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Questions???

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Anita J. Coyle, PhD, RN, CHES is assistant professor at Midwestern State University in Wichita Falls, TX. After receiving a BSN and a MS degree in Community Health Nursing, infectious diseases became a key interest of Dr. Coyle. She went on to earn a PhD in Health Studies from Texas Woman's University following dissertation research that contrasted immunization rates for Denton County with mother's stress and neighborhood factors. Dr. Coyle is a frequent contributor of continuing nursing education activities that are published in the Dallas area.

Educational goal/purpose

The purpose of this educational activity is to provide nurses with information on current trends in the transfer, treatment and prevention of MRSA, in an effort to promote better outcomes for the hospital-based or community-based patients/clients and their families.

Learning Objectives

Upon completion of this activity, the nurse should be able to:

1. Discuss the importance of adherence to infection control and infection prevention procedures.
2. Identify four risk factors associated with the transmission of Methicillin-Resistant Staphylococcus Aureus (MRSA).
3. Explain the need to reduce the use of antimicrobials.
4. Describe three education strategies for the patient or family concerning MRSA colonization or infection.
5. Contrast hospital-acquired MRSA infections with community-acquired MRSA infections.

**Emergence of Infectious Disease
Methicillin-Resistant Staphylococcus Aureus (MRSA)**

by Anita J. Coyle, PhD, RN, CHES

At the beginning of the 20th century, infectious disease was the primary cause of death in the United States. With the introductions of antibiotics for the treatment of infection and vaccines to prevent disease, the public began to believe protection was lasting.

The most effective method for decreasing transmission of infection is hand hygiene.

In fact, despite advances in medical research during the 20th century, infectious diseases remained among the leading causes of death worldwide for three reasons: 1) emergence of new infectious diseases; 2) re-emerging diseases defined as diseases that have reappeared after a significant decline or the re-emergence of old infectious diseases; and 3) persistence of intractable infectious diseases (Siegel et al., 2006).

Antibiotics are no longer the one-step answer to cure. Today there is growing alarm concerning multi-drug-resistant organisms such as Methicillin-Resistant Staphylococcus Aureus (MRSA) (Siegel et al., 2006). The Institute of Medicine emphasized, "The evolution of drug resistance is an inevitable consequence of genetics and natural selection when drugs are used against microbial pathogens" (Institute of Medicine, 2004). To prevent the spread of diseases such as MRSA and prepare for the next evolving disease, the Centers for Disease Control and Prevention (CDC) recommends health care professionals use antimicrobials wisely.

The CDC (2007b) further recommends that health professionals research local data, related current treatment recommendations, and at risk community populations. Prevention guidelines include staying home when you are sick and considering restricting ill visitors from contact with patients.

It has been found that adherence to hand hygiene and isolation protocol is enhanced when facility administration emphasizes the priority of both patient safety and infection control precautions in an effort to promote the health of the facility, patients, and staff (Siegel et al., 2006).

To appreciate the interplay between nurse, work environment, community environment and family, a case study is presented as a framework for this article. The case study involves three nurses at work in acute care. After discussing the risk of infectious

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of disease, the unit staff ask for information from nurse management which is answered in a second case study by the nurse manager and administrative staff who inform the unit of relevant policy and procedure and current trends.

Case Study: Three nurses work together on a medical unit in acute care. At the beginning of a staff meeting, they describe the difficulty that the most recent new graduate nurse is experiencing due to her becoming colonized with MRSA after exposure through changing wet dressings on a patient diagnosed with MRSA in a wound. The mentor to this new grad expressed concern that the new nurse had not followed unit standard procedures for hand hygiene while she was in orientation. The shift supervisor hesitated for a moment and then began to talk about answering an emergency call light in one of the rooms assigned to the new grad. There was no isolation precautions posted for the patient with MRSA in a draining wound. She wondered what her responsibility was to the hospital staff and visitors. What if their subsequent contacts with patients transmitted MRSA?

The third nurse had listened intently while the discussion continued. What does it mean to be MRSA colonized and a nurse? Could I have carried the drug-resistant pathogen home to my family? What do I need to know to be a caring, competent nurse and parent? What can I do to educate all individuals who come into contact with the patient or any surface where the patient could have transmitted pathogens?

Risky Contact

How can we as nurses be at risk for emerging disease such as MRSA? Close, frequent contact places the nurse in direct contact with the MRSA organism. Changes in human demographics, behavior, land use, and population increases are contributing to new disease emergence by changing disease transmission dynamics by bringing people into closer and more frequent contact with pathogens, as well as each other (Lashley, 2006). Hospitals, work sites, schools and community settings have factors that make it easier for MRSA to be transmitted. Crowding, skin-to-skin contact, compromised skin, contaminated items and surfaces, and lack of cleanliness increase the risk of transmission (CDC, 2007a).

Risks of Touching

Infections typically occur when *staph* organisms come in contact with a wound or skin lesion. Contact can be by direct contact or via shared, contaminated items such as towels, personal item, counters, rails, and bars of soap. Athletes who have cuts and scrapes may acquire MRSA in locker rooms or during contact sports. Schools are recommending frequent disinfecting of objects with heavy use such as desks, countertops, drinking fountains, weight lifting machines, basketballs, etc. Even grocery carts are risky. Stores are providing disinfectant wipes for customers to use on cart handles before touching them. A handshake is no longer expected as the risks associated with close contact are known (MRSA in Healthcare Settings, CDC, 2007b).

In answer to the threat of multi-drug resistance organisms such as MRSA, the CDC developed the following prevention strategies.

1. Promptly Investigate	<ul style="list-style-type: none"> • Surveillance and response to promptly investigate and monitor emerging pathogens, the diseases they cause, and the factors influencing their emergence to diagnose effectively. • Consult infectious disease experts. • Use antimicrobials wisely to decrease the evolution of the organism.
2. Research	<ul style="list-style-type: none"> • Research to integrate laboratory science and epidemiology to optimize public health practice. • Encourage vaccination for staff and patients. • Prevention of pressure ulcers and aspiration. • Prompt removal of all unnecessary devices such as tubes and catheters.
3. Build Infrastructures	<ul style="list-style-type: none"> • Strengthen local, state, and federal public health systems infrastructure to support surveillance and implement prevention and control programs. • Administer multidisciplinary efforts to survey and control compliance with infection control.

Table 1: (Siegel, et al., 2006, Department of Health and Human Services, and Centers for Disease Control and Prevention, Safer Healthy People, November 2006).

The Case Study continues as the nurses reflect on the risk of MRSA: “I was noticing that wherever you look, listen or search health news, MRSA is a prime topic. Why?” the shift supervisor asked the group. “How do we know what signs to watch for while at work or home?”

“How do we know who might be infected with MRSA? How can admission

screening be accomplished for MRSA? We are having difficulty discharging patients who have been diagnosed with active or colonized MRSA. What are the criteria for timely discharge? We search for answers for these questions daily. I think we should talk with the infection control nurses about these questions at our next staff meeting.”

The new graduate spoke quietly to the group. “In school we were taught by the book about the risk of not following procedures while performing skills. Does anyone know the policy and procedure for isolation transfer, admission, and discharge? Now that I am working, the more experienced nurses talk about the “shortcuts” that save time. It is difficult to know exactly what to do. I would have posted the isolation signs but I was told it was the clerk’s job.”

In response to the nurses’ concerns about the risk of MRSA, the following information was shared at the next unit staff meeting by the nurse manager, infection control nurse and administrative support staff.

The Prevention of MRSA and Infection Control Plan that was presented in the case study has been based on the resources found in Table 2.

Table 2. Case Study Resources for the MRSA and Infection Control Plan

Resource One	Resource Two
Report in Brief. <i>Treating Infectious Diseases in a Microbial World</i> . February 2007 The National Academies Institute of Medicine. April 2003. This report brief was prepared by the National Research Council based on the committees’ report. For more information, contact the Board on Life Sciences at bls@nas.edu or visit http://nationalacademies.org/bls	Marian Koshland Science Museum of the National Academy of Sciences at 6th & E Streets, NW, Washington, DC. Retrieved on Dec 2, 2007. Web page last updated 2007. <i>Drug Resistant Bacteria Are Emerging: Interactive Exhibit</i> http://koshland-science-museum.org
Resource Three	Resource Four
<i>Workshop. Issues of Resistance: Microbes, Vectors, and the Host</i> . Event Date: February 07, 2002. The summary of this workshop was released in April 2003. Visit the following link http://iom.edu/?id=8620&redirect=0 Methicillin-resistant Staphylococcus aureus (MRSA) Research http://www.cdc.gov/ncidod/aip/research/mrsa.html	Invasive Methicillin-Resistant <i>Staphylococcus aureus</i> infections in the United States. Klevens et al., 2008. Downloaded from CDC-Information Center on October 18, 2007. Published in JAMA October 17, 2007 Vol 298, No. 15. Reprinted on the CDC website with the permission of the American Medical Association from www.jama.com
Resource Five	Resource Six
<i>Management of Multidrug-Resistant Organisms in Healthcare Settings</i> , 2006. Siegel, et al., 2006 Visit the following link for the report. http://www.cdc.gov/ncidod	<i>Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents 2007</i> Siegel et al., 2007 Visit the following link for the full report. http://cdc.gov

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Resource Seven	Resource Eight
Healthcare-Associated Methicillin Resistant <i>Staphylococcus aureus</i> (HA-MRSA) Visit the following link for the report. http://www.cdc.gov/ncidod/dhqp/ar_mrsa.html Community-Associated Methicillin Resistant MRSA. View the following link: http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca.html	From the Centers for Disease Control web site at http://cdc.gov search for MRSA in the upper right hand corner of the page. The results will give you 2730 MRSA resources that are found at the Centers for Disease Control site.
Resource Nine	Resource Ten
DC Features Questions and Answers about <i>Methicillin-Resistant Staphylococcus aureus</i> (MRSA) in Schools. View the following link. http://www.cdc.gov/Features/MRSAinSchools/	NIOSH Update: NIOSH Web MRSA and the Workplace Recommends Ways to Prevent Risks of Infections http://www.cdc.gov/niosh/updates/upd-10-30-07.html

Case Study continued: The infection control nurse and administrator responded to the nurse's questions during the next unit meeting. The text of their presentation is provided in the following paragraphs.

"A quarterly requirement for patient safety in-services for all staff was added as a result of questions regarding MRSA. At the beginning of each monthly unit meeting, all staff who service the unit, housekeeping, dietary, admission, discharge and maintenance staff are expected to attend for a short review of the unit's infection control status and the responsibilities of each staff member. An administration representative will be present at each meeting. Prevention and control is the goal of this monthly multidisciplinary discussion."

Wash Your Hands

"Planning for the campaign titled *Hands Free* is in place. This campaign encourages good hand hygiene by providing alcohol hand gel dispensers in all locations that serve the unit and for the pockets of all staff. Hand hygiene information is also available at every clinical area of the hospital. Isolation information for the patient is written in plain language considering the health literacy needs of our patient population. English and Spanish are the languages used initially. Symbols and pictures showing the steps for standard and contact isolation, as well as all other isolation requirements, are placed outside the isolation room and upon entry to the isolation room. Information sheets for the patient and family are present as well. Checklists used by the nurse that review isolation steps are given to the nursing staff and to the family. The completed checklist is forwarded to the nurse manager. Frequent education and "teach back" methods to evaluate understanding are in place for the patient and family.

Each month, a one-week period is used to observe the behavior of staff and visitors to monitor compliance with infection control and safety standards. Reports of the observations are given to the infection control nurse and the administrator who will analyze the findings and determine the resources needed to achieve adherence to target performance goals, decrease hospital-associated infections, and meet patient safety goals. Adherence to policy and procedures for infection control and patient safety is enhanced by increased resources and comprehensive involvement of all staff."

Reminders for Isolation Precautions

The approach to isolation precautions is multidisciplinary and is tailored for each department. A quarter of the hospital's beds are in single rooms. This allows potentially infectious patients to be isolated from others and prompts health care staff to wash their hands before entering and leaving the room. A voice reminder upon entry across the threshold into the isolation room has increased the compliance with isolation protocol. A proposal is under consideration to add a permanent line of red across the threshold of each isolation room. The red line symbolizes the requirement to stop, think, and survey the patient's room for any environmental exposures to infectious disease."

Patient Placement

"Unfortunately, there are not enough single rooms to house all patients who are infected. Selected patients are then placed in semi-private rooms in a cohort environment. This means that patients who have the same infection are placed together. Patients may also be placed in the same room when there are no risk factors. Risk factors include: patients who have catheters in place, surgical sites, open skin, draining wounds, or weakened immune systems. These individuals are especially at risk of becoming infected with *S. aureus*.

The goal is to place the patient in a room environment that supports the least opportunity to transmit the infectious disease. Nurse Managers review room placement daily to reduce the risk of infection"

Screening for Risk

"All patients at high risk of carrying MRSA are screened on admission to the

facility. This includes anyone arriving from another hospital or anyone who has been an in-patient in the past year, nursing home admission, dialysis patient, or one who has previously been colonized with MRSA. We regularly screen our ICU patients and renal or diabetic patients who we know are our highest-risk groups for hospital-acquired infection. We also screen pre-operative orthopedic patients where the risk of having MRSA may be low, but where the consequences of getting MRSA infection at the operative site could be devastating. Patients who are incontinent and/or have draining wounds are also identified in the screening."

Timely Surveillance

"We have recently implemented a new, rapid laboratory test for MRSA. Previously, laboratory tests took about three days to confirm that a patient was colonized with MRSA. The new test is able to identify MRSA carriers in hours. This allows us to identify carriers more quickly and isolate them appropriately, which reduces the risk of a carrier's MRSA being transmitted to others."

MRSA Liaison to Patients, Families, Staff and Community

"For those patients who are found to be colonized or infected with MRSA, we have a dedicated MRSA liaison nurse. This nurse ensures infection control precautions are in place, answers any concerns that the patient and family may have, and coordinates the communication of staff addressing the impact of infection, colonization, and de-colonization on their ability to work.

Nurses are concerned about their families. Family and community education is also the role of the MRSA liaison. All individuals and families are asked to the contact MRSA liaison nurse by phone or by appointment to discuss MRSA prevention, treatment, and control information.

Families who use the emergency room for their primary care are one population that requires ongoing follow-up. Having an accessible nurse for this population and community education contributes to public health."

Environmental Control

"The environment is a potential reservoir for MRSA. This facility has an ongoing program of inspection. Every month, the Culture of Care Healthy Environment Committee inspects the hospital. Members of the committee are not employed by the hospital and can inspect any clinical area without warning. Their inspections assess the safety of the environment and the compliance to infection control policy and procedures. A newly developed, simple-to-read-and-follow guide for isolation standards is given to patients and families upon admission. One of the barriers found by the committee was that everyone had a different idea about how isolation was implemented and maintained. A brief and clear booklet of the patient safety and infection control guidelines was written for each discipline that come in contact with the patient or the patient's environment."

Nurses Who are Fit and Well

The most effective policies and procedures to prevent the spread of any contagious disease must focus on personal health, good hygiene, proper use of antibiotics, and environmental control. Nurses are encouraged to care for themselves by attending an in-service on the importance of being fit and well to serve as role models in a healthy environment of work. In addition, budgeting for employee worksite health programs are being considered for the next year. Nursing is among the most trusted of all the professionals (Harris, 2004). This designation carries with it the responsibility to model healthy work and play, and to communicate the risk associated with infectious disease."

Caring and Respect

"Finally, the concerns of the new graduate nurse were addressed by revising the mentor program for new employees and the preceptor programs for nursing students. Nurse Managers were lead in a seminar that focused on creating a culture of caring and respect. Plans have begun to survey the environment of work for nurses and all hospital staff. Preceptors were included in discussions on how to promote adherence to infection control practice guidelines for all nurses. This discussion will continue at the next unit meeting."

(The case study has given you a sample of best practice programs found in evidence-based practice. The following information continues to explore aspects of MRSA.)

How do I know I am at risk?

Because MRSA is resistant to nearly all available antibiotics except vancomycin, the emergence and spread of MRSA is alarming. More than 94,000 life-threatening infections and almost 19,000 deaths were associated with MRSA in 2005 (Klevans et al., 2007). The need to promptly assess begins with identification of a red-hot tender area, which sometimes resembles spider bites or larger abscesses. Detected early, even resistant staph can be treatable. MRSA occurrence ranges from mild skin infections, usually due to cuts or scrapes, to those that grow within deeper tissues and in the bloodstream, lungs, and surgical sites. Staph bacteria can cause serious infections even in healthy young active people.

Additionally, MRSA occurs most frequently among patients who undergo invasive medical procedures or who have weakened immune systems and are being treated in hospitals and health care facilities such as nursing homes and dialysis centers. Eighty-five percent of all invasive MRSA infections in 2005 were health care-associated (Klevans et al., 2007).

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Challenges of MRSA

Rapid and evolutionary behavior challenges are our main defenses against infectious diseases. Public health measures that minimize exposure to disease-causing organisms; immunity, whether gained by infection or vaccination, and therapeutic drugs used to treat infections are the only avenue of prevention and control. When an organism becomes resistant to antibiotic treatment, the development of new antibiotics can take as many as ten years to reach the patient (National Academy of Sciences, 2007).

The administration of health care organizations and institutions should ensure that appropriate strategies are fully implemented, regularly evaluated for effectiveness, and adjusted as needed to support a consistent decrease in the incidence of targeted MRSA. "The question is not whether resistance will occur, but how prevalent resistance will become" (Chambers, 2001).

Enforce Standards of Care

Ongoing laboratory-based surveillance and detection of patient and staff colonization status can promote prompt identification of patients who require contact isolation. Topical intranasal application of mupirocin ointment has had limited effectiveness (Boyce, 2001). Colonization means that the organism is present in or on the body but is not causing illness. De-colonization is the treatment to eradicate the presence of MRSA. Compliance with standards of care and policy and procedures for environmental control of transmission are important to the health of health care workers and the public. Communication with facilities that receive the MRSA patient will help stop transmission of infection to the receiving facility. Defined discharge criteria and follow-up with home care orders help limit spread.

Hidden Risk of Noncompliance

Noncompliance with treatment occurs when individuals forget to take medication, interrupt the treatment as they begin to feel better, or are unable to afford a full course of therapy. Follow up at home after discharge is necessary. Self-medication with antimicrobials almost always involves unnecessary, inadequate, and ill-timed medication. (CDC, 2007a)

This misuse of antibiotics is accelerating the natural evolution of drug-resistant bacteria. Partial treatments kill the most susceptible bacteria and select for the growth of individual bacteria that are more drug resistant encouraging the most drug-resistant bacteria to grow. Resistance emerges where antibiotics are in heavy use. Hospitals are primary sites due to the high volume of antibiotic use (Institute of Medicine, 2002).

Community-associated MRSA: Selective Disparity

Community-associated infection means that the infection occurred in people without documented health care risk factors. The characteristic strains of community-associated MRSA assist in identification. Rates of invasive infection in 2005 were highest among people 65 years of age or older. Rates were lowest among persons aged 5 to 17 years of age. Black people were affected at twice the rate of Whites. Racial disparity in MRSA can be described by urban, rural characteristics, chronic illness, socioeconomic status, and geographic differences (Klevens et al., 2007).

Invasive MRSA affects certain populations disproportionately. It is a major public health

problem primarily related to health care but is no longer confined to intensive care units, acute care hospitals, or any health care institution. MRSA is now community-associated as well (Klevens et al., 2007).

Emergence of MRSA and S. aureus

Humans are a natural reservoir for *S. aureus*. Symptomatic colonization is far more common than infections. Transmission occurs by direct contact with a colonized carrier. Transmission especially occurs among injection drug users, persons with insulin-dependent diabetes, patients with dermatologic conditions, patients with long-term, indwelling intravascular catheters, and health care workers. Colonization may be transient or persistent and can last for years (Chambers, 2001). The epidemiology of MRSA and the factors driving resistance bear strong similarities and parallels to those occurring with penicillin-resistant strain of *S. Aureus* in the 1940s (Chambers, 2001). The healthcare-acquired resistances to multiple antibiotics were common in 1940 regardless of the location of facility. The community-acquired infections were resistant only to penicillin.

Time Line for Emergence of Resistance

- 1943– Penicillin effective against *s. aureus*
- 1947– First resistant *s. aureus* strains reported
- 1960– 20% Health care-associated MRSA rate
Methicillin replaced penicillin for staph infections
- 1961– Methicillin-resistant staph reported in Cairo
- 1970s– Penicillin continued to be considered effective anti-staphylococcal agent as late as the early 1970s
- 1980– Community-associated MRSA appeared at 10% rate of infection
- 1981– Methicillin-resistance rising, vancomycin used as a last resort
- 1992– Health care-associated MRSA has 15% rate of infection
- 1992– Growing health care-associated and community-associated infections
- 1996– 35% Health care-associated MRSA
- 2000– 50% Health care-associated MRSA
- 2001– Vancomycin resistance reported not found in Staph that are Methicillin resistant
- 2002– 57% Health care-associated MRSA
- 2003– 64% Health care-associated MRSA
First comprehensive description and accurate assessment of the epidemiology of drug-resistant strains of *S. aureus* were published
- 2005– 58% Health care-associated MRSA
- 2005– 13% Community-associated MRSA

(National Academy of Sciences, 2007)

Risky Antibiotic Overuse

Patient expectations and demands have influenced the overuse of antibiotics. Multiple factors on the part of the health care provider may influence the response to patient demands. One look at the timeline for the progression of MRSA in our facilities and communities motivates the nurse to help monitor the usage of antibiotics and educate the public and health care professionals about the antibiotic overuse.

Case Study continued: A case of colonization of Methicillin-resistant *Staphylococcus aureus* (MRSA) by a nurse who could be carrier a to her family at home is a concern to the staff. The nurse's home environment was found to be widely contaminated with MRSA. Family members were at risk to also acquire the pathogen. Recent relapse of colonization after routine anti-staphylococcal measures and three negative results of screening specimens could result in an outbreak. The infection was finally eliminated after a coordinated commercial cleaning of the house, disinfection of all linen and replacement of soft furnishings. The nurse was asked not to return to work until her physician stated that she was no longer actively infectious or colonized. She was re-assigned to an area without patient contact. She continued to be concerned about her ability to work in nursing.

Risk of antimicrobial overuse in animals

Overuse of antimicrobials in animals has also contributed to the development of drug-resistant microbes that are subsequently transmitted to humans, usually through food products. It has been estimated that 50% of all antimicrobial production is directed to food-producing animals (Institute of Medicine, 2002.)

Healthy infrastructures reduce risk


Experts have found that health care personnel are more receptive and adherent to the recommended control measures when organizational leaders participate in efforts to reduce transmission (Siegel et al., 2007). National control measures can be effective when backed by international planning, cooperation, information sharing, and funding to eradicate disease. Organizations and countries working together can create effective control measures. MRSA may originate in the community as well as in the hospital, and presents a threat to patients in both settings.

A single set of infection control measures may not be equally efficacious against all strains of MRSA. Environmental control may be the added step to initiate a decrease in infection and control outbreak conditions. Collaboration of all health care employees and adequate funding for infection control are the resources for success. Nurses in all settings can be influential in creating a culture that values nursing science, integrates evidenced-based protocols into daily practice, and encourages all nurses to work together to ensure infection prevention and control guidelines for care are taught, mentored and followed in all settings.


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Question #1

What was the primary cause of death in the United States at the beginning of the 20th century?

- stroke
- injury and accidents
- infectious disease
- cardiovascular disease

Question #2

Adherence to hand a hygiene and isolation protocol is enhanced when:

- emphasized during orientation
- there is a high infection rate
- supplies are available
- administration sets infection control as a priority

Question #3

What are two risk factors for the transmission of MRSA by close contact?

- overcrowding and population increases
- land use and lack of cleanliness
- human behavior and compromised skin
- all of the above

Question #4

Detected early, MRSA can be treatable.

- This is a correct statement
- This is an incorrect statement

Question #5

One of the first signs of infection is a red hot tender area which sometimes resembles:

- spider bites
- abrasions
- intact skin
- mosquito bites

Question #6

People who are at risk for MRSA undergo invasive medical procedures or:

- have a history of broken skin
- have weakened immune systems
- have stopped taking antibiotics
- have to be dehydrated

Question #7

Compliance with treatment occurs when individuals:

- take medication as ordered
- interrupt medication when feeling better
- are unable to afford medication
- self-medicate with other peoples medicine

Question #8

In 1940, penicillin was effective against *s. aureus*. In what year was the first resistant *s. aureus* strain reported?

- 1960
- 1961
- 1947
- 1970

Question #9

Antibiotic overuse is not recommended due to the risk of:

- drug-resistant microbes
- increased infection rates
- families cannot afford the antibiotic
- side-effects of the antibiotic

Question #10

Health professionals are asked to communicate the emergence of community-associated MRSA:

- due to the rising numbers of people who are infected
- due to the increasing antimicrobials that are available for MRSA
- due to the cost of treatment for MRSA
- due to the number people who are isolated when colonize

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NACES Seeks Project Participants

The NACES Plus Foundation, Inc. conducts nurse aide certification testing in multiple states across the U.S. including Texas. Currently, NACES has a contract with the Texas Department of Aging and Disability (DADS) to conduct two, quality review projects—the Nursing Facility Quality Project, and the Long-Term Service and Support Quality Review Survey Project.

In the Nursing Facility Quality Project, registered nurses visit long-term care nursing facilities in their area to gather research data for improving the quality of care for residents who reside in these facilities.

In the Long-Term Service and Support Quality Review Survey Project, registered nurses, licensed vocational nurses, and social workers interview consumers who are receiving state- and federally-supported services, in an effort to get the consumer's perspective on how the support and services received have affected their quality of life.

Both NACES projects will run from February 2008 to June 2008. If you're an RN, LVN or social worker interested in participating in one of the projects, please e-mail your resume to Mmock@texasnurses.org, or fax it to 512-452-3842. If you would like more information on either project, please phone toll free 1-888-411-5404.

NACES Plus Foundation, Inc. is an organization formed by Texas Nurses Association to develop initiatives which promote quality improvements and access to health care services for all people. For more information, visit the NACES Web site: www.nacesplus.org. ★

“Emergence of Infectious Disease: (MRSA)

Test Question Answer/Registration/Evaluation Form

(Send by mail with a **self-addressed stamped envelope** OR complete online and print certificate at <http://tnacne.texasnurses.org>)

Test question answers:

- | | |
|------------|-------------|
| 1. A B C D | 6. A B C D |
| 2. A B C D | 7. A B C D |
| 3. A B C D | 8. A B C D |
| 4. A B | 9. A B C D |
| 5. A B C D | 10. A B C D |

Activity Evaluation

Purpose of this activity: The purpose of this educational activity is to provide Nurses with information on the current trends in the transfer, treatment, and prevention of MRSA in an effort to promote better outcomes for their hospital-based or community-based patients/clients and their families.

Please complete this evaluation questionnaire. Your responses will be used to revise this activity and to plan future educational activities. Circle the number/response that best fits your evaluation of the activity.

1 = Not at all 2 = Somewhat 3 = Almost completely 4 = Completely

1. Rate your achievement of these objectives:

a. Discuss the importance of adherence to infection control and infection prevention procedures.	1 2 3 4
b. Identify four (4) risk factors associated with the transmission of Methicillin-Resistant Staphylococcus Aureus (MRSA).	1 2 3 4
c. Explain the need to reduce the use of antimicrobials.	1 2 3 4
d. Describe three (3) education strategies for the patient or family concerning MRSA colonization or infection.	1 2 3 4
e. Contrast hospital-acquired MRSA infections with community-acquired MRSA infections.	1 2 3 4

2. Rate the effectiveness of the teaching/learning materials. 1 2 3 4

3. Were the objectives relevant to the overall purpose? 1 2 3 4

4. How long, in minutes, did it take you to complete this activity? _____

5. List two (2) ways you will integrate what you learned in this activity into your practice and/or employment environment. _____

6. Were the following disclosed prior to the beginning of this activity?

a. Requirements for Successful Completion	Yes	No
b. Conflicts of Interest	Yes	No
c. Commercial Support	Yes	No
d. Non-Endorsement of Products	Yes	No
e. Off-Label Use of Products	Yes	No

7. Did you notice any bias that was not disclosed in this activity? Yes No
 If "Yes," Please describe: _____

Additional comments: _____

Registration Information

Name: _____

Address: _____

City: _____ State: _____ ZIP: _____

Phone: _____

Date of Birth (MM/DD): ____ / ____ / ____

Email: _____

Check one: RN LVN Student Other: _____

Mail this completed form to: **Texas Nurses Association
 7600 Burnet Road, Suite 440
 Austin, Texas 78757**

Please **include a self-addressed, stamped envelope**. If all fields are completed on the form and a passing grade of 80% is achieved on the post-test, certificates of successful completion will be sent in 4 to 6 weeks.