

Today's Agenda: 9/30/14

1. Students will take C List Medical Abbreviation Quiz.
2. TO: Discuss MRSA.

MRSA

Methicillin Resistant
Staphylococcus Aureus

A close-up photograph of a person's hands, wearing a white lab coat, holding a petri dish. The petri dish contains a yellow, opaque bacterial culture. A wooden stick is being used to stir or examine the culture. The background is blurred, showing a laboratory setting.

What is it?

- Methicillin Resistant Staphylococcus Aureus or MRSA (often called Mersa) is a **bacteria that causes infections in humans.**
- MRSA is a resistant variation of the common bacteria, staphylococcus aureus. This type of bacteria was one of the **first to outwit some of the most powerful drugs.**



Hx

- **Discovered in 1961** in a UK hospital
- Within the last ten years, this bacteria has become very difficult to treat.
- And since the 1990's, these infections have been on the rise.

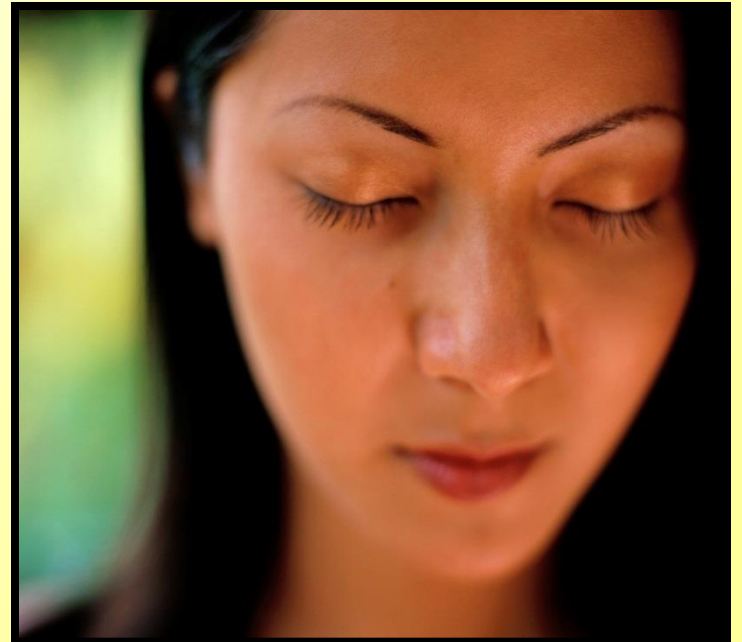
- In **US hospitals today, MRSA causes up to 40-50% of staph inf per year.**



Where can it be found?

- Staph bacteria can normally be found on the skin or in the nose of about 1/3 of the population.
- If you **have staph** on your skin or in your nose but aren't sick, you are **said to be "colonized"** but **not infected** with MRSA.

Plenty of healthy people carry staph without being infected by it. In fact, **25-30% of us have staph bacteria in our noses.**

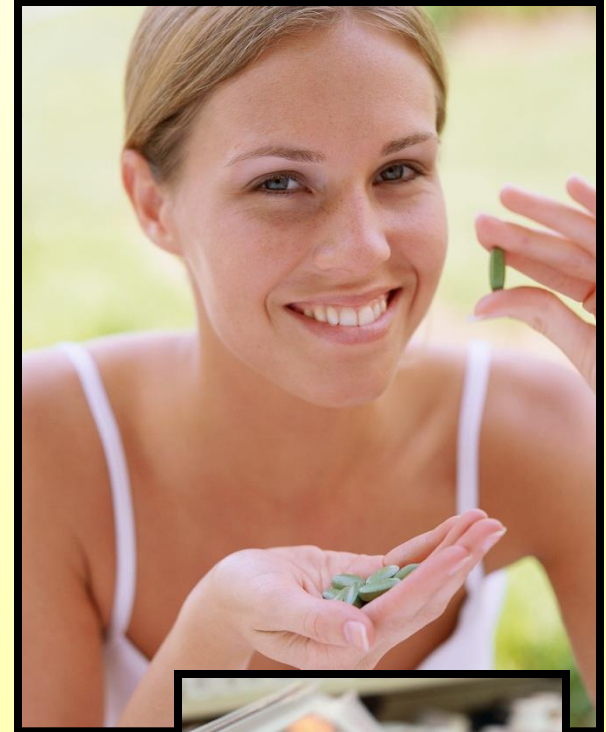


Why are MRSA cases increasing in Hospitals?

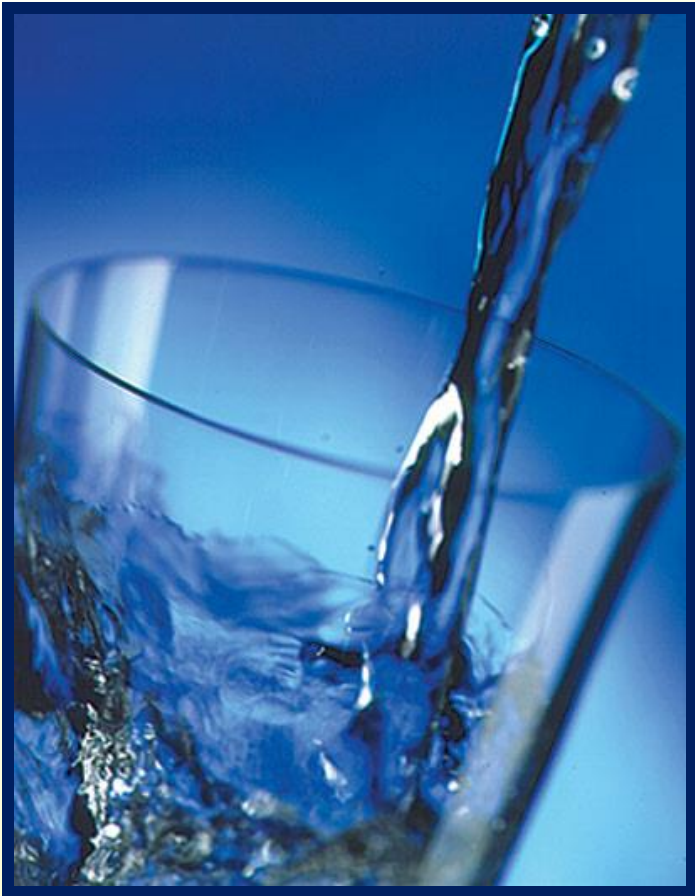
- The new strains of MRSA are spreading more easily on the **hands of health care workers who are colonized with the inf.**
- Also, the hospital **equipment is often not properly cleaned** after each patient use.



- In addition, for years doctors have been prescribing antibiotics for illnesses that they won't cure. (Example: Giving antibiotics to treat a virus like the common cold)
- Due to **decades of antibiotic misuse, our immune systems are now unable to fight off infections like MRSA.**



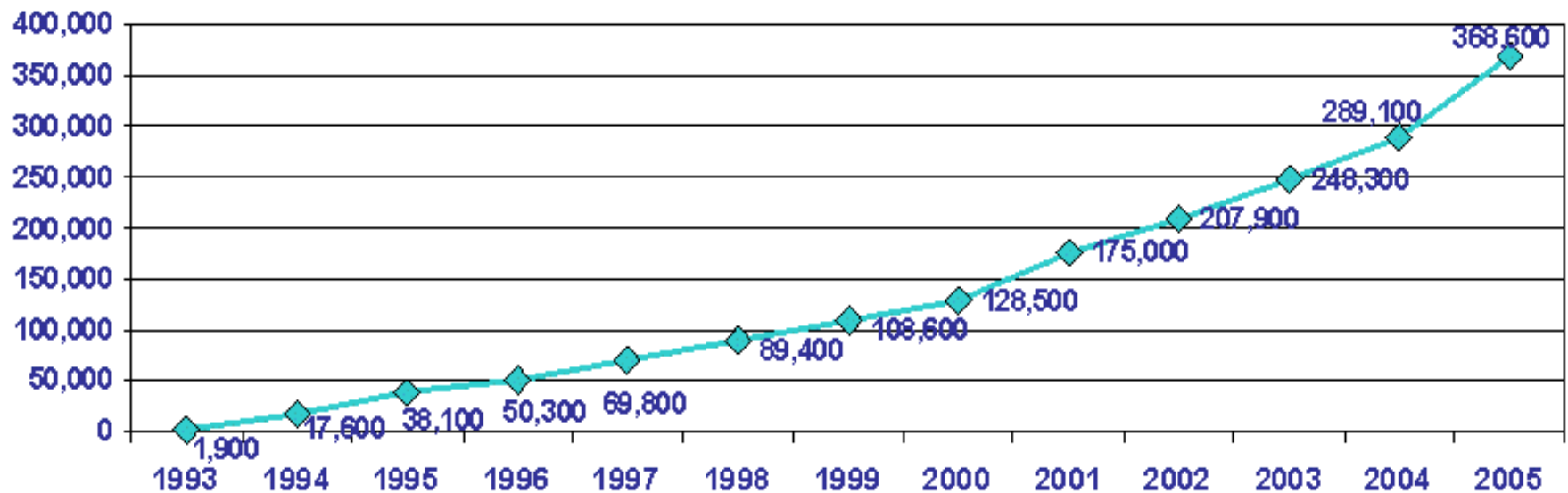
Other Reasons MRSA is on the Rise:



- Antibiotics found in our food and water
- Gene mutations of this bacteria
- Community exposure

Figure 1. Hospital stays with methicillin-resistant Staphylococcus aureus (MRSA) infections, 1993–2005

Total number of discharges

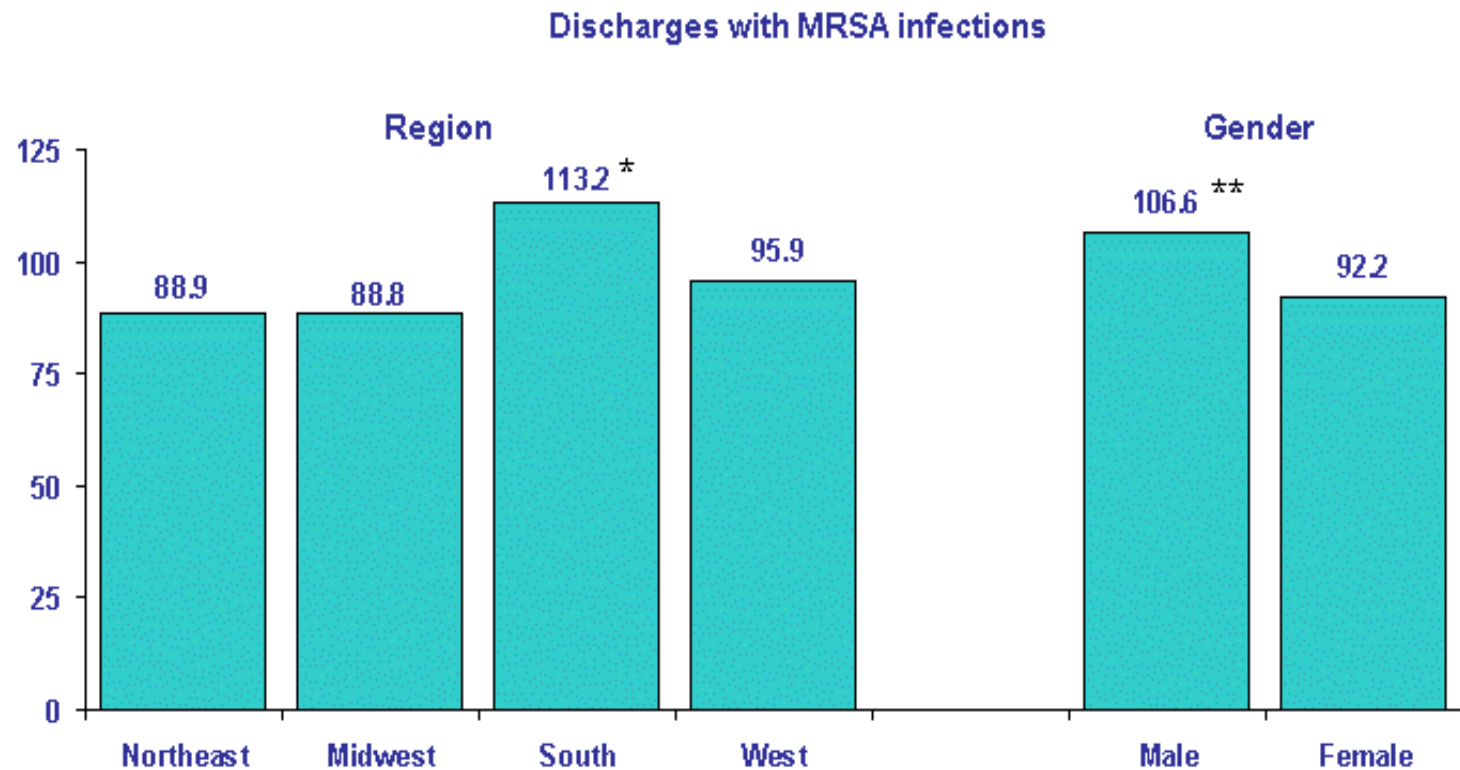


Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1993-2005

The above chart shows the MRSA discharge increase between 1993 to 2005.



Figure 2. Rates of hospitalization with MRSA infection per 100,000 population, by region and gender, 2004

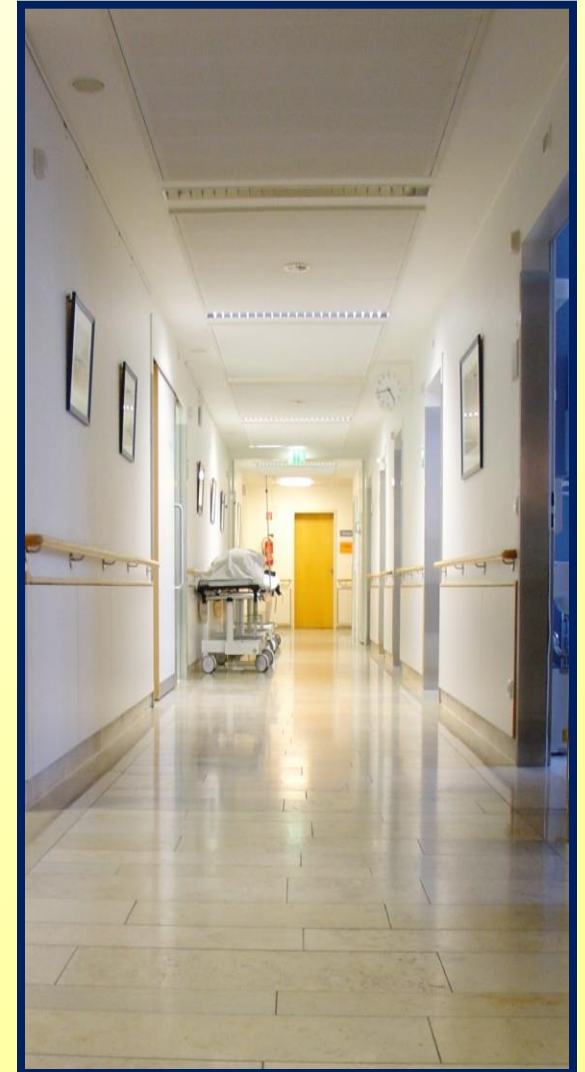


*Significantly higher than the other three regions. **Significantly higher than females.

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2004

Two Types of MRSA

- HA-MRSA is
Hospital Acquired MRSA
- CA-MRSA is
Community Acquired MRSA



1. Risk Factors for HA-MRSA

- **Pts with weakened immune systems.**
- **Elderly pts.** (Or patients living in long term care facilities)
They often have a very weakened immune system.
- **Invasive devices.** People who are on dialysis, are catheterized, or have feeding tubes or other invasive devices are at higher risk.
- **Recent antibiotic use.** Treatment with certain antibiotics can increase the risk of HA-MRSA.
- **Hospital workers.** Due to repeated exposure to MRSA

2. Risk Factors for CA-MRSA

- **Young age.** CA-MRSA can be particularly dangerous in children. Often entering the body through a cut or scrape.
- **Participating in contact sports.** CA-MRSA has crept into even sports teams. The bacteria spreads easily through skin-to-skin contact, sharing towels, and by equipment.
- **Living in crowded conditions.** Outbreaks of CA-MRSA have occurred in military training camps & prisons.
- **Association with health care workers.** People who are in close contact with health care workers. Often, family member works in health care.

What does MRSA look like?

- MRSA often starts off as red bumps like a pimples, boils, or spider bites. Sometimes this bacteria remains confined to the skin, and in other cases, the infections turn into deep, painful abscesses that can require surgical draining.



MRSA Infections

- If MRSA inf go deeper into the body, often it can cause life threatening infections that can effect the bones, joints, surgical wounds, the bloodstream, heart valves, and the lungs.



Transmission?



You could get MRSA by **touching another person who has it on their skin**, or by touching **objects that have the MRSA bacteria** on them.



Diagnose?

- Nasal Swabs
- Wound Cultures



Statistics on MRSA deaths

Today there are higher death rates in men than women from MRSA.





Also, figures show that most of the deaths involving MRSA occurred in older age groups.

MRSA Deaths

- An estimated 90,000 people in the United States fall ill each year from methicillin-resistant staphylococcus aureus, or MRSA.

It is not clear how many die from the infection; one estimate puts it at more than 18,000, which would be slightly higher than US deaths from AIDS.

MRSA Risk

<u>Risk</u>	<u>Annual Deaths</u>	<u>Lifetime risk</u>
• Heart disease	652,486	(1 in 5)
• Cancer	553,888	(1 in 7)
• Stroke	150,074	(1 in 24)
• Hospital infections	99,000	(1 in 38)
• Flu	59,664	(1 in 63)
• Car accidents	44,757	(1 in 84)
• Suicide	31,484	(1 in 119)
• Accidental poisoning	19,456	(1 in 193)
• MRSA	19,000	(1 in 197)

Sources: Unless otherwise noted, all accidental death information from [National Safety](#)

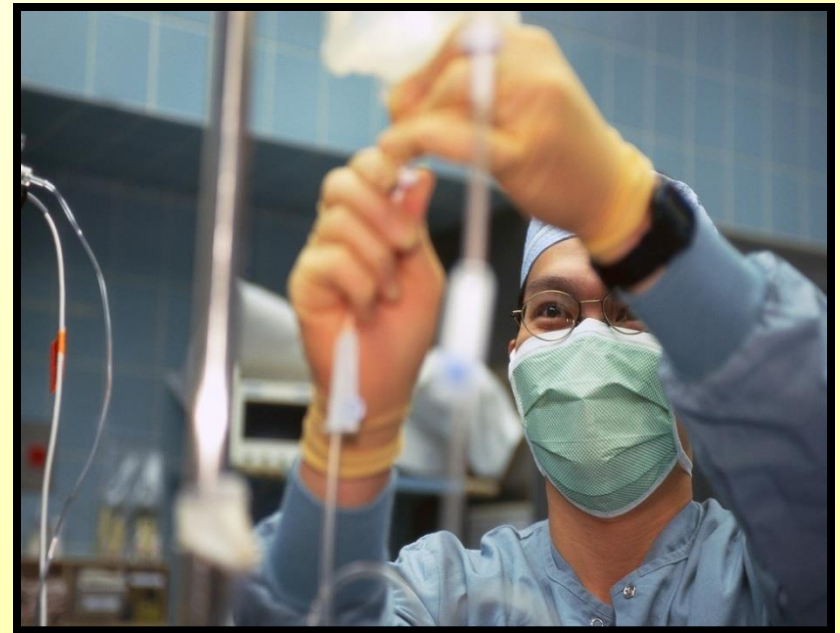
A photograph of a patient lying in a hospital bed. The patient's right arm is in a white cast and is resting on a metal bed rail. The patient is wearing a white hospital gown. In the background, there is a medical monitor and various tubes and wires connected to the patient. The scene is brightly lit, typical of a hospital room.

Hospital Stays

On average, hospital stays for MRSA infections cost \$14,000, compared with \$7,600 for all other stays, and the length of hospitalization was more than double—10.0 days for MRSA infections versus 4.6 days for all other stays.

Treatment of MRSA

- MRSA may be **treated with vancomycin** or other strong antibiotics that have proven effective.
- However, in some cases even vancomycin-resistant outbreaks have occurred leading to a new Superbug, VRSA (Vancomycin Resistant Staphylococcus Aureus).



How Can You Prevent It?

Understanding that MRSA is usually spread from close contact with infected people. It's recommended to **practice good hand washing hygiene.**



Other Ways to Prevent

- **Keeping cuts and abrasions clean and covered** with a proper dressing (bandage) until healed.

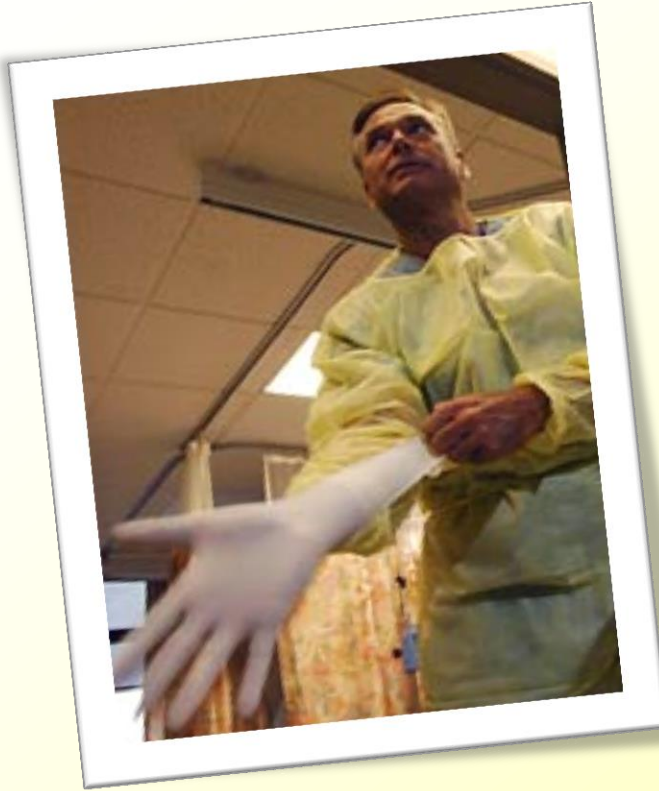


Other Ways to Prevent

- Avoid using other people's personal items like razors.



Healthcare Workers



Besides using good hand washing techniques, the healthcare worker should **wear a gown and gloves when coming in direct contact** with a MRSA wound or skin infection.

Also, all medical **equipment needs to be properly cleaned/disinfected** after each patient use.



Precautions for Athletes

- Athletes should be encouraged to shower and wash with soap after all practices and competitions.
- Prevention of MRSA also includes avoiding contact with other people's wounds or material contaminated from wounds (towels, clothing and sports equipment).



Don't let infection

get under your skin.

CUTS AND SCRAPES
ARE PART OF THE GAME.
TAKE CARE OF THEM
PROPERLY.

To avoid skin infections:

- Wash your hands frequently.
- Shower after playing sports; use a clean towel.
- Keep cuts and scrapes clean and covered with a bandage.

Tell your coach or athletic trainer if you think you have a skin infection.



Massachusetts Department of Public Health

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October 2010

Who's playing DEFENSE?

Good hygiene and taking care of your skin are the best protection against skin infections.

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Tell your coach or athletic trainer if you think you have a skin infection.

PROTECT AGAINST SKIN INFECTIONS.



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October 2006



Everyone Can Help!



FIGHTING MRSA FROM THE GROUND UP

Works Cited

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