Blood Glucose Documentation Improvement Study

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Purpose

Purpose: To identify and reduce missed testing and documentation of point of care (POC) testing, specifically fingerstick blood glucose results, of patients undergoing procedures at our facility.

Background: Our facility performs randomized monthly chart audits, including POC testing. Chart audits are completed for 10% of all cases performed. During Q4 2022, an increase in fingerstick blood glucose (FSBG) testing not being performed was identified. Two policies were discovered containing conflicting criteria for FSBG testing. One comprehensive policy was created which simplified the process. This policy was approved and implemented in December 2022.

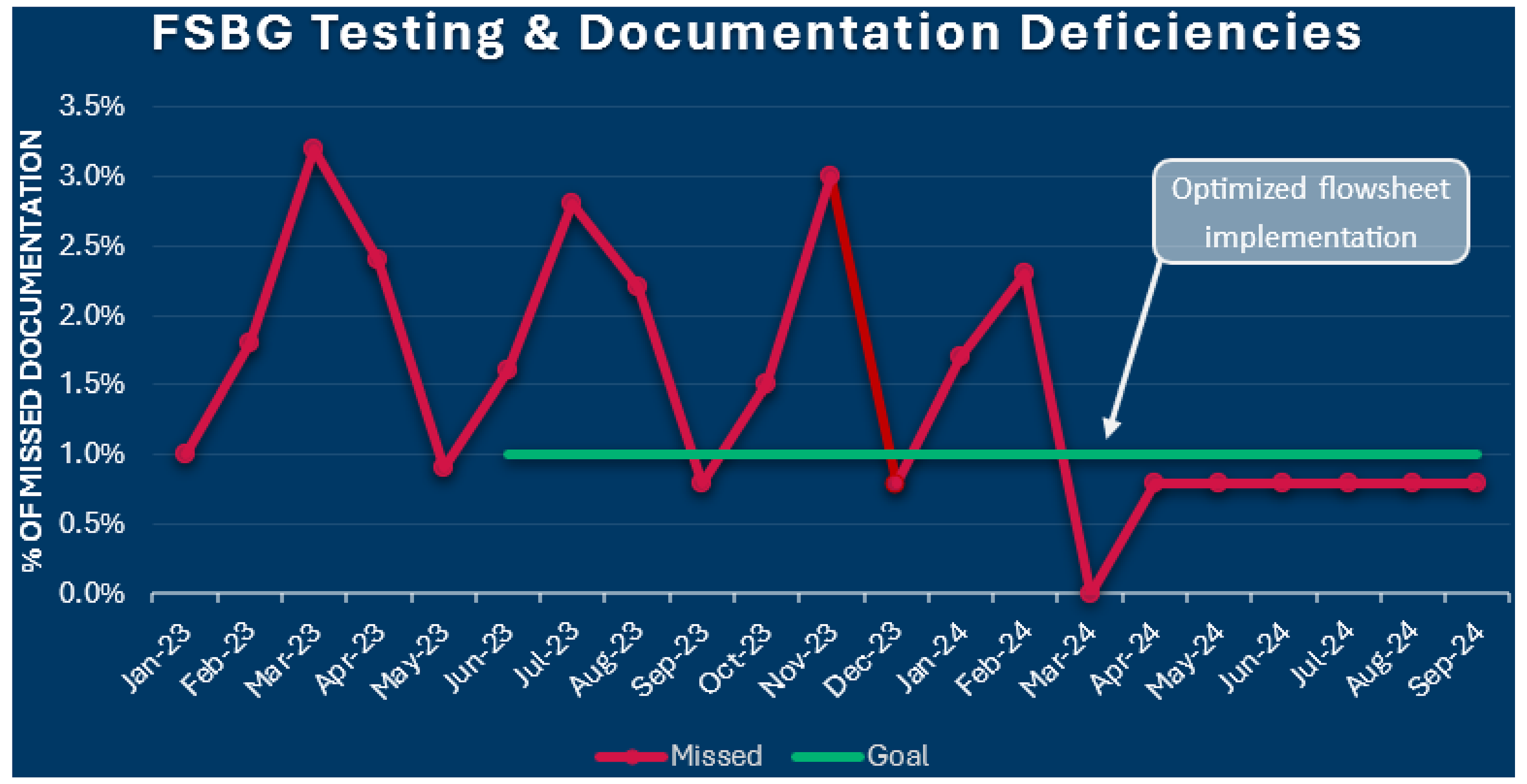
From January to May 2023, an average of 2% of audited charts lacked FSBG documentation. Due to our center's high volume this deficiency rate could mean FSBG documentation was insufficient for as many as 117 patients between January and May 2023. This data indicated that the policy change did not resolve the issue; a formal QI study was initiated at that time.

Significance: Studies show a clear link between hyperglycemia and adverse outcomes such as SSIs, delayed wound healing, and increased postoperative hospitalizations. The true number of affected patients is likely much higher, as extrapolating our sample data to total procedure volume reveals a greater impact.

Goal

Our goal is to reduce the current average of 2% of patients affected by missed documentation to 1% or below for a minimum of 3 consecutive months by December 2023, effectively lessening the impact to less than half of its current rate.

The successful completion of the goal will be measured by monthly chart audits and reported variances.



Reason for Gap

Initial deficiencies were attributed to two policies containing conflicting FSBG testing criteria. A comprehensive policy was implemented, and teammates were educated. However, continued audits revealed that our revisions did not close the gap or achieve the expected improvements.

Further analysis and investigation identified gaps were:

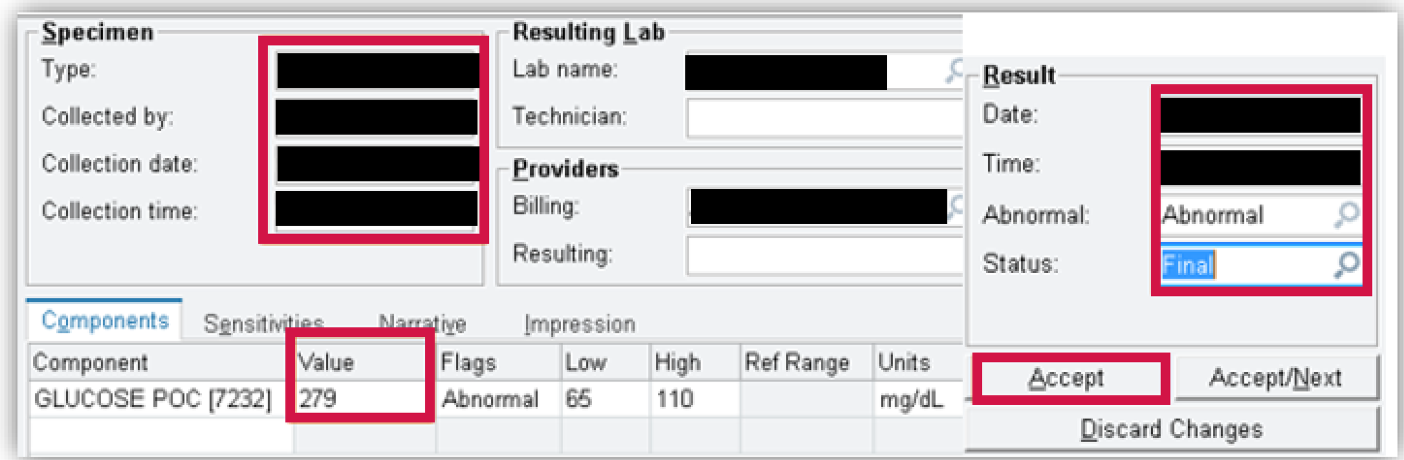
- Test ordering process was both cumbersome and not functioning correctly
- When FSBG test ordered using the standing order set, system failed to generate the ability to document the FSBG result
    - Nurses were then required to place separate FSBG order, leading to workflow inefficiencies
- When orders were placed correctly, the required steps for accurate documentation were excessive
- The system allowed users to accept results without all the necessary information, leading to results not saved in the electronic medical record

Corrective Actions

Corrective actions taken based on identified gaps included:

- IT ticket submitted to address the standing order set's inability to generate an option for FSBG result entry.
- Additional IT ticket submitted, requesting a redesign of steps required for result documentation, as the system currently allows submission of incomplete information.
- During monthly staff meetings, trends in FSBG testing deficiencies were reviewed with all teammates.
- Further education provided to all applicable teammates to ensure complete and accurate documentation while awaiting the resolution of pending IT tickets.
- IT tickets remained pending with no known completion date, reminders were incorporated into daily departmental huddles.

This figure illustrates the previous FSBG documentation process, where all red-marked fields required manual entry for each result.



This figure displays the optimized flowsheet implemented in March 2024.

POC Glucose	
FSBS (Manual)	
POC Glucose (Download)	
Hypoglycemia Treatment	
Urine Pregnancy	
Urine Pregnancy	
QC	
Urine Pregnancy Lot #	
Other POCT Results	
Whole Blood HCG	
INR Value	
Hemoglobin (ASC)	
Critical Results	
Critical Result/ Procedure and ...	
Time Provider Notified	
Name of Provider Notified	
Provider Response/Orders Giv...	

Remeasure

Corrective actions could not be fully implemented by December 2023 due to the pending IT tickets. Despite multiple inquiries, IT could not provide a completion date, and our initial goal was not met by December 2023.

Given our assessment that the issue was process-related, a meeting with end users in January 2024 revealed a preference for a simplified flowsheet. Discussions with our partnered health system, The University of Kansas Health System, revealed our facility was using an outdated entry process, while other locations had transitioned to an optimized flowsheet that eliminated the need for an order set and reduced documentation steps.

Recognizing the benefits of an optimized flowsheet, we collaborated with the health system's informatics team to implement it at our facility. An IT ticket was submitted in February 2024, and implementation was completed in early March.

Data remeasurement confirmed that our goal of reducing missed documentation to 1% or less was achieved from March to May 2024, reflecting a 75% reduction in deficiencies identified in monthly chart audits.

Communicate

Progress and results reported to:

- Facility-wide monthly staff meetings
- Daily departmental huddles
- Facilitator and leadership monthly meetings
- Quality Council
- Clinical Operations Committee
- Governing Board

References

Duggan, E., Carlson, K., Umpierrez, G. (2017, March). *Perioperative Hyperglycemia Management: An Update*. Anesthesiology.