

NOSOCOMIAL ANTIBIOTIC RESISTANT ORGANISMS

OBJECTIVE/RATIONALE

Vancomycin resistant enterococcus and Methicillin resistant Staphylococcus aureus are dangerous nosocomial infections that may occur in health-care facilities today. The student will learn to protect themselves and their clients from Vancomycin resistant enterococcus and Methicillin resistant Staphylococcus aureus.

TEKS: 121.14 1A, 1B, 1C, 2B, 2C, 5A, 5C, 5D, 5E

TAKS ELA 1, 4, 6

Science 1, 4

National Science Education Standards A9-12; C9-12; E9-12; F9-12; G9-12

National Health Care Skills Standards .01, .02, .03, .05, .06, .07, .08, .09

National Curriculum Standards for School Mathematics S1; S3

KEY POINTS

Nosocomial Antibiotic Resistant Organisms PowerPoint Presentation

MRSA

- A. MRSA - Methicillin resistant Staphylococcus aureus
 - 1. Resistant to most antibiotics
 - 2. Found in health care facilities
 - a. hospitals
 - b. long term care facilities
 - c. other care facilities
 - 3. Not a threat to a healthy individual
- B. MRSA concerns
 - 1. MRSA is difficult to contain
 - 2. MRSA is easily spread
- C. MRSA risk factors
 - 1. Surgery
 - 2. devices used in invasive procedures
 - 3. burn wards or intensive care units (ICU)
 - 4. age
 - 5. Treatment with multiple antibiotics
 - 6. Severe illness or disability
 - 7. Prolonged or repeated hospital stays
 - 8. compromised immune system
- D. MRSA transmission
 - 1. direct contact between health-care workers and clients.
 - 2. Health-care workers are the main carriers of MRSA
 - a. Colonized vs. infected persons
 - 3. MRSA is not usually spread through the air

- E. Identifying MRSA infection
 - 1. Symptoms:
 - a. Drainage from a wound
 - b. Fever and chills
 - c. Elevated white blood count
 - 2. Common sites of infection
 - a. Respiratory tract
 - b. Surgical wounds
 - c. Perineum or rectum
 - d. Skin
- F. MRSA prevention
 - 1. Proper hand-washing – **link to handwashing activity**
 - a. Before caring for each client
 - b. After removing gloves
 - c. Before leaving the client's room
 - 2. Follow facility protocol for standard precautions

VRE

- A. VRE - Vancomycin resistant enterococcus
- B. VRE concerns
 - 1. VRE is hard to treat
 - 2. VRE can pass on their drug-resistant genes
- C. VRE risk factors
 - 1. Severe illness
 - 2. Treatment with multiple antibiotics
 - 3. Abdominal or cardiac surgery
 - 4. Devices used in invasive procedures
 - 5. Age
 - 6. Intensive care unit (ICU)
 - 7. Prolonged or repeated hospital stays
 - 8. Compromised immune system
- D. Pathogenesis of VRE
 - 1. Opportunistic
 - 2. Bacteria transmitted between clients and health-care workers
 - a. Colonized vs. infected persons
- E. Signs of infection
 - 1. Drainage from a wound
 - 2. Fever and chills
 - 3. Elevated white blood count
- F. Role of health care workers in prevention of VRE
 - 1. Hand-washing helps stop the spread of VRE
 - a. Wash before caring for a patient
 - b. After removing gloves
 - c. Before leaving the patient's room
 - 2. Follow facility protocol for standard precautions

ACTIVITIES

- I. Complete the **Test Your Knowledge Quizzes**.
- II. Choose a local hospital or long-term care facility and interview an infection control professional on the statistics of VRE and/or MRSA in their facility. Report findings. **Interview Questions**.
- III. Research and report in cooperative groups on an MSRA or VRE case study. Present findings using a multimedia presentation.

MATERIALS

Nosocomial Antibiotic Resistant Organisms PowerPoint

“Test Your Knowledge” Quizzes

ASSESSMENT

Successful completion of Quizzes

Multimedia Presentation Rubric

ACCOMODATIONS

For reinforcement, the student will design a chart of standard precautions for MSRA and VRE.

For enrichment, the student will choose either MRSA or VRE and investigate through the CDC the latest statistics on the antibiotic resistant organisms and their economic impact.

REFLECTIONS

Interview Questions

MRSA

1. Are MRSA clients isolated?
2. How is MRSA infection treated?
3. Is MRSA more contagious than other species of staph?
4. Should health-care workers be screened for MRSA?
5. Can a carrier of MRSA continue working?
6. Can nursing facilities refuse clients because they have MRSA?

VRE

1. Are VRE patients isolated?
2. Should patients from high-risk hospitals be screened for VRE?
3. Are there special precautions for moving VRE clients to other facilities?
4. Should all health-care workers be screened for VRE?
5. Can a carrier of VRE continue working?
6. Can nursing facilities refuse clients because they have VRE?

**MEDICAL MICROBIOLOGY
MRSA QUIZ**

NAME:
CLASS:

DATE:

Please answer the following true or false questions.

1. MRSA infects anyone who comes in contact with it. T or F
2. MRSA infection can be hard to stamp out once it's established in a facility. T or F
3. Open wounds give MRSA easy entry into the body. T or F
4. Those who are already seriously ill are at higher risk of MRSA infection. T or F
5. Most cases of MRSA infection are the result of patient-to-patient contact. T or F
6. Anyone who is colonized with MRSA will eventually become infected. T or F
7. MRSA is rarely spread through the air. T or F
8. Symptoms of MRSA infection are different than symptoms of other kinds of Staphylococcus infection. T or F
9. Wearing gloves when caring for patients makes hand-washing unnecessary. T or F
10. MRSA is no more contagious than other types of Staphylococcus. T or F

MEDICAL MICROBIOLOGY VRE QUIZ

NAME:
CLASS:

DATE:

Please answer the following true or false questions.

1. VRE infects anyone who comes into contact with it. T or F
2. VRE infection can be hard to stamp out once it's established in a facility. T or F
3. Open wounds give VRE easy entry into the body. T or F
4. Those who are already seriously ill are at higher risk of VRE infection. T or F
5. VRE can only be spread by health-care workers. T or F
6. The hospital microbiology laboratory should immediately report the presence of VRE. T or F
7. Health-care providers should prescribe vancomycin whenever possible. T or F
8. The presence of enterococci in a patient's gastrointestinal tract is a sign of infection. T or F
9. Wearing gloves when caring for patients makes hand-washing unnecessary. T or F
10. Equipment such as thermometers should be disinfected after each use. T or F