American Association of Nurse Anesthetists
222 South Prospect Avenue
Park Ridge, IL 60068
www.aana.com

Guidelines Regarding the Role of the Certified Registered Nurse Anesthetist in Mass Casualty Incident Preparedness and Response

A mass casualty incident (MCI) occurs when the number of patients overwhelms a healthcare management system, thereby presenting challenges of resource allocation in a community.[1,2] Even when resources are available, catastrophic events can intensely impact the anesthesia workload.[3] MCIs may be triggered by naturally occurring pandemics, devastating geological events, and large-scale or local community catastrophes. Recent world events have prompted new planning and training to address the increasing concern for bioterrorism and the use of weapons of mass destruction.[4]

The American Association of Nurse Anesthetists (AANA) recognizes the importance of providing safe anesthesia care at all times and the vital role that Certified Registered Nurse Anesthetists (CRNAs) play in the planning for an MCI and provision of care during an MCI.[5-9] Activation of MCI plans often presents difficult and ethically challenging decisions regarding resource allocation,[10,11] requiring sound judgment, critical-thinking, and leadership skills. The purpose of these guidelines is to detail the capacities in which a CRNA may serve throughout the MCI disaster management phases (mitigation, preparedness, response, and recovery) based on the CRNA's anesthesia education, training and expertise.[12-14]

Anesthesia Disaster Management and Leadership

Anesthesia education, training, and clinical practice uniquely prepare a CRNA to be an autonomous member of the MCI preparation and response team. CRNAs possess specialized knowledge of incident awareness and "non-medical aspects of high-performance team behaviors."[3] These qualifications demonstrate a CRNA's ability to contribute at high levels to the development of emergency preparedness programs, standard operating procedures, and interdisciplinary team communication processes to efficiently allocate resources and provide care during an MCI.[7,13-17]

CRNAs are able to provide comprehensive anesthesia services for diverse patient populations during an MCI. Expertise in rapid systems assessment, vascular volume resuscitation, airway management, general and regional anesthesia and pain management, team coordination, and resource management contribute to a CRNA's ability to treat and manage patients during an MCI.[5,6,12,17-24] A CRNA has expertise in management of various forms of trauma by integrating practice experience and an "understanding of the detailed physiology and pharmacology of the respiratory, cardiac, and nervous systems."[25]

Considerations for Anesthesia MCI Preparedness and Response

To provide anesthesia care in this challenging and unfamiliar environment presented by an MCI, whenever possible, CRNAs should prepare for their role with the MCI team by participating in training activities for the four disaster management phases.[1,26]

Disaster Management Phases	
Mitigation	Development of the plan to reduce the impact of future MCIs.
Preparedness	Development of plans and activities to strengthen the ability to respond to a MCI.
Response	Acute care is provided to preserve life immediately following an MCI.
Recovery	Reestablishment of the community and instilling a sense of normalcy into the lives of the survivors.

Mitigation and Preparedness Phases

- Training: Participate in MCI-related training activities, such as disaster planning, tabletop exercises, mock drills, and actual events within their institutions and communities.[12,20,24,27,28]
- Program Development: Conduct MCI literature review, disseminate findings, and attend MCI-related conferences to build and strengthen community, national and international learning and collaboration.[20]

Response and Recovery Phases

- Leadership: Serve in positions of leadership, which could include duties such as functioning as a surgical team member in collaboration with the surgeon and operating department professional to ensure the swift transition of patients from admission to the operating room, the intensive care unit, or the morgue.[3]
- Safe Practice: Adhere to AANA *Infection Control Guidelines for Certified Registered Nurse Anesthetists*, universal precautions and emergency specific (e.g. viral, radiation) self-protection measures to optimize patient outcomes as the patient status permits.
- Early Analgesia: Consider administering early analgesia at the site of the emergency for trauma cases as appropriate and allowed by facility policy and state and federal laws and regulations.[25]
- Emergent Airway Management: Consider risk of pulmonary aspiration of gastric contents, foreign object and cervical spine status if securing the patient's airway.[25]
- Ethical Considerations: Working as a member of the MCI team to triage patients and resources, reference the AANA *Code of Ethics for the Certified Registered Nurse Anesthetist* when considering ethically related decisions.[10,11,26]

CRNAs are encouraged to preserve the integrity and safety of patients, team members, and themselves despite any resource limitations and the emergency environment.[10,12-14,20]

Community and Institutional Preparedness and Response

Community and institutional participation in MCI planning, emergency and disaster preparedness simulations, and training is fundamental to an effective community- wide MCI response.[9,15,18,23,27-31] Research demonstrates that community-wide, periodic mass casualty emergency and disaster preparedness training improves a healthcare providers' confidence in responding to an MCI.[20]

An essential component of an effective community response includes healthcare facility cooperation and systems preparedness. The Joint Commission requires accredited hospitals and ambulatory care organizations to have an established emergency management plan that is tested biannually to identify opportunities for improvement.[2] The emergency management requirement for hospitals includes a mandate for community participation in at least one of the annual hospital drills.[32] The community response team includes emergency medical services, fire and police departments, the public health department, local municipalities and government authorities, local hospitals, and other healthcare organizations.[2]

Summary

Delivery of optimal care for severely injured casualties in the controlled chaos of the unfamiliar MCI environment requires responders to have a comprehensive plan, high-level training and skills to respond to the event and to support each other to deliver optimal care for each casualty. The team should debrief together both the event and their personal emotional response as part of the MCI recovery and quality improvement process. Anesthesia professionals possess the clinical and team leadership experience to serve as members of the leadership team of the MCI.[25] Effective preparation and management of the MCI

depends on a coordinated, multi-responder team response. The team of responders must be familiar with their community and facility initiatives through detailed planning, education, and regular rehearsal to provide triage, treatment, and patient safety.[3]

Resources

- American Red Cross and Sigma Theta Tau International jointly sponsor Disaster Preparedness Case Study with free CE to all nurses available at: http://www.nursingcenter.com/lnc/JournalArticle?Article_ID=407039&Journal_ID=54023&Issue_ID=406242.
- Online training modules and nursing curriculum for emergency preparedness offered through the Nursing Emergency Preparedness Education Coalition available at: http://nnepi.gwnursing.org/.
- http://www.nursing.vanderbilt.edu/incmce/modules.html.
- Additional online disaster preparedness nursing modules available through the National Nurse Emergency Preparedness Initiative available at:
- Agency for Healthcare Research and Quality Public Health Emergency Preparedness resources are available at: http://archive.ahrq.gov/prep/.
- Emergency Nurses Association provides the all-hazards position statement on emergency preparedness and is available at: http://www.ena.org/SiteCollectionDocuments/Position%20Statements/AllHazards.pdf.
- The Centers for Public Health Preparedness Resource Center offers comprehensive educational resources on disaster preparedness, including web casts, exercise/drill/tabletop manuals, comprehensive course outlines, and more available at: http://preparedness.asph.org/perlc/resourcereports.cfm.

References

1. World Health Organization. Mass Casualty Management Systems Strategies and Guidelines for Building Health Sector Capacity. 2007. http://www.who.int/hac/techguidance/MCM_guidelines_inside_final.pdf.
2. Amram O, Schuurman N, Hedley N, Hameed SM. A web-based model to support patient-to-hospital allocation in mass casualty incidents. *The journal of trauma and acute care surgery.* May 2012;72(5):1323-1328.
3. Shirley PJ, Mandersloot G. Clinical review: the role of the intensive care physician in mass casualty incidents: planning, organisation, and leadership. *Critical care.* 2008;12(3):214.
4. Smith C, Hewison A. Are nurses prepared to respond to a bioterrorist attack: a narrative synthesis. *Journal of advanced nursing.* Dec 2012;68(12):2597-2609.
5. Bostick NA, Subbarao I, Burkle FM, Jr., Hsu EB, Armstrong JH, James JJ. Disaster triage systems for large-scale catastrophic events. *Disaster medicine and public health preparedness.* Sep 2008;2 Suppl 1:S35-39.
6. Couig MP, Martinelli A, Lavin RP. The National Response Plan: Health and Human Services the lead for Emergency Support Function #8. *Disaster Manag Response.* Apr-Jun 2005;3(2):34-40.
7. Davies K. Disaster preparedness and response: more than major incident initiation. *Br J Nurs.* Sep 8-21 2005;14(16):868-871.
8. Barishansky RM, Langan J. Surge capacity. Is your system prepared for the victims of a large-scale incident? *EMS Mag.* Apr 2009;38(4):36-40.

9. Rubinson L, Hick JL, Curtis JR, et al. Definitive care for the critically ill during a disaster: medical resources for surge capacity: from a Task Force for Mass Critical Care summit meeting, January 26-27, 2007, Chicago, IL. *Chest.* May 2008;133(5 Suppl):32S-50S.
10. Hick JL, Hanfling D, Cantrill SV. Allocating scarce resources in disasters: emergency department principles. *Annals of emergency medicine.* Mar 2012;59(3):177-187.
11. Corcoran SP, Niven AS, Reese JM. Critical care management of major disasters: a practical guide to disaster preparation in the intensive care unit. *Journal of intensive care medicine.* Feb 2012;27(1):3-10.
12. Christian MD, Kollek D, Schwartz B. Emergency preparedness: what every health care worker needs to know. *CJEM.* Sep 2005;7(5):330-337.
13. Adini B, Goldberg A, Laor D, Cohen R, Zadok R, Bar-Dayan Y. Assessing levels of hospital emergency preparedness. *Prehosp Disaster Med.* Nov-Dec 2006;21(6):451-457.
14. Lusby LG, Jr. Are you ready to execute your facility's emergency management plans? *J Trauma Nurs.* Apr-Jun 2006;13(2):74-77.
15. Challen K, Bentley A, Bright J, Walter D. Clinical review: mass casualty triage--pandemic influenza and critical care. *Crit Care.* 2007;11(2):212.
16. Rebmann T, Carrico R, English JF. Lessons public health professionals learned from past disasters. *Public Health Nurs.* Jul-Aug 2008;25(4):344-352.
17. Admi H, Eilon Y, Hyams G, Utitz L. Management of mass casualty events: the Israeli experience. *Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing / Sigma Theta Tau.* Jun 2011;43(2):211-219.
18. Baker MS. Creating order from chaos: part II: tactical planning for mass casualty and disaster response at definitive care facilities. *Mil Med.* Mar 2007;172(3):237-243.
19. Association of Women's Health; Obstetric Neonatal Nursing. The role of the nurse in emergency preparedness. *Nursing for women's health.* Apr-May 2012;16(2):170-172.
20. Baack S, Alfred D. Nurses' preparedness and perceived competence in managing disasters. *Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing / Sigma Theta Tau.* Sep 2013;45(3):281-287.
21. Bulson JA, Bulson T. Nursing process and critical thinking linked to disaster preparedness. *Journal of emergency nursing: JEN : official publication of the Emergency Department Nurses Association.* Sep 2011;37(5):477-483.
22. Bernardo LM, Veenema TG. Pediatric emergency preparedness for mass gatherings and special events. *Disaster Manag Response.* Oct-Dec 2004;2(4):118-122.
23. Hsu EB, Thomas TL, Bass EB, Whyne D, Kelen GD, Green GB. Healthcare worker competencies for disaster training. *BMC Med Educ.* 2006;6:19.
24. Hammad KS, Arbon P, Gebbie K, Hutton A. Nursing in the emergency department (ED) during a disaster: a review of the current literature. *Australasian emergency nursing journal : AENJ.* Nov 2012;15(4):235-244.
25. Baker DJ, Telion C, Carli P. Multiple casualty incidents: the prehospital role of the anesthesiologist in Europe. *Anesthesiology clinics.* Mar 2007;25(1):179-188, xi.
26. Benjamin E, Bassily-Marcus AM, Babu E, Silver L, Martin ML. Principles and practice of disaster relief: lessons from Haiti. *The Mount Sinai journal of medicine, New York.* May-Jun 2011;78(3):306-318.

27. Abraham RT, Walls RT, Fischer M, et al. Tabletop scenarios for realism in bioterrorism and threat preparedness. *The West Virginia medical journal.* Nov-Dec 2012;108(6):12-17.
28. Fattah S, Kruger AJ, Andersen JE, Vigerust T, Rehn M. Major incident preparedness and on-site work among Norwegian rescue personnel - a cross-sectional study. *International journal of emergency medicine.* 2012;5(1):40.
29. Collander B, Green B, Millo Y, Shamloo C, Donnellan J, DeAtley C. Development of an "all-hazards" hospital disaster preparedness training course utilizing multi-modality teaching. *Prehosp Disaster Med.* Jan-Feb 2008;23(1):63-67; discussion 68-69.
30. Frykberg ER. Disaster and mass casualty management: a commentary on the American College of Surgeons position statement. *J Am Coll Surg.* Nov 2003;197(5):857-859.
31. Chung S, Shannon M. Hospital planning for acts of terrorism and other public health emergencies involving children. *Arch Dis Child.* Dec 2005;90(12):1300-1307.
32. National Association of Public Hospitals and Health Systems. Recent Changes to Emergency Preparedness Mandates and Funding: Research Brief. http://www.naph.org/Main-Menu-Category/Publications/Emergency-Preparedness/recentchangestoemergencypreparendessmandatesandfunding.aspx. Accessed November 10, 2013.

In October 2002, the AANA Board of Directors adopted Advisory Opinion Number 5.3 (AO 5.3), *Mass Casualty Incident Preparedness and the Role of the Certified Registered Nurse Anesthetist*. In August 2011, the AANA Board of Directors renamed and numbered AO 5.3 as Position Statement Number 2.16, *Role of the Certified Registered Nurse Anesthetist in Mass Casualty Incident Preparedness and Response*. In April 2014, the AANA Board of Directors archived this position statement and adopted the *Guidelines Regarding the Role of the Certified Registered Nurse Anesthetists in Mass Casualty Incident Preparedness and Response*.