



CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

MRSA Basics

What Is MRSA?

There has been a lot of attention in the news about methicillin-resistant *Staphylococcus aureus*, or MRSA. *Staphylococcus aureus* is a type of bacteria or germ that commonly lives on the skin and in the nose of people. Some people call it “staph” bacteria. Usually, staph do not cause any harm. However, sometimes staph can get inside the body through a break in the skin and cause an infection. Most staph bacteria will be killed with many types of antibiotics. However, MRSA is a form of staph that is resistant to many common antibiotics, and needs more attention if an infection occurs. Most people who have MRSA carry it in their noses without having any problems with an infection.

MRSA used to be found most commonly in hospitals and other medical places such as nursing homes. Today, MRSA is also common in the community. MRSA can be found in places such as gyms, schools, and child care facilities. As more and more people pick up MRSA, this germ has become an important health concern.

There is much to be learned about MRSA. Project CLEAR will help us understand what will work best to prevent MRSA infections in people who have MRSA after they leave the hospital.

How Do You Pronounce MRSA?

MRSA is typically pronounced by saying each letter “M-R-S-A”. Some people pronounce MRSA as “mer’-sa”. The form of staph that is not resistant to antibiotics is called Methicillin-Sensitive *Staphylococcus aureus* or MSSA (pronounced by saying each letter, “M-S-S-A”).

How Did I Get MRSA?

Staphylococcus aureus, or “staph”, are germs that commonly live in people’s noses and skin. People can become carriers of the antibiotic resistant form of “staph”, or MRSA, in several ways. MRSA is spread through physical contact with things or people that have MRSA. This can occur in hospitals and nursing homes, as well as in the community. For example, MRSA can be found in gyms or sporting areas and in child care centers. Because of the many sources of MRSA, it is hard to know how someone picked up MRSA. Taking antibiotics can also make it more likely to pick up a resistant strain of staph.

How Do You Know that I Have MRSA?

Doctors test for MRSA by sending a culture. A doctor may send a culture because a patient isn’t feeling well. Doctors sometimes send a culture from a patient’s nose. Nose cultures are usually done while a patient is in the hospital. In California, patients in hospitals are required to have nose cultures for MRSA if they have been recently hospitalized, if they are in the intensive care unit, if they will have surgery, if they are on hemodialysis, and if they are nursing home residents.

Does Having MRSA Mean that I Have an Infection?

No. MRSA often live in our noses without causing an infection. Like many other bacteria that live in our nose, throat, and gut, having MRSA without an infection is called *colonization* and is not the same as infection. Most people who are colonized with MRSA do not realize that they have MRSA. However, being colonized with MRSA does increase the risk of a later MRSA infection, which is what this trial is trying to prevent.

What Types of Infections Can MRSA Cause?

MRSA comes from the family of bacteria called *Staphylococcus*. *Staphylococcus* or “Staph” have been causing infections for hundreds of years across the world.

Infections from MRSA can be very different, such as skin infections or severe blood infections. Skin infections can first look like spider bites or bumps that are red, swollen, painful, or filled with pus. Areas of the body that are covered by hair, like the back of the neck, groin, buttock, armpit, or thighs are common places where these skin infections appear. However, these infections can occur almost anywhere on the body. Skin and deeper infections can also occur in surgical or other wounds.

MRSA can also cause infections in the bloodstream. Infections of the blood are especially dangerous because the blood can carry MRSA around the body. Infections can occur anywhere blood travels in the body. Patients who have intravenous (IV) catheters, such as a “central line” or “PICC” line, may be at risk for MRSA blood infections because these lines cause breaks in the skin and may allow bacteria to enter the bloodstream. MRSA blood infections can also occur in healthy persons without IV catheters and without infections at other areas of their body. Persons with severe MRSA infections are also at risk for MRSA blood infections.

MRSA can also cause infections in other parts of the body. Some other types of MRSA infections include infections of the bone or joint, urine or kidneys, and lung (pneumonia). It is important to know that MRSA does not cause the common cold, “the flu”, or “strep throat”. Please read the later section, MRSA Treatment, for more information on types of MRSA infections.



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MRSA at Home

How MRSA is Spread in the Home

MRSA are microscopic, invisible Staph germs that cannot be seen with the naked eye. MRSA can be spread when a person touches objects such as towels, bandages, or razors that have touched the skin or wounds of someone infected with MRSA. Even if MRSA is spread to others, MRSA doesn't always cause infection. In fact, many MRSA germs live on people's skin and don't cause infections. However, those MRSA germs can spread to others and can cause infections in the future. People with MRSA on their body that is not causing infection can be said to be "colonized" with MRSA.

There are several things that make MRSA spread. These include skin-to-skin contact between people, having skin breaks such as cuts, scrapes or sores where MRSA might enter the body, touching contaminated items and surfaces, being in crowded conditions where lots of people crowd together and contact one another, and poor hygiene. People may be at higher risk of MRSA in locations where these factors are common. These types of places include hospitals, nursing homes, rehabilitation facilities, athletic facilities, dormitories, military barracks, jails, crowded households, and daycare centers.

Risks from Contaminated Surfaces

MRSA doesn't always cause infection. In fact, many MRSA germs can live on objects and not people. When MRSA lives on an object, that object can be said to be "contaminated" with MRSA. MRSA-contaminated objects may look normal and even clean. MRSA can live on objects for many weeks.

MRSA can get on objects if someone who is colonized or infected with MRSA touches an object. Because MRSA often lives in wounds that are infected, persons with MRSA skin infections need to keep their wounds covered with bandages. Covering infected wounds is the best way to reduce the chance that surfaces will be contaminated with MRSA.

Even if surfaces of objects have MRSA on them, this does not mean that you will pick up MRSA or get an MRSA infection if you touch these surfaces. MRSA is most likely to cause problems when you have a cut or scrape that is not covered with bandages. MRSA can also get into small openings in the skin that may not be noticeable to you.

The best defense against picking up MRSA or preventing later infection among those colonized with MRSA is good hygiene such as hand washing, and regular bathing and showering. Soap and water kill germs like MRSA. Alcohol based hand sanitizers (rubs) such as gels and foams also kill germs like MRSA. Please keep your hands clean by washing them regularly with soap and water or an alcohol-based hand rub, especially after you may have touched something that may be contaminated with MRSA. If you must share medical equipment or gym equipment with others, either disinfect the equipment between use or use clothing or towels as a barrier between you and shared equipment. These are easy ways to decrease your risk of getting MRSA.

Preventing the Spread of MRSA

What can I do to prevent spreading MRSA to others?

- Clean your hands often with soap and water or use an alcohol-based hand sanitizer
- Take regular baths or showers using soap to clean your body
- Showering immediately after activities where you have direct skin contact with people or shared surfaces, such as after physical therapy sessions, rehabilitation sessions, group sports, or exercising at a health club
- Wash your sheets and towels at least once a week
- Change your clothes daily and wash them before wearing again
- Do not share towels, washcloths, razors, or other personal items
- Clean common areas of your home (bathrooms, countertops, etc.) daily with a household cleaner

What should I do about wounds or cuts?

- If you get a cut or scrape on your skin, clean it with soap and water and then cover it with a bandage until healed
- Pus from infected wounds can contain staph, including MRSA, so keeping the wound covered will help prevent the spread to others
- Bandages and tape can be discarded with the regular trash
- Clean your hands immediately after putting on or changing bandages
- Do not touch skin sores; if you do touch a sore, clean your hands right away
- Wear clothes that keep bandages and sores covered, if possible
- Do not participate in contact sports until your wounds or cuts have healed
- Do not go to a public gym, sauna, hot tub or pool until wounds or cuts have healed
- You, your family, and others in close contact should wash their hands frequently with soap and water or use an alcohol-based hand rub, especially after changing the bandage or touching the infected wound

Caring for Yourself

Does it matter how I wash my hands?

- Yes. You have to use soap and rub your hands together for at least 15 seconds to get rid of the bacteria. Washing your hands is the number one way to stop the spread of MRSA
- Also, you can spread MRSA to people you live with if you share towels. Consider having your own hand towel to dry your hands on

How do I clean my hands with alcohol-based hand sanitizer?

If your hands look dirty or if you've used the bathroom, you should use soap and water. Otherwise, if your hands don't look dirty, you can use hand sanitizer as a very effective way to get rid of germs. Don't use the hand sanitizers to clean surfaces or objects. Look for a sanitizer with at least 60% alcohol in it.

- Use enough to cover all the surfaces of your hands
- Apply sanitizer and rub together for at least 15 seconds, getting between the fingers and thumb, and around nails
- Allow your hands to air dry

Always wash your hands thoroughly:

- Before preparing food, eating, or drinking
- After coughing, sneezing, or blowing your nose
- Before and after touching your eyes, nose, mouth, genitals
- Before and after touching any cuts or wounds, including sores, acne, boils, or rashes
- Before and after changing bandages
- After going to the bathroom
- After touching urine, feces (poop), and body fluids—this includes items soiled with body fluids, such as bedding
- After cleaning the bathroom, changing your bedding, and doing laundry
- After touching things other people touch, such as phones, door knobs, computers, shopping carts, gym or rehab equipment

Contact with Family Members

Can I have contact with my family members?

- Naturally, contact with family members is an essential and important part of family life. In general, healthy people are at low risk of becoming infected with MRSA. Therefore, in general, you should not be worried about casual contact - such as kissing, hugging, and touching - as a major way to spread MRSA for both adults and children.
- MRSA is not exchanged through bodily fluids during kissing, sexual intercourse, etc. However, it can be spread through skin-to-skin contact. Touching wounds or cuts are the most worrisome way for spreading MRSA to family members. Cover any skin wounds with a bandage and anyone changing bandages should clean their hands immediately before and after doing this.

Laundry

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 (blood, pus), these may be laundered separately, but this is not absolutely necessary since laundry detergents kill germs.

Do I need to be careful when I do laundry?

- Yes. Touching dirty clothes and bedding can spread MRSA bacteria
- When touching your laundry or changing your sheets, hold the dirty laundry away from your body and clothes to prevent bacteria from getting on your clothes
- Be particularly careful with laundry that is soiled with body fluids, like blood or drainage from a sore, urine or feces (poop).
 - Wash these items immediately if possible, or place into a plastic bag until it can be washed.
 - If necessary, you can use disposable gloves when handling these

items. If you have cuts or sores on your hands or arms, you should avoid direct contact with these items. If you choose not to use gloves, make sure you wash your hands well for at least 15 seconds with soap and water immediately after handling.

- Remember to clean your hands with soap and water even if you have been wearing gloves
- Do not reuse gloves
- Wash your laundry with warm or hot water, use bleach if possible
- Dry in a warm or hot dryer and make sure the clothes are completely dry

How often should I change clothes and bedding?

- Change your sheets and towels at least once a week
- Change your clothes daily
- Do not put dirty clothes or clothes you have just worn back in your closet or drawers until they have been washed

Cleaning

What about cleaning my house?

- Simple daily cleaning is important
- Use a household disinfectant or bleach solution to clean surfaces daily
- Focus on surfaces that touch people's bare skin each day and any surfaces that could come into contact with uncovered infections and that are frequently touched – light switches, doorknobs, phones, toilets, sinks, and kitchen counters
- A simple wipe with a disinfectant wipe will help get rid of MRSA germs
- Wipe or spray the surface or object with the disinfectant and let it dry
- Large surfaces such as floors and walls **have not been directly linked** to the spread of staph and MRSA
- There is no evidence that spraying or fogging rooms or surfaces with disinfectants will prevent MRSA infections more effectively than the targeted approach of cleaning frequently touched surfaces and any surfaces that have been exposed to infections

Disinfectants to use:

Disinfectants effective against *Staphylococcus aureus* or staph are most likely also effective against MRSA. These products are readily available from grocery stores and **you should look for the word “disinfectant”**. Some examples include Lysol®, Clorox®, or bleach products as sprays or wipes. **Generic versions of these may be available and less expensive than brand names.**

Keep the bleach solution away from children and don't put it in bottles that could be mistaken for something to drink. While pop up wipes may be the easiest to use, a simple solution of bleach and water is also effective. To make a bleach solution:

- Mix two teaspoons bleach into one quart of water in a spray bottle and label it “bleach solution”
- Make it fresh each time you plan to clean because the bleach evaporates out of the water making it less effective
- Never mix bleach with other cleaners, especially ammonia

How should disinfectants be used to clean?

Always read the label first. Each disinfectant has instructions on the label that tell you important facts:

- How to apply the product to a surface
- If the surface needs to be wiped clean first to remove dirt
- If the surface needs to be rinsed after using disinfectant
- If the disinfectant is safe for certain surfaces
- Whether the product requires mixing with water before use
- Precautions you should take when using the product, such as wearing gloves or aprons or making sure you have good ventilation during application

If body fluids or pus get onto surfaces, you need to do the following:

- Put on disposable gloves, if available
- Wipe up the fluids with a paper towel
- Throw the paper towel in the trash

- Clean the surface thoroughly using disinfectant and a paper towel
- Throw the paper towel in the trash
- Then wipe the surface again with the disinfectant and a new paper towel and let it dry for at least 30 seconds
- Throw the paper towel in the trash
- Remove your gloves and throw them in the trash
- Wash your hands with soap and water

Summary

- MRSA can't be seen on objects
- MRSA can be spread by skin-to-skin contact or by contaminated objects
- Keep any open wounds or cuts bandaged
- Wash your hands often with soap and water or alcohol hand sanitizer
- Launder your clothing and bedding regularly
- Dry all laundry completely in a dryer
- Clean surfaces often touched by people with a disinfectant wipe or spray daily



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MRSA Treatment

MRSA Infections

MRSA can cause many different types of serious infections that need treatment with antibiotics. For example, MRSA can cause pneumonia, skin and wound infections, infections after medical procedures or surgery, and bone and joint infections. When these infections are very serious, they can cause MRSA to appear in the blood – a very serious event that needs urgent medical attention and antibiotics.

Patients who have intravenous (IV) catheters, such as a “central line” or “PICC” line, may be at risk for MRSA blood infections because these lines cause breaks in the skin and may allow bacteria to enter the bloodstream.



MRSA blood infections can also occur in healthy persons without IV catheters and without infections at other areas of their body.

General Signs of Infection

Most MRSA infections have at least one of the below signs of infection. Not all of the signs below will be seen with an infection and not all of the signs below mean that people have an infection with MRSA. This is because other health conditions can also cause these symptoms.

- Fever, chills, or shivering
- Redness or pain at the infected area
- Feeling run down or really tired
- In older patients, sometimes mental confusion can be a sign of infection

Signs of Specific Kinds of Infection

- 1) **Wound Infections:** The place on the skin where the infection occurred may be red, swollen, puffy, or painful. A yellow or green fluid, called pus, may also be draining from the skin. MRSA skin infections can also look like spider bites or bumps which then become worse and can be filled with pus. MRSA skin infections can also occur at hair follicles (where hairs come out of the skin). These are called boils and can look like blisters.
- 2) **Pneumonia (MRSA infection in the lungs):** People with pneumonia may find it hard to breathe, feel tired, have pain when coughing or taking deep breaths, have a cough that becomes worse over time, cough up thick yellow or greenish fluid, or have a fever.
- 3) **Line (catheter) Infections:** The place where the IV line goes into the skin may be painful, red, or have yellow or green fluid, called pus, come out of the skin. People with MRSA line infections can also have shivering when medicines are put through the IV line. Fever is also common in people with MRSA line infections.
- 4) **Bone and Joint Infections:** At the infected bone or joint, people may have swelling, feel pain or heat, or have difficulty moving the infected bone or joint. Patients may also have a fever with bone and joint infections.

Treatment of MRSA Infections

MRSA infections should always be treated by a doctor. It is important to follow the instructions for treatment that your doctor gives you.

If you have an MRSA infection, your doctor may choose one or more of the following treatments:

- 1) **Give Antibiotics (by mouth or by vein):** MRSA can defend itself against many antibiotics so MRSA can be difficult to kill. However, there are antibiotics that can remove MRSA and make the infection go away. If your doctor gives you antibiotics, take them exactly as prescribed. Do not stop early, even if you feel better. The last few pills kill the toughest germs. Never take antibiotics without a prescription from your doctor.
- 2) **Drain the Infection:** Some MRSA infections will make green fluid or pus. This can happen on the skin or inside the body depending on where the infection is. Large amounts of pus need to be drained in order to get rid of the infection. Often both drainage and antibiotics are needed, but for some skin infections, drainage alone can sometimes cure the infection. Only a doctor can tell you exactly what you need to cure an infection.

If you see pus coming from the skin, don't drain the pus yourself. It can be very dangerous to squeeze or poke a skin infection because it can push the bacteria deeper into the skin and make the infection much worse. Also sometimes the pus can come from an area deep in the skin that requires a doctor to help cure. Draining the infection should only be done by a trained health care provider.

If you have an infection drained, you should keep the area covered until it heals. Sometimes your doctor may ask you to come back for a checkup or to change the dressing. Please see the section, **MRSA at Home**, for details on how to practice good hygiene if you have a bandage or dressing.



CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

MRSA and Decolonization

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a germ that is resistant to many common antibiotics. This germ lives in the front of your nose. In fact, nearly 5 million people in the United States carry MRSA in their noses. MRSA may also be found on other parts of your body, such as your throat or skin, including in cuts or wounds.

Removing MRSA from these body areas may be important since people carrying MRSA have a higher chance of developing a future infection with MRSA in another part of their body. This process of removing MRSA from your body is called “decolonization”. Decolonization is thought to prevent infection in people that carry MRSA themselves, but it also may prevent them from passing MRSA to other people around them, such as their friends, family, and coworkers.

Since many common antibiotics do not work against MRSA, and because MRSA may live in your nose, throat, armpits, and skin, decolonization often involves several forms of treatment. These different treatments will work together to get rid of MRSA in the different places it may grow. Project CLEAR will use the special soaps and medicines below:

- Bactroban Nasal® ointment (to reduce and remove MRSA in your nose)
- Hibiclens® soap (to reduce and remove MRSA from your skin)
- PerioGard® mouthwash (to reduce and remove MRSA from your throat)

These medicines have been approved by the United States Food and Drug Administration (FDA) for use against MRSA. These medicines are very safe and widely used in hospitals across the country. In fact, smaller, shorter studies have shown that each of these products may be effective in reducing the amount of MRSA on the body and lowering the chances of developing an MRSA infection.

Several studies have looked at the effects of these products during a hospital stay. However, those who leave the hospital with MRSA are at higher risk for MRSA infection for many months up to a full year after leaving the hospital. Through Project CLEAR, we hope to find out whether these three treatments, when repeatedly used together for 6 months, are effective in removing MRSA and preventing infections for a full year after you leave the hospital.

These treatments fight MRSA in the following ways. Bactroban Nasal[®] ointment contains an antibiotic called mupirocin. Mupirocin works by preventing MRSA from making important proteins it needs to survive. Hibiclens[®] soap and PerioGard[®] mouthwash both contain a separate antiseptic called chlorhexidine. Chlorhexidine damages the coat of MRSA so that it is no longer protected from the environment.

Since MRSA can defend itself against antibiotics, it is very important that you use these medicines together and carefully as instructed. On the pages that follow, detailed instructions have been provided for you. Please follow them closely so that these medicines are used safely and effectively against MRSA.



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project CLEAR

Plan B

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CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

Hibiclens® (Chlorhexidine) Soap Instructions for Showering

Showering with Hibiclens® (chlorhexidine) helps reduce the amount of MRSA and other germs on your skin. With continued use along with PerioGard® mouthwash and Bactroban NASAL® ointment, it may get rid of MRSA and prevent MRSA infection. Before using Hibiclens®, please review the instructions below and contact Project CLEAR study staff with any questions at [REDACTED] or EndMRSA@uci.edu.

Special Considerations

- Do not use Hibiclens® if you have an allergy to chlorhexidine-containing products
- Avoid getting Hibiclens® into your eye or ear canal
- If Hibiclens® gets into eyes, flush with water

Before Starting Hibiclens® Showering

Do not share sponge or Hibiclens® with others

- Attach the calendar cling to your bathroom wall or mirror where you can see it every day. This cling is safe on mirrors, walls, and paint and will be easy to remove at the end of the trial.
- Attach the laminated instructions to a wall near your shower so you can see it while you shower
- Remove cap from Hibiclens® bottle and insert pump



- Ensure pump dispenses Hibiclens® smoothly before showering
- Use a new mesh sponge for each 5 day treatment with Hibiclens®

What I Need for Showering with Hibiclens®

1. Hibiclens® bottle and pump
2. Large mesh sponge
3. Two minute timer
4. Clean towel

How To Use Hibiclens®

Use Hibiclens® soap INSTEAD of your regular soap and shampoo. Please **DO NOT USE** other soaps, shampoos, or lotions since many of these products will inactivate Hibiclens® and prevent it from removing MRSA. Only hair conditioner may be used with Hibiclens®. **Lotions compatible with Hibiclens® will be provided upon request.**

- Wet face and hair with water
- With head and hair out of water stream, wash face and hair by pumping Hibiclens® onto hands and firmly massaging onto face and into hair and scalp
 - Ensure Hibiclens® reaches skin around nose. Avoid eyes and ear canal.
- Rinse face and hair with water
- If you use hair conditioner, apply it next, rinse
- Wet the mesh sponge
- Dispense 3 pumps of Hibiclens® onto the wet sponge and rub vigorously into lather
 - Hibiclens® will not lather until you massage Hibiclens® thoroughly into sponge
- Wash body by **turning off shower water** and **FIRMLY MASSAGING** the soapy Hibiclens® sponge onto your skin.
- ****IMPORTANT** for Hibiclens® to work, you should turn the WATER OFF while you lather.**

- Soap all areas of neck with special attention to getting soap between all skin folds
- Wash arms and legs one at a time by massaging skin **THOROUGHLY** with the soapy Hibiclens® sponge
- Then apply soap to chest and back using firm massage
- Then apply soap to abdomen using firm massage
- Then apply soap to hip and groin, followed by genitals and buttocks using firm massage
- Turn on the **2 minute shower timer**. **For the best effect, Hibiclens® needs to remain on all areas of your skin for at least 2 minutes.**
- Reapply soap a **SECOND TIME** to all skin areas from the neck down with firm massage exactly as above.
- Please place special attention to the neck, armpit, groin, areas between the fingers and toes, and all skin folds, including under the breasts for women. Firmly massage Hibiclens® into all skin areas.
- Turn on water after 2 minute timer goes off
- Rinse and pat dry with clean towel

When To Use Hibiclens®

- Use Hibiclens® soap **for all bathing needs (could be more than once a day)** Monday through Friday in the highlighted weeks on the calendar cling. During this time, take at least one shower per day. This means that twice a month, you will use Hibiclens® soap for 5 days in a row (Monday through Friday).

How To Shower Wounds with Hibiclens®

- Hibiclens® is safe on rashes and bruises
- Hibiclens® is safe on wounds or burns that are **not deep or very large**
 - In fact, Hibiclens® is FDA approved as a wound cleanser
- **Do NOT use on deep open wounds**
- Hibiclens® is safe on surgical wounds that are NOT deep or very large. It is safe to use over staples and stitches.
- **Apply gently then rinse with water**

Important Things to Remember

Avoiding Brown Stains

- If you put Hibiclens® (chlorhexidine) liquid **directly onto** bathing towels, wash towels, cloths, or bathtub surfaces and then wash with bleach, a **brown stain may appear due to a chemical reaction between chlorhexidine and chlorine (bleach).**
- **Staining does NOT occur** on towels or clothing if they touch your skin after you have washed with Hibiclens®. Once Hibiclens® binds to your skin, it will not rub off on other things. The staining requires direct contact with the chlorhexidine liquid and later contact with bleach. If you bathe with chlorhexidine, rinse, and then put on clothes or use sheets or towels, a brown stain should not develop after washing with bleach.

Allergic Reactions or Side Effects

- Allergic reactions and skin reactions are rare, but can occur. If you develop a rash or skin irritation that you believe is due to the Hibiclens® (chlorhexidine), discontinue use and contact Project CLEAR study staff at [REDACTED]). **We encourage you to call if you are unsure and would like to discuss concerns with study staff.**
- **Severe allergic reactions are very rare, but can occur. If you develop an allergic reaction involving severe hives or have any difficulty breathing, call 911 or go to your nearest emergency department.** A Project CLEAR study supervisor can be reached anytime, including after hours or on weekends for **urgent issues** that cannot wait until business hours by paging [REDACTED]



CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

Hibiclens® (Chlorhexidine) Soap Instructions for Bathing

Taking a bath with Hibiclens® (chlorhexidine) helps reduce the amount of MRSA and other germs on your skin. With continued use along with PerioGard® mouthwash and Bactroban Nasal® ointment, it may get rid of MRSA and prevent MRSA infection. Before using Hibiclens®, please review the instructions below and contact Project CLEAR study staff with any questions at [REDACTED] or EndMRSA@uci.edu.

Do not share sponge or Hibiclens® with others

Special Considerations

- Do not use Hibiclens® if you have an allergy to chlorhexidine-containing products
- Avoid getting Hibiclens® into your eye or ear canal
- If Hibiclens® gets into eyes, flush with water



Before Starting Hibiclens® Bathing

- Attach the calendar cling to your bathroom wall or mirror where you can see it every day. This cling is safe on mirrors, walls, and paint and will be easy to remove at the end of the trial.
- Attach the laminated instructions to the wall next to the bathtub so you can see it while you bathe
- Remove cap from Hibiclens® bottle and insert pump
- Ensure pump dispenses Hibiclens® smoothly before bathing

- Use a new mesh sponge for each 5 day treatment with Hibiclens®

What I Need for Bathing with Hibiclens®

1. Hibiclens bottle and pump
2. Large mesh sponge
3. Two minute timer
4. Clean towel

How To Use Hibiclens®

Use Hibiclens® soap INSTEAD of your regular soap and shampoo. Please **DO NOT USE** other soaps, shampoos, or lotions since many of these products will inactivate Hibiclens® and prevent it from removing MRSA. Only hair conditioner may be used with Hibiclens®. **Lotions compatible with Hibiclens® can be provided upon request.**

- Do not dilute
- Wet face and hair with water
- With head and hair entirely out of water, wash face and hair by pumping Hibiclens® onto hands and firmly massaging onto face and into hair and scalp
 - Ensure Hibiclens® reaches skin around nose. Avoid eyes and ear canal.
- Rinse face and hair with water
- If you use hair conditioner, apply it next, rinse
- Wet the mesh sponge
- Dispense 3 pumps of Hibiclens® onto the wet sponge and rub vigorously into lather
 - Hibiclens® will not lather until you massage Hibiclens® thoroughly into sponge
- Wash body by lifting parts of the body out of the bath water and **FIRMLY MASSAGING** the soapy Hibiclens® sponge onto the entire skin before placing back into the water
- **For the best effect, try to keep Hibiclens® soap on skin as long as possible (2 minutes if you can) before rinsing off.** We understand this may not be possible for certain parts of the body so please do the best you can.

- Soap all areas of neck with special attention to getting soap between all skin folds
- Lift arms and legs out of water one at a time and massage skin **THOROUGHLY** with the soapy Hibiclens® sponge
- Then apply soap to chest and back using firm massage while out of the bath water
- Then apply soap to abdomen using firm massage while out of the bath water
- Then apply soap to hip and groin, followed by genitals and buttocks using firm massage while out of the bath water
- Turn on 2 minute timer. **For the best effect, Hibiclens® should remain on all areas of your skin for at least 2 minutes. Do the best you can.**
- Reapply soap a second time to all skin areas from the neck down with firm massage exactly as above. **Keep your soapy body outside the bath water as much as you can while you re-apply Hibiclens®**
- Please place special attention to the neck, armpit, groin, areas between the fingers and toes, and all skin folds, including under the breasts for women. Firmly massage Hibiclens® into all skin areas.
- Rinse after 2 minute timer goes off
- Pat dry with clean towel

When To Use Hibiclens®

- Use Hibiclens® soap **for all bathing needs (could be more than once a day)** Monday through Friday in the highlighted weeks on the calendar cling. During this time, take at least one bath per day. This means that twice a month, you will use Hibiclens® soap for 5 days in a row (Monday through Friday).

How To Bathe Wounds with Hibiclens®

- Hibiclens® is safe on rashes and bruises
- Hibiclens® is safe on wounds or burns that are **not deep or very large**
 - In fact, Hibiclens® is FDA approved as a wound cleanser

- **Do NOT use on deep open wounds**
- Hibiclens® is safe on surgical wounds that are NOT deep or very large. It is safe to use over staples and stitches
- **Apply gently then rinse with water**

Important Things to Remember

Avoiding Brown Stains

- If you put Hibiclens® (chlorhexidine) **directly onto** bathing towels, wash towels, cloths, or bathtub surfaces and then wash with bleach, a **brown stain may appear due to a chemical reaction between chlorhexidine and chlorine (bleach).**
- **Staining does NOT occur** on towels or clothing if they touch your skin after you have washed with Hibiclens®. Once Hibiclens® binds to your skin, it will not rub off on other things. The staining requires direct contact with the chlorhexidine liquid and later contact with bleach. If you bathe with chlorhexidine, rinse, and then put on clothes or use sheets or towels, a brown stain should not develop after washing with bleach.
- Allergic reactions and skin reactions are rare, but can occur. If you develop a rash or skin irritation that you believe is due to the Hibiclens® (chlorhexidine), discontinue use and contact Project CLEAR study staff at [REDACTED] **We encourage you to call if you are unsure and would like to discuss concerns with study staff.**
- **Severe allergic reactions are very rare, but can occur.** If you develop an allergic reaction involving severe hives or have any difficulty breathing, call 911 or go to your nearest emergency department. A Project CLEAR study supervisor can be reached anytime, including after hours or on weekends for **urgent issues** that cannot wait until business hours by paging [REDACTED]
[REDACTED]



CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

Hibiclens® (Chlorhexidine) Soap Frequently Asked Questions

What If I Forget to Shower with Hibiclens® for Any Reason?

It depends on how many times you forgot. If you forget to shower or bathe with Hibiclens® **for a single day**, you should restart Hibiclens® as soon as possible and then go back to using Hibiclens and all other study products until you have used all three products for a total of 5 days (not counting the skipped day).

If you skipped **more than one day's** worth of Hibiclens®, you will need to restart the 5 days of therapy with all treatments (Hibiclens®, Bactroban Nasal®, PerioGard®) from the start. Remember it is important to make sure you use all 3 products at the same time. **If you need to restart any of these products because you missed more than a day's worth of use, you should continue using all 3 products until you have completed a 5-day course all in a row.**

How Many Pumps of Hibiclens® Should I Use?

Different people may need different amounts of Hibiclens®. For instance, women with long hair may need extra pumps of Hibiclens® to wash their hair. Use as much Hibiclens® as needed to keep the mesh sponge in a full lather while you are applying it to all skin areas. If the lather decreases, apply more Hibiclens®. To wash your entire body, please use **at least** 3 pumps. Much more may be needed to cover all skin areas with a well lathered mesh sponge. Hibiclens® will only lather after being massaged thoroughly into the mesh sponge.

I Am Worried My Hair Is Not Clean. Can I Use My Own Shampoo or Conditioner?

Hibiclens is highly effective in removing bacteria and getting your hair clean. Since shampoos will inactivate Hibiclens® and prevent it from getting rid of MRSA, **please only use Hibiclens® to wash your hair, face, and body during your assigned decolonization weeks. Hair conditioner may be used with Hibiclens®.**

Sometimes I Shower More Than Once per Day. Should I Use Hibiclens® Each Time I Shower or Bathe?

Yes, please use Hibiclens® each time you shower, bathe, or “freshen up,” regardless of how many times **during your assigned decolonization weeks.**

I Noticed a Rash on My Skin After Using Hibiclens®. Should I Stop Using Hibiclens®?

A skin rash may occur for many different reasons. A skin rash may be caused by food or medication allergy, infection, or irritation. If you believe that your skin rash may be caused by Hibiclens®, please contact Project CLEAR study staff at [REDACTED] or EndMRSA@uci.edu to discuss if you should discontinue Hibiclens®. If the rash is mild or you are not sure it is Hibiclens® that is causing the rash, and you wish to continue using Hibiclens®, that is fine. Just let us know, so that we can check on you and make sure your rash is not getting worse.

If the rash is an allergic reaction involving hives or you develop difficulty breathing, please call 911 or go to your nearest emergency department.

I Don't See Lather on My Face. Can I Use My Regular Face Wash?

Since soaps will inactivate Hibiclens® and prevent it from getting rid of MRSA, please only use Hibiclens® to wash your face. Hibiclens® does not lather as much as regular soap, but it actually works better than soap to remove germs. Hibiclens® should replace your regular face wash during your scheduled weeks of Hibiclens® bathing.

I Am on a Medication Prescribed by My Doctor. Should I Stop Taking My Medication in Case It Interferes with Hibiclens®?

No. Please continue using all your regular medications (including skin medications) as prescribed by your doctor. Hibiclens® should not change the way you use prescription medications.

Can I Use Hand Soap to Wash My Hands?

Yes. Although soaps can inactivate Hibiclens®, we understand the frequent need to wash hands during the day. Continue to use available soap or alcohol rub products to keep your hands clean throughout the day. Please note that **hand** soaps are the only soaps that may be used during Hibiclens® treatment weeks.

I Have Dry Skin. Can I Use Skin Lotion?

The ingredients in most skin lotions will inactivate Hibiclens® and prevent it from getting rid of MRSA. The only lotions that can be used with Hibiclens® are *Cetaphil Moisturizing Lotion* and *Eucerin Original Lotion*. Please contact Project CLEAR study staff if you would like these lotions to be provided for you.

Can I Use Shaving Cream, Deodorant, and Hair Products like Hair Gel or Hair Wax?

Yes. Shaving cream, deodorant, hair gel or hair wax can be used during Hibiclens® treatment weeks.

Can I Wear My Regular Cologne or Perfume?

Since the ingredients in perfumes and colognes may inactivate Hibiclens® and prevent it from getting rid of MRSA, please do not use cologne or perfume during scheduled weeks of Hibiclens® bathing.

Can I Use Suntan or Sunscreen Lotion?

Since the ingredients in suntan and sunscreen lotions will inactivate Hibiclens® and prevent it from working against MRSA, please do your best to avoid suntan or sunscreen lotion during scheduled weeks of Hibiclens® bathing. To protect your skin from the sun, please wear sun-protective clothing, hats, or avoid the sun especially when the UV index is at its highest.

Is Hibiclens® Safe to Use on the Groin or Genitals?

Yes. The medication in Hibiclens® has been approved for external use on the groin and genitals by the US Food and Drug Administration (FDA). Please wash these areas thoroughly with Hibiclens® as shown in the instructions. For women, only use Hibiclens® on external genital areas.

Should I Be Concerned about Hibiclens® Having a Stinging Effect on Wounds?

No. Antiseptic over-the-counter products often contain alcohol and will sting when applied to wounds. Hibiclens® is safe on wounds, burns, and surgical wounds that are NOT deep or very large. It is also safe to use over staples and stitches. Hibiclens® is approved as a wound cleanser by the US Food and Drug Administration (FDA). However, please do not use Hibiclens® on **deep open wounds**.

Do I Need Gloves When Using Hibiclens®?

No. Gloves are not needed to touch or handle Hibiclens®. Hibiclens® is approved for use on your skin.

Is It True That Hibiclens® Can Cause a Brown Stain when Mixed with Bleach?

Yes. Since Hibiclens® can sometimes produce a brown stain if it comes into direct contact with bleach, we recommend avoiding bleach or using a **non-chlorine** bleach to wash your clothes during your decolonization weeks.

Staining does NOT occur on clothing or towels if they touch your skin after you have washed with Hibiclens®. Once Hibiclens® binds to your skin, it will not rub off on other things. The staining requires direct contact with the Hibiclens® and later contact with bleach. If you bathe with Hibiclens®, rinse, and then put on clothes or use sheets or towels, a brown stain should not develop after washing with bleach.

Are There Any Important Parts of the Body to Remember when Showering or Bathing with Hibiclens®?

All areas of the skin are important for getting rid of MRSA. However, people are most likely to forget to clean **skin folds**. This is especially important in areas that become sweaty or dirty such as the neck, armpit, groin, skin between the fingers and toes, and all skin folds, including under the breasts for women. Please make sure you remember to wash all areas of your body thoroughly when showering or bathing with Hibiclens®.



CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

PerioGard® (Chlorhexidine) Mouthwash Instructions for Use

PerioGard® is a mouthwash containing chlorhexidine that will reduce the amount of MRSA that lives in the throat and may lower your risk for MRSA infection. It also kills the germs on your gums and teeth. Before using, please review all instructions below and contact Project CLEAR study staff with any questions at [REDACTED] or EndMRSA@uci.edu.

- Use PerioGard® during your assigned weeks of every month (either **1st and 3rd weeks** OR **2nd and 4th weeks**)
- During these weeks, use **twice per day for 5 days** (Monday through Friday)

Special Considerations

- Do not use PerioGard® if you have an allergy to chlorhexidine
- PerioGard® is a mouthwash and is not meant to be swallowed. The small amount that may be swallowed after spitting out the rinse is considered safe.

Things to Remember

- PerioGard® will stick to plaque on teeth, so be sure to brush and floss your teeth **right before** you use PerioGard®. This will avoid any staining of plaque during the 5 days of use.
- Rinse toothpaste completely from your mouth with water before using. Toothpaste can interfere with PerioGard®'s ability to fight MRSA.

- Do not eat and drink right **after** using PerioGard®. PerioGard® works best if you do not eat and drink for an hour or two.
- Do not use any other mouthwash products since they may inactivate PerioGard® and prevent it from fighting MRSA

Instructions for Use

- 1) Use the cap on the container to measure 15 mL (1/2 fluid ounce)
- 2) Fill the cap to the “fill line”
- 3) Swish PerioGard® around in your mouth for at least 30 seconds
- 4) Spit out. Do not rinse with water immediately after use.
- 5) Use two times per day, preferably in the morning and evening



Allergic reactions are rare, but can occur. **If you develop mouth irritation, please contact Project CLEAR study staff at [REDACTED]** If you develop an allergic reaction involving hives or difficulty breathing, call 911 or report to your nearest emergency department.

A Project CLEAR study supervisor can be reached anytime, including after hours or on weekends for **urgent issues that cannot wait until business hours** by paging [REDACTED]



CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

PerioGard® (Chlorhexidine) Mouthwash Frequently Asked Questions

How Does PerioGard® Work?

PerioGard® contains the antiseptic, chlorhexidine, which destroys the bacteria that grow in the plaque (coating) that forms on your teeth between brushings. However, PerioGard® does not prevent plaque and tartar from forming, so proper tooth brushing and flossing are still necessary and important.

It is recommended that you brush your teeth very well before using PerioGard® since PerioGard® can stick to plaque and tartar. However, before using PerioGard®, be sure to rinse out all the toothpaste from your mouth and teeth since toothpaste will inactivate PerioGard®.

I Forgot to Use PerioGard®. What Should I Do?

It depends on how many times you forgot. If you only forgot one day's worth (or less than a day's worth of use), you should perform mouth washing with PerioGard® as soon as possible and then go back to your regular schedule.

If you skipped more than one day's worth of mouth washing, you will need to restart the 5 days of therapy with all treatments (Hibiclens®, Bactroban Nasal®, PerioGard®) from the start. Remember it is important to make sure you use all 3 products at the same time. **If you need to restart any of these products because you missed more than a day's worth of use, you will need to restart all 3 of them for another 5-day course.**

What Does PerioGard® Taste Like?

Some people get a bitter aftertaste after using PerioGard®. However, please do not rinse your mouth with water or any other mouthwashes immediately after using chlorhexidine, since this may increase the bitterness. Importantly, rinsing with water and other mouthwashes may also decrease the effect of the medicine. In patients that do experience a bitter aftertaste, this effect will become less noticeable after continued use.

Will PerioGard® Affect My Sense of Taste?

PerioGard® may change the way foods taste to you especially if you eat right after using PerioGard®. Sometimes this side effect may last for several hours after you use PerioGard®. In most cases, this effect will become less noticeable as you continue using PerioGard®. When you stop using PerioGard® your taste should return to normal. Not everyone will experience this.

Will PerioGard® Affect My Teeth?

PerioGard® will stick to plaque on teeth, so be sure to brush your teeth well before you use PerioGard®. This will help prevent staining of plaque and tartar in your mouth for the 5 days that you use PerioGard®.

What Happens if I Accidentally Swallow PerioGard®?

In general, the chlorhexidine in PerioGard® will not be absorbed into the bloodstream even if it is swallowed. Swallowing a small amount is not dangerous. However, PerioGard® also has a small amount of alcohol in it. If a large amount is swallowed, the effects would be similar to drinking alcohol. So please keep your PerioGard® bottle away from children. If an accidental overdose occurs, please call poison control (800-222-1222).



CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

Bactroban Nasal[®] (Mupirocin) Ointment Instructions for Use

Bactroban Nasal[®] (mupirocin) is an antibiotic ointment that is FDA approved for use in your nose to get rid of MRSA. Before applying, please review all instructions below and contact Project CLEAR study staff with any questions at [REDACTED]

- Use Bactroban Nasal[®] during your assigned weeks of every month (either **1st** and **3rd weeks** OR **2nd** and **4th weeks**)
- During these weeks, use **twice per day for 5 days (Monday through Friday)**

Special Considerations

- Do not use Bactroban Nasal[®] if you have an allergy to the product
- Avoid contact with eyes



Missed Doses

If you forgot to use Bactroban Nasal[®] for one day or less, you should restart Bactroban Nasal[®] as soon as possible and then go back to your regular schedule. Do *not* double up doses. Always restart with the usual dose.

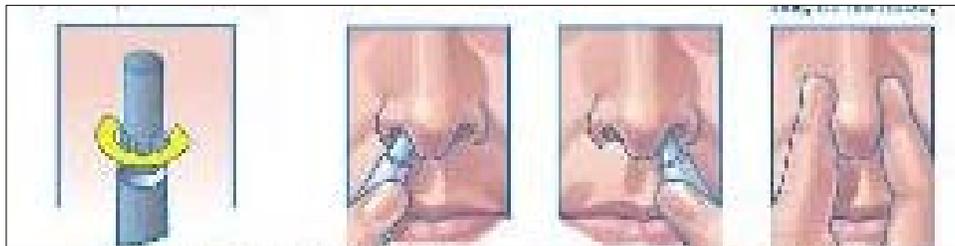
If you skipped more than one day's worth of Bactroban Nasal[®], you will need to restart the 5 days of therapy with all treatments (Hibiclens[®], Bactroban Nasal[®], PerioGard[®]) from the start. Remember it is important to make sure you use all 3 products at the same time.

If you miss more than a day's worth of use of any of these products, you will need to restart all 3 of them together for another 5-day course.

If you have missed doses and are not sure what to do, contact Project CLEAR study staff at [REDACTED] or EndMRSA@uci.edu for instructions.

How I Should Use Bactroban Nasal®

- 1) Tilt your head back
- 2) Turn cap counter-clockwise to puncture the seal
- 3) Apply half the tube content directly into each nostril
- 4) You may use a q-tip to help distribute the ointment
- 5) Press nostrils together and massage for 1 minute
- 6) Place used tube into disposal box and bring with you to your next clinic visit
- 7) Wash your hands with soap and water as soon as you are finished



Allergic reactions are rare, but can occur. **If you develop irritation, please contact the study coordinators at [REDACTED]** If you develop an allergic reaction involving hives or difficulty breathing, call 911 or report to your nearest emergency department.

A Project CLEAR study supervisor can be reached anytime, including after hours or on weekends for **urgent issues that cannot wait until business hours** by paging [REDACTED]



CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

Bactroban Nasal[®] (Mupirocin) Ointment Frequently Asked Questions

Can I Use Nasal Spray or Other Medicines in My Nose while Using Bactroban Nasal[®] ?

Unless your doctor has prescribed or recommended medicines that go in the nose like nasal sprays, please do not use other medicines or nasal sprays inside the nose on the same days that you are using Bactroban Nasal[®] ointment. Other nasal products may inactivate Bactroban Nasal[®] and prevent it from working against MRSA. If your doctor has prescribed or recommended medicines that go into the nose like nasal sprays, continue to use them as prescribed by your doctor.

I Have a Stuffy and/or Runny Nose. Should I Still Use Bactroban Nasal[®] ?

Yes. Please continue using Bactroban Nasal[®] ointment even if you have a stuffy and/or runny nose. Apply the ointment after you blow your nose. This will reduce the chance that you will need to blow your nose right after you apply the ointment. The medicine will continue to kill MRSA even if you have a cold. Bactroban Nasal[®] will not have any effect on the common cold. Remember that colds are caused by viruses and MRSA is a bacteria.

Can I Blow My Nose when Using Bactroban Nasal[®] ?

If possible, please do not blow your nose right after applying the Bactroban Nasal[®] ointment. Blowing your nose right after use may remove the ointment and prevent it from working. About five minutes after applying Bactroban Nasal[®] to the inside of your nose, it will be fine to blow your nose.

Why Do I Sometimes Feel like Sneezing when I Use Bactroban Nasal®?

Some people feel like sneezing after they use Bactroban Nasal®. This may be because the tube was inserted too deep into each nostril and scratched the inside of their nose with the tube. If this happens to you, please try applying the nasal ointment more gently. If you think you have developed an allergic reaction to Bactroban Nasal®, please contact the study coordinators at 8 [REDACTED]
[REDACTED]

Does Bactroban Nasal® Ointment Have Any Side Effects?

Side effects for Bactroban Nasal® are rare. If side effects do occur, they may involve minor burning, stinging, pain, or itching. If you think you have developed a serious reaction to Bactroban Nasal®, please stop using the ointment and contact Project CLEAR study staff at [REDACTED]. If you have a severe reaction, go to the nearest emergency department.

I Forgot to Use Bactroban Nasal®. What Should I Do?

It depends on how many times you forgot. If you forgot to use Bactroban Nasal® for one day or less, you should restart Bactroban Nasal® as soon as possible and then go back to your regular schedule. Do *not* double up doses.

If you skipped more than one day's worth of Bactroban Nasal®, you will need to restart the 5 days of therapy with all treatments (Hibiclens®, Bactroban Nasal®, PerioGard®) from the start. Remember it is important to make sure you use all 3 products at the same time. **If you miss more than a day's worth of use of any of these products, you will need to restart all 3 of them together for another 5-day course.**

If you have missed doses and are not sure what to do, contact Project CLEAR study staff at [REDACTED] or EndMRSA@uci.edu for instructions.



CHANGING LIVES BY ERADICATING ANTIBIOTIC RESISTANCE

Safety and Side Effects

Because you are in the Decolonization Group, you will be using mupirocin and chlorhexidine gluconate (CHG) products during the study to reduce and possibly get rid of MRSA on your body. All of the products used in this trial have excellent safety profiles.

Both mupirocin and CHG are only used topically, and are not absorbed into the bloodstream during use. In addition, these FDA-approved products have been used in healthcare for a very long time and are considered safe for use in adults. CHG, which is found over-the-counter, has been used in healthcare for over 50 years. In fact, CHG as an oral rinse is considered the gold standard in dental and oral hygiene.

In the case of mupirocin and CHG, many people have no side effects when using them. However, as with any medication, side effects may occur. With topically applied products like mupirocin and CHG, the most common side effects are irritation at the site of application. The following is a list of each of the study products and the most common side effects that people have reported:

Hibiclens® (Chlorhexidine Gluconate Soap 4.0%)

To date, hundreds of thousands of patients have used the chlorhexidine gluconate soap 4.0% in Hibiclens® for bathing. Local side effects are estimated to happen in less than 1% of patients:

- Skin irritation
- Rash
- Redness of the skin

PerioGard® (Chlorhexidine Gluconate Mouthwash 0.12%)

Local side effects to PerioGard® as a mouthwash are also uncommon and happen in less than 1% of patients. However, PerioGard® will stick to plaque and tartar on teeth, so it is recommended that PerioGard® be used after thorough brushing of the teeth. It is also just as important that the toothpaste be rinsed out of the mouth thoroughly, since toothpaste can prevent PerioGard® from killing bacteria.

Bactroban Nasal® (Mupirocin Ointment)

Side effects to Bactroban Nasal® are uncommon and happen in **1% or less** of patients. Among these, rare side effects include:

- Mild runny nose
- Change in sense of taste
- Sore throat

Severe Allergic Reactions

In **extremely rare** circumstances, severe allergic reactions to chlorhexidine and mupirocin have been reported. **Such serious reactions are so rare that it cannot even be accurately reported.**

However, if you think you might be developing a severe allergic reaction (including hives, severe itching, difficulty breathing, tightness in the chest, swelling of the mouth, face, lips, or tongue), stop the study drug and **immediately** call 911 or go to the nearest emergency department.

A Project CLEAR study supervisor can be reached anytime, including after hours or on weekends for urgent issues that cannot wait until business hours by paging [REDACTED]

For less severe side effects, please contact Project CLEAR study staff by calling toll free at [REDACTED] or emailing us at EndMRSA@uci.edu. **We encourage you to call if you are unsure and would like to discuss concerns with study staff.**