Follow the Yellow Brick Road: Improving the Urine Sample Collection Process in ECU Health Medical Center Emergency Department

Manaya Perry
ECU Health Medical Center

BACKGROUND

Each month, approximately 200 patients visit the ECU Health Medical Center ED for urinary issues. The current urine collection process is inefficient, causing delays in patient disposition and posing infection control risks. Contributing factors include staff shortages and the inappropriate use of lobby restrooms. This project aims to streamline urine collection, reduce delays, improve infection control, and enhance patient outcomes.

PROJECT AIM

To have a 15% reduction in urine collection time by October 1, 2024 in the Emergency Department at ECU Health Medical Center.

PROJECT DESIGN/STRATEGY

Design:
• Developed interventional pilot study framework, defining process start at urine sample order placement
Measure:
• Collected data on patient coordination and specimen handling
• Utilized EPIC PowerBI tool for accurate timestamping of urine collection
Analyze:
• Analyzed data to assess process efficiency and patient experience
Improve:
• Implemented process adjustments based on data insights to streamline patient flow and specimen collection
Control:
• Established ongoing data monitoring to ensure sustained improvements in the process

CHANGES MADE (PDSA CYCLES)

PDSA Cycle 1:
• **Plan**: Identify and address delays in urine collection, infection control risks, and patient flow issues.
• **Do**: Educate EMTs on the appropriate use of lobby restrooms and infection control standards.
• **Study**: Monitor the impact of EMT education on streamlining the urine collection process.
• **Act**: Implement necessary adjustments based on findings to further improve the process.

PDSA Cycle 2:
• **Plan**: Ensure efficient sample collection, improved infection control, and compliance among all stakeholders.
• **Do**: Train the Experience Team on the revised urine collection process.
• **Study**: Evaluate the effectiveness of the training on sample collection efficiency and infection control.
• **Act**: Make refinements to the training program and process as needed to sustain improvements.

RESULTS/OUTCOMES

Month	Avg Triage Start to First Urine Collected (Minutes)
June 2024	269.38
July 2024	258.21
August 2024	271.07

Analysis:
- In conclusion, there was an improvement in July (with a lower average time) compared to June.
- However, there was no sustained improvement into August, where the average time slightly worsened.
- With 37 patients screened, zero barriers were reported to the process, and overall urine collection time decreased by 4%.

LESSONS LEARNED

- Daily discussions and shift-specific oversight are essential for maintaining the process.
- Continued training will be crucial to sustaining improvements and ensuring long-term success.

NEXT STEPS

- **Streamlining Success**: The urine collection process has been streamlined, resulting in reduced delays, improved infection control, and enhanced patient outcomes.
- **Ongoing Monitoring**: Continued success and process refinement will be ensured through ongoing monitoring via a Power BI dashboard.

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Manaya Perry
Office of Quality
ECU Health Medical Center
Greenville, North Carolina 27858
252-403-8815
Manaya.Perry@ECUHealth.org