.8) *P*=1	72 (98.6) *P*=1	457 (99.3)
Performance of team briefing	72 (98.6)	81 (96.4) *P*=0.365	70 (97.2) *P*=0.495	75 (97.4) *P*=0.520	77 (95.1) *P*=0.218	71 (97.3) *P*=0.500	446 (97)
Characteristics of team briefing	*n*=72	*n*=81	*n*=70	*n*=75	*n*=77	*n*=71	*n*=446
Changes to list during team briefing	26 (36.1)	30 (36.6) *P*=0.951	27 (38.6) *P*=0.762	24 (32) *P*=0.599	30 (38.5) *P*=0.766	**38 (53.5)** **P=0.036**	175 (39.1)
Perceived barriers to team briefing	10 (13.7)	8 (9.5) *P*=0.413	7 (9.7) *P*=0.457	9 (12.3) *P*=0.806	7 (8.6) *P*=0.317	5 (6.8) *P*=0.173	46 (10.1)
Characterisation of barriers* identified during team briefing	*n*=10	*n*=8	*n*=7	*n*=9	*n*=7	*n*=5	*n*=46
Time constraints	7 (70)	**1 (12.5)** **P=0.023**	**1 (14.3)** **P=0.036**	2 (22.2) *P*=0.051	**1 (14.3)** **P=0.036**	2 (40) *P*=0.287	14 (31.1)
Lack of engagement	3 (30)	4 (57.1) *P*=0.268	5 (71.4) *P*=0.117	1 (11.1) *P*=0.333	**6 (85.7)** **P=0.036**	1 (20) *P*=0.593	20 (44.4)
Clinical urgency	0 (0)	0 (0) *P*=1	1 (14.3) *P*=0.412	0 (0) *P*=1	1 (14.3) *P*=0.412	0 (0) *P*=1	2 (4.4)
Other	3/10 (30)	4 (57.1) *P*=0.268	2 (28.6) *P*=0.686	7 (77.8) *P*=0.051	1 (14.3) *P*=0.441	3 (60) *P*=0.287	20 (44.4)

surgical safety checklist, which were embedded into everyday practice in this hospital before the study, acted as a control measure.

Data collection took place during 1-week periods. Baseline data were collected before implementation, with follow-up at 1 week, 3 months, 6 months, 12 months, and 18 months after the intervention. Staff were interviewed after completing care for the last case of each surgical list in postanaesthetic recovery areas. To ensure full sample capture and a homogeneous approach to data collection, a trained research team interviewed theatre staff following the research questionnaire, recorded their responses on paper and these were transcribed to a database at the end of each data collection week.

Numerical data collected are described as absolute value (*n*) and percentage (%) in each period. Barriers for briefing and debriefing were collected as qualitative variables. Agreed actions for improvement were collected as open-text data and categorised according to emerging themes by two researchers. Statistical analysis was carried out using χ^2 and Fisher's test for non-parametric data, which were applied through SPSS v 27 (IBM, Armonk, NY, USA).

According to NHS Health Research Authority criteria, the study protocol did not require approval by a Research Ethics Committee. The protocol was approved by Health and Care Research Wales before the start of data collection (IRAS reference number 227454). Information sheets were provided and informed consent obtained from all participants.

Results

A total of 568 elective surgical lists were identified throughout the study, and 460 (81.0%) were included. Excluded lists, as their patients did not require stay in recovery areas, comprised cardiac surgical lists (13.7%) and those with cases performed under local anaesthesia with patients discharged directly to the ward (5.3%) (Fig. 2).

The number of lists included in each 1-week data collection period was homogeneous, ranging from 91 to 98. Specialties represented in the included lists comprised gynaecology, urology, general, upper gastrointestinal, colorectal, liver, vascular, neurosurgical, orthopaedic, thoracic, ear, nose, and throat (ENT), maxillofacial, and ophthalmic surgery.

Briefing and WHO surgical safety checklist

Team briefing was performed consistently throughout the study (95.1–98.6%) (Table 1, Fig. 3). Changes to the day plan took place during team briefing in 36.1% of lists before the intervention, and showed a significant increase to 53.5% at 18 months ($P=0.036$). The most common action prompted at the time of briefing was to rearrange the sequence of planned operations, which took place on 61.1% of occasions. Other recorded changes included obtention of additional equipment (17.0%), request of additional diagnostic tests (7.6%), incorporation of additional team members (2.9%), and request of high-level care provision (1.8%).

Perceived barriers to team briefing were reported in 10.1% of lists where team briefing had been carried out. The most common barrier identified at baseline was 'time constraints' (70%), which decreased after the intervention (12.5–40.0%), significantly after 1 week, 3 months, and 1 year ($P\leq0.036$).

Compliance with the WHO surgical safety checklist was ≥98.6%, as only three lists out of 460 reported time constraints hindering its completion.

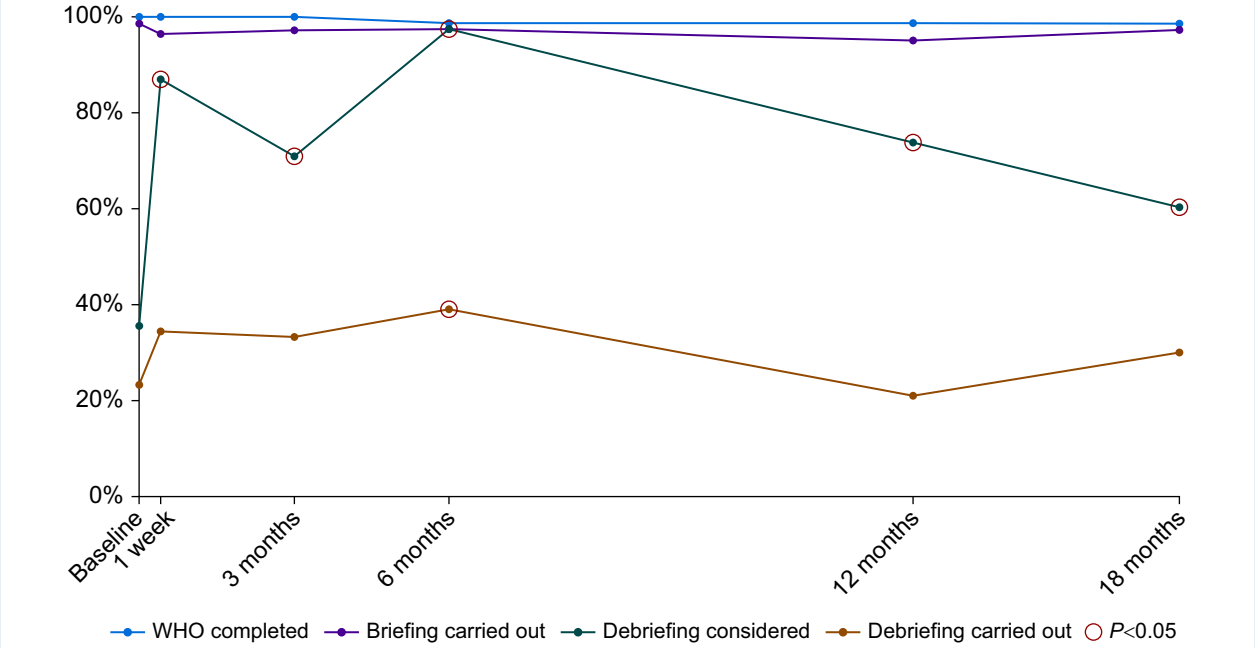

Fig 3. Variation of communication behaviours in operating theatres over 18 months regarding completion of World Health Organization surgical safety checklist and team briefing, and consideration and performance of team debriefing.* *Data points showing a significant difference ($P<0.05$) when compared with baseline are highlighted in the graph.

Debriefing

At baseline, 26 out of 73 teams (35.6%) stated that debriefing had been considered during their list. After the intervention, this increased at all data collection periods, ranging from 60.3% to 97.4% ($P<0.01$), peaking at 6 months (Table 2). The number of lists where debriefing was completed increased from 23.3% at baseline to 39.0% at 6 months ($P=0.039$). However, whilst consideration of debriefing remained significantly higher after the intervention, its translation into performance of debriefing was not homogeneous throughout the study, declining to non-significant levels after 6 months (Fig. 3). Reasons not to debrief related mainly to lack of identified issues to discuss, which accounted for >85% at 3, 6, 12, and 18 months ($P\leq0.006$). Conversely, clinical urgency lost relevance as a reason not to debrief, from 22% at baseline to 0% at 12 months ($P=0.027$). Other reasons reported for not debriefing after consideration included lack of engagement and time constraints.

Introduction of the TALK© debriefing tool resulted in a significant increase in reported key actions for improvement identified during debriefing, from 17.6% at baseline to 70.0% at 6 months ($P<0.001$) (Table 3). Concurrently, the scope of intended actions broadened, from focussing on optimising the use of equipment and resources at baseline, to a wider range after intervention, including changes to shared decision-making, communication, and team performance. Examples of planned key actions included: better provision of electricity extension lines, adequate needles and sutures, ultrasonography or difficult airway equipment, and purchase of new equipment such as a theatre tables; optimisation of preoperative pain management, patient positioning, postoperative care in high-level areas, or patient referral to specialist services; addressing miscommunication on the ward and theatre; and highlighting positive inputs, feeding back to other care areas, reinforcement of protocols such as thromboprophylaxis, and planning for improvements on team efficiency.

Barriers encountered during debriefing were reported on 17.6% of occasions at baseline, decreasing after the intervention (0–13.8%) without statistical significance, and related mostly to time constraints and lack of engagement.

Regarding team composition during debriefing, the whole team was present in 76.5% of debriefing episodes at baseline, with a trend to increase after implementation, and being >90% after 12 months. Healthcare personnel initiating or leading a debriefing also changed after the intervention. At baseline, debriefing was commenced by nurses or allied healthcare professionals on 17.6% of occasions, increasing after implementation to 23.5–50.0%, achieving significance at 3 months ($P=0.034$). Although changes in leadership were not statistically significant, the proportion of debriefings facilitated by nurses or allied healthcare professionals increased after the intervention.

Discussion

Introduction of the TALK© debriefing tool into operating theatre environments resulted in significant increases in consideration and performance of debriefing, and a subsequent growth in collaborative decisions for quality improvement.

Improving and maintaining patient safety in healthcare necessitates genuine participation of all clinicians in learning and adapting to change and collaboratively optimising everyday tasks and team processes within specific working environments.[24] For this participation to be effective, team

Table 2 Consideration and performance of debriefing. Values are expressed as absolute value and percentage. *P*-values refer to comparison with baseline. *More than one answer was possible. Statistically significant results have been higlihted in bold.

	Baseline *n*=73	1 week *n*=84	3 months *n*=72	6 months *n*=77	12 months *n*=81	18 months *n*=73
Lists where debriefing was considered	26 (35.6)	**73 (86.9) P=0.000**	**51 (70.8) P=0.000**	**75 (97.4) P=0.000**	**60 (74.1) P=0.000**	**44 (60.3) P=0.003**
Lists where debriefing was performed	17 (23.3)	29 (34.5) P=0.123	24 (33.3) P=0.179	**30 (39) P=0.039**	17 (21) P=0.731	22 (30.1) P=0.350
Reasons not to debrief ('intention–behaviour' gap)*	*n*=9	*n*=44	*n*=27	*n*=45	*n*=43	*n*=22
No issues to discuss	3 (33.3)	27 (61.4) P=0.154	**23 (85.2) P=0.006**	**39 (86.7) P=0.002**	**43 (100) P<0.001**	**20 (90.9) P=0.003**
Time constraints	2 (22.2)	9 (20.5) P=1	6 (22.2) P=1	3 (6.7) P=0.190	3 (7) P=0.202	5 (22.7) P=1
Lack of engagement	1 (11.1)	15 (34.1) P=0.248	2 (7.4) P=1	1 (2.2) P=0.308	8 (18.6) 1	1 (4.5) P=0.503
Clinical urgency	2 (22.2)	3 (6.8) P=0.196	1 (3.7) P=0.148	**0 (0) P=0.025**	**0 (0) P=0.027**	0(0) P=0.077
Other	2 (22.2)	3 (6.8) P=0.196	0 (0) P=0.061	1 (2.2) P=0.069	**0 (0) P=0.027**	1 (4.5) P=0.195

members must be enabled to identify system and performance gaps, and act upon them by engaging in iterative adaptation and improvement.[25] Following a Safety II approach, healthcare professionals should be able to learn not only from weaknesses and errors, but also embrace and understand the richness of everyday variation and be proactive in identifying and repeating determinants of success.[21]

We studied six 1-week periods over 18 months, each capturing >90 theatre lists encompassing a wide variety of surgical specialties. Introduction of TALK© for clinical debriefing was designed to be easily replicable and low cost. Multiprofessional engagement from participants was positive and uneventful.

Briefing and the WHO surgical safety checklist

At baseline, the participant teams demonstrated a high level of compliance with briefing and the WHO surgical safety checklist (>95% of lists). This suggests a well-established safety culture in this population which could have facilitated our intervention. Previous studies have shown large variations in use of the WHO surgical safety checklist, citing compliance <72%.[26,27] Although implementation of debriefing did not affect the already high rate of performance of sign in, time out, and sign out, it resulted in greater proactivity during team discussions with a significant increase in changes agreed during briefing at 18 months. This could be related to a heightened sense of agency and an increased awareness of the importance of effective communication.[25] The resulting cultural change might increase team members' willingness to speak up.

Debriefing

There is variable evidence of the impact of debriefing tools in healthcare.[20] Many tools are context-specific and require trained facilitators. This is the first study evaluating implementation of a widely applicable tool for *voluntary* team self-debriefing in theatre environments. The study demonstrates that introduction of TALK© in theatre areas resulted in a significant increase in consideration and performance of debriefing. The consideration of debriefing escalated rapidly, nearly tripling at 6 months, and remained increased over 18 months. This change in team attitude towards debriefing could be a marker of cultural change and increased team emotional intelligence.[28] The performance of debriefing also rose significantly, almost doubling at 6 months, and once initiated, barriers were rarely encountered. A further behavioural change was observed as teams' collaborative planning for safety actions quadrupled at 6 months, expanding to include improvements in communication, utilisation of resources, shared decision-making, and team efficiency.

There were sustained differences between consideration and performance of debriefing throughout the study, demonstrating an 'intention–behaviour' gap.[29] When teams had considered debriefing but decided that it would not be necessary, the main reason alleged was 'lack of issues to debrief'. This might correlate with an assumption that we only need to discuss 'what has gone wrong' rather than learning from 'failure, success and everyday variation'.[21] Considering the intention–behaviour paradigm, a variation of approach might be required at the time of the initial intervention, in particular providing training in the initiation of debriefing conversations after uneventful experiences, in alignment with a Safety II perspective.

Improvements in debriefing consideration and performance peaked at 6 months but declined afterwards. Although the circumstances involved in considering and carrying out a debrief are multifactorial, this decay is comparable with the skills decline observed after cardiopulmonary resuscitation training, which appears to occur between 6 months and 1 year after the educational event.[30] Another possible explanation for this reduction in performance includes a behavioural fade-out phenomenon,[17] which would reflect a need for intervention reinforcement activities in order to sustain implementation of a debriefing culture.

The use of TALK© for clinical debriefing is facilitated by accessible cognitive aids, aiming to guide conversions with lower hierarchy gradients and encourage teams to be proactive as change agents, with an aggregation of marginal gains approach.[5,22,25] A sense of agency[25] was fostered by this intervention, leading to a greater proportion of debriefings

Table 3 Characteristics of debriefing. AHP, allied healthcare professionals. *At 6 months, one team did not report who started the debriefing. **In one list there were two debriefing episodes. Statistically significant results have been higlihted in bold.

	Baseline n=17	1 week n=29	3 months n=24	6 months n=30	12 months n=17	18 months n=22
Agreement on key actions during debriefing	3 (17.6)	13 (44.8) P=0.062	8 (33.3) P=0.264	**21 (70) P<0.001**	1 (5.9) P=0.287	8 (36.4) P=0.288
Barriers during debriefing	3 (17.6)	4 (13.8) P=1	1 (4.2) P=0.290	2 (6.7) P=0.336	0 (0) P=0.227	1(4.8) P=0.307
Whole team present during debriefing	13 (76.5)	21 (72.4) P=0.524	22 (91.7) P=0.182	24 (80) P=0.526	15 (93.8) P=0.187	20 (90.9) P=0.214
Debriefing episodes	18**	29	24	30	17	22
Debriefing started by nurse or AHP*	3 (17.6)	11 (37.9) P=0.149	**12 (50) P=0.034**	8 (26.6) P=0.349	4 (23.5) P=0.500	7 (31.8) P=0.265
Debriefing started by doctor*	15 (88.2)	18 (62.1) P=0.056	**12 (50) P=0.011**	21 (70) P=0.130	13 (76.5) P=0.328	15 (68.2) P=0.137
Debriefing led by nurse or AHP	3 (17.6)	6 (20.7) P=0.561	10 (41.7) P=0.103	6 (20.7) P=0.561	4 (23.5) P=0.500	7 (31.8) P=0.265
Debriefing led by doctor	15 (88.2)	23 (79.3) P=0.366	15 (65.5) P=0.068	24 (82.8) P=0.482	13 (76.5) P=0.328	15 (68.2) P=0.137

being initiated or led by nursing or allied healthcare staff members.

We acknowledge the limitations of this study. Data collection took place in recovery, therefore only team members handing over each patient reported on team behaviours, which might have led to underreporting. Although we included a wide range of surgical specialties, emergency and cardiac surgery lists were excluded; those teams might have exhibited different behaviours, which cannot be extrapolated from our sample.

Additionally, we did not explore how agreed key actions were implemented or their impact on patient outcomes.

Based on our findings, we recommend that teams wishing to introduce debriefing into their everyday practice support it with the use of cognitive aids, plan for reinforcement interventions after 6 months, and promote a Safety II approach to team learning and improvement.

Conclusions

Healthcare staff working on the frontline coalesce into clinical microsystems that need to continually adapt, learn, and improve. Clinical debriefing provides a crucial opportunity to facilitate these adaptations. This study demonstrates that a simple intervention introducing the TALK© tool for voluntary structured debriefing in theatres promotes changes in team behaviour and sustained growth regarding consideration and performance of debriefing, especially in the first 6 months. Further work is required to identify the benefit of reinforcement interventions, to specify the optimum number or frequency of team debriefings, to follow up on agreed actions and their impact on patient outcomes.

Authors' contributions

Study conception and design: CDN IEP, ELC, AH, JMN, PC
Data acquisition: CDN, IEP, AH, ELC
Data analysis and interpretation: CDN, IEP, JMN, PC
Manuscript draft: CDN, IEP
Review: ELC, AH, JMN, PC
Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved: all authors

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Declarations of interest

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