Clinical Impact of AI-Directed Triage for Incidentally Detected Outpatient Intracranial Hemorrhage

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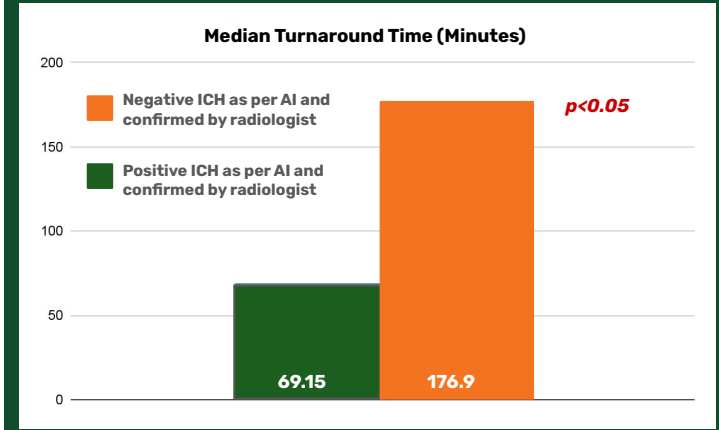
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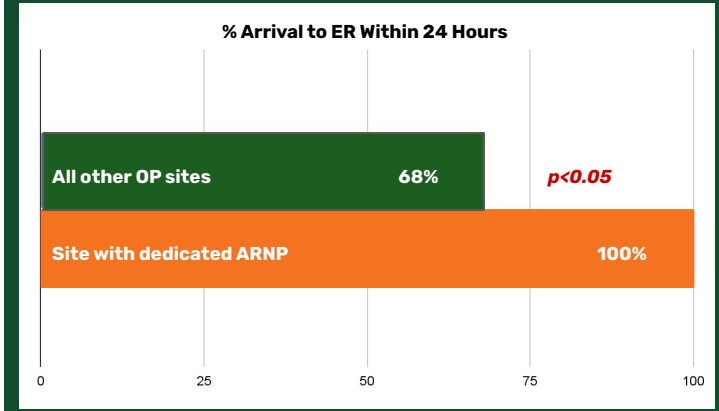
PURPOSE

- Evaluate the clinical impact of an AI-guided triage system for directing patients with incidentally detected intracranial hemorrhage (ICH) on outpatient CT imaging to the Emergency Department (ED) for timely intervention
- Assessment of the role of an ARNP at one institutional specific outpatient site, who was tasked with supervising patients and contacting the radiologist to prioritize the final read, hence influencing clinical outcomes

MATERIAL & METHODS

- AI software was implemented at our institution July 2023 for ICH
- All outpatient CT brain/head performed outpatient were analyzed from July 2023-March 2024
- To compare outcomes between an outpatient site with a dedicated ARNP versus all other outpatient centers, further data was analyzed from February 6th-September 30th 2024





Median Turnaround Time: Study Acquisition Time to Time Report Signed by Radiologist.

Key Finding: Dedicated ARNP facilitates more efficient patient referral to the ED in incidentally-detected ICH in the outpatient setting.

RESULTS:

- N= 9,590 CT evaluated by AI algorithm
- 150 ICH identified
- Median turnaround time: 69.15 minutes (positive cases) versus 176.9 minutes (negative cases)
- ADDITIONAL ANALYSIS: At the ARNP-supported site, 100% (n=2) of patients with new ICH arrived to the ED within 24 hours of study acquisition time, versus 62% (n=8) at all other outpatient sites without a dedicated ARNP (*p<0.03*)

CONCLUSION:

- The implementation of AI-guided workflows significantly improved prioritization times for incidental ICH cases
- The inclusion of a dedicated ARNP demonstrated statistically significant improvement in clinical outcomes, facilitating more efficient patient referral to the ED and thereby streamlining care delivery

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