Pittsburgh Regional Healthcare Initiative

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An American in Amsterdam

Antibiotic resistant infections and you

You're vacationing in Amsterdam when the pain hits. Presenting yourself at the local hospital, you're asked about your medical history. Then you tell them you're an American, and were recently hospitalized back home. That changes everything.

Parts of your body are swabbed and sent for laboratory analysis. You are ushered into an isolation room, and every healthcare worker who enters your room wears full protective garb—gloves, gowns, caps and nose-face masks—for every encounter with you. Only after two days, when the lab analysis comes back negative, are you moved to a regular, semi-private room.

Question: Since when did being an American become such an acute risk factor that it automatically sent you to an isolation room in a foreign hospital?

Answer: Since the Netherlands, along with several other countries, aggressively pursue and control methicillin-resistant *Staphylococcus aureus* (MRSA), an antibiotic-resistant infection, in their hospitals.

What is MRSA?

MRSA was first seen in hospital outbreaks in eastern Australian in the late 1970s. By the 1980s, MRSA had spread throughout the world. Today, stark differences in healthcare practices have led to stark differences in MRSA rates:

In the Netherlands, Scandinavia and western Australia, MRSA is uncommon, with sporadic outbreaks that are quickly contained.

In Belgium and France, countries with high prevalence, MRSA has been stabilized and confined. In Paris hospitals, prevalence went from 55% in 1993 to 25% in 2002.

In the United States, more than 50% of *Staph* infections are now methicillin resistant. The U.S. holds the dubious distinction of having the world's second highest MRSA rate. (Only Japan has more.)

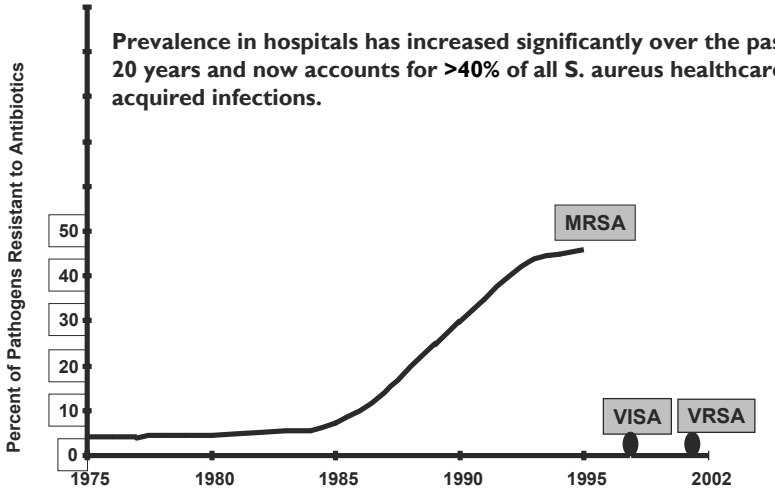
Why is MRSA so bad?

According to a series last year in the *Chicago Tribune*, healthcare-acquired infections affect 2.2 million people in the U.S. each year, cause 100,000 deaths, and add about $1 billion in costs. MRSA infections are on the rise, and are associated with increased mortality, length of stay, hospital costs, and resistance to the one antibiotic left in the arsenal: vancomycin.

How is MRSA spread?

MRSA is spread primarily through transmission from one patient to another via the hands of healthcare workers. While frequent antibiotic use can make patients more susceptible to resistant organisms, simple physical contact is the more prevalent method of spread.

Increasing MRSA Prevalence in the US – Where we are



Thronsberry C. NNIS. 38th ICAAC.1998; San Diego, Calif; Abstract E22; *MMWR Morb Mortal Wkly Rep.* 1997;46:624-636.

Active infections are just the tip of the iceberg. People can be colonized with MRSA—that is, have the organism present in their bodies but show no symptoms—and spread it to others. (And once colonized, up to 60% of people will develop an active MRSA infection.)

All people with MRSA—infected or colonized—must be isolated, and all who come in contact with them must use precautions such as gloves, gowns and masks. The items used in the care of these patients, such as blood pressure cuffs, thermometers and stethoscopes, must be decontaminated or disposed of.

How can MRSA be controlled?

A task force from the Society for Healthcare Epidemiology of America (SHEA) recently proposed a new guideline for preventing in-hospital transmission of resistant organisms. (See sidebar.) Lead author of the report is Carlene Muto, MD, MS, Director of Infection Control at UPMC Presbyterian, and Co-chair of PRHI's Infection Control Advisory Committee. Among the SHEA task force recommendations:

- ***Surveillance cultures of incoming patients deemed to be at risk, and periodic culturing during hospital stay.*** As in the Netherlands, SHEA guidelines call for healthcare workers to be screened periodically.
- ***Isolation*** of all patients known to be infected or colonized. Isolation of all high-risk patients until lab work on the swabs either confirms or rules out MRSA infection (usually 48 hours).
- ***100% hand hygiene.*** Healthcare workers disinfect hands upon entry and exit for each patient encounter, whether gloving or not.
- ***Dedicate the use of non-critical equipment*** to a single patient or cohort of patients who have the pathogen. If use of common equipment is unavoidable, adequately clean and disinfect between uses.
- ***Housekeeping protocol.*** Special attention to disinfection of surfaces includes active damp scrubbing following each patient discharge.
- ***De-colonization.*** Treatment, as deemed appropriate, for patients and workers, with followup surveillance.
- ***Appropriate antibiotic use.***

Why can't we …

Can the United States defeat MRSA? Precedent exists in the Netherlands and Scandinavia, countries where leadership and national will coincided. In translating well-known precautions into action, the healthcare establishment in those countries have been able to bring the epidemic under control. Vigilant surveillance continues.

What is PRHI's role?

PRHI has been working in conjunction with the CDC and the staff on a post-surgical unit at the Veterans' Administration Pittsburgh Health System, in an effort to reduce transmission of MRSA. A plethora of improvements has followed—from improving access to supplies to cleaning wheelchairs—that provide staff with more time for hand sanitation.

PRHI's Infection Control Advisory Committee (ICAC) continues to pursue ways to reduce MRSA transmission across the region, including a regional conference set for October 2, 2003.

PRHI's Infection Control Advisory Committee (ICAC) comprises infectious disease physicians and infection control practitioners from partnering institutions, as well as representatives from the Centers for Disease Control and Prevention (CDC). This committee is responsible for establishing a region-wide nosocomial infection reporting system. ICAC also develops, conveys and facilitates practice interventions based on the National Nosocomial Infection Surveillance (NNIS) system. Carlene Muto, M.D., Hospital Epidemiologist/Director, Assistant Professor of Medicine, University of Pittsburgh School of Medicine, Division of Infectious Diseases, and Cheryl Herbert, RN, CIC, Director of Infection Control, Allegheny General Hospital, co-chair this committee.

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