Bone Marrow Transplant Unit Embraces Culture Change to Meet and Sustain Unprecedented Central line-associated bloodstream infection Rates

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No financial disclosures
Disclosures of Conflicts of Interest

- Marissa McMeen, MPH, MLS (ASCP), CIC has nothing to disclose.
- Donna Miller, RN, MSN has nothing to disclose.
- Jessica Radicke, RN, BSN, OCN has nothing to disclose.
13 Hospitals
- Abington Hospital
- Abington – Lansdale Hospital
- Aria – Bucks County Hospital
- Aria – Frankford Hospital
- Aria – Torresdale Hospital
- Jefferson Hospital for Neuroscience
  – part of Vickie and Jack Farber Institute for Neuroscience at Jefferson
- Kennedy University Hospital – Cherry Hill
- Kennedy University Hospital – Stratford
- Kennedy University Hospital – Washington Township
- Methodist Hospital
- Physicians Care Surgical Hospital
- Rothman Orthopaedic Specialty Hospital
- Thomas Jefferson University Hospital
  – Sidney Kimmel Cancer Center at Jefferson (NCI-designated)

6,000 physicians/practitioners

7,200 nurses

Abington Hospital, Jefferson Hospital for Neuroscience and Thomas Jefferson University Hospital are Magnet-designated hospitals

50+ outpatient and urgent care locations

Over 3.6 million patient interactions annually
Learning Objectives

• Upon completion, audience will be able to describe interventions used to decrease CLABSI rates.

• Upon completion, audience will be able to explain what led to this unit's success.

• Upon completion, audience will recognize why the BMT patient population is at higher risk for CLABSIs.
Background

- Central line-associated bloodstream infections (CLABSIs) are one of the most common types of hospital-associated infections.

- Bone marrow transplant patients are at an increased risk of developing CLABSIs due to their immunocompromised clinical state.

- The CLABSI rate in the Blood and Marrow Transplant Unit (BMTU) had risen to 3.44 in June 2015 and continued to be elevated through October 2015.

- A comprehensive action plan was then developed that focused on increasing staff engagement, ownership and awareness of the risks associated with CLABSIs.
First Steps

• Nursing leadership acknowledged the first step needed to combat this issue was to increase staff engagement and awareness of the problem.

• Engaging the unit's staff promoted them to take ownership, problem solve and work together with other disciplines to find solutions to this issue.
Steps Used to Engage Staff

• To empower staff and promote ownership, leadership committed to fostering an environment of transparency by regularly sharing metrics with the team and celebrating successes.
  
  • CLABSI data was shared via graphs.
  • Days since the last infection was posted weekly in a highly visible staff area.
  • CLABSI cases were discussed in staff meetings and focus groups.

• Consistent unit representation at the monthly infection control meetings was enforced.
Education Made Fun

• Staff celebrated an “Infection Prevention” week

• This week focused on staff reeducation of evidence-based CLABSI prevention strategies.

• Activities included scrub the hub and hand washing in-services.
Scrub the Hub Activity

• Items needed:
  • "Glow germ lotion"
  • Black light
  • Sample Hubs
  • Alcohol Pads

1. Place Glow germ lotion on the sample hub.
2. Have the staff member scrub the hub as they would if they were accessing a line.
3. Place the scrubbed hub under the black light.

Learning objective: the areas that glow under the black light are the areas that were not scrubbed. Staff can focus their attention on the areas that they missed when they are scrubbing their patient's lines.
Next Steps

- A mandatory competency was established for the BMTU RNs to demonstrate the administration of medication and drawing of a patient's blood via a central line. Super-users were identified.
  
  - Competencies were demonstrated on a manikin equipped with central line access named "Chester the Chest."

- Central line care was limited to BMT staff who achieved and demonstrated competency.

- Super-users were identified and educated on proper technique when the hospital changed their central dressing kit. All staff were required to complete a return demonstration with the new central line kits.
Benefits of Return Demonstrations

- Return demonstrations provided an unconventional yet highly effective learning experience for the unit's staff.

- When issues were identified immediate feedback and on-the-spot training was provided.

- If the staff member did not successfully complete the competency a second return demonstration was required.

- Some issues identified: Sterility was not always maintained and the correct procedure was not always followed.
Reallocation of Staffing Resources

• Our hospital procedure is to change central line dressings on Mondays.

• The Critical Care Technicians (CCTs) are responsible for the BMT unit's dressing changes.

• The CCT group identified that they were having an issue completing all of their dressing changes and patient care.

• Staffing resources were reallocated to provide a block of four hour double ancillary coverage on Mondays.

• This double coverage allowed the CCT enough time to complete their patient care and central line dressing changes.
Embracing Patient Safety

- All staff completed the TeamSTEPPS program facilitated by the patient safety department, and were further supported and empowered to Speak Up for patient safety.
- As the staff became more engaged, they embraced the “Speak Up” program more diligently, which further fostered a culture of patient safety.
- Senior leadership helped foster the unit's culture focused on patient safety, quality care and the improvement of Nurse Sensitive Indicators by recognizing the BMTU CLABSI action plan in various meetings.
Results

• There was a **statistically significant decrease** in CLABSI rates from June through October 2015 compared to November 2015 through May 2017 (p≤0.05).
  - Chi-square analysis was used to compare the reduction of CLABSIs.
• The unit went **10 consecutive months with zero infections** and had only 1 CLABSI in 19 months
• The rate from June through October 2015 was 3.26% (5 infections/1532 central line days) compared to the rate from November through June 2016 of 0.22% (1 infections/4650 central line days).
Figure 1. Reduction of Central Line-associated Bloodstream Infections in a Bone Marrow Transplant Unit
June 2015 - May 2017

<table>
<thead>
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<th>Action plan implemented</th>
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Constant Vigilance

- Constant vigilance is needed to maintain zero infections.

- In the event a CLABSI is identified it is crucial to examine the case individually, alert and reengage staff.
Current Changes: Patient Room Audit tool

• An patient room audit tool was created.

• Unit goal was to audit a minimum of two patient rooms weekly.

• Unit leadership would complete patient room audits.

• When the room was being audited and something was found to be incorrect it was immediately fixed and the staff was made aware of the issue.

• Some issues identified: IV tubing was not capped correctly, IV tubing was expired and lines did not have disinfection caps at the end of them.
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<th><strong>Patient Auditing Tool</strong></th>
<th><strong>Auditor:</strong></th>
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<tr>
<td><strong>Dayshift RN:</strong></td>
<td><strong>Nightshift RN:</strong></td>
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<td><strong>Dayshift Ancillary:</strong></td>
<td><strong>Nightshift Ancillary:</strong></td>
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<td>If yes: Dressing intact and changed per policy</td>
<td>Yes __ No ___</td>
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<td>Yes ☐ No ☐</td>
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<td><strong>Disinfecting caps:</strong></td>
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Future Steps

• Change the paper audit tool into an online tool.
• Require CCTs to complete annual return demonstration of central line dressing changes.
• Weekly BMT Broadcast email highlighting infection rates.
• Share best practices among peers.
• A secure high importance alert email will be sent to all staff when a CLABSI is suspected.
• Development of a standardized way to draw blood culture(s) from central lines.
• Partner with the Patient Safety Authority to complete a research study.
Conclusion

• The BMTU sustained zero CLABSI for 10 consecutive months and a ubiquitous culture of safety pervaded the unit.

• Daily diligence was paramount in sustaining zero infections in this high-risk patient population.

• The Unit’s success proves that when front line staff is personally invested in performance improvement, they are able to achieve unprecedented results.
let's celebrate!

Celebrate Success!
When you celebrate other's successes you give your unconscious mind permission to succeed.

Celebrate what you've accomplished, but raise the bar a little higher each time you succeed.
Mia Hamm
QuotePixel.com

Make time to celebrate your accomplishments, no matter how big or small.
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