

Empowering Nurses Through Education For Appropriate Use of a Nurse-driven Central Line Removal Protocol



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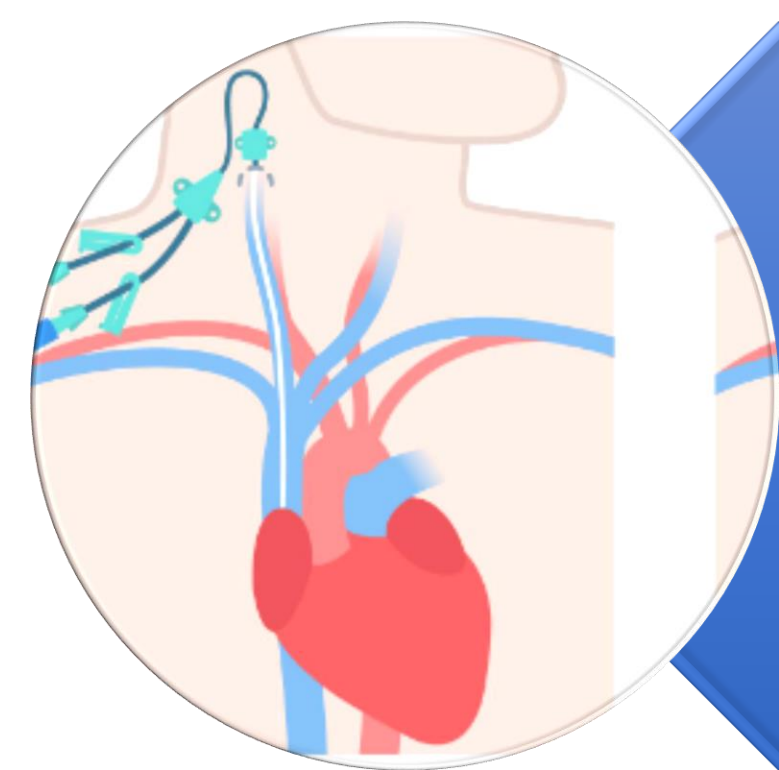
Background

- Central line associated blood stream infections (CLABIs) are a major concern for hospitalized patients and the healthcare system (Larson, et al., 2019)
- CLABIs contribute to increased patient length of stay, increased mortality and morbidity, and increased healthcare costs (Chovanec, et al., 2021)
- Estimates indicate that each CLABSI costs the hospital \$48,108 (Agency for Healthcare Research and Quality, 2017)
- The standardized infection ratio (SIR) is a risk-adjusted measure used to track healthcare associated infections (HAIs) at national, state, and local levels over time (CDC, 2022).
- The SIR compares the **observed number** of HAIs to the **expected number** of HAIs.
- A SIR of 1 means the observed and expected numbers of infections are equal, a SIR of greater than 1 means there are more infections than expected, a SIR of less than 1 means there are fewer infections than expected
- HAI surveillance data at one community hospital revealed that the SIR for CLABIs had increased steadily for 5 months in 2022 to a record high of 3.145
- Infection prevention protocols were already in place, however, observation revealed that nurses were not consistently adhering to an evidence-based nurse-driven protocol for early central line removal and central lines were remaining in place that were not indicated.

Purpose

- To reduce CLABSI rates using a nurse-driven central line removal protocol
- To improve nurses' adherence to the nurse-driven central line removal protocol
- To reduce central line days

Protocol



Criteria for **maintaining** a central line included: medications such as irritants or vesicants, poor venous access, TPN, chemotherapy, long-term infusion therapy > 4 weeks, and complex infusion regimen in critical care units



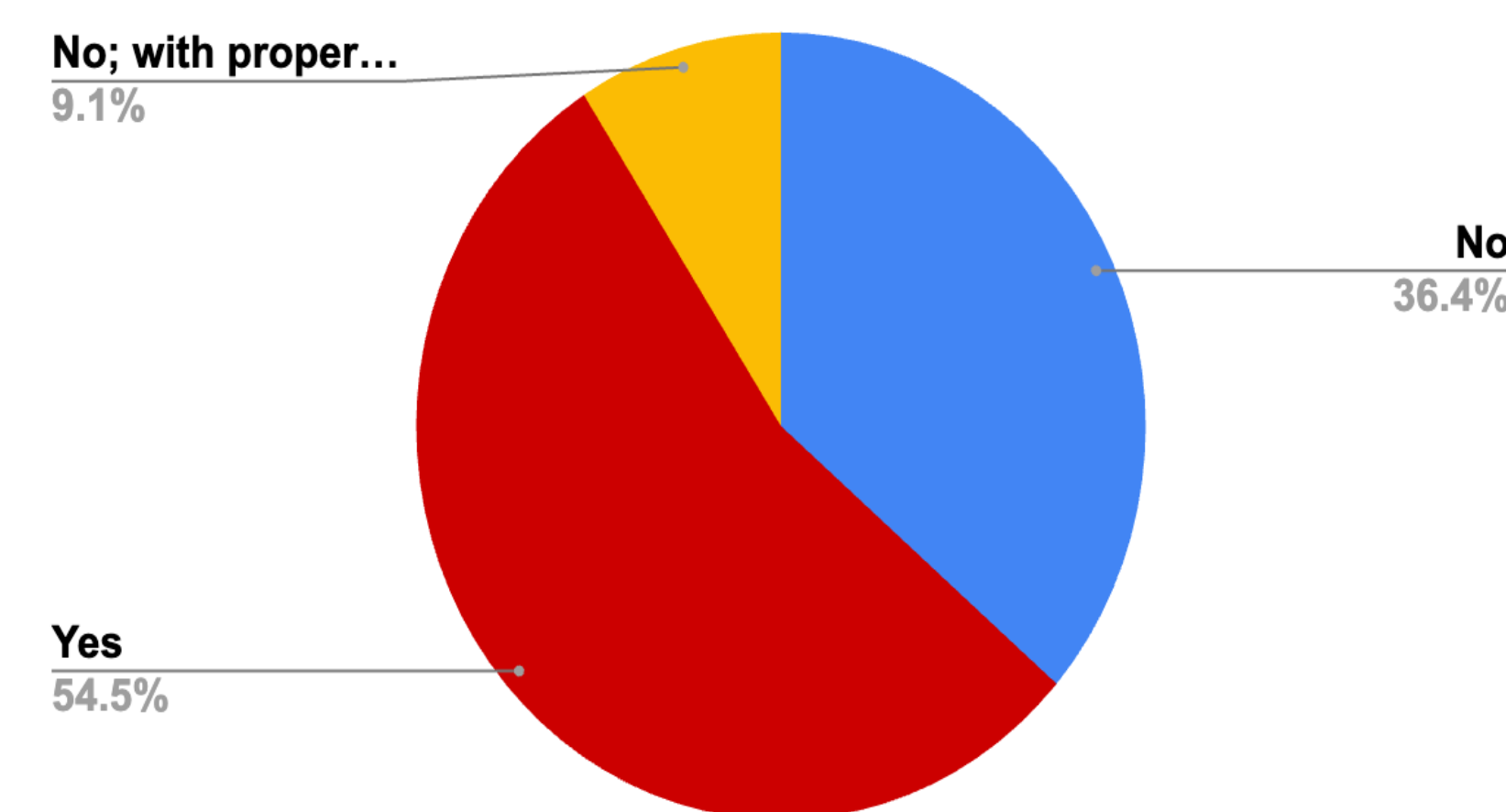
Criteria for **removal** included: physician order for removal protocol, no medications administered within the last 48 hours requiring a central line, and peripheral IV access has been obtained

Practice Change

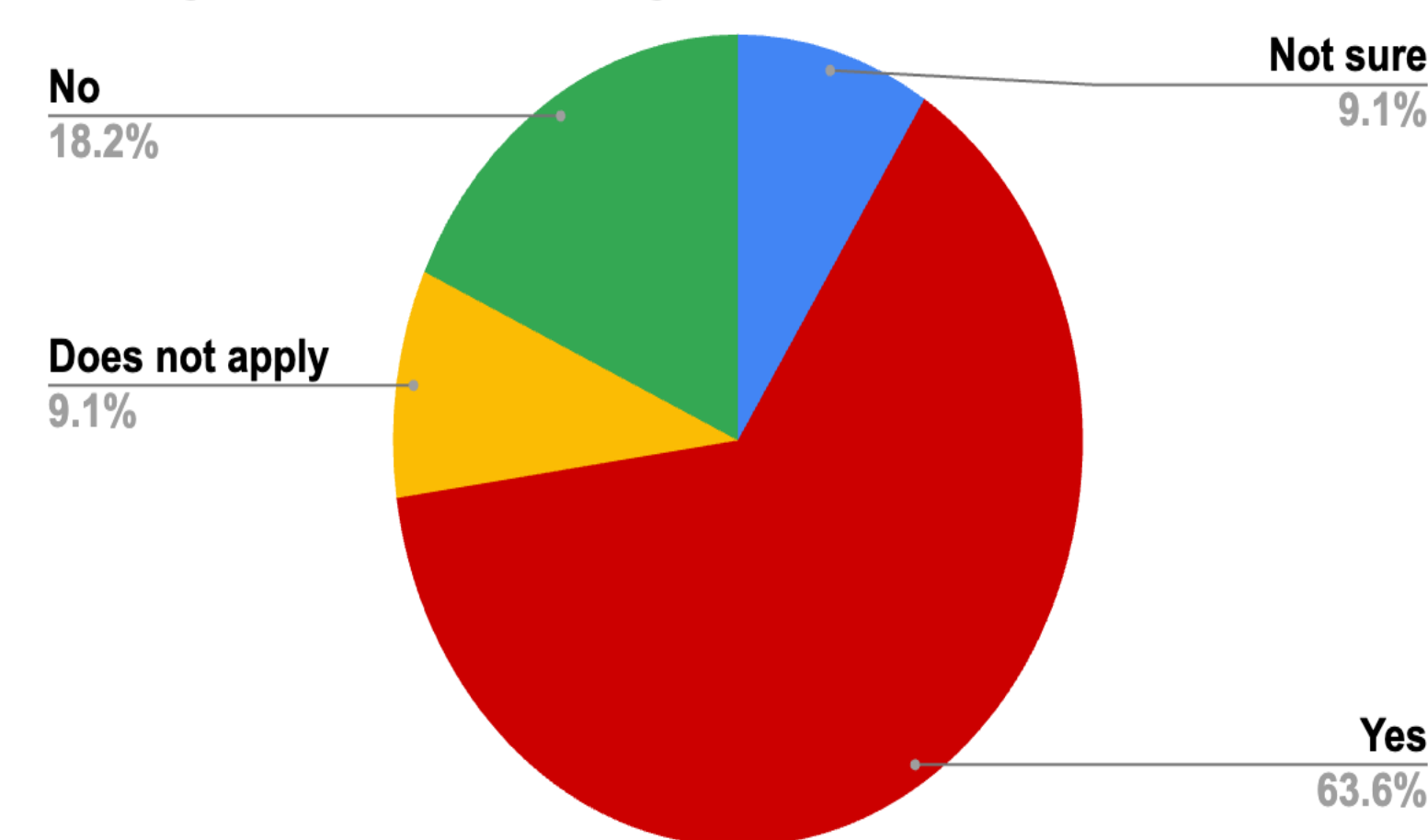
- Nurses were given **autonomy** to remove central lines using nurse-driven removal protocol
- Protocol was established and identified criteria for appropriate removal of lines
- Nursing units were provided a daily list of central lines which could be removed
- If the order was present to "initiate nurse-driven central line removal protocol", nurses would assess central lines for necessity
- Nurses were surveyed to determine reasons for not following central line removal protocol
- CNS student, unit manager, and charge nurse provided **education, guidance, and feedback** for timely removal of lines

Findings

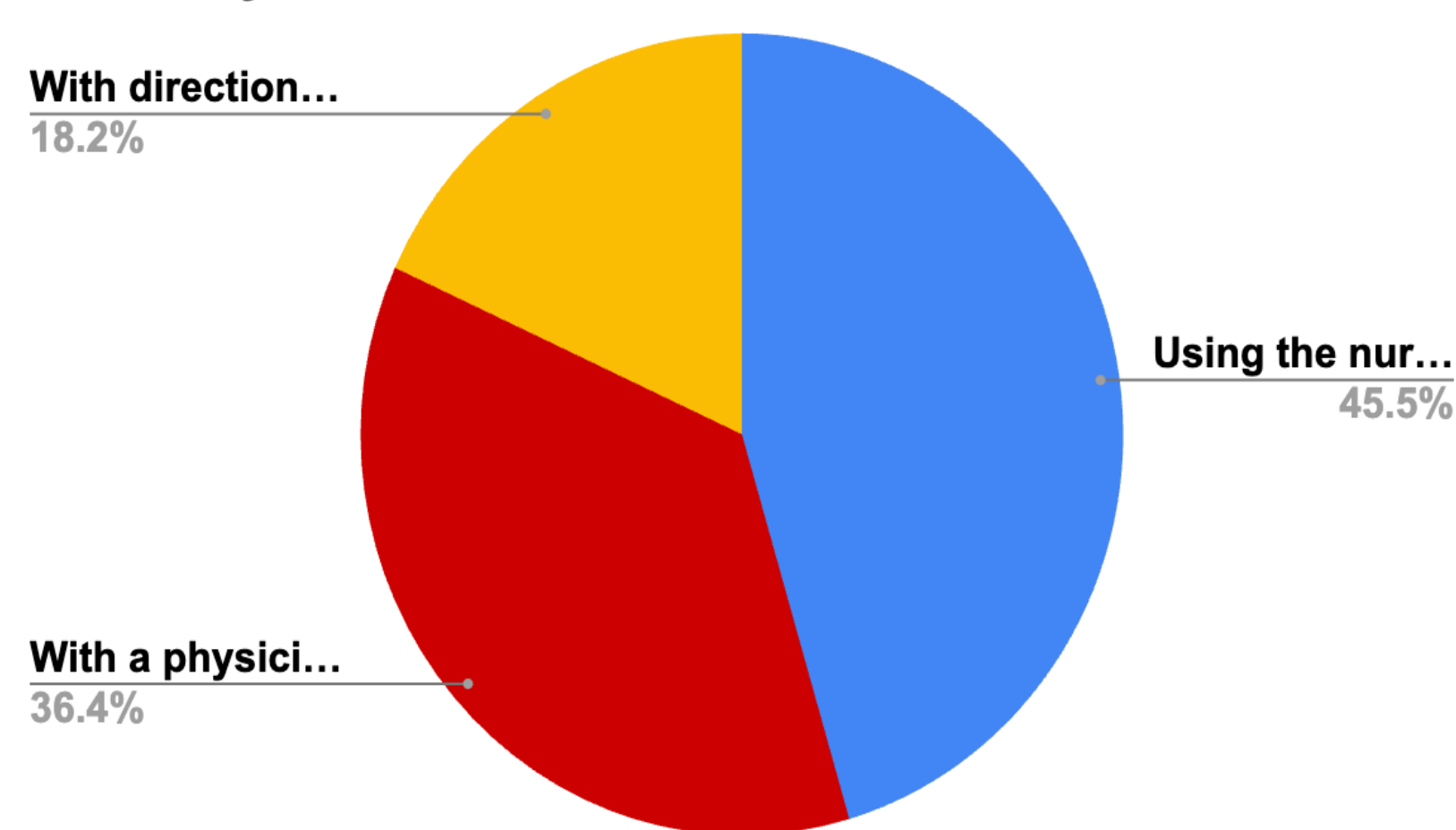
Do you feel comfortable with making the decision to remove a central line, PICC line, etc. using the nurse driv...



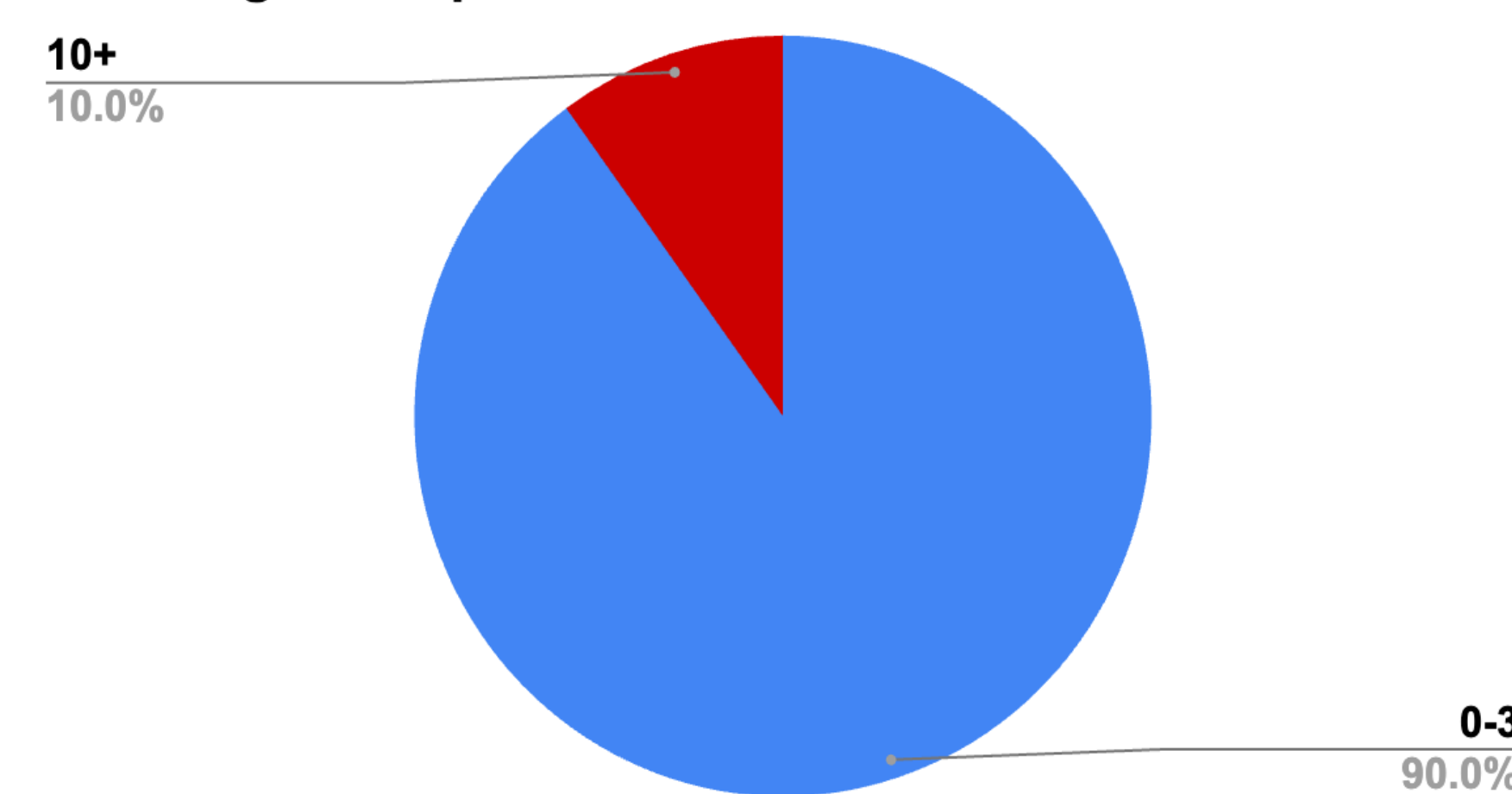
Do you consult with a charge nurse, CNS student, or manager prior to removing a central line?



How do you decide when to remove a central line?



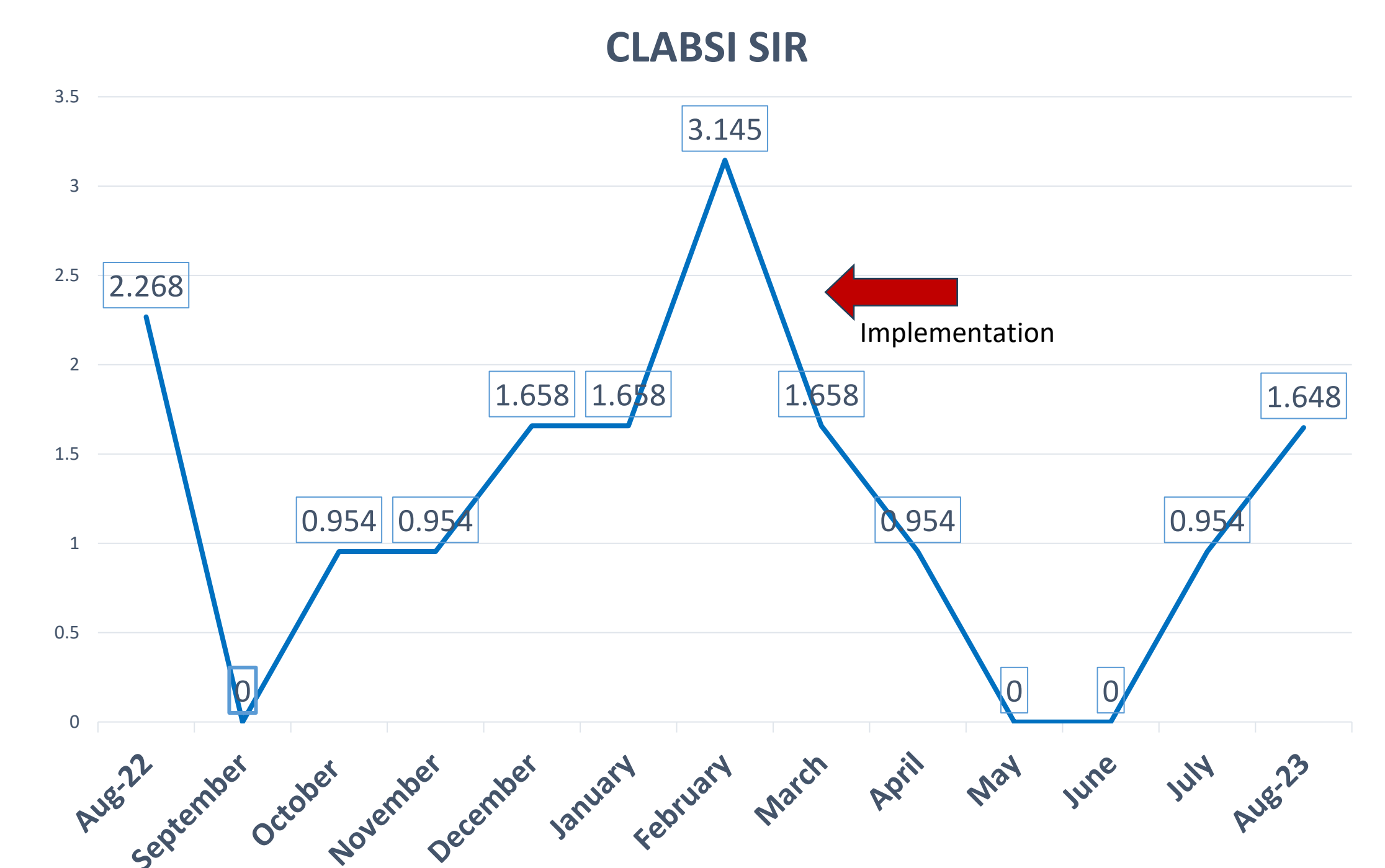
How many central lines have you removed without checking with a provider?



- Even with education and guidelines, nurses remained tentative with removal because of lack of confidence and uncertainty of removing lines too early
- Barriers to adherence to the protocol were "ensuring adequate IV access prior to removal" and "tactile guidance and education"

Results

- Prior to implementation, CLABSI SIR in February was 3.145.
- This increase in the SIR was attributed to changes in nursing staff (graduate nurses, agency nurses, new hires) who were unfamiliar with the nurse-driven central line removal protocol.
- Measures were implemented to increase adherence to the nurse-driven central line removal protocol through education and guidance through staff meetings, skills fairs, and independent training sessions.



Conclusion/Recommendations

- Delays in timely central line removal may be attributed to adherence to a nurse-driven removal protocol
- Nurses need guidance, support, and education to promptly and properly remove central lines
- Using an evidence-based, nurse-driven central line removal protocol can reduce CLABSI.
- A CNS can influence nursing care through "education, role modeling, team building, and quality monitoring" (NACNS, 2004)
- CNS core competencies used:
 - Advocates for nurses to practice to the full extent of their role in the delivery of healthcare.
 - Assesses the nursing practice environment and processes for improvement opportunities
 - Evaluates the outcomes of nursing practice using methods that provide valid data
 - Provides expert specialty consultation to nurses related to complex patient care needs.

References

