

# Implementation of a Robust Intervention to Address Central Line Associated Blood Stream Infection Rates in an Acute Oncology and Stem Cell Patient Population in an Academic Setting



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## Background

Oncology patients require vigilance to prevent life-threatening infections.

The need to reduce central line-associated blood stream infections (**CLABSI**) is documented widely (Whited, A. & Lowe, J., 2013).

An opportunity to improve quality and safety was identified in an acute hematology/oncology population in an academic setting when **CLABSI** rates rose.

The **Clinical Nurse Leader** microsystem assessment process was utilized to address this quality and safety concern.

## Evidence-Based Practice Inquiry

Review of 5P's was completed with audits:

1. Purpose
2. Patient
3. Professionals
4. Care Processes
5. Patterns

## Aim

1. **Assess** the microsystem
2. **Analyze** the gap
3. **Standardize** process
4. **Implement** the evidence in the acute hematology/oncology patient care setting
5. **Reduce CLABSI** rate

## Methods

A **systems gap assessment** was recommended, performed and analyzed.

A **knowledge deficit** regarding existing policy was identified.

**Educational sessions** addressed this gap.

An **educational intervention** was proposed, implemented and evaluated.

## Intervention

Nurses in the Adult Hematology/Oncology (AHO), a 29 bed unit, and Adult Stem Cell Transplantation (ASCT), an eight bed unit, implemented an intervention to reduce **CLABSI** rates.

Four steps included:

- 1) **Education** regarding policy and process.
- 2) **Standardized approach** to central venous catheter (CVC) maintenance.
- 3) **Practice audits** three times per week on all patients.
- 4) **Immediate peer feedback.**

Nurses completed CVC education and **collaborated with the medical team** to address appropriateness of CVCs.

**CLABSI** nursing **champions** were identified to support education and interdisciplinary collaboration.

**Standardization of process** was put into place.



## Outcome Data

Reduction in **CLABSI** rates was demonstrated by implementing CL insertion and maintenance "bundle" approach (Centers for Disease Control and Prevention, 2011).

Prior to implementation, **CLABSI** rates were 4.85 (AHO) and 3.21 (ASCT) times the National Healthcare Safety Network (NHSN) Mean.

Post intervention, rates decreased to 1.15 times NHSN Mean within one quarter.

Both units reached over 185 preventable **CLABSI** free days.

The **CLABSI** rate for AHO in October-December 2012 measured 6.79 (NHSN Mean 1.40) and measured 7.71 for ASCT (NHSN Mean 2.40).

In April – June the AHO rate measured 1.62 and measured 0 for ASCT.

Findings post-intervention included:

- 1) **reduced practice confusion**
- 2) **increased compliance of 98% with best practices**
- 3) **no breaks in sterility**
- 4) **increased policy knowledge**

## Conclusions

Findings are consistent with recommendations for reducing **CLABSI** in non-ICU setting.

Pre and post data indicate **education and process standardization** reduced **CLABSI** incidence and addressed a **quality and safety gap** for health systems.

## References

Whited, A. & Lowe, J., (2013). Central line-associated bloodstream infection: not just an intensive care unit problem. *Clin J Oncology Nurs*. 2013 Feb;17(1):21-4. doi: 10.1188/13.CJON.21-24.

(Centers for Disease Control and Prevention, 2011).