

CHAPTER EIGHT: EMERGENCY PREPAREDNESS

Practical Application: Book Activity

Practical Application

Setting the Scene

Glanders is a disease that usually affects livestock and farm animals and household pets, including

- horses, donkeys, and mules
- goats
- dogs
- cats
- rabbits
- guinea pigs
- hamsters

Of note, cattle, swine, and chickens appear to be resistant to glanders. While the disease still occurs in certain parts of the world, no animal in the United States has gotten sick with glanders since the 1940s. As such, it is extremely unlikely that pets or livestock in the United States will get the disease naturally.

Though not common, people have contracted glanders from sick animals. It can be a serious illness and most people sick with glanders need to be hospitalized for treatment. As many as 9 of every 10 people who contract the disease die if they do not receive specific antibiotics, while up to 5 of 10 people die with the correct antibiotics. Even after they are well enough to go home, people who have had glanders need to take antibiotics for several months to ensure the germs are eradicated in the body and prevent the disease from coming back.

It can also be difficult to diagnose glanders quickly as its symptoms are the same as more common diseases like community-acquired pneumonia, the flu, or tuberculosis. In the entire world, only a few people are diagnosed with glanders each year. Because glanders in humans is so rare, most doctors are unfamiliar with the disease.

The germs that cause glanders, the bacteria *Burkholderia mallei*, have previously been used as a biological weapon during war and there remains a possibility that they may again be used for a similar purpose. The germs that cause glanders are prime candidates for bioterrorism because of the combined severity and rarity of the disease.

A bioterrorism attack that releases glanders germs into the air, water, or food supply might put many people at risk of getting sick. For example, if the germs that cause glanders were released into the air in a crowded place, many people might inhale them. Or, if the germs were put into food, people who eat the contaminated food would eat the germs, too. Anyone who comes into contact with these germs are in danger of getting sick with glanders. Discovering that an attack occurred may be delayed because people cannot see, smell, or taste the germs. Instead, an occurrence will likely not be identified until doctors begin to see many people sick with fevers and respiratory illnesses. Once doctors diagnose patients with glanders, they will work with public health authorities to find out how the patients came into contact with the glanders germs.

Public health authorities study glanders and many others to be prepared if a bioterrorism attack ever occurs. They develop bioterrorism response plans, which are extremely valuable and key to protection against bioterrorist attacks. (CDC, 2017).

Think About It

Nurses' roles in public health emergencies vary depending upon their area of focus. Select a public/community health role from the following:

- Nurse at a public health department
- Nurse at a hospital internal medicine department
- School nurse at a middle school
- Home visiting nurse at Nurse Family Partnership (focus on families with children under 5).

Answer the questions below and then discuss your responses with classmates who have selected the same and different roles.

1. What category of agents of bioterrorism is Glanders?
2. What is your role in preparing for a disaster like Glanders in the community? In the workplace?

3. What steps would you take if you suspect a patient has Glanders or another disease which may be used in a bioterrorism attack?
4. What is your role in each step of the disaster management cycle for outbreaks such as the one described in the case study?
5. How willing are you to respond during an outbreak when there are unknown levels of risk?

Practical Application: Additional Guidance

Exercise Title

Glanders Awareness and Bioterrorism Preparedness Application Practice

Objectives

- **Understanding Glanders:**
 - Familiarize nursing students with the disease, its rarity, and potential bioterrorism implications.
 - Highlight the role of nurses in public health emergencies.
- **Preparedness and Response:**
 - Equip students with knowledge and skills to respond effectively to Glanders outbreaks.
 - Emphasize collaboration with public health authorities.

Preparing for the Exercise

- **Review the Glanders Information:**
 - Provide background on glanders, its historical context, and current status.
 - Discuss the severity, transmission, and diagnostic challenges.
- **Bioterrorism Awareness:**
 - Introduce the concept of bioterrorism and its relevance to glanders.
 - Explain the potential impact of glanders release into the community.

Exercise Components

1. Discussion (30 minutes):

- a. Divide students into groups based on their chosen nursing roles (public health department, hospital, school, home visiting).
 - b. Discuss the following questions:
 - i. What category of agents of bioterrorism does Glanders belong to?
 - ii. How can nurses prepare for a glanders outbreak in the community and workplace?
 - iii. What initial steps should be taken if a patient is suspected to have Glanders or another potential bioterrorism-related disease?
2. Disaster Management Cycle (45 minutes):
- a. Explore each step in the cycle (mitigation, preparedness, response, recovery).
 - b. Discuss the nurse's role during each phase:
 - i. **Mitigation:** Educate the community about glanders risks.
 - ii. **Preparedness:** Develop response plans, train healthcare staff, and stockpile necessary supplies.
 - iii. **Response:** Identify cases, isolate patients, and collaborate with public health authorities.
 - iv. **Recovery:** Support affected individuals and assess lessons learned.
3. Risk Perception (20 minutes):
- a. Engage students in a scenario-based discussion:
 - i. How willing are you to respond during an outbreak with unknown risk levels?
 - ii. Explore personal and professional considerations.

Evaluation and Assessment

- Assess group discussions, understanding of glanders, and application of disaster management principles.
- Evaluate risk perception and willingness to participate in emergency response.

Integration into Curriculum

- **Alignment with Course Objectives:** Integrate glanders awareness into Community Health courses while discussing epidemiology or disaster nursing.
- **Sequencing:** Determine the appropriate timing and sequencing of the exercise within the course curriculum to complement other content and activities.
- **Integration of Theory and Practice:**
 - Include case studies and simulations related to bioterrorism preparedness.

Resources and Support

- **Learning Resources:** Provide students with access to relevant literature, articles, and resources on

epidemiology or disaster nursing, including:

- Refer to CDC guidelines on glanders and bioterrorism response.
 - [CDC | Preparation and Planning for Bioterrorism Emergencies](#)
- Collaborate with local health departments and emergency management agencies like the Medical Reserve Corps.
 - [MRC | Home \(hhs.gov\)](#)
- **Faculty Support:** Offer guidance, feedback, and support to students as they engage in the exercise, addressing any questions or concerns they may have about the scenario or related topics.

Conclusion

Nurses play a critical role in preventing, detecting, and responding to glanders outbreaks. By understanding the disease and participating in preparedness efforts, nurses contribute to community safety and resilience. Feel free to adapt this guide to your teaching context and tailor it to your students' needs.

Additional Activities

Role-playing/Communication Exercise

Scenario Title

Focusing on Emergency Preparedness

Objective

To enhance nursing students' communication skills in emergency preparedness scenarios. It focuses on clear, effective communication, teamwork, and the ability to provide accurate information during emergencies.

Roles

- Nurse (primary role)

- Patient (role-played by a student)
- Family Member (role-played by a student)
- Team Leader (role-played by a student)
- Observer

Materials Needed

- Role-play scenario cards
- Notepads and pens
- Emergency response plan (simulated)
- Communication guidelines for emergencies
- Feedback forms

Scenario Setting

A simulated hospital unit, community health center, or emergency response setting.

Communication Activity

1. Pre-Exercise Briefing
 - a. Objective: Orient participants to the exercise, provide background on emergency preparedness and assign roles.
 - b. Background on Emergency Preparedness:
 - i. Types of emergencies (e.g., natural disasters, mass casualty incidents, pandemics).
 - ii. Importance of effective communication during emergencies.
 - iii. Overview of emergency response plans and protocols.
 - c. Role Assignment:
 - i. Assign participants to roles such as Nurse, Patient, Family Member, Team Leader, and Observer.
 - ii. Discuss the objectives of the exercise and the key communication skills to be practiced.
2. Role-Play Scenarios

- a. Objective: Practice communication skills in a simulated environment focusing on emergency preparedness.
- b. Scenario Cards:
 - i. Develop scenario cards with different types of emergency situations. Examples include:
 - ii. A natural disaster (e.g., earthquake) causing multiple injuries.
 - iii. A mass casualty incident (e.g., large-scale traffic accident).
 - iv. An outbreak of an infectious disease requiring quarantine measures.
- c. Role-Playing:
 - i. Nurse: Communicate effectively with patients, family members, and the healthcare team during the emergency.
 - ii. Patient: Portray symptoms and responses realistically based on the scenario card.
 - iii. Family Member: Express concerns and seek information about the patient's condition and safety.
 - iv. Team Leader: Coordinate the emergency response and ensure all team members are informed and supported.
 - v. Observer: Take notes on the interactions, communication strategies, and actions of the participants.
- d. Conducting the Role-Play
 - i. Initial Communication:
 - A. Nurse assesses the situation, provides initial information to the patient and family member, and reassures them.
 - B. Uses clear and concise language to explain the emergency situation and the steps being taken.
 - ii. Team Communication:
 - A. Nurse communicates with the Team Leader and other healthcare team members, providing updates on patient status and needs.
 - B. Ensures all team members are aware of the emergency response plan and their roles.

iii. Patient and Family Communication:

- A. Nurse keeps the patient and family member informed about the ongoing situation, addressing their concerns and questions.
- B. Provides instructions on safety measures and what to expect next.

iv. Documentation and Reporting:

- A. Nurse documents the emergency situation, communication exchanges, and actions taken.
- B. Reports critical information to the Team Leader and updates the emergency response plan as needed.

Debriefing and Feedback

After the role-play, conduct a debriefing session where each participant reflects on their experience, provides feedback, and discusses lessons learned.

- Observer: Provide constructive feedback on communication skills, clarity, and effectiveness demonstrated during the exercise.
- Participants: Reflect on their roles and actions, identifying effective communication strategies and areas for improvement.
- Discuss the emotional and logistical challenges of communicating during emergencies.

Discussion Points:

- Importance of clear, concise, and consistent communication during emergencies.
- Strategies for managing stress and maintaining professionalism in high-pressure situations.
- Role of teamwork and collaboration in effective emergency response.

Reflective Practice

This activity could occur on a discussion board or by uploading a video using Flip or Canvas Studio.

- How well do I understand the impact of climate change on public health, and what steps can I take to further educate myself on this issue?
- In what ways can I integrate environmentally sustainable practices into my daily nursing care to reduce the carbon footprint of healthcare delivery?
- How can I effectively educate my patients and their families about the health impacts of climate change and ways to mitigate these effects?

Interactive Module

Create an interactive escape room using Google Forms that challenges students to solve puzzles related to the chapter topic. These NCLEX-style questions can be a starting point.

1. A nurse is working in a hospital that has just received a large influx of patients following a natural disaster. Which of the following is the nurse's priority action?
 - A. Contact family members of the patients to inform them of their status.
 - B. Coordinate with local media to provide updates about the disaster.
 - C. Conduct a detailed medical history for each patient.
 - D. Triage patients based on the severity of their injuries.
2. During an emergency drill at the hospital, the nurse is assigned to evacuate patients from the ICU. Which of the following patients should the nurse prioritize for evacuation?
 - A. A stable patient who is scheduled for discharge the next day.
 - B. A patient on mechanical ventilation.
 - C. A patient who is receiving routine IV antibiotics.
 - D. A patient with a mild fever and no other complications.
3. A nurse is developing an emergency preparedness plan for a community health clinic. Which of the following elements is essential to include in the plan?
 - A. A list of all clinic staff members' home addresses.

- B. Procedures for protecting patient records and data.
 - C. Detailed biographies of the clinic's board members.
 - D. A financial budget for the next fiscal year.
4. A nurse is part of a team conducting a training session on emergency preparedness for a local community. Which of the following topics should the nurse emphasize as most important for immediate community response to a disaster?
- A. Creating and practicing a family emergency plan.
 - B. Identifying local political representatives.
 - C. Attending annual community social events.
 - D. Reading local historical disaster accounts.
5. During a hospital-wide emergency preparedness drill, a nurse discovers that the evacuation route is blocked. What should be the nurse's immediate action?
- A. Inform the hospital administration after the drill is completed.
 - B. Attempt to remove the blockage from the evacuation route.
 - C. Use an alternative evacuation route and report the blockage to the incident commander.
 - D. Ignore the blockage and continue with the drill as planned.

Case Study: Response to a Suspected Bioterrorism Incident: Anthrax Exposure at a Community Event

Background

A community health fair was held in a large metropolitan area, attended by several thousand people. Three days after the event, local hospitals began reporting an unusual number of patients presenting with flu-like symptoms, skin lesions, and respiratory distress. Public health officials suspect a bioterrorism attack involving anthrax.

Objectives

- To understand the role of nurses in identifying and responding to bioterrorism.
- To apply knowledge of bioterrorism agents and emergency response protocols.
- To explore the importance of interagency collaboration during a bioterrorism incident.
- To highlight the ethical and legal considerations in managing a bioterrorism event.

Scenario

1. Day 1: Initial Presentation

- a. Patient Demographics: Diverse group including men, women, and children of various ages.
- b. Symptoms: Patients are presenting with high fever, malaise, cough, shortness of breath, and in some cases, vesicular skin lesions.
- c. Initial Actions: Triage nurses at local hospitals are overwhelmed by the volume of patients. Nurses must prioritize care based on the severity of symptoms.
- d. Key Nursing Actions:
 - i. Triage and Initial Assessment: Assess the severity of each patient's symptoms, prioritize treatment, and initiate isolation protocols to prevent the spread of the suspected agent.
 - ii. History Taking: Collect detailed patient histories to identify common factors, such as attendance at the community health fair.
- e. Questions:
 - i. What are the key signs and symptoms of anthrax exposure that nurses should look for?
 - ii. How should nurses prioritize patients for treatment during this initial surge?

2. Day 2: Confirmation of Bioterrorism

- a. Laboratory Results: Public health laboratories confirm the presence of *Bacillus anthracis* (anthrax) in several patients.
- b. Public Health Response: The local health department issues a public health alert and begins coordinating with hospitals, emergency services, and federal agencies.
- c. Key Nursing Actions:

- i. Notification: Nurses must follow protocols to report suspected cases to public health authorities.
 - ii. Education: Provide accurate information to patients and the public about anthrax, its transmission, and treatment.
 - d. Questions:
 - i. What are the steps for reporting a suspected bioterrorism event to public health authorities?
 - ii. How can nurses effectively educate patients and the public during a bioterrorism event?
- 3. Day 3: Coordinated Response
 - a. Incident Command System (ICS): Hospitals activate their emergency operations plans and establish an incident command system.
 - b. Collaboration: Nurses collaborate with other healthcare professionals, law enforcement, and public health officials.
 - c. Key Nursing Actions:
 - i. Care Coordination: Work with interdisciplinary teams to manage patient care, including the administration of antibiotics and supportive treatments.
 - ii. Communication: Maintain clear and consistent communication with all stakeholders, including patients, families, and the media.
 - d. Questions:
 - i. What is the role of the incident command system in managing a bioterrorism event?
 - ii. How can nurses ensure effective communication and coordination during such a large-scale public health emergency?
- 4. Day 4: Ongoing Management and Follow-Up
 - a. Patient Care: Continued treatment and monitoring of affected patients.
 - b. Psychosocial Support: Address the psychological impact on patients, families, and healthcare providers.
 - c. Key Nursing Actions:
 - i. Treatment: Administer appropriate antibiotics (e.g., ciprofloxacin, doxycycline)

and monitor for adverse reactions.

- ii. Support: Provide emotional support and mental health resources to patients and healthcare workers.

d. Questions:

- i. What are the recommended treatments for anthrax exposure?
- ii. How can nurses support the mental health of patients and healthcare workers during and after a bioterrorism event?

5. Resolution:

- a. The coordinated response by healthcare professionals, public health authorities, and emergency services successfully manages the bioterrorism incident. The source of the anthrax is identified and neutralized, and patients receive appropriate treatment and support.

Questions for Reflection and Analysis

- What were the most significant challenges faced by nurses during this bioterrorism incident, and how were they addressed?
- How did interagency collaboration contribute to the effective management of the bioterrorism event?
- What lessons were learned about emergency preparedness and response that can be applied to future incidents?

Simulation

Scenario

Response to a Hurricane Disaster in a Coastal Community

Objective

To prepare nursing students to respond effectively to a hurricane disaster. Students will develop skills in emergency triage, patient care, communication, evacuation procedures, and interagency collaboration.

Setting

A large urban hospital and an emergency shelter were set up in a school gymnasium during and after a hurricane.

Roles

- Nurse (primary role)
- Patient
- Family Member
- Emergency Shelter Coordinator
- Public Health Official
- Hospital Administrator
- Observer

Materials Needed

- Role-play scenario cards
- Personal protective equipment (PPE)
- Simulated medical records and patient charts
- Emergency response plan documents
- Communication guidelines
- Evacuation equipment (wheelchairs, stretchers)
- Feedback forms

Simulation Outline

1. Pre-Simulation Briefing
 - a. Objective: Orient participants to the simulation, provide background on hurricane

preparedness, and assign roles.

b. Background on Hurricane Preparedness:

- i. Description of hurricane characteristics, potential impacts on health, and common injuries or illnesses associated with hurricanes.
- ii. Overview of emergency response plans, including triage, evacuation, and interagency coordination.

c. Roles Assignment:

- i. Assign participants to roles such as Nurse, Patient, Family Member, Emergency Shelter Coordinator, Public Health Official, Hospital Administrator, and Observer.
- ii. Discuss the objectives of the simulation and the key skills to be practiced, including triage, patient care, communication, and coordination.

2. Day 1: Hurricane Landfall and Initial Response

a. The hurricane makes landfall, causing widespread damage, flooding, and power outages. The hospital and emergency shelter begin to receive an influx of patients with various injuries and medical conditions.

b. Key Nursing Actions:

- i. Triage and Initial Assessment: Assess patients arriving at the hospital and emergency shelter, prioritize care based on the severity of injuries, and initiate appropriate treatments.
- ii. Infection Control: Implement infection control measures to prevent the spread of diseases in the crowded shelter environment.

c. Questions:

- i. What are the key priorities for triage and initial assessment during a hurricane disaster?
- ii. What infection control measures should nurses implement in an emergency shelter?

3. Day 2: Evacuation and Continued Care

a. Due to rising floodwaters and structural damage, parts of the hospital need to be evacuated. Patients must be safely transported to the emergency shelter or other facilities.

b. Key Nursing Actions:

- i. Evacuation Procedures: Coordinate the safe evacuation of patients, ensuring that critical medical equipment and medications are transported with them.
- ii. Continued Care: Provide ongoing care to evacuated patients in the emergency shelter, managing both chronic conditions and acute injuries.

c. Questions:

- i. What are the essential steps for safely evacuating patients from a healthcare facility during a disaster?
- ii. How can nurses ensure continuity of care for patients with chronic conditions in an emergency shelter?

4. Day 3: Coordination and Communication

- a. As the immediate crisis begins to stabilize, nurses must coordinate with public health officials, emergency shelter coordinators, and other agencies to manage ongoing care and resources.

b. Key Nursing Actions:

- i. Communication: Maintain clear and consistent communication with all stakeholders, including patients, families, healthcare team members, and public health authorities.
- ii. Resource Management: Identify and address resource shortages, such as medications, medical supplies, and staff.

c. Questions:

- i. How can nurses ensure effective communication with multiple stakeholders during a disaster response?
- ii. What strategies can be used to manage and allocate limited resources in an emergency setting?

5. Day 4 and beyond: Recovery and Follow-Up

- a. The hurricane has passed, and efforts shift to recovery and rebuilding. Nurses must support patients and the community in the aftermath, addressing both physical and psychological needs.

b. Key Nursing Actions:

- i. Post-Disaster Care: Provide follow-up care for injuries and illnesses sustained during the hurricane, as well as support for mental health issues such as trauma and stress.
 - ii. Community Outreach: Participate in community outreach programs to educate residents about health and safety measures during the recovery phase.
- c. Questions:
- i. What are the key components of post-disaster care that nurses should focus on?
 - ii. How can nurses contribute to community recovery and resilience following a hurricane?

Debriefing and Feedback

After the simulation, conduct a debriefing session where each participant reflects on their experience, provides feedback, and discusses lessons learned.

Feedback Session:

- Observer: Provide constructive feedback on the participants' actions, communication, and adherence to protocols.
- Participants: Reflect on their roles, discussing what went well and what could be improved.

Discussion Points:

- Importance of rapid triage and evacuation during a hurricane.
- Effective communication and coordination among healthcare providers and agencies.
- Challenges and solutions in providing care in a disaster setting.
- Addressing the psychological impact of disasters on patients and healthcare providers.

Competency Assessment

Demonstration

- Demonstrate proper use of PPE to ensure safety and infection control during emergencies.
- Demonstrate appropriate triage techniques to prioritize patient care effectively in emergencies.
- Participate in hospital—or community-based emergency drills to practice triage, patient care, and resource coordination during emergencies.

Clinical Activities/Opportunities

1. **Health Education:** Participate in public health campaigns to educate community members about emergency preparedness, disaster response plans, and preventive measures.
2. **Community Assessments:** Complete assessments of community vulnerabilities, disaster preparedness plans, and resources available for response and recovery.
3. **Clinical Placements:** Mobile Health Units and Emergency Command Centers.