Sentinel Events and Miscommunication What do we know in 2021: A Language and Social Psychology framework

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Abstract

The paper explored the extent to which hospital appointed official root cause analysis (RCA) panels consider antecedent and proximal events when they investigate communication related sentinel events (CRSEs) in hospitals. It also explored which CRSEs are most common in the hospital setting in Hong Kong and the communication modes most commonly associated with CRSEs. The data consisted of Risk Alert and Annual Report on SEs issued by the Hong Kong Hospital Authority from October 2007 to September 2017. Over the period studied, there were 379 reported sentinel events (SEs). In 186 of these SEs we identified communication as a contributing factor. We examined the RCA panels' reports on contributing factors and subsequent recommendations in these 186 SEs and found that their recommendations only highlighted the proximal contributing factors and not antecedent factors that may be relevant. RCA panels most often recommended that communication should be enhanced or documentation improved. We propose that it is time to review the RCA process to recognize that many CRSEs may occur because of antecedent factors that result from the complex hospital organizational structure and its associated hierarchical culture. We suggest two ways forward, 1) applying a language and social psychology perspective to the investigations of CRSEs and, 2) the involvement of experts from different disciplines who can work with clinicians during RCA investigations.

Keywords: Miscommunication, Sentinel events, Language and social psychology, Intergroup communication, Skills training

Introduction

Patient safety has become one of the top priorities for health services worldwide (World Health Organisation [WHO], 2008, 2019a, 2019b, 2019c). This focus has led to increasing attention to the reporting and investigation of sentinel events (Iedema, 2009; Mathews et al., 2016), which are defined as medical incidents that adversely affect patients (WHO, 2009), and represent a significant source of patient harm (O'Connor et al., 2010). In the health research literature, they are often referred to as "adverse" events which is a more generic term. Hospitals worldwide more generally use the term sentinel event (SE), which is also the accepted term used by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

Hong Kong has been proactive in SE investigation and reporting. The Hospital Authority (HA) of Hong Kong implemented its Sentinel Event Policy in 2007. From 2010 this policy widened to include Serious Untoward Events (SUEs). However, we focus only on SEs because they clearly depict the type of patient harm central to this paper. In line with the JCAHO, in Hong Kong, an SE refers to an "unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof" (Joint Commission on Accreditation of Healthcare Organizations [JCAHO], 1996).

In line with other Western countries, when an SE occurs in Hong Kong, public hospitals are required to set up a root cause analysis (RCA) panel to investigate the factors involved in the event. The RCA panels, at the hospital level, consist of members from the involved hospitals/institutes, technical experts with relevant clinical expertise, and representatives from the HA Head Office (HAHO). The RCA panel investigates the SE, documents the investigation results, and submits a report to the HAHO within eight weeks of the occurrence of the SE. The

SE Report Review Panel in the HAHO will regularly review all the submitted RCA reports. The HAHO will issue HA Risk Alert newsletters to all HA staff and the public on the learning points from reported SEs. Each year the HAHO also compiles an annual report for submission to the HA Board and release to the HA staff as well as the public.

The Types and Incidence of Sentinel Events

Sentinel event policies or their equivalents have been launched worldwide. The JCAHO in the United States launched its formal Sentinel Event Policy in 1996, since 2007 sentinel events in Australian public hospitals have been reported by states, the UK National Health Service (NHS) has implemented the Never Events Policy since 2010, and Dubai Healthcare City Authority Regulatory started the Sentinel Event Policy in 2019. The National Health Service has implemented the Never Events Policy since 2010. Never events are "serious incidents that are entirely preventable because guidance or safety recommendations providing strong systemic protective barriers are available at a national level and should have been implemented by all healthcare" (National Health Service [NHS], n.d.). These are similar to the sentinel events of interest here.

All these policies or programs aim to facilitate learning from these events and avoid or reduce their reoccurrence. Sentinel event policies or programs might vary in their list of sentinel events but more often than not share commonalities. The most frequently reported sentinel events include, but are not limited to, unintended retention of a foreign object inside the patient, performing procedures on the wrong patient or wrong site, performing wrong procedures on the patient, and patient suicide. For example, the top five SEs reviewed by the JCAHO in 2020 were patient falls, unintended retention of a foreign object, suicide, wrong surgery, and delay in treatment (JCAHO, 2021). The NHS (2020) reported that wrong site surgery, retained foreign

object post procedure, and wrong implant/prosthesis as the top three never events that occurred

between 1 April 2019 and 29 February 2020. We link these findings with the collected Hong

Kong data in the Results section.

Communication and Patient Care

Miscommunication has been recognized as a major factor leading to medication errors

and adverse healthcare outcomes (Brock et al., 2013; Hu et al., 2012; Leonard et al., 2004;

Makary et al., 2006; Manojlovich et al., 2015; Spear, 2005, September; Watson et al., 2015).

Communication failure which can also be termed miscommunication (Coupland et al., 1991) can

happen at any phase of care, within a single department or across departments and institutions

(Greenberg et al., 2007). It can also occur between different healthcare stakeholders - physicians,

nurses, patients etc. (Carney et al., 2010; Hewett et al., 2009a; Makary et al., 2006; Watson &

Gallois, 1999). Information may be communicated inaccurately or inappropriately, and

sometimes may not be transmitted at all, resulting in information gaps or missed information

(Greenberg et al., 2007).

Reduction of miscommunication can decrease errors and ensure better and safer patient

care. To date both clinicians and researchers have focused on improving healthcare providers'

communication competencies through competency skills training as an effective way to solve the

current problems (Best & Kim, 2019; McDaniel et al., 2020). The assumption behind much of

the competency skills training is that health professionals are deficient interactants and through

the adoption of communication skills training (Best & Kim, 2019; McDaniel et al., 2020) their

communication will improve and lead to a reduction in communication errors. However, despite

15 years of competency skills training aiming to reduce error, globally there has been no

significant reduction of SEs (Guttman et al., 2018; Kwok et al., 2020; Zegers et al., 2016).

What has been investigated less in this context are the concurrent systemic factors that

exist in the hospital structure which is a complex hierarchical organization with rigid cultural

norms (Watson et al., 2012). These factors are constant across western societies (e.g., UK, USA,

Canada and Australia) and can negatively impact communication between health professionals

and between health professionals and their patients (Fiol et al., 2009; Hewett et al., 2009b;

Weick & Sutcliffe, 2003). As this study uses Hong Kong data, which is comparable to SEs that

have occurred in other Western countries, we examine whether the same issues found in these

countries with respect to communication and SEs apply in Hong Kong.

In this study, we challenged the focus on enhancing communication competencies and

skills to improve patient care, given that numerous communication skills interventions have not

reduced the incidence of SEs. We invoke a language and social psychology (LSP) approach

(Coupland et al., 1991) to examine hospital culture, and the existing hierarchical complexities

and traditions, which, we suggest, are in part responsible for SEs and so demand more research

attention. Individuals who are familiar with their workplace communication culture may be less

aware than outsiders of reasons for existing communication problems or unknowingly support

miscommunication by accepting it as the status quo (Coupland et al., 1991). Finally, we explored

the modes of communication (written, spoken etc.) that were most commonly associated with

SEs in Hong Kong. A focus on commonly occurring communication modes may shed further

light on ways to reduce communication related SEs.

In summary, the unique contribution of this paper is the analysis of SE reports in Hong

Kong over a 10-year period and the frequency of miscommunication in those reported sentinel

events. To our knowledge such a detailed analysis of SEs and communication factors over a 10-year period in Hong Kong has not been undertaken. This analysis may inform both Hong Kong practice as well as western countries that adopt similar healthcare practices. Owing to sociohistorical factors, the health system of Hong Kong is similar to those of western countries. This study may also assist change in practices in the developing countries because the lessons learned in developed countries need to be made accessible to less developed countries in order to avoid the same errors.

Sentinel Events and Miscommunication from an LSP Perspective

All communication occurs within a specific context. Our previous research has highlighted that the hospital setting represents a complex hierarchical structure with many different health professions working together with clear status and power differentials that are apparent between their different professional groups (Watson et al., 2016). Physicians are generally regarded as the most powerful profession with other professions having lower status. The result is that hospitals are highly intergroup structures where health professionals identify strongly with their own professions, their ingroups, and often regard other professions as outgroups (Hewett et al., 2009b). The intergroup relations between physicians and nurses are the most often cited in this respect. However, it is also true that physicians from different specialties and sub-specialties may also regard each other as outgroup members. Previous research has shown that these intergroup dynamics can adversely influence communication (Hewett et al., 2009a, 2009b). An additional problem is that in general (although this is beginning to change) different health professions train separately and use different medical languages (Hewett et al., 2015). Research has shown that these health providers may not understand medical terms used by another specialty or profession (Hewett et al., 2015). The term *silo mentality* has been used to

describe this situation and reflects the inability of health professionals to work together in multidisciplinary teams (Watson et al., 2012).

Healthcare is globally reported as resource poor, understaffed, and overworked. These additional factors exacerbate the relationships between healthcare providers who have to fight, figuratively, for essential services and resources to ensure quality patient care. The evidence of this problem and its consequences have been widely reported by researchers (Leape et al., 2009; Setchell et al., 2015). One negative consequence of competition for resources is that it can engender a sense of threat with respect to the workplace. Healthcare professionals can respond to this threat by emphasizing the importance and salience of their own professional group (e.g., nurse or doctor) which can lead to discrimination between different professional groups, their outgroups, and to favoritism between the same professional ingroups. These in- and outgroup attitudes can undermine working relations. All these factors can be seen as the sociohistorical context behind each hospital procedure and antecedent factors that exist for each hospital event, influencing how any hospital procedure proceeds and whether or not problems arise. They can also be responsible for communication errors associated with an SE.

Scientists from various disciplines, social sciences included, explicitly examine what factors may be related to the outcome of some event. They look at a possible list of antecedents that may correlate and perhaps be causal to the resultant outcome, and they develop a model to test their hypotheses. In other words, they establish patterns that map onto events. In this paper we want to explore whether there may be other antecedent factors in communication related SEs. From an LSP perspective, we propose that because clinicians who make up the RCA panels are so enmeshed in the hospital culture, they fail to recognize other important antecedents that are consistently present in communication related SEs. Or if they do recognize them, they do not

give them priority because they are viewed as part of the status quo – what is often phrased as "that is how we do things here". Coupland and colleagues (1991) developed an integrated model of six levels of analysis. At the sixth level they proposed that individuals within an organization can create miscommunication. This happens because individuals unknowingly support miscommunication as part of the culture and it takes outside social change and intervention to repair the communication. When there are communication related SEs, it may be valuable for communication scholars to collaborate with clinicians and lead the way to change. This LSP perspective positions the hospital culture as a key factor in the communication problems that lead to the adverse events. In summary, we cannot in this paper empirically state the causal existence of specific antecedents to SEs but if similar SEs occur despite introducing interventions based on the RCA recommendations, there are grounds for a different approach. As communication related SEs are still prevalent, this paper further investigates using an LSP perspective.

Context of This Study

We used the public Hong Kong Risk Alert newsletters and annual reports to focus on communication related SEs that occurred over a decade from 2007 in Hong Kong. Because Hong Kong combines Western and Asian cultural characteristics we examined the reported incidence of SEs globally and in Hong Kong to establish that Hong Kong experiences comparable SEs to other Western countries. We examined the literature for the associations that have been made between communication and SEs to question the continuing emphasis on improving communication competency skills as a way to reduce SEs. Given the lack of success in reducing SEs, we wanted to further investigate the reported contributing factors to explore what other factors may be involved in communication related SEs. We invoked a language and social psychology (LSP) framework to examine whether the RCA recommendations could be too narrow and do not consider other related contributing factors. The significance of this paper is

that it probes into additional factors around communication that may be underplayed or not recognized by the RCA panels.

This literature suggests that Hong Kong is comparable to Western hospitals. From this we would expect that there would be a higher proportion of communication related SEs than non-communication related SEs over the 10-year period under review (Hypothesis 1).

Second, because of the focus on improving communication to reduce SEs, we expect that where communication is reported as a contributing factor to error in Hong Kong, recommendations will concentrate on corrective action that is task focused. These include communication competency training and improving existing record and tracking systems. We hypothesize that there will be little consideration of other antecedent factors that may be implicated in the miscommunication (Hypothesis 2).

The following research questions link directly to Hypothesis 2.

Our emphasis on an LSP perspective highlights the intergroup nature of the hospital setting and its associated impact on health professional relationships. Given this focus, we would ask whether there are any patterns in the communication related SEs that suggest intergroup relations with respect to miscommunication are evident (Research Question 1)?

Finally, we pose a research question to ask: What are the modes of communication most commonly associated with communication related SEs (Research Question 2)?

Method

Data Sample

The secondary data consisted of the Risk Alert newsletters and Annual Report on Sentinel Events issued by the Hospital Authority (HA) of Hong Kong from October 2007 to September 2017. These two publicly available documents were initiated under the Sentinel and

Serious Untoward Event Policy, aiming to improve the reporting, response and management of

such events. Given that the 43 HA hospitals are mandated to report SEs to the HA Head Office,

the two documents captured all the occurrences of these incidents.

The annual reports covering sentinel events provide a summary of all the SEs reported by

HA hospitals in that year, consisting of a review of all reported events (e.g., frequency of

reportable SEs, breakdown of SEs by category), risks, improvement opportunities, and learning

points identified through root cause analysis. It also documents risk reduction measures that have

been taken or planned to prevent the reoccurrence of such adverse events.

HA Risk Alert was initially a bi-monthly newsletter reporting the SEs and SUEs, which

has become quarterly since 2011. The Risk Alert and Annual Report covers all 43 public

hospitals in Hong Kong. Reports of SEs in Risk Alert primarily include 1) description of the

events, 2) key contributing factors, and 3) key recommendations made by the Root Cause

Analysis panel.

Insert Tables 1 and 2 about here

HA has identified nine SE categories (see Table 1). Their categories of consequences are

shown in Table 2. HA Risk Alert was our primary source of data. We examined all the 384 SEs

reported in the Risk Alert and then mapped these reports with the summaries of SE reports in the

Annual Report. Where there were discrepancies (i.e., SEs that were only reported in one

document, either the Risk Alert or Annual Report) these SEs were excluded. Seven SEs were

excluded for this reason. The category of Inpatient Suicide in Hong Kong refers to the "death of

an in-patient (including suicide committed during home leave)" (Hospital Authority [HA], 2009,

p. 2). It has been the top reported SE category with a total occurrence of 144, representing

around 38% of the total SEs in Hong Kong from 2007 to 2017. Common contributing factors

identified by the RCA panel include underlying mental illnesses of the patients, ineffective

assessment tools for identifying at-risk patients, the presence of high-risk facilities (e.g., curtain

rails, shower facilities, and doorknobs), and inadequate communication between healthcare

professionals and family members or caregivers. However, since most patients committed

suicide during home leave, it was difficult to ascertain definite contributory factors to each case

even though root cause analysis was conducted. Therefore, the information on Inpatient Suicide

cases was limited and lacking in sufficient detail. For this reason, we excluded these incidents

from our analysis. Removal of the Inpatient Suicide events left 235 SEs in our sample. We

recognize the importance of this category but feel we require more information before

conducting a full investigation.

Procedure

We first examined the 235 SEs across the 43 public hospitals to determine whether or not

they were related to communication. To some extent, every issue is related to communication, so

to be more specific, communication-related incidents were defined as those in which either one

of the following criteria was met: 1) the RCA panel report noted that there was a reported

information gap between healthcare stakeholders, i.e., information that should be communicated

was not communicated, or 2) the RCA panel report indicated that information was

communicated incompletely or inaccurately.

The second author read through each SE report and categorized those that fitted the

criteria for communication-related incidents. There were eight SE categories that provided

detailed descriptions of the events and reported major contributing factors and RCA

recommendations. Once a first pass of the communication categorization had been completed,

the authors worked together to agree on the classifications. Where there was disagreement the authors re-examined the SE report in order to reach a mutual agreement.

Upon agreeing on the classification, the second author mapped the reported RCA contributing factors and subsequent recommendations for eight of the nine SE categories (Inpatient Suicide excluded).

Results

Overview of SEs

Insert Figure 1 about here

The analysis revealed that of the remaining 235 incidents, communication problems contributed to 186 SEs (79%) across eight categories (See Figure 1). Retained Instruments/ Material (RIM) with a total occurrence of 116 communication related sentinel events (CRSEs) was the most frequent SE category for ten consecutive years. Of these 116 incidents, 28% (n= 33) caused major/moderate patient harm and resulted in either reoperation or additional skin incision such as wound re-exploration. The high occurrence and the large proportion of major/moderate consequences highlight that RIM is a high-risk CRSE category. With respect to Wrong Patient/Part, there were 44 CRSEs. Of these 44 incidents, 33 involved surgery or interventional procedures on the wrong site. A further 11 related to procedures on the wrong patient. Retained Instruments/Material and Wrong Patient/Part were the two most commonly occurring SE categories and together they represented 86% of all CRSEs. This finding was consistent with the JCAHO (2021) and the NHS (2020), both reporting these two SE categories or their equivalents among the top five SEs.

An examination of the category, Medication Error, showed that there were seven communication Medication Error incidents over the ten years all of which resulted in patient

death. Five were related to drug prescription and two to drug administration. All six SEs in the categories of Wrong Infant/Abduction (n=3) and Blood Incompatibility (n=3) were related to miscommunication. The category, Others, referred to events resulting in permanent loss of function or death, excluding complications that arose from the patient's condition. Over the period studied, there were ten incidents in this category, seven patient deaths and two permanent loss of function. The consequence of the tenth incident remained unknown due to a lack of sufficient information in the Reports which meant the contributing factors were speculative. However, ineffective communication in the form of inadequate briefing was reported as a contributing factor.

Communication failure was less apparent for Maternal Morbidity and Gas Embolism incidents. For the former, communication failure contributed to only 13% of cases over the last ten years (2 incidents). A more frequently mentioned factor for this category was that of complications, while other specific contributing factors were difficult to identify. Gas embolism incidents were often attributed to professional competence. Specifically, a health professional's lack of competence led to a failure to follow standard practices or guidelines, rather than the result of poor instructions. Only one incident was associated with communication breakdown.

Communication Modes Associated with SEs

We read the reports and categorized the communication modes described in the SEs to establish those most commonly associated with communication. We categorized the communication mode reported for each SE and identified three single modes that were reported (spoken only, written only and system-related only). System-related referred to communication via the computer system. There were also four mixed modes (i.e., spoken+written, spoken+system-related, written+system-related, and spoken+written+system-related). The two

authors discussed the categorization to ensure mutual agreement. Across all modes,

spoken+written (49%: n=92) was the most predominant mode associated with CRSEs, followed

by written (35%: n=65). These two modes of communication accounted for 84.4% of all

communication failures. Spoken only and system-related each accounted for 5.4% of SE

miscommunication. All the system-related only incidents occurred in Retained

Instruments/Material events. It is interesting that spoken only is less common than other modes

and this point is taken up in the discussion. Written+System and Spoken+Written+System each

accounted for less than 5% of CRSEs (2.7% and 2.2%, respectively). Given the predominance of

Spoken+Written and Written, and the specific occurrence of system-related only incidents in

Retained Instruments/Material events (the highest occurring SE), the remainder of this paper

focuses on these three modes as key points of interest. This is not to deny the importance of

every event but serves to investigate and identify possible patterns across CRSEs that may

provide insight into antecedent events across incidents.

RCA Panel Reported Contributing Factors and Recommendations

In the next section we describe the factors that the RCA Panel attributed to the

communication related SEs and the three focal modes of communication: Written only,

Spoken+Written, and System-Related only. Of the 186 CRSEs, the panel identified 234

communication-related contributing factors, of which 187 were focused on the immediate event.

Insert Table 3 about here

Modes – Written Only

In general, the RCA Panel noted that written communication failures were mostly related

to documentation and guidelines or protocols in SEs. The full list of contributing factors is

available but for the purposes of this paper, we provide contributing factor exemplars (see Table

3). With respect to Wrong Patient/Part and Retained Instruments/Material, for the most part, the reports stated that they occurred when the information relayed in writing was ineffective, reflecting inefficient or inaccurate information exchange. For example, communication broke down when the documentation was inaccurate (e.g., the number and type of gauze that was used), unclear (e.g., unclear instructions or prescription orders), or not up-to-date. The RCA panels noted that healthcare professionals might perform treatment or procedures without checking the patients' medical notes (e.g., a nurse assumed one piece of gauze was packed into the patient's vagina so only removed one without checking the medical notes which showed two pieces were packed). The marking of the operation site was identified as another type of problematic written communication. Inaccurate or incomplete communication about the operation site can lead to wrong site surgery or intervention. The RCA panels also reported that the unclear layout of the request form impeded the critical information on dose reduction to reach the intended receivers (i.e., the prescriber). Written miscommunication played a role in five of the seven drug prescription mistakes with reported problems of unclear written orders or request forms. In one incident, the suggested instruction for the reduced dosage of medicine (Betaloc) after the patient underwent the computer tomography coronary angiogram, was obscured by the patient's labels on the request form. Unaware of the recommendation, regular adult dose was prescribed to a high-risk cardiac patient. The patient died six days later.

Another type of frequently identified written miscommunication was the absence of key information that was supposed to be relayed from the hospitals to healthcare providers, such as guidelines, protocols or checklists. For example, a key contributing factor to a wrong side laser treatment of eye glaucoma was the "lack of guidelines or protocol on how the Procedural Checklist" (HA, 2014, p. 5).

Modes - Spoken+Written

Half of CRSEs in the Wrong Patient/Part category were attributed to spoken+written communication failures, with 17 leading to minor/insignificant consequences and five to major/moderate outcomes. Nine gauze retention incidents in the Retained Instruments/Material category were caused by a mix of written and spoken communication during the intraoperative period. As with written only, the RCA panels noted that documentation was unclear and inaccurate. However, the RCA panel also reported suboptimal communication among the surgical team. For the Wrong Patient/Part, they noted the use of closed-ended questions or a failure to verify the patient's identification before commencing the procedure. They stated that it was not uncommon that, even though a member of team might have realized the problem (e.g., a missing instrument), they did not speak up about any doubts or concerns in order to clarify with the team. In two cases, the nurses did realize that a piece of gauze was missing and informed the doctors during the surgery, but the doctors closed the wounds before the missing gauze was found. The postoperative X-ray revealed the retained gauze. There appeared a pattern of poor teamwork or communication, an inability by staff to speak up during the procedures, and sub-optimal handovers. Thirty-six examples were found for the Retained Instruments/Material SEs. The RCA panel reported that these incidents occurred because of the surgeons' low awareness of retained gauze and their lack of response to the nurses' concerns.

Modes - System-Related Only

The RCA panels repeatedly mentioned incomplete instrument/material defect database and the lack of an instrument/material tracking system. For example, metal fatigue, which can result in broken instruments, is inevitable and often imperceptible, especially when the broken part of the instruments or material is minute. There appeared to be no comprehensive and

effective tracking system to alert staff of possible metal fatigue which compromised the procedure.

Recommendations - Written Only

The RCA panels' recommendations were similar across the incidents so we report the exemplar recommendations as well as any recommendations that were less common (See Table 3). The RCA panels recommended that health professionals should ensure clear documentation. They recommended that forms should be redesigned for the prominent presentation of vital information and hospitals should constantly revise and update the forms, records and checklists. They emphasized that clear written information transmission from the hospitals is required which includes written guidelines, protocols and regulations. They also stated that staff compliance to the guidelines, protocols and regulations needed to be more rigorously enforced.

Recommendations – Spoken+Written

The recommendations by the RCA panels were that health professionals should be encouraged to speak up whenever they are aware of a mistake or problem. Junior healthcare providers need to consult senior health professionals as required. Also, relevant staff need to consult health professionals from other specialties or disciplines when required. To ensure correct counting, it was suggested that a team approach should be developed for gauze and instrument counting, and counting verification should be conducted by another doctor or nurse after the procedures. The RCA panels noted that problems arose when there were large numbers of professionals working together. They recommended clear role delineation so that every staff member understood their specific roles and responsibilities.

Recommendations - System-Related Only

System-related communication played the most significant role in Retained Instruments/Material incidents, compared with other SE categories. The RCA panels recommended that a tracking system was needed to keep a constant record of the instruments to ensure timely detection and replacement of the fatigued or aging instruments. The computer record would provide access for healthcare providers to verify the integrity of the instruments or material to be used in the procedure. This is critical and essential information that should be available to health professionals before the procedures commence.

Of the 186 CRSEs, there were 228 communication-related recommendations. What was clear was in the majority of cases the recommendations mirrored the contributing factors and were mostly based on corrective measures to the incident and limited to the proximal contributing factors. Below is a typical example (HA, 2018, p. 3).

Contributing factor: *Unclear communication and documentation of the nerve block procedure.*

Recommendation: *Enhance communication between anaesthesiologist and nurse.*

Discussion

The aim of this paper was to examine the percentage of SEs that are linked with communication in Hong Kong. The reason for this focus is that communication failures are cited as a key reason for SEs worldwide (Hu et al., 2012; Makary et al., 2006; Spear, 2005, September; Watson et al., 2015). As reported above, 43 public hospitals in Hong Kong showed that 79% of the SEs were communication related. This finding supports Hypothesis 1 that there would be a higher proportion of communication related SEs across all SEs reported. This general finding with respect to communication is consonant with other countries worldwide and confirms that Hong Kong faces similar issues to other hospitals in Western countries.

We reviewed the RCA panels' reports of the contributing factors associated with each event in order to examine the scope of their investigation. Based on our prior research and the work of Coupland et al. (1991), we hypothesized that RCA panels would concentrate on the immediate or proximal circumstances of the adverse event and not consider other relevant antecedent factors (H2). This hypothesis was supported. Of the 234 communication-related contributing factors 187 focused on the immediate event. The results demonstrate that the RCA panel comments directly addressed actions and behaviors that occurred during the immediate event and made their recommendations to resolve the problem based on the proximal factors. Some exemplars were illustrated in Table 3.

As noted in the introduction, for task-oriented clinicians this proximal focus is logical and understandable and does provide relevant information, which can assist with addressing contributing factors of the incident but, by itself, it is insufficient. There needs to be examination of what other factors leading up to the SEs are constant, and explain why such events recur. The link made between the immediate contributing factors and subsequent related recommendations misses other relevant detail. Insights into this problem were raised by the Hospital Authority when they reviewed adverse events over the period 2016 to 2018. Their findings add weight to our 10-year review and, while their review did not distinguish communication related events, their findings of a high percentage of weak recommendations and no change in error reduction is highly relevant (Kwok et al., 2020).

When the RCA panels noted other factors such as cultural norms might have had a role to play in the incidents, they were not emphasized in the recommendations. Rather, corrective action or team communication skills training was proposed to fix the issues. The aforementioned exemplars demonstrate the limitations of the recommendations described by the panels.

Importantly they did not sufficiently acknowledge the historical background to such cultural norms that represent an important part of the working hospital environment and must be tackled. They implicitly mentioned hierarchical and power differentials between health professions, doctors and nurses, but did not consider how the sociohistorical context (e.g., the intergroup working relation that exist) associated with each event might have a key bearing on the communication behavior.

The RCA panels did allude to staff shortages once and noted staff inexperience six times. They also stated that enhanced communication training was required. Enhancing training cannot fully address the problems while there are insufficient staff and staff working beyond their level of competency. We noted that they did not consider staff fatigue as a factor that led to the adverse event. But staff shortages will lead to fatigue. The association between a lack of speaking up culture (Schwappach & Gehring, 2014) in teams and across professions is a pattern that must be investigated beyond putting in place education and training. Again, this is not to deny the critical importance of skills training but the pattern of events demonstrates that a different approach is required. The RCA panels' concentration on the immediate actions of each event is not intended as a blanket criticism because analysis of these actions is an integral part of an investigation. However, ignoring other possibly hidden antecedents to the events is an omission that, we argue, must be investigated if change and reduction of errors are to occur. We propose that an LSP approach which highlights the hospital culture and the existent intergroup dynamics provide additional important insights into the role of miscommunication in SEs.

Relatedly, a further research question investigated whether specific communication modes were more often associated with CRSEs. We proposed that such an investigation could identify the modes that are most problematic. Among the modes identified in this study,

written+spoken miscommunication was the most frequently associated with CRSEs, followed by written, spoken, and then system-related miscommunication. With respect to written communication, RCA panel recommendations focused on staff ensuring that documentation and the transfer of information was clear. Their emphasis concerned the proper implementation of documentation formats including a formal, clear process which transmits information from hospitals to the relevant staff (e.g., doctors and nurses). Written information transmission, such as instructions, specifications, handbooks or notes with the key information of the new implants, instruments or procedures, are helpful for relevant staff (e.g. the surgical teams), because it allows access to written information for revision or for future reference. But from previous research we propose other factors must be explored. For example, we would want to investigate whether the transfer of information is problematic because key staff are not present. This is not uncommon (Watson et al., 2015). Why was vital information that was required for patient treatment not available? Are the time pressures placed on health professionals reducing their capacity to write clearly, or preventing accurate gauze counts (as a case in point)? Time pressures may also lead to cutting corners and noncompliance with procedures. Investigation of these queries may show that there is little room for the procedures described to be updated regularly. Suggesting that improvement must be made is a cosmetic recommendation that does not necessarily get to the heart of the problem(s). More in-depth analysis is required by independent outside investigators. We return to this comment below.

Retained Instruments/Material incidents also showed a large number of spoken+written SEs. The above written recommendations and our queries to those recommendations apply here but additional problems around the dynamics of spoken communication must be further explored. The RCA panels noted that large numbers of healthcare professionals working together

led to miscommunication. Recommendations around staff being more consultative and working together more closely in teams is valid but, at the same time, superficial. As more multidisciplinary teams communicate, the sizes of teams may continue to increase. The issues that need to be addressed concern the protocols that should be established when large numbers of staff are working together and may be multidisciplinary. More in-depth investigations about actual team communication dynamics are required. We argue that such investigations must involve the clinicians as they are the ones with the hands-on experience but outside experts in this instance in communication must be brought in. The antecedents of each adverse event must be unpacked in order to understand what other, less immediate, factors led to miscommunication. Is it about the team being over a certain number? If so, how does it affect their ability to work together? Specifically, is it the number in the team, the hierarchical structure of the team, the different disciplined involved, or a combination? Can it depend on the context? These issues must be investigated.

Most striking across the RCA panel recommendations to alter spoken communication, was the observation that there was a reluctance for some staff to speak up. In the category of Wrong Patient/Part, the RCA panels noted that nurses did not always voice their concerns despite being aware of the error. Again, in the Retained Instruments/Material category, the panel commented that nurses did not speak up. Noting the failure to speak up and recommending that speaking up be encouraged is a logical recommendation but we argue that what is required is a detailed analysis concerning the factors and sociohistorical antecedents around why and when nurses and junior staff did not speak up. The dynamics between the different professions working together, or not, in the operating theatre need attention.

This finding has been echoed in many studies across many countries and is not unique to Hong Kong (Hewett et al., 2009a; Singer & Vogus, 2013). Junior staff are reluctant to interact with senior staff. The RCA panels emphasized that spoken communication should happen in a timely manner if there is any doubt or uncertainty about the documents or any new medical condition emerges. Spoken communication in the orientation and briefing before the surgery assists health professionals familiarize themselves with the instruments, and the written information can serve as an effective tool facilitating them to refresh knowledge and revise when necessary. But to date solutions to address these problems around speaking up have not been resolved. An investigation of antecedents across different contexts in the hospital setting and a closer examination of the hospital culture may assist in addressing this serious problem. There were very few accounts of spoken only problems. Given that all the procedures require documentation of one form or another, this is unsurprising and we suggest that concentrating on spoken+written may be sufficient.

The reporting of SEs in Hong Kong is rigorous but remains at Coupland et al.'s (1991) level six. The people investigating the incidents are part of the culture and do not see outside of their complex hospital system. One suggestion for immediate implementation would be to look for recurring patterns across a year's events. Annual reports should do more than provide a record of the year's SEs but should systematically review the events for patterns. Such a review should be undertaken with both clinicians and experts in communication, human factors and other disciplines and the findings synthesized into plans for action. Additional information about antecedent factors may assist with planned interventions to reduce miscommunication. It is critical to recognize that this gap in the RCA panel investigations is not because of negligence by clinicians but reflects their unawareness or ignorance of these antecedent problems. Clinicians

are too enmeshed in the cultural environment to recognize other factors that an outsider could identify as important and recurring. Clinicians are task focused, as they have been trained, and their goal is to fix the problem by examining the immediate evidence and making recommendations based solely on that information. They are not trained to enquire why did it happen in the first place and then ask the associated question, why does it keep happening? This is the domain of social scientists who always investigate antecedents to behavior.

There are a number of limitations in this study. It was not possible to investigate the full range of reported SEs because of the lack of information. Specifically, in-patient suicides were not covered and need attention. However, the data do provide a snapshot of incidents in Hong Kong and the extent to which they are communication related. The data are historical reports of the SEs and a next step may be to access the raw data which was not possible for the authors. We used what was written in the reports and acknowledge this limitation.

Procedures in Hong Kong involving wrong patients have been decreasing over the years. From October 2007 to September 2011, they contributed to about 43% (10 out of 23) of SEs in this category while the percentage has dropped to 9% (2 out of 22) over the time span from October 2011 to September 2017. This is an important improvement and research needs to also focus on successful communication and the outcomes that arise from it. Acknowledging success and excellence is a way to encourage staff to welcome speaking up and interdisciplinary dialogue. Currently there is too much emphasis on error and very little on success.

Conclusion

This paper sought to gain insights into antecedent events across incidents. The RCA Panel recommendations are based purely on each event and general suggestions are proposed to improve the situation. But what are the antecedents to each situation and is there a recurrent

pattern? RCA recommendations do not query what led up to these problems and why teamwork is poor. These are the sociohistorical and cultural issues that need to be made explicit but are currently seen as either invisible or status quo by health professionals embedded in the system (Coupland et al., 1991). It is time for outsiders to engage with health professionals and bring their theoretical expertise to this complex problem. An LSP perspective that recognizes the intergroup nature of the hospital setting is one way forward. We recommend this approach because we are LSP researchers. We propose that the first step is to work with health professionals and complement their expertise with our own. However, there will be other perspectives from other social scientists that can go beyond investigating how health professionals talk to each other and what motivates them to communicate in specific ways. Our approach and others will provide further insight into the problem and can assist in reducing adverse events. Implementing new ways of investigating SEs in developed countries can also inform and assist developing countries avoid the same mistakes.

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