

Keeping Patient Safety First While Responding to Production Pressure

Production pressures are the “overt or covert pressures and incentives on personnel to place production, not safety, as their primary priority.”¹ A variety of organizational, systematic and personal factors may be contributing to production pressures in a particular healthcare environment, including unrealistic workload planning, inadequate staffing, disorganization, duplicative efforts, delegation problems, personal financial needs and a culture that does not value safety over production.² Clinicians and staff adapt to production pressures in a variety of ways, including:³

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- Deviating from procedures and practice guidelines that are designed to promote quality and safety.
- Completing tasks too quickly and without an adequate amount of attention to quality and safety.
- Working when fatigued.

Any of these coping mechanisms can increase the risks of patient injury and medical liability exposure.

Although much of the responsibility for production pressure risk management falls on the shoulders of healthcare administrators and managers, there are a variety of strategies individual providers can use to meet production expectations while minimizing patient safety and professional liability risks. In addition to providing information for administrators and managers, this publication provides production pressure risk management strategies for individual providers, including: how to recognize when production pressure has reached a dangerous level and how to adjust the circumstances, how to maintain quality while satisfying production demands, and how to become a more efficient communicator during patient encounters.

Production Pressure and Surgery

Production pressure can result in a variety of adverse circumstances in the surgical arena, including, but not limited to:

- Inadequate preoperative work up and evaluation of a case.
- Failure to cancel or reschedule a case when it is reasonable and necessary to do so.
- Surgery on the wrong site or the wrong patient; or performance of the wrong surgery.

Case One - Failing to Reschedule a Procedure

The following case shows how production pressure contributed to an anesthesiologist's decision to allow a procedure to go forward, when it should have been cancelled.

Allegation: *If the procedure had been rescheduled, the patient would have had a better outcome.*

The Event

The patient, a 420-pound, 40-year-old male, was scheduled to undergo laparoscopic gastric banding at a surgical center (Center) on a Friday, but because of scheduling problems, the case was moved to a Saturday. On Saturdays, the Center scheduled only one anesthesiologist and no anesthesiology technicians. On this particular Saturday, the scheduled anesthesiologist was recently hired.

In addition to being morbidly obese, the patient had diabetes, hypertension and obstructive sleep apnea. During the pre-procedure anesthesia examination, the patient informed the anesthesiologist that he had undergone a liposuction procedure in the recent past, and that there had been no anesthesia problems. Because of the patient's preexisting conditions, the anesthesiologist assigned an ASA score of 3. The anesthesiologist obtained an informed consent for general anesthesia and post-operative analgesia.

The patient was taken to the operating room, where in addition to the surgeon and anesthesiologist, a scrub nurse and a circulating nurse were present. The difficult-airway cart was outside the operating room in the hallway. After the monitors were placed, the patient received preoxygenation through a face mask. The anesthesiologist attempted rapid sequence induction but, because of the patient's size, had difficulty ventilating him through a mask, as well as moving his head to get good position and visualization.

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When the anesthesiologist passed the laryngoscope, one of the patient's teeth became loose and his gums began to bleed. The blood covered the oral pharynx. The anesthesiologist suctioned the blood but still could not see the vocal cords. Within a minute of the onset of bleeding, the oxygen saturations dropped to 80%. The anesthesiologist was able to place a laryngeal mask airway (LMA), and the saturations slowly increased from a low of 70% to 90%. The anesthesiologist placed an endotracheal tube into a fiber optic scope and passed it down the LMA. After an initial increase, the oxygen values dropped again, indicating that the endotracheal tube was not in place.

At this point, the anesthesiologist and the surgeon agreed to cancel the surgery. The anesthesiologist removed the endotracheal tube, leaving the LMA in place because of the damage to the tooth. He turned off all the gases and thereafter administered flumazenil to reverse the Versed and wake the patient. The patient began to wake and resumed breathing on his own; however, he quickly became very agitated—kicking, flailing and pulling at the LMA. The anesthesiologist removed the LMA and placed a non-re-breather (NRB) facemask, but the patient's agitation continued. He pulled off his monitors and facemask, causing the tubing to become disconnected from the oxygen source. Because of the patient's size, the surgical team was unable to restrain him adequately. After struggling for a few minutes, the patient slowly became less agitated, and the team was able to reconnect the oxygen and monitors. They then discovered he had no pulse. Chest compressions were started and the LMA was placed. The patient returned to sinus rhythm with a normal blood pressure and saturations.

Unfortunately, the patient had suffered an anoxic brain injury. He was later found to be unresponsive to pain and his pupils were sluggish. As recovery was deemed doubtful, the family decided to withdraw life support and the patient expired. The family filed a medical liability lawsuit against all of the providers involved in the decedent's care. Because of lack of standard of care support, the case settled.

Discussion

Although the anesthesiologist recognized prior to surgery that the intubation could be challenging given the patient's comorbidities, he felt that he could accomplish it safely. In retrospect, however, the anesthesiologist acknowledged that because of the absence of additional anesthesiologists or anesthesia technicians and the fact that the surgery was not urgent, he should have insisted on postponing the surgery.

The anesthesiologist was a recent hire, and he wanted to appear capable and make a good impression. Despite the challenging circumstances, he did not

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want his colleagues to think he had “dodged the case.” He was aware that this patient had already been rescheduled and knew that it would be an inconvenience to the patient and other members of the team if the procedure had to be rescheduled again. He also knew that rescheduling would result in a loss of income for the Center and the surgeon, and he did not want to be held responsible for those losses. All of these issues contributed to his decision to continue with the surgery.

Inadequate Staffing

Experts felt that the pre-anesthetic evaluation was adequate but not ideal. Had it been performed earlier, providers might have been able to plan more appropriately for the patient. For example, the ability of the surgical team’s ability to restrain the patient physically might have been taken into consideration. When he needed to be physically restrained, the team struggled to accomplish this in a timely manner. Also, the anesthesiologist later noted that many of the problems he encountered with the patient could have been alleviated through the assistance of another anesthesiologist or an anesthesiology technician.

Inadequate Preparation

Production pressure can adversely impact a provider’s preparation. In this case, the surgical team (and the anesthesiologist in particular) was unprepared to intervene and/or rescue the patient if it became necessary. Preparing for the anesthetic includes assembling necessary equipment and medications and preparing checklists of important equipment.⁴ In this case, the anesthesiologist did not have specialized intubation equipment prepared for immediate use and had left the difficult-airway cart in the hallway. He felt part of his inability to respond to the emergency was his unfamiliarity with the operating room. Experts were critical of his lack of preparation.

Risk Management Recommendations

Patient safety must trump production. Many steps can be taken to encourage a culture of safety, including:²

- Evaluate the workplace for systems and factors that affect workload and production pressures. Ensure that scheduling and facility planning optimize staff resources. Many times, there are more factors affecting patient safety than simply the number of people scheduled. Consider the fact that clinicians and staff have different levels of skill, knowledge and experience.

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- Empower frontline staff and clinicians to halt a procedure when production pressure threatens patient safety.
- Remind clinicians and staff of the importance of a culture of safety.

Although this anesthesiologist's desire to go through with the procedure is understandable, and there was certainly a chance that nothing would go wrong, proceeding with the surgery turned out to be the wrong choice and resulted in a devastating outcome.

Case Two - Wrong Site Surgery

Allegation: *The surgeon operated on the wrong knee.*

The Event

A 70-year-old female patient presented to an orthopedic surgeon with complaints of knee pain. The surgeon's diagnosis was "bilateral knee pain, most likely early osteoarthritis." He ordered an MRI of the left knee to rule out meniscal pathology. The MRI showed a complex lateral meniscus tear of the left knee. He recommended an arthroscopic partial lateral release and lateral partial meniscectomy of the left knee. Surgery was scheduled to take place a few weeks later — specifically at 4 p.m., the last surgery of the day.

The day the patient presented for surgery was extremely busy. Because of staffing shortages and the orthopedic surgeon's schedule, procedures were behind schedule. Although the patient had been scheduled for a 4 p.m. procedure, it was almost 5 p.m. by the time the surgeon met with the patient to go through the consent process. The patient signed a consent form for left knee arthroscopy and wrote "Yes" on her left knee. After the patient's left knee was marked, the anesthesiologist performed a femoral nerve block on the left knee.

Nurse #1 prepared and draped the right knee. (There had been a right-knee arthroscopy in the surgical suite immediately before the surgery at issue.) The operative time-out (surgical pause) was performed by Nurse #2 after the orthopedic surgeon performed his first incision. As part of the time-out, Nurse #2 stated, "Right-knee arthroscopy."

When the surgery on the right knee was completed, the orthopedic surgeon realized that the surgery was supposed to have been done on the left knee. When the drape was removed, the "Yes" was clear on the patient's left knee. The patient claimed medical negligence and battery, as she had never consented to surgery on her right knee. The case was settled.

Discussion

According to surgery center policy, the operative time-out was to be performed before any incisions were made, and the person performing the time-out was to read from the consent form. The fact that the nurse stated “right-knee arthroscopy” indicates that she did not look at the consent form during the time-out, as the consent form indicated a left knee procedure. Even though he had performed a block on the left knee earlier, the anesthesiologist did not recognize the error. Even though he had worked up the left knee for surgery, the orthopedic surgeon did not recognize the error. When questioned as to why protocol had not been followed, no one on the team could supply a reason other than being in a hurry to complete the procedure. According to one nurse, it was not uncommon for this particular surgeon to start procedures before the protocol had been completed.

Risk Management Recommendations

- Analyze work systems and workflows to identify the circumstances that cause increased production pressure. In this case, the surgeries were scheduled too tightly, and the surgery center was chronically understaffed.
- Develop methods, policies and procedures for managing workload.² If surgeries are scheduled at a rate that compromises patient safety, then this practice must change.
- For many reasons, surgery schedules sometimes back up or run late. It is incumbent upon surgeons and administrators to be honest, ethical and realistic with scheduling and to be willing to make adjustments to the schedule when needed. If this means rescheduling non-emergent cases, then that is what should be done.
- Perform all required safety checks as they are designed. The entire operating room team is responsible to ensure this occurs and members of the team must not allow one member to alter or avoid the protocol.
- Production pressure is not an excuse to skimp on patient safety measures. All members of the surgical team must remain vigilant and support other team members in complying with patient safety protocols.

Late-Afternoon Surgeries

Various studies have shown that adverse events are more likely to occur during late-afternoon surgeries. Clinicians and staff must learn to recognize when fatigue is beginning to affect their ability to remain alert during surgery and to take advantage of short-term interventions to maintain alertness. Howard, *et al.* suggest the following interventions to combat fatigue during late-afternoon surgery:⁵

- Understand how sleep deprivation and circadian rhythms can affect alertness in the late afternoon.
- Develop alertness strategies such as naps, short exercise periods and good sleep habits. Healthy sleep is 7 to 7.9 hours per night. Exercise, even for a short period of time, can increase blood flow to the brain.

The foregoing interventions are mostly reactionary, which is not ideal. All members of the healthcare team, including administrators and managers, are encouraged to develop policies and procedures that manage patient flow, on-call hours and interdepartmental communication in ways that reduce surgical team fatigue.

References

1. Gaba DM, Howard SK, Jump B. Production pressure in the work environment: California anesthesiologists' attitudes and experiences. *Anesthesiology* 1994;81:488-500.
2. Agency For Healthcare Research and Quality (AHRQ). Production pressures. WebM&M. Surgery/Anesthesia (May 2007). Available on the AHRQ Website at: <http://webmm.ahrq.gov/case.aspx?caseID=150> (accessed 6/18/2010).
3. Cohen L. Production pressure in endoscopy: balancing quantity and quality. *Gastroenterology* 2008;135:1842-1844.
4. Blitt C. Patient safety and production pressure: private practice. APSF Newsletter Spring 2001. Available on the APSF Web site at: www.apsf.org/resource_center/newsletter/2001/spring/08privatepractice.htm (accessed 6/18/2010).
5. Johnson J. The increased incidence of anesthetic adverse events in late afternoon surgeries. *AORN* 2008;88(1):79-87.