

CLABSI Unit-Based Targeted Improvement Initiatives

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Background/Introduction

Healthcare-associated infections (HAIs) are the greatest risk that patients face when they are cared for in healthcare facilities. According to estimates from the Centers for Disease Control and Prevention (CDC), one in 20 hospitalized patients experience a healthcare-associated infection every year in the U.S., leading to approximately 88,000 deaths and \$4.5 billion in added healthcare cost per year. HAIs appear to have increased over the last three decades,¹ despite the fact that the majority of HAIs are thought to be preventable.²

In this poster presentation, we will systematically review the evidence supporting quality improvement strategies to reduce the incidence of Central-Line Associated Blood Stream Infection (CLABSI) in inpatient oncology units at Houston Methodist Hospital. Compliance with the CLABSI prevention bundle elements and infections will be reviewed regularly in an effort to better understand the unique needs of this patient population. We seek to understand if distinct interventions tailored to this patient population are necessary to prevent infections.

Objectives

1. Promote infection prevention practices across our system.
2. Improve communication with nursing leadership and staff.
3. Raise staff awareness regarding healthcare associated infections (HAIs), and how they are viewed by regulatory bodies and the public.
4. Promote multidisciplinary collaboration.
5. Focus prevention efforts in locations with higher than predicted number of infections.
6. Achieve unparalleled care.

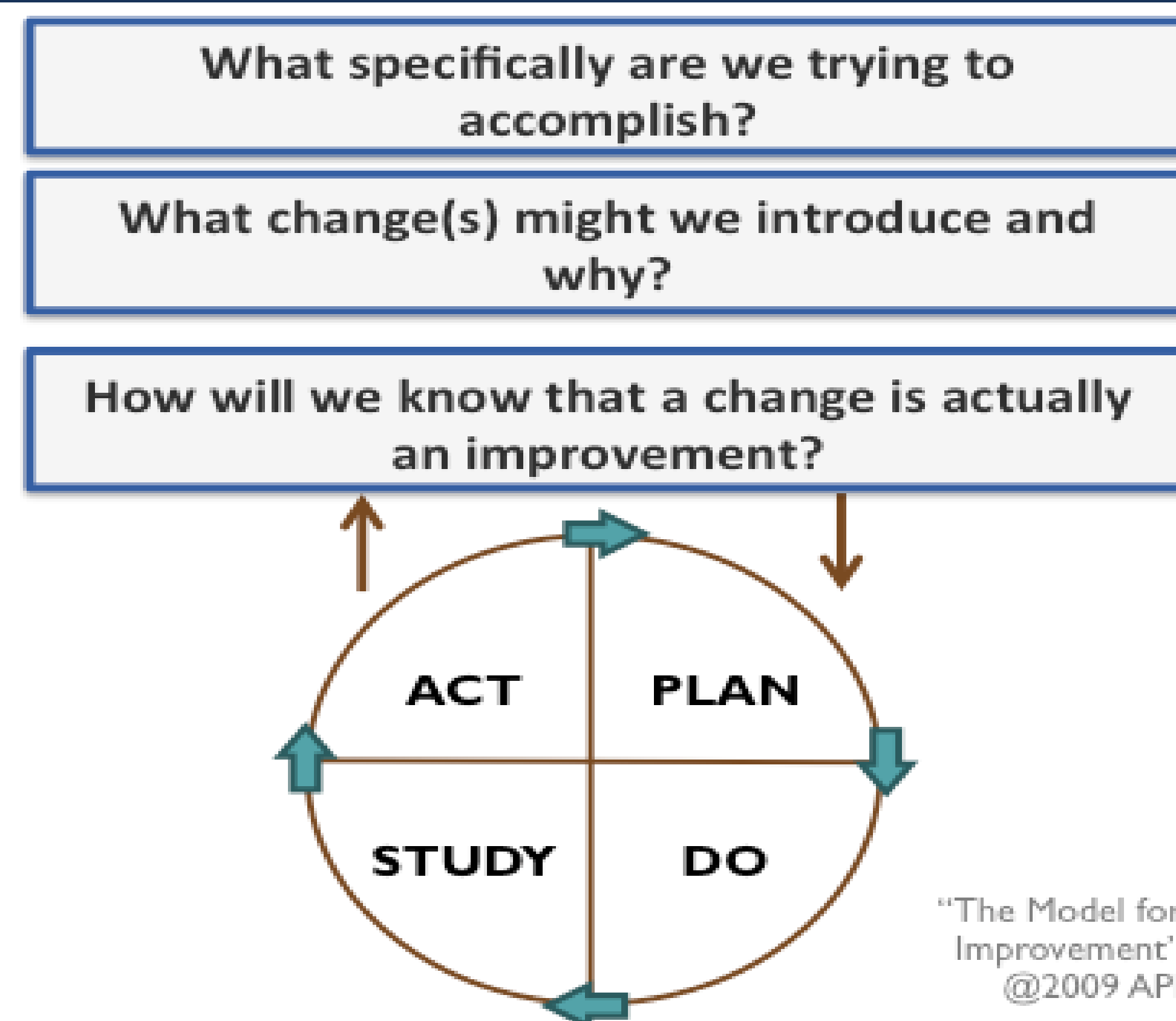
Method

The project kick-off was launched on October 4, 2017. It was attended by multidisciplinary teams that included nurses, physicians, quality outcomes specialists, and infection control staff. Points for discussion were:

- Aim Setting
- Using PDCA Model for improvement
- Tracking measures over time- CLABSI (rates, standardized infection ratio, days since last infection), and bundle compliance rates

At Houston Methodist, the National Healthcare Safety Network (NHSN) HAI definitions are utilized to classify infections.

Tools



PLAN - Baseline Data

Figure 1 – CLABSI rates for Main 8 East (M8E), a 15-bed capacity inpatient unit for adult Bone Marrow Transplant services.

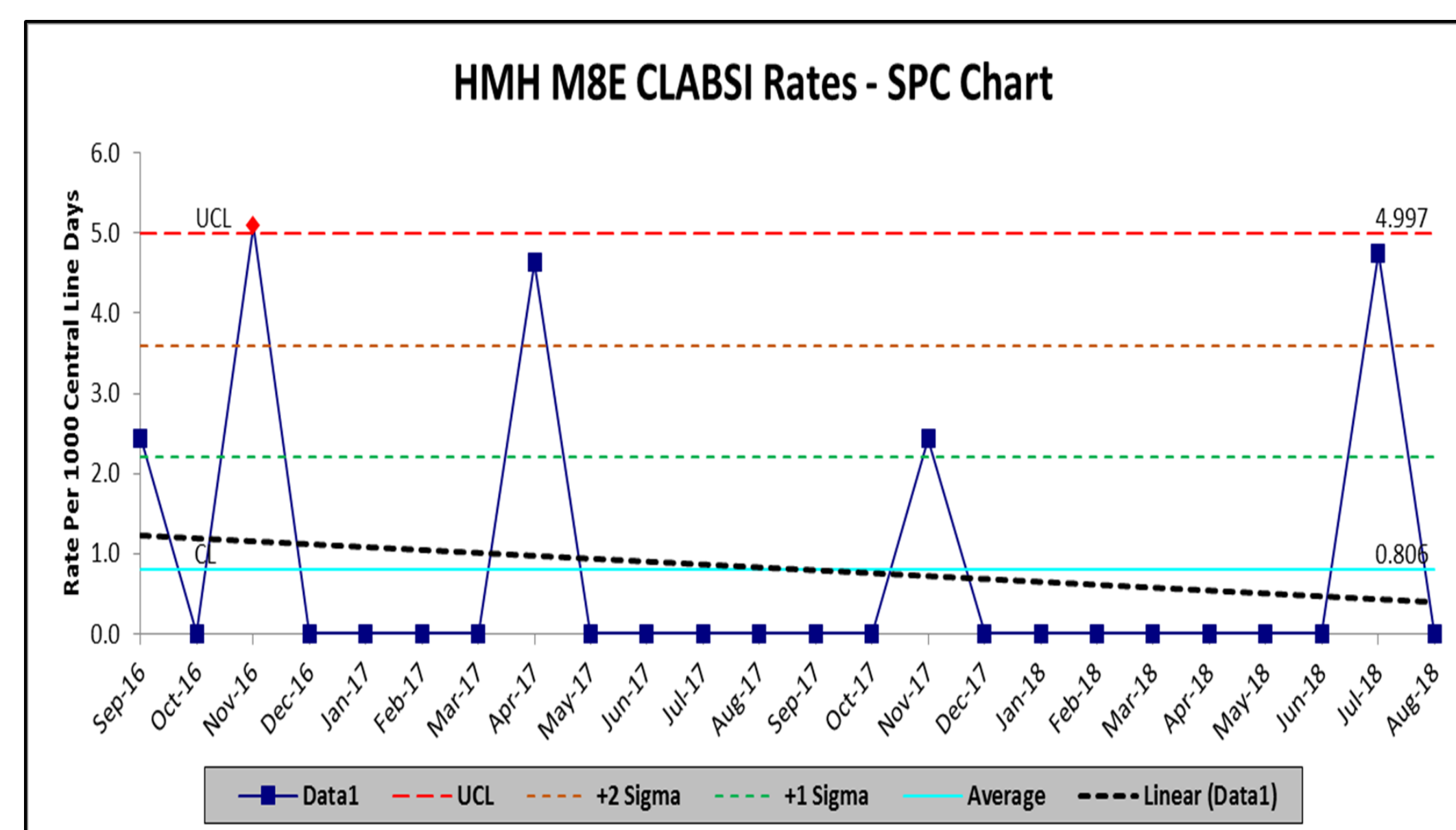
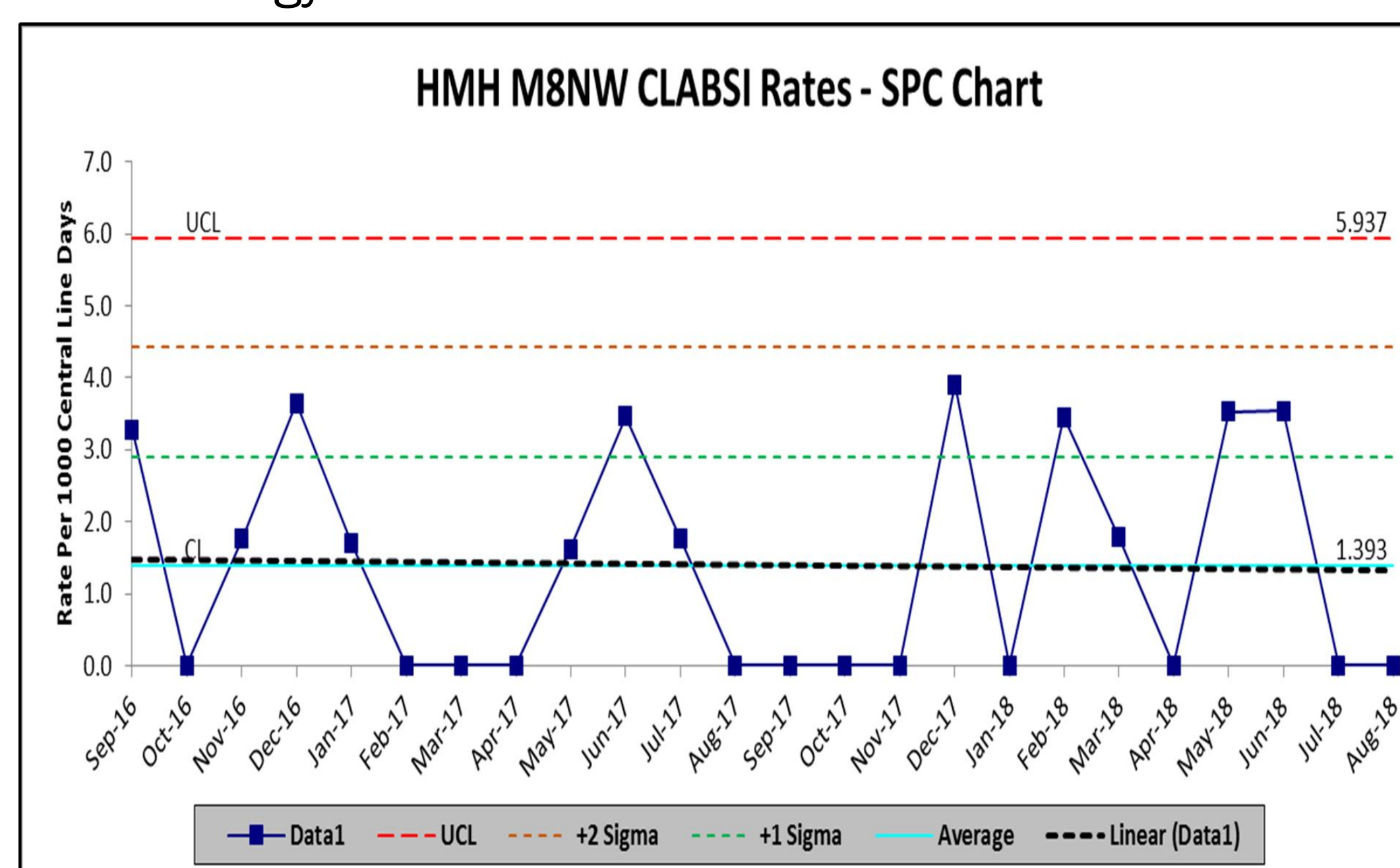


Figure 2 – CLABSI rates for Main 8 Northwest (M8NW), a 22-bed capacity inpatient unit for adult Oncology and Hematology services.



Bundles/Interventions

CLABSI bundle during catheter maintenance:

- ✓ Hand Hygiene
- ✓ Appropriate dressing changes –timing, aseptic technique
- ✓ Appropriate access practices –CUROS caps, scrub the hub, aseptic technique
- ✓ Accurate assessment of dressing and insertion site conditions, with appropriate documentation
- ✓ Escalating instances of non-compliance to chain of command

Additional interventions (implemented in April 2018):

- ✓ Use of AquaGuard for patients who shower with 4% CHG soap solution
- ✓ CHG-impregnated dressing for our patients with implanted ports

DO -Action Plan/Timeline

October 2017 to present:

- Weekly infection control bundle audits for central line care and maintenance conducted by RN (registered nurse) champions and unit leadership in partnership with infection control and quality departments. Audit results were recorded electronically through MyRounding application tool (Ongoing).
- Chlorhexidine (CHG) bathing training and validation for RNs and PCAs (patient care assistants). Training materials include online learning module, training videos, skills check off on simulation mannequins and actual patients (April to August 2018).
- Ultrasound-guided peripheral intravenous line (PIV) insertion training to assist in de-escalation of line selection per protocol i.e. from subclavian central line to peripheral IV as appropriate (Ongoing).
- Use of midlines as indicated (Ongoing).

STUDY - Results/Implications

Figure 1 demonstrates that processes were stable in M8E (BMT population) and CLABSI rates have been declining in the last two years. However, CLABSI rates in M8NW have remained flat (See Figure 2).

Case reviews uncovered that although opportunities were identified related to bundle compliance, most CLABSIs assigned to M8NW were more likely related to secondary bloodstream infections (BSIs).

STUDY - Results/Implications

Case reviews further revealed that due to the complexity of the patient population, it is often difficult to meet the NHSN definitions for secondary BSIs, especially with regards to the infection window attribution. Therefore, early recognition of primary sources of infections and early interventions are key to accurate classification of infections.

ACT - Future Actions

Early identification of primary infection site is key to surveillance. Prevention is the overall goal through proper insertion techniques and management of central lines. Consistency in the following processes will be maintained and monitored:

- Central Line Care and Maintenance: Ensure timely dressing and tubing changes per policy.
- Line Necessity: Follow time-sequenced protocol to ensure that patients must meet criteria for insertion set by HMH
- Staff competency: Clinicians who received appropriate education must be eligible to insert and remove central lines per policy using aseptic technique
- Multidisciplinary Rounds: Review line necessity and bundle compliance
- Hand Hygiene Compliance
- Multidisciplinary Case Reviews
- Engage Medical Staff to enhance early recognition and intervention for primary sources of secondary BSIs

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