IMPLEMENTING STRATEGIES FOR BACTEREMIA PREVENTION THROUGH SURVEILLANCE AND UTILIZING BEST PRACTICES

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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.

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.

CHG Bath Compliance

- 96% Qualified patients getting CHG bath
- 4% Qualified patients not getting CHG bath

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

Patients with **known** colonization or infection with resistant organism(s) **AND**
One or more risk factors listed below:
- Non-surgical wound ≥ stage 3;
- Tracheostomy tube;
- Peg tube;
- Central venous access device (CVAD);
- Drains (including Foley catheter)

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)

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.

Figure 2.
Antibiotic resistant bloodstream infections in Hospital patients from April 01 to June 30, 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 | Rate of |
| 0.019 | 0.025 |
| per 1,000 inpatient days | per 1,000 inpatient days |

Figure 3.
Directions for CHG bath at HRH.