Chlorhexidine Gluconate Bathing to Prevent Central Line Associated Infections: What to do When the Patient Can Bathe Themselves.

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**INTRODUCTION**

Bathing with pre-medicated 2% chlorhexidine gluconate (CHG) impregnated cloths has been shown to decrease central line associated blood stream infections (CLABSI) in intensive care units (ICU) settings. The use of 2% CHG cloths for bathing is designed to decontaminate the skin and use of the cloths is recommended in a particular order to cover the entire skin surface (Diagram 1). The success of CHG bathing in the ICU may be related to the standardization of the bathing process by healthcare personnel (HCP). The use of CHG on patients outside of intensive care units has not been well studied. Patients that are ambulatory and alert, often prefer to bathe themselves. CHG bathing for all patients with central venous catheters (CVC) was implemented at our institution in 2011. After implementation along with other infection prevention bundles, we saw a 58% reduction in CLABSI from 2012 to 2014. Ongoing review of CLABSI data identified higher rates in our bone marrow and stem cell transplant unit (BMTU) compared with other units. In addition, we found 91% of the BMTU CLABSI were with gram positive organisms, suggesting needed increase in interventions directed at CVC maintenance and skin contamination. We performed regular audits of our standardization of the bathing process by healthcare personnel (HCP). The use of CHG on patients outside of intensive care units has not been well studied. Patients that are ambulatory and alert, often prefer to bathe themselves. CHG bathing for all patients with central venous catheters (CVC) was implemented at our institution in 2011. After implementation along with other infection prevention bundles, we saw a 58% reduction in CLABSI from 2012 to 2014. Ongoing review of CLABSI data identified higher rates in our bone marrow and stem cell transplant unit (BMTU) compared with other units. In addition, we found 91% of the BMTU CLABSI were with gram positive organisms, suggesting needed increase in interventions directed at CVC maintenance and skin contamination. We performed regular audits of our CLABSI prevention protocols, including ongoing assessment of indication, dressing integrity, alcohol impregnated access caps, and CHG bathing. Audits in the BMTU found compliance with CHG bathing to be lacking.

**METHODS**

Incomplete or incorrect bathing by patients

Signage posted in patient rooms with bathing instructions

Lack of education on appropriate bathing technique for HCP

Concern for potential sensitivity or rash

To include

- Contract for patient bathing with initials daily
- Per contract days were calculated
- and Leanne O’Connell, RN, BSN, MPH

**RESULTS (cont.)**

Compliance with CHG bathing pre-intervention was 81% (2015), and post was 93% (2017). Definitions for compliance changed as part of implementation, to include patient signature, and reasons for non-compliance. CLABSI rate for the BMTU pre-intervention was 2.2/1000 device days in 2015, post intervention 1.0/1000 device days in 2017 for a 55% reduction in CLABSI. Gram positive infections comprised 91% in 2015 and 60% in 2017 (Figure 4). Figure 3 illustrates the decline in CLABSI rate over time after the intervention and continuing into 2018 where CHG bathing compliance ranges from 93-95%. No concomitant interventions were implemented during this period.

**CONCLUSIONS**

Patients outside of the ICU are typically non-ventilated, awake and capable of self-bathing. Many interventions have been implemented to decrease CLABSI; however, the need for patient engagement and education in the implementation of bathing is a critical step that needs to be addressed to ensure fidelity and success of the intervention.

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