

**Increasing Preparedness for an Active Shooter Incident in the Perioperative
Environment**

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ANE 7920: The DNP Project

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Abstract

Problem: Anesthesia providers need additional recommendations and education for an active shooter incident in the perioperative environment.

Purpose: The purpose of this quality improvement project is to develop an active shooter response guideline for anesthesia providers and provide education on these recommendations to increase staff preparedness at Henry Ford Hospital.

Background: The overall occurrence of active shooter incidents is on the rise in the United States and healthcare facilities are not immune to these disastrous scenarios. While response strategies do exist, there are no current policies tailored to the perioperative environment. Additionally, healthcare providers need education and training to respond to these situations effectively.

Project Design: This quality improvement project follows the framework laid out by the Ottawa Model of Research Use. The setting for this project was Henry Ford Hospital in Detroit, Michigan. The sample consists of 13 anesthesia providers made up of Certified Registered Nurse Anesthetist's. In collaboration with the emergency preparedness department, active shooter response recommendations were developed and provided to the anesthesia staff. A focus group discussion was also held to gather data to develop recommendations for an active shooter training program.

Data Plan: Data was collected via pre-education and post-education questionnaires. An analysis of responses indicates an increase in staff preparedness and knowledge of active shooter response strategies. The focus group discussion data was transcribed and analyzed to generate a report of recommendations for Henry Ford Hospital.

Implications for Practice: Perioperative active shooter guidelines and education may lead to increased feelings of preparedness. This project aims to address the overall gap in literature discussing active shooter response in the perioperative environment.

Introduction

Background and Significance

Anesthesia providers are equipped with advanced education to respond to many potential life-threatening scenarios such as airway fires, pipeline crossovers, malignant hyperthermia, and more. They are prepared to address any of these situations no matter how infrequently these events are encountered. However, one critical incident that many anesthesia providers lack regular training for is an active shooter incident (ASI). As mass shootings in the United States are on the rise, the Henry Ford Hospital anesthesia department staff are considering what actions should be taken if an active shooter entered the perioperative area. Henry Ford Hospital's current active shooter policy lacks a protocol specifically designed for surgical areas of the hospital.

ASI's are steadfastly becoming an ever-present rarity that demands attention and preparedness similar to the intraoperative events named above. Where mortality is decreasing in rare anesthesia related events, a looming risk to everyone in a confined area is growing. ASIs are increasing in trend yearly: 2021 saw a 52.5% increase in ASI's from 2020 and a 96.8% increase from 2017 (FBI, 2021, p. 3). The high stress, 24 hours a day accessible, and emotionally charged hospital facilities are a high target for crime. Over a three-year period, more than 150 hospital-based shootings were reported that resulted in 235 persons dead or injured (Leppert et al., 2020). Over half of these shootings take place in the emergency room, outpatient clinics, patient rooms, and intensive care units (ICUs) with no current reports of shooters appearing in the operating

room (OR) (Scott-Herring, 2022). Regardless, the dangers of such a deadly scenario occurring in the OR cannot be overlooked.

There is a need for hospital organizations to develop plans to protect people in all areas of the hospital if an ASI was to take place within their facility. Glasofer and Laskowski-Jones (2019) detail a call to action in awareness and action research which describes the nursing community as having, “an immediate call to action to become fully educated on active shooter events, undergo training in lifesaving techniques...and participate in preparedness and risk mitigation efforts” (p. 24). To avoid confusion during an attack, organizations should have a reference that may mitigate chaotic responses if an incident occurs in the workplace. The International Nursing Coalition for Mass Casualty Education (INCMCE) encourages every nurse to, “know how to protect oneself, know how to provide immediate care for those individuals involved, recognize their own role and limitations, and know where to seek additional information and resources” (Glasofer & Laskowski-Jones, 2019). The increase of ASI’s in the United States and lack of perioperative guidelines creates a gap on preparedness for anesthesia providers if they were to encounter this situation while caring for patients in the OR. Creation of a guide for anesthesia providers to deliver care and safe treatment to patients while maximizing survival for themselves should be adapted into hospital safety protocols.

Problem Statement

Active shooter incidents are occurring with more frequency and anesthesia providers require targeted education, training, and guidelines to respond appropriately. Currently, Henry Ford Hospital does have an active shooter policy in place. However, it does not offer recommendations for anesthesia providers caring for vulnerable patients in the OR setting. Additionally, there is no regular training on this topic for anesthesia staff. Key stakeholders of

this project include members of the anesthesia department and the hospital security department. Our goal is to collaborate with Henry Ford Hospital's police authority to enhance the current active shooter response protocols and implement recurring education to improve preparedness for an ASI in the OR.

Literature Review

Search Strategy

A literature review was conducted using the CINAHL and ProQuest databases with access provided by University of Detroit Mercy library services. Key terms used for this search included: active shooter, operating room, post anesthesia care unit (PACU), and anesthesia. Articles chosen were found in the year range of 2017 to 2022. This search generated 43 articles discussing ASI in the healthcare setting. Additionally, current active shooter policies from surrounding hospitals were obtained to compare in this literature review. In total, ten journal articles, two current hospital policies, and three news stories were included in this review. Journal articles that did not discuss new active shooter response strategy or active shooter training were excluded.

Defining an Active Shooter Incident (ASI)

What constitutes an ASI varies slightly depending on the source. The Joint Commission (2021) defines an active shooter as "an individual actively engaged in killing or attempting to kill people in a confined and populated area". The FBI (2021) points out that inclusion in ASI research considerations are mass killings, spontaneity, methodical search for victims, and an intent to injure people to be driving factors of these acts (p. 2).

ASI's in Healthcare Facilities

The overall occurrences of ASI's are minimal. However, when these events do transpire, the consequences can be devastating with lasting effects on a community in addition to those directly involved (Gerold, 2018). Although many healthcare employees expect to work in an environment free from violence, hospitals are not exempt from being the target of active shooters. According to Gerold (2018), the healthcare industry is four times more likely to suffer from violent events than other industries. Henry Ford Hospital has unfortunately experienced one of these ASI's in 1993 (Costello, 1993). An angered family member of a deceased patient opened fire and injured two health care workers at Henry Ford Hospital (Costello, 1993). There have been three known ASI's at Henry Ford Hospital and many more active threats according to the security department (K. Robinson, personal communication, June 22, 2022). While some healthcare workers might dismiss active shooter incidents based on rarity, it is essential to remember that it can happen anywhere, and staff must be prepared.

The Healthcare and Public Health Sector Coordinating Council (HPHSCC) that many are targeted attacks directed at particular patients and persons attempting to stop the attack (IAEMSC, 2017). Over 20% of ASIs in the ED involved a security officers' weapon (IAEMSC, 2017, p. 13). Most ASIs involve a motivated shooter defined by a grudge or suicidal intentions, and hospital employees compose 20% of health care facility shootings (IAEMSC, 2017). There is always a possibility that the perpetrators may be familiar with the hospital facility, as disgruntled employees or frequent patients may return with targeted intents.

As an example, there was an ASI at St. Francis Hospital in Tulsa, Oklahoma where the perpetrator was a former dissatisfied patient (Stoddard, 2022). This incident resulted in five deaths including health professionals, patients, and the assailant (Stoddard, 2022). According to

the Tulsa Police, many officers had undergone active shooter training just days prior to this incident and responded appropriately. Despite a proper response from the police department, there was still a devastating result. There is a clear need for healthcare staff preparedness to respond effectively while waiting for authorities to arrive.

In 2018, at Mercy Health in Chicago, another ASI resulted in four deaths including a pharmacy resident, emergency physician, and a police officer (ABC 7, 2018). In this incident, the shooter was an angered ex-fiancé of the emergency physician. After shooting the physician in the parking lot, the gunman entered the hospital and opened fire (Tarm & Babwin, 2022). After this ASI, the hospital increased training for staff to be held four times per year (Tarm & Babwin, 2022). Based on this ASI, it is evident that potential threats can arise from unpredictable sources. Additionally, this incident resulted in an increased emphasis on staff training and preparedness at that facility.

Active Shooter Response Policies

An evaluation of current, commonly utilized active shooter policies was completed to determine if they addressed the problem statement. The “run, hide, fight” and “A.L.I.C.E.” policies were identified. Based on the analysis of each policy, there were no instructions specifically targeted for the OR environment when providers are caring for vulnerable patients.

Many hospitals, including Henry Ford Hospital, have active shooter policies that follow the “run, hide, fight” recommendations from the Department of Homeland Security (Leppert et al., 2019). “Run, hide, fight” is a commonly utilized three-step process for active shooter response. The first action to consider in the workplace is to run if it is safe to do so (IAEMSC, 2017). Staff should leave all personal belongings behind and run out of the building and keep moving away until a safe location is found (IAEMSC, 2017). If unable to run, the next step is to

find a safe hiding space and still try to run if the opportunity presents itself (IAEMSC, 2017). Doors with locks should be locked and barricaded with heavy furniture, lights should be turned off, and silence should be maintained (IAEMSC, 2017). Finally, if running or hiding are not viable options, staff should be prepared to confront the shooter and fight as a last resort (IAEMSC, 2017). While the “run, hide, fight” recommendation may be appropriate for many settings, the OR presents some unique challenges to an active shooter situation.

A different health system in southeast Michigan employs the A.L.I.C.E. procedure which has similar key points to the run, hide, fight sequence. A.L.I.C.E. stands for alert, lockdown, inform, counter, evacuate. The general process is to notify police, announce the danger, evacuate when able, hide, and fight as a last resort. A thorough evaluation of this policy did not show any recommendation tailored for anesthesia providers in the OR who are caring for vulnerable patients.

A New Strategy in the OR

The unique challenges of the OR range from lack of access to resources, accessible escape routes, and caring for anesthetized patients who may be physically or mentally incapacitated, in active labor, or reliant on life sustaining equipment (Clark, 2019). In 2018, Inaba et al. recommended an alternate strategy to the run, hide, fight sequence that considers the professionals providing essential medical care to patients that have no other option than to be exposed to danger. They recommend a different set of responses: secure the area immediately, preserve the life of both patient and oneself, and fight only if necessary (Inaba et al., 2018). The secure, preserve, defend method attempts to allow HCPs to “fulfill their ethical obligations to their patients while responding in a way that maximizes the odds of survival for both their patients and themselves” (Inaba et al., 2018). Implementation of the secure, preserve, fend

method allows healthcare providers to fulfill their moral and ethical obligations to not abandon their patients (Giwa et al., 2020).

The first step of securing the patients and staff can begin prior to the start of an active shooter situation. These initial preventative measures include proper screenings at entrance points, proper securing of non-functioning entrances, and the development and implementation of proper training and warning systems related to an active shooter situation (Giwa et al., 2020). During an active shooter situation, the secure step involves taking steps to promptly safeguard patients that are dependent on life-sustaining equipment (Clark, 2019). These steps include securing all entrances from the inside by any means necessary, dimming or turning off all non-essential lights and equipment, and silencing all phones and electronic equipment (including medical devices).

The main goal of the preserve step looks to implement steps aimed at preserving the lives of both patients and staff. Basic measures of this step include staying away from windows and doors, moving to more secure areas, and providing only essential medical care (Clark, 2019). This step also brings in many ethical dilemmas such as whether to move forward with the procedure or discontinuing the case and begin weaning the anesthetic. On one hand, discontinuing the procedure puts the patient at increased risk of going under another anesthetic procedure in the future. However, continuing with the procedure also puts the patient at increased risk of errors due to distractions of the healthcare staff (Leppert et al., 2019). This is yet another reason it is vital for healthcare facilities to have procedures and training related to such situations for the OR staff.

The last step in this modified training would be to actively engage the attacker. This step is only the last measure used when the lives of staff and patients are in immediate danger (Clark,

2019). Training related to the fight measures involves the use of medical equipment as defensive barriers or weapons, de-escalation techniques to prevent situations from escalating (Clark, 2019). As this is the final step in the training, it is imperative to be prepared to defend yourself and patients against an attacker if needed. This final step deviates from the run, hide, fight recommendation as there is another life being guarded if possible. Inaba et al. (2018) suggest this new method as an addition to the widely accepted run, hide, fight process. They propose that the secure, preserve, defend strategy addresses the gap in active shooter response options for healthcare providers in the perioperative area (Inaba et al., 2018).

Implications for Developing a New Guideline

Based on the information available in literature, it is evident that anesthesia providers require an additional guideline to follow during an ASI. According to Panteli et al. (2019), the development of new practice guidelines should be rooted in scientific evidence. However, the current availability of evidence regarding active shooter response policy in the OR is quite limited. The secure, preserve, defend method suggested by Inaba et al. (2018) is the only OR focused strategy identified through this literature review. Because the secure, preserve, defend method is a relatively recent recommendation found in the literature, there is a lack of evidence from official governing bodies proclaiming this method in place of the run, hide, fight sequence.

Despite the limited evidence, anesthesia providers still need recommendations to follow during an ASI because the federally supported run, hide, fight strategy does not address all concerns in the OR. The Department of Health and Human Services (DHHS) states “no one individual at any time can or should be instructed to leave or stay with a patient when his or her own safety is threatened” (Scott-Herring, 2022, p. 549). However, they simultaneously suggest a need for security procedures so that staff can keep caring for patients (Scott-Herring, 2022). The

recommendations from Inaba et al. (2018) along with input from Henry Ford Hospital's security department can shape an OR guideline that supplements the current active shooter policy.

Organizational Assessment

Henry Ford Hospital is an 877-bed, level one trauma center located in Detroit, Michigan. The hospital provides a comprehensive list of services with anesthesia providers caring for patients in 26 operating rooms, three cardiac catheterization labs, two electrophysiology labs, three MRI suites, four CT scanners, labor & delivery, a TEE lab, seven endoscopy suites, and two interventional radiology rooms. The health system's mission is to "improve people's lives through excellence in the science and art of health care and healing" (Henry Ford Health, 2022). They stress core values of compassion, innovation, respect, and results (Henry Ford Health, 2022). In addition to an emphasis on patient-centered care, the health system also stresses the importance of employee wellness. Both are exceptionally relevant areas of focus when evaluating response to active shooter incidents. During a major crisis event, hospital staff require the proper guidance and training to react in a manner that optimizes both their own health and the health of their patients.

Through an informal survey of surgical staff at Henry Ford Hospital, there is an interest in finding the proper response to an active shooter in the perioperative area. More specifically, anesthesia providers are uncertain of their duties and responsibilities when they have a vulnerable, anesthetized patient in their care. Current policy proposes the common "run-hide-fight" method. Staff may require additional suggestions or recommendations for situations where they feel that running is not an option.

To thoroughly assess the Henry Ford Hospital surgical department's readiness for change, completing a SWOT analysis is valuable. A SWOT analysis examines strengths,

weaknesses, opportunities, and threats. We can detect the various factors of the Henry Ford surgical department that might impact the implementation of an active shooter response protocol.

Henry Ford Hospital offers many strengths in relation to this project. First, the purpose of this project closely aligns with the mission and values of the health system. They identify that the patient is the most important member of the healthcare team with a promise of ensuring safe and high-quality care (Henry Ford Health, 2022). Additionally, Henry Ford Health (2022) notes that a healthy workforce is the most vital asset. An appropriate response during an ASI promotes both values and optimizes the lives of staff and patients. Second, there is legitimate interest from the certified registered nurse anesthetist (CRNA) staff members regarding this issue. The CRNA educator at Henry Ford Hospital sees the need for recommendations or guidelines for active shooter response in the operating rooms. Another strength of this organization is the active involvement of the security department. While surgical staff are specialists in healing patients, active shooter response requires a different form of expertise. The head of security is willing to collaborate with our team on this project to identify specific measures that can be taken at Henry Ford Hospital by anesthesia staff caring for vulnerable patients.

The Henry Ford Security Department is a major stakeholder to consider in achieving the project goals. Their mission statement is to provide “a safe, secure, and therapeutic environment at its hospitals and other on and off campus facilities for all patients, staff, and visitors” (Henry Ford Health, 2018, p. 2). They have a comprehensive system management plan put into policy that highlights the goals, objectives and responsibilities of the department. The security force has a mixture of both armed and unarmed personnel with some officers having full arrest authority. Security officers undergo extensive and ongoing training for a plethora of critical situations. According to the system management plan, the local Detroit Police Department will be contacted

in emergency situations when deemed necessary. Active engagement and inclusion of the security department will be a major strength in developing a valid active shooter guideline.

Despite the many strengths of Henry Ford Hospital, there are also some weaknesses to consider. Even with the high level of interest from the CRNA group, we may see opposition from other stakeholder groups. Resistance to practice changes is a common potential barrier when new practice is being implemented. It will be essential to address the concerns of the security department and other members of the anesthesia department.

Given the strengths and weaknesses, there is a great opportunity to enhance active shooter response at Henry Ford Hospital. First, there is already a policy in place to build upon. The current Henry Ford policy is based on the well-known run-hide-fight sequence. Unfortunately, this response is not suitable in all instances. There is an opportunity to expand the current policy or create an additional protocol tailored for surgical staff taking care of vulnerable patients. Furthermore, a successful practice change at Henry Ford Hospital can be the impetus for change at other institutions within the health system. Additionally, this project helps to address the overall literature shortage regarding active shooter response in the OR.

Potential organizational threats must also be identified and assessed. While recent literature suggests the need for active shooter preparedness in the OR, there is an overall lack of evidence-based suggestions for how surgical departments should proceed. There is no official governing body that offers specific practice guidelines for the OR. This lack of evidence could lead to resistance from stakeholders at Henry Ford Hospital. Simultaneously, there is also a major opportunity to address this literature shortage. By involving all the different stakeholders, including security experts, a novel protocol can be created at Henry Ford Hospital. Another threat to thoroughly evaluate is the potential financial cost of the project. Creating a poster

presentation and physical reference sheets are minimal in financial cost. However, providing training or simulation sequences utilizes staff work hours that would otherwise be used for patient care. The financial cost of training anesthesia staff must be considered. One way to avoid using costly work hours to train staff is to use the existing, weekly anesthesia department education meetings to implement this project.

Defining the Project

Conceptual Framework: Ottawa Model of Research Use

To best accomplish the goals of this project, a conceptual framework is needed to guide the process. The Ottawa Model of Research Use is a type of planned change theory that provides a framework for adopting innovations (NCCMT, 2010). This model aligns well with the project's purpose to develop a novel active shooter guideline to increase preparedness among anesthesia providers. According to McDonald et al. (2004), the Ottawa Model of Research Use “offers a comprehensive, interdisciplinary framework of elements that affect the process of healthcare knowledge transfer” (p. 32). From a broad perspective, this model relies on a three-step process of assessment, monitoring, and evaluation. This framework can further be broken down into the following six steps that guide the translation of research into practice: 1) set the stage 2) specify the innovation 3) complete a situational assessment 4) select a strategy 5) monitor adoption of the innovation 6) evaluate the outcomes (NCCMT, 2010).

The first step is to set the stage. This process involves identifying the stakeholders and available resources for implementation. For this project, the key stakeholders involve the Henry Ford security department and members of the anesthesia department. Resources for developing the guideline are input from the security department and newer recommendations in literature. The second stage of this model is to specify the innovation. The innovation of this project is a

guideline specifically addressing an anesthesia provider's role during an ASI while caring for a vulnerable patient in the OR. The third step requires a situational assessment to “determine current practice and identify any barriers and facilitators within the innovation, potential adopters and the practice environment that could influence adoption of the innovation” (NCCMT, 2010, p. 1). The completed SWOT analysis addresses these concerns. The fourth step is to identify and select an appropriate strategy to disseminate the knowledge. For this project, ongoing department education meetings will be utilized to offer this new protocol to the anesthesia department. The fifth and sixth steps tie together and propose monitoring for adoption of the recommendations and evaluation of the outcomes of this project (McDonald et al., 2004). Monitoring will focus on the adoption of this new guideline by the education committee so that education is completed on an annual basis. To finally measure efficacy of the initiative, the staff preparedness for ASI’s and knowledge of response strategies will be evaluated with questionnaires.

Project Scope, Goals, and Objectives

The purpose of this project is to increase active shooter preparedness by offering an alternative guideline for anesthesia providers who feel that they cannot leave vulnerable patients behind while staying within the current Henry Ford Hospital active shooter policy. This alternative strategy will be created based on the suggestions in the literature and collaboration with the Henry Ford Hospital security department. The goals of this project are to generate an ASI response guideline tailored for anesthesia staff and develop an annual educational training program to deliver these new recommendations. By achieving these goals, the aim is to increase active shooter preparedness among anesthesia providers.

The scope of this project involves evaluating the current policy, gauging staff knowledge and preparedness on active shooter response, developing alternative recommendations, and

offering this new process to staff. The first objective is to analyze current active shooter policy, compare processes at other institutions, and identify new strategies in the literature prior to the implementation phase starting in September 2022. Another objective is to complete a walk-through of the OR with the emergency preparedness manager before October 2022 to help identify specific interventions that can be taken at Henry Ford Hospital during an ASI. This information will be incorporated into the guideline that is presented to staff. In November 2022, the new guideline will be presented to the anesthesia staff by utilizing the ongoing weekly department education meetings held on Wednesday. The final objective is to incorporate recurring active shooter response training into staff education by coordinating with the members of the education committee.

Methods and Design

Implementation Plan

This project's design is categorized as a quality improvement initiative at Henry Ford Hospital that aims to increase anesthesia provider preparedness for active shooter events. The initial task involves developing a new active shooter guideline for anesthesia providers that addresses the unique circumstances of the OR. This new guideline builds on the current policy, utilizes suggestions from literature, and incorporates recommendations from the Henry Ford Security Department. An initial meeting with the emergency preparedness manager, who authored the current active shooter policy, was held to discuss active shooter response recommendations for the OR. Following the initial meeting, an in-person operating room walk through was completed with the emergency preparedness manager was completed to identify appropriate response strategies. The next step involved educating staff on how to effectively respond to an ASI. In addition to educating staff members about the new active shooter

strategies, a focus group session was held to gather further information from staff members regarding the topic of ASI's and the desired direction for future ASI education.

The sample for the education and focus group session of this project consists of a convenient non-randomized sample of anesthesia providers from Henry Ford Hospital. The entire anesthesia department is made up of approximately 80 attending anesthesiologists, 80 residents and fellows, and 70 CRNA's. A sample size of 13 anesthesia providers was utilized for this project based on the average number of staff present for the weekly education meeting. The background of this group is diverse in age, gender, and racial background. None of these demographic factors factored into inclusion or exclusion criteria. Inclusion for this study required participants to be anesthesia providers at Henry Ford Hospital. Participation in this program was completely voluntary and exclusion criteria was solely based on those who did not want to participate.

Implementation of the education session and focus group discussion was conducted during the anesthesia department's weekly educational meetings. Using these existing education meetings kept the costs low as additional staff work hours were not needed. An initial pre-education questionnaire was distributed to members of the anesthesia department at the commencement of the education session via a QR code located on the active shooter guideline. Paper copies of the pre-education questionnaire were also available if needed. This initial questionnaire assessed participants' prior knowledge and preparedness levels related to ASI's.

During this educational session, anesthesia providers were instructed on both the run, hide, fight sequence and the secure, preserve, defend method. Copies of the active shooter guideline were distributed to the staff to utilize as a reference. Appendix C provides a draft of an active shooter guideline that incorporates recommendations from literature and current policy.

Following the education session, the participants were asked to scan the original QR code to complete a post-education survey. Paper copies of the post-education questionnaires were available if needed. This post-questionnaire includes the same Likert scale format questions that were compared to the participants pre-implementation questionnaire responses. The items on the questionnaires were retrieved from previous studies by Janairo et al. (2021) and Hemingway et al. (2019) with adaptations to best suit Henry Ford Hospital's clinical setting. The data from the questionnaires was analyzed to determine the efficacy of the educational session and find areas for improvement if needed. Potential changes to this active shooter education can be made after this initial pilot project with the plan that the anesthesia department education committee will implement recurring training for staff.

Immediately following the education session, a focus group discussion was held to gather qualitative data from staff. The group discussion was recorded. The contents of the discussion were transcribed into text and analyzed for common themes. This data was utilized to generate a report of recommendations for developing a formal active shooter education program that will be presented to the stakeholders.

Ethical Considerations

To properly implement this project, potential ethical considerations must be identified and addressed. First, it is essential to maintain confidentiality of the staff that participate. Identifying factors such as name, date of birth, and employee identification number will be excluded from the questionnaires to maintain anonymity. Information regarding the purposes of this project will be fully disclosed to participants. A consent statement will be included in all questionnaires given to participants (See Appendix A).

Another major ethical consideration is that the guidelines are dispensed without influencing participants toward one response strategy over another. The run, hide, fight sequence will be presented as the current policy at Henry Ford Hospital. The new protocol should be offered in an impartial manner as an alternative for providers who feel that the run, hide, fight sequence is not an acceptable option. ASI's present a unique ethical dilemma for some healthcare providers who may have difficulty choosing between saving themselves or abandoning a patient. In one respect, healthcare providers have a duty to care for their patients. On the other hand, can staff ethically be instructed to prioritize a patient's life over their own during an ASI? The literature review points out the vague recommendations from DHHS that providers cannot be told to leave or stay with a patient during an ASI. For the purposes of this project, it is essential that providers are not forced to choose one response strategy.

After discussion with the CRNA educator and Henry Ford Hospital quality improvement team, it was determined that institutional review board (IRB) approval will not be required from Henry Ford Hospital for the scope of this project because patients are not directly involved. Agreement from all the stakeholders was required as well as IRB approval through the University of Detroit Mercy. Stakeholders include the leadership of the anesthesia department and security department at Henry Ford Hospital.

Evaluation Methods

The overall goal of this project is to increase anesthesia staff preparedness for ASI's in the OR. Two primary outcome measures for this project are staff feeling of preparedness and increased knowledge of active shooter response strategies. Since this topic is still relatively new, the literature review did not yield a validated measurement tool that would best fit the purposes of this project. To ensure that this project would measure outcomes as intended, the pre-

implementation and post-implementation questionnaires were derived from previous studies that examined the impact of active shooter training. Questionnaire items were designed with a 5-point Likert scale and include demographic data. They assess a baseline and then post-education feelings of preparedness and knowledge of active shooter guidelines.

The first four items on the pre-education questionnaire (see Appendix A) aim to obtain brief demographic data from the participants. Detailed demographic data regarding gender, age, race was not included based on concerns of identifiable responses in a small cohort of colleagues. Items three and four identify if the participants have had any form of training in the past or if they have training available to them. Items five and six of the pre-education questionnaires (see Appendix A) were adapted from a study by Janiro et al. (2021) that assessed the impact of simulation training on ethical beliefs in an active shooter situation. These items directly ask the participants about the importance of being prepared for active shooters and their current perceived preparedness. The responses to these items directly touch on the outcome measure “staff feeling of preparedness”. The remaining items on the questionnaire were adapted from a study by Hemingway et al. (2019) that investigated the gain in knowledge of actions during an active shooter event after an education program. These items indicate an increased knowledge of the active shooter guidelines that will be presented to staff.

The post-education questionnaire (See Appendix B) mirrors the non-demographic items listed in the pre-education questionnaire. A Likert scale is used to measure the participant’s feeling of preparedness and understanding of active shooter guidelines. Comparison of pre and post responses will indicate the efficacy of the education session. The post-education questionnaire will also include an open-ended comment section to obtain qualitative feedback from participants about active shooter education.

Data was collected from participants in the form of electronic surveys. Participants were asked to scan a QR code and complete the questionnaires at the start and end of each education session to ensure maximum response. All information collected was safely stored and only accessible to researchers named in this proposal via a password protected Microsoft Forms account. Data from the questionnaires were put into a Microsoft Excel spreadsheet for analysis. Descriptive statistics were used to analyze demographic data. Demographic information was compared to questionnaire responses to assess trends in levels of active shooter preparedness related to type of providers, years of experience, and previous experience with active shooter training. Participant responses on the Likert scale survey items were given a numerical score. These scores were averaged on pre-education and post-education surveys. The average scores were evaluated for any change in order to assess the efficacy of the education session.

In addition to evaluating the efficacy of the education session with the surveys, the qualitative data gathered from the focus group discussion was used to guide the development of recommendations for Henry Ford Hospital regarding active shooter preparedness. The findings from both the education session and focus group discussion will be presented to the key stakeholders.

Results

Data Analysis

The data can be separated into qualitative and quantitative categories. The survey results provide quantitative data while the focus group discussions generated qualitative data. Both forms of data were used in combination with the literature review to generate a final report of recommendations for Henry Ford Hospital found in Appendix D. The findings and

recommendations from this quality improvement project will be presented to anesthesia leadership, operating room leadership, and the emergency preparedness manager.

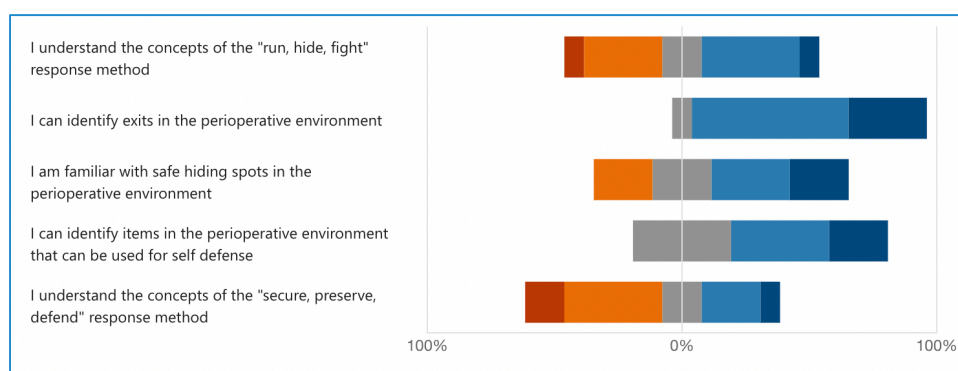
Survey Data

The total sample size includes 13 certified registered nurse anesthetists (CRNA's) practicing at Henry Ford Hospital. The total number of surveys received for this study was 13 which is a 100% response rate. Practice experience ranged from 2 years to 42 years with an average of 12.8 years. Four CRNA's said they have had some active shooter training in the past while nine said they never had training. When asked about the availability of training in their facility, four said that it was available to them while four said it was not and the remaining five were not sure. Items 5 and 6 on the questionnaire (Appendix A) ask about the importance and level of preparedness regarding active shooter response. 84.6% of the participants said they agreed or strongly agreed that it is important to be prepared for an active shooter incident. However, only 30.8% of participants felt somewhat prepared. 53.8% responded they were not very prepared and 15.4% said they were not prepared at all for an active shooter incident. Following the education session, the percentage of participants who felt somewhat prepared increased slightly from 30.8% to 38.5%.

The surveys also included five items to assess the knowledge of active shooter strategies. These items were measured on a Likert Scale with each response associated with a numerical value (Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5). Figure 1 displays the pre-education responses. Approximately 38% of participants disagreed or strongly disagreed with the statement that they understand the run, hide, fight response method. 46.2% of participants reported that they understand the run, hide, fight response method which is the current Henry Ford Hospital policy. 92.3% of the participants agreed or strongly agreed that they

could identify the exits in the perioperative environment. 23.1% of the sample disagreed that they were familiar with safe hiding locations in the perioperative setting while 23.1% responded neutral, and 53.9% agreed or strongly agreed. 61.6% of participants agreed or strongly agreed that they could identify items in the perioperative environment that can be used for self-defense. 53.9% of participants disagreed or strongly disagreed that they understood the “secure, preserve, defend” method.

Figure 1 Pre-implementation Survey Results



The post-education survey results are displayed in Figure 2. For each of the five survey items, participants responded, neutral, agree, or strongly agree. There were no responses that were disagree or strongly disagree. Table 1 displays the average scores on each survey to compare the pre-implementation and post-implementation responses. Survey Item 2 regarding the knowledge of exits in the perioperative environment showed no change after education. The remaining four survey items showed an increase in average score from pre-implementation to post-implementation.

Figure 2. Post-implementation Survey Results

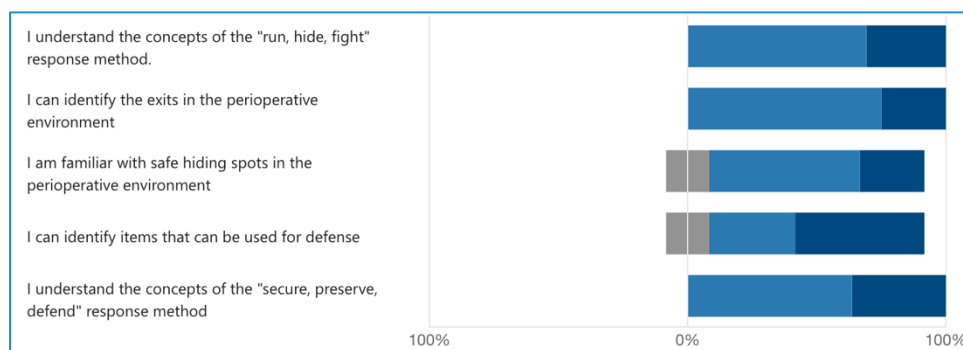


Table 1. Average Scores of Pre-implementation vs. Post-implementation surveys

Survey Item	Pre-implementation average	Post-implementation average
1. I understand the concepts of the “run, hide, fight” response method.	3.1	4.3
2. I can identify the exits in the perioperative environment.	4.2	4.2
3. I am familiar with safe hiding spots in the perioperative environment.	3.5	4.1
4. I can identify items that can be used for defense.	3.8	4.3
5. I understand the concepts of the “secure, preserve, defend” response method.	2.6	4.3

The final question of the post-implementation survey asked participants to provide more information on what they want from active shooter response training. The word “simulation” was mentioned by two different participants. One participant highlighted the importance of communication strategies during an active shooter incident. Another response suggested mandatory in-person training for all staff.

Focus Group Data

Following the education session, an open focus group discussion was conducted with the participants. The focus group discussions were recorded and transcribed into text for further analysis. Table 2 contains the general themes that were identified, specific issues, the number of comments on each issue, and some specific quotes from participants. The major themes included frequency of training, type of training, need for training, strategies for active shooter response, communication during an incident, and ethical dilemmas.

Table 2. Focus Group Results

General Theme	Specific Issue/Outcome	Number of Comments	Example Statements
Frequency of Training	Yearly training frequency	2	“So it's, I think drills, not only discussions, but I think you have to actively do drills every single year.”
	Not being overloaded with education/training	2	“But on the other hand, all of us get trained on so many things and we get overloaded with a lot of training. So it's finding that delicate balance.”
	Repetition	1	“Unless you are actively doing this daily and it's part of your routine. Okay, I lose an airway. I've trained for this over and over and over and over again. Muscle memory kicks in and I secure it versus an active shooter, I don't know what to do.”
Type of Training	Simulation format	3	“It would be nice to have like the simulation in the OR”
	Active drills	3	“I think drills, not only discussions, but I think you have to actively do drills every single year. I think it should have to be a mandatory for every employee.”

	Professional instruction	2	“There are companies that specialize in this too, that come in and look at your exact building and tell you the best plan when you're in a situation. And that's probably the best way to deal with it, which I know we have not done.”
	Modules	2	“Okay. I heard about this once on a module. Oh, crap. Now what? Yeah, because the panics gonna kick in before instinct with like you're talking, most people just click through the modules content.”
Need for Training	Mandatory training	2	“I think it should be mandatory drills in your department, in your work area.”
	Not feeling prepared	3	“Personally, I think that, I think right know that we're not prepared.”
	Panic and confusion	2	“it inflicts panic, especially visitors, patients, people that are not trained” “by having the training, we don't have that confusion”
Strategies for Active Shooter Response	Advantages of secure, preserve, defend method	2	“Yeah. I like part two, secure, preserve, defend a little bit better. Yeah. I get, I feel like it kind of fits the OR setting a little better if it's me.”
	Securing and barricading the OR	4	“you can be creative and use like all the surgical tools or barricade the doors or we have access to the most dangerous drugs”
	Protecting yourself	2	“we need to preserve ourselves, because we have a, a high skill level in which we can affect care afterwards, right?”

Communication during an incident	Overhead announcements in the OR setting	3	“how do we know it's happening if it isn't announced in the OR.”
	Standardizing communication	1	“the big thing is like standardizing communication”
Ethical Dilemmas	Protecting yourself	4	“I'm responsible for this person. Like what do I do now? Yeah. But at the same time, I gotta protect myself.”
	Protecting patients	3	“I would like put that person before myself with the risk of, yes, I might get hurt”
	Obligation to patient safety	1	“you have an obligation to your patient”

Based on the results of the focus group discussion and information from the literature review, four key recommendations were provided to Henry Ford Hospital regarding active shooter preparedness (Appendix D). First, mandatory active shooter training should be implemented for perioperative staff. Second, the frequency of this training should be on an annual basis. Third, the format of the training should be a simulation or drill rather than an online module. Finally, the fourth recommendation is to reassess the current policy and include strategies that apply specifically to the perioperative setting.

Discussion

This project aimed to address the lack of targeted education, training, and guidelines for anesthesia providers in responding to ASI in the OR setting. The rising trend of ASI's in the United States and the potential risks that hospital facilities pose as high targets for crimes prompted the need for hospital organizations to develop plans to protect people in all areas of the hospital, including the OR. While anesthesia providers are equipped with advanced education to

respond to potential life-threatening scenarios, such as airway fires, pipeline crossovers, and malignant hyperthermia, they lack regular training for ASI's. Therefore, the project sought to collaborate with the Henry Ford Hospital anesthesia and security departments to enhance the current active shooter response protocols and implement recurring education to improve preparedness for an ASI in the OR.

The problem statement identified the lack of targeted education, training, and guidelines for anesthesia providers to respond to ASI's in the OR. While Henry Ford Hospital has an active shooter policy in place, it did not offer recommendations for anesthesia providers caring for vulnerable patients in the perioperative setting. Additionally, anesthesia staff did not receive regular training on this topic. The results indicate that a majority of participants were either unaware of available active shooter training, or they believed there was no training available at all. Although most participants said that active shooter preparedness was extremely important, many did not feel prepared to effectively respond to an ASI. Studies show that healthcare facilities are not exempt from being the target of active shooters, and the healthcare industry is four times more likely to suffer from violent events than other industries. Henry Ford Hospital had experienced three known ASI's and many more active threats according to the security department. The consequences of these events can be devastating with lasting effects on a community in addition to those directly involved. Consistent with the survey results, findings from the focus group discussion also highlighted the need for active shooter training. Staff expressed a current lack of preparation with one participant saying, "I think right now, we are not prepared". Multiple staff members stressed that training should be mandatory for all employees. While the frequency of training was not unanimously agreed upon, many participants did stress

the importance of repetition. These findings call for the implementation of recurring active shooter training for staff at Henry Ford Hospital.

This project developed active shooter response recommendations specifically for anesthesia providers caring for patients in the OR. The guide provided recommendations on how to deliver care and safe treatment to patients while maximizing survival for themselves. This study implemented an education session on both the “run, hide, fight” and “secure, preserve, defend” strategies. The education aimed to improve preparedness for an ASI in the OR. Although the results indicate that overall knowledge of these two methods did increase, there are potential areas for improvement moving forward. The findings of the focus group discussion identified simulations or drills as a preferred format for training rather than on-line modules. These findings align with Joint Commission recommendations to provide ongoing training for all employees and “conduct periodic drills or tabletop exercises to prepare employees for an active shooter event” (The Joint Commission, 2021).

Another key topic of interest was the ethical component of active shooter response. Healthcare facilities pose unique situations where healthcare providers may be forced to choose between patient safety and their own wellbeing. In a public space, “running” is the appropriate choice during an ASI. In the hospital, anesthesia providers have a vulnerable, anesthetized patient in their care. Recommendations from the Department of Homeland Security are unclear on whether staff can “run” or must stay with patients during an ASI. The findings of this study show both thought processes on the part of anesthesia providers. Future studies that focus solely on the ethical dilemma that healthcare providers face during an ASI is recommended.

Overall, this study further explores the topic of active shooter preparedness in the perioperative setting. The project outcomes include increased preparedness for an ASI in the OR,

improved collaboration between anesthesia and security departments, and increased awareness of the potential risks of ASI's in healthcare facilities. This project also contributed to enhancing Henry Ford Hospital's active shooter policy by recommending specific response strategies for anesthesia providers in the OR setting. Additionally, this project can serve as a model for other healthcare facilities to develop targeted education, training, and guidelines for anesthesia providers and other staff in responding to ASI's.

Limitations

This project has some limitations to consider. First, this study was conducted at a single, level-1 trauma center healthcare facility in Detroit, Michigan. The small sample size of 13 participants indicate that the results may not be representative of a larger target population. Additionally, all participants were CRNA's. An additional study with a more diverse population of anesthesia providers may be beneficial. Furthermore, including all types of perioperative staff could provide more information on this topic. Another limitation is the lack of a validated tool to measure active shooter preparedness. The literature regarding ASI's in healthcare is limited. The survey items for this project were adapted from several different studies to measure preparedness. Finally, another limitation that is common in focus group discussions is that some participants may have been unable to voice their opinions freely. There are situations where a few vocal participants dominate a conversation.

Implications for Practice

As hospitals are thought of as safe places which provide life-saving care to the injured, it is a new reality that they may be targeted by an active shooter. It is essential for healthcare workers to have the training and guidelines to follow during an ASI. A study by McKenzie et al. (2019) showed many healthcare providers believe that "doctors and nurses should accept a high

or very high degree of personal risk to aid the most vulnerable” (p. 173). Anesthesia providers work in a unique OR environment and need an additional set of recommendations to follow when caring for a vulnerable patient. This project provides those guidelines and addresses the staff concerns at Henry Ford Hospital. Although daily clinical practice will not be notably affected, anesthesia provider preparedness and knowledge would be greatly increased if an active shooter scenario were to commence. Providing a controlled opportunity to walk through the perioperative spaces, brainstorm barricade strategies, visualize escape routes, identify hiding areas, and potential weapons to use in the event the OR is targeted bolsters confidence in staff and hamper the fears of encountering an ASI. Although a record of the secure, preserve, defend training has yet to be tested, Giwa et al. (2020) proposes that a combination of training, simulation, and controlled immersion can significantly reduce the risks to defenseless patient lives and to the practitioners who choose to remain with those patients and provide continuing life sustaining treatment.

This project also helps to address the overall gap in the literature regarding OR preparedness for ASI's. Current literature and active shooter policies revolve around one major protocol for an entire hospital. A concentrated active shooter response in the OR has started being discussed in the past few years. The introduction of the secure, preserve, defend sequence provides an alternative to the run, hide, fight sequence in an effort to save both the lives of the defender and the defenseless. Creating an addendum to the policy that supports this goal may inspire peace of mind in practitioners that take on a joint responsibility in caring for patients. Presenting an alternative option to perioperative services acknowledges a “professional duty to protect patients from active shooters” and a “reciprocal duty of health care facilities to develop

and implement reasonable measures to help professionals keep patients and themselves safe from such attacks” (Giwa et al., 2020, p. 256).

The financial implications of this project must also be considered. For the purposes of this project, training anesthesia staff comes at minimal cost. Making use of educational meetings that are prescheduled throughout the year decreases the cost that would be needed if staff were to come in outside of their scheduled work hours. At an organizational level, this project incurs very minimal financial costs with the potential for great benefit to patients and providers if an ASI were to occur.

Sustainability Plan

Sustainability refers to “locking in the progress made by an improvement initiative” (Moran et al., 2020, p. 292). To address sustainability, we must obtain input and buy in for continued project support from the organization and key decision makers, define critical short-term strategies, acquire resources necessary for implementation, and establish a process for ongoing improvements in preparedness (Moran et al., 2020). The progress made by this project can be continued after buy-in from the anesthesia education committee and security department at Henry Ford Hospital. In order to obtain support from these stakeholders, it will be essential to stress the importance of active shooter preparedness among healthcare staff. The educational session highlighted the recent rise in ASI’s and the vulnerability of healthcare facilities. Recommendations from the Joint Commission can also aid in obtaining support from the stakeholders. The Joint Commission (2021) strongly encourages that healthcare organizations should have appropriate procedures in place and provide ongoing training for all employees.

Currently, anesthesia staff at the Henry Ford Hospital do not receive mandatory in-person training about active shooters. Schwerin et al. (2022) recommends routinely conducting drills to

grasp what is working and what needs improvement. A search for “active shooter” under the Henry Ford system portal for annual training reveals few videos and modules that reinforce the run, hide, fight sequence, but staff completion of these modules are not required. The sustainability plan is to work with members of the anesthesia department education committee to use the newly developed guidelines and implement annual education on active shooter response. By implementing a recurring active shooter training program, staff members will continuously be prepared for an ASI.

In the short term, critical strategies involve identifying a member of the education committee to champion this topic and carry on the active shooter education for staff after this initial project is complete. This committee member will be responsible for maintaining the guidelines and updating them with changes in practice and changes in Henry Ford Policy. The results from the initial project implementation will inform the efficacy of the education session and identify areas for improvement moving forward. In the short term, financial considerations would remain minimal. Continued utilization of the scheduled department education meetings would keep costs low. Additional staff work hours would not be used. Organizing a process for ongoing documentation would depend on the various data collection methods utilized. With survey services, encrypted information is gathered and downloadable in pre-analyzed results, making the survey answers easy to comprehend (Maniyamkott, 2022). If paper questionnaires are preferred, a password protected excel spreadsheet can be used to collect all information into one area and papers subsequently shredded. Continued use of the questionnaires for the education sessions will identify the effectiveness of the training and find areas for improvement.

As the format of the education session may evolve and data collection continues, financial challenges may include any charges associated with utilizing survey services, renting

meeting rooms, booking a simulation demonstration, and the paid time that staff will be afforded while attending any walkthroughs or presentations. Survey services such as SurveyMonkey.com or typeform.com have free accounts, with some limitations that are not applicable for the scope of this proposal. As Henry Ford Hospital boasts a grand number of conference and meeting rooms and well as a world-class simulation lab, renting these spaces would not be a barrier if sufficient notice is given prior to use.

The long-term sustainability goal of this project targets policy change. Eventually, an expanded literature selection and evidence of the secure, preserve, defend method in the OR would be ideal. With more evidence in literature and investment from the education committee and security department, a decision may be made to move forward with a policy proposal. This would propose implementing the secure, preserve, defend method as a supported addition to the run, hide, fight sequence into Henry Ford Hospital Policy.

Conclusion

In conclusion, ASI's are becoming increasingly common in the United States and are a looming risk for hospital facilities. While anesthesia providers are trained to respond to many potential life-threatening scenarios, they often lack regular training for ASI's. This gap in literature must be addressed, and hospital organizations need to develop plans to protect patients and staff in all areas of the hospital. Anesthesia providers require targeted education, training, and guidelines to respond appropriately to an ASI, especially when caring for vulnerable patients in the OR. While many healthcare employees expect to work in an environment free from violence, this is not always reality as hospitals are not exempt from being the target of workplace violence and ASI's. Therefore, Henry Ford Hospital's police authority and security department

should collaborate with the anesthesia department to enhance current active shooter response protocols and implement recurring education to improve preparedness for ASI's in the OR.

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Appendix A

Pre-Implementation Questionnaire

Consent Statement

By completing this questionnaire, I understand that participation in this research project is completely voluntary. I also understand my responses to this questionnaire will be used as data in a Doctor of Nursing Practice (DNP) project supported by the University of Detroit Mercy. The information gathered may be made public, but my identity will not be exposed.

1. Current Position: SRNA CRNA MDA/Resident

2. Years of Experience:

3. Have you had active shooter training before? Yes No

4. Does your facility offer active shooter training? Yes No Unaware

5. What is the importance of being prepared for an active shooter situation in the perioperative area?	Not at all important	Not Very important	Neutral	Very important	Extremely Important
6. What is your current level of preparedness for an active shooter event in the perioperative area?	Not at all prepared	Not Very prepared	Neutral	Very prepared	Extremely prepared
7. I understand the concepts of the run, hide, fight sequence in an active shooter situation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. I can identify exits in the perioperative environment	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
9. I am familiar with safe hiding spots in the perioperative environment	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
10. I can identify items in the perioperative environment that can be used for defense in an active shooter situation.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11. I understand the concepts of the secure, preserve, defend method in an active shooter situation.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree



Appendix B

Post Implementation Questionnaire

Consent Statement

By completing this questionnaire, I understand that participation in this research project is completely voluntary. I also understand my responses to this questionnaire will be used as data in a Doctor of Nursing Practice (DNP) project supported by the University of Detroit Mercy. The information gathered may be made public, but my identity will not be exposed.

1. What is the importance of being prepared for an active shooter situation in the perioperative area?	Not at all important	Not Very important	Neutral	Very important	Extremely Important
2. What is your current level of preparedness for an active shooter event in the perioperative area?	Not at all prepared	Not Very prepared	Neutral	Very prepared	Extremely prepared
3. I understand the concepts of the run, hide, fight sequence in an active shooter situation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4. I can identify exits in the perioperative environment	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5. I am familiar with safe hiding spots in the perioperative environment	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. I can identify items in the perioperative environment that can be used for defense in an active shooter situation.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7. I understand the concepts of the secure, preserve, defend method in an active shooter situation.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. What gaps in the active shooter response would you like to be addressed?

9. Please provide any feedback or comments below:

Appendix C

Guideline for Active Shooter Response

Tier 1 Henry Ford Health System Armed Subject/Active Shooter Policy – Refer to Policy 1106721

<u>Notification and Warning</u>	
All personnel	<p>The first employee to identify the armed subject should:</p> <ul style="list-style-type: none"> • Move to a safe location immediately • Call hospital emergency number or 911 • Provide details of the situation to the dispatcher <ul style="list-style-type: none"> ○ How many are there? ○ Where are they? ○ What are they wearing? ○ What type of weapons do they have? ○ Are you in a safe location?
Security Control Center/Communications	<p>Security will page overhead 3 times:</p> <p>“Attention All Personnel – Security Alert – Armed Subject – Location – Please move away from that area and into a safe location”</p>

Henry Ford Health System staff should take the following steps to seek protection from an active threat.

<u>RUN, HIDE, FIGHT</u>	
Run	<p>If it is safe to do so, the first course of action is to run out of the area or building and move far away until you are in a safe location.</p> <ul style="list-style-type: none"> • Leave belongings behind • Avoid elevators and escalators • Visualize escape routes
Hide	<p>If running is not a safe option, find a hiding location</p> <ul style="list-style-type: none"> • Lock/barricade doors and windows • Turn off lights, alarms and remain in silence • Look for other possible ways to escape
Fight	<p>If neither running nor hiding is a safe option, as a last resort when confronted by the armed subject, staff in immediate danger should consider trying to disrupt or incapacitate the armed subject by using aggressive force and items in their environment</p> <ul style="list-style-type: none"> • Once officers do arrive <ul style="list-style-type: none"> ○ Remain calm and follow instructions ○ Drop any items in your hands ○ Always keep hands visible ○ Avoid quick movements toward officers

Additional Actions for the Perioperative Area

Running may not always be an option for professionals providing essential medical care to patients who cannot run, hide, or fight due to ongoing medical condition or ongoing life-sustaining therapy.

<u>SECURE, PRESERVE, DEFEND</u>	
Secure	<p>Immediately secure patient care areas where essential life-sustaining treatment is being provided</p> <ul style="list-style-type: none"> • Deploy electronic or mechanical devices to barricade entrances • Dim or turn off all nonessential lights • Silence telephones and pagers • Turn off machine alarms
Preserve	<p>Take actions to preserve patient lives</p> <ul style="list-style-type: none"> • Stay away from windows and doors • Move patients to sheltered areas if possible • Provide only essential medical care required to preserve life
Defend	<p>As a last resort when one's life or patient's life is in immediate danger, attempt to distract, disarm, or incapacitate shooter</p>

Appendix D

Recommendations for Henry Ford Hospital

Active Shooter Preparedness at Henry Ford Hospital

Unfortunately, healthcare facilities are potential targets for Active Shooter Incidents (ASI's). According to the Joint Commission, accredited facilities reported 39 shootings resulting in 39 deaths from 2010 to 2020. These situations are unpredictable and usually end quickly. There is a window of time from the onset of an active shooter incident until law enforcement arrives. Healthcare staff must be prepared to respond effectively in these moments.

In October of 2022, two focus group sessions were held with a total of 13 anesthesia staff members at Henry Ford Hospital. The topic of interest was active shooter preparedness in the perioperative setting. Based on the findings from the focus group sessions and discussion in literature, our recommendations for enhancing active shooter preparedness for the staff are listed below.

1. **Implement a mandatory active shooter training program for staff**
 - a. The Joint Commission provides some safety actions to consider regarding active shooter preparedness
 - i. "Provide ongoing training for all employees"
 - ii. "Conduct periodic drills or "tabletop" exercises to prepare employees for an active shooter event"
 - b. Multiple staff members stressed the importance of training and the need for mandatory training for all employees
2. **The frequency of recurring training on an annual basis**
 - a. Staff expressed the importance of repetition
 - b. Multiple focus group participants suggested revisiting this topic yearly
3. **Training should be in the form of simulation or in person discussion rather than a computer module**
 - a. Staff highlighted a preference for simulation or drill-based training.
 - b. Simply adding another module to the already long list of module training is not as effective as simulation or drills according to staff
4. **Reassess current policy and make updates that apply specifically to the perioperative setting**
 - a. Recent literature by Inaba et al. (2018) points out potential limitations of the commonly used run, hide, fight response strategy
 - b. Staff expressed concerns and ethical dilemmas of "running" or staying with an anesthetized patient during an active shooter incident