

Immunization Competencies for Nurses

*MODULE 5: COMMON SIDE EFFECTS AND ADVERSE
EVENTS*

Module Outline

Post-Vaccination Considerations

Common side effects for each vaccine

Management of Fainting

Anxiety

Special Situations

AEFIs

Epinephrine Kits

Resources

Post-Vaccination Considerations

- ✓ NACI (National Advisory Committee) recommends that prophylactic oral analgesics or antipyretics (e.g., acetaminophen or ibuprofen) should not be routinely used before or at the time of vaccination, but their use is not a contraindication to vaccination.
- ✓ Oral analgesics or antipyretics may be considered for the management of side effects (e.g., pain or fever, respectively), if they occur after vaccination.
- ✓ Cool clean compresses can be used for injection site discomfort.
- ✓ Post-vaccination monitoring of 15 min-30 min depending on clinical judgement/ situational basis.
- ✓ A 5-15 min waiting period for booster doses.

Common Side Effects

- ✓ During the clinical trials, common side effects similar to other vaccines were reported (e.g., redness and pain at the injection site).
- ✓ These side effects do not pose a health risk.
- ✓ The most frequent adverse reactions were mild or moderate and resolved within a few days after vaccination.
- ✓ Additional details and a complete list of reported side effects are available in the respective product monographs.

Pfizer/Pediatric Pfizer

| Vaccine | Very common side effects (may affect more than 1 in 10 people) | Common side effects (may affect 1-10 in 100 people) | Un common side effects (may affect up to 1 in 100 people) |
|-----------------|--|--|---|
| Pfizer-BioNTech | Pain at injection site Fatigue Headache Muscle pain Chills | Localized redness or swelling Joint pain (very common after second dose) Fever (very common after second dose) Diarrhea | Nausea/ vomiting (common after second dose) Enlarged lymph nodes |

Moderna

| Vaccine | Very common side effects (may affect more than 1 in 10 people) | Common side effects (may affect 1-10 in 100 people) | Un common side effects (may affect up to 1 in 100 people) |
|----------------|---|---|---|
| Moderna | Pain at injection site Lymphadenopathy/ Axillary swelling and tenderness Fatigue Headache Muscle pain Joint pain Fever (second dose) | Localised redness Localized swelling (very common after second dose) Chills (very common after second dose) Nausea/ Vomiting (very common after second dose) | Fever (very common after second dose) |

Janssen (Johnson/Johnson)

| Product Brand Name | Janssen (Johnson & Johnson) COVID-19 Vaccine |
|--|---|
| Very common and common side effects ⁷ | Pain, swelling, or redness/erythema at injection site Fatigue Headache Muscle Pain Chills Joint pain Nausea/Vomiting Fever |

Myocarditis/Pericarditis

- There have been Canadian and international reports of myocarditis (inflammation of the heart muscle) and pericarditis (inflammation of the lining around the heart) following vaccination with COVID-19 mRNA vaccines. Global experience to date has indicated that the majority of reported cases have responded well to conservative therapy (rest, treatment with non-steroidal anti-inflammatory drugs (NSAIDs)) and tend to recover quickly. Symptoms have typically been reported to start within one week after vaccination.
- Based on advice from Ontario's Vaccine Clinical Advisory Group, the Ministry of Health has issued a preferential recommendation for the use of Pfizer-BioNTech COVID-19 vaccine for individuals <30 years.
- Check out PHO Focus On: [Myocarditis and Pericarditis after COVID-19 mRNA Vaccines.](#)

Fainting



Prevention

- Client should be seated prior to and during immunization process.
- Prepare immunization out of view of client.
- Minimize wait time and line ups.
- Anxious clients should lie down to receive.



Signs

- Sudden onset, recovery within a few minutes.
- Pale, diaphoretic, cold and clammy skin.
- Normal or shallow breathing, hyperventilation.
- Slow, steady pulse.
- Hypotension
- Lightheaded, dizziness.
- Brief clonic seizure.



Management

- Lie person down
- Apply cool wet cloth to face.
- Check vital signs including BP.
- Have client sit up for a few minutes prior to standing.
- Check BP and pulse prior to leaving clinic.
- If unconsciousness persists more than 2-3 minutes, proceed as per *Medical Directive for Anaphylaxis Management*

Management of fainting



[Needle related fainting: Why does it happen? What to do about it?](#)

Management of Fainting

- ✓ If the client hits his/her head, recommend assessment by a physician.
- ✓ Advise the client not to drive and to be accompanied by another person.
- ✓ Keep client in clinic area for at least 30 minutes.
- ✓ Document on *Incident/Occurrence Report* and *Immunization Related Occurrence Report* (or appropriate equivalent for your organization)

Anxiety



Signs

- People experiencing anxiety may appear
 - fearful
 - Pale, diaphoretic
 - complain of light headedness, dizziness
 - complain of numbness, as well as tingling of the face and extremities.
- Hyperventilation is usually evident.



Management

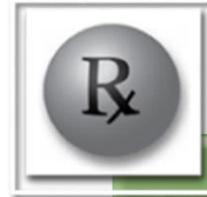
- Reassurance
- Have the client lie down for vaccination
- Hyperventilation:
 - Breath through pursed lips (like whistling)
 - Tell client to pinch one nostril and breath through nose.
- Slow breathing to 1 breath every 5 seconds.

Breath-holding



Signs

- Occurs in some young children when they are upset and crying hard.
- Child is suddenly silent but obviously agitated.
- Facial flushing and peri-oral cyanosis deepens as breath-holding continues.
- Some spells end with resumption of crying, but others end with a brief period of unconsciousness during which breathing resumes.



Management

- No treatment is required beyond reassurance of the child and parents.

Special Situations

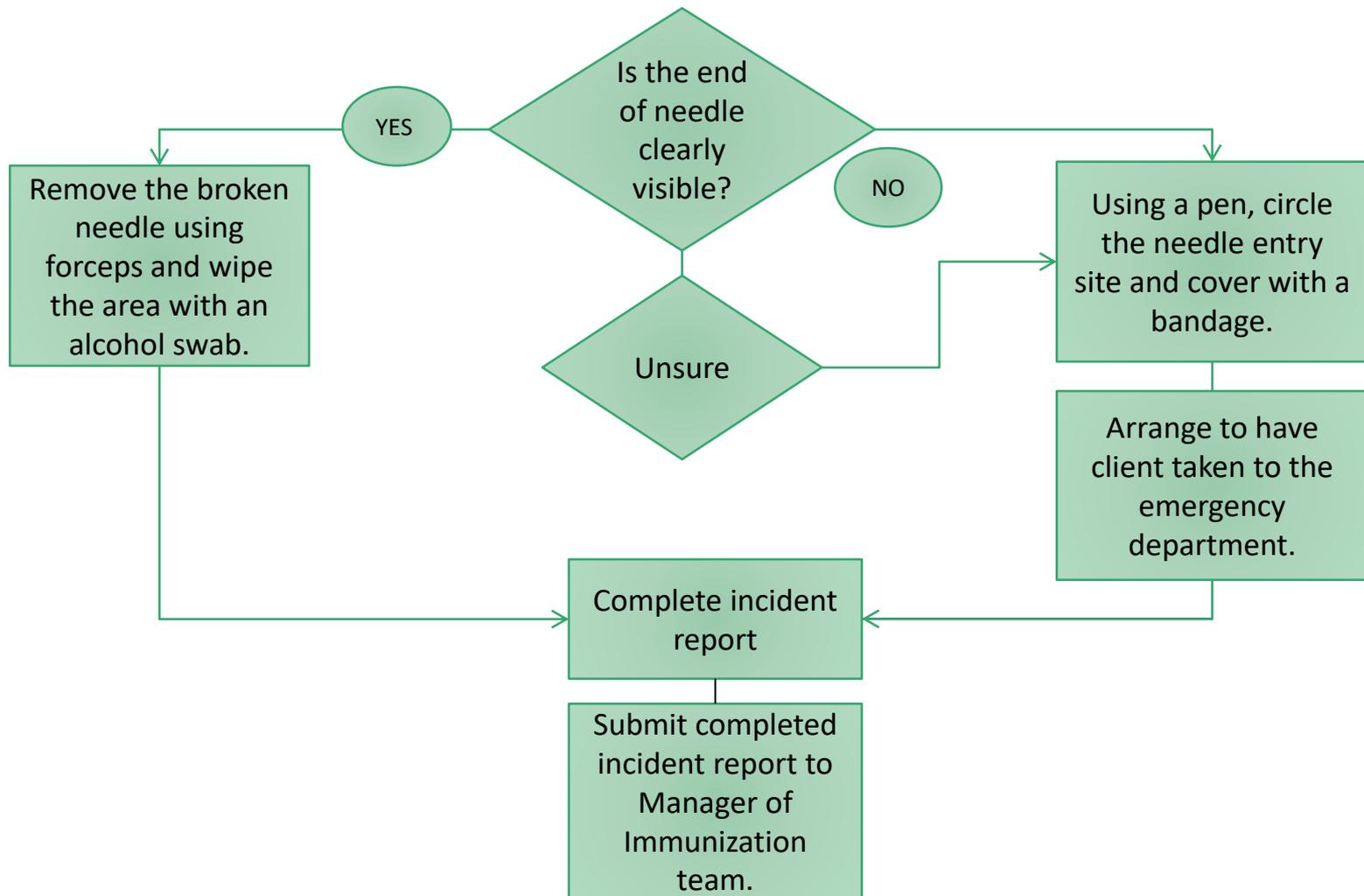
✓ Bleeding Disorders / Anti-coagulant therapy

- ✓ Clients receiving anticoagulant therapy can be immunized if they are optimally managed, and after immunization they should be advised to apply firm pressure to the injection site for 5 to 10 minutes.
- ✓ Individuals may develop hematomas in IM injection sites.
- ✓ Advise the client or family of the risk of hematoma associated with IM injection.

✓ Latex Allergy

- ✓ Ensure all immunization supplies are latex-free.
- ✓ Some vaccines may contain latex in the stopper of the vial. Consult product monograph.

Special Situation: Needle Breakage



Adverse Events Following Immunization (AEFI)

Very common and common adverse events:

- ✓ Common adverse events are defined as those that occur in 1% to less than 10% of vaccine recipients; very common adverse events occur in 10% or more of vaccine recipients.

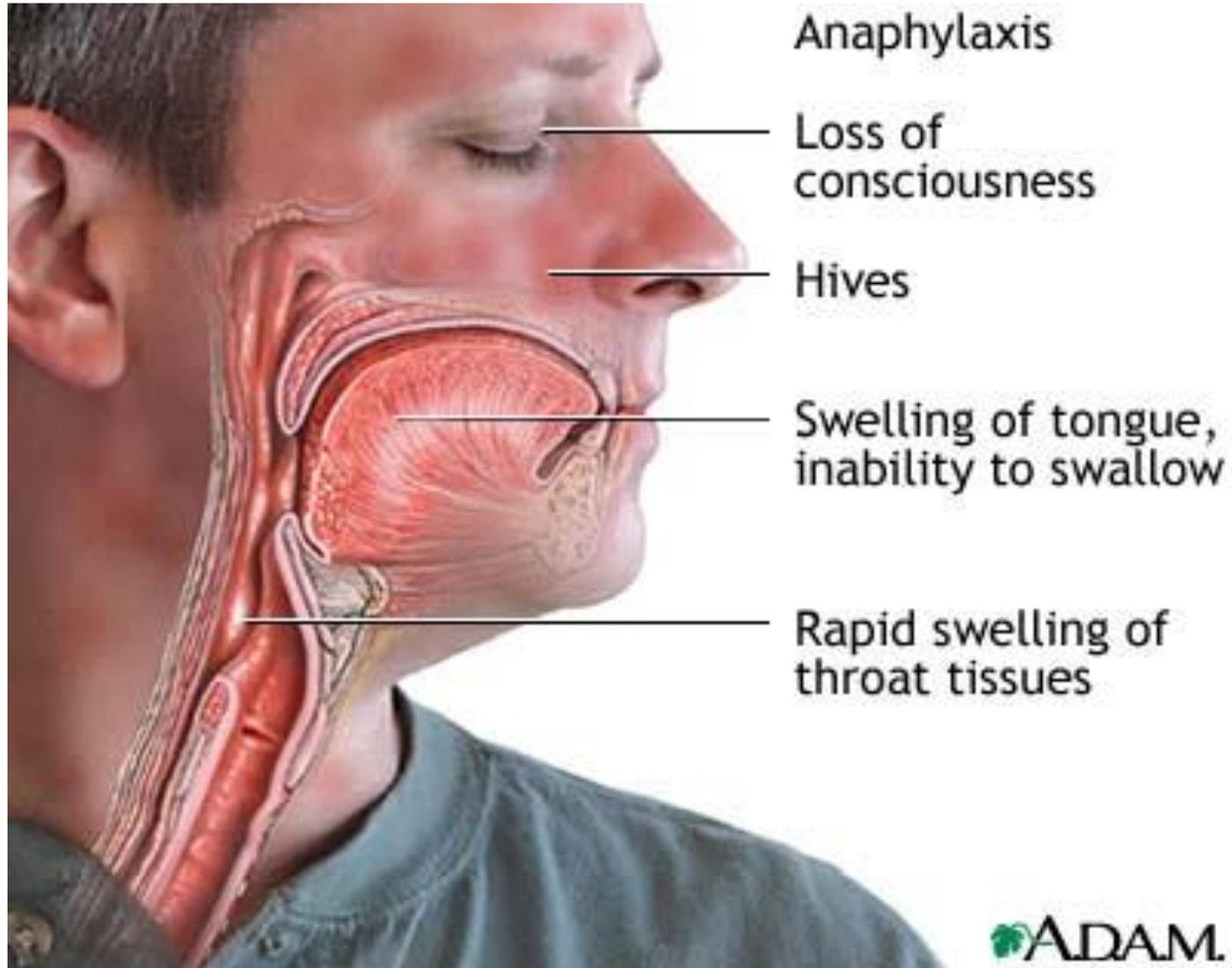
Uncommon, rare, and very rare adverse events:

- ✓ Uncommon adverse events occur in 0.1% to less than 1% of vaccine recipients. Rare and very rare adverse events occur in 0.01% to less than 0.1% and less than 0.01% of vaccine recipients, respectively.

AEFI Reporting

- ✓ Vaccine providers are asked to report AEFIs through local public health departments and to follow AEFI reporting requirements that are specific to their province or territory.
- ✓ In general, any serious (defined as resulting in hospitalization, permanent disability or death) or unexpected adverse event that is temporally related to vaccination should be reported.
- ✓ To report an AEFI to Renfrew County and District Health Unit, please completely and as accurately as possible, fill out the [AEFI reporting form](#) and fax it to 613-735-3067.

Anaphylaxis



Red Flags

Difficulty breathing

Chest pain

Hives

Loss of consciousness

Swelling around the eyes,
mouth or throat



Seek
emergency
medical
attention

Anaphylaxis

- ✓ Rare event and potentially life-threatening allergic reaction to foreign protein antigens
- ✓ Estimated annual reported rate ranges from 0.4 to 1.8 reports per 1,000,000 doses of vaccines distributed in Canada.
- ✓ Anaphylaxis must be distinguished from fainting (vasovagal syncope), anxiety and breath-holding spells, which are more common and benign reactions.
- ✓ Changes develop over several minutes and usually involve at least two body systems.

Signs of Anaphylaxis

Changes develop over several minutes and usually involve at least two body systems (affecting the skin, respiration, circulation).

Unconsciousness is rarely the sole manifestation of anaphylaxis. It occurs only as a late event in severe cases.

Respiratory symptoms - sneezing, coughing, wheezing, laboured breathing and upper airway swelling

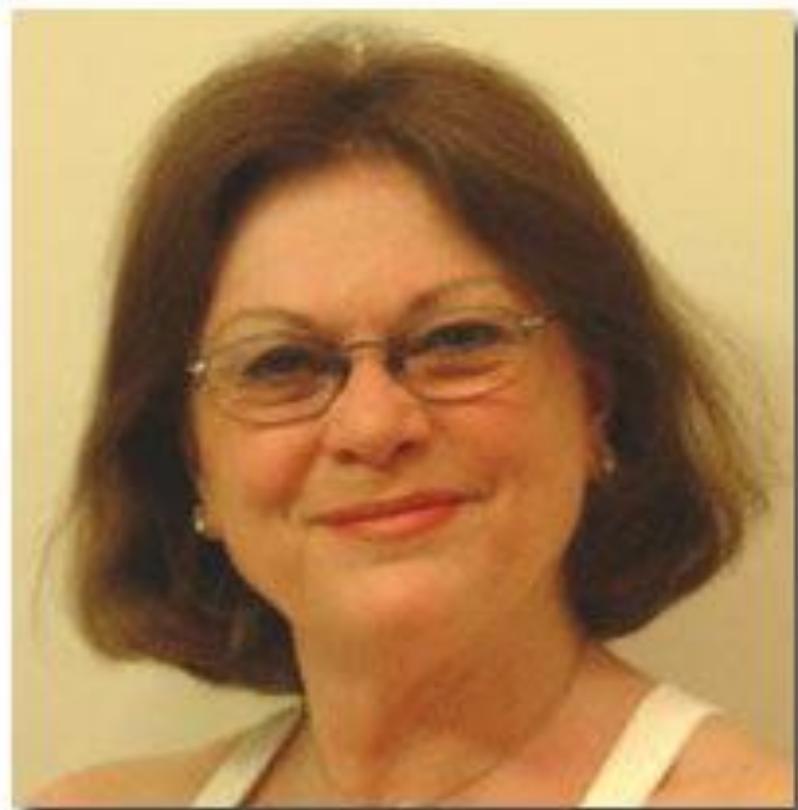
Indicated by hoarseness and/or difficulty swallowing possibly causing airway obstruction

Gastrointestinal - nausea, vomiting and diarrhea may also occur

Itchy, urticarial rash (in over 90% of cases)

Angioedema - progressive, painless swelling of face and mouth, may be preceded by itchiness, tearing, nasal congestion or facial flushing

Hypotension - develops later in the reaction and can progress to shock and cardiovascular collapse.



Normal appearance



Severe allergic reaction
(anaphylaxis)

Swelling & Urticarial Rash at Injection Site

- ✓ Not always due to allergic reaction.
- ✓ Can be managed by observation of client and ice at injection site.
- ✓ Individual should be observed for 30 mins.
- ✓ If swelling and urticaria disappear – then no further treatment needed.
- ✓ If other symptoms arise, or urticarial rash progresses – epinephrine should be given.

Anaphylaxis Kit Recommendations

| Items | Essential | Optional |
|---------------------------------|---|---|
| Laminated documents | <ul style="list-style-type: none"> • Clear, concise summary of emergency management protocol • EPINEPHrine dosage by weight and age | N/A |
| Drugs | EPINEPHrine ² : three vials - 1:1000 (1 mg/mL) solution for IM injection ³ | N/A |
| Injection supplies ⁴ | <ul style="list-style-type: none"> • Two 1 cc syringes with attached 25 gauge needle (one - 1 inch; one 5/8 inch) • Three extra 25 gauge needles of each different size: 5/8 inch, 1 or 1.25 inch, 1.5 inch | EPINEPHrine ² autoinjectors labelled by and weight |
| Other | <ul style="list-style-type: none"> • Scissors • Alcohol swabs • Tongue depressors • Pocket mask • Wristwatch with second hand (for heart rate) • Ready access to a phone to call emergency services • Flashlight | <ul style="list-style-type: none"> • 1 nasopharyngeal, 1 oropharyngeal airway for each age range anticipated in the community • Oxygen and related equipment • IV lines, fluids and related equipment • Stethoscope • Sphygmomanometer |

Epinephrine Dosage

| Age | Weight | Dose by Injection |
|--------------------|--------------------------|-----------------------|
| 0-6 months | Up to 9kg (20 pounds) | 0.01mg/kg body weight |
| 7-36 months | 9-14.5kg (20-32 pounds) | 0.1-0.2mg |
| 37-59 months | 15-17.5kg (33-39 pounds) | 0.15-0.3mg |
| 5-7 years | 18-25.5kg (40-56 pounds) | 0.2-0.3 mg |
| 8-12 years | 26-45 kg (57-99 pounds) | 0.3mg |
| 13 years and older | 46+kg (100+ pounds) | 0.5mg |

Myocarditis and Pericarditis

- ✓ A number of cases of myocarditis/pericarditis following immunization with mRNA COVID-19 vaccines have been reported in Ontario, Canada, and internationally. Reported cases have occurred more frequently in males under the age of 30 years, commonly following their second dose, usually within one week of vaccination, and have been mild with a quick recovery.
- ✓ On September 29, 2021, out of an abundance of caution, Ontario issued a preferential recommendation for the use of Pfizer-BioNTech vaccine for individuals 18-24 years of age, and the continued use of Pfizer-BioNTech for individuals 12-17 years of age, based on an analysis of data from Ontario's vaccine safety surveillance system.
- ✓ The benefits of vaccination continue to outweigh the risks of COVID-19 illness and vaccination is highly recommended for all eligible individuals, including youth.
- ✓ More information found at PHO: AT A GLANCE

https://www.publichealthontario.ca/-/media/documents/ncov/vaccines/2021/11/myocarditis-pericarditis-mrna-vaccines.pdf?sc_lang=en

Resources

- ✓ [AEFI Reporting Form](#)
- ✓ [Epinephrine Order Form](#)
- ✓ [COVID-19 Vaccine Administration](#)

References

1. NACI recommendations
2. Moderna Product Monograph (Dec 23, 2021)
3. Pfizer-BioNTech Product Monograph (Nov 19, 2021)

Quiz

1. It is advised for clients to have a post-vaccination monitoring period of:

- A. 15 min
- B. 30 min
- C. 5 min
- D. As long as the client does not have allergies, a post-vaccination monitoring period is not necessary.
- E. A,B and C depending on clinical judgement/ situational basis.

Quiz

2. Redness and pain at the injection site is a common side effect of the COVID-19 vaccines.

- A. True
- B. False

Quiz

3. The following strategy/strategies are used to help prevent fainting during and after vaccination:

- A. Client should be seated prior to and during immunization process.
- B. Prepare immunization out of view of client.
- C. Minimize wait time and line ups.
- D. Anxious clients should lie down to receive.
- E. All of the above.

Quiz

4. Hyperventilation is usually evident with anxiety related to vaccination and requires the nurse to implement strategies to help the client manage their breathing.

- A. True
- B. False

Quiz

5. Special considerations for clients with bleeding disorders or who are on anti-coagulant therapy include:

- A. can be immunized if they are optimally managed.
- B. after immunization they should be advised to apply firm pressure to the injection site for 5 to 10 minutes.
- C. advising the client or family of the risk of hematoma associated with IM injection.
- D. All of the above.

Quiz

6. What does AEFI stand for?

- A. Always Elevate Feet for Immunization
- B. Adverse Event Following Immunization
- C. Assess Evaluate Formulate Investigate
- D. None of the above

Quiz

7. In general, any serious (defined as resulting in hospitalization, permanent disability or death) or unexpected adverse event that is temporally related to vaccination should be reported to RCDHU.

- A. True
- B. False

Quiz

8. In anaphylaxis, changes develop over several minutes and usually involve only one body system.

- A. True
- B. False

Quiz

9. The following symptoms are common in anaphylaxis:
- A. Respiratory symptoms (sneezing, coughing, wheezing, laboured breathing)
 - B. Gastrointestinal (nausea, vomiting and diarrhea)
 - C. Hypotension (later onset)
 - D. Angioedema (progressive, painless swelling of face and mouth, may be preceded by itchiness, tearing, nasal congestion or facial flushing)
 - E. Itchy, urticarial rash (in over 90% of cases)
 - F. All of the above

Quiz

10. During the management of an anaphylactic reaction, you should always give Benedryl® first, followed by epinephrine if there is no improvement.

- A. True
- B. False