

# The Impact of Decolonization in High-Risk Medical-Surgical Patients

Skip G Katipunan, BSN, RN, CIC; Rodolfo Espinosa, Jr., RN; Danielle Porras, BSN, RN; Tami Riojas, RN; Gwenn Snook, MLT(ASCP), MT(AAB), CIC



## BACKGROUND

Healthcare-associated infections (HAIs) are the most common complication of hospital care and are one of the top 10 leading causes of death in the United States.

CHG daily bathing paired with nasal decolonization has proven to be an effective strategy for central line-associated bloodstream infection (CLABSI) prevention in the critical care setting (Huang et al., 2019) and in non-critical care hematology-oncology units (Tien et al., 2019). The newest practice guidelines now recommend this intervention for patients outside the intensive care unit (ICU) who have invasive devices such as central lines, midline catheters, and lumbar drains to reduce the incidence of clinical cultures positive for methicillin-resistant Staphylococcus aureus (MRSA), a proxy measure for CLABSIs and other HAIs (Popovich et al., 2023). Dombecki et al. (2020) showed evidence that CHG daily bathing reduced CLABSIs by 26% in the med-surg setting, and a study by Engel et al. (2022) showed a 22.8% reduction.

## PURPOSE

**PICOT Question:** In med-surg patients with invasive devices (P), will the introduction of CHG daily bathing and twice-daily alcohol nasal antiseptis paired with targeted patient education (I) result in a decrease in the rate of CLABSIs and/or MRSA bacteremia (O) over 12 months (T) when compared to the current practice of no CHG daily bathing or nasal decolonization (C)?

## METHODS

A dual decolonization strategy has been in place at UMC in the adult ICUs since October 2022 and in intermediate care units (IMCs) since April 2023. The strategy includes daily bathing with 2% CHG cloths and nasal decolonization with 62% ethyl alcohol swabs every 12 hours during their critical care stay. This process will be expanded to include all adult patients with an invasive device in all units outside critical care. The intervention will be paired with a targeted patient education handout, as many patients in the med-surg arena might be alert, oriented, and independent in their bathing efforts, and so will be offered education by the primary nurse, to include the handout.

## BASELINE DATA

Baseline data for comparison. Pre-intervention data is shown for two years prior to implementation. This includes the 3<sup>rd</sup> quarter of 2022 through the 2<sup>nd</sup> quarter of 2024, a 24-month period.

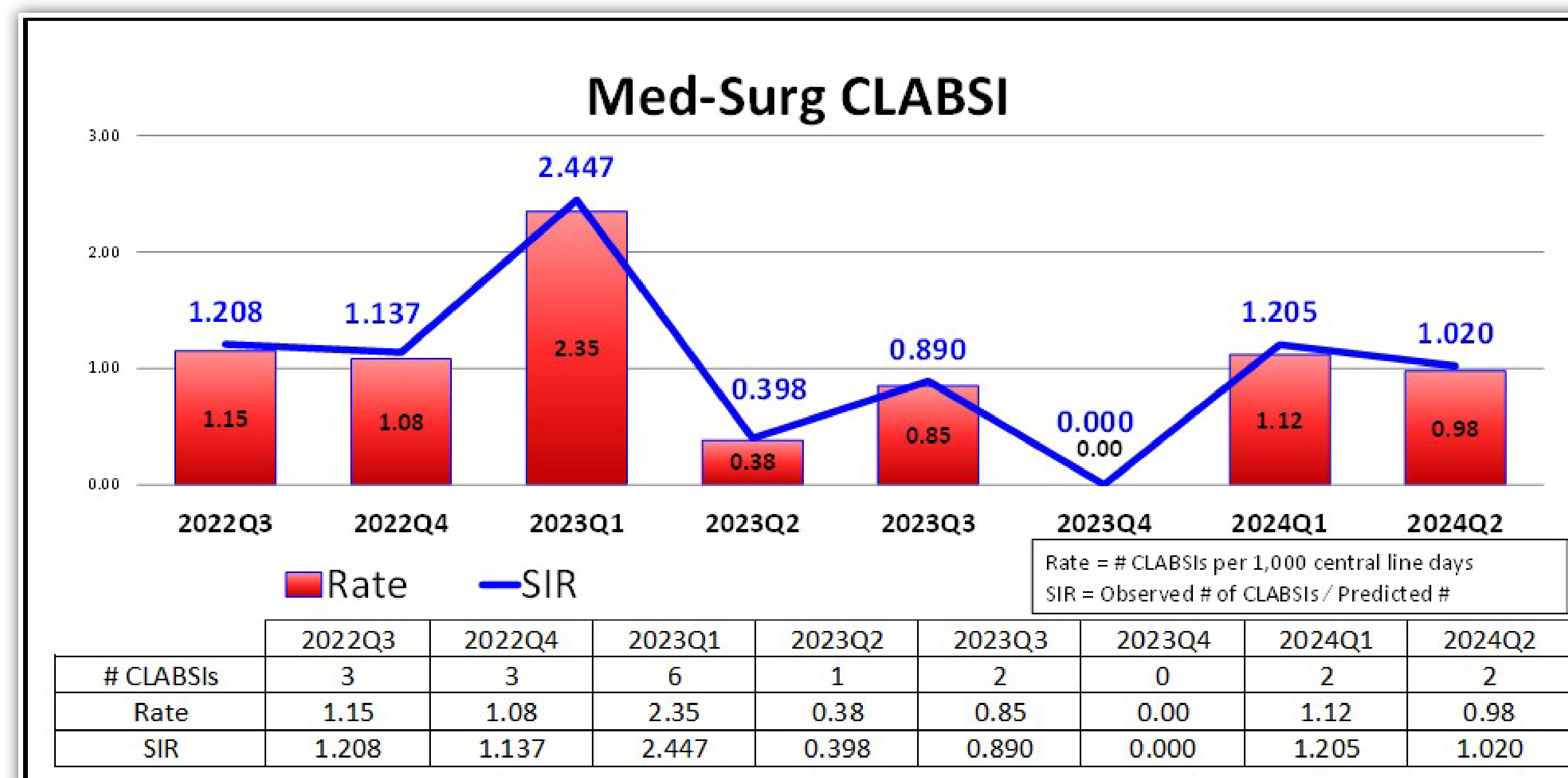


Figure 1. Med-Surg CLABSI Rates and SIRs. Adapted from Infection Prevention Dept., University Medical Center of Southern Nevada, UMCSN 2024.

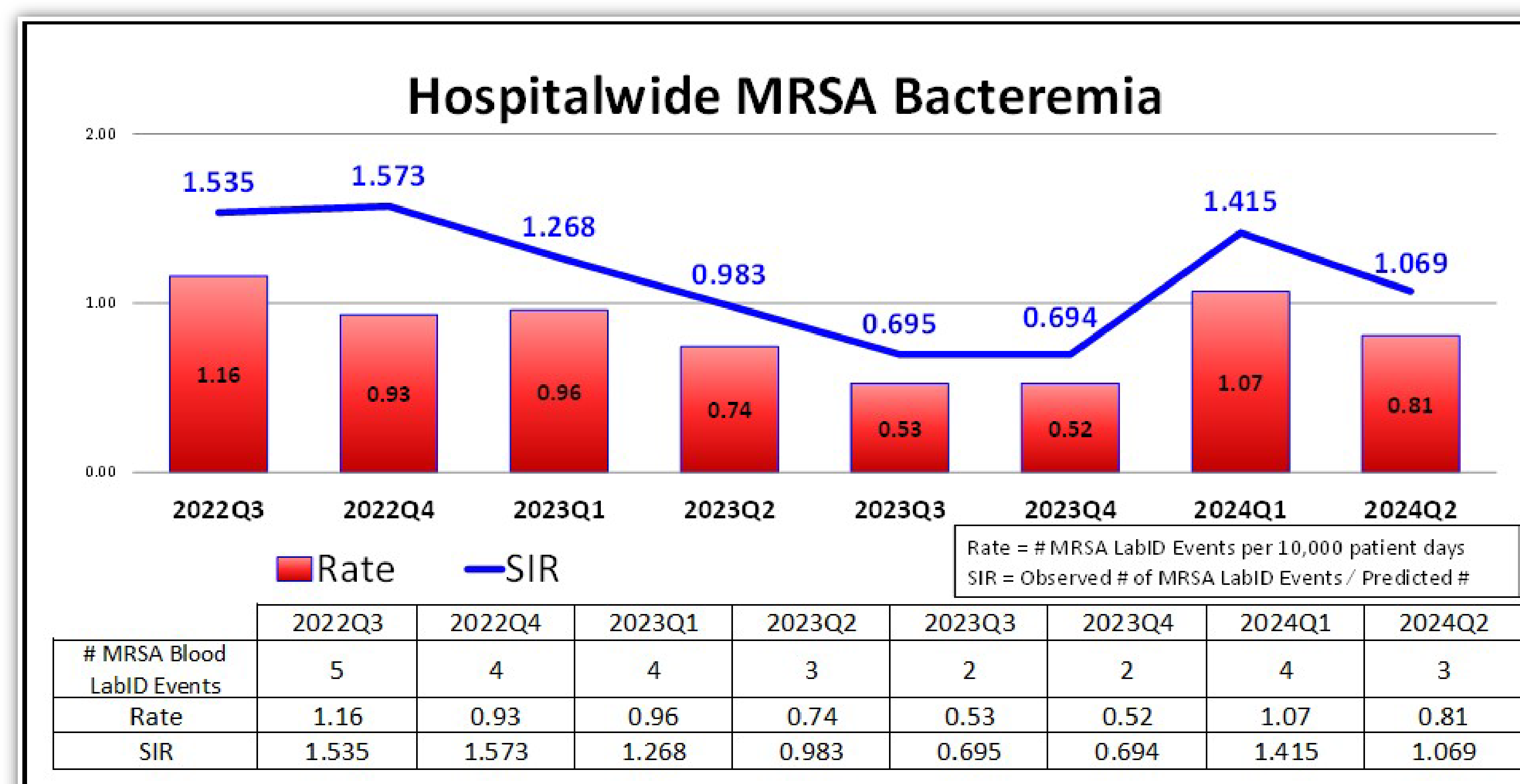


Figure 2. Hospital-wide MRSA LabID Event Rates and SIRs. Adapted from Infection Prevention Dept., University Medical Center of Southern Nevada, UMCSN 2024.

Hospital infection preventionists will continue data collection and synthesis using the standardized surveillance definitions from the National Healthcare Safety Network (NHSN) Patient Safety Component Manual (2024) and analyze changes in rates and standardized infection ratios (SIRs) to determine the clinical significance of the intervention or lack thereof.

Measures to be monitored include CLABSIs in med-surg units and hospital-wide MRSA Bacteremia LabID Events, as defined by NHSN.

## EDUCATION

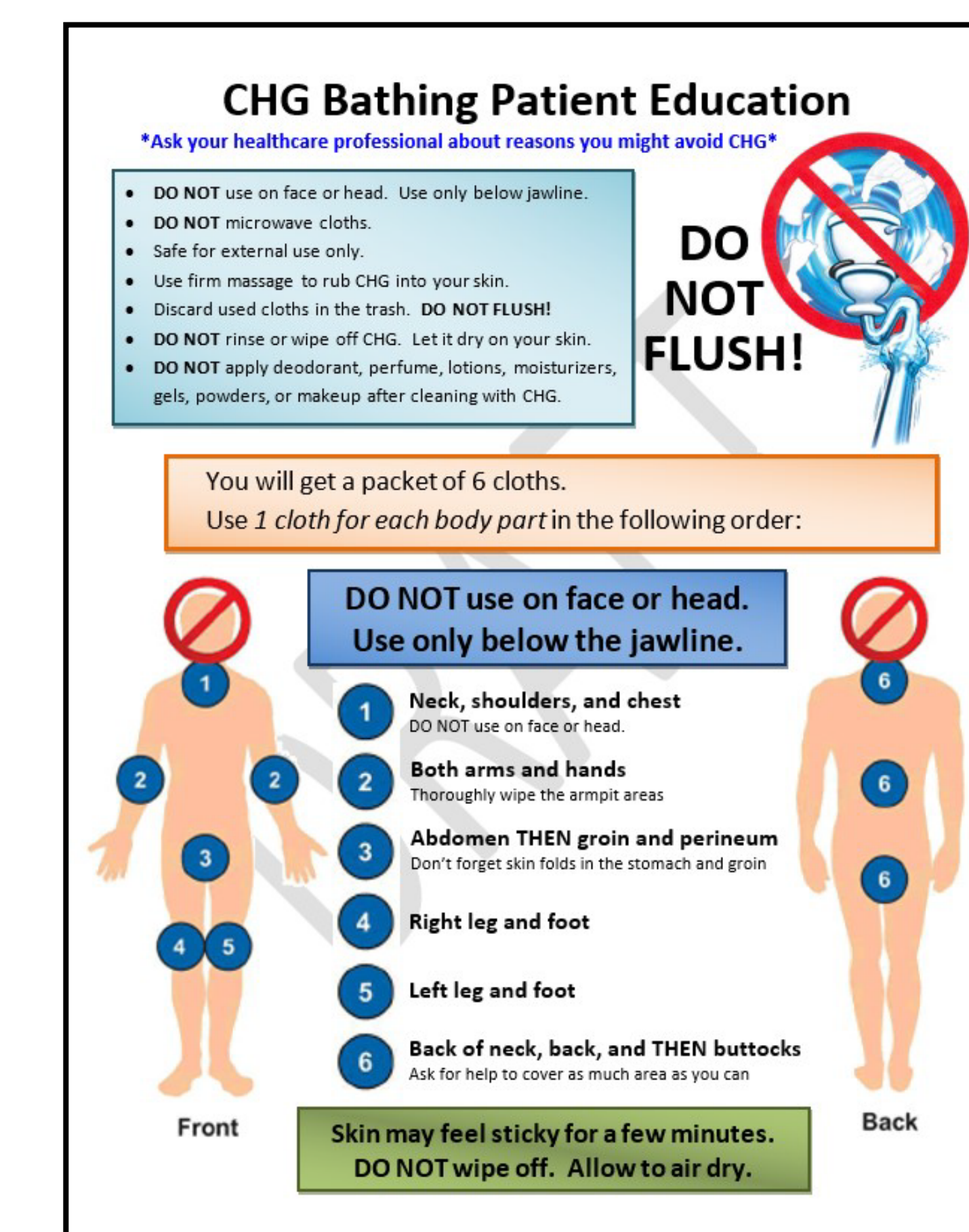


Figure 3. CHG Bathing Patient Education. From Infection Prevention Dept., University Medical Center of Southern Nevada, UMCSN 2024.

The following is a draft of the CHG bathing patient education handout, which was developed through collaboration between primary care nurses and hospital infection preventionists. It is currently in continued development and will be made available in English and Spanish. Handout to be provided along with verbal education by nursing staff.

## RESULTS

After 12 months of data collection and analysis, rates and SIRs will be compared with the twelve months prior to the intervention and analyzed to determine any clinical significance of the dual decolonization strategy paired with patient education. Intended outcome measures for comparison include CLABSIs in med-surg units and hospital-wide MRSA Bacteremia LabID Events.

This intervention is based on existing evidence that the dual decolonization of skin and nares is a safe practice that can decrease HAIs in other settings. This study will contribute to the body of evidence by specifically investigating the use of dual decolonization of skin and nares in the med-surg setting and its impact on CLABSIs and MRSA bacteremia.

## REFERENCES

References are available upon request.

