A. SUMMARY

MRSA is methicillin-resistant \textit{Staphylococcus aureus}, a type of staph bacteria that is resistant to certain antibiotics and may cause skin and other infections. You can get MRSA through direct contact with an infected person or by sharing personal items, such as towels or razors that have touched infected skin.

If you or someone in your family experiences these signs and symptoms, cover the area with a bandage and contact your healthcare professional. It is especially important to contact your healthcare professional if signs and symptoms of a MRSA skin infection are accompanied by a fever.

Most staph skin infections, including MRSA, appear as a bump or infected area on the skin that may be:
- Red
- Swollen
- Painful
- Warm to the touch
- Full of pus or other drainage
- Accompanied by a fever

These skin infections commonly occur at sites of visible skin trauma, such as cuts and abrasions, and areas of the body covered by hair (ie. back of neck, groin, buttock, armpit, beard area of men).

Almost all MRSA skin infections can be effectively treated by drainage of pus with or without antibiotics. More serious infections, such as pneumonia, bloodstream infections, or bone infections, are very rare in healthy people who get MRSA skin infections.

B. TRANSMISSION

The bacteria that causes MRSA is usually transmitted by direct skin-to-skin contact or contact with shared items or surfaces that have come into contact with someone else's infection (ie. towels, used bandages). The bacteria may live in people’s noses and on their skin and most of the time do not cause any problem. Staph can enter the body through breaks in the skin and sometimes cause infection. The main ways to prevent staph infection are to wash hands and care for wounds properly.

As with other germs, staph and MRSA can survive on some surfaces for hours, days or even months, but it all depends on factors like temperature, humidity, the amount of germs present, and the type of surface (is it porous like a sponge or nonporous like plastic). It also depends on whether these surfaces have nutrients to allow it to survive longer. When surfaces aren't cleaned and conditions are good for bacterial growth, staph and MRSA is more likely to survive for longer periods.

C. PRECAUTIONS

You can protect yourself by:
- practicing good hygiene (ie. keeping your hands clean by washing with soap and water or using an alcohol-based hand sanitizer and showering immediately after participating in exercise);
- covering skin trauma such as abrasions or cuts with a clean dry bandage until healed;
avoiding sharing personal items (ie. towels, razors) that come into contact with your bare skin; and using a barrier (ie. clothing or a towel) between your skin and shared equipment such as weight-training benches;

- maintaining a clean environment by establishing cleaning procedures for frequently touched surfaces and surfaces that come into direct contact with people's skin.

Even if surfaces have staph and MRSA on them, this does not mean that you will definitely get an infection if you touch these surfaces. Staph and MRSA are most likely to cause problems when you have a cut or scrape that is not covered. That's why it's important to cover your cuts and open wounds with bandages. MRSA can also get into small openings in the skin, like the openings at hair follicles. The best defense is good hygiene.

**D. NOTIFICATION**
In general it is not necessary to close schools to "disinfect" them when MRSA infections occur. It is also not usually necessary to inform the entire school community about a single MRSA infection. When an MRSA infection occurs within the University population, the Director of Health & Wellness will determine, based on their medical judgment, whether some or all students, parents and staff should be notified. Consultation with the local public health authorities may be used to guide this decision.

**E. CONTROL OF SPREAD**

- Students, faculty or staff, who are colonized or infected with MRSA, do not need to be routinely excluded from the classroom. Exclusion from school should be reserved for those with wound drainage that cannot be covered and contained with a clean, dry dressing taped on all 4 sides.

- Students with weakened immune systems may be at risk for more severe illness if they get infected with MRSA. These students should follow the same prevention measures as all others to prevent staph infections.

- Athletes with active skin and soft tissue infections should not participate in wrestling until wounds are completely healed. Consider using this rule for all contact sports.

- Individuals with open wounds should keep them covered with clean, dry bandages that are taped on all four sides.

- Gloves should be worn if you expect to have contact with non-intact skin or mucous membranes. Hands should be washed immediately after removing gloves.

- Good personal hygiene and hand washing with soap and water for at least 20 seconds should be encouraged.

- If soap and water are not available, use an alcohol-based hand sanitizer with at least 60% alcohol concentration.

- Potentially contaminated surfaces should be cleaned with an EPA-registered disinfectant labeled effective against MRSA and manufacturer’s directions should be followed. Household bleach diluted 1:100 (new solution every day) may be used. EPA-registered wipes and towelettes may also be used. Follow manufacturer’s directions.

- Clean and disinfect Health & Wellness cots regularly and use pillow protectors.

- If soiled linens and clothing are washed on school premises, wash with laundry detergent in hot water (minimum 160°F), add one cup of bleach if water is not 160°F and dry in a hot dryer.
FREQUENTLY ASKED QUESTIONS

What's the difference between cleaners, sanitizers, and disinfectants?

Cleaners or detergents are products that are used to remove soil, dirt, dust, organic matter, and germs (like bacteria, viruses, and fungi). Cleaners or detergents work by washing the surface to lift dirt and germs off surfaces so they can be rinsed away with water. The same thing happens when you wash your hands with soap and water or when you wash dishes. Rinsing is an important part of the cleaning process. Use these products for routine cleaning of surfaces.

Sanitizers are used to reduce germs from surfaces but not totally get rid of them. Sanitizers reduce the germs from surfaces to levels that considered safe.

Disinfectants are chemical products that destroy or inactivate germs and prevent them from growing. Disinfectants have no effect on dirt, soil, or dust. Disinfectants are regulated by the U.S. Environmental Protection Agency (EPA). You can use a disinfectant after cleaning for surfaces that have visible blood or drainage from infected skin.

Which disinfectants should I use against staph and MRSA?

Disinfectants effective against Staphylococcus aureus or staph are most likely also effective against MRSA. These products are readily available from grocery stores and other retail stores. Check the disinfectant product’s label on the back of the container. Most, if not all, disinfectant manufacturers will provide a list of germs on their label that their product can destroy. Use disinfectants that are registered by the EPA (check for an EPA registration number on the product’s label to confirm that it is registered).

How should cleaners and disinfectants be used?

Read the label first. Each cleaner and disinfectant has instructions on the label that tell you important facts:

- How to apply the product to a surface.
- How long you need to leave it on the surface to be effective (contact time).
- If the surface needs to be cleaned first and rinsed after using.
- If the disinfectant is safe for the surface.
- Whether the product requires dilution with water before use.
- Precautions you should take when applying the product such wearing gloves or aprons or making sure you have good ventilation during application.

What is “contact time,” and why is it important?

Contact time is the time needed for the disinfectant to inactivate or kill germs to the extent as indicated by the manufacturer. For example, if a disinfectant label says that the product will inactivate 99.99% of germs, and the contact time of 1 minute is in the instructions, this means that this disinfectant will inactivate or kill 99.99% of germs in 1 minute if you follow the instructions. Most instructions will note that the disinfectant must remain wet on the precleaned surface being treated for the entire contact time in order to be most effective.

Do surfaces need cleaning before using a disinfectant?

It depends on the product, so read the label first. Soil, dirt, dust, and organic matter all can often interfere with the active ingredients of disinfectants. Removing dirt from a surface by cleaning the surface before using a disinfectant will make sure it is most effective. Follow the product label’s instructions. Most products will use the words “precleaned surface” to point out that a surface should be cleaned before using the disinfectant.
What is a detergent/disinfectant, and how does it differ from a disinfectant?

In general, cleaners don’t disinfect, and disinfectants don’t clean. There are some products that include chemicals for both cleaning and disinfecting. Read the label instructions of these products carefully because there are often different directions for cleaning and disinfecting. For example, before you use the detergent/disinfectant product to disinfect a surface, the surface should be cleaned. When using a detergent/disinfectant as a disinfectant, the product should remain wet on the surface for the indicated contact time.

Are there any health risks or hazards in using disinfectants?

Yes. Some disinfectants can be respiratory, eye and/or skin irritants. Read and follow the product label instructions. The product label is your guide to using disinfectants safely and effectively. It contains information that you should read and understand before you use the product. Proper Personal Protective Equipment (PPE), including safety glasses or goggles, gloves, and/or respirators, should always be used when handling chemicals.

How should difficult surfaces such as keyboards be cleaned?

Many items such as computer keyboards or handheld electronic devices may be difficult to clean or disinfect or they could be damaged if they became wet. If these items are touched by many people during the course of the day, a cleanable cover/skin could be used on the item to allow for cleaning while protecting the item. Always check to see if the manufacturer has instructions for cleaning.

How do I know if the surfaces or equipment are properly cleaned?

Although in most situations you will not know if a surface has been cleaned, it’s important to remember that most surfaces do not pose a risk of spreading staph and MRSA. If cleaning procedures are unknown, taking the appropriate precautions such as

- using barriers like a towel or clothing between your skin and the surface.
- Showering immediately after activities where you have direct skin contact with people or shared surfaces such as after exercising at a health and fitness center.
- Cleaning your hands regularly.
- Keeping cuts and scrapes clean and covered with bandages or dressing until healed.

These precautions are especially important in settings such as in locker rooms, gyms, and health centers.

How should shared equipment like sports gear be cleaned?

Shared equipment that comes into direct skin contact should be cleaned after each use and allowed to dry. Equipment, such as helmets and protective gear, should be cleaned according to the equipment manufacturers’ instructions to make sure the cleaner will not harm the item.

Is it safe to use household chlorine bleach as a disinfectant?

In general, EPA-registered products are preferred for disinfection, but if these aren’t available household chlorine bleach can be used. Chlorine bleach is a broad spectrum disinfectant that can inactivate or kill germs, including staph and MRSA. It should never be used at full strength for disinfecting. If you are using household chlorine bleach, read the label to see if the product has specific instructions for disinfection. Some bleach products are EPA-registered for this purpose. If no disinfection instructions exist, then use 1/4 cup of regular household bleach in 1 gallon of water (a 1:100 dilution equivalent to 500-615 parts per million [ppm] of available chlorine) to
disinfect pre-cleaned surfaces. As with other cleaners and disinfectants, household chlorine bleach might damage some surfaces and items — for instance, some metals, plastics, and non-colorfast clothing.

Also be aware that household chlorine bleach, like other disinfectants, can be skin, eye, and respiratory irritants. Take appropriate precautions described on the product’s label instructions to reduce this risk. Proper personal protective equipment (PPE) such as gloves and safety glasses should be worn.

Never mix chlorine bleach with any other household or cleaning products. Doing so can result in different types of harmful acids and gases.

**Can disinfectants be used to treat MRSA skin infections?**

No. Disinfectants are registered by the EPA as pesticides and are not to be used on skin or other body parts.

**Laundry**

**Will routine laundry processes, detergents, and laundry additives remove staph and MRSA from towels, clothes, linens, and uniforms?**

Yes. Routine laundry procedures, detergents, and laundry additives will all help to make clothes, towels, and linens safe to wear or touch. If items have been contaminated by infectious material, these may be laundered separately, but this is not absolutely necessary.

**What’s the proper water temperature for laundry?**

Read and follow the clothing and soap or detergent label instructions. Water temperatures for household laundry depend on the type of fiber or fabric of the clothing. In general, wash and dry in the warmest temperatures recommended on the clothing label. Also some modern laundry detergents are made to clean best at certain temperatures. Not following instructions could damage the clothing item or decrease the effectiveness of the detergent.

**Is hot water washing and drying required for laundry?**

No. Read and follow the clothing and soap or detergent label instructions. Wash and dry clothing in the warmest temperature listed on the clothing label. Hot water washing is not necessary for all household laundry.

**Do we need to use bleach for each load of laundry?**

No. Clean laundry produced by washing with detergent alone will be safe for wear and use. Use of bleach as a disinfectant in laundering is optional, and not all fabrics are suitable for bleach. Read the clothing label instructions.

**G. CLEANING AND DISINFECTING PROCEDURES**

Focus on surfaces that touch people’s bare skin each day and any surfaces that could come into contact with uncovered infections. For example, surfaces such as benches in the weight room or locker room.

Large surfaces such as floors and walls have not been directly involved in the spread of staph and MRSA. There is no evidence that spraying or fogging rooms or surfaces with disinfectants will prevent staph and MRSA infections more effectively than the targeted approach of cleaning frequently touched surfaces and any surfaces that have been exposed to infections.
Note: When cleaning and disinfecting the area, the individual(s) responsible will adhere to Universal Precautions at all times and wear Personal Protective Equipment as needed. Universal precautions means treating all bodily fluids as potentially infectious material (pathogenic). Personal Protective Equipment (PPE) includes safety glasses or goggles, gloves, and facemasks (ie. surgical mask, N95 respirator).

1. Hard Surfaces (Handrails, Doorknobs, Countertops, Stools, Tables, Desks, Light Switches, Weight Training / Rehabilitation Equipment, Mats, Pads, etc.)
   a. Use an EPA registered antimicrobial product effective against MRSA
   b. A 1:10 diluted bleach solution can also be used to clean hard surfaces only
   c. Apply the product in the following manner or according to product recommendations
      i. Spray the disinfectant on the surface to be cleaned and wipe with a towel.
      ii. Spray the disinfectant on the surface again and allow the solution to sit on the surface for ten (10) minutes; and
      iii. Allow to air dry.

2. Coolers
   a. Coolers must be cleaned and disinfected following use, or as needed following every possible contamination using a diluted solution of Povidone Iodine 10% solution or any household dishwashing detergent (e.g. Sun Light, Dawn, Joy, etc.) or other appropriate cleaner.
   b. Coolers should be cleaned in the following manner:
      i. Squirt the cleaning solution inside and outside the cooler and inside and outside the cooler top / lid.
      ii. Partially fill the cooler with hot water.
      iii. Use the assigned sponge to thoroughly scrub the inside and outside of the cooler and the inside and outside of the cooler top / lid.
      iv. Allow the soapy solution to circulate through the cooler spigot
      v. Thoroughly rinse the cooler and cooler top / lid using hot water
      vi. Allow the hot water to circulate through the cooler spigot for rinsing.
      vii. Coolers should be towel dried and then allowed to air dry.
      viii. Store coolers upside down in the designated storage area(s). Cooler tops / lids should be stored standing up in their designated area(s).

3. Water Bottles, Water Bottle Lids & Carriers, etc.
   a. Water bottles, water bottle lids and carriers, etc. must be cleaned and disinfected every day following use, or as needed following every possible contamination using Povidone Iodine 10% solution or a diluted solution of household dishwashing detergent (e.g. Sun Light, Dawn, Joy, etc.) or other appropriate cleaner.
   b. Water bottles, water bottle lids and carriers, pouring pitchers, etc. are to be cleaned using the same cooler washing method listed above.

4. Towels
   a. Cloth towels should only be used on a single patient and should be laundered following every use.
   b. Disposable towels should be used whenever feasible on the field / court and should be disposed of after a single use.
5. Hydrocollator Packs / Covers
   a. A cloth and/or disposable towel should be placed between the patient and the
      hydrocollator pack / cover.
   b. Hydrocollator covers should be laundered every day and/or following a possible
      contamination.

6. Soft Goods (neoprene braces / sleeves, knee / elbow / forearm / shin pads, splints, lace-up
   ankle braces, shoulder harnesses, walking boot liners, cast shoes, back braces, etc.)
   a. Soft goods (neoprene braces / sleeves, knee / elbow / forearm / shin pads, splints, lace-up
      ankle braces, shoulder harnesses, walking boot liners, cast shoes, back braces, etc.) should be
      laundered upon return to the athletics department BEFORE being returned to inventory and/or
      administered to another athlete.
   b. Soft goods that cannot be laundered (Philadelphia collars, Donjoy Velocity ankle
      braces, Aircast ankle braces, hard splints, etc.) should be disinfected using the
      above guidelines for hard surfaces.

7. Whirlpools / Hot Tubs / Aqua-Cisers
   a. Whirlpools, Hot tubs, and Aqua-cisers shall be cleaned on a daily basis, or as
      needed following every possible contamination;
   b. Whirlpools, Hot tubs, and Aqua-cisers are not to be used by student-athletes or
      personnel with open or draining wounds;
   c. Whirlpools, Hot tubs, and Aqua-cisers are to be cleaned using approved cleaning
      product.
   d. Whirlpools, Hot tubs, and Aqua-cisers are to be cleaned in the following manner:
      i. Spray the approved cleaning product in and around the sides of the whirlpool;
      ii. Allow the cleaner to sit for five (5) minutes;
      iii. Using a clean towel, scrub all surfaces of the whirlpool, including the bottom,
          sides, turbine, etc.
      iv. Rinse the tank very well with hot water and allow it to drain;
      v. Towel dry or air dry;
      vi. Whirlpool turbines are to be cleaned using household bleach or ammonia by
          allowing the bleach or ammonia solution to circulate through a running turbine
          with hot water for ten (10) minutes.

      Do NOT use bleach and ammonia at the same time as this will create harmful
      hazardous fumes.

H. REFERENCES
   1. Centers for Disease Control and Prevention (CDC) 1600 Clifton Rd, Atlanta, GA 30333
   2. Occupational Safety & Health Administration (OSHA) 200 Constitution Avenue, NW
      Washington, DC 20210