**MODULE 1: THE CONCEPT OF ACID–BASE BALANCE**

**Relate**

**Linking the concept of acid–base balance with the concept of oxygenation:**

**Question 1**

What oxygenation changes are seen in patients with acidosis and alkalosis?

**Answer 1**

Patients hypoventilate in acidosis, which results in hypoxemia. Patients hyperventilate in alkalosis, resulting in hypocarbia.

**Question 2**

Why does hypoventilation decrease oxygenation? Why does hyperventilation increase oxygenation?

**Answer 2**

Decreased respirations cause inadequate oxygenation that may lead to hypoxia. Increased respirations cause excessive carbon dioxide release that may lead to alkalosis. However, hypercapnia may occur with hypoxia.

**Linking the concept of acid–base balance with the concept of communication:**

**Question 3**

How might an acid–base imbalance impair a patient’s ability to communicate?

**Answer 3**

Communication may be impaired in any illness. With hypoxia, the patient is tired and unable to communicate. With hypercapnia, the patient may be in a high state of anxiety and unable to communicate.

**Question 4**

Give some examples of therapeutic communication techniques to use when addressing concerns of patients whose communication is limited due to severity of illness.

**Answer 4**

Quality of life is affected by severity of illness. The nurse needs to develop skill and comfort in assessing patients’ and families’ responses to illness and planning interventions that will support their values and choices throughout the caring process.

**Linking the concept of acid–base balance with the concept of safety:**

**Question 5**

Why would it be particularly important to guard against medication errors for a patient with acid–base imbalance?

**Answer 5**

Nurses have to honor the five rights of medications during administration. Nurses have certain roles in medication error prevention. They must first check to see that the other healthcare provider has not made an error in any part of the medication chain. And nurses must ensure that they themselves do not make an error. Patients with an acid–base imbalance are at particular risk of increased problems with acid–base imbalances because their ability to compensate for any medication error may be limited and they may have cognitive changes such as confusion, so they have difficulty communicating any issues with the health care team.

**Question 6**

In what situations or for what patients might it be necessary to arrange for a home safety assessment prior to discharge?

**Answer 6**

Patients with acid-base disorders may experience manifestations from confusion to decreased perfusion leading to cardiac arrest. With the help of case management and social work, nurses can help provide home safety assessment prior to discharge.