



Recommended Curriculum Guidelines for Family Medicine Residents

Disaster Medicine

This document was endorsed by the American Academy of Family Physicians (AAFP), the Society of Teachers of Family Medicine (STFM), the Association of Departments of Family Medicine (ADFM) and the Association of Family Medicine Residency Directors (AFMRD), and was developed in cooperation with the Sioux Falls Family Medicine Residency Program.

Disasters come in many shapes and forms, and family physicians stand as the front line to help detect, support, direct and participate in all disasters that might strike a community. Thus, it is critical that this curriculum encompass the depth and spectrum of disasters from natural, to accidental, to intentional acts of violence. This curriculum was developed for this critical role that family physicians will play in the disasters of tomorrow.

Introduction

This Curriculum Guideline defines a recommended training strategy for family medicine residents. Attitudes, knowledge and skills that are critical to family medicine should be attained through longitudinal experience that promotes educational competencies defined by the Accreditation Council for Graduate Medical Education (ACGME) <http://www.acgme.org>. The curriculum must include structured experience in several specified areas. Most of the resident's knowledge will be gained by caring for ambulatory patients who visit the family medicine center. Structured didactic lectures, conferences, journal clubs and workshops must be included in the curriculum with an emphasis on outcomes-oriented, evidence-based studies that delineate common and chronic diseases affecting patients of all ages. Targeted techniques of health promotion and disease prevention are hallmarks of family medicine. Appropriate referral patterns and provision of cost-effective care should also be part of the curriculum.

Program requirements specific to family medicine residencies may be found on the ACGME Web site. Current AAFP Curriculum Guidelines may be found online at <http://www.aafp.org/cg>. These guidelines are periodically updated and endorsed by the AAFP and, in many instances, other specialty societies as indicated on each guideline.

Each residency program is responsible for its own curriculum. ***This guideline provides a useful strategy to help residency programs form their curricula for educating family physicians.***

Preamble

When disasters strike, members of the local healthcare system are among the first to respond. Every family physician has the potential to be in a situation where he or she may need to respond to a disaster. For example, following Hurricane Katrina's landfall in southern Mississippi, local physicians and hospitals were the sole source of medical care to the devastated region until the arrival of federal disaster medical assistance teams, and were then integrated into the federal response. Knowledge of how to respond to disasters, and how to coordinate that response with other agencies and organizations involved, is essential.

Since the events of 9/11, there has been an increased focus on the standardization of disaster response in an effort to speed the implementation of relief and decrease the iatrogenic component of the chaos inherent to such situations. In the U.S., the National Incident Management System (NIMS) has been developed in an attempt to facilitate a timely, coordinated and effective response to disasters, ranging from small, local incidents to disasters of national magnitude.

Planning, coordination, execution and debriefing are key to successful disaster response. These components make up the AAFP curriculum on Disaster Medicine. While the focus of the specific objectives in this curriculum is domestic disasters, the majority of the principles covered may be applied to disaster responses abroad, as well.

Competencies

At the completion of residency training, a family medicine resident should:

- Have a basic knowledge of NIMS and the Incident Command System, including its application to the planning, coordination and execution of disaster responses. (Systems-based Practice)
- Have a basic understanding of the primary importance of safety in disaster responses, including personal protective equipment, decontamination and site security. (Medical Knowledge)
- Have an understanding of the principles of triage, and the ability to effectively perform triage in a disaster setting. (Patient Care)
- Possess the clinical competence to provide effective care in a setting of extremely limited resources. (Patient Care)
- Have an understanding of Critical Incident Stress Management (CISM), and the ability to apply it to debriefing in the context of disaster response. (Systems-based Practice)

Attitudes

The resident should develop attitudes that encompass:

- An understanding of the need to be prepared for disasters that may strike a community.
- An understanding of the importance of team work in the planning, preparation and participation of a disaster response event, including the importance of good leadership and “followership” during a time of crisis.
- An understanding of the value of excellent communication skills in a time of crisis.
- An understanding of the necessity of staying calm and keeping one’s wits at a time when there is maximal chaos and confusion.
- An understanding of the principles of triage to maximize benefit when limited resources preclude comprehensive care for all of those affected.
- An understanding of the need for resourcefulness when the usual supplies, personnel, communication and transportation are not available.

Knowledge

In the appropriate setting, the resident should demonstrate the ability to apply knowledge of:

1. Definitions of importance
 - a. Disasters
 - b. Mass casualties
 - c. Triage
 - d. Terrorism
2. Types of disasters
 - a. Natural
 - i. Meteorological (e.g., hurricane, tornado, blizzard, heat, cold wave)
 - ii. Geological (e.g., earthquake, volcanic eruption, flood)
 - iii. Other (e.g., fire, explosion, disease outbreak)
 - b. Accidents
 - i. Transportation accidents (e.g., airplane, bus, train)
 - ii. Structural accident (e.g., building or bridge collapse)
 - iii. Agricultural or industrial accident (e.g., hazardous chemical or biological exposure)
 - iv. Nuclear accident

c. Intentional acts of violence

- i. Criminal acts (where the focus of the act is the victims)
 - 1). Bombing
 - 2). Shooting
- ii. Acts of terrorism (where the focus of the act is society)
 - 1). Bombing
 - 2). Shooting (e.g., urban sniper attacks)
 - 3). Nuclear/radiological
 - 4). Biological
 - a). Bacteria (e.g., anthrax, cholera, plague, tularemia, Q fever)
 - b). Virus (e.g., smallpox, Venezuelan equine encephalitis, viral hemorrhagic fevers)
 - c). Toxin (e.g., botulinum, staphylococcal enterotoxin B)
 - 5). Chemical agents
 - a). Nerve agent (e.g., sarin, insecticides, pesticides)
 - b). Blister agent (e.g., lewisite, mustard)
 - c). Precursors (e.g., chlorosoman, chlorosarin)
 - d). Choking agents (e.g., phosgene, chlorine)
 - e). Blood agents (e.g., hydrogen cyanide, cyanogen chloride)
 - f). Riot control agents (e.g., tearing agents, vomiting agents)

3. Response to disasters

a. The importance of preparation before a disaster event

- i. Personnel
 - 1). Identify who will be in charge (see Incident Command System below).
 - 2). Identify who will be available and their roles.
 - 3). Conduct training
- ii. Maintain adequate supplies

Specific equipment and supplies required will depend on the nature and the scope of the disaster.

 - 1). Suggested pharmaceuticals and related supplies
 - a) For care of acute injuries (e.g., tetanus shots, antibiotics, analgesics, IV fluids, supplies for splinting, casting and suturing)
 - b) For care of acute illnesses (e.g., analgesics, antibiotics, antihistamines, antiemetics, inhalers, psychotropics)
 - c) For care of chronic diseases in those affected by a disaster (e.g., insulin, inhalers, diuretics, antihypertensives, oxygen, psychotropics)
 - d) For response to terrorist attacks (e.g., antibiotics, antidote kits)
 - 2). Logistical supplies
 - a) Food and water
 - b) Soap and disinfectants
 - c) Personal protective equipment
 - d) Basic office supplies
- iii. Guidelines, regulations, policies and procedures
 - 1). Local facility evacuation procedure
 - 2). Hospital and/or clinic regulations

- 3). State, county and local regulations
 - 4). The Joint Commission on the Accreditation of Healthcare Organizations (JCAHO)
 - 5). Federal Emergency Management Agency (FEMA)
- b. Coordination of response
- i. Incident Command System as basis
 - 1). Incident Commander
 - 2). Unity of Command
 - 3). Unified Command
 - 4). Emergency operations center
 - 5). Media relations
 - ii. Internal coordination with key clinic and hospital personnel
 - iii. External coordination with local community emergency resources and regional or national response teams
- c. Execution of the disaster response
- i. Safety – disaster responders are of no value if they become victims.
 - 1). Decontamination
 - a). Site set-up
 - b). Personnel trained in use
 - c). Clean and dirty areas
 - d). Cleaning agents
 - e). Plenty of water
 - 2). Personal protective equipment
 - a). Face masks and respirators
 - b). Personal protective clothing (e.g., mission-oriented protective posture [MOPP] gear)
 - 3). Security
 - a). Crowd and traffic control
 - b). Protection of relief workers
 - c). Protection of medications, food and water
 - 4). Environmental hazards
 - a). Damaged infrastructure (e.g., downed electrical power lines, damaged roads and buildings, hazardous chemicals)
 - b). Infectious hazards (e.g., human and animal victim corpses, exhumed bodies from disturbed cemeteries, contaminated water)
 - ii. Triage
 - 1). Location
 - 2). Principles and practice; black, green, yellow and red.
 - 3). Personnel involved
 - iii. Clinical skills
 - 1). Care in an austere environment
 - a). Broad scope of practice
 - b). Ability to supervise nurses, emergency medical technicians (EMTs), etc. in expanded roles
 - c). Clinical diagnostic skills in the absence of full (or even partial) radiology, laboratory and other ancillary support

- d). Effective therapeutic interventions with limited availability of medication varieties and quantities
 - i) Acute illnesses and injuries
 - ii) Chronic medical conditions
 - iii) Ingenuity in devising treatments
 - 2). Mental health needs
 - a). Individual survivors presenting to the facility
 - b). Patients with special needs (e.g., pregnant women, children, elderly or those who have an underlying mental health problem)
 - c). Witnesses to the disaster
 - d). Family and friends of the missing, injured or dead
 - e). The "worried well"
- iv. Logistics
 - 1). Location for decontamination, triage, clinical care and responder's sleeping/eating areas
 - 2). Communication
 - a). Radios
 - b). Telephones (wired and wireless)
 - c). Computers (Internet)
 - d). Runners
 - 3). Personnel/manpower
 - 4). Supplies (medical, food, water)
 - 5). Evacuation (of patients needing higher levels of care and of personnel if situation deteriorates)
- v. After-action debrief
 - 1). Timing, location, participants
 - 2). Evaluation and critique of response – not blame-assigning but reviewing lessons learned to improve the response in the future
 - 3). Critical Incident Stress Management – caring for the responders

Skills

In the appropriate setting, the resident should demonstrate the ability to independently perform or appropriately refer:

- 1. Planning, preparation and practice of emergency response system
 - a. Based on the Incident Command System
 - i. Planning skills
 - 1). Develop a plan
 - a). Inter-agency coordination
 - b). Development and utilization of checklists
 - i). Supplies and equipment
 - ii). Jobs and responsibilities
 - 2). Practice the plan by conducting drills
 - a). Participation
 - b). Evaluation and feedback

- ii. Being an effective team member
 - 1). Leadership and “followership”
 - 2). Staying calm and focused under pressure
 - 3). Using the members of the team effectively
- iii. Effective communication
 - 1). With the media, victims and community
 - 2). With other responders
 - a). Local health department
 - b). Police and fire officials
 - c). Emergency medical services (EMS)
 - 3). Employing various technologies effectively
- 2. Triage skills
 - a. ABC's
 - b. Categorization of patients (e.g., emergent, immediate, delayed, minimal, expectant)
- 3. Safety issues
 - a. Wearing of appropriate personal protective equipment
 - i. Gas masks, face masks, respirators
 - ii. Protective clothing
 - b. Set up and use of decontamination systems
- 4. Medical/surgical skills
 - a. Advanced trauma life support (ATLS) procedures
 - b. Advanced cardiac life support (ACLS) procedures
 - c. Pediatric advanced life support (PALS) procedures
 - d. Comprehensive advanced life support (CALS) procedures (incorporates items a and c above into a single course with emphasis on limited-resource settings)
- 5. Debriefing
 - a. Effectively participate in a debriefing session
 - b. Lead a debriefing session
 - c. Address Critical Incident Stress Management issues

Implementation

This curriculum will be implemented into family medicine residency programs in both block format and longitudinally over the three years of residency training.

The block-training can be incorporated in the community medicine rotation. During this phase, the resident should engage in practice scenarios (on paper, in person, and via computer simulations) and visit with local response agencies to discuss disaster

response plans. It is critical that the residents meet with key leaders to discuss how the community will mobilize in case of a disaster. The knowledge and experience of working with these individuals will help the physician in planning, developing, training and participating in disaster preparedness programs at their future practice locations. In addition, as a part of the block-training, residents should receive formal training and certification in the Incident Command System (ICS), ICS-100 at a minimum, via classroom or Internet self-study modes of instruction.

The longitudinal training over the three-year residency will consist primarily of lectures, workshops, scenario discussions and participation in drills at the hospital or clinic. It is important that the resident participate in both the execution and the evaluation of the emergency management drills. The experience gained and lessons learned will be of great value for later use in the development of, and participation in, disaster preparedness programs in the communities where they will ultimately practice.

Resources

AAFP Home Study Self-Assessment (HSSA), Home Study Audio 276, Bioterrorism, May 2002.

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Birch M, Miller S. ABC of conflict and disaster. Humanitarian assistance: standards, skills, training, and experience. *BMJ* 2005;330:1199-201.

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Trotter G. The ethics of coercion in mass casualty medicine. Baltimore, Md: Johns Hopkins University Press, 2007.

Waeckerle, JF. Domestic preparedness for events involving weapons of mass destruction. JAMA 2000;283:252-4.

Web sites

Advanced Trauma Life Support: <http://www.facs.org/trauma/atls/index.html>

American Academy of Family Physicians: <http://aafp.org>

American Heart Association (information about advanced cardiac life support [ACLS] course): <http://www.americanheart.org/presenter.jhtml?identifier=3011972>

American Heart Association (information about pediatric advanced life support [PALS] course): <http://www.americanheart.org/presenter.jhtml?identifier=3012001>

American Hospital Association (AHA) Emergency Readiness: http://www.hospitalconnect.com/aha/key_issues/disaster_readiness/

American Medical Association: <http://ama-assn.org>

Association of State and Territorial Health Officials: <http://www.astho.org>

Centers for Disease Control and Prevention: <http://www.cdc.gov>

Centers for Disease Control and Prevention Emergency Preparedness and Response: <http://www.bt.cdc.gov>

Comprehensive Advanced Life Support (CALs): <http://www.calsprogram.org/>

Federal Emergency Management Agency: <http://www.fema.gov>

Federal Emergency Management Agency (NIMS, ICS and other online training):
<http://www.fema.gov/about/training/index.shtm>

International Critical Incident Stress Foundation (management information and training):
<http://www.icisf.org/>

Johns Hopkins Office of Critical Event Preparedness and Response (CEPAR):
<http://www.hopkins-cepar.org/>

National Disaster Life Support Foundation: <http://www.bdls.com/>

U.S. Army Medical Research Institute of Infectious Diseases:
<http://www.usamriid.army.mil/index.htm>

U.S. Department of Health and Human Services National Disaster Medical System (NDMS): <http://oep-ndms.dhhs.gov>

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