Optimizing athenahealth’s Streamlined EHR: Two Ways to Proactively Identify, Evaluate, and Minimize Potential Patient Safety Risks

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Company overview

athenahealth is a leading provider of cloud-based services for electronic health records (EHR), revenue cycle management and medical billing, patient engagement, care coordination, population health management, and point-of-care mobile apps, including Epocates.

Background

At athenahealth, our vision is to identify and address potential patient safety risks so providers can focus on treating patients instead of computer screens. We accomplish this goal by incorporating patient safety and patient-centered design principles in the development process, which was especially important as athenahealth prepared to launch its streamlined EHR (athenaClinicals) in 2016.

EHRs have potential to improve the safety of care provided, but we first need to understand the unintended consequences and potential patient harm of using such complex systems.

As part of a collaborative project between the athenahealth’s User Experience and Patient Safety teams, athena’s Streamlined EHR was examined for potential patient safety risks and actionable opportunities for improvement.

Research Goals

Use a measurable, actionable and repeatable methodology that relies on established usability standards, design heuristics, and patient safety principles.

Evaluation Process

Streamlined EHR was examined for potential patient safety risks by collecting qualitative and quantitative data, identifying high risk elements, analyzing results, and delivering outcomes to the stakeholders.

Key Takeaways

Evaluate & Identify Risks

- **Goal:** What potential patient safety risks occur, and how often?
- **Method:** To quantify the risks we presented athenaClinicals users with tasks and questions based off of images from the Streamlined EHR in an unmoderated usability test.
- **Results:** Evaluated 530 responses: 65% completion rate. We conducted moderated usability sessions with provider participants focused on areas of greatest risk. Recruited 6 participants.
- **Findings:**
  - Varying specialties and familiarity with the system.
  - User interface and information design.
  - High risk for task failure.
- **Recommendations:**
  - Intuitive insights for senior stakeholders.
  - Identify largest risks.
  - Opportunites based on patient safety principles.
  - Enhance real-time decision making.
  - Surface critical information.

- **SAFER Guide Recommended Practice:** Information required to accurately identify the patient is clearly displayed on screens and printouts.
- **System inefficiency:** “Checking DOB requires an extra click.”

Enhance real-time decision making

- **Data Drowns Meaning:** “Checking DOB requires an extra click.”
- **Alert Fatigue:** “Drug warnings seem to be impractical and mostly irrelevant. Leading to the “boy who cried wolf” risk.”
- **Discoverability:** “This is great. Understand there is 1 serious and 1 moderate alert.”

Surface critical information

- **SAFER Guide Recommended Practice:** Drug-allergy interaction checking occurs during the entry of new medication orders and new allergies.
- **Opportunity:** Increase awareness around in-line allergy warnings to improve provider efficiency and clinical decisions.

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Key Takeaways

- **SAFER Guide Recommended Practice:** Interactive clinical decision support features and functions (e.g., interruptive warnings, passive suggestions, or info buttons) are available and functioning.
- **Opportunity:** Make it easier for providers to quickly wade through massive amounts of alert information.

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