

# **Implementation Pearls for Decolonization in Healthcare: *The Process of Adoption***

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# What is Decolonization?

- Topical antiseptics to reduce body bacteria and infection
- Commonly
  - Chlorhexidine (CHG) for skin and wound bathing
  - Mupirocin or iodophor for nasal use
- Prevents shedding, spreading, and infection
- Used in vulnerable times, high risk populations
- Active against drug-resistant bacteria
- Strong safety record

# The REDUCE MRSA Trial

Randomized Evaluation of Decolonization vs. Universal Clearance to Eliminate MRSA

- 43 Hospital, 74 ICUs
- 3-arm cluster randomized ICU trial
- Universal decolonization arm (CHG, mupirocin)
  - 37% reduction in MRSA clinical cultures
  - 44% reduction in all bloodstream infection
  - 44% reduction in blood culture contamination
  - 26-37% reduction in uropathogens in men



Huang et al. N Engl J Med 2013;368:2255-2265  
Huang et al. ICHE 2014; 35 S3:S23-S31  
Septimus et al. ICHE 2014; 35 S3:S17-S22  
Huang et al. Lancet ID 2016;16(1):70-9

# Implementation Pearl #1

## *Fund Pragmatic Trials*

- Assess impact under usual care
- Usual hospital QI infrastructure
- No research staff on-site
- Provided
  - Coaching calls
  - Educational materials, protocols, training modules, video
  - Staff handouts, FAQs, talking points

# Implementation Pearl #2: Provide Tools

## Evite las infecciones durante la hospitalización Bañar diariamente con el jabón CHG **El Personal**

Durante la hospitalización, bañe a los pacientes diariamente con el jabón antiséptico especial (CHG) para ayudar a prevenir las infecciones. **Recuerde** animar el baño o ducha con CHG. **Proteja a sus pacientes diariamente** con el jabón CHG.

## Prevent infections during the hospital stay BATHE daily with Chlorhexidine (CHG) soap **STAFF**

While in the hospital, bathe patients every day with a special antiseptic soap. **Encourage CHG shower or bath** every day. **Protect your patients every day** with CHG soap.

## Evite las infecciones durante su hospitalización DUCHAR diariamente con el jabón Chlorhexidine (CHG) **EI PACIENTE**

Durante su estancia, ducharse todos los días con un jabón antiséptico especial (CHG), que elimina microbios y previene la infección. **Tomar una ducha con CHG** diariamente. **Protégase diariamente** con el jabón CHG.

## Prevent infections during your hospital stay SHOWER daily with Chlorhexidine (CHG) soap **PATIENT**

During your stay, shower every day with a special antiseptic soap (CHG) which removes germs and prevents infection better than soap and water.

**Take a CHG Shower**

SHOWERING with CHG soap

- You will be given a 4 oz CHG bottle to wash your hair, face, and body each day
- Begin with hair and face, rinse
- Apply generous amount of CHG to mesh sponge and rub until foamy
- Use the mesh sponge. It helps CHG lather well**
- Apply CHG with water off** or stand out of water stream
- Firmly massage onto skin. Clean from top down (cleanest to dirtiest areas). Reapply CHG to keep sponge foamy
- Ask for help for hard-to-reach areas**
- For best effect, leave soapy lather on skin for 2 minutes. Rinse body well. Rinse mesh sponge and hang to dry.
- If needed, ask your nurse for CHG-compatible lotions to moisturize

**Protect Yourself Every Day**

Reminders

- CHG is proven to work better than regular soap to get rid of germs
- Once massaged onto skin, CHG works to kill germs for 24 hours
- Use CHG every day. Starting on the admission day works best** to remove germs before IVs, lines, urinary catheters, and procedures or surgery
- Be thorough. Ask for help to reach hard-to-reach areas, including backside, around devices, on wounds
- CHG is safe on rashes, burns, and wounds that are not large or deep

Clean all skin areas with attention to:

- Neck
- All skin folds
- Skin around all devices (tubes/drains)
- Wounds and open skin
- Armpit, groin, between fingers/toes

**Avoid eyes and ear canals**

\* Regular soap and shampoo prevent CHG from working well. If you must use your own shampoo or face wash, use them first and try to keep the shampoo and face wash off the body so CHG will work as body soap.

## Shower Instructions **ABATE Infection Project**

For your health, we are pleased to provide you with a special liquid soap, chlorhexidine, which has been proven to work better than regular soap and water in removing germs from your skin and keeping you clean.

- Use the bottle of liquid chlorhexidine (CHG) for all areas of the body. Begin by washing hair using CHG as shampoo. Rinse well.
- Next, clean face with CHG, but take care to **avoid getting soap into eyes and ears**. Rinse.
- Apply generous amount of CHG to mesh sponge and rub until foamy
  - Wet skin with water
  - Turn water off or stand out of water stream
  - FIRMLY MASSAGE** soapy sponge onto all skin. Reapply CHG generously to the sponge to keep sponge with plenty of foamy lather. Be sure to clean from top down (cleanest to dirtiest areas).

Hospital Name: \_\_\_\_\_ Unit Name: \_\_\_\_\_

### HCA Skills Assessment:

Hospital Corporation of America® **CHG Showering – Patient Self-Bathing** 12 minutes

Please complete for **THREE** different patients per unit.

*Please record patient responses after the patient showered with CHG liquid.*

**Questions**

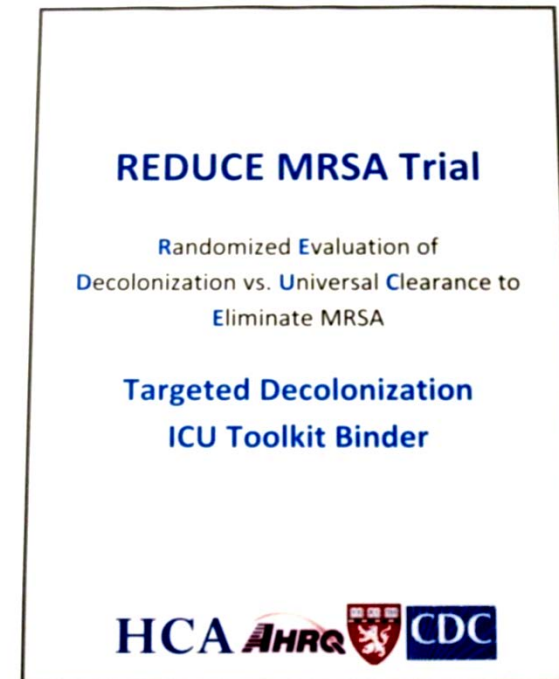
- Were you provided a handout with instructions on how to apply the CHG liquid in the shower?  Y  N
- Were you told that CHG kills germs better than regular soap and water?  Y  N
- Did you use the mesh sponge to apply the CHG?  Y  N
- Did you soap up twice with CHG before rinsing?  Y  N
- Did you leave the CHG on your skin for 2 minutes before rinsing off?  Y  N
- Were you told NOT to use other bathing soaps or lotions while in this unit?  Y  N
- Were you told to bathe or shower daily with CHG while in this unit?  Y  N
- Did you or an assistant clean your lines, tubes, and/or drains with a CHG cloth after showering?  Y  N  N/A
- Did you or an assistant clean your wounds with a CHG cloth after showering?  Y  N  N/A

1. Fold well, including too. 2. Rinse well, including too. 3. Rinse to dry. 4. Use to moisturize your body. We recommend using em before the CHG soap. 5. Use em and shampoo prevents infection.

Staff training video for CHG bathing/showering at <https://vimeo.com/164608558>

# Toolkits

- Contact Information and Phone Matrix
- Participation Requirements
- Nursing Protocol
- FAQ
- Do's and Don'ts
- Patient/Resident Talking Points
- Instructional Handouts
- Training Module
- Just in Time Training
- CHG Compatibility
- Safety and Side Effects
- Compliance Documentation



# Implementation Pearl #3:

## *Require Training*

- Proper bathing not intuitive
- More than cleaning intact skin
  - ✓ Lines, tubes, drains, devices
  - ✓ Wounds
  - ✓ Rashes, friable skin
- Remove incompatible products
- Air dry

### Chlorhexidine Only Works If Applied Correctly: Use of a Simple Colorimetric Assay to Provide Monitoring and Feedback on Effectiveness of Chlorhexidine Application

Laura Supple, BS;<sup>1</sup> Monika Kumaraswami, MD;<sup>1</sup> Sirisha Kundrapu, MD, MS;<sup>2</sup> Venkata Sunkesula, MD, MS;<sup>2</sup> Jennifer L. Cadnum, BS;<sup>2</sup> Michelle M. Nerandzic, BS;<sup>1</sup> Myreen Tomas, MD;<sup>3</sup> Curtis J. Donskey, MD<sup>2,3</sup>

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We used a colorimetric assay to determine the presence of chlorhexidine on skin, and we identified deficiencies in preoperative bathing and daily bathing in the intensive care unit. Both types of bathing improved with an intervention that included feedback to nursing staff. The assay provides a simple and rapid method of monitoring the performance of chlorhexidine bathing.

*Infect Control Hosp Epidemiol* 2015;00(0):1-3

# Implementation Pearl #4: Assess Adherence

- 3-5 assessments per unit per month

**ABATE Infection Project**  
CHG Cloth Self-Bathing Patient Survey

Please complete for **THREE** different patients per unit

Active Bathing to Eliminate Infection Project

Please record patient responses after the patient bathed him/herself with the CHG cloths.

**Questions**

1. Were you provided a handout with instructions on how to apply the CHG bathing cloths?  
 Y  N
2. Were you told that the CHG bathing cloths kill germs better than regular soap and water?  
 Y  N
3. Were you told that the temporary stickiness was due to aloe and would go away when dried?  
 Y  N
4. Were you told that the CHG bathing cloths should not be rinsed off?  
 Y  N
5. Were you told to NOT use other bathing soaps while in this unit?  
 Y  N
6. Were you told to bathe daily with the cloths while in this unit?  
 Y  N
7. Did you use all six cloths?  
 Y  N
8. Did you or a bathing assistant clean your lines, tubes, and/or drains?  
 Y  N  N/A
9. Did you or a bathing assistant clean your wounds?  
 Y  N  N/A
10. Did you throw the used cloths in the trash (did not flush them)?  
 Y  N

**Patient CHG Cloth Self-Bathing Survey**

**ABATE Infection Project**  
CHG Cloth Observation Checklist

Please complete for **THREE** different staff per unit

Active Bathing to Eliminate Infection Project

**Individual Giving CHG Bath**

Please indicate who performed the CHG bath.

Nursing Assistant (CNA)  Nurse  Other: \_\_\_\_\_

**Observed CHG Bathing Practices**

Please check the appropriate response for each observation.

Y  N Patient received CHG cloth bathing handout

Y  N Patient told that bath is a no rinse cloth that provides protection from germs

Y  N Provided rationale to the patient for not using soap at any time while in unit

Y  N Massaged skin firmly with CHG cloth to ensure adequate cleansing

Y  N Cleaned face and neck well

Y  N Cleaned between fingers and toes

Y  N Cleaned between all folds in perineal and gluteal area

Y  N  N/A Cleaned occlusive and semi-permeable dressings with CHG cloth

Y  N  N/A Cleaned 6 inches of all tubes, central lines, and drains closest to body

Y  N  N/A Used CHG on superficial wounds, rash, and stage 1 & 2 decubitus ulcers

Y  N  N/A Used CHG on surgical wounds (unless primary dressing or packed)

Y  N Used all 6 cloths (more if needed)

Y  N Allowed CHG to air-dry / does not wipe off CHG

Y  N Disposed of used cloths in trash / does not flush

**Query to Bathing Assistant/Nurse**

1. Do you ever use soap in conjunction with a CHG bathing cloth? If so, when?  
\_\_\_\_\_
2. Do you reapply CHG after an episode of incontinence has been cleaned up?  
\_\_\_\_\_
3. Are you comfortable applying CHG to superficial wounds, including surgical wounds?  
\_\_\_\_\_
4. Are you comfortable applying CHG to lines, tubes, drains and non-gauze dressings?  
\_\_\_\_\_

**CHG Cloth Bathing Observation Form**



# Adherence Matters

- Post discharge trial of education vs decolonization if MRSA+
- Overall decolonization arm
  - 30% reduction in MRSA infection
  - 17% reduction in all infection
- Fully adherent subjects
  - 44% reduction in MRSA infection
  - 40% reduction in all infection

Project CLEAR Trial  
IDWeek 2016

# **Implementation Pearl #5:** ***Foster Comparison and Collaboration***



# Implementation Pearl #6: *Ensure Dissemination*

- Dissemination grants are critical

**AHRQ** Agency for Healthcare Research and Quality  
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Clinicians & Providers

Education & Training

**Hospitals & Health Systems**

- Hospital Resources
  - Emergency Department Tools and Resources
  - Emergency Severity Index

## Universal ICU Decolonization: An Enhanced Protocol

Publication # 13-0052-EF

### Introduction and Welcome

This enhanced protocol is based on materials successfully used in the REDUCE MRSA Trial (**R**andomized **E**valuation of **D**ecolonization vs. **U**niversal **C**learance to **E**liminate Methicillin-Resistant *Staphylococcus aureus*), which found that universal decolonization was the most effective intervention. Universal decolonization led to a 37 percent reduction in MRSA clinical cultures and a 44 percent reduction in all-cause bloodstream infections.

[http://www.ahrq.gov/professionals/systems/hospital/universal\\_icu\\_decolonization.html](http://www.ahrq.gov/professionals/systems/hospital/universal_icu_decolonization.html)

# The REDUCE MRSA Trial

Randomized Evaluation of  
Decolonization vs. Universal Clearance to Eliminate MRSA

- Successful adoption by 95 hospitals with BSI reduction
- 80% of US hospitals use universal decolonization in ICUs

Septimus ES et al. CID 2016;63(2):172-7  
Shuman EK et al. IDWeek 2014

## **Implementation Pearl #7:** ***Assess Value to Other Settings***

- ICU                      REDUCE MRSA, SCRUB, Climo et al.
- Non-ICU                ABATE Infection Trial
- Post-Discharge        Project CLEAR
- Nursing Homes        PROTECT Trial
- Region                  SHIELD OC

