

BACKGROUND

- EKG interpretation is an essential acute care nursing skill².
- Demonstration of competency by assessment has been required for inpatient bedside nurses per Duke policy for more than 10 years.
- In 2024, Clinical Nurse Educators taught online EKG classes that coupled live teaching with e-learning modules. After class, nurses completed a 20-question assessment.
- When tested, new and experienced nurses struggled to successfully identify common rhythms and arrhythmias **55.7% of the time in the first 10 months of 2025³**.

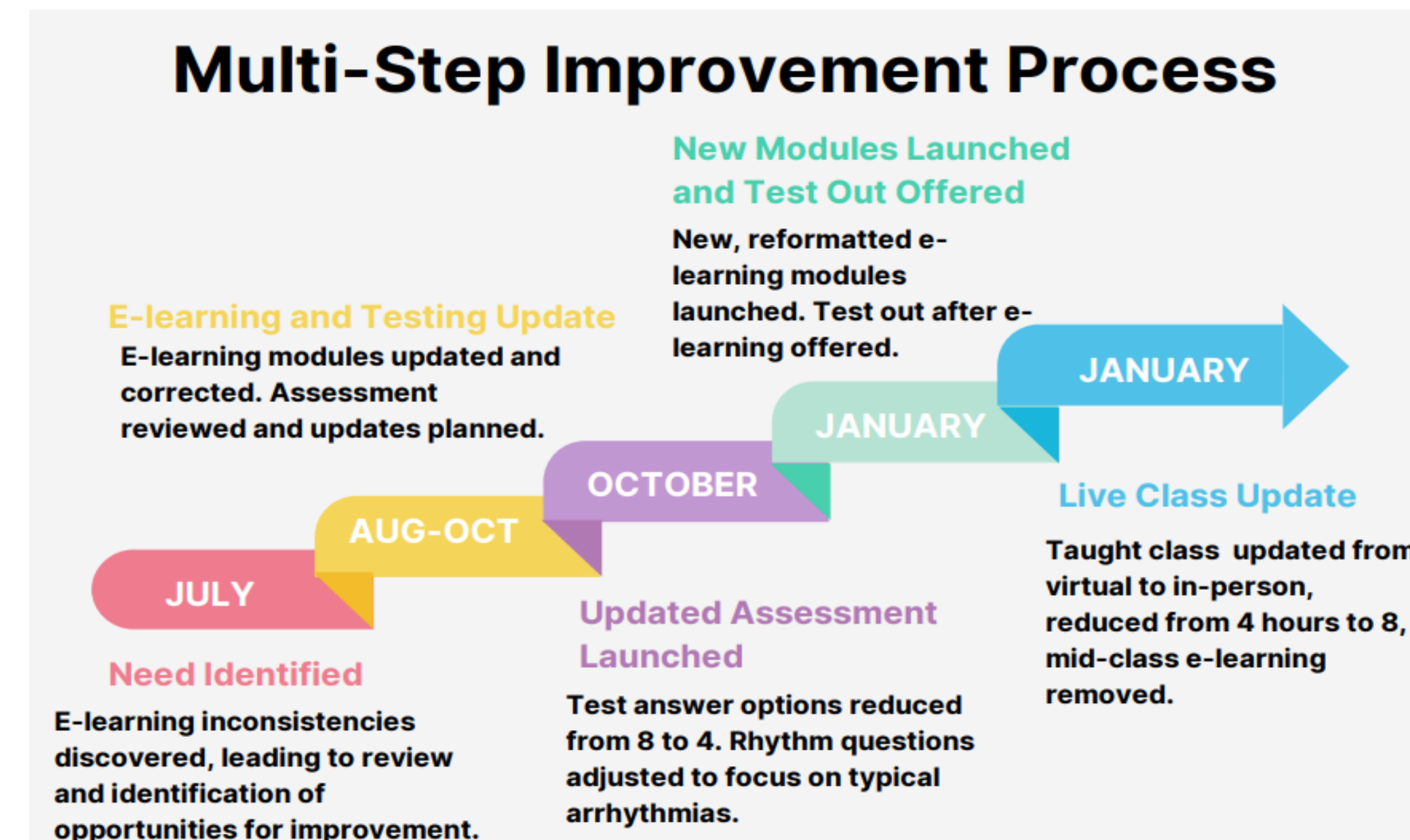
PURPOSE

To increase the effectiveness of standardized EKG education and assessment for nurses newly hired into DUHS acute care units by refining and improving testing and teaching practices as evidenced by improved EKG assessment pass rates.

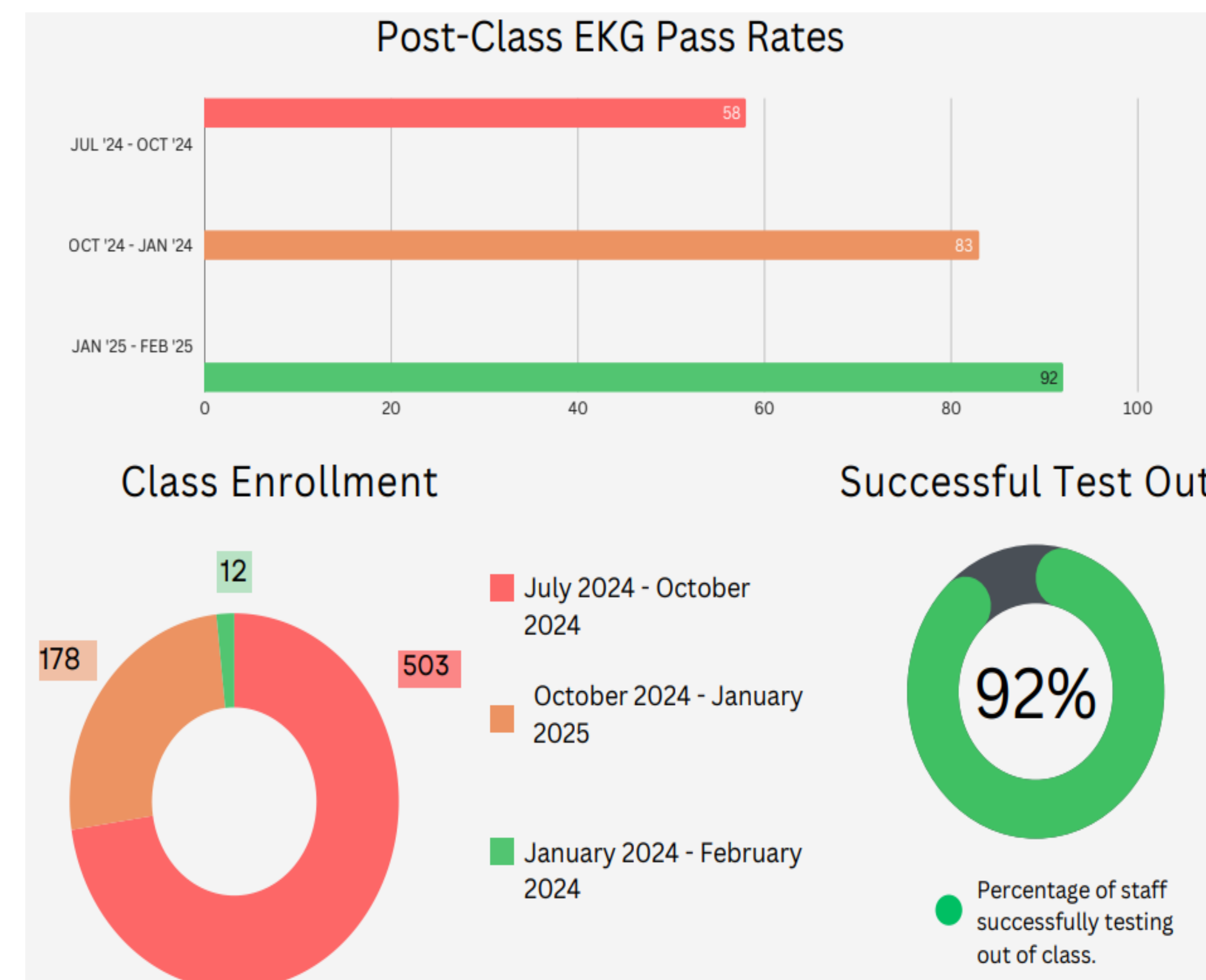
DEMOGRAPHICS

- 33 Rhythm Interpretation Basics classes were taught by 6 Clinical Nurse Educators from January 2024 – February 2025.
- 929 nurses (LPNs and RNs) completed the Rhythm Interpretation Basics classes between January 2024 and February 2025.
- Nurses were both new graduates and experienced nurses hired into acute care adult and pediatric units in DUH, DRH and DRAH.

INTERVENTIONS



OUTCOMES



DISCUSSION

SUCCESSES

- Adoption of these changes aligns with the necessary adjustments in an evolving healthcare education landscape¹.
- Significant improvements in EKG pass rates were seen in each step of the improvement process.
 - Pass rates in the 3 months prior to intervention were around 58%, improving to 83% after assessment revision and to 92% after assessment and module and class revision.
- Improved pass rates reduced staff and educator requirements for remediation and retesting.
 - Assessment pass rate improvement saved at least 22 hours of remediation from October 2024 – January 2025.
- Over 90 learners were able to test out of EKG class attendance after completing the reformatted learning modules from January to February 2025.
 - This number is expected to grow with larger orientation cycles onboarding in the summer.
 - Fewer EKG class attendees reduces class sizes, allowing for more individualized support for learners and has received positive feedback.
 - Class time reduction will save a minimum of 4 hours of indirect (education time) per learner.

CHALLENGES

- Additional opportunities for improved e-learning exist. Despite completion of online modules before live class attendance, many learners do not accurately identify standard measurements of normal EKG complexes at the start of class.
- EKG pass rates only demonstrate rhythm identification at the moment of testing. Application of successful learning to improved cardiac rhythm identification in daily bedside care needs further review.

REFERENCES

- Kavanagh, J. M., & Dnp, P. A. S. (2021). Crisis in Competency: A Defining Moment in Nursing Education. *Online Journal of Issues in Nursing*, 26(1), N.PAG. <https://doi.org/10.3912/OJIN.Vol26No01Man02>
- Lee, S., Kim, h.j., Choi, Y. *et al.* Effectiveness of electrocardiogram interpretation education program using mixed learning methods and webpage. *BMC Med Educ* **24**, 1039 (2024). <https://doi.org/10.1186/s12909-024-05960-8>
- Ng J, Christensen M. Registered nurses' knowledge and interpretation of ECG rhythms: A cross-sectional study. *Nurs Crit Care*. 2024 Sep;29(5):1032-1039. doi: 10.1111/nicc.13013. Epub 2023 Dec 29. PMID: 38156358.

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