

Increasing Feedback on Residents' Clinical Reasoning Documentation Using Machine Learning

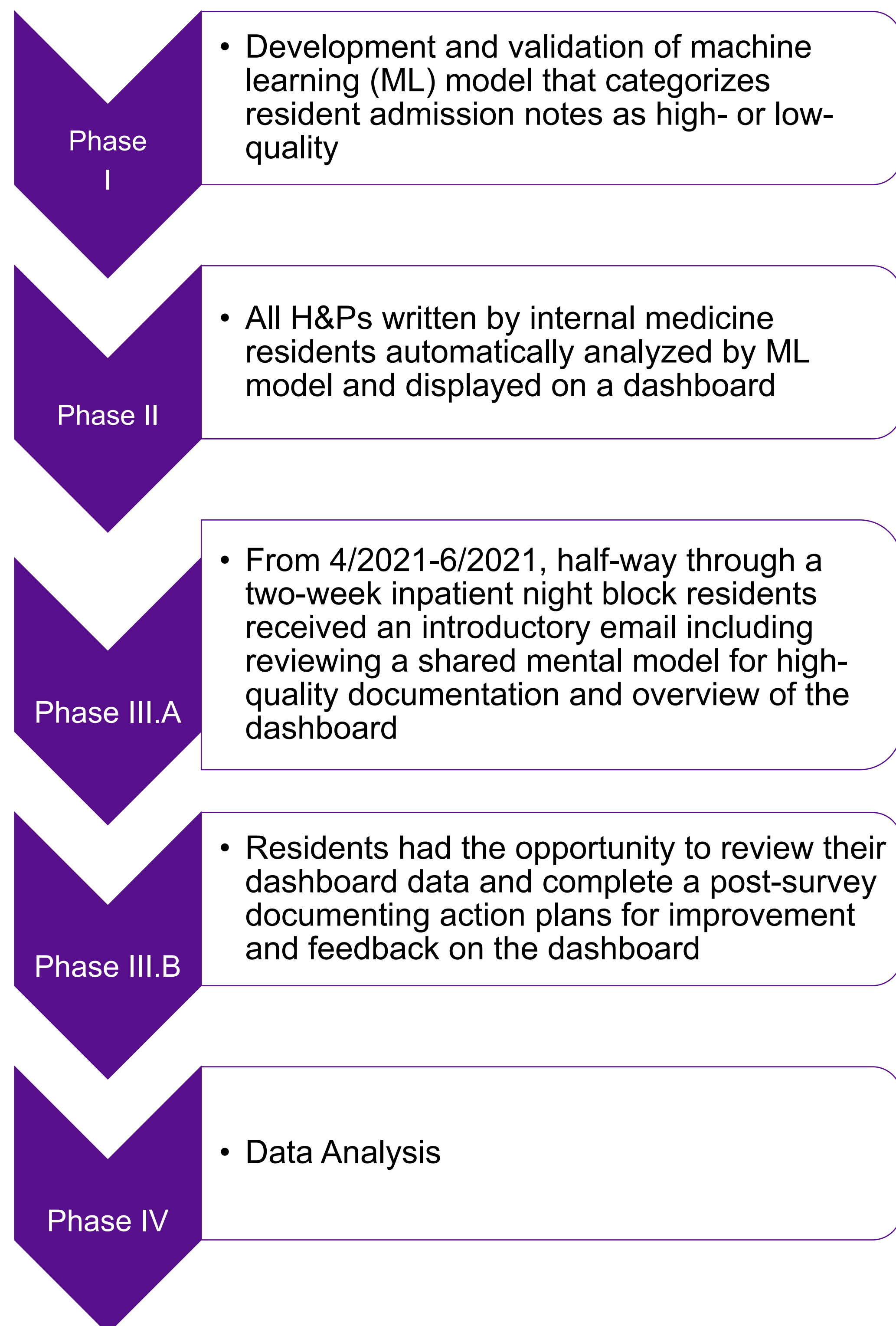
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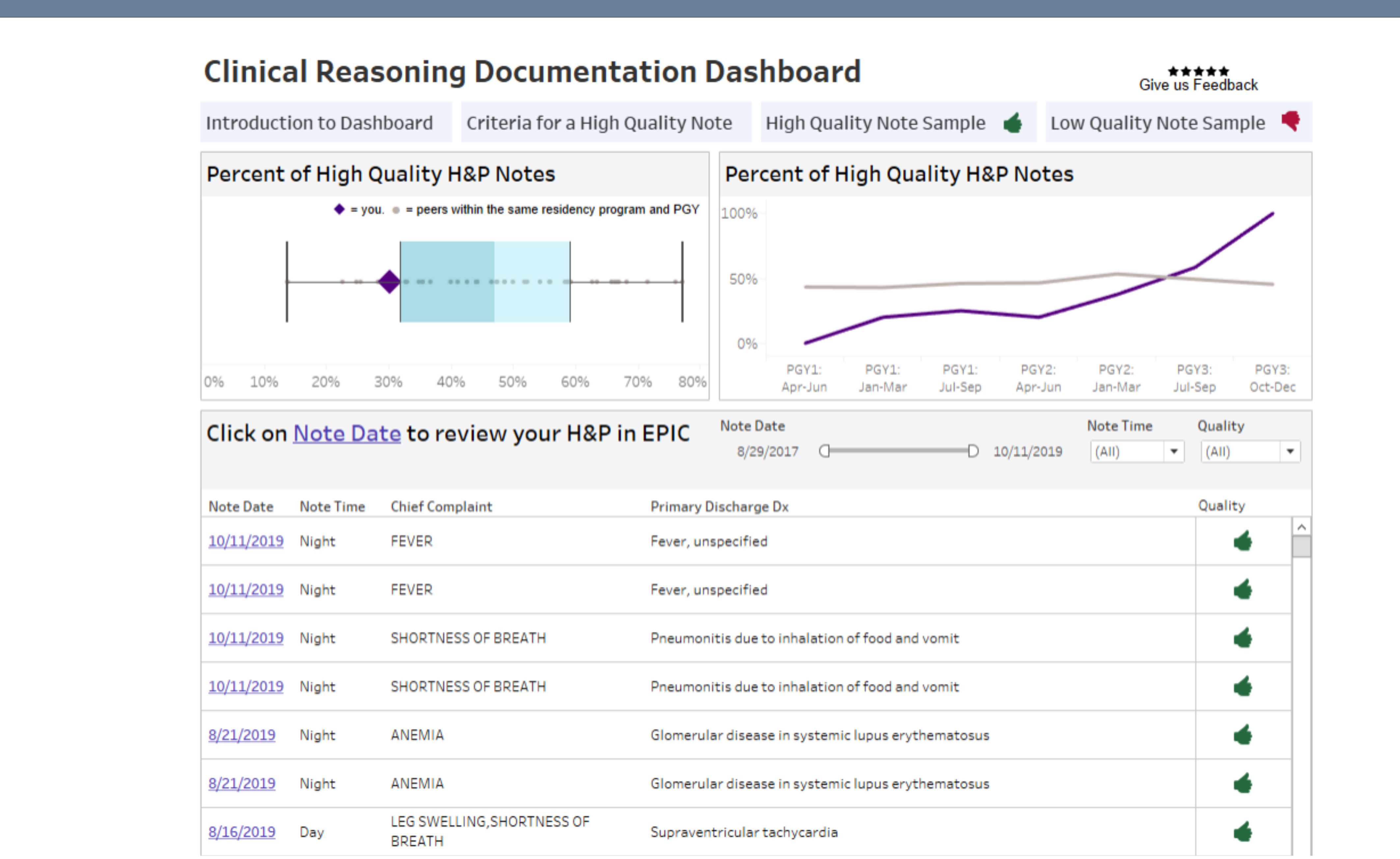
Background

- Residents often receive limited feedback on their clinical reasoning documentation
- Barriers include time constraints of supervisors and lack of a shared mental model
- In earlier phases of this work, we developed and validated an innovative workplace-based assessment of clinical reasoning documentation using machine learning
- Here, we describe initial pilot implementation data providing feedback using this tool

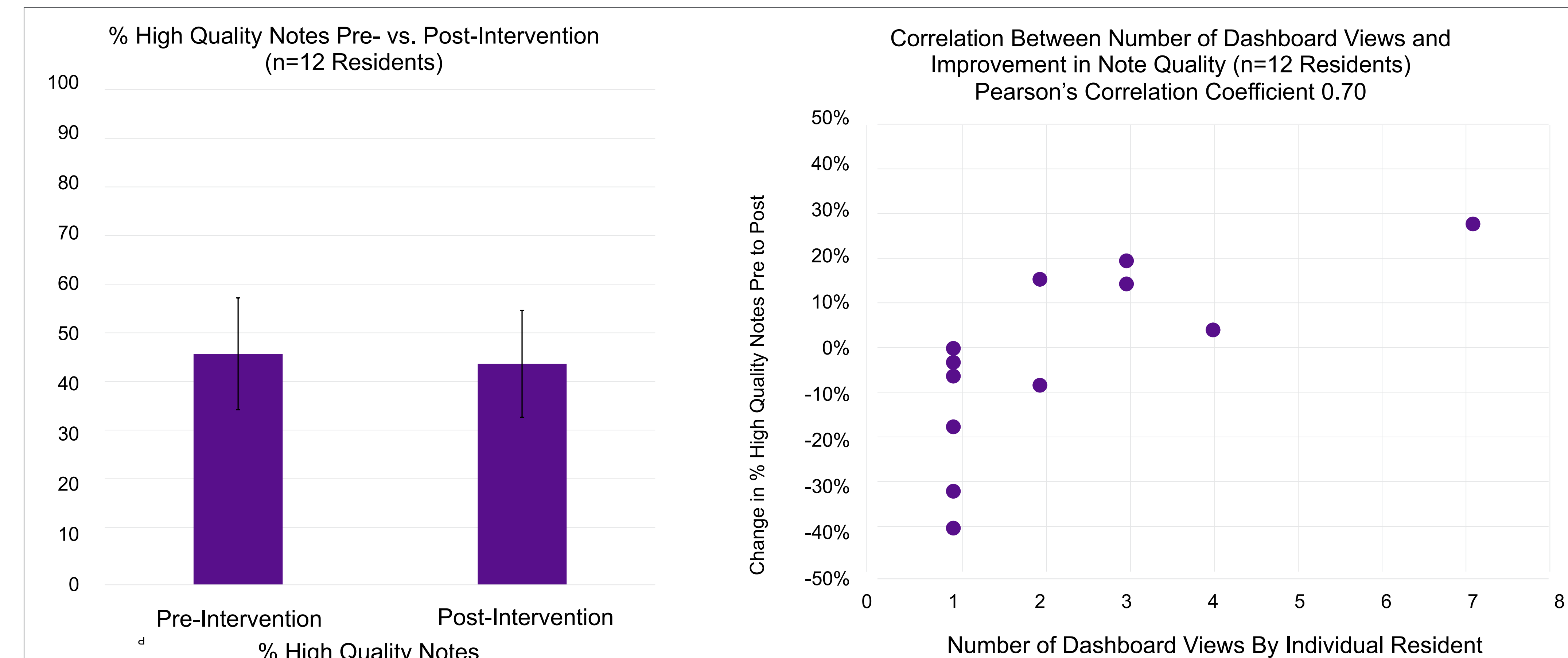
Methods



Dashboard Displaying Machine Learning Model Output on Clinical Reasoning Documentation Quality



Results



Resident Action Plans for Improvement

I will try to be more explicit about my ddx and mention supporting evidence of alternative diagnoses

I will try to make my reasoning more clear and try to expand my differentials as a personal incentive to expand my clinical reasoning.

I will try to always include at least one alternative diagnosis with at least two data points explaining my choice.

I will work to more clearly define my differential including specific diagnoses rather than systems, as include additional qualifiers for #1 vs alternative diagnoses

Conclusions

- There was no significant difference in note quality from pre- to post-intervention in this pilot study with a small N
- However, there was a trend in improvement post-intervention in those residents who accessed the dashboard more than once
- 70% of residents who received the intervention accessed the dashboard at least once
- A consistent theme from residents on areas for improvement was the desire for more specific feedback rather than the binary high- vs low-quality
- A faculty dashboard to view resident data has since been created
- Next steps will be to train faculty to use this tool to increase the frequency of feedback on note quality and usage of the dashboard
- We anticipate this will result in a significant improvement in note quality

References

Colicchio TK, Cimino JJ. Clinicians' reasoning as reflected in electronic clinical note-entry and reading/retrieval: a systematic review and qualitative synthesis. *J Am Med Inform Assoc.* 2019;26:172-84

Schaye V, Miller L, Kudlowitz D, et al. Development of a clinical reasoning documentation assessment tool for resident and fellow admission notes: a shared mental model for feedback. *J Gen Int Med.* 2021;May 4:1-6.