AutoDX 2.0: Automated Diagnosis Capture to Enhance Quality, Efficiency, and Physician Experience

Matthew Cerasale, MD, MPH, Robert Strong, Ben Petro, Kat Eibensteiner

Problem

- Accurate diagnosis capture drives case mix adjustment, benchmarking, and hospital rankings (Vizient, U.S. News).
- Current reliance on manual CDI is labor-intensive, inconsistent, and hard to scale.
- Missed diagnoses (e.g., AKI, malnutrition, sepsis) skew risk models, distort outcomes, generate queries, and understate severity.
- Analyses show underreporting of Elixhauser comorbidities and Vizient risk variables, creating clinical and financial loss.

Goal

- Improve capture of comorbidities and risk variables that drive U.S. News, Vizient, and CMS Outcomes.
- Reduce reliance on external vendors, and build internal sustainable tools
- Enhance benchmarking, case-mix accuracy and patient safety.

Intervention Design

- **Prioritization Framework**: Conditions scored on impact (revenue, risk adjustment, mortality/LOS contribution) and feasibility (data availability, logic complexity).
- **Algorithm Development**: Logic based on structured EHR fields (flowsheets, lab thresholds, discrete vitals, medications). Narrative-driven conditions triaged to CDI/NLP
- **Stakeholder Engagement:** Cross-disciplinary collaboration (CDI, Coding, Clinical Informatics, Quality Improvement, CAIS).
- **Evaluation Metrics:**
  - Decrease in number of clinician queries.
  - Contribution to Vizient risk models and case-mix adjustment.

Targeted Coding Queries vs AutoDx Use
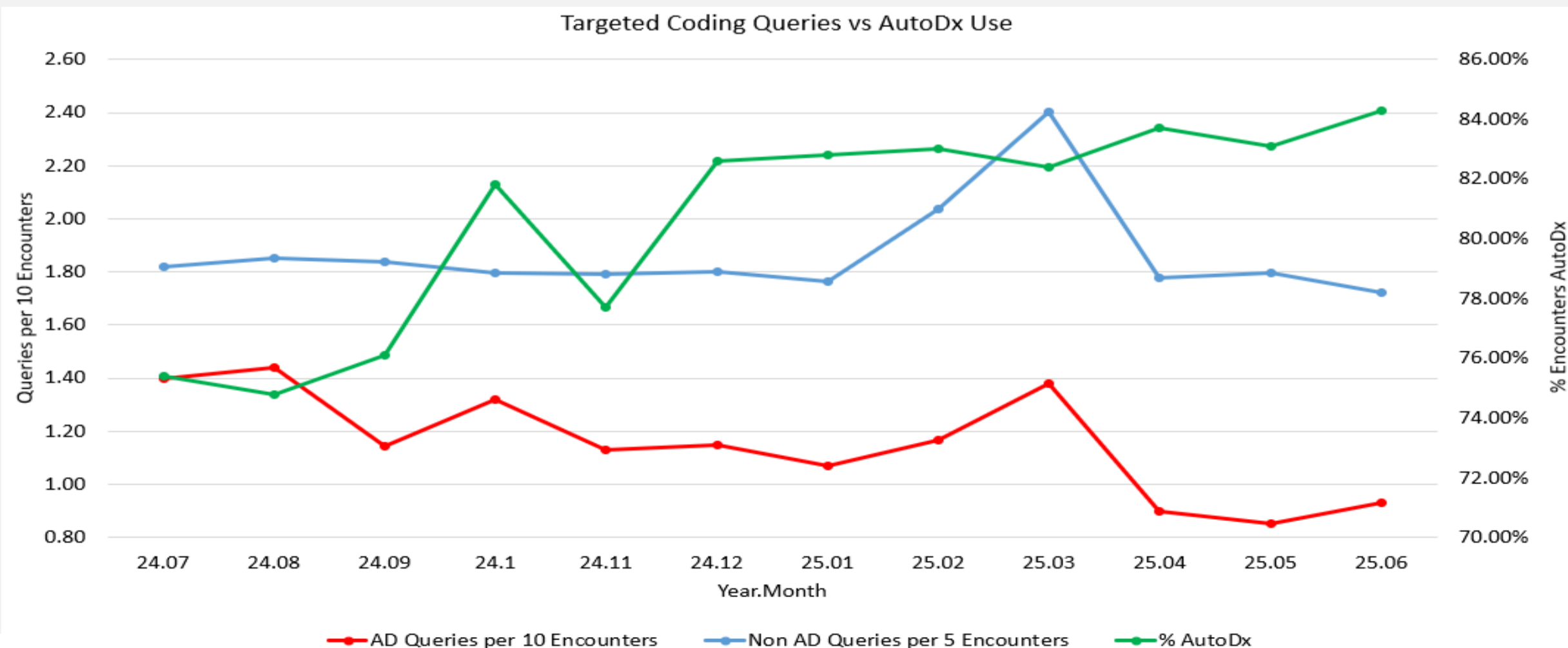
Impact

Discharge Summary Integration:
- Overall improvement: AD documentation rose significantly post-DCS.
- Strong increases in General Medicine, Hospitalists, Neurology, and Trauma.
- Variation: Some services showed little change or declines, pointing to targets for improvement.

AutoDx in Discharge Summaries Before and After Template Updates
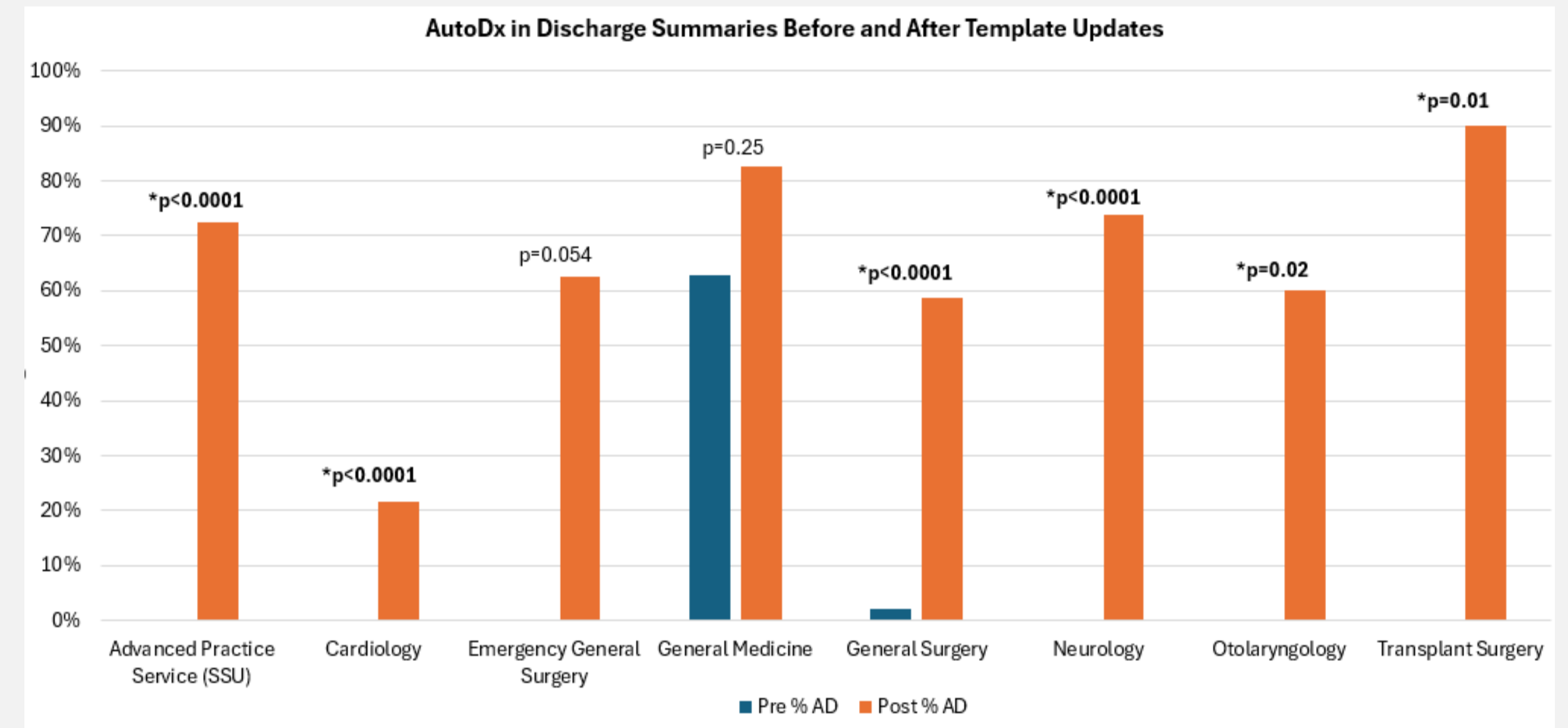
Next Steps

- Expand AutoDX to additional high-value conditions in FY2026
- Advance resequencing logic to optimize U.S. News and CMS ranking impact
- Integrate AutoDX outputs into SmarterDX query sequencing and Epic workflow automation.
- Evaluate downstream effects on risk-adjusted outcomes, DRG assignment, and hospital rankings

Acknowledgements