

Reducing Central Line Bloodstream Infections using Alcohol Impregnated Caps

Aurora St Luke's Medical Center

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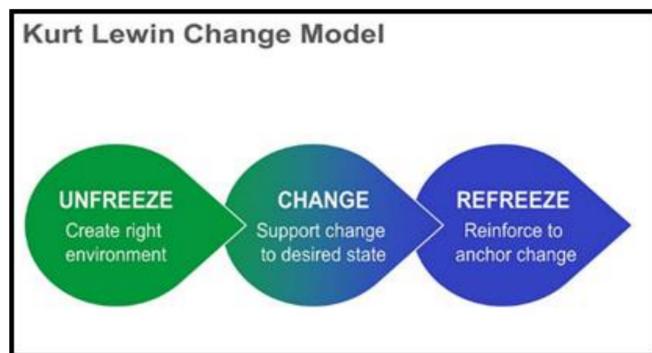
Background/Significance

- Nurses are not properly cleaning the port of central lines as the manufacturer suggests
- This includes “scrubbing the hub” prior to accessing central line ports and “scrubbing” for the required amount of time recommended by the manufacturer to sufficiently disinfect the central line ports prior to access (Sweet et al, 2012)
- Most patients in critical care have central venous lines therefore are at risk for those catheters becoming infected
- Current literature details that ICU settings are changing from “scrub the hub” to alcohol impregnated caps and have experienced a significant reduction in CLABSI rates (Wright et al, 2013, Merrill et al 2014, & Ramirez, 2012)
- CLABSI rates were not consistently below benchmark in patient care areas
- Sixty percent of nurses surveyed did not follow recommendations for scrubbing time

Purpose

- The purpose was to determine if alcohol impregnated caps reduced CLABSI rates as compared to current practice of “scrub the hub” prior to accessing a central line port

Theoretical Model



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Sample and Setting

- Three units used the DualCap®: a 21-bed surgical ICU, a 30-bed cardiovascular ICU and a ten bed level-II trauma ICU
- Central lines were defined as CVC catheters, PICC lines, Subclavian lines and Mahukar lines
- Total number of central lines (N=1032):
 - Central lines using alcohol impregnated caps on all ports (n=526; 6 months in 2018)
 - Central lines using “scrub the hub” on all ports (n=506; 6 months in 2017)

Methods/Application to Practice

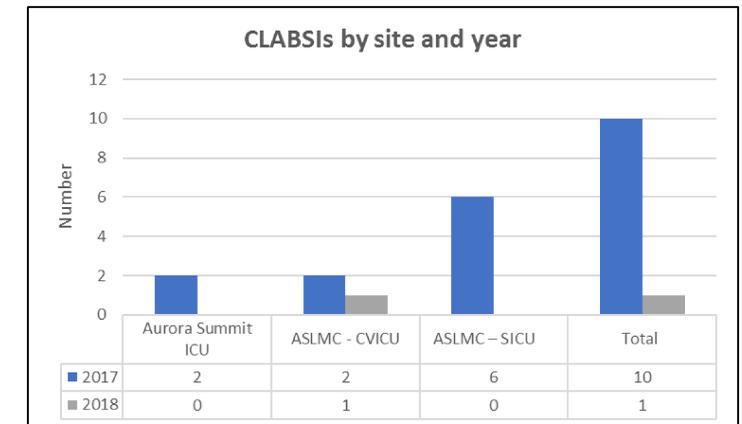
- Use of alcohol impregnated caps (DualCap®) were compared to use of “scrub the hub” method
- The DualCap® is placed on all ports of all central lines



- Upon admission to the ICU, the appropriate DualCap® was applied to every central line port and any disconnected IV lines
- The light blue cap was applied to every access port on the central line
- The dark blue cap is to be placed on the male luer end of the disconnected IV lines
- When accessing a port, the cap was removed, disposed of, and connection into the port was immediate
- If a port was left unattended, nurse must then “scrub the hub” before connecting anything into that port
- If any debris was visible on the port, the nurse must “scrub the hub” to clean before securing a new DualCap® could be used for 7 days or until the cap was removed
- Once the port was no longer in use, a new cap would immediately be applied to the port

Findings/Results/Outcomes

There was a reduction in CLABSI rates from 2017 to 2018 with the use of impregnated caps



Implications

The success of the trial ultimately changed practice.

- Creation of guidelines for use of *Alcohol Impregnated Caps on all Central Lines*
- Approval for product change through Aurora Products Committee
- Approval for nursing practice change through System Nursing Practice Council
- In-servicing/ Education to all Aurora Inpatient nursing staff
- DualCap® now being used on all central line ports.

References

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