Answer Guidance

# Chapter 24: Clinical measurement

## Activity answer guidance

### Activity 24.1

The first step in A-E assessment is assessing the patient’s airway. Consider what you would look for when assessing someone’s airway and how you would respond to your findings.

#### Answer guidance:

What you would look for:

*Ask them a simple question, like how they are feeling? This will enable you to assess whether they are talking in a clear voice, identifying if the airway is patent.*

*Look for any obstructions such as blood, vomit, or foreign bodies in the airway.*

*Listen for noises such as gurgling, wheeze, or stridor.*

How to respond:

*If there are signs of obstruction seek immediate help. Try to remove the foreign body only if clearly visible. You do not want to push the obstruction further into the airway. If available use suction to remove the obstructions such as blood or vomit.*

*If the obstruction persists, consider a jaw thrust and inserting a Guedel or nasopharyngeal airway. Seek expert help as your patient may require intubation.*

### Activity 24.2

Research and explain the meaning of the following medical terminology that relates to the assessment of breathing. Consider the conditions in which these may occur.

 Cyanosis

 Hypoxia

 Bradypneoa

 Dyspnoea

 Tachypnoea

#### Answer guidance:

 *cyanosis— airway obstruction or hypothermia*

 *hypoxia—airway obstruction or respiratory cause, for example, sepsis, pneumonia, exacerbation of COPD, or asthma.*

 *bradypnea—drowsy or loss of consciousness*

 *dyspnoea—difficulty breathing which could be caused by heart failure, anxiety, exertion.*

 *tachypnoea—anxiety, infection, asthma attack, choking*

### Activity 24.3

What is meant by the term recession? Which patient groups are you most like to see it in and why?

#### Answer guidance:

*This is when the rib cage is drawn in on inspiration It is seen in children and indicates an increase in the work of breathing. The degree of recession can indicate the severity of respiratory distress.*

### Activity 24.4

What factors may influence a person’s pulse?

Write a list of the factors which may affect the pulse and consider how this may differ between adults and children.

#### Answer guidance:

What factors may influence a person’s pulse?

There are several factors that can influence a person’s pulse, they may include the following:

gender

exercise

pyrexia

medications

hypovolaemia

stress

positioning

pathology

hormones

electrolytes

*Barely palpable central pulses suggest a poor cardiac output, whilst a bounding pulse may indicate sepsis. Hypovolemia would also cause tachycardia, as would anxiety or pain. A normal pulse for an adult would be between 60 and 100 but could be between 43 and 180 in children.*

### Activity 24.5

Does the NEWS2 system accurately reflect all patients’ risk of acute illness?

What factors should the nurse consider when undertaking a NEWS2 assessment?

What scope of professional judgment is expected according to the Code (NMC, 2018a)?

Read the following article and consider whether emergency checklists are a valid resource, or do they add to the complexities surrounding patient care?

Subbe, CP., Kellet, J., Barach, P., Chaloner, C., Cleaver, H., Cooksley, T., Korston, E., Croke, E., David, E., De Bie, AJR., Durham, L., Hancock, C., Hartin, J., Savijn, T., & Welch, J. (2017) Crisis checklists for in-hospital emergencies: expert consensus, simulation testing and recommendations for a template determined by a multi-institutional and multi-disciplinary learning collaborative. BMC Health Services Research (2017) 17:334

#### Answer guidance:

Does the NEWS2 system accurately reflect all patients’ risk of acute illness?

*The parameters required to complete a NEWS2 assessment have been selected to support the clinician in making an evidence-based decision on the likely risk of deterioration for the patient. However, there are some parameters that should also be routinely tested which aren’t included in the NEWS2 system. For example, Blood Glucose measurement is a key indicator of ill-health. It could be argued that if the patient’s blood glucose is reduced or raised compared to normal then some of the other parameters in the NEWS2 system will be affected, for example, respiration rate, pulse, and level of consciousness.*

What factors should the nurse consider when undertaking a NEWS2 assessment?

*The factors which the nurse should consider when undertaking a NEWS2 assessment in the context of the assessment, that is, what is the purpose of the assessment; the accuracy of the measurements undertaken, and the trends indicated by multiple recordings across the care journey. For example, it would be important to assess conscious levels using the same criterion and to record the level of consciousness in a uniform way to ensure the trends noticed are accurate and valid.*

What scope of professional judgment is expected according to the Code (NMC, 2018a)?

*There are multiple links to the Code (NMC, 2018) whilst undertaking, recording, and reporting clinical measurements. They include the safe delivery of effective care (Code 1.2; 6.2; 8.5; 10.3; 10.5; 13.1).*

*1.2 make sure you deliver the fundamentals of care effectively*

*6.2 maintain the knowledge and skills you need for safe and effective practice*

*8.5 work with colleagues to preserve the safety of those receiving care*

*10.3 complete all records accurately and without any falsification, taking immediate and appropriate action if you become aware that someone has not kept to these requirements*

*10.5 take all steps to make sure that all records are kept securely*

*13.1 accurately identify, observe and assess signs of normal or worsening physical and mental health in the person receiving care*

Read the following article and consider whether emergency checklists are a valid resource, or do they add to the complexities surrounding patient care?

Subbe, C.P., Kellet, J., Barach, P. et al. (2017) ‘Crisis checklists for in-hospital emergencies: Expert consensus, simulation testing and recommendations for a template determined by a multi-institutional and multi-disciplinary learning collaborative’, BMC Health Services Research, 17: 334.

*The study concluded that emergency checklists custom-designed for general ward patients have the potential to guide the treatment, speed, and reliability of responses for emergency management of patients with abnormal physiology while minimising the risk of adverse events. Interventional trials are needed.*

### Activity 24.6

The values provided in Table 24.3 relate to a healthy adult.

What effect do you think the following would have on a patient’s fluid balance?

An adult who is pyrexial (having a high temperature)

A child having diarrhoea and vomiting.

A frail elderly person

#### Answer guidance:

*An average daily fluid and nutritional intake would have the following impact on these patients:*

 an adult who is pyrexial (having a high temperature)—might be dehydrated as they are losing lots of fluid through sweating.

 a child having diarrhoea and vomiting-infants are more susceptible to fluid imbalance and this child would be losing more fluid due to D&V, so it would be important to closely monitor their blood pressure and urine output.

 a frail elderly person—it would be important to closely monitor this patient’s fluid balance, including their blood pressure and urine output. Elderly people often suffer from dehydration due to a combination of deficient hormonal processes and disruptions to regular patterns of rehydration and dietary intake, however, they could very easily be overloaded if lots of fluid was given so fluid challenges should be given with caution.

### Activity 24.7

 Review the information presented in Table 24.4 (the fluid balance chart):

 What is the patient’s name?

 How much fluid has he taken orally during the 24 hours covered by the fluid balance chart?

 What was his urine output for the 24 hours covered by the fluid balance chart?

 Is he in positive or negative fluid balance for the 24-hour period?

 How would you explain to the patient what this means?

#### Answer guidance:

What is the patient’s name?

***Ivor Well***

 How much fluid has he taken orally during the 24 hours covered by the fluid balance chart?

***3526mls***

 What was his urine output for the 24 hours covered by the fluid balance chart?

***1170mls***

 Is he in positive or negative fluid balance for the 24-hour period?

***1836mls positive***

 How would you explain to the patient what this means?

*You have taken onboard more fluid than you have lost so you are in a positive balance for the day. This means you are catching up on the blood and fluid you lost during surgery. We won’t stop the drip yet though as your urine output is just adequate.*

## Case study answer guidance

### Case study 24.1: James

James is a 3-year-old who has a known diagnosis of asthma. This is normally well managed, and he has not had any hospital admissions related to his condition. He has been bought into the GP surgery by his parents who are concerned he is having difficulty in breathing. James is upset and crying on arrival. James’s mum is very anxious and cuddles James tightly to her chest.

 What clinical measurements do you think are required in this scenario?

 What else might you be assessing?

 What interventions can you do to ensure you are recording an accurate measurement?

#### Answer guidance:

 What clinical measurements do you think are required in this scenario?

*Oxygen saturation, respiratory rate, arterial blood gas to assess oxygen and carbon dioxide readings, and PH.*

 What else might you be assessing?

*Is the airway patent, is he making unusual noises on breathing, is there any cyanosis, what is his chest movement like, what does his chest sound like on auscultation, is he producing any sputum, and if so what colour is it?*

 What interventions can you do to ensure you are recording an accurate measurement?

*Take an arterial blood gas to get a more in-depth measurement. Look back through notes to see if there are any baseline readings.*

### Case study 24.2: John

John is a 23-year-old gentleman and has a moderate learning disability. He lives with his mother, and he is generally independent in terms of his personal care needs, and he can prepare meals for himself. He works in the local shop 3 days per week. John suffers from type 1 diabetes, and this is generally well-controlled using insulin. You have been asked to visit John by his GP after John’s mother reported he had been acting out of character over the past few days. Your visit is part of your community nursing placement, and you accompany your practice supervisor to meet and assess John. When you initially meet John, his mother tells you that he has been feeling generally unwell for the last 3 days with pyrexia and loss of appetite. Your practice supervisor has asked you to help John provide a urine sample for urinalysis. When you ask him if he can provide a urine sample, he says: “No. I’m not doing it—it hurts lots when I try to go.”

 What do you think might be going on?

 How would you manage this situation?

#### Answer guidance:

*John has a temperature, loss of appetite, and pain in urination, he also appears confused/ out of character. This suggests urinary sepsis.*

*I would speak to John and explain what I think may be wrong in a way that he can understand and explain that I need to do some more investigations. I would ask his parents to assist by reassuring John whilst I undertook an A-E assessment to rule out any other concerns, including his blood sugar. I would try to get John to drink plenty of water and ask him to provide a sample when he next goes to the toilet. John will most likely need antibiotics and then to monitor the infection over the next day or two, to make sure he does not deteriorate.*