

## Answers to Assessment in Action and Points to Ponder

### Section 6: Special Populations

#### Chapter 31: Pediatric Emergencies

##### *Assessment in Action*

1. D. Febrile seizure

With the recent history of fever and the reported shaking, this baby has had a febrile seizure. You should assess the baby's level of consciousness, airway, breathing, and circulation. You should discuss with the caregiver the types of fever-reducing measures that have been made, including removal of the baby's blankets and/or layers of clothing.

2. D. meningitis.

Fever with a rash (especially small, pinpoint, cherry-red spots or a larger purple/black rash on the face or body) can indicate the presence of meningitis. This serious condition is caused by bacteria, viruses, parasites, or fungi and results in inflammation of the meninges or the tissue covering the spinal cord and brain. This condition is also highly contagious and infectious. If you have come into contact with any of the patient's saliva or respiratory secretions, you must receive antibiotics to protect yourself and to prevent further spread of the illness.

3. B. larger than an adult's.

Children have larger, rounder occiputs (back of the head) than do adults. This is important to know as it will require more careful positioning of the airway.

4. A. smaller in diameter and more flexible.

An infant's trachea is smaller in diameter (approximately the size of a straw) and more flexible than an adult's. An infant's airway is easily obstructed by secretions, blood, and swelling.

5. C. 30 to 60 breaths/min

Infants are aged 1 month to 1 year old. Normal respiratory rates for this age are 30 to 60 breaths/min. Newborn rates are 40 to 60 breaths/min and adults are 12 to 20 breaths/min. Many EMT-Bs find it helpful to carry field guides to remind them of the appropriate respiratory rates in children.

6. D. 100 to 160 beats/min.

The normal heart rate range for infants is 100 to 160 beats/min. As a person ages, the normal heart rate range decreases and the blood pressure range increases. Again, the use of field guides can help EMT-Bs remember these ranges during pediatric calls.

7. Children, unless they have a congenital defect of the heart, are able to compensate blood loss by increasing their heart rates. An infant's heart rate can become as high as 200 beats or more per minute if the body needs to compensate for injury or illness. They also compensate for decreased perfusion by the constriction of blood vessels.

8. It is important to keep parents with their children (except in cases of suspected child abuse). Depending upon the child's age, introduction of strangers or separation from their parents will cause significant increases in stress levels. If you can involve parents in patient care by having them hold oxygen masks for example, it can help parents feel involved and simultaneously ease a child's anxiety. Obviously, if parents appear to be a hindrance to patient care, they must be separated from the child.

9. Calls involving the injury or death of children are oftentimes completely preventable. It can be especially difficult to care for children whose injury would have been avoided entirely if their parent had taken simple, preventative steps to protect their child such as using a bike helmet or car seat, securing household cleaners, or placing a fence around the family's pool. Caring for children who have been intentionally harmed also evokes strong emotions, especially if the EMT-B has children of his or her own. EMS personnel should participate in critical incident stress debriefings after they return from serious calls involving children.

10. Responses involving sudden infant death syndrome (SIDS) will be charged with emotion. Although it will not change the outcome of the situation, you may need to initiate CPR to care for the emotional well-being of family members. Always follow local protocols, and understand that while you may not be able to save the baby, you can provide caring and assurance to the parents and family members. Allow them to express their grief, give them time with the baby and answer their questions simply and honestly. If you do not know the answer to a question, make sure that they can contact someone who can provide insight.

### *Points to Ponder*

Caring for critically ill or injured children is one of the most stressful calls an EMT-B will ever experience. Children are dependent upon adults for their protection and well-being. It can be especially difficult for responders to see preventable injuries or death of young children.

Unfortunately, child abandonment, neglect, and abuse will be seen in the field. You must report any such incidents to the proper authorities. It is important to recognize stress within yourself and request help as necessary.

## **Chapter 32: Pediatric Assessment and Management**

### *Assessment in Action*

#### 1. B. Check responsiveness.

You should determine whether the baby is responsive. Just as with adults, you must determine the baby's level of consciousness. Flicking the baby on the feet and saying her name should elicit a response.

#### 2. C. Foreign body airway obstruction

Young children often put objects in their mouths. They can easily find objects throughout the house when they begin learning to crawl. Presence of the board games implies the presence of small game pieces that could be easily swallowed by the baby.

#### 3. D. Heimlich maneuver

The Heimlich maneuver should be performed for foreign body airway obstructions for children older than 1 year. Blind finger sweeps are never performed on infants or children because you are likely to push the object further into the airway.

#### 4. C. take the baby to the emergency department.

Although the baby seems fine now, it is possible that the foreign body was aspirated into the lungs. The baby should be evaluated by a physician to rule out this possibility.

#### 5. D. all of the above.

The pediatric assessment triangle (PAT) includes appearance (muscle tone and mental status), work of breathing, and circulation to the skin. It is a cursory assessment of the child that allows the EMT-B to rapidly form a general impression of a child's condition before performing a hands-on assessment.

#### 6. C. stridor.

Stridor is a high-pitched inspiratory sound that indicates a partial airway obstruction such as in croup or a foreign body. This is a very distinctive sound, and is an instant indicator of the child's airway status.

7. Failure to use appropriately sized oral airways or bag valve mask devices for the pediatric patient cannot only hinder airway management but may also cause more damage. Poorly sized oral airways can cause trauma to the oropharyngeal passage, or worse yet, block the airway altogether. Using an adult-sized BVM device can overinflate the lungs and result in lung trauma such as pneumothorax.

8. Because children do not possess the same cognitive skills as adults, the AVPU scale is modified when it is applied to children. If a child is alert 'A', they will respond to their surroundings by noticing people or objects near them, exhibited by good muscle tone and eye contact. If they fail to respond appropriately to their surroundings, assess the verbal portion of the AVPU scale. This is accomplished by saying the child's name. Failure to respond to the speaking of their name is considered abnormal. Appropriate responses in the 'P' or pain category include pulling away from painful stimulus. Children who do not show purposeful withdrawal from pain are not responding appropriately. Obviously, the 'U' or unresponsive portion of the AVPU scale remains the same for children.

9. Signs of increased work of breathing beyond tachypnea include accessory muscle use, retractions (intercostals and sternal), head bobbing, and nasal flaring. For a child who has been working very hard to breathe, the sudden slowing of the respiratory rate, or bradypnea, is an extremely ominous sign. This indicates that the child is tiring and will likely suffer respiratory arrest soon. Be prepared to administer ventilatory assistance immediately.

10. Adults and older children are assessed using the head-to-toe method. This method is not well received by young children, who are naturally fearful of strangers. It is less stressful for children if EMT-Bs use the reverse method of assessment, or toe-to-head approach. This will allow time for the child to become used to you and give an opportunity for you to earn their trust. Attempt to gain as much information as possible regarding their physical condition without physical contact. Much can be learned about the severity of illness simply from observing the child from across the room. Make use of distracters such as stuffed animals or your stethoscope when you are performing an assessment, or better yet, remove yourself from the child's field of vision.

### *Points to Ponder*

This child is in big trouble. She's breathing very fast, and her metered dose inhaler is not easing her attack as it normally does. She is only able to speak in short sentences, which also provides insight into the severity of her asthma attack. When transporting a patient who has suffered significant trauma or illness, it is vital to perform assessments every 5 minutes or sooner. This is

especially important in pediatric patients as they can deteriorate quite quickly. The sudden absence of wheezing, the slowing of her respiratory rate and her decrease in mentation are very ominous signs. She will likely become unconscious and suffer respiratory arrest quite soon.

### **Chapter 33: Geriatric Emergencies**

#### *Assessment in Action*

##### 1. D. COPD.

This patient is experiencing chronic obstructive pulmonary disease (COPD). Although the patient may also have any of the other conditions listed, this is the underlying cause of the patient's shortness of breath.

##### 2. B. environmental assessment.

The "E" of the GEMS diamond stands for environmental assessment. Surveying the scene can provide valuable information regarding your patient and his or her medical conditions.

##### 3. D. hypoxia.

Hypoxia is a condition in which the body's cells and tissues do not have enough oxygen. It is unknown how long this patient has been without home oxygen. Regardless, it has been long enough to result in a pulse oximetry reading of 78%. Even with a patient whose body functions in a constant state of decreased oxygen levels (hypoxic drive), this oxygen reading is very low.

##### 4. C. dyspnea.

Dyspnea or shortness of breath is a common complaint in the geriatric population. It can be the result of prolonged illnesses such as emphysema or chronic bronchitis or from new-onset conditions such as pneumonia or a heart attack.

##### 5. B. the negative effects of taking multiple medications.

Polypharmacy refers to the negative effects of taking too many or duplicated medications. Complete patient assessment must include obtaining a current list of medications.

##### 6. D. both A and C.

Advance directives are written documents that specify medical treatment for competent patients should they become unable to make decisions. They are also referred to as living wills.

7. "G" stands for geriatric. This reminds you that older patients are different and my present atypically. "E" stands for environmental assessment. There is a lot of information present in this

patient's physical surroundings to suggest elder abuse/neglect. "M" stands for medical assessment. The patient's chief complaint, vital signs, and presence of home oxygen point to COPD. "S" stands for social assessment. This patient either has no spouse or family, or they are unaware of her current living conditions. This patient needs your protection from further abuse and assistance in obtaining help with the requirements of daily living. Reporting her situation in accordance with your local protocols will assist her in both capacities.

8. She is unconcerned about the patient's complaints of shortness of breath and tried to prevent access of emergency personnel. Obviously, this is not a normal response of a caregiver, but is more like the reaction of someone who is (at minimum) uncaring or attempting to conceal wrongdoing. From her own words, she attempted to prevent this patient from accessing needed medical care.

9. At minimum, this patient's living conditions suggest neglect. Obviously, this caregiver does not assist this patient in the tasks of daily living, such as emptying her bedside commode or providing her with clean clothing, food, and meals. She also ignores her medical needs, as evidenced by allowing her oxygen tank to empty. If this patient requires medications, the caregiver is likely not giving them to her as prescribed or at all. Further examination of the patient's physical conditions could also point to direct physical abuse. Psychological abuse is present by having the patient living in one small bedroom in the basement and the reluctance of the patient to answer questions with the caregiver present. This patient's situation must be reported to the proper authorities without delay.

10. You should explain to the caregiver that a DNR, or Do Not Resuscitate order, does not apply to this situation because the patient is not in cardiac arrest. Also, DNR orders do not imply the withholding of supportive measures such as oxygen delivery, pain relief, or comfort. The caregiver is likely trying to prevent the patient from receiving medical care and/or confusing living wills with DNRs.

### *Points to Ponder*

The aging process brings decreases in muscle mass, bone density, and a variety of other conditions that increase the likelihood for falls and can create difficulties in completing the tasks of daily living. Understandably, many older people do not wish to leave their homes or become dependent upon other individuals for their care. They may be unable to hire outside help for the purposes of cooking and cleaning, as many retired persons are on a fixed income. The patient in this scenario may be able to continue living at home, if her residence is modified to address her

needs. Slip and fall hazards can be greatly reduced by removing area rugs (or taping them down), applying nonslip treads to areas likely to become wet, and modifying bathrooms by adding raised commodes, handrails, and seating in bathing areas. Monitoring devices such as personal pendants are also a good idea for older persons who live alone.

## **Chapter 34: Geriatric Assessment and Management**

### *Assessment in Action*

1. D. None of the above

Given the patient's chief complaint, medical history, and survey of the scene, her most likely cause of tripping is a hip fracture. Sometimes patients believe that they have tripped when the actual source of their fall was a spontaneous fracture.

2. C. hip fractures.

Hip fractures refer to fractures of the head, neck, or proximal portion of the femur. A large number of older people who experience a hip fracture will be permanently impaired, and nearly 20% will die within the first 12 months of injury.

3. C. central cord syndrome.

Relatively small hyperextension injuries can cause the spinal cord to be squeezed, leading to dysfunction known as central cord syndrome. This syndrome results in weak or absent motor function, which is more pronounced in the upper extremities than in the lower extremities. Although this type of injury is not usually permanent, persons with this injury can take several months or even years to recover.

4. A. a compression fracture.

Compression fractures are stable injuries in which often only the anterior third of the vertebrae is collapsed. This type of fracture results from minimal trauma, from simply bending over, rising from a chair, or sitting down forcefully. This is by far the most common type of spine fracture seen in the older patient population.

5. D. both A and B.

It is important to assess pulse, motor, and sensory function before and after splinting of any extremity. It is also important to continue monitoring distal pulse, motor, and sensation throughout transport for any changes in the patient's condition.

6. D. all of the above.

Taking the blood pressure and pulse readings of a patient while he or she is lying, sitting, and standing is obtaining the patient's orthostatic vital signs. Oftentimes, changes in pulse (increased rates) are evident before changes in blood pressure occur. However, pulse rates can appear normal in the older persons depending upon their current medications. Evidence of volume loss (dehydration) will be seen in patients who have a drop in their systolic reading of more than 10 mm Hg. On a safety note, do not make a patient who feels faint stand. Obtain his or her readings from a lying and standing position.

7. Common chief complaints in the geriatric population include shortness of breath, chest pain, dizziness or weakness, generalized pain, and nausea. These complaints can be caused by a myriad of conditions such as COPD, heart attack, stroke, low blood glucose levels, dehydration, or poor nutrition. Performing a thorough patient assessment, obtaining the patient's medical history (including current medications), and surveying the scene will help you narrow down the underlying possibilities.

8. Medications can become a problem for older patients. On average, a patient 65 years old or older will take four or more prescription medications as well as over-the-counter (OTC) medications. Problems with memory loss can also have an impact on the amount and frequency of medication taken. Sometimes older persons take too much or not enough of the prescribed doses. If these patients are being treated by multiple physicians and filling medications at different pharmacies, some medication interactions may not be caught before a problem arises.

9. Emergency responders can sometimes find communication with older patients challenging. As with any patient experiencing an emergency, it is important to speak slowly and clearly. Do not immediately assume that an older patient is hard of hearing and begin speaking loudly into his or her ears. If an older person continually asks you to repeat what you've said, ask if the person has hearing aids and if they are in. Also, avoid turning away from the patient as you speak, and turn off or remove other sources of noise that can impair the patient's ability to hear you. Give the patient time to answer your questions, and treat the patient with the dignity and respect.

10. Depending upon the severity of the illness, these patients may not be able to identify pain or injury and can be poor historians of their medical conditions. You must rely on physical signs, current medications, the scene, and caregivers to help you determine the source of the problem. Depending upon the stage of the illness, these patients can be combative. Protect yourself, your crew, and the patient from injury.

*Points to Ponder*

A typical fender-bender can cause significant trauma for the older patient who has osteoporosis. However, this patient's primary problem is most likely medically related. In this scenario, begin to question the presence of underlying medical conditions. This patient could have experienced any number of medical emergencies, including hypoglycemia, heart attack, or stroke. Although a medical condition could have initially caused the crash, you must not only treat the condition but also any injuries that occurred as a result of the crash.