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Surgery

Operating room preparedness for active shooter events

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Inside the operating room, the overhead alarm repeatedly announced, "Active Shooter–Shelter in Place." It was a Thursday morning, 1 hour into a robotic partial nephrectomy for a patient with a renal cell carcinoma. The patient was stable, and surgery had progressed to a point where aborting the case was safe. We locked the operating room doors and covered the windows. A call to hospital security confirmed that this was not a drill and that the shooter was in a building adjacent to the hospital where the procedure was taking place. Our operating room team then had to decide what to do next.

Hospital-based shootings are increasingly common.[1] Over 150 hospital-based shootings were reported between 2009 and 2011 and resulted in 235 dead or injured. Despite this, hospitals across the country remain inadequately prepared.[2] Health care system active shooter event training often follows the Department of Homeland Security system of "run, hide, or fight." These trainings are not modified or adapted for health care environments and have not been incorporated into the disaster command and control of clinical procedures in hospitals.[3,4] Further, they fail to consider specific hospital units, such as the operating room, and the challenges unique to responding to an active shooter threat.

Inaba et al proposed a modified response plan specific to health care facilities.[3] The proposed "secure, preserve, fight" response begins to consider care for vulnerable patients and obligations to patients as well as to yourself. When immediate action is critical, this system is a much-needed improvement. However, not all scenarios require response to an imminent threat. When the situation permits decision-making, individual surgeons, anesthesiologists, and nurses are then asked to balance the ethical, clinical, and systems-coordination issues when deciding whether to continue the case, await further information, or abort the case.

Ethical considerations: Continue, wait, or abort?

Proceeding with the operation allows the cancer surgery to be completed and avoids the increased risks of reoperation and the risks of repeat anesthesia. Continuing could also increase the likelihood of surgical errors due to surgeon and staff distractions. Availability of support surgical staff may also be limited, and it may not be possible to retrieve surgical instruments or blood products while others "shelter in place." If continuing the case, there must also be a consideration of ethical obligations to the operating room team. Could a minimal team of nurses and doctors stay to finish the case, dismissing others to shelter?

Waiting for more information may appear to be the default action. If the active shooter alert were triggered in error, waiting allows for additional information to be gathered. However, the patient would be maintained under anesthesia for a longer period of time, and the operative team would not be evacuated as soon as feasible. The fidelity of information must also be questioned. In an era of social media communication, misinformation can divert or distract from the actual response. Indeed, in this case, it was later determined that the 2 reports of shots fired were erroneous, despite real-time mention of the event on news websites, local television, and social media.

Aborting the operation when safe to do so allows the patient to be awakened as quickly as possible. Stopping elective surgery can also liberate operating room resources in the event of a mass casualty, in which case all operative resources could be mobilized to treat victims of the attack. In this case, a collaborative decision was made to abort the case. Approximately 20 minutes later, during the patient's emergence from anesthesia, the "All Clear" was

announced and routine hospital activities resumed. The patient and his wife (who was sheltering in the waiting room) were understanding and appreciated the team's decision.

Operating room preparedness for active shooter events

While a consensus decision was reached in this specific operating room and for this individual patient, there was no coordination of response across hospital units integral to perioperative care and response to casualties. In response to the alert, each operating room made a decision of whether to proceed with their cases. Official information was not passed from critical care units such as the Emergency Department, Intensive Care Unit, Operating Room, Post Anesthesia Care Unit (PACU), and blood bank. As a result, intensive care unit team members separately made a response plan to try to safeguard staff and patients by transporting patients to the PACU for shelter.

Complex decisions regarding operating room function during an active shooter event require a coordinated response based on a prespecified centralized response plan. The Incident Command System (ICS) established in the 1970s creates a standardized approach to the command, control, and coordination of emergency response.[5] ICS methodology would designate a single decision maker (Incident Commander) for the operating room, PACU, intensive care unit, Emergency Department, and other critical care areas. The Incident Commander would have access to all relevant information, eliminating the possibility of different individuals formulating conflicting action plans. Critical decisions (eg, placing operating room cases on hold or freezing all movement in or out of the operating room) could then also be aligned with the broader facility-level ICS.

We reviewed our institutions' ICS and Incident Action Plans. Unfortunately, none of these consider care delivery in the operating room during an active shooter event. Similarly, based on personal communications with a selection of large urban trauma hospitals in the United States, no facility has incorporated an active shooter Incident Action Plan that addresses the conduct of ongoing care delivery in the operating room and other units that deliver critical care. Without a well-delineated ICS structure and plan, decision-making will occur on a case-by-case basis and increase the potential for chaos and response delays.

In summary, hospitals should consider plans that adapt an ICS to coordinate response during an active shooter event and specify an Incident Action Plan that can allocate operating room resources and disseminate critical information while considering the tensions specific to the delivery of surgical care in the operating room.

Conflict of interest/Disclosure

The authors have no relevant conflicts or disclosures to report.

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