



University  
of  
Pittsburgh

School  
of  
Medicine

# Bystander Emergency Response Professional Enrichment Course Spring 2021

Course Dates: January 4, 11, 25, February 1, 15, March 1  
Mondays, 3:00-5:00 PM

Maximum Students: 16

Class Year: MS1

Course Director: Adam Z. Tobias, MD, MPH  
Dylan Morris, MD  
James Van Meerbeke, MD

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### Description:

"Is there a doctor on the plane?" These words are simultaneously some of the most anticipated and dreaded by physicians-in-training. This course will provide a framework for bystander treatment and first aid, taught at the knowledge level of first year medical students. Each session will approach a different "real-world" clinical scenario with an exploration of the approach to the patient, available resources, stabilization of the condition, and the pathophysiology of the condition. Each session will be held in the WISER simulation center with the use of high-fidelity simulation mannequins.

### Course Objectives:

1. Provide a general structured approach to the injured/ill patient for medical students with limited clinical experience
2. Explore scenario-specific techniques for patient stabilization and management
3. Discuss initial patient management in resource-poor environments

### Requirements:

Attendance at each session.

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## **Course Outline: Bystander Emergency Response**

### **Course Director:**

Adam Z. Tobias, MD, MPH  
Associate Professor of Emergency Medicine

Dylan Morris, MD  
James Van Meerbeke, MD

### **Location:**

WISER center, 230 McKee Place, 3<sup>rd</sup> Floor

Mondays—January 4, 11, 25, February 1, 15, March 1  
3:00-5:00 PM

### **Week 1: Standard Approach to the Ill or Injured Patient**

The course will begin with an introduction to scene safety and how to best protect yourself when responding to an ill patient. We will review the “ABCs”, abnormal vital signs, the “SAMPLE” history, and focused physical exam techniques. Once we have reviewed patient assessment, we will discuss organizing available resources (such as recruiting bystanders to help) and calling for backup.

### **Week 2: Basic Life Support**

After your initial assessment (learned in Week 1) you may need to perform life-saving interventions. Some of the most fundamental (yet life-saving) maneuvers in bystander intervention involve CPR, basic airway management, and bleeding control and administration of time-sensitive medications, such as epinephrine and naloxone. During this session, participants will have an overview of CPR techniques for the adult. Basic airway maneuvers will involve assessment of the airway, finger sweep, chin lift and jaw thrust. Participants will also be introduced to BVM ventilation, considerations for management of supraglottic vs infraglottic airway obstruction, and the Heimlich maneuver. We will also discuss bleeding control techniques including tourniquet use and hemostatic agents. Epinephrine administration for anaphylaxis and naloxone administration for opioid toxicity will be discussed with participant skill practice with auto-injectors.

### **Week 3: In-flight Medical Emergencies**

Have you yet been on a plane when a doctor was requested? Soon you will be able to rise to the challenge! During this week’s session we will discuss common medical emergencies during commercial airline flights and what resources are available on the airplane for your use. We will review cases from the UPMC Medical Command Center, where flights from all over the world call to speak to a doctor. The first question we will explore is, “was this syncope or seizure?” Depending on this answer; overview of syncope management, approach to the seizing patient, and discussion of the differential diagnosis will be reviewed. In applying your new skills, there will be simulation of in-flight medical emergencies. Finally, does this patient need to go to the hospital?

### **Week 4: Witness to a Car Accident**

The trauma patient: As you approach your first patient you see he is confused, bleeding from the scalp, and has an obvious leg deformity. How do you proceed? In this session, a systematic approach to the trauma patient will be discussed. Primary and secondary survey, hemorrhage control and cervical spine immobilization will be among the topics reviewed. Discussions will include ensuring scene safety and how to manage the trauma patient during case scenarios.

### **Week 5: Hiking in the Wilderness**

This session will provide an introduction to Wilderness Medicine. Students will be offered several skills stations and case based learning modules. Learning modules will include approaching hyperthermia and hypothermia. Skills stations will include assessment of long bone fractures, joint dislocation and ankle sprain. Discussions will include patient assessment, immobilization of the injury, and associated physical exam and first aid techniques while in a resource-limited environment.

### **Week 6: Disaster Mode**

You have witnessed a multivehicle car accident with a large number of casualties. Now what? In the final session we will put everything together with the management of multiple patients during a Mass Casualty Incident (MCI). This session will build on knowledge and skills acquired during previous sessions and the discussion will include the MCI triage system and how to manage multiple patients at once during a disaster. Needle decompression will be discussed in the management of a tension pneumothorax. The session will end with a simulated disaster scenario using skills learned throughout the course.