Session: L051
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Beyond Swiss Cheese – Cases for the Anesthesia Patient Safety Officer
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Disclosures: This presenter has no financial relationships with commercial interests

Stem Case and Key Questions Content
You have had the privilege of being selected (or appointed) as your anesthesia department's patient safety officer by the department chairperson. Although you have long appreciated the role that anesthesiologists have had in being champions for improving patient safety, the specific duties of improving safety within a department and hospital are new to you.

1. What are some of the resources available that you could utilize to help prepare for your new role?

2. What do you need from your department chairperson in order to carry out your duties as department safety officer?

As you may have surmised, your department's need for a safety officer was borne from several recent safety incidents which the hospital has asked the anesthesia department chairperson to look into. Because she is busy with multiple other demands placed upon her, she has asked that you take the lead in investigating these problems.

There have been recent difficulties with the surgical safety checklist implementation in your operating rooms (ORs). The checklist was rolled out a little less than a year ago by the chief of surgery, who has since left the hospital for another position. Despite high levels of self-reported compliance, in the past six months two patients have been brought to the operating room with incomplete or incorrect surgical consents, three patients did not receive timely pre-operative antibiotics, and it is not uncommon for several attending surgeons to walk out of the OR to scrub before the checklist is completed.

3. Do surgical safety checklists actually improve patient safety or should you abandon the practice altogether?

4. What are some possible actions that may improve checklist compliance?
One of your colleagues in the anesthesia department has a reputation for being a bit of a "curmudgeon." Lately, the grumblings by members of the operating room staff have increased. He frequently berates nursing staff in front of other OR team members and throws medical students and residents out of the OR if they answer his questions incorrectly. Because of your newly assigned role and your presence in the operating room, the nursing administrator of the OR approaches you with his concerns about your colleague's behavior.

5. How do you define the "disruptive physician?" Is your colleague disruptive?

6. Is this an issue for the patient safety officer to address?

7. From a patient safety standpoint, how would you address disruptive behavior in your department?
Just as you are finished dealing with your colleague, you receive a stat page from the radiologist on-call. He has just finished looking at a chest x-ray of a patient that is post-operative day #2 from a radical nephrectomy to treat renal cell carcinoma. It appears from the chest radiograph that the guidewire from the central line that was placed for the operation is protruding into the right atrium. Since the anesthesiologist who placed the central line yesterday is post-call today and no longer in-house, the incident is being brought to your attention as the new anesthesia patient safety officer.

8. How will you manage this situation? What will you tell the patient and his family?

9. This is the second case in 4 months of a retained guidewire after central line insertion that you are aware of. How will you investigate these events?

10. What questions need to be answered? What barriers to investigation might you face?

Model Discussion Content

We are now more than 20 years since James Reason proposed his Swiss cheese model to explain the complexities of human failure. As the patient safety movement grabs momentum, more and more departments within hospitals and healthcare organizations are appointing members of their staff to supervise and direct patient safety efforts. This can be challenging, as there may be very little guidance available to help new patient safety officers. Within a department, a newly appointed anesthesia safety officer may solicit advice and suggestions from the department chair and other faculty members regarding the needs of the department. Faculty that have trained and worked at other facilities where a department safety officer position existed may be able to provide important contacts that would be willing to share advice and experience. Within the organization, other departments may have safety and/or quality officers that can provide assistance. Most hospitals have an administrator in charge of quality and safety that the department safety officer can align himself with. Every hospital has a risk management department; however it is important to realize that the risk management department may view a patient safety incident from a somewhat different perspective than a patient safety officer. (1) It might be advisable for a patient safety officer to engage resident physicians, CRNAs, and AAs within the department who are interested in patient safety. They can provide assistance when investigating adverse events and establishing credibility when department policies and procedures need to be changed.

Looking beyond the immediacy of one's own department and institution, several resources are available on-line (See Fig 1.) Many books have been written on patient safety. The Essential Guide for Patient Safety Officers by Michael Leonard et al. (Joint Commission Resources, 2013) is a good place to start. There are several peer-reviewed journals that deal specifically with

patient safety topics including The Joint Commission Journal on Quality and Patient Safety, Journal of Patient Safety, and BMJ Quality and Safety. These are, of course, in addition to anesthesia and critical care journals which typically feature safety-related topics in each issue. Many of the organizations whose websites are listed in figure 1 offer training on safety related topics using both on-line and conference formats. An advantage to attending conferences as opposed to on-line training is the ability to network and share ideas with other safety professionals. For a considerably greater time and financial commitment, several medical schools offer both graduate certificates and master's degrees in patient safety and healthcare quality improvement.

In order to carry out the duties of a patient safety officer, access will need to be granted to review patient charts as well as the authority to interview staff members while investigating adverse events. A patient safety officer should have dedicated non-clinical time in order to perform the duties of the position. A good working relationship with department faculty members in charge of equipment purchasing, clinical competency, and education is also helpful. Support should also be granted to attend and participate in continuing education on patient safety topics.

Surgical Safety Checklists
The use of a surgical safety checklist has its history rooted in the work of the Safe Surgery Saves Lives Study Group in 2009. (2) The original checklist employed in 8 hospitals in 8 cities across the world resulted in a drop in mortality from 1.5% to 0.8% and a drop in inpatient complications from 11% to 7%. The use of a surgical safety checklist was adopted rapidly at hospitals and ambulatory surgical centers across the United States. Since that time, several subsequent studies have found flaws in the performance of the surgical safety checklist. Fourcade et al. found that mean checklist compliance rates were only 61%. (3) Levy et al. found that despite a 100% documented completion of a surgical safety checklist, most individual checkpoints were either not executed as designed or not executed at all. (4) A more recent study showed that although participation improved over time and completion was high, the accuracy of the checklist was poor. (5)

Not all research involving checklist usage in the OR is as dismal. Several studies support the decrease in morbidity and mortality reported by the Safe Surgery Saves Lives Study Group (6-8) A recent systematic review found that checklists improved the quality of OR teamwork and communication and reduced errors relating to poor team skills.(9)

The effectiveness of the surgical safety checklist was found to vary with a hospital's implementation process. (10) Implementation processes that included active leadership, deliberate enrollment, extensive training, piloting, real-time coaching and feedback distinguished those that were more effective than those that were less effective. (10) Possible solutions for improving checklist compliance include observation of checklist performance by hospital administration and physician and nursing leadership, selection of champions from all disciplines involved (anesthesia, surgery, nursing, scrub technicians), discipline-specific training and coaching, visiting professors that explain the rationale and benefits of checklists, and the use of

stories of harm to patients that could have been prevented by accurate checklist use. Mandating the involvement of all team members through attestation was found to improve adherence to checklist usage. (11)

Disruptive Healthcare Professionals
Another situation that the patient safety officer may be called upon to address is that of the disruptive healthcare professional. It was not long ago that unprofessional behavior was tolerated as part of an expected pattern of behavior by specialists in certain high-pressure fields of medicine. The Joint Commission issued a Sentinel Event Alert in 2008 on intimidating and disruptive behaviors in healthcare facilities. (12) In this Sentinel Event Alert, The Joint Commission introduced a new leadership standard (LD.03.01.01.) which addresses disruptive behaviors and mandates that hospitals have a code of conduct defining acceptable and disruptive behaviors as well as a process for managing these behaviors.
Defining disruptive conduct is somewhat more challenging. The American Health Lawyers Association provides a sample definition: (13)
"conduct that adversely affects the hospital's ability to accomplish its objectives and includes but is not necessarily limited to the following actions toward colleagues, hospital personnel, patients, or visitors: (1) hostile, angry, or aggressive confrontational voice or body language; (2) attacks (verbal or physical) that go beyond the bounds of fair professional conduct; (3) inappropriate expressions of anger such as destruction of property or throwing items; (4) abusive language or criticism directed at the recipient in such a way as to ridicule, humiliate, intimidate, undermine confidence, or belittle; (5) derogatory comments that go beyond differences of opinion that are made to patients or patients' families' about caregivers (this is not intended to prohibit comments that deal constructively with the care given); (6) writing of malicious, arbitrary, or inappropriate comments/notes in the medical record; and (7) sexual harassment and discrimination."

The American Medical Association defines disruptive behavior as: (14)
"any abusive conduct including sexual or other forms of harassment, or other forms of verbal or non-verbal conduct that harms or intimidates others to the extent that quality of care or patient safety likely would be compromised. It does not include reasonable behavior by the physician in the context of a care environment that has become unsettled by the behavior of a patient, a resident, or an individual served."

Reynolds (15) makes some key points regarding disruptive behavior in the clinical setting. A single episode of disruptive behavior, except for those which are egregious, does not necessarily render a physician disruptive. Human communication involves a substantial subjective component, individual perceptions and feelings, and can be largely non-verbal. The medical staff creating disruptive behavior policies and procedures needs to be mindful of this. Behaviors that are disruptive not only contribute to poor patient satisfaction, decreased morale, and increased staff turnover, but may also foster medical errors. (12) Disruptive behaviors are common in the perioperative setting amongst surgeons, anesthesiologists, and nurses. (16) The operating room is a team environment. The presence of psychological safety amongst team

members ensures that members of the team feel safe and respected when voicing their opinions, ideas, and concerns. (17) The disruptive practitioner in the operating room may be creating a situation where psychological safety does not exist and team members are afraid to voice their concerns about potential threats to patient safety.

The Joint Commission has suggested several actions for addressing disruptive behavior. (12) These actions encompass education, creating accountability, creating of policies and procedures, developing systems of assessing extent of unprofessional behavior and risk of harm to patients, and implementing reporting and surveillance systems. Some organizations have implemented a real-time response policy ("code white" or "red-light") to address disruptive behavior immediately and prevent untoward consequences. (16) There should be uniform behavioral standards for all staff/faculty, confidential reporting, and no fear of retaliation by those reporting behavior. Vanderbilt University has published their approach to the management of unprofessional behaviors in their medical institution, which includes a step-wise approach of increasing intervention. (18) Egregious acts allow for an immediate escalation to the top of the pyramid. It is also important to consider alternate explanations for disruptive behavior including substance abuse as well as psychiatric & medical conditions.

Dealing with Adverse Events & Medical Errors
The incidence of retained guidewires from central line insertions ranges from 1 in 1611 insertions (19) to 1 in 3291 (20) insertions. An adverse event has been defined as "an injury caused by medical care." (21) An adverse event may or may not indicate that an error has taken place. An error is "an act of commission or omission that leads to an undesirable outcome of significant potential for such an outcome." (22) A retained guidewire clearly indicates that an error has taken place. Managing adverse events and errors involves preventing further harm to the patient, taking care of the "second victims," and investigating the series of events that led up to the error. (23) Full disclosure of the error to the patient and family, explaining everything that is known at that point is the best practice and has been linked to improved learning, systems improvements, and overall patient safety as well as decreased litigation. (24) Pre-existing culture, more than fear of being sued, remains a barrier to full disclosure. The term second victim was coined by Albert Wu to describe the fact that the healthcare provider who was involved in the error also needs support. (25) The second victim has a unique perspective which can help in the understanding of how the error occurred and perhaps how to keep it from happening in the future. Treating second victims with respect, caring, and support allows them to heal from the psychological distress that accompanies being involved in such an event and return to productive practice. The investigation of accidents can be broken down into three steps: the assembly of facts and generation of a timeline, the identification of active failures, and the identification of latent failures. (26) In other words, it is important to understand what happened, how it happened, and why it happened. (27) An additional approach borrowed from aviation is to utilize the 5M model, which examines man, machine, medium, mission, and management in terms of their relative contribution to accident causation. (27) The investigation of medical errors typically involves root cause analysis (RCA). Although almost universally adopted throughout healthcare and required by the Joint Commission and the Department of

Veterans Affairs, the evidence that RCA is effective in improving safety is only anecdotal. (28) There is frequently hindsight bias, tensions due to interpersonal relationships and hierarchy, and acceptance of more proximal causes than true root causes. (28) Even if the RCA is conducted appropriately, lack of corrective action or lack of adequate corrective action may still hinder successful process improvement. (29)

Figure 1. Patient Safety Websites of Interest to the Patient Safety Officer

Organization	Address	Information
Anesthesia Patient Safety Foundation	http://www.apsf.org	searchable website and archive of its newsletters
Agency for Healthcare Quality and Research	http://psnet.ahrq.gov/	Patient safety primers, glossary, collection of articles, books, and newsletters related to patient safety which is updated weekly
Institute for Healthcare Improvement	http://www.ihi.org/Pages/default.aspx	Tools, publications, case studies, open school, conference schedules
National Patient Safety Foundation	http://www.npsf.org/	Reports, listservs, links to education, conference schedules

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