

The 'time-out' procedure: an institutional ethnography of how it is conducted in actual clinical practice

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ABSTRACT

Background The time-out procedure is a critically important communication interaction for the preservation of patient safety in the surgical setting. While previous research has examined influences shaping the time-out procedure, limited information exists on how actual time-out communication is performed by multidisciplinary surgical team members in the clinical environment.

Methods An institutional ethnographic study was undertaken. The study was conducted over three hospital sites in Melbourne, Australia. In total, 125 healthcare professionals from the disciplines of surgery, anaesthesia and nursing participated in the study. Data were generated through 350 h of observation, two focus groups and 20 semi-structured interviews. An institutional ethnographic analysis was undertaken.

Results Analysis revealed healthcare professionals adapted the content, timing and number of team members involved in the time-out procedure to meet the demands of the theatre environment. Habitually, the time-out procedure was partially completed, conducted after surgery had commenced and involved only a few members of the surgical team. Communication was restricted and stifled by asynchronous workflows, time restrictions, a hierarchical culture and disinclination by surgeons and anaesthetists to volunteer information and openly communicate with each other and nurses. Healthcare professionals became normalised to performing an abbreviated time-out procedure.

Conclusions Patient safety was relegated in importance as productivity, professional and hierarchical discourses configured the communication practices of surgical team members to limit active, open and direct communication. Examining how the time-out procedure was conducted in the clinical environment enables possibilities to emerge for facilitating compliance with hospital and WHO guidelines.

INTRODUCTION

The literature on surgical procedures going awry is concerning, particularly as many surgical complications are avoidable.¹ In Australia and internationally, many sentinel and adverse events are reported in relation to surgical procedures.²⁻⁴ These events can arise as numerous diverse causes accrue and interact in work settings. The Systems Engineering Initiative to Patient Safety model addresses the role of interrelated components of work systems that shape the services provided by healthcare professionals.⁵ Components of the model include the person, organisation, tasks, environment, tools and technologies.⁵ For operating room staff, communication is a key element of work systems, which is intrinsic to performing their activities. Hence, suboptimal communication can unbalance the interlinked work systems and affect the way safe care is provided.⁵

A key communication interaction undertaken in the operating room is the time-out procedure. The procedure involves a brief pause before a surgical incision is made to check the patient's identity, the operative site and side, and the surgery to be performed.⁶ As well as verbal communication, the anaesthetist, surgeon and nurse are expected to confirm the operation side, site or sites by inspection.⁶ Time out is an opportunity for surgical team members to communicate and address any concerns relating to patient safety or the procedure.⁶⁻⁷ All healthcare team members delivering surgical care are expected to participate in a time-out communication interaction.⁶⁻⁸ Congregation of surgical team members is designed to promote group communication, achieve shared understandings and improve patient safety.⁷⁻⁸ However,

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despite use of the time-out interaction in theatre, surgical procedures on the wrong surgical site and wrong patient and incorrect procedures still occur.²⁻⁴

Recently, time-out procedures have been incorporated into preoperative checklists, such as the WHO surgical safety checklist. This checklist expands the time-out procedure to incorporate 19 items for checking, divided into three phases: before the induction of anaesthesia, before skin incision and before the patient leaves the operating room.⁹ Checklists can simplify, standardise and organise tasks, ensuring their completion.¹⁰ Additionally, checklists can structure interactions to foster active and transparent verbal engagement, raising the likelihood of successful communication. In turn, the incidence of errors and adverse events may be reduced and patient safety be promoted.¹⁰⁻¹¹

Adherence to and implementation of surgical checklists, however, have been problematic in practice.¹²⁻¹³ Organisational and sociocultural factors are diverse among surgical specialities and environments, and when these contextual aspects are not accounted for prior to checklist implementation, resistance to checklist use can arise.¹²⁻¹⁵ Further, while an implementation manual for the WHO surgical safety checklist was published,¹⁶ a standardised operating protocol was not included, varying its implementation across settings and potentially diminishing its safety features.¹²⁻¹⁷

Research to date has provided limited insights into how time-out communication interactions are conducted in clinical practice. An Australian group of researchers investigated the time-out procedure by conducting interviews with 16 healthcare professionals and focused on influences shaping the time-out communication interaction.¹⁸ However, observation of time-out communication was not undertaken to see how the actual procedure was carried out. While many researchers have concentrated on exploring the use of surgical safety checklists in practice,¹⁹⁻²² limited attention has been paid to the time-out component, restricting the scope of understanding how time-out procedures are accomplished. Hence, the aim of this paper is to explore how the time-out procedure is implemented in clinical practice.

METHODS

Research setting and study informants

An institutional ethnographic research design was used. Observations were made in three public, teaching hospitals in Melbourne, Australia, from January to October 2010. These hospitals collectively perform over 20 000 surgical procedures per year. Characteristics of the study hospitals are shown in table 1. Ethics approval was granted by the research and ethics committee of the respective hospitals. One hundred and twenty-five healthcare professionals were purposely selected to act as informants across the perioperative pathway and provided written consent to participate. Their characteristics

are shown in table 1. As the selected informants engaged with many others in communication, verbal consent was gained from other individuals participating in communication interactions.

Data collection

Data were collected through more than 350 h of participant observation, two focus groups, and 20 semi-structured interviews with informants from each hospital. Information was collected on individuals involved in time-out procedures; when overlapping conversations and multitasking occurred; the types of communication channels used and the causes, outcomes and consequences of communication failure. A single observer, a registered nurse with 20 years' hospital experience, performed the observations, interviews and focus groups. Data collection commenced in January 2010 and concluded in October 2010. The research settings were initially observed for 1-3 days prior to recording any observations. Informants (N=107) were shadowed for a period of 2-4 h during mornings, afternoons, weekdays and weekends. Observations were made at a distance to enable the informant's speech to be heard clearly, but not so close to be intrusive, cause disruption or contaminate sterile areas. Focus groups and semi-structured individual interviews were conducted over 30-40 min and consisted of a total of 30 informants, 12 of whom had also consented to participate in being observed. Accordingly, a total of 125 healthcare professionals participated in the study.

The time-out policy of the health service listed all items on the time-out component of the WHO checklist, except for confirming the introduction of all team members. Observation for the time-out procedure commenced as soon as the patient entered the theatre. The time-out procedure was considered incomplete once the surgeon made a skin incision or inserted a scope into the patient. Time out was noted as not conducted if it was not completed before the patient was moved out of theatre. To detect if the checklist was wholly or partially completed during the time-out interaction, the researcher marked off components of the checklist in field notes as the items were audibly spoken and checked by theatre staff. Time out was deemed incomplete if an anaesthetist, surgeon and nurse did not confirm the patient, site and procedure or any other relevant components of the checklist. Communication failure was detected according to Lingard *et al*'s²³ communication failure definition, where a flaw exists in the audience, occasion, purpose or content of a communication event. How communication failure was detected and categorised is described in table 2.

Data analysis

Institutional ethnography does not prescribe traditional qualitative data analysis methods of using

Table 1 Characteristics of study hospitals and healthcare professional informants

Site	Number of operating rooms	Number of theatres		Elective and emergency surgery	
		(n)	(%)	(n)	(%)
Hospital 1	2	6		Both	
Hospital 2	1	3		Both	
Hospital 3	1	4		Both	
Healthcare professional demographics		Focus group and interview (N=30)		Participant observation (N=107)	
		(n)	(%)	(n)	(%)
Gender	Female	15	50.0	68	63.6
	Male	15	50.0	39	36.4
Age in years	18–30	4	13.3	23	21.5
	31–40	7	23.3	27	25.2
	41–50	12	40.0	45	42.1
	Over 50	7	23.3	12	11.2
Occupation	Surgeon	6	20.0	17	15.9
	Anaesthetist	5	16.7	19	17.8
	Nurses with a Bachelor's degree	19	63.3	66	61.7
	Nurses with a Certificate or Diploma qualification	0	0.00	5	4.70
Area of employment	Surgical ward	0	0.00	28	26.2
	Operating room	30	100.0	79	73.8
Employment status	Full time	12	40.0	48	44.9
	Part time	18	60.0	59	55.1
Number of years in current position	Under 1 year	2	6.70	9	8.40
	1–5 years	7	23.3	53	49.6
	6–10 years	9	30.0	27	25.2
	11–15 years	10	33.3	12	11.2
	Over 15 years	2	6.70	6	5.60
Number of years of experience in current profession	Under 1 year	0	0.00	5	4.70
	1–5 years	4	13.3	22	20.5
	6–10 years	6	20.0	28	26.2
	11–15 years	9	30.0	23	21.5
	Over 15 years	11	36.7	29	27.1

interpretative coding to organise data into set groups and concepts.^{24 25} Repeated coding of data can distort and obscure the permeating social relations that are at the core of an institutional ethnography.²⁶ However, initial coding of data into indexed 'chunks' can assist to broadly organise the data for further analysis.²⁷ Ethnographic field notes, texts and audio transcripts

were used to analyse data, uncover the social relations, and trace the institutional ruling relations coordinating healthcare professionals' communication. Multiple analytical questions proposed by Campbell and Gregor²⁵ and McCoy²⁸ were used to deeply probe the data. The questions posed to lead this analysis are shown in online supplementary appendix 1.

Table 2 How communication failure was attributed during observations

Type of communication failure	Description of communication failure and example
Occasion	Occasion communication failure was noted if there was difficulty with the timing or context of the interaction, such as if time out was conducted after a skin incision was made
Content	Content communication failure was recorded when the time out was lacking content, such as if the patient, site, procedure or side were not verbally checked
Purpose	If the purpose of time-out interaction was not achieved, communication failure was noted, such as when it was not conducted
Audience	Audience communication failure was noted if the time-out communication act did not include personnel from nursing, anaesthetic and surgical disciplines

To ensure rigour, the methods of prolonged engagement, triangulation, member checking, peer review and inter-rater reliability were employed. A description of these methods is provided in online supplementary appendix 1.

RESULTS

While 107 surgical procedures were observed, only 102 time-out interactions were witnessed, as time-out communication did not occur on five occasions. Of the time-out interactions, 10% (11/102) were conducted in accordance with the hospital policy. Fifty percent of the time-out interactions involved only a surgeon and a nurse. The most frequently non-completed component of the time-out checklist was involvement of, and contribution by, an anaesthetist (76%, 91/102). The most common reasons for non-participation in the time-out interaction was healthcare professionals were unaware time out was being conducted (94%, 96/102) and they were preoccupied with the completion of other tasks (91%, 93/102). Communication failure occurred in 94% (96/102) of time-out interactions. The characteristics of the surgical procedures and time-out interactions observed are shown in table 3.

In the clinical area time-out communication was routinely performed; however, the procedure was often incomplete. While most surgeons and nurses

Table 3 Number of surgical procedures observed and characteristics of time-out interactions

	n	N	%
Hospital			
Hospital 1	80	107	75
Hospital 2	18	107	17
Hospital 3	9	107	8
Urgency of procedure			
Elective	100	107	93
Emergency	7	107	7
Type of anaesthetic			
General anaesthesia	84	107	78
Sedation	17	107	16
Local anaesthetic	4	107	4
Epidural	2	107	2
Time-out procedure			
Complete	11	107	10
Incomplete	91	107	85
Not conducted	5	107	5
Patient participation in time out			
Yes	0	102	0
No	107	102	100
Time-out timing			
Before incision or scope insertion	93	102	91
After incision or scope insertion	9	102	9

Continued

Table 3 Continued

	n	N	%
Component of time out not completed*			
No anaesthetist contribution	91	102	76
Verbal and visual confirmation of surgical site	50	102	42
No surgeon contribution	33	102	32
Verbal confirmation of procedure	4	102	4
Healthcare discipline involved in time out			
Surgeon and nurse	51	102	50
Nurse and nurse	35	102	34
Anaesthetist, surgeon and nurse	12	102	12
Theatre technician and nurse	4	102	4
Reason for non-compliance with time-out policy*			
No announcement of time out/other team members unaware of time-out procedure	96	102	94
Healthcare professional busy completing other tasks	93	102	91
Healthcare professional not in theatre at the time of time out	12	102	12
Forgotten	5	102	5
Declined invitation to participate	3	102	3
Multitasking by healthcare professionals during time out			
Yes	7	102	7
No	95	102	93
Interruptions to healthcare professionals performing time out			
Yes	10	102	10
No	92	102	90
Activities healthcare professionals engaged in when not involved in time out†			
Intubating or assisting with intubation	71	102	70
Attaching equipment to patient	65	102	64
Instrument counts or equipment checks	61	102	60
Setting up instruments or equipment	60	102	59
Talking to colleagues in theatre	27	102	26
Not present in theatre	14	102	14
Type of communication failure*			
Content	87	96	91
Purpose	4	96	4
Audience	91	96	95
Occasion	7	96	7
Consequences of communication failure at time out*			
Missing information in communication	38	96	40
Confusion in clinical practice	17	96	18
Inefficiency in work practice	15	96	15
Rushing in work	10	96	10
Patient consequences such as delays and rescheduling of surgery	8	96	8
Wasted resources	3	96	3
Tension between individuals	2	96	2

*Components do not add up to 100% as multiple categorisations were possible.

†Healthcare professionals included anaesthetist, surgeon, circulating nurse, instrument nurse and anaesthetic nurse.

n, the number of procedures related to the different variables listed; N, the total number of procedures observed.

worked to ensure the time-out procedure took place, it was rarely carried out in accordance with the

WHO or hospital policy. Alternatively, an abridged time-out procedure was often performed. The time-out communication encounter typically involved only a nurse and a surgeon, verbally confirmed the patient and procedure only, or was conducted after a patient incision had been made.

Ruling government policy endorsing efficiency and productivity discourses pervasively coordinated constrained communication practices exhibited by healthcare professionals at time-out interactions. In an intertextual hierarchy,²⁹ the government's elective surgery access policy organised how the operating room list was assembled.³⁰ Accompanying government healthcare documents also outlined key organisational performance indicators to be accomplished, such as the set numbers of surgeries to be completed annually.³¹ Formal monitoring of the health service's performance occurred through regular audits on the numbers and types of surgeries completed.

Limited involvement of surgical team members

Before a surgical procedure, surgeons, anaesthetists and nurses were all actively engaged in performing their role-related tasks. Surgeons were usually busy washing their hands and putting on sterile gowns; anaesthetists were involved in securing a patient's airway and delivering medications. Nurses were typically setting up equipment, opening supplies and performing instrument counts. Thus, surgeons, anaesthetists and nurses worked asynchronously as each discipline went about performing its specific duties before a surgery commenced. These asynchronous workflows impacted on a healthcare professional's ability to halt their work and collaboratively meet to communicate at a time-out procedure:

Time out was about to commence and the nurse initiating it asked the anaesthetist "Are you joining us?" The anaesthetist replies, "No, we have things to do." [Obs_circnurs_125]

Interdisciplinary group communication rarely occurred. On most occasions, a combination of either a nurse and a surgeon or two theatre nurses, performed the time out. Other surgical team members present in the theatre were busily engaged in discipline-specific preparations for the impending surgery. Thus, as two theatre staff members with no participation from the broader surgical team routinely conducted time out, communication failure occurred.

Often anaesthetists did not participate in time-out communication, as usually no invitation was extended by other staff to involve the anaesthetist, and no announcement was made that the time-out procedure was being conducted. Indeed, anaesthetists justified their non-participation in time-out communication in terms of time restrictions, competing interests and lack of relevance. An anaesthetist (213) rationalised his absence from time-out communication by stating,

"It [time out] takes a long time if everyone is involved.... Everyone's busy doing their own jobs. We just need to get on with treating patients; there are enough people on the waiting lists for surgery as it is". Another anaesthetist (211) expressed his disconnection from the time-out procedure owing to no perceived need to be involved: "I will call or contact the surgeon prior to the procedure if I have any concerns".

Healthcare professionals' asynchronous work routines, combined with organisational pressures to complete operating room lists in limited timeframes, restricted opportunities for information to be collaboratively shared. Healthcare professionals seemed normalised to these ubiquitous occurrences, and to the notion that group interdisciplinary communication at the time-out procedure was unnecessary. Interestingly, even when opportunities for collaborative communication before surgery occurred, healthcare professionals still did not actively converse in a time-out interaction. If an unexpected delay provided time before surgery, theatre staff would usually disperse into groups to communicate with individuals from their own discipline on topics unrelated to the patient and impending procedure. The consequence of communication failure owing to non-active and limited engagement of surgical team members, was that not all healthcare professionals possessed the same patient and procedural information before the commencement of surgery.

Time out after incision

Striving to meet demands of the operating room list, healthcare professionals worked under time-pressured conditions. To maximise operating room time and space and avoid delaying surgeons, healthcare professionals worked hastily. This ensured the theatre area was set up and that the patient was anaesthetised in a timely manner. However, in the rush to commence operating, the time-out procedure was sometimes overlooked:

The surgeon had cut the patient's skin and a nurse asks, "Did we do a time out?" The anaesthetist says "No, but we should keep it legal". The time out is performed, but as the surgeon had started operating he was not involved. [Obs_nursecoord_121]

Sometimes things are rushed before surgery, but theatre time out is always conducted, even if I can't be involved. [Surgeon_308]

While on most occasions healthcare professionals incorporated the time-out procedure into their work prior to the first incision, the goal of promptly commencing a patient's surgery sometimes took precedence. On other rare occasions, the time-out procedure was omitted entirely; this usually occurred when emergency surgery was required and surgical intervention was time critical. Thus, owing to flaws in

the purpose and timing of the time-out interaction, communication failure transpired.

Surgical teams worked under constant time pressures, and overt and covert evidence of time constraints was ever present. Overbooked operating room lists, audits on theatre starting times, surgeon demands for patient flow through theatres and regular incorporation of unplanned emergency cases into theatre, all served to remind healthcare professionals of time limitations. Thus, owing to the pervasive influence of time, healthcare professionals routinely ordered and negotiated their work based on this priority. While the time-out procedure was recognised as a necessary requirement by surgical team members, it did not always take precedence over adherence to time restrictions. Hence, the time-out procedure was relegated as other tasks of greater perceived importance were addressed. Accordingly, time-out communication occurred after an operation was commenced or occasionally the time-out procedure was entirely omitted.

Failure to perform the time-out procedure before a patient's skin was cut also took place when surgeons did not inform other theatre team members of their intention to make an incision. Sometimes, a surgeon would commence an operation before nursing staff had completed their preparations. Nurses, busy fulfilling last minute requests made by surgeons, were distracted from seeing a surgeon beginning operating. As nurses customarily instigated the time-out procedure, any distraction or interruptions to nurses' routines had the potential to lead to delays or omissions in the time-out procedure. A theatre nurse (125) commented "We [nursing staff] always initiate the time out. I don't think it would ever be done otherwise". The consequences of time-out communication occurring after an incision had been made were tension among surgical team members (when the surgeon gave no warning before starting a surgery) and diminished safety for the patient.

Partial completion of the time-out procedure

Time-out communication was of short duration, rarely lasting more than 1 min. While the process of completing time out was generally ingrained into the work processes of nursing staff and some surgeons, these healthcare professionals routinely abbreviated the procedure. A theatre nurse summarised what was observed to be commonplace in theatres:

There is no group communication! We just check the patient's name, UR [unique record number] and procedure, and we are straight into it [the surgery]. [Focus_group_theatrenurs_123]

The patient was admitted for removal of screws from his right ankle. At time out the surgeon and nurse read out the patient [name], procedure and site of surgery, but the site of surgery was never physically

checked. The patient's legs remained under the blankets. [Obs_surg_303]

To integrate the mandated hospital policy on time out into the practicalities of their time-restricted work, theatre staff unofficially implemented an abridged time-out procedure. The procedure was simplified and shortened by reducing the number of staff involved and limiting the details to be authenticated by not physically checking the site of surgery. Adapting the hospital's time-out procedure enabled theatre staff to work quickly and facilitated integration of the procedure into the daily work routines of surgical teams. However, this abbreviated time-out interaction incorporated only selected aspects of the hospital's procedural requirements and was not endorsed by the healthcare organisation. Communication failure ensued owing to limited content in, and failure to attain the purpose of, time-out communication.

Further contributing to partial completion of the time-out procedure were nurses' disinclination to question surgeons regarding the impending surgery and surgeons' and anaesthetists' reluctance to disclose their needs. Nurses were hesitant to utilise the time-out procedure to explore or confirm the likely requirements of a surgeon or an anaesthetist during surgery. Nurses either felt intimidated to ask for information, or their experiences of asking proved to be of little benefit. As shown and described by two theatre nurses:

It's [time out] just to check right patient, right procedure. If I need to know something I'll ask one of the other nurses. We [nurses] are very subservient to the surgeons; we pretty much do as we are told. I don't like to question. [Theatre_nurs_131]

Prior to the commencement of surgery the theatre nurse asked the surgical consultant to review the equipment for surgery. The surgeon declined, stating, "We kind of make it up as we go". [Obs_theatre_nurs_123]

Given the routine of little or no interdisciplinary communication taking place during the time-out procedure, nurses often did not attempt to alter its established format. Rather, nurses accepted partial completion of the time-out procedure as custom. To gather information, nurses preferred to consult sources of information other than surgeons, such as other nurses or surgeon preference cards. Without the benefit of clear forewarning by surgeons and anaesthetists of their likely needs during the surgery, nurses worked reactively. Although the lack of timely notification of surgical needs caused nurses to work inefficiently, nurses choose to rarely verbally protest or directly challenge a surgeon's authority. Workflow inefficiency was evident as nurses recurrently chased up instruments, equipment and radiological services, causing surgical delays. An additional consequence of communication failure from partial

completion of the time-out procedure was diminished safety for the patient.

Online supplementary appendix 2 provides additional quotes from the research informants for each of three result categories.

DISCUSSION

Exploring how the time-out procedure is implemented in clinical practice is of significant interest, for this critical communication interaction is intrinsic to the delivery of safe patient care. This paper presents important knowledge through examining how the time-out procedure was carried out in busy theatre environments, in contrast to how the procedure should be conducted according to WHO and hospital guidelines.

Working within the constant constraint of time restrictions, time-out interactions were predominantly partially completed. Anaesthetists were often uninformed and only limited components of the checklist were confirmed. Reducing the number of items checked and the extent of healthcare professionals' involvement shaped the communication interaction to fit into busy, time-restricted pre-surgery work routines. This unofficial adaptation of the time-out procedure can be traced back to healthcare professionals working diligently to maintain a steady flow of patients in and out of theatre. Coordinated by ruling discourses of productivity and efficiency, healthcare professionals aligned their work with the operating room list, which was an organising document designed to ensure that theatre time and space were maximally utilised.

Our findings identified that the time-out interaction was not conducted as an open collaborative communication opportunity and vital safety check. Nurses were reluctant to address their information needs at the time-out procedure and on occasions surgeons commenced operating before the time-out procedure was conducted. Further, anaesthetists sometimes declined to participate in time out, and when time was allowed for all healthcare professionals to collaboratively communicate before surgery, they did not always actively converse.

Discourses of professional practice and hierarchical dominance converged to inhibit collaborative communication at the time-out procedure. As doctors enjoyed higher positioning in the hierarchy than nurses, the unequal power relations caused nurses to feel uncomfortable with approaching anaesthetists and surgeons for information. In line with Gillespie *et al*'s³² view, healthcare professionals demonstrated strong tribal affiliations to their own professional discipline, which contributed to surgical, nursing and anaesthetic teams acting as independent units.

Additionally, surgeons' and anaesthetists' work and communication processes reflected discourses of independent practice. Displaying strong professional identities and possessing detailed patient and

procedural knowledge, surgeons and anaesthetists routinely carried out their work independently. However, professional independence led to information ownership and the inclination to work individualistically. As noted by Nagpal *et al*,³³ individuals holding information led to no theatre staff member possessing all the patient and procedural knowledge relevant to the case at hand. Accordingly, in our study, critical information was indirectly distributed and gained in an informal, untimely and haphazard manner. These results support the findings of Lingard *et al*,^{10 34} which also revealed communication failure prior to surgery stemming from a disorganised approach to information distribution.

Theatre staff displayed a clear sense of duty to perform time-out communication, but they abridged the procedure to fit in with their busy work conditions. The adapted time-out communication became a cultural habit, as the procedure was performed consistently as a mundane automated task. Healthcare professionals might have subsequently lost sight of the purpose of the procedure and understanding of how to perform it as outlined by hospital and WHO guidelines. Nonetheless, time out was routinely performed by a combination of a nurse and a surgeon, or two nurses together. Nurses' consistent involvement in time-out interactions may relate to them equating adherence to hospital procedures with discourses of professionalism.³⁵ The lack of regular participation by medical staff may reflect their rejection of highly prescriptive policies and desire for professional autonomy.³⁵

Discourses of quality and safety were also evident in healthcare professionals' work and communication. However, practices associated with quality and safety activities were time consuming. Healthcare professionals, accordingly, found themselves embedded in a complex web of ruling relations coordinating their work in the clinical environment. Healthcare professionals reconciled this dilemma by streamlining the time-out procedure to partially meet safety and quality standards, as well as adhere to ever-present efficiency and productivity demands. The consequences of communication failure during the time-out procedure were ultimately inefficiency, rushing and increased workload, as well as the exchange of minimal patient and procedural information among theatre staff. Minimal information exchange prevented the attainment of mutual understandings, which potentially compromised healthcare professionals' decision making and therefore patient safety.

The results of our study were often in clear contrast to the WHO time-out guidelines. Adherence to the WHO time-out guidelines, however, is only part of the solution for surgical teams to reduce avoidable risks. For surgical teams to successfully communicate, the culture of minimal interdisciplinary communication at time-out interactions must change. To enable patient and procedural information to flow freely at time-out interactions, healthcare professionals require

sufficient time to synchronise their workflow. To foster active and effective communication, steep hierarchies must be flattened and tolerance displayed for open questioning by co-workers. Such transformations are unlikely to occur without communication and team training and strong leadership to initiate and sustain change. Furthermore, patient participation in confirming their identity, site of surgery and procedure could add a further layer of safety protection to the time-out communication process.⁹

Future research needs to explore the impact of interdisciplinary communication education programs on surgical teams' implementation of, and adherence to, time-out procedure guidelines. Further, government departments writing healthcare policies that determine hospital performance indicators must take into account the communication challenges faced by surgical teams for delivering safe patient care in constrained timeframes.

Limitations of the study

It is possible that staff who consented to act as informants were particularly interested in communications research or were confident in their communication skills. Nevertheless, as many communication gaps were identified, it is unlikely that these aspects affected data collection. Further, the presence of the first author in the perioperative environment might have caused an undue focus on improving communication. However, as over 350 hours of observations were conducted, after a short period of time the repeated and extended presence of the first author drew very little attention and comment.

CONCLUSION

This study has highlighted complex issues surrounding how the time-out procedure is implemented in clinical practice. Patient safety was relegated in importance as ruling discourses configured the communication practices of surgical team members to limit active, open and direct communication at time-out interactions. To align and sustain healthcare professional communication processes with patient safety, awareness of actual communication behaviours at the time-out procedure is vital to communication improvement and compliance with guidelines.

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Data sharing statement As further publications are planned from the data, data sharing is not possible at this stage.

REFERENCES

- 1 de Vries E, Ramrattan M, Smorenburg S, *et al*. The incidence and nature of in-hospital adverse events: a systematic review. *Qual Saf Health Care* 2008;17:216–23.
- 2 Department of Health *Building foundations to support patient safety*. Melbourne: Quality, safety and patient experience branch, Victorian government Department of Health, 2010.
- 3 National Patient Safety Agency (NPSA) *Patient safety incident reports in the NHS: reporting and learning system quarterly data summary*. England: National Patient Safety Agency, 2009.
- 4 Joint Commission on Accreditation of Healthcare Organizations. Sentinel event data root cause by event type 2004-fourth quarter 2011: The Joint Commission, 2011.
- 5 Carayon P, Schoofs H, Karsh BT, *et al*. Work system design for patient safety: the SEIPS model. *Qual Saf Health Care* 2006;15:i50.
- 6 World Health Organization. *WHO guidelines for safe surgery*. 2nd edn. Geneva: WHO Press, 2009.
- 7 Makary M, Holzmueller C, Thompson D, *et al*. Operating room briefings: working on the same page. *Jt Comm J Qual Patient Saf* 2006;32:351–5.
- 8 Royal Australasian College of Surgeons. Royal Australasian College of Surgeons guidelines for ensuring correct patient, correct procedure, correct side and correct site surgery: Royal Australasian College of Surgeons, 2009.
- 9 World Health Organization. *Implementation manual surgical safety checklist*. Geneva: WHO Press, 2008.
- 10 Lingard L, Regehr G, Orser B, *et al*. Evaluation of a preoperative checklist and team briefing among surgeons, nurses, and anesthesiologists to reduce failures in communication. *Arch Surg* 2008;143:12–7.
- 11 Haynes AB, Weiser TG, Berry WR, *et al*. A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J Med* 2009;360:491–99.
- 12 Fourcade A, Blache J, Grenier C, *et al*. Barriers to staff adoption of a surgical safety checklist. *BMJ Qual Saf* 2012;21:191–97.
- 13 Walker IA, Reshamwalla S, Wilson IH. Surgical safety checklists: do they improve outcomes? *Br J Anaesth* 2012;109:47–54.
- 14 Bosk C, Dixon Woods M, Goeschel C, *et al*. Reality check for checklists. *Lancet* 2009;374:444.
- 15 Dixon Woods M, Bosk C, Aveling E, *et al*. Explaining Michigan: developing an ex post theory of a quality improvement program. *Milbank Q* 2011;89:167–205.

- 16 World Health Organization. *Implementation manual WHO surgical safety checklist 2009*. Geneva: WHO Press, 2009.
- 17 ElBardissi A, Sundt T. Human factors and operating room safety. *Surg Clin North Am* 2012;92:21–35.
- 18 Gillespie B, Chaboyer W, Wallis M, *et al*. Why isn't 'time out' being implemented? An exploratory study. *Qual Saf Health Care* 2010;19:103–06.
- 19 Altpeter T, Luckhardt K, Lewis JN, *et al*. Expanded surgical time out: a key to real-time data collection and quality improvement. *J Am Coll Surg* 2007;204:527–32.
- 20 Kearns RJ, Uppal V, Bonner J, *et al*. The introduction of a surgical safety checklist in a tertiary referral obstetric centre. *BMJ Qual Saf* 2011;20:818–22.
- 21 Levy S, Senter C, Hawkins R, *et al*. Implementing a surgical checklist: more than checking a box. *Surgery* 2012;152:331.
- 22 Abdel-Rehim S, Morritt A, Perks G. WHO Surgical checklist and its practical application in plastic surgery. *Plast Surg Int* 2011;2011: doi:10.1155/2011/579579 <http://www.hindawi.com/journals/psi/2011/579579/> (accessed 1 Sept 2012).
- 23 Lingard L, Espin S, Whyte S, *et al*. Communication failures in the operating room: an observational classification of recurrent types and effects. *Qual Saf Health Care* 2004;13:330–34.
- 24 Smith D. Institutional ethnography. In: May T, ed. *Qualitative research in action*. London: Sage Publication, 2002:17–52.
- 25 Campbell M, Gregor F. *Mapping social relations: a primer in doing institutional ethnography*. Walnut Creek, California: AltaMira Press, 2004.
- 26 Smith D. *Institutional ethnography. a sociology for people*. Oxford: AltaMira Press, 2005.
- 27 De Vault M, McCoy L. Institutional ethnography: using interviews to investigate ruling relations. In: Smith D. *Institutional ethnography as practice*. Maryland: Rowman & Littlefield Publishers, 2006:15–44.
- 28 McCoy L. Keeping the institution in view: working with interview accounts of everyday experience. In: Smith D. *Institutional ethnography as practice*. Maryland: Rowman & Littlefield Publishers, 2006:109–25.
- 29 Smith D, ed. Incorporating texts into ethnographic practice. In: *Institutional ethnography as practice*. Oxford: Rowman & Littlefield Publishers, 2006:65–88.
- 30 Department of Human Services. *Elective surgery access policy*. Melbourne, Victoria: Victorian government Department of Human Services, 2009.
- 31 Department of Health. Victorian health service performance monitoring framework 2011–12 business rules: Department of Health, 2011.
- 32 Gillespie BM, Chaboyer W, Wallis M, *et al*. Why isn't 'time out' being implemented? An exploratory study. *Qual Saf Health Care* 2010;19:103–06.
- 33 Nagpal K, Vats A, Ahmed K, *et al*. An Evaluation of information transfer through the continuum of surgical care a feasibility study. *Ann Surg* 2010;252:402–07.
- 34 Lingard L, Espin S, Rubin B, *et al*. Getting teams to talk: development and pilot implementation of a checklist to promote interprofessional communication in the OR. *Qual Saf Health Care* 2005;14:340–46.
- 35 McDonald R, Waring J, Harrison S, *et al*. Rules and guidelines in clinical practice: a qualitative study in operating theatres of doctors' and nurses' views. *Qual Saf Health Care* 2005;14:290.



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