

## Learning Objectives

1. Define CLABSI metrics used to evaluate the success of a quality improvement initiative.
2. Describe the potential roles for both pharmacists and EMR enhancements in a multidisciplinary approach to curtailing CLABSI.
3. Explain and quantify the impact a pharmacist can have on CLABSI mitigation strategies.

## Background

- CLABSI are one of four National Healthcare Safety Network (NHSN) hospital-acquired infection surveillance metrics that Vizient utilizes in their Quality and Accountability scorecard.
- In 2021, CLABSI rates at University of Kentucky HealthCare (UKHC) were determined to be higher than similar academic medical centers. This finding led to the initiation of multidisciplinary, enterprise-wide work to identify root causes of CLABSI to develop targeted strategies aimed at reducing CLABSI incidence.
- One opportunity that was highlighted during root cause analyses was to determine if adult intensive care unit (ICU) pharmacists could develop, implement and utilize a tool within the EMR that could assist in evaluating central line necessity based on if a patient was receiving vesicant medications.

## Intervention

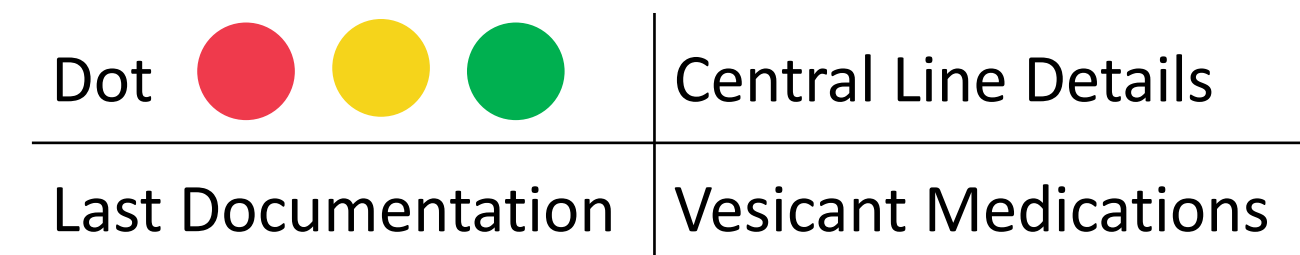
### Tool development within the electronic medical record

Critical care pharmacists reviewed institutional policies regarding vesicant medications and central venous access. A "stoplight" signal was developed to identify potential opportunities for central access removal.

	Vesicant	Central Line	Possible Actions
RED	Yes	No	Consider central line placement
YELLOW	No	Yes	Consider non-medication indications Consider line removal
GREEN	Yes	Yes	No action required
NONE	No	No	No action required

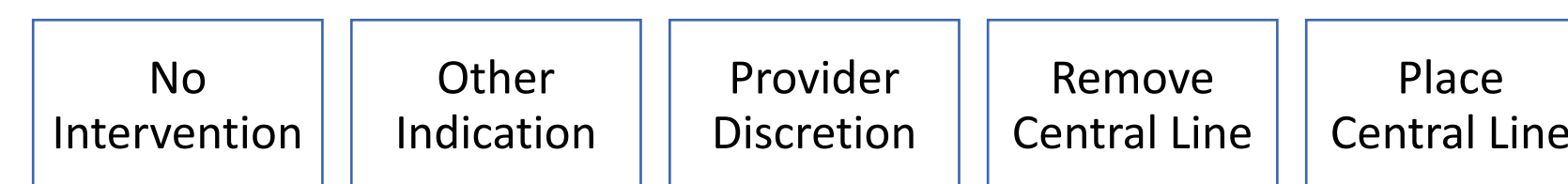
### Addition to standard workflow

This tool was integrated into the standardized patient list for patients in the intensive care unit. Pharmacists utilized this tool to facilitate discussion as part of weekday multidisciplinary ICU rounds.



### Documentation of recommendation and discussion

Documentation occurred on weekdays for all ICU patients with a yellow or red dot. Options included:



### Implementation and assessment of tool by end user

Following a 6-month pilot phase, education was provided to all ICU pharmacists and providers prior to full implementation. End users were surveyed for feedback.

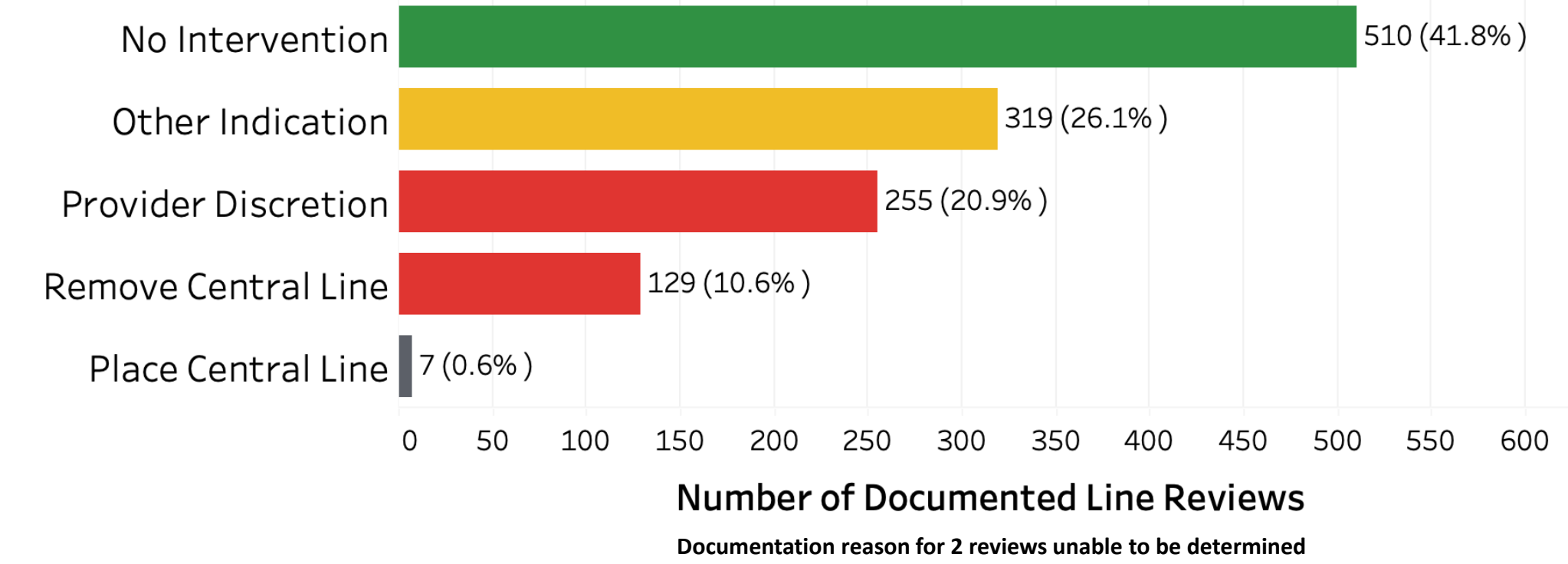
**13-month assessment:  
1222 documentation  
occurrences for 611  
unique patients**

- **Standard Infection Ratio (SIR):** Observed CLABSI / Predicted CLABSI (Goal <1)
- **Standard Utilization Ratio (SUR):** Observed Line Utilization / Predicted Line Utilization (Goal <1)

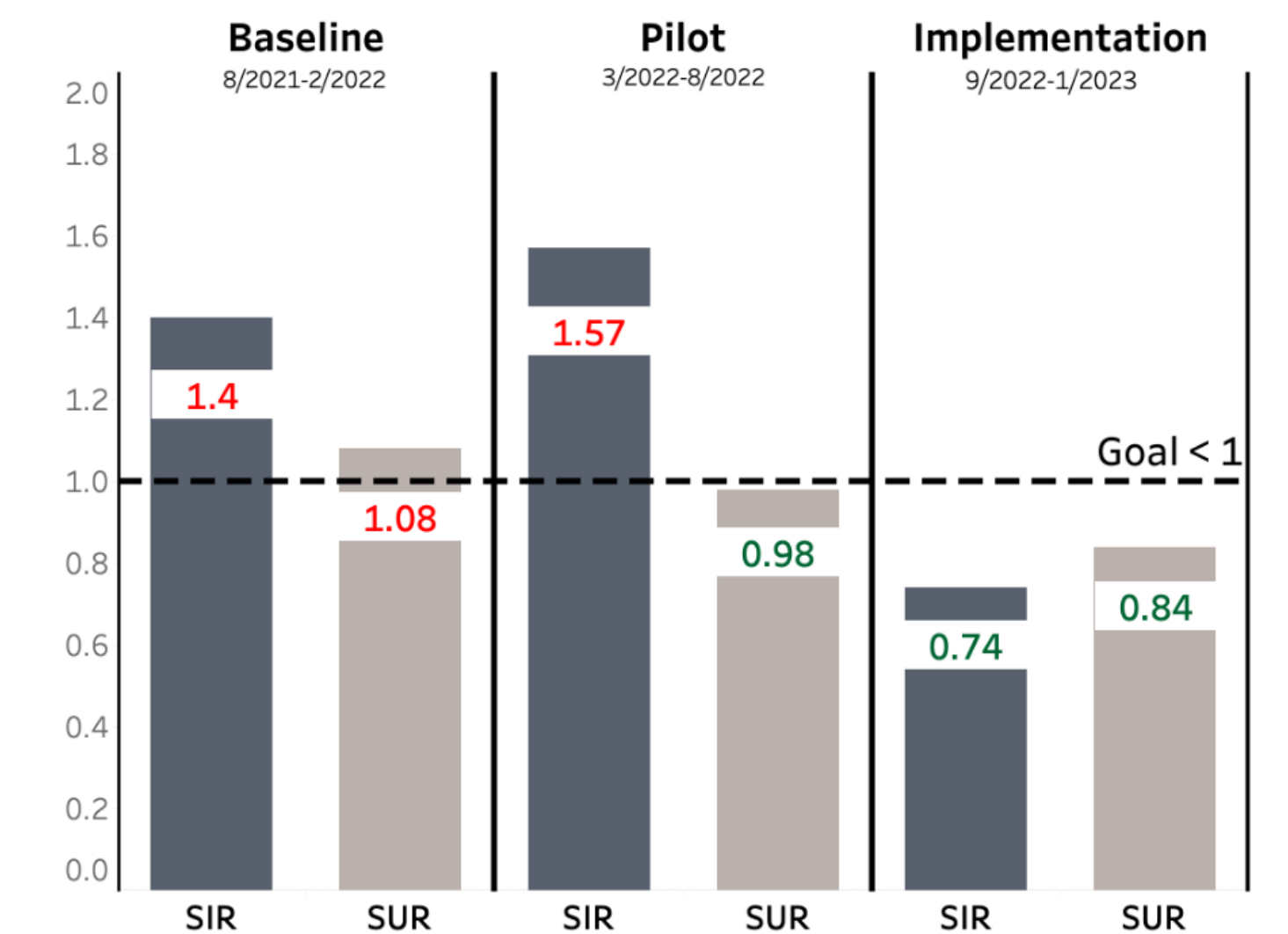
## End-User Feedback

- **2 minutes:** Average amount of time cited to perform the review
- **79%** of pharmacists surveyed found the tool to be helpful to assess central line necessity
- **More than 50%** of pharmacists state that they are sometimes or always initiating central line discussion on multidisciplinary rounds

## Tool Utilization



## ICU CLABSI Outcomes



## Conclusions

1. Pharmacists are well positioned, yet often underutilized, to evaluate central line necessity for medication therapy.
2. This integrated EMR tool allows for enhanced efficiency in pharmacist review and is well received amongst end users.
3. This initiative is a unique way that pharmacists have contributed to our institution's multidisciplinary efforts to reduce CLABSI.

## CE Questions:

1. What is the definition of a central-line associated bloodstream infection (CLABSI)?
  - a. A laboratory-confirmed bloodstream infection that occurs within 48 hours of central line placement or within 7 days of catheter removal and is not related to an infection at another site
  - b. A laboratory-confirmed bloodstream infection that occurs within 24 hours of central line placement or within 5 days of catheter removal and is not related to an infection at another site
  - c. A laboratory-confirmed bloodstream infection that occurs within 72 hours of central line placement or within 7 days of catheter removal and is not related to an infection at another site
  - d. A laboratory-confirmed bloodstream infection that occurs within 48 hours of central line placement or within 5 days of catheter removal and is not related to an infection at another site
2. Which of the following describes the national benchmark for the CLABSI Vizient Metric?
  - a. 1.25 CLABSI per 10 central line days
  - b. NHSN Standard Infection Ration (SIR)
  - c. 1.25 CLABSI per 1000 central line days
  - d. None of these
3. The CLABSI Vizient metric is calculated by which of the following equations?
  - a.  $(\# \text{ CLABSIs} / \text{total number of central line days}) * 10$
  - b.  $(\# \text{ CLABSIs} / \text{total number of central line days}) * 1000$
  - c. Observed Number of CLABSI/Predicted Number of CLABSI
  - d. None of these
4. Which of the following are steps that hospitals can take to reduce CLABSI rates:
  - a. Use baby wipes for skin antisepsis before central line placement
  - b. Remove unnecessary central lines
  - c. Avoid central line bundles as they promote the use of excessive central lines
  - d. Use aseptic technique during central line placement only
5. True or False: It is the primary responsibility of the attending physician to ensure CLABSI prevention measures are appropriately undertaken.