

The Impact of Daily Chlorhexidine Gluconate Wipe Bed Baths on Hospital-Acquired Infection Rates in Intensive Care Units

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Question: In adult Intensive Care Unit (ICU) patients, how does the implementation of daily chlorhexidine gluconate (CHG) wipe bed baths compared to other methods of bathing affect the rates of hospital-acquired infections (HAIs)?

Background

- HAIs include catheter-associated urinary tract infections (CAUTIs), central line-associated bloodstream infections (CLABSIs), surgical site infections (SSIs), and ventilator-associated pneumonia (VAP)
- According to a 2023 study, an estimated 136 million HAIs occur each year around the world. (WHO, 2023)
- According to the Centers for Disease Control and Prevention (CDC), approximately one in 31 hospitalized patients in the United States has at least one HAI on any given day (CDC, 2024)
- It is estimated that the financial burden of HAIs in the United States ranges from 28 billion to 45 billion dollars annually (Gidey et al., 2023)
- ICU patients have an increased risk for being exposed to HAIs due to complex operations, peripherally inserted central catheters (PICCs), indwelling urinary catheters, wound drains, and other IV insertion points (Blot et al, 2022)

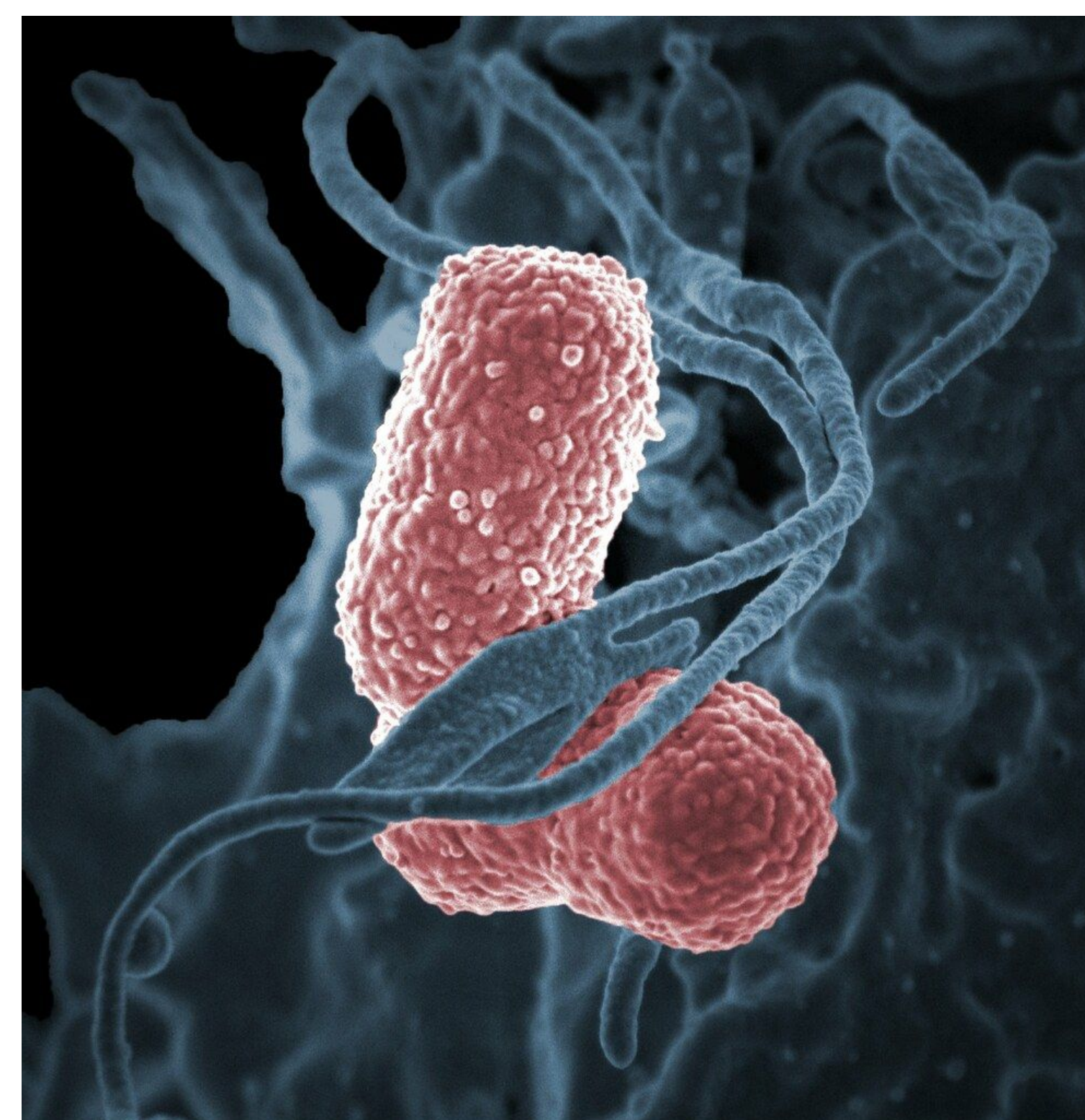
Study	Findings
A study was performed in 2021 by Tien et al to investigate whether 2% chlorhexidine (CHG) bathing reduces vancomycin-resistant Enterococcus-hospital-acquired infections (VRE-HAIs) in ICU patients (Tien et al, 2021). The study tracked 10 ICUs over a 30-month period, with a 12-month baseline phase and an 18-month intervention phase. 1501 patients were studied in the CHG group and 3299 in the standard care group. Data was then collected from these patient's electronic medical records and infection surveillance reports for evaluation.	In the study's findings CHG bathing was associated with a statistically significant reduction in VRE-HAIs. With the incidence of VRE-HAIs decreasing from 3.21 cases per 1,000 patient-days in the control group to 1.93 cases per 1,000 patient-days in the CHG group.
A study conducted 2022 in Sao Paulo, Brazil investigated CHG's effect on HAI's compared to soap and water bed baths (Oliveira et al, 2022). In this study four Brazilian ICUs were evaluated with two of the ICUs implemented daily soap and water baths, while the other implemented daily baths with a CHG solution. The data was evaluated via electronic health records over twelve months based on hospital-acquired infections (HAIs), length of patient stay, and patient morbidity.	In conclusion the rates of VAP, CLABSIs, and CAUTIs did not change. However, the rates of Klebsiella pneumoniae carbapenemase-producing enterobacteria declined, as well as patients' mortality rate in the CHG group.
A study took place in 2016 in which 325 participants at a twenty-four-bed surgical ICU were evaluated to study CHGs impact on HAIs (Swan et al, 2016). The patients were randomly separated into a 164 person control group to receive soap and water bathing. The experimental group, which consisted of 161 participants, received CHG treatment.	The use of chlorhexidine bathing was found to decrease the risk of acquiring infections by 44.5% in surgical ICU patients. For example, incident of HAIs was 14 vs. 7 for catheter-associated urinary tract infection, 13 vs. 8 for ventilator-associated pneumonia, 6 vs. 3 for incisional surgical site infections, and 2 vs. 0 for primary bloodstream infection. (See chart below)

Conclusion

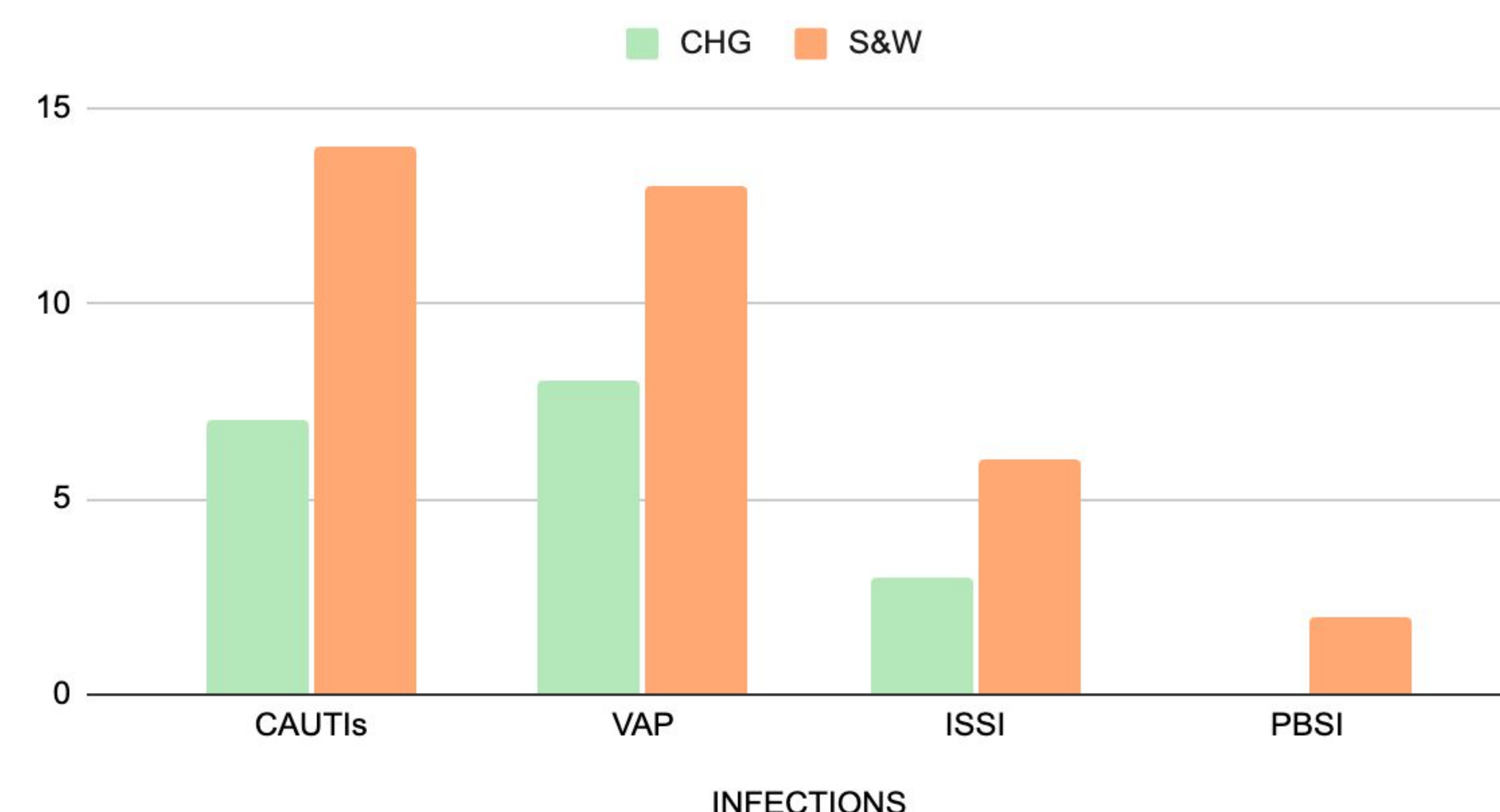
The data clearly show that CHG wipes are significantly more effective than other bathing methods in preventing HAIs in the ICU setting. Three additional articles are cited in our reference page with similar results.

Application

- Nurses should advocate for the use of CHG bathing methods, compared to other methods, to reduce HAI rates.
- Educating patients and other staff about how CHG reduces rates of HAIs will significantly improve patient outcomes.
- Advocate for the use of CHG bathing in order to decrease overall healthcare costs related to HAI incidences
- Implement change in the adult ICU setting and share recommendations of using CHG bathing to other units in the hospital



CHG v.s. S&W



References

