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Enhancing Patient Experience through AI-Enhanced Blood Drawing Services

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INTRODUCTION

Extended wait times at blood drawing services degrade patient satisfaction and operational efficacy. Addressing this challenge, our study utilized a dual approach: refining processes through the Quality Control Circle (QCC) methodology and integrating an AI-based precise prediction system to enhance the efficiency and patient experience at our hospital's blood drawing counter.

AIM

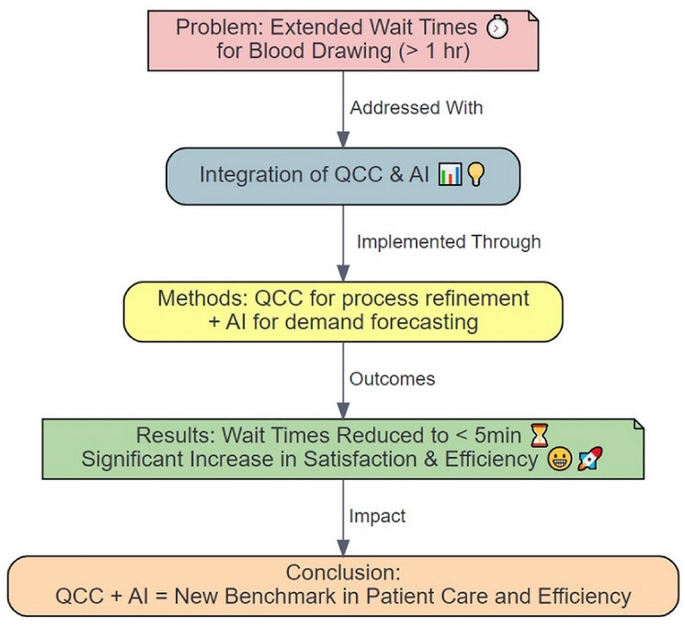
To reduce wait times and enhance patient satisfaction at our hospital's blood drawing counter by integrating QCC methodology with AI-based predictive analytics, optimizing workflow efficiency and resource allocation.

METHOD

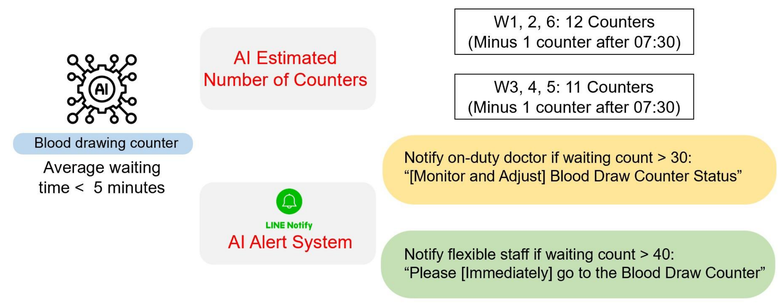
Our strategy involved a robust application of QCC principles to dissect and enhance workflow efficiencies, alongside the development of an AI-based system for precise demand forecasting. This comprehensive method enabled optimal staffing, streamlined patient flow, and improved service delivery by precisely anticipating peak times and adjusting resources accordingly.

RESULTS

The implementation of an AI system, which accurately estimated the number of counters needed each week, along with an AI alert system for dynamic staff management, played a crucial role in reducing wait times at the blood drawing counter. The alert system ensured that if the waiting count exceeded 30, the on-duty doctor was notified to monitor and adjust counter operations. When the count surpassed 40, additional flexible staff were promptly deployed to maintain efficient service. These efforts, combined with QCC-driven process optimization, led to a dramatic reduction in wait times from over 1 hour to less than 5 minutes during peak demand, significantly enhancing patient satisfaction and operational efficiency.



Overview of the approach used to address extended wait times at the blood drawing service. The integration of Quality Control Circle (QCC) methodology with AI-based demand forecasting led to significant reductions in wait times and improvements in patient satisfaction and operational efficiency, establishing a new benchmark in healthcare service delivery.



AI-driven system for optimizing blood drawing services. The AI estimates the required number of counters and uses LINE Notify for real-time alerts. If the waiting count exceeds 30, the on-duty doctor is notified to monitor and adjust counter status. If the count exceeds 40, flexible staff are immediately directed to assist, ensuring the average waiting time remains under 5 minutes.

CONCLUSIONS

This initiative demonstrates the powerful impact of integrating traditional quality improvement methods with innovative technology. The QCC's role in foundational process evaluation and enhancement, when augmented by AI's predictive capabilities, sets a new benchmark in patient care and service delivery efficiency. Our approach highlights the importance of blending human-centric quality control methodologies with cutting-edge technology to achieve superior healthcare outcomes.

ACKNOWLEDGEMENT

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REFERENCES

Chen C-H et al. Evaluating Different Strategies on the Blood Collection Counter Settings to Improve Patient Waiting Time in Outpatient Units. Inquiry. 2022;59:469580221095797.

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