

# OEC Module of the Senior Program

## OEC Skills Mastery

**Each candidate must perform each task proficiently before moving on to the scenario practice of the Senior Module**

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### Patient Assessment & Vital Signs

#### 1.1 Patient Assessment

Patient assessment has five distinct elements – Scene sizeup, Primary assessment, Patient history, Secondary assessment, and Reassessment. The relevant Skill Guide in OEC 6e is 7-1.

During scene sizeup, the senior candidate protects themselves by making the scene safe, initiating standard precautions, and obtaining consent. It may help with training to remind them to protect themselves physically (scene safety), pathogenically (standard precautions) and legally (consent). The senior candidate will also determine the MOI/NOI and the number of patients and need for additional resources. These steps, especially the need for resources, represent decision making and problem management.

During primary assessment, the senior candidate is forming a general impression of the candidate and addressing any life threats, including life-threatening bleeds. Responding to ABCD issues promptly represents decision making for the senior candidate, while obtaining the chief complaint and updating dispatch of additional needs sets the candidate up for efficient problem management.

A complete patient history using SAMPLE and OPQRST can provide more information for managing the chief complaint. For example, when responding to a bleed, if the senior candidate determines the patient is on Coumadin (anticoagulant) for a history of atrial fibrillation, they may recognize the need for closer management of the bleed. If the senior candidate responds to a patient with nonspecific pain in the chest but learns that it is radiating to left arm and jaw, they may recognize the possibility of a cardiac event and the need for high flow O<sub>2</sub> and rapid transport. The problem management resulting from this information is evident.

The secondary assessment steps of a head-to-toe physical examination and baseline vital signs provide opportunity for the senior candidate to determine latent findings. That is, there may be a distracting injury and a secondary injury is found during the physical examination or vital signs may point to the presence of shock.

Reassessment, the final step, is an opportunity for the senior candidate to know if the interventions they have taken are providing relief to the patient. The trend in vital signs is of particular importance.

## Assessing Pupils and Eye Movement

Assessing pupils and eye movement should be done during physical examination of secondary assessment. The relevant Skill Guides in OEC 6e are 7-2 and 7-3.

In assessing the eyes, the senior candidate should note if the pupils are equal, round, and reactive to light (PERLL) and the extraocular movement is intact (EOMI). Constricted pupils may result from the patient being on drugs while dilated pupils that are fixed is an ominous sign of neurological injury. These findings should be considered alongside information from the rest of the physical exam or patient history.

### 1.3 Assessing Pulse & Assessing Respiratory Rate

Assessing pulse and respiratory rate are two essential vital signs that are most appropriate to initial care of the patient on the hill. The relevant Skill Guides in OEC 6e are 7-4 and 7-5.

Assessing the pulse, typically at the radial artery, should be done for the rate, rhythm, and quality. Noting a pulse that is outside normal limits or is bounding or irregular provides information to the senior candidate for problem management. A pulse that is abnormally high may raise suspicion of a serious problem in the absence of another reason such as exercise. Finding the carotid pulse on an unresponsive patient or the brachial pulse on an infant patient are essential skills, too.

The respiratory rate should be determined at the same time as the pulse, but the senior candidate should also note the quality of the breaths or any abnormal breath sounds, such as wheezing.

#### 1.4 Obtaining a Blood Pressure

Adequate blood pressure is needed to adequately perfuse tissues. The relevant Skill Guide in OEC 6e is 7-6.

Blood pressure is not commonly taken on the hill, but transport of a patient to the aid room and consequent reassessment provides an opportunity for blood pressure to be taken. A widening pulse pressure can be indicative of a traumatic brain injury and pulsus paradoxus, a drop of 10 mm Hg in systolic pressure on inhalation, can be indicative of thoracic trauma.

## 2 Airway Management

### 2.1 Opening the Airway

Airway management can begin for the unresponsive patient by using the head-tilt, chin-lift or jaw thrust methods. There are no relevant Skill Guides in OEC 6e.

Maintaining the airway in an unresponsive patient by the senior candidate, rapidly and using only their hands, is the first step in a timeline of airway management that can include airway devices, suction, and oxygen administration.

### 2.2 Airway Devices

The senior candidate recognizes the critical nature of maintaining a patient's airway and demonstrates problem management and appropriate care for the patient by selecting an airway adjunct when needed. The relevant Skill Guides in OEC 6e are 9-3 and 9-4.

The nasopharyngeal airway provides a pathway through the nostril to the nasopharynx and is indicated for a responsive or partially responsive patient who does not have massive head or facial injuries. The oropharyngeal airway keeps the airway open by displacing the tongue but must be used only in unresponsive patients without a gag reflex. The senior candidate demonstrates decision making in selecting, correctly sizing, and placing the appropriate device.

### 2.3 Oxygen Administration

Supplemental oxygen increases the oxygen saturation of hemoglobin in the blood and is appropriate therapy for patients who are hypoxic or in danger of shock. The relevant Skill Guide in OEC 6e is 9-5.

Oxygen should be administered to any patient with dyspnea, cardiac or respiratory arrest, shock, or a decreased level of responsiveness. The senior candidate presents appropriate decision making in recognizing the need for supplemental oxygen and can demonstrate leadership in delegating the task to other members of their team. Obviously, the use of oxygen therapy for seriously ill or injured patients is essential in problem management by the senior candidate.

## 3 Bleeding Control & Management

### 3.1 Direct Pressure & Pressure Dressings

Bleeding should be addressed as soon as possible. The most rapid way to attempt to control bleeding is through direct pressure. The relevant Skill Guide in OEC 6e is 19-1.

When direct pressure is applied with a gloved hand over a sterile dressing to a severe bleed, even arterial bleeding can be stopped. Normal clotting mechanisms can occur more readily as the underlying vessels are occluded by the pressure. This may be compromised by medications the patient is taking that have an anticoagulant effect. The dressing should be secured with a pressure bandage. The senior candidate demonstrates decision making by promptly recognizing a severe bleed and acting to stop it.

### 3.2 Wound Packing & Tourniquets

Direct pressure and a pressure dressing are sometimes inadequate for the control of bleeding. Packing a large wound with gauze and applying a tourniquet are further steps that can be taken to control severe bleeding. The relevant Skill Guide in OEC 6e is 19-2.

Packing a large wound with gauze is appropriate for severe bleeding in a location where a tourniquet cannot be placed, such as the neck, chest, abdomen, or groin. Local protocol may allow for the use of gauze impregnated with a hemostatic agent as a pressure dressing. Tourniquets work well on severe bleeding from extremities. These steps in controlling severe bleeding are in accordance with the American College of Surgeons Stop the Bleed program. The senior candidate demonstrates decision making and problem management by responding quickly to the life threat posed by severe bleeding.

## 4 Fracture Management Skills

At times, placing an injured extremity into anatomic position before splinting may be difficult if not impossible. These circumstances include patients with open fractures, severely angulated fractures, dislocations, or fracture–dislocations close to a joint; patients or children who will not let you move the injured limb; and patients with an impaled object in the injured extremity.

### 4.1 Management near a joint

Management of a fracture near a joint principally requires consideration of compromised CMS and recognition of the possibility of a true orthopedic emergency. There is no relevant skill guide for management near a joint, but skill guides for splinting can be referenced.

Elbow, shoulder, hip, and knee injuries with deformity may need to be immobilized using some creativity. When faced with these situations, remember the essential principles of splinting, immobilize the limb in the most comfortable position possible, checking CMS before and after splinting, and transport patient.

### 4.2 Alignment of angulated fracture

Alignment of an angulated fracture may be necessary when there is neurovascular compromise and definitive care is more than two hours away. There is not relevant skill guide, but skill guides for splinting can be referenced.

The gross deformity of an angulated fracture may also present with absence of a distal pulse or sensory or motor neurological deficit. An OEC technician may splint the fracture in the position it was found, however, if definitive care is more than two hours away one attempt at realignment into normal anatomic position may be attempted to restore neurovascular function. The senior candidate demonstrates decision making in responding to this injury which can be an orthopedic emergency.

### 4.3 Open fracture management

An open fracture is a complex injury that requires two responses from the patroller. First, the patroller should manage the soft tissue injury, the bleeding, then immobilize the fracture appropriately. There is no relevant skill guide for an open fracture, but skill guides for bleeding control and splinting can be referenced.

Bandage the wound by applying a pressure bandage if there is active bleeding. Ensure the bleeding is controlled and recheck the wound for additional bleeding. If required, use a tourniquet.

OEC technicians should neither attempt to set a fracture nor force exposed bones of an open fracture back into their normal anatomic alignment, especially when the injury involves the femur. Correct application of a traction splint to a mid-shaft femur fracture may pull bone ends back into the open wound and below the skin. Patrollers should leave the bones where they are, bandage the wound, and communicate to the EMS personnel that the fracture was open. The senior candidate demonstrates decision making and problem management addressing this complex injury.

### 4.4 Long bone management

Long bone fractures (humerus, radius, ulna, femur, tibia) are injuries an OEC technician can expect to encounter and must respond appropriately to. The relevant skill guides are from Chapter 20 of OEC 6e.

General splinting principles govern the approach to management of all long bone fractures. CMS must be checked before splinting and the fracture must be manually stabilized. Rigid splints are best and selection, sizing and padding of the splint is done before securing the splint to the fracture.

Reassessment of CMS after splinting should be accompanied by documentation. Vital signs provide an additional piece to the clinical picture and the determination for the need to apply oxygen to the patient. The senior candidate demonstrates problem management in dealing with a long bone fracture.

### 4.5 Traction Splinting

Traction splints place an in-line force on a fractured long bone to align it in an anatomically neutral position, prevent further soft tissue damage, and help to reduce blood loss. OEC Technicians primarily apply traction splints to mid-shaft femur fractures, the middle third of the femur. Several types of traction splints are available, including the Hare, Sager, Slishman, and Kendrick. Each has unique features for its operation, but there are common elements to their application. The relevant Skill Guide in OEC 6e is 20-7.

General splinting principles apply to the use of traction splints. Distal CMS should be checked before splinting and the injury should be manually stabilized. Selection of a traction splint by verifying the femur fracture is mid-shaft and proper sizing of the splint is required. The splint should be correctly applied and secured and distal CMS should be checked.

The details for application of each type of traction splint may vary, but correct sizing of the splint is accomplished by use of a folding pole, as with the Kendrick, or by a telescoping rigid frame as with the Hare. The splint is anchored near the hip with a strap or against a bony part of the pelvis. A second anchor is at the ankle, allowing for traction to be applied in-line to the fracture, being careful to avoid plantar flexion of the foot. Improvised ankle hitches may be used if needed. Final steps are typically to finish securing the splint with additional straps. Finally, the patient should be secured to a long spine board. This serves to adequately immobilize the injury and assist with extrication and transport.

To develop competency, it is critical to practice with the traction device your patrol uses to treat injured patients. Confidence in sizing the splint, applying the ankle hitch, and securing the splint to the injured leg allow for the candidate to demonstrate mastery.

## 5 Spinal Motion Restriction

During scene sizeup and the primary assessment, the OEC technician considers the need for spinal motion restriction. Spinal motion restriction can prevent secondary injury to the spinal cord, but the decision to apply SMR depends on the mechanism of injury, the reliability of the patient and the findings during the secondary assessment. The relevant Skill Guides in OEC 6e are 21-1 through 21-5.

IF the need for SMR is suspected, the patroller should protect the patient's cervical spine with manual stabilization until further assessment is complete. If findings do not indicate the need for spinal motion restriction after a quality spine and neurologic evaluation, manual stabilization can be discontinued. If findings indicate the need for SMR, a cervical collar should be placed and the patient transferred and secured to the SMR device, such as a long-spine board or vacuum mattress.

The senior candidate demonstrates decision making in determining the need for spinal motion restriction, problem management in ensuring that all transfers should be done with careful attention to limiting spinal motion, and leadership in directing the team to accomplish SMR carefully and efficiently.

## 6 Lifting Techniques

When providing outdoor emergency care, lifting a patient is a frequent occurrence. Lifting a patient correctly is critical in ensuring the safety and well-being of both patient and team members. The relevant Skill Guides in OEC 6e are 5-1 through 5-12.

When lifting, make sure you communicate clearly with other people lifting to protect both team members and the patient. The use of good body mechanics is needed for all the urgent and non-urgent moves a patroller may need when moving a patient. Knowledge and practice of the various lifts and moves ensures that a patroller can manage an incident in a manner that provides the best patient care. For example, logrolling a patient onto a backboard is done to protect their spine, as are the long axis drags used in an urgent situation. Knowing that a pelvic fracture should not be logrolled but moved with a bridge lift again leads to the best patient care. The senior candidate demonstrates problem management and leadership while directing their team in safely lifting and transferring a patient.

## 7 Medical Emergencies

Medical emergencies are varied but can make up many of the incidents that patrollers respond to. Quality assessment of a patient with effective patient history-taking is key to determining the patient's needs and providing appropriate treatment. The relevant Skill Guide in OEC 6e is 7-1.

The patient history mnemonics of SAMPLE and OPQRST provide convenient ways to obtain a patient history. Previous medical problems, medications, and allergies all provide information that not only gives clues about the nature of an illness, but also allows for anticipation of potential further problems. These elements of patient history are asked in SAMPLE, but response to a medical emergency and associated pain should be followed with the OPQRST questions about the specific nature of the pain. A

report of radiating pain or a severity of 8 or 9 out of 10 can help the OEC technician recognize the need for rapid transport to higher care. While the OEC technician may be limited in their response to some medical emergencies, such as an acute abdomen, the accurate reporting of patient history in a handoff report to higher care is necessary for the best patient care. The senior candidate demonstrates problem management in responding to a medical emergency.