

Showcase for Hopkins Inquiry and Nursing Excellence

SHINE

Conference **2023**

Enhancing Phlebotomy Nursing Skills to
Prevent Delays in Sepsis Care in Medical
Intensive Care Units (MICU)

Presented by:

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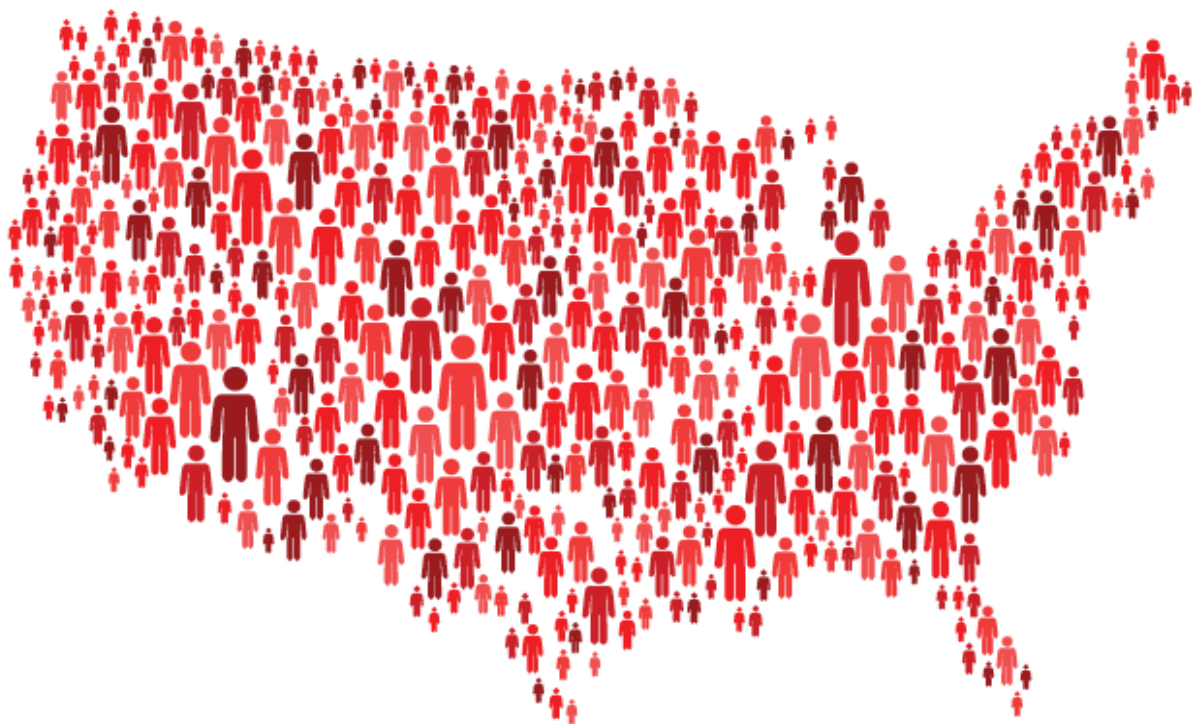
April 17-19, 2023



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Learning Objectives

- After viewing this presentation, the learners will be able to:
- explain the importance of timely antibiotics administration for survival of sepsis patient
- understand how phlebotomy skills can improve sepsis care
- establish a USGIV training program to improve patient care



**EACH YEAR, ABOUT
1.7 MILLION ADULTS IN
AMERICA DEVELOP SEPSIS.
AT LEAST 350,000
DIE DURING THEIR
HOSPITALIZATION OR ARE
DISCHARGED TO HOSPICE.**

**GET AHEAD
OF SEPSIS**

KNOW THE RISKS. SPOT THE SIGNS. ACT FAST.

Learn more at cdc.gov/sepsis





Prostate Cancer



Auto Accident



Breast Cancer



Heart Failure



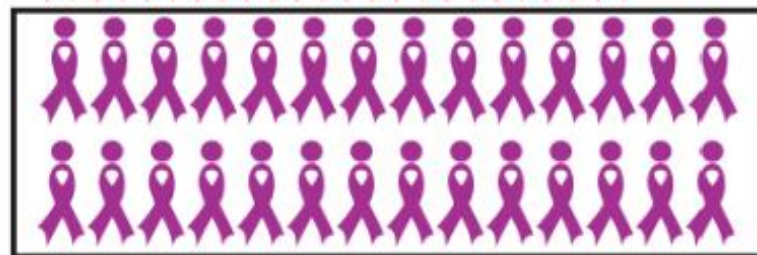
Diabetes



Alzheimer's



Heart Attack



Sepsis

Sepsis Kills More People Than Any Other Medical Condition



Coalition *for*
Sepsis Survival



= 10,000 Deaths/Year
in the U.S.

THESE ARE THE FACES OF SEPSIS™



Anyone who has an infection is at risk of developing sepsis.

(Sepsis Alliance Institute , 2023)

Sepsis in Hospitalized Patients

- 1:3 who die while hospitalized die of sepsis
- **80% of sepsis** deaths could be prevented
- Every one hour of treatment delay increases mortality by 35% in septic shock.
- Delay in treatment: Increased patient morbidity, mortality, nursing workload, healthcare costs, and poor compliance with the regulatory body.

Sepsis Cost

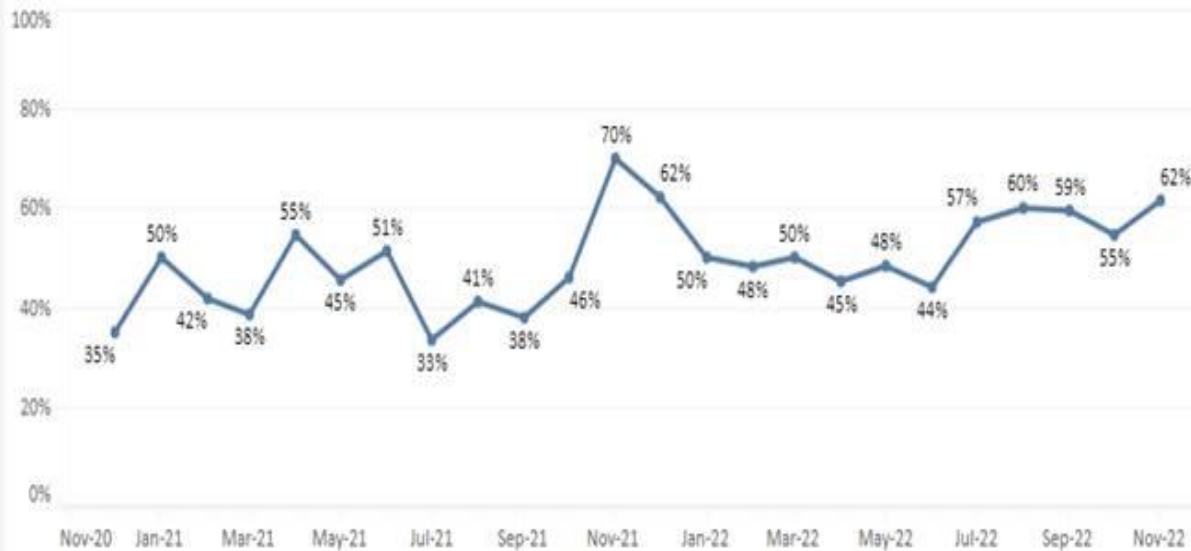
- Sepsis is #1 cost of hospitalizations in the US: \$27 billion/year
- Sepsis is the leading cause of 30-day readmissions to the hospital (19%), cost \$2 billion/year

Background

- MICU data: Only 35% of sepsis patients had antibiotics administered within 60 minutes of the order.
- Median minutes of order to administration was 91 minutes

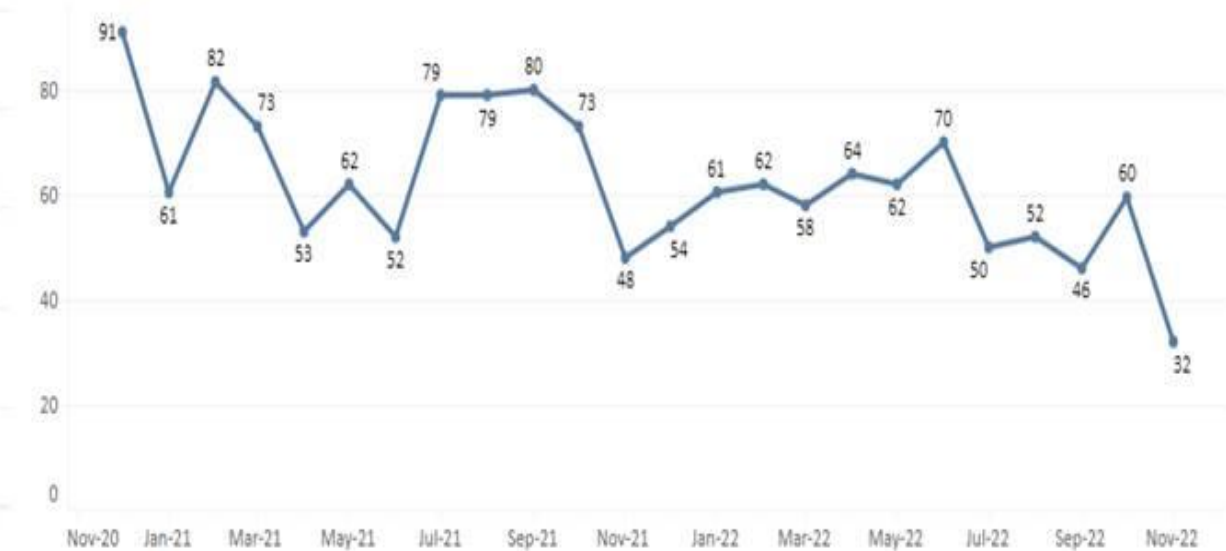
Compliance Trend - Inpatient STAT Abx Order to Admin

A trend of the percent of inpatient STAT antibiotics administered within 1 hour of order time



Median Trend - Inpatient STAT Abx Order to Admin

A trend of the median number of minutes from order to administration for inpatient STAT antibiotics administered



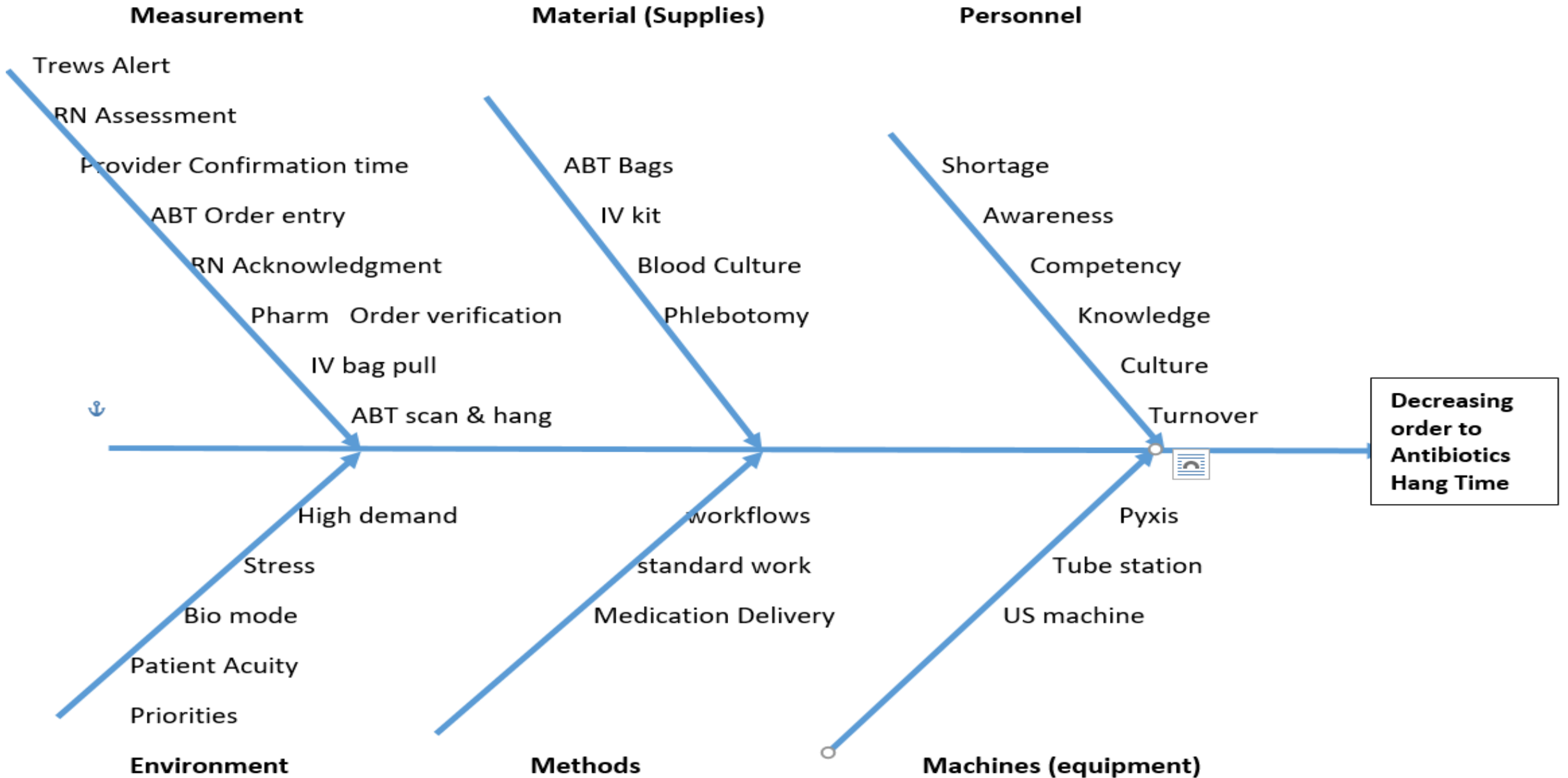
Project Aim

- To improve sepsis care in MICU by increasing the compliance of administering antibiotics within 60 minutes of the order.
- To decrease time from antibiotic order to administration
- To address the barrier to timely antibiotic administration

LEAN Six Sigma Model: Process Improvement

- **Fishbone diagram:** To identify causes and contributing factors
- **PICK Chart:** To organize ideas and to implement the intervention with greatest impact

Fishbone Diagram



Fish Bone Chart

RCA

Phlebotomy skills

**Communication
Failure**

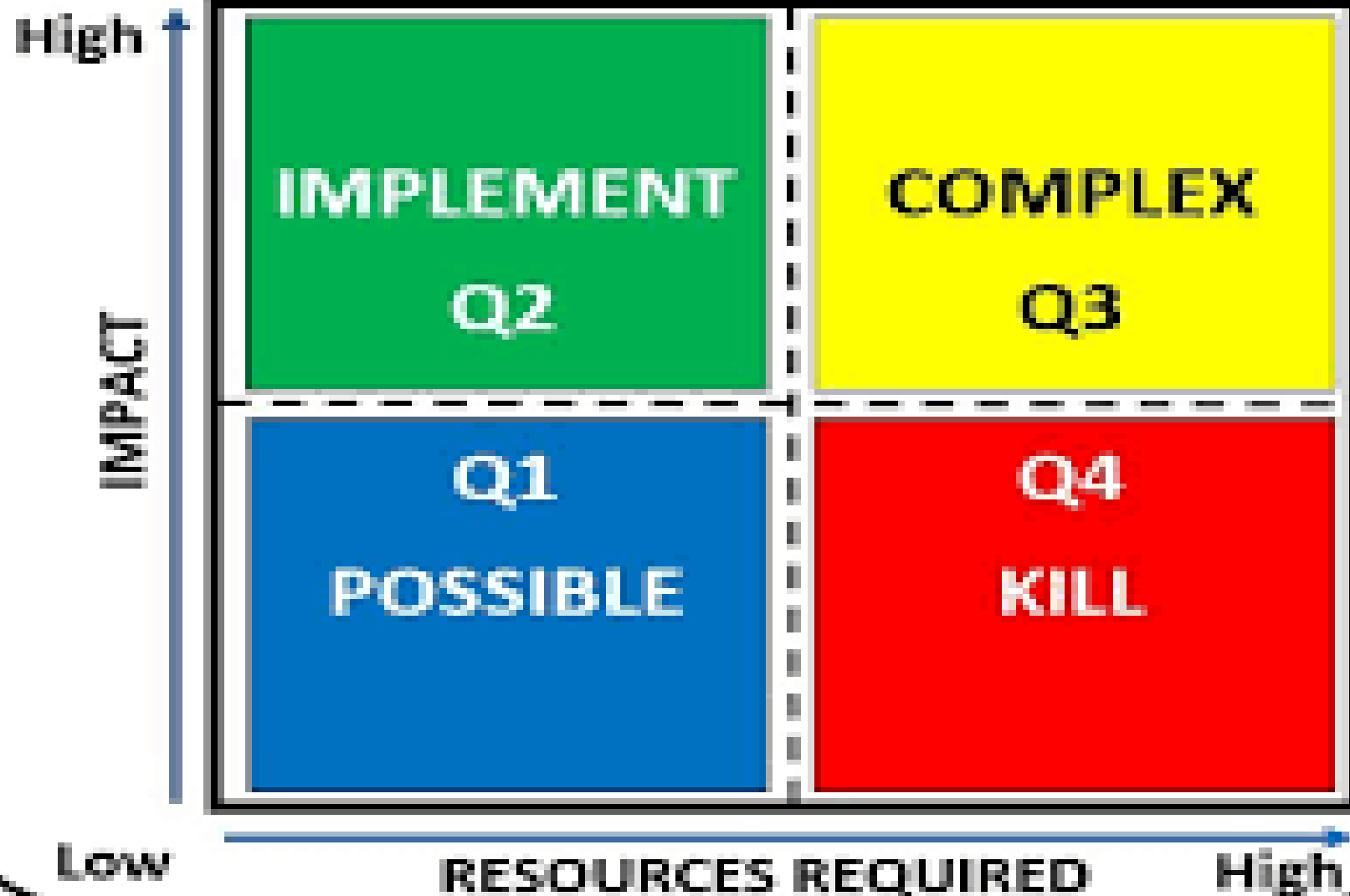
Staff engagement

Turnover



REASONS FOR FAILURE "WHAT COULD HAVE CAUSED THIS?"	LEVEL OF CONCERN 1 = LOWEST CONCERN 5 = HIGHEST CONCERN
1. Staff Turn over	5
2. Delay in Blood culture Collection	5
3. Communication Failure	5
4. Pharmacy delays	3
5. Phlebotomy Competency	3
6. Gap in Clinician education	4
7. Lack of Sepsis Bundle awareness	5
8. Provider buy in on Trews Bundle	4
9. Difficulty in getting IV access	5

PICK CHART



Implement USGIV Training

- Stake Holders meetings
 - Quarterly Training
 - Staff Selection Criteria
 - Selection Process
 - Super User responsibility
 - Checkoff process
- USGIV utilization sheet
 - Data set up with JHHS Data analyst and QI lead
 - Weekly Data Tracking through Tableau

Super User Requirements

- ✓ Night shift/rotators
- ✓ 30 hours/week or above based on the unit needs
- ✓ Has been in MICU for at least one year
- ✓ Mentor approval
- ✓ No active discipline/in good standing clinically and professionally
- ✓ Be proactive and good buddy during clinical shifts
- ✓ Commit to staying at least one year post training

Participants Responsibility

- ✓ Attend the didactic class
- ✓ Be proactive in getting signed off while working.
- ✓ Notify- If unable to complete sticks while working
- ✓ Complete 5 sticks and submit the checklist within 3 months of the class.

Data Analysis: Key Metrics

- Monthly tracking of Median minutes from the antibiotics order to administration
- Compliance data
- USGIV Utilization Data

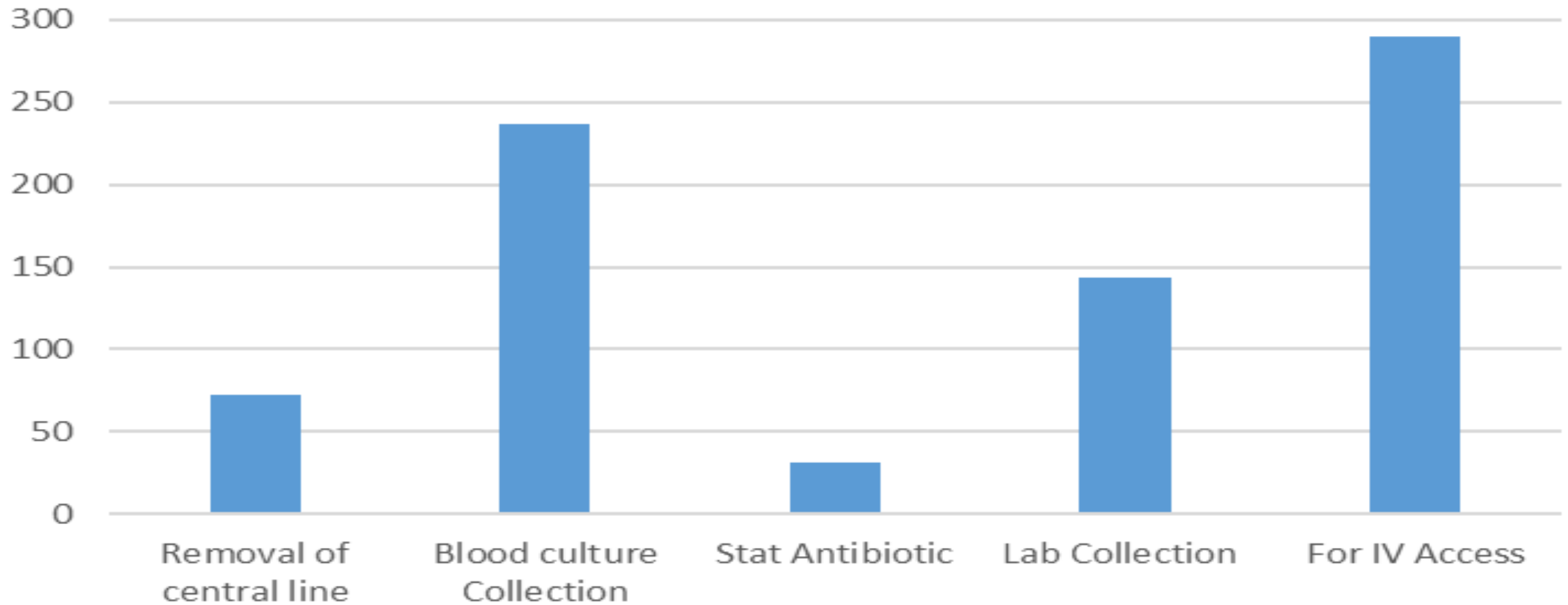
Result

- Established USGIV training
- Seven training sessions
- 45 nurses trained
- Utilized USGIV more than 1000 times (in 1st 17 months).
- Antibiotic administration compliance increased from 35% to 62%.
- Median minutes decreasing from 91 minutes to 32 minutes

USGIV Utilization

Jan 2020- June 2022

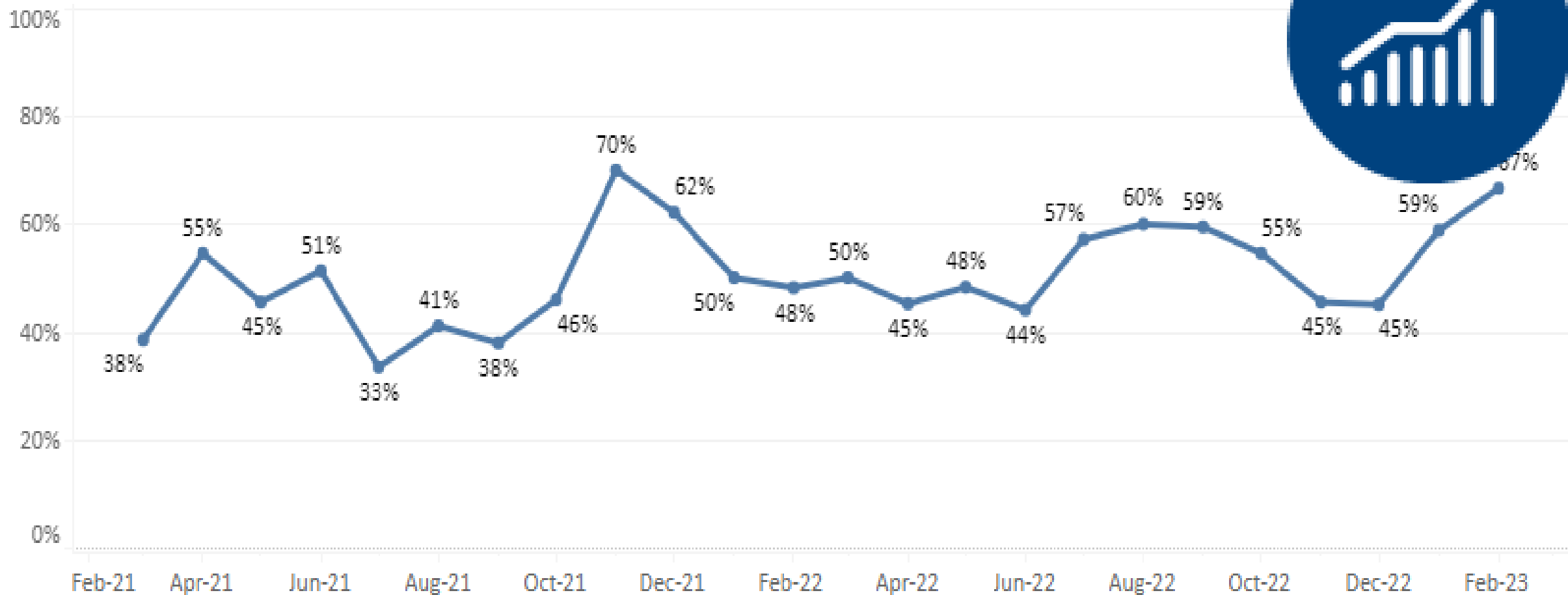
Ultrasound-Guided IVs - Utilization



Result

Compliance Trend - Inpatient STAT Abx Order to Admin

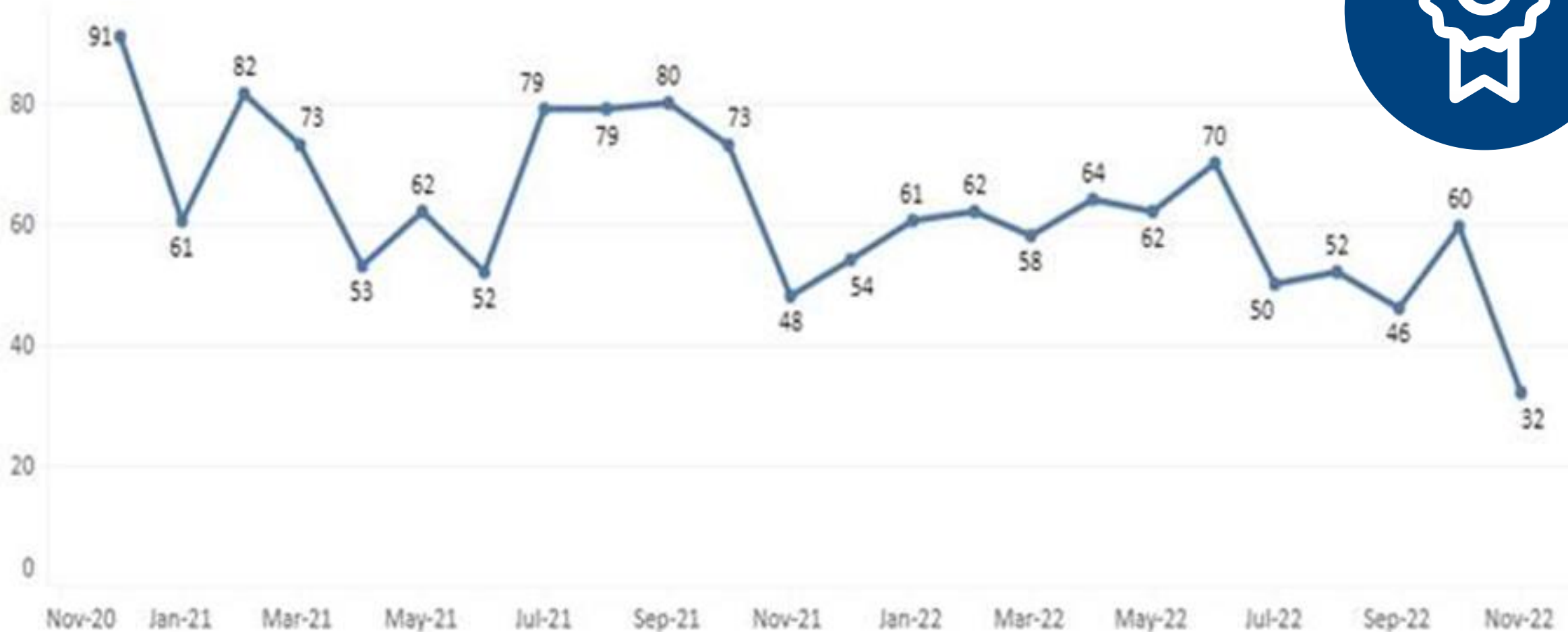
A trend of the percent of inpatient STAT antibiotics administered within 1 hour of order time



Result

Median Trend - Inpatient STAT Abx Order to Admin

A trend of the median number of minutes from order to administration for inpatient STAT antibiotics administered



Implications for Practice

- Improved Sepsis patients care
- Decreased access issue
- Less Central lines
- Lower Blood culture contamination rate
- Nursing empowerment & excellence
- Nurse Retention
- Scheduling challenges

References

- Centers for Disease Control and Prevention. (2022, August 9). *What is sepsis?* Centers for Disease Control and Prevention. Retrieved November 18, 2022, from <https://www.cdc.gov/sepsis/what-is-sepsis.html>
- Im, Y., Kang, D., Ko, R.-E., Lee, Y. J., Lim, S. Y., Park, S., Na, S. J., Chung, C. R., Park, M. H., Oh, D. K., Lim, C.-M., Suh, G. Y., Lim, C.-M., Hong, S.-B., Oh, D. K., Suh, G. Y., Jeon, K., Ko, R.-E., Cho, Y.-J., ... Moon, J. Y. (2022). Time-to-antibiotics and clinical outcomes in patients with sepsis and septic shock: A prospective nationwide multicenter cohort study. *Critical Care*, 26(1). <https://doi.org/10.1186/s13054-021-03883-0>
- Sacchetti, B., Travis, J., Steed, L. L., & Webb, G. (2022). Identification of the main contributors to blood culture contamination at a tertiary care academic medical center. *Infection Prevention in Practice*, 4(3), 100219. <https://doi.org/10.1016/j.infpip.2022.100219>
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Questions?