

SPECIAL REPORT

INCLUSION OF CONFINED SPACE RESCUE IN EMS PHYSICIAN FELLOWSHIP PROGRAMS

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ABSTRACT

Introduction: In July 2021, the Accreditation Council for Graduate Medical Education (ACGME) updated the Program Requirements for Graduate Medical Education in Emergency Medical Services to include participation in special operations trainings as a required key index procedure during an EMS fellowship. These requirements now include documentation of “participation in confined space, technical rescue, or collapse/trench training”. EMS fellowships may have limited opportunities for fellows to actively participate in these complex events.

Background: Federal or State Urban Search and Rescue (USAR) teams present a unique opportunity to meet this training requirement. USAR teams perform search and rescue operations in collapsed structures and provide emergency medical care for entrapped survivors, task force personnel, and search canines. The physician is integrated into the Incident Command Structure of the USAR teams under the Medical Branch as the “Medical Team Manager”. This provides a defined team role in training and promotes physician level knowledge and skills in rescue operations.

Methods: The University of Chicago EMS Fellowship partnered with Illinois Task Force-1 USAR team to meet the new training requirements and participate as a Medical Team Manager on the team.

Results: During the 12-month fellowship period, the EMS fellow participated in monthly USAR training that included both single day and multi-day exercises. The exercises included scenarios with complex hazardous materials, confined space rescue, high angle rescue, collapsed structure and trench rescue. With a dedicated physician role on the USAR team, the EMS fellow integrates into the response structure as a Medical Team Manager and can learn how to deliver high quality patient care in an austere environment. USAR training fulfilled several of the new ACGME key index procedure for an EMS fellow in the special operations environment including participation in hazardous materials response training, participation in confined space, technical rescue, or collapse/trench training, and participation in vehicle rescue/extrication training.

Conclusions: EMS fellowship programs can collaborate with Urban Search and Rescue teams to provide training opportunities in confined space rescue to meet ACGME requirements for key index procedures and integrate qualified EMS physicians into USAR responses. Collaboration between EMS fellowship programs and USAR teams can be mutually beneficial.

INTRODUCTION

In July 2021, the Accreditation Council for Graduate Medical Education (ACGME) updated the “ACGME Program Requirements for Graduate Medical Education in Emergency Medical Services” to include participation in special operations trainings as a required key index procedure during EMS Fellowship. Among these new requirements, fellows must document “participation in confined space, technical rescue, or collapse / trench training” (ACGME, 2021). EMS Fellowship Program Directors may need to evaluate partnerships with organizations that can become participating sites and provide an educational experience for the fellow. Within the complex environment of confined space and technical rescue, Urban Search and Rescue (USAR) teams represent a unique opportunity for training EMS fellows. We describe our experience partnering with an Urban Search and Rescue (USAR) team to provide special operations training to physicians in their EMS fellowship and meet new ACGME requirements.

BACKGROUND

USAR TEAM DESCRIPTION

The National Urban Search & Rescue (US&R) Response System was established under the authority of the Federal Emergency Management Agency (FEMA) in 1989 as a framework for organizing federal, state, and local partner emergency response teams as integrated federal disaster response task forces (FEMA, 2020). According to FEMA “An Urban Search and Rescue (US&R) Task Force is a multi-disciplined organization which conducts search, rescue, and recovery in technical rescue disciplines, including structural collapse, rope rescue, vehicle extrication, machinery extrication, confined space (permit-required, non-cave, non-mine), trench, excavation, water operations, and chemical, biological, radiological, nuclear, and explosives (CBRNE) defensive operations in a US&R environment” (FEMA, 2020). There are currently 28 active US&R teams in the United States (FEMA, 2022) that may be deployed by FEMA as a disaster response task force. In addition to these federal teams, there are numerous state task force teams with a similar structure to the federal teams. USAR task force personnel are equipped and ready to deploy within six hours of notification (FEMA, 2003). USAR task force teams train frequently in different aspects of technical rescue including high angle, confined space, trench, hazardous materials, and swift water.

USAR TEAM ORGANIZATION

USAR task force members are assigned to a specific team with a defined component of the USAR mission. There are six teams which include Search, Rescue, Hazardous Materials, Medical, Logistics, and Planning (FEMA, 2003). Physicians serve in the role of Medical Team Manager and supervise the medical team of a USAR task force. The role of the Medical Team Manager includes ensuring all medication and controlled substances are accounted for and secured, ensuring proper medical coverage of the task force is maintained during all mission phases, monitoring the task force for injury and illness, providing medical oversight, performing medical care as appropriate, and coordinating incident stress debriefing as indicated (FEMA, 2003). Medical Team Managers work with

Medical Specialists, who are typically paramedics, to carry out the medical team responsibilities. Duties of the Medical Specialist include monitoring the health and wellbeing of task force personnel and under the direction of the Medical Team Manager, assisting in the treatment, extrication, and transfer of injured team members and patients to the local emergency department (FEMA, 2003).

USAR MEDICAL COMPONENT

Medical care within the Task Force is primarily to care for Task Force members and survivors being extricated or rescued. As defined by FEMA, “the Medical Team Manager is a licensed physician who is Emergency Medicine residency trained and/or Board-certified in Emergency Medicine and actively practicing clinical Emergency Medicine and having experience with prehospital medical care OR be a currently licensed physician with current ACLS, ATLS and PALS certification (or equivalent) whose medical activities include clinical medicine and/or prehospital care” (FEMA, 2020). Emergency Medicine physicians with subspecialty fellowship training in EMS are well qualified to meet the defined responsibilities of a Medical Team Manager. Team members participate in training specific to USAR which includes use of a self-contained breathing apparatus (SCBA), maneuvering through confined spaces, and preparing an injured patient for extrication. The Medical Team must be trained and equipped for potentially prolonged field management of critically ill or injured patients. Unique problems that are encountered in the USAR environment include dust asphyxiation, toxic inhalation, crush injury, open fractures, and field limb amputations (Macintyre et al., 2006).

SCOPE OF PRACTICE

Medical Team Managers and Medical Team Specialists have an expansive scope of out of hospital equipment and medications available. The FEMA medical cache is a comprehensive standardized pallet of equipment to aid the medical team in their mission. It is important that USAR teams be self-sufficient for at least 72 hours, as they will not be able to depend on local infrastructure to support their operations. The cache is designed for extended field care operations and similar to the formulary in an Emergency Department, which includes medications for procedural sedation and rapid sequence intubation, antibiotics, chest tubes, central lines, ventilators, and video laryngoscopes. Some USAR teams have a climate-controlled patient treatment truck with examination beds and overhead lighting for advanced field care.

METHODS

This study was determined to be exempt from IRB review by The University of Chicago Biological Sciences Division (Protocol Number: IRB22-1477).

The University of Chicago EMS Fellowship explored local opportunities for physician involvement in confined space rescue training. The Illinois Task Force-1 USAR team is a State USAR team comprised of first responders from around the state. It has an organization modeled after the previously described FEMA USAR teams. The University of Chicago EMS Fellowship Program contacted task force leadership to discuss opportu-

nities for fellowship involvement on the team to meet their available open positions for Medical Team Managers.

After an interview, both the EMS Fellow and Program Director started the process of onboarding as Medical Team Managers. Part of the onboarding process included licensure verification, current employment verification, completion of a computer based Medical Specialist training and signing a memorandum of understanding (MOU). As available, both team members planned to attend the four-day FEMA approved Medical Specialist Course. This comprehensive course provides Medical Team Managers and Medical Team Specialists with “the knowledge, skills, and abilities necessary to perform medical functions for an Urban Search and Rescue team during a disaster or planned event”. It covers medical topics specific to the confined space environment and culminates in field exercises to apply newly learned skills.

Both team members were outfitted with standard USAR equipment to include helmets, boots, duty uniforms, cold weather gear, rain gear, eye protection, respirators, heavy leather gloves, flashlights, sleeping bags and head lamps. New team members were also added to an alerting system, which sends notification regarding trainings and deployments. Once onboarding was completed, the team members were added to the training schedule and alert cycle.

RESULTS

During the 12-month fellowship period, the EMS fellow participated in monthly USAR training that included both single day and multi-day exercises. Each exercise was attended by all USAR function groups and focused collaboratively to stabilize the incident. The exercises included scenarios with complex hazardous materials, confined space rescue, high angle rescue, collapsed structure and trench rescue. The medical team is integrated into the response structure with the goal of providing high quality patient care from initial assessment, through extrication, and prolonged field care. With a dedicated position on the team for physicians as Medical Team Managers, the EMS fellow was able to be “down the hole” performing medical care at the point of patient contact with the Medical Specialists in high fidelity scenarios during each training day. During these scenarios the fellow gained skills including setting up high angle and confined space rescue systems, performing confined space rescue work while wearing HAZMAT gear and a self-contained breathing apparatus, treating patients in the confined space environment, extricating patients from collapsed structures and other confined spaces, performing field amputations, and using ropes to rappel and ascend on scene.

USAR training fulfilled several of the new ACGME key index procedure for an EMS fellow in the special operations environment. These procedures include specifically participation in hazardous materials response training, participation in confined space, technical rescue, or collapse/trench training, and participation in vehicle rescue/extrication training.

DISCUSSION

University of Chicago EMS fellowship met the new ACGME requirements for EMS fellowships by successfully partnering with the Illinois Task Force-1 USAR team. USAR teams represent a unique opportunity for EMS Fellowships to deliver high quality patient care in an austere environment with technical rescue while completing ACGME key index procedures. Establishing a relationship between an EMS Fellowship and a USAR team is mutually beneficial for both the EMS fellow and EMS faculty. EMS faculty may consider joining the USAR team which allows for an expanded scope of out of hospital medicine practice, opportunity to educate the fellow during trainings, and the ability to deploy for real world disasters.

The steps to establish a partnership between an EMS fellowship and a USAR team are geographic considerations, stakeholder meetings, administrative paperwork, distribution of team gear and equipment, scheduling trainings, and attending specialized courses. The first and most important step to evaluating a collaboration between an EMS Fellowship program and an urban search and rescue program is the geographic proximity of the sites. The distance should be within reason for a fellow to travel to the participating site. If the site is proximate, the task force leader of the USAR team can be contacted. A state or federal urban search and rescue teams that has an opening for Medical Team Manager is optimal, however discussion about the mutual benefits may provide a pathway onto a fully staffed team. A meeting between key stakeholders of the EMS Fellowship and USAR team is critical to ensure requirements and needs on both sides are met. Once the partnership is established, the onboarding process for the fellow may consist of a brief interview and commitment to meet team requirements including monthly trainings.

USAR teams benefit from consistent physician involvement. For a mobilized USAR task force to be considered complete, typically a physician is required to deploy with the team. This can pose a challenge, as some teams can expect to be reliably mobilized on an annual basis for seasonal events like hurricanes. Deployments will typically last 10-14 days and both personal and occupational factors can prevent a physician from being able to go every time their team is mobilized. By establishing a relationship with an EMS fellowship, it is possible that a USAR team will find itself with a greater pool of physician resources.

EMS Fellowships also benefit from USAR involvement. USAR teams offer access to and education in the complex world of technical rescue. EMS fellows can directly participate in high quality training events that satisfy the ACGME key index procedure requirements while learning from highly skilled rescue professionals. One of the major advantages to the USAR organizational structure for EMS fellows is the defined role for a physician on the team. Involvement of an EMS fellowship with a USAR team can also lead to scholarly and quality improvement efforts on USAR topics, leading to improved medical care provided by the USAR team and overall advances in the field of confined space medicine.

Our experience is limited to one EMS fellowship program and one state USAR team.

Other programs and locations may have different considerations as they investigate similar opportunities for collaboration to strengthen EMS fellow education.

CONCLUSION

EMS fellowship programs can collaborate with urban search and rescue teams to provide training opportunities in confined space rescue to meet ACGME requirements for key index procedures. This mutually beneficial relationship provides USAR teams with consistent EMS fellow and faculty physician involvement and EMS fellowships with high quality experience in technical rescue and prehospital medicine. Additional investigation should include defining best practices for collaborations to strengthen EMS fellowship clinical education in the various out of hospital environments.

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