CPB FMEA #45 Failure to communicate

Friends-

This week’s FMEA deals with the highest risk failure, the “failure to communicate”. That is much more than just a catch phrase from a 1967 Paul Newman movie. It is the most deadly failure in the OR. One study estimated that one communication failure occurs every 2 hours on average during a surgical procedure (Halverson AL, 2011). In another study surgeons rated their teamwork and communication skills as ‘high’ or ‘very high’ 85% of the time, but their nurses rated the surgeons’ skills as ‘high’ or ‘very high’ only 48% of the time (Undre S, 2007). Even our demeanor when we communicate can be important. For example, just being rude during verbal communication can have a deleterious effect on patient safety (Riskin A, 2015). In a study of cardiac surgery handoff events, important items were reported only 53% of the time and an average of 2.3 distractions occurred per minute of communication (Chen JG, 2011). Many other surgical studies have shown that communication failures are the most common root cause of errors and adverse outcomes. In fact, communication failures were one of the leading causes of operative sentinel events reported to The Joint Commission between 2004 and 2012; <<http://www.jointcommission.org/Sentinel_Event_Statistics/>>.

A well-seasoned team has fewer communication failures, most likely because their techniques are well ritualized. But there are still at least two variables that can result in communication failures. The first is the patient who may have co-morbidities or special conditions that are not adequately communicated to everyone on the team. The second is the human tendency to make assumptions. That old cliché that ‘if you assume, you make an ass out of u and me!’ is just as valid as it was the first day I heard it in surgery 48 years ago. Seasoned teams are more likely to make assumptions (IMHO) because there is a lot of trust between team members who rely on each other to speak up. If no one speaks up, then the assumption is made that things must be OK.

To reduce communication failures, structured communication techniques that are effective in reducing errors and mortality can be included in team-training programs (Neily J, 2010). Specific programs like Crew Resource Management teaches teams to function effectively under demanding or unpredictable situations where communication is likely to be poor (Hefner JL, 2016). Implementation of such communication training has been shown to reduce surgeon and perfusionist communication failures by almost 40% (Wadhera RK, 2010).

Unfortunately, most studies of patient safety in cardiac surgery are retrospective and seek to identify trends rather than prospective studies to test interventions to reduce human error or improve safety. That is where FMEAs play an important role. An FMEA can identify areas of communication weakness, develop pre-emptive skills to reduce communication failures and rank the risks so they can be prioritized.

I often use the Gritten Report as an example of a perfusionist’s lethal failure. Even though the cause of death was a calcium overdose, in reality, it was the failure to communicate that killed the patient. If the perfusionist and the lab or the perfusionist and the surgeon had communicated better the incident might have been avoided. Ask yourself this; what would have happened if I had not received or conveyed a critical piece of information during a case? For example, the patient was not allergic to antibiotics (but forgot to mention his food allergy to caviar, # possible protamine reaction). Patient was a redo sternotomy (but forgot to mention he had an interrupted IVC, #making venous femoral cannulation impossible should emergent fem-fem CPB need to be initiated). The patient’s head circumference measurement was incorrectly entered as the height (making the BSA and calculated flow too low, #resulting in too small of cannulae and circuit being utilized.) Nobody in the patient’s family had a reaction to an anesthetic (but forgot to mention Uncle Joe who heated up and died in the ICU after surgery, #malignant hyperthermia). During an urgent need for blood for patient John Smith, a unit labeled John Smith but with a different ID number arrives in the OR, (#potential transfusion delay or error).

I have a "story" about communication failures and the use of time outs. I met Story Musgrave back in 2008. Story was the astronaut that fixed the Hubble telescope after it was discovered that the mirror in the scope was made incorrectly. But before becoming an astronaut, he was Dr. Story Musgrave MD, a trauma surgeon. (Read his bio online. He is truly a renaissance man!) He told me that before beginning any surgical procedure he asked EVERYONE in the room individually to identify themselves and if they were comfortable with starting the case. This was the opportunity for anyone to speak up. Story said that he especially valued the opinion of the older, more experienced RNs in the room if things were safe to proceed. He valued young physicians much less because of their lack of experience. He said that his time out process caught a lot of problems that could have proved catastrophic.

In another story, one of my old staffers relayed a tale about when she was a student or a newbee staff perfusionist, I don’t remember which. (Forgive me Tammy if I don’t get the details exactly correct.) She knew from her prep review that the case she was working on was supposed to be a single IMA. When the patient was brought in the room and the case was started, there was no time out. The surgeon started to take the leg veins. This was a very experienced and practiced team that had now become the victim of its own well ritualized technique. The student (or newbee staffer) thought this was wrong, but hesitated to speak up due to fear of looking stupid. She thought "Surely this team knows something I don't." So she kept quiet. It wasn't until after the veins were taken that the mistake was discovered and the patient's veins wasted and not available for any future procedure if needed. She told me that after that experience she never hesitated to speak up again!

There is soooo much material on medical communication failures that there is no way I can utilize all of it in this FMEA. So I have included only some basic Causes and Pre-emptive Management and Management applications. Each CV surgery and perfusion program must determine what communication tools work best for them. Because failure to communicate is so pervasive among healthcare providers I gave this the highest RPN; 375. When you write your own communication failure FMEA, rate the risks as you perceive them. For example, if you incorporate a pre-CPB time out that outlines your preparedness and pertinent labs to everyone in the room, perhaps the Occurrence RPN could be reduced from ‘5’ to ‘4’ and the Detectability RPN from ‘5’ to ‘4’. And during the pre-CPB time out, if the perfusionist is working alone, a specific non-perfusionist individual is verbally designated to provide another set of eyes, hands and feet to assist the perfusionist with a pump problem should one occur, perhaps the Occurrence RPN could be reduced even further from ‘5’ to ‘3’ and the Detectability RPN from ‘5’ to ‘3’.

This will be my last CPB FMEA, at least for a while. I originally started this project last July with the goal of carrying it out for just 1 year. My intent was to bring a fresh awareness to perfusion safety and to make Perflist more interesting and useful as an educational tool. I have tried to post items weekly as often as possible and asked a group of retired (or nearly retired) perfusionists to provide their insight into each CPB FMEA before posting it. They have done a wonderful job and I greatly appreciate their efforts. I have been asked by others to continue with this project. But I don’t want the project to become stale. So if I continue I might try a new perspective, to keep it fresh. If you have some ideas in this regard, please contact me; [garygrist@comcast.net](mailto:garygrist@comcast.net).

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FAILURE: Failure of communication between the perfusionist and other team members. (7/14/16).

EFFECT: Indeterminate effect ranging from insignificant to lethal.

CAUSE:

1. Lack of formalized communication techniques.
2. Ineffective timeout tool that does not include role identification of team members (who is responsible for what, particularly on teams with frequent member changes).
3. Differences in educational level, training and experience among team members.
4. Disruptive or distracting behaviors.
5. Tense emotional climate or the presence of conflict between team members, i.e. fear of rebuke or ridicule.
6. Pre-occupation with non-relevant matters.
7. Institutional or leadership impediments to formal communication training, particularly for new team members.
8. Poor operating room ergonomics; line of sight, lighting, acoustics, noise level, temperature variations, equipment positioning, etc.

PRE-EMPTIVE:

1. Implement checklists (perfusion and surgical).
2. Utilize effective time out tools prior to each critical process: examples, pre-incision, pre-CPB, CPB termination, moving patient for transport.
3. Verbal communication of patient and procedural information between individual team members should include an affirmative verbal, repeat response.
4. Formal handoff tools should be implemented during transfer of patients between providers, i.e. I-PASS Study Group <http://ipassstudygroup.com/> or I PASSTHECLAMP <http://www.amsect.org/page/perfusion-safety>.
5. Implement training involving all team members to improve structured communication, situational awareness and leadership.
6. Conduct event scenario training (i.e. FMEA discussion) for non-routine events on a regular basis that includes all team members.
7. Conduct routine simulation exercises for all team members if practical.
8. Conduct prospective studies of teamwork and communication that investigate optimal communication models.

MANAGEMENT:

1. There is no management technique which can mitigate a communication failure other than immediately addressing the consequence of the failure.
2. Following a miscommunication involving patient harm or potential harm, root cause analysis should be conducted and an FMEA developed.
3. Post-traumatic stress disorder (PTSD) therapy should be available if needed for perfusionists or other employees, particularly if the patient experiences an adverse outcome.

RISK PRIORITY NUMBER (RPN):

A. Severity (Harmfulness) Rating Scale: how detrimental can the failure be:

1) Slight, 2) Low, 3) Moderate, 4) High, 5) Critical

(I would give this failure a Critical RPN of 5.)

B. Occurrence Rating Scale: how frequently does the failure occur:

1) Remote, 2) Low, 3) Moderate, 4) Frequent, 5) Very High. (This failure occurs very frequently. So the Occurrence is Very High. The RPN would be a 5.)

C. Detection Rating Scale: how easily the potential failure can be detected before it occurs:

1) Very High, 2) High, 3) Moderate, 4) Low, 5) Uncertain. (The Detectability RPN equals 5 because it is impossible to predict when failure to communicate will occur.)

D. Patient Frequency Scale: 1) Only a small number of patients would be susceptible to this failure, 2) Many patients but not all would be susceptible to this failure, 3) All patients would be susceptible to this failure. (All patients and perfusionists are at risk. So the Frequency RPN would be 3.)

Multiply A\*B\*C\*D = RPN. The higher the RPN the more dangerous the Failure Mode.

The lowest risk would be 1\*1\*1\*1\* = 1. The highest risk would be 5\*5\*5\*3 = 375. RPNs allow the perfusionist to prioritize the risk. Resources should be used to reduce the RPNs of higher risk failures first, if possible. (The total RPN for this failure is very high at 5\*5\*5\*3 = 375.)