AACD: Leading in Complex Systems

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As anesthesiologists, we are trained to deal with uncertainty and complexity. Walking into preoperative holding in the morning, we have formulated an anesthetic plan for each of our patients. We discuss this plan with them and their family, including potential risks, benefits and alternatives, and execute accordingly. A vast majority of the time these plans go well, and we deliver our patients to the PACU or discharge to the ICU. However, those infrequent times when things don't go as planned is when others look to us to lead. Sometimes it is an unexpected difficult airway, sometimes it is a cardiopulmonary arrest on induction – crisis situations we are trained to handle effectively. But sometimes, an event occurs that is so rare, so unexpected, and on such a large scale that our training and preparation are not enough. At times like these, individuals need to work together across disciplines as an effective group, contributing their expertise for a common positive outcome. As the number of individuals increases, with increased variability in perspectives, personality and expertise, the group formed invariably becomes more complex. Leading through this complexity demands a unique set of skills. Skills typically honed as a perioperative physician.

The Association of Anesthesia Clinical Directors (AACD)[1] is an organization dedicated to unparalleled perioperative operational efficiency. Tacitly included in this mission statement is leadership. The 2020 Annual Perioperative Leadership Summit hosted by the AACD took place March 6-8 in Newport Beach, California. The theme this year was "Leading in Complex Systems;" certainly appropriate given the events of the last few weeks. We were fortunate to have Dr. Shawn Beaman as a presenter who recounted his experience as Chief Anesthesiologist at University of Pittsburgh Medical Center (UPMC) on the morning of Saturday October 27, 2018, the day of the Tree of Life Synagogue mass shooting. Consistent with Level I trauma centers across the nation, and with the ASA Committee on Trauma and Emergency Preparedness,[2] there were plans and policies in place that address mass casualty events (MCE). However, the scale and rapid unfolding of events caught the center off guard. Despite this, and with a few fortuitous events, Dr. Beaman was able to prepare a multispecialty team to receive victims of the MCE.

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UPMC is the largest trauma center and quaternary referral center in the region, having 46 O.R.s and 5,000 trauma admissions a year. Saturday staffing is typically scaled back, with an average of 20-25 cases in six O.R.s and one to two NORA locations. On this day, there were no cases running with zero staff or faculty occupied, leaving a large amount of capacity and personnel available for wounded; a rare event to say the least.

Second, one of the 50+ staff anesthesiologists at UPMC just so happened to be a Pittsburgh Police SWAT commander, and it just so happened that he was on duty that Saturday morning. Nine minutes after the call came into 911, he contacted Dr. Beaman to give him a heads-up. This represented an approximate 10-minute head start of Dr. Beaman contacting personnel to mobilize to the hospital.

There were 11 fatalities and seven wounded that day. These numbers are tragic by any standard and were likely aggravated by the ensuing standoff with the gunman. Two victims were taken to the O.R. and survived.

The heroic acts, selflessness, and bravery of the hospital faculty, staff and first responders undoubtedly kept those numbers from being higher. However, there were several lessons learned. Early notification of appropriate leaders of a MCE to mobilize resources is the first step in an efficient, life-saving process; communication from one consistent voice to staff and faculty outside of the hospital is needed to minimize confusion; titrating the response of personnel to appropriate levels decreases the risk of anxiety in those responding but not needed. Perhaps the most universal lesson learned by UPMC, and the most relevant in the past few weeks, is that of anesthesiology involvement in formulating and implementing the policies and procedures that address not only MCE, but any event that puts an unprecedented strain on institutional operations.

It is safe to say our society is facing a similar situation on a much larger scale. The novel coronavirus known as COVID-19 is not only extremely dangerous to our patients and health care workers, but to institutional operations and is crippling our society. The scale of the national response is unprecedented in our lifetime; but the lessons learned that day in Pittsburgh are applicable.

Regardless of politics, our national government is collaborating across the aisle to send one unified message of support for our country. State legislatures are sending the same message. From a health care perspective, the Centers for Disease Control and Prevention[3] and The National Institute of Allergy and Infectious Diseases[4] have done an excellent job at promulgating recommendations for slowing the spread of the virus. The ASA and APSF are doing a commendable job with frequent updates for frontline providers on personal protective equipment use, patient triage, resource management, and the like. Our knowledge of the pulmonary and airway effects of this virus, methods of airway control to minimize risk of exposure, expertise in ICU care, and formulation of safe and effective alterations of O.R. workflow, mandate that anesthesiologists lead in formulating policies and procedures to ensure patients with the COVID-19 virus are cared for safely without putting other patients or our health care workers at increased risk.

Efforts to "flatten the curve" require collaboration of leaders from every discipline of health care. Perioperative physicians' clinical expertise and leadership in this definitive complex system is essential in getting our society through this crisis.

Please join us for the 2021 Perioperative Management Summit on March 19-21 at the Wyndham Lake Buena Vista Disney Springs Resort, Orlando, Florida. The theme will be High Operating Room Reliability.

References:

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