

EHRT Case Study: Bacterial Meningitis

Lesson Plan: In-person or Online (Activities for Theory or Clinical Replacement)

TIME TO COMPLETE: 16 HOURS

NOTES

Materials

EHR Tutor

- Patient Chart: Keegan Mitchell
- Activity: Case Study: Meningitis

CMS Review Module: Fundamentals for Nursing

- Chapter 11: Infection Control
- Chapter 56 Bacterial, Viral, Fungal, and Parasitic Infections

CMS Review Module: Community Health

- Chapter 3: Epidemiology and Communicable Diseases

CMS Review Module: Adult Medical Surgical Nursing

- Chapter 3: Neurologic Diagnostic Procedures
- Chapter 5: Meningitis
- Chapter 84: Immune and Infectious Disorders Diagnostic Procedures
- Chapter 85: Immunizations

CMS Review Module:

Pharmacology for Nursing

- Chapter 36: Opioid Agonists and Antagonists
- Chapter 37: Adjuvant Medication for Pain
- Chapter 43: Principles of Antimicrobial Therapy
- Chapter 44: Antibiotics Affecting the Cell Wall

Health Assess Tutorial

- Head, Neck, and Neurological

Active Learning Template

- System Disorder
- Medication
- Nursing Skill
- Therapeutic Procedure
- Nursing Skill

Objectives

After completion of the lesson, the student will be able to:

- Identify relevant subjective and objective client data related to Bacterial Meningitis.
- Identify appropriate priority nursing actions for a client with Bacterial Meningitis (or suspected communicable disease).
- Document an individualized plan of care for a client with Bacterial Meningitis.
- Identify appropriate PPE when caring for a client on droplet or airborne precautions.
- Complete accurate and effective SBAR communication.
- Document a teaching plan for a client with Bacterial Meningitis.
- Analyze lab results in the electronic health record for manifestation of severe illness.

Lesson Overview

This lesson focuses on an 18 year-old male college student with bacterial meningitis. It addresses client-centered care including vital sign assessment, and neuro assessment findings. Nursing-focused activities include documenting an individualized plan of care, prioritizing nursing actions, medication administration, and SBAR communication.

Instructional Component

NOTE TO INSTRUCTORS: This learning experience requires faculty to be actively engaged with all aspects of the virtual learning experience. The following activities are recommended to be completed in online groups; however, they can be adapted for completion by large groups, small groups, or individual students. The discussion questions can be used in the classroom, discussion boards, or during a synchronous video conference.

FACULTY PREPARATION

Faculty should review the lesson plan and become familiar with the recommended resources prior to assigning to students:

1. Read through the EHR Tutor chart for Keegan Mitchell within the *Case Study: Meningitis* activity.
2. Read the Fundamentals Review Module: Chapter 11: Infection Control
3. Read the Fundamentals Review Module: Chapter 56 Bacterial, Viral, Fungal, and Parasitic Infections
4. Read the Community Health Review Module: Chapter 3: Epidemiology and Communicable Diseases
5. Read the RN Adult Medical Surgical Nursing Review Module: Chapter 3: Neurologic Diagnostic Procedures
6. Read the RN Adult Medical Surgical Nursing Review Module: Chapter 5: Meningitis
7. Read the RN Adult Medical Surgical Nursing Review Module: Chapter 84: Immune and Infectious Disorders
8. Read the RN Adult Medical Surgical Nursing Review Module: Chapter 85: Immunizations
9. Read the Pharmacology for Nursing Review Module: Chapter 36: Opioid Agonists and Antagonists
10. Read the Pharmacology for Nursing Review Module: Chapter 37: Adjuvant Medication for Pain
11. Read the Pharmacology for Nursing Review Module: Chapter 43: Principles of Antimicrobial Therapy
12. Read the Pharmacology for Nursing Review Module: Chapter 44: Antibiotics Affecting the Bacterial Cell Wall

Instructional Component (continued)**STUDENT ACTIVITIES**

1. Instruct students to complete the following activities prior to the scheduled class / online/clinical session.
 - EHR Tutor
 - Read through the EHR Tutor chart for Keegan Mitchell
 - CMS Review Module: Fundamentals of Nursing
 - Read Chapter 11: Infection Control
 - Read Chapter 56 Bacterial, Viral, Fungal, and Parasitic Infections
 - CMS Review Module: Community Health
 - Read Chapter 3: Epidemiology and Communicable Diseases
 - CMS Review Module: Pharmacology for Nursing:
 - Read Chapter 36: Opioid Agonists and Antagonists
 - Read Chapter 37: Adjuvant Medications for Pain
 - Read Chapter 43: Principles of Antimicrobial Therapy
 - Read Chapter 44: Antibiotics Affecting the Bacterial Cell Wall
 - CMS Review Module: Adult Medical Surgical Nursing
 - Read Chapter 3: Neurologic Diagnostic Procedures
 - Read Chapter 5: Meningitis
 - Read Chapter 84: Immune and Infectious Disorders Diagnostic Procedures
 - Read Chapter 85: Immunizations

TIME

7.5 hours

DELIVERABLES

Active Learning Templates
Health Assess Report

Instructional Component (continued)

2. Instruct students to complete the following Active Learning Templates (ALTs) prior to the scheduled class/online/clinical session (completion of the ALTs could also be done with a peer or in a small group).
 - Diagnostic Procedure: Laboratory tests:
 - CBC
 - CMP
 - CSF Analysis with gram stain culture and RDT
 - Diagnostic Procedure:
 - MRI of the brain
 - Lumbar puncture for CSF analysis
 - Medication:
 - ceftriaxone
 - erythromycin
 - albuterol
 - methylprednisolone
 - propofol
 - Nursing Skill:
 - Neuro assessment
 - Infection Control
 - IV Start
 - System Disorder:
 - Bacterial Meningitis
 - Basic Concept:
 - Levels of communicable disease prevention
 - Links in the chain of infection
3. Instruct students to view the HealthAssess Head, Neck, and Neurological Module. Students should download the completion report. This report will be used as a ticket to class.

Instructional Component (continued)**STUDENT ACTIVITIES** (CONTINUED)**SMALL GROUP ACTIVITIES**

These activities should be completed during the scheduled class/clinical/lab/simulation session. Divide students into small groups and have them complete the following exercises in their groups. The instructor should then bring the students together as a large group to discuss answers.

4. Divide students into small groups (2-4 students) and instruct them to read through the entire EHR Tutor for Bacterial Meningitis. Have the students write out answers for the questions listed below. Next guide the students through a discussion of their answers.
 - a. Identify relevant subjective/objective assessment findings (Assessment/Recognize Cues)
 - b. Upon admission to the ED what assessment findings are of immediate concern? (Analysis/Analyze Cues)
 - c. When the client is on the Medical-Surgical unit what assessment findings prompted the need to transfer the client to the ICU? (Analysis/Analyze Cues)
 - d. Prioritize client problems based on analysis of assessment findings on admission to the ED (Planning/Prioritize Hypotheses)
 - e. Identify the desired client outcomes related to the priority client problems. (Planning/Generate Solutions)
 - f. What nursing actions should be taken to address the client priority problems to achieve the desired outcome? (Planning/Generate Solutions).
 - g. Describe the responses for which the client should be monitored related to the identified nursing actions. (Planning/Generate Solutions)
 - h. Identify age-related considerations that are necessary when providing care for this client. (Planning/Generate Solutions).
 - i. Identify the interprofessional team members and discuss each member's role in caring for the client. (Implementation/Take Actions)
 - j. Explore social considerations that should be included in a plan of care for the client (Implementation/Take Actions)
 - k. Outline client education that should be provided to the client. (Implementation/Take Actions)
 - l. Identify assessment findings that would indicate the plan of care successfully helped the client achieve the desired outcomes. (Evaluation/Evaluate Outcomes).

TIME

4 hours (allow approximately 10 minutes per question for groups to develop answers and 10 minutes per question for larger group discussion.)

DELIVERABLES

Small group written responses to each question.

*Instructional Component (continued)***STUDENT ACTIVITIES (CONTINUED)**

5. Using the completed Active Learning Templates, develop and document a plan of care for the client in the client's EHR. Students should be sure to address priority client problems and evidence-based nursing interventions based on the client's assessment findings. References should be provided for evidence-based interventions. The plan of care should address indicators to evaluate that the plan of care successfully helped the client to achieve the desired outcomes.
6. Students should develop a teaching plan for the client in the EHR. The teaching plan should include:
 - Pathophysiology of Bacterial Meningitis
 - How to prevent the spread of a communicable disease.
 - Isolation guidelines
 - Medications: ceftriaxone, erythromycin, methylprednisolone, and propofol. Including:
 - Actions, side/adverse effects, administration, and contraindications/precautions
 - Signs of an allergic response
 - Significance of VS monitoring
 - Significance of monitoring laboratory values
 - Necessary assessments to monitor the client's health condition
7. Develop a SBAR hand-off report to give to the PCU nurse.
8. In the large group, have students practice neuro assessments on one another.
 - Document neuro assessment in the EMR

TIME

2.5 hours

DELIVERABLES

Care plan documented in EHR Tutor

Teaching Plan documented in EHR Tutor

SBAR Report documented in EHR Tutor

Neuro Assessment documented in EHR Tutor

Instructional Component (continued)

REFLECTION

Complete the questions below as assigned by instructor. The post-class independent assignment questions should be completed individually by the students and submitted to the instructor. Each answer should display insight and answered in complete sentences.

TIME
2 hour

DELIVERABLES
Reflection Question Responses

1. Were there any ethical issues that you uncovered when reviewing the client’s case? If so, please explain.
2. Compare and contrast Bacterial Meningitis with Viral Meningitis. How would the nursing interventions differ between the two types of Meningitis? Provide cited rationales for your response.
3. Provide a rationale for why ceftriaxone is to be administered after obtaining blood and CSF specimens?
4. Describe how primary, secondary, and tertiary prevention affects the spread of communicable disease. Give 2 examples of activities for each type of prevention.
5. Describe the links of the chain of infection. Could this client have prevented acquiring bacterial meningitis?
6. What challenges did you face in completing this lesson?
7. Are there additional questions you have after completing this lesson?
8. Which of your strengths did you draw on today?

Evaluation

ACTIVITY

CRITERIA

EHR TUTOR BACTERIAL MENINGITIS LESSON

Completed Active Learning Templates

EHR TUTOR STUDENT ACTIVITIES

Submit to instructor for grading

HEALTHASSESS

Download and Submit Report to Instructor

INDEPENDENT ASSIGNMENT SUBMIT TO INSTRUCTOR

Independent Assignment Responses Completed (displays insight and of acceptable length)