HQIC Patient Safety Network: CAUTI & CLABSI Surveillance and Data Analysis

Welcome!

- All lines are muted, so please ask your questions in the Chat panel.
- Please actively participate in polling questions that pop up on the lower right-hand side of your screen.

We will get started shortly!

HQIC Infection Prevention:
CAUTI and CLABSI Surveillance and Data Analysis

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Rhonda Bowen, CIC, CPPS, CPHQ, CPHRM

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Welcome from all of us!

HAI Reduction Co-Leads

Amy Ward, MS, BSN, RN, CIC

INFECTION PREVENTION SPECIALIST

Amy is a registered nurse with a diverse background in acute care nursing, microbiology, epidemiology and infection control. She is passionate about leading and mentoring new and future infection preventionists in their career paths.

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Rhonda Bowen, BSHS, CIC, CPPS, CPHQ, CPHRM
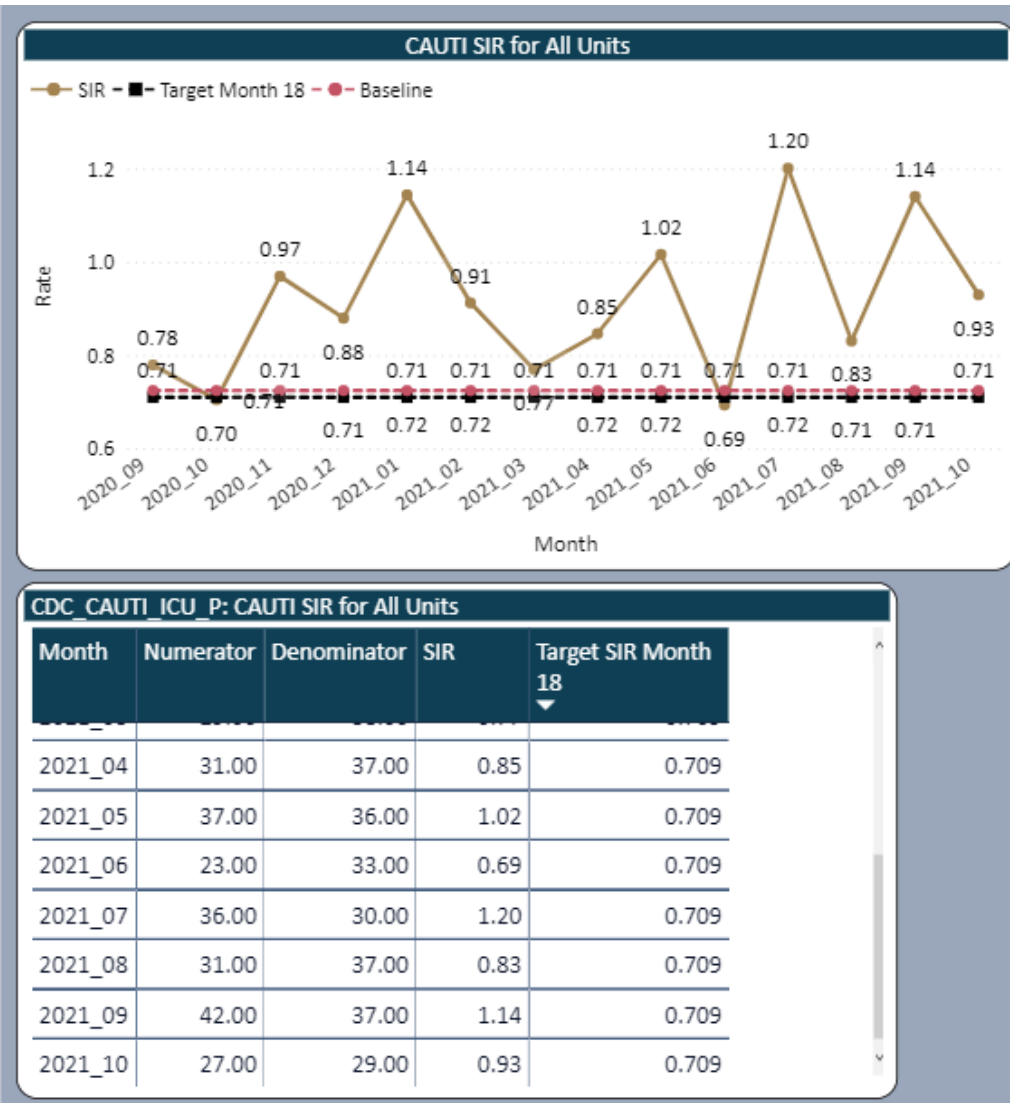
SENIOR IMPROVEMENT ADVISOR, PATIENT SAFETY

Rhonda has worked in rural and critical access hospitals for over 30 years and has directed patient safety, quality and infection prevention and control for the past 14 years. She is passionate about all aspects of patient safety and infection prevention and control, especially the effects of health literacy and organizational safety culture on patient outcomes.

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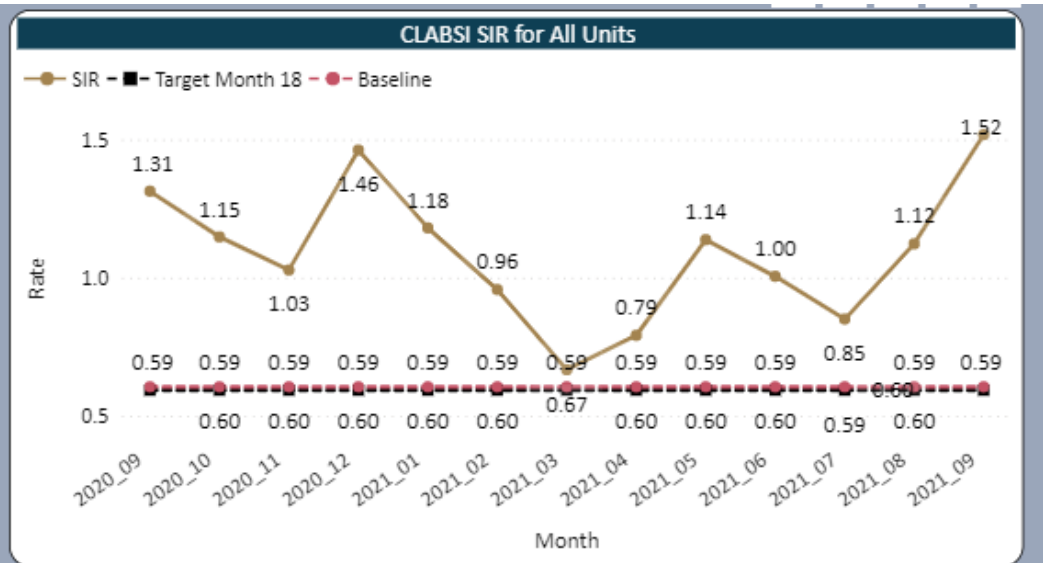
Learning Objectives

- Learn Today:
  - Review surveillance tools and techniques for CAUTI and CLABSI data.
  - Review reporting and benchmarking options for CAUTI and CLABSI data.
  - Discuss data analysis and how to inform infection prevention efforts.

- Use Tomorrow:
  - Develop a written surveillance and reporting plan that includes data entry to NHSN for standardized and comparable analysis options.

CAUTI HQIC Overall Performance

CAUTI SIR for All Units

- SIR — Target Month 18 — Baseline

Month	Numerator	Denominator	SIR	Target SIR Month 18
2021_04	31.00	37.00	0.85	0.709
2021_05	37.00	36.00	1.02	0.709
2021_06	23.00	33.00	0.69	0.709
2021_07	36.00	30.00	1.20	0.709
2021_08	31.00	37.00	0.83	0.709
2021_09	42.00	37.00	1.14	0.709
2021_10	27.00	29.00	0.93	0.709

- CAUTI Target SIR: 0.71
- Average SIR: 0.93
- Worsening Trend
- Data through 10/2021

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CLABSI HQIC Overall Performance

CLABSI SIR for All Units

- SIR
- Target Month 18
- Baseline

CDC_CLABSI_ICU_P: CLABSI SIR for All Units				
Month	Numerator	Denominator	SIR	Target SIR Month 18
2021_03	18.00	27.00	0.67	0.593
2021_04	21.00	27.00	0.79	0.593
2021_05	31.00	27.00	1.14	0.593
2021_06	25.00	25.00	1.00	0.593
2021_07	20.00	24.00	0.85	0.593
2021_08	32.00	29.00	1.12	0.593
2021_09	42.00	28.00	1.52	0.593

- Target SIR: 0.593
- Average SIR: 1.52
- Worsening Trend
- Data through 9/2021

2020 National and State HAI Progress Report

Between 2019 and 2020

- **Overall, 24% increase in CLABSI**
  - **Largest increase in ICUs (50%)**
- Overall, 15% increase in MRSA Bacteremia
- Overall, 35% increase in VAE
- **Overall, no significant increase in CAUTI**
  - **10% increase in ICU**
- Overall, 11% decrease in CDI
- Overall, 5% decrease in SSI (10 select procedure types)
  - 8% decrease in HYST
  - 5% decrease in COLO
- **Overall, SUR for central lines was 0.901**
- **Overall, SUR for urinary catheters was 0.835**

So What Happened?

Please enter in the chat your top three findings from your completed gap analysis.

Infection Surveillance

- Essential component of an effective infection prevention program
- Defined in the APIC Text as "a comprehensive method for measuring outcomes and related processes of care, analyzing the data, and providing information to members of the health care team to assist in improving those outcomes."
- Should be based upon sound epidemiological and statistical principles
- When properly collected, surveillance data can be used to improve quality of care and outcomes

Meehan Arias, Kathleen. Surveillance. APIC Text. 2014. Available at http://text.apic.org/toc/epidemiology-surveillance-performance-and-patient-safety-measures/use-of-statistics-in-infection-prevention. Accessed December 29, 2021.

Basic Statistical Measures Used in Surveillance

- Measures of Frequency
  - Ratios, proportions, rates

- Measures of Central Tendency
  - Mean and median

- Measures of Dispersion
  - Range, deviation, variance, standard deviation

- Percentiles

Surveillance Methods

- Targeted Surveillance
  - Focused on specific units, infection types, procedures or populations
  - Typically focuses on high risk, high volume procedures
  - Often aimed at HAIs that are preventable or with severe adverse outcomes
- Total House Surveillance
  - Monitors for all infection types among all populations
  - If total house surveillance is used, a total infection rate should not be calculated, but rather calculated for specific HAIs in defined populations (e.g., CLABSI in ICU)
  - Often not done due to personnel, technical or cost constraints
- Combination Surveillance
  - Example: Monitor for SSI secondary to all surgical procedure types rather than targeted high risk, high volume only, while monitoring CAUTI in the ICU only

Surveillance Plan

- Annual infection prevention plans should include a surveillance section describing:
  - Surveillance method (total/targeted/combination)
  - Populations (patient, resident, staff, those with specific risk factors, etc.)
  - Events monitored
    - In addition to other high-risk events, such as reprocessing failures or TST conversions, which HAIs will be monitored through the year?
- Surveillance plan should be evaluated regularly to ensure it meets organizational goals and objectives and to ensure methodologies are current.
- Efforts should be made to select event types that have standardized, validated and nationally recognized benchmarking data available.
  - Example: NHSN for HAI data or Vermont Oxford Network for newborn care

Data Collection

- Concurrent versus retrospective

- Data source examples
  - Medical records
  - Lab reports
  - List of admissions with diagnoses
  - Patient day reports/census data by unit
  - Isolation precautions report/list
  - Incident reports
  - Observations
  - Procedure or activity logs

NHSN

- Over 40,000 facilities nationwide reporting data to NHSN (includes ACH (includes CAH), LTACs, Rehab hospitals, dialysis facilities, ASCs, nursing homes, etc.)
  - 8000 hospitals including LTACs and IRFs
- Provides web-based reporting and feedback of comparative data for performance improvement.
- Access to prevention tools and best practices.
- NHSN website offers protocols, data collection forms, calculators, training and other supporting materials.

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Data Analysis

- Internal benchmarking – use of your own historical data to monitor for changes over time.

- External benchmarking – comparing your data to that of others with similar characteristics and risks.

- Use of statistical methods to compare differences.
  - NHSN methodology to collect and analyze data, such as a z-test with SIR, can be used to compare risk-adjusted rates with rates in NHSN.
  - Other statistical methods that can compare: t-test, chi-square test, fishers exact test, CI and 2x2 tables.

NHSN Data Analysis Options

Eliminates need to manually calculate and ensures data are comparative over time

- Standardized Infection Ratio (SIR)
- Standardized Utilization Ratio (SUR)
- Rate Tables
- TAP Reports
- Frequency Tables
- Rate Tables
- Pie Chars
- Bar Charts
- Run Charts
- Line Lists – event and summary data options

PSN: Healthcare-Associated Infection Series

☑ Session 1: Guidelines for Prevention and Gap Assessment

☑ Session 2: Surveillance and Data Analysis

Session 3: Back to Basics: Hand Hygiene

Session 4: Back to Basics: Cleaning/Disinfection/Sterilization

Session 5: Process Audit and Continual Improvement

Our plan will be to alternate the focus each month. Odd months will have a CAUTI/CLABSI emphasis, and even months will focus on C. diff/MRSA.

Resources

CAUTI

- [HQIC Coaching Package – CAUTI](#)
- [HQIC CAUTI Gap Assessment Tool](#)

CLABSI

- [HQIC Coaching Package – CLABSI](#)
- [HQIC CLABSI Gap Assessment Tool](#)

Key Takeaways

- Learn Today:
  - Review surveillance tools and techniques for CAUTI and CLABSI data.
  - Review reporting and benchmarking options for CAUTI and CLABSI data.
  - Discuss data analysis and how to inform infection prevention efforts.

Questions?

Email us at hospitalquality@allianthealth.org or call us at 678-527-3681.

References

- Meehan Arias, Kathleen. Surveillance. APIC Text. 2014. Available at http://text.apic.org/toc/epidemiology-surveillance-performance-and-patient-safety-measures/use-of-statistics-in-infection-prevention. Accessed December 29, 2021

- 2021 NHSN Patient Safety Component Manual

- Patient Safety Component (PSC) Training | NHSN | CDC

- NHSN Analysis Training | NHSN | CDC

HQIC Goals

Behavioral Health Outcomes & Opioid Misuse

- ✓ Promote opioid best practices
- ✓ Decrease high dose opioid prescribing and opioid adverse events in all settings
- ✓ Increase access to behavioral health services

Patient Safety

- ✓ Reduce risky medication combinations
- ✓ Reduce adverse drug events
- ✓ Reduce *C. diff* in all settings

Quality of Care Transitions

- ✓ Convene community coalitions
- ✓ Identify and promote optical care for super utilizers
- ✓ Reduce community-based adverse drug events

Upcoming Events

Wednesday January 19, 2022

(Occurring the 3rd Wednesday of each month)

HQIC Patient Safety Network
Infection Prevention – Sepsis and Septic Shock

Rhonda Bowen and Amy Ward

quality.allianthealth.org

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Thank you for joining us!
How did we do today?

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