IMPLEMENTING STRATEGIES FOR BACTEREMIA PREVENTION THROUGH SURVEILLANCE AND UTILIZING BEST PRACTICES

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Humber River Health Lighting New Ways in Healthcare™

DESCRIPTION

Hospital acquired bacteremia is a key performance indicator for patient safety in Ontario hospitals. Bacteremia is a bloodstream infection which leads to serious health outcomes and increased hospital costs. Bloodstream infections caused by antimicrobial resistant organisms (AROs) are of great concern due to the challenges in treatment. Humber River Health's (HRH) Bacteremia Prevention Program is designed to target high-risk cases by reducing the microbial burden on the skin and utilize best practices when accessing the lines.

OBJECTIVE

To identify high-risk cases and take preventative action to lower the risk of bacteremia.

ACTIONS TAKEN

The best practice guideline and procedure for bacteremia prevention in the high-risk population was implemented on inpatient units and consisted of:

- Timely review of the high-risk bacteremia cases using the Bacteremia Prevention database created by the Infection Prevention and Control (IPAC) team.
- Documentation of high-risk cases in a centralized database for analysis of CHG bath compliance across inpatient units.
- Ongoing education and regular unit rounds to ensure compliance with routine practices by healthcare providers (i.e., hand hygiene, PPE donning and doffing).
- Collaboration with relevant stakeholders: IPAC Clinical Coordinators, Physicians, Clinical Practice Leaders, and Nursing staff.
- Daily administration of 4% chlorhexidine gluconate (CHG) baths to patients who meet high-risk criteria for bacteremia prevention.

LESSONS LEARNED

Surveillance of the best practices for bacteremia prevention are essential to ensure that patients are getting appropriate care and to reduce the risk of hospital acquired bacteremia.

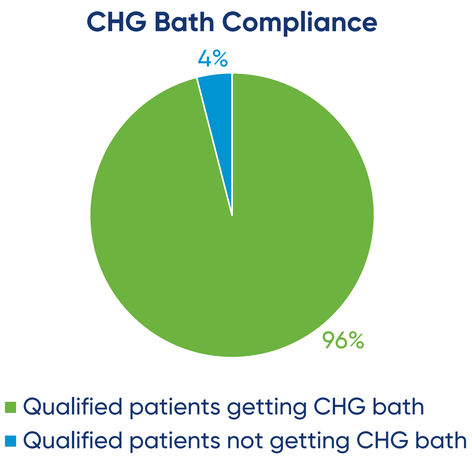


Figure 1.
Number of qualified patients getting CHG baths vs. number of qualified patients not getting CHG baths from July 2019 to October 2023.

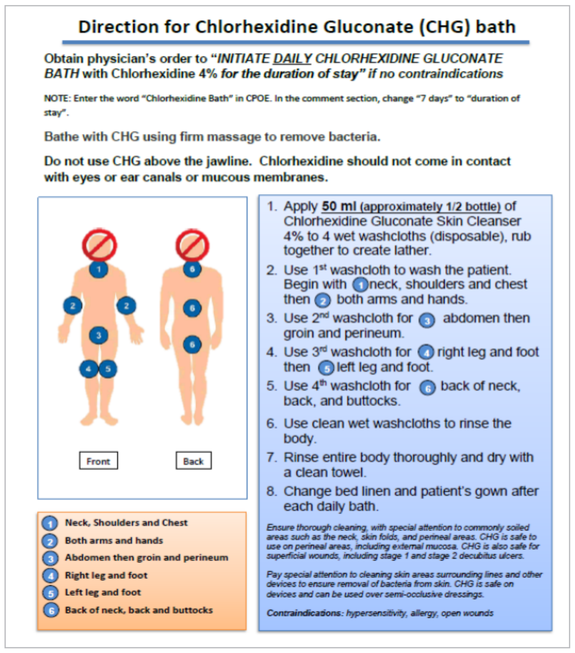
Antibiotic Resistant Bloodstream Infections in Hospital Patients

Humber River Health - Wilson Site	Ontario
Apr 01-Jun 30, 2023	Apr 01-Jun 30, 2023
Rate of **0.019** per 1,000 inpatient days	Rate of **0.025** per 1,000 inpatient days

Figure 2.
Antibiotic resistant bloodstream infections in Hospital patients from April 01 to June 30, 2023.

Patients with **known** colonization or infection with resistant organism(s) **AND** One or more risk factors listed below:	Patients with **no known** colonization or infection with resistant organism(s) **AND** Two or more risk factors listed below:
• Non-surgical wound ≥ stage 3; • Tracheostomy tube; • Peg tube; • Central venous access device (CVAD); • Drains (including Foley catheter)	• Non-surgical wound ≥ stage 3; • Tracheostomy tube; • Peg tube; • Central venous access device (CVAD); • Drains (including Foley catheter)

Table 1.
Criteria for patients to be deemed high-risk for bacteremia.



Direction for Chlorhexidine Gluconate (CHG) bath

Obtain physician's order to "*INITIATE DAILY CHLORHEXIDINE GLUCONATE BATH* with Chlorhexidine 4% *for the duration of stay*" *if no contraindications*

NOTE: Enter the word "Chlorhexidine Bath" in CPOE. In the comment section, change "7 days" to "duration of stay".

Bathe with CHG using firm massage to remove bacteria.

Do not use CHG above the jawline. Chlorhexidine should not come in contact with eyes or ear canals or mucous membranes.

Front
Back

1. Neck, Shoulders and Chest
2. Both arms and hands
3. Abdomen then groin and perineum
4. Right leg and foot
5. Left leg and foot
6. Back of neck, back and buttocks

1. Apply **50 ml (approximately 1/2 bottle)** of Chlorhexidine Gluconate Skin Cleanser 4% to 4 wet washcloths (disposable), rub together to create lather.
2. Use 1st washcloth to wash the patient. Begin with (1) neck, shoulders and chest then (2) both arms and hands.
3. Use 2nd washcloth for (3) abdomen then groin and perineum.
4. Use 3rd washcloth for (4) right leg and foot then (5) left leg and foot.
5. Use 4th washcloth for (6) back of neck, back, and buttocks.
6. Use clean wet washcloths to rinse the body.
7. Rinse entire body thoroughly and dry with a clean towel.
8. Change bed linen and patient's gown after each daily bath.

Ensure thorough cleaning, with special attention to commonly soiled areas such as the neck, skin folds, and perineal areas. CHG is safe to use on perineal areas, including external mucosa. CHG is also safe for superficial wounds, including stage 1 and stage 2 decubitus ulcers.

Pay special attention to cleaning skin areas surrounding lines and other devices to ensure removal of bacteria from skin. CHG is safe on devices and can be used over semi-occlusive dressings.

Contraindications: hypersensitivity, allergy, open wounds

Figure 3.
Directions for CHG bath at HRH.

SUMMARY OF RESULTS

From July 2019 to Oct 2023, 1315 patients were assessed in the database. Using the best practice guidelines for Bacteremia Prevention, 74 patients were identified as high-risk for bacteremia and qualified for CHG baths. Of these qualified patients, 71 patients had active CHG baths hence a compliance rate of 96%. By continuing to employ these strategies, HRH aims to reduce the prevalence of bacteremia.

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