Reducing Central Line Infections in the Medical Intensive Care Unit

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Background

- CLABSI = Central Line-Associated Blood Stream Infection
- 12% - 25% mortality rate*
- Costs approximately $30,000 - $65,000 per CLABSI**
- CLABSI Rate = \( \frac{\text{# of infections}}{\text{line days}} \times 1000 \)

*Center for Disease Control
**American Medical Association 2013
Reducing Central Line Infections in the Medical Intensive Care Unit

- **Cost**: Decrease length of stay in ICU
- **Care**: Decrease # of infections per 1000 line days
- **Health**: Reduce Mortality

**Triple Aim**
IE Methods Used

- Human Factors Engineering
- Data Analysis
- Social Network Analysis
CLABSI Rate

The graph shows the CLABSI (Central Line Associated Bloodstream Infection) rate over the years 2011 to 2014. The vertical axis represents the CLABSI rate per 1000 central line days, while the horizontal axis shows the quarters of the years.

- **Micu CLABSI Rate**: A blue line indicating the rate of CLABSI infections in the MICU (Medical Intensive Care Unit).
- **Yearly MICU Average**: A red line representing the average CLABSI rate over each year.
- **National Healthcare Safety Network Major Academic MICU Average**: A green line showing the national average for major academic MICUs.
- **25th Percentile**: An orange line indicating the 25th percentile of CLABSI rates.

The graph illustrates significant fluctuations in the CLABSI rate over the years, with peaks and troughs that suggest variations in infection control measures and patient care during these times.
Infection G-Chart

![Chart](chart.png)

- **Time Between Infections**
- **Weeks**
- **Infections**

- **23 weeks and counting without reported infection**
- **Start of Implementation**
Central Line Device Utilization Rate

![Graph showing Central Line Device Utilization Rate over time from Q1 2011 to Q1 2014. The graph includes data for MICU Device Utilization, MICU Average (79%), National Healthcare Safety Network Major Academic MICU Average, and 25th Percentile.](image-url)
Interventions
Our Process:
Staff Awareness and Motivation
Our Process: Education Campaign

- Educated staff on current CLABSI data and their role in reducing rates
  - Insertion
  - Maintenance
  - Access
  - Removal
Our Process: Daily Line Review

- Nurse states line days and reason for central line
- During synopsis, intern running the plan will review the necessity of the line
Central Line Discussion on Rounds

- Access Discussed: 90% Pre-Interventions, 92% Post-Interventions
- Removal Discussed: 26% Pre-Interventions, 35% Post-Interventions
Our Process: Sustainability Plan

- Education for New Nurses
- Orientation for New Residents
- Staff Awareness and Motivation
- Quarterly Audits
Thank You