

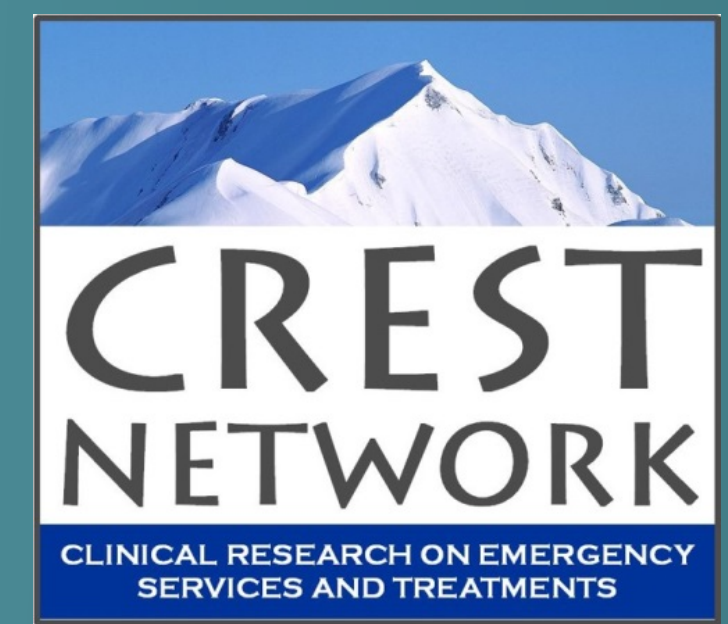
Enhancing the Electronic Health Record: Clinical Decision Support via Risk Stratification at the Emergency Department Point of Care

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BACKGROUND

- Emergency departments (EDs) are a prime setting for technical innovation to improve evidence-based clinical decision making.
- Prediction rules are useful for risk stratifying patients to appropriate care pathways.
- A web-based application embedded within the electronic health record (EHR) offers a convenient opportunity to bring clinical decision support (CDS) to emergency physicians at the point of care.

OBJECTIVES

- To develop methods and best practices for bringing innovation to emergency medical care through a fast and user-friendly CDS embedded in the EHR .

METHODS

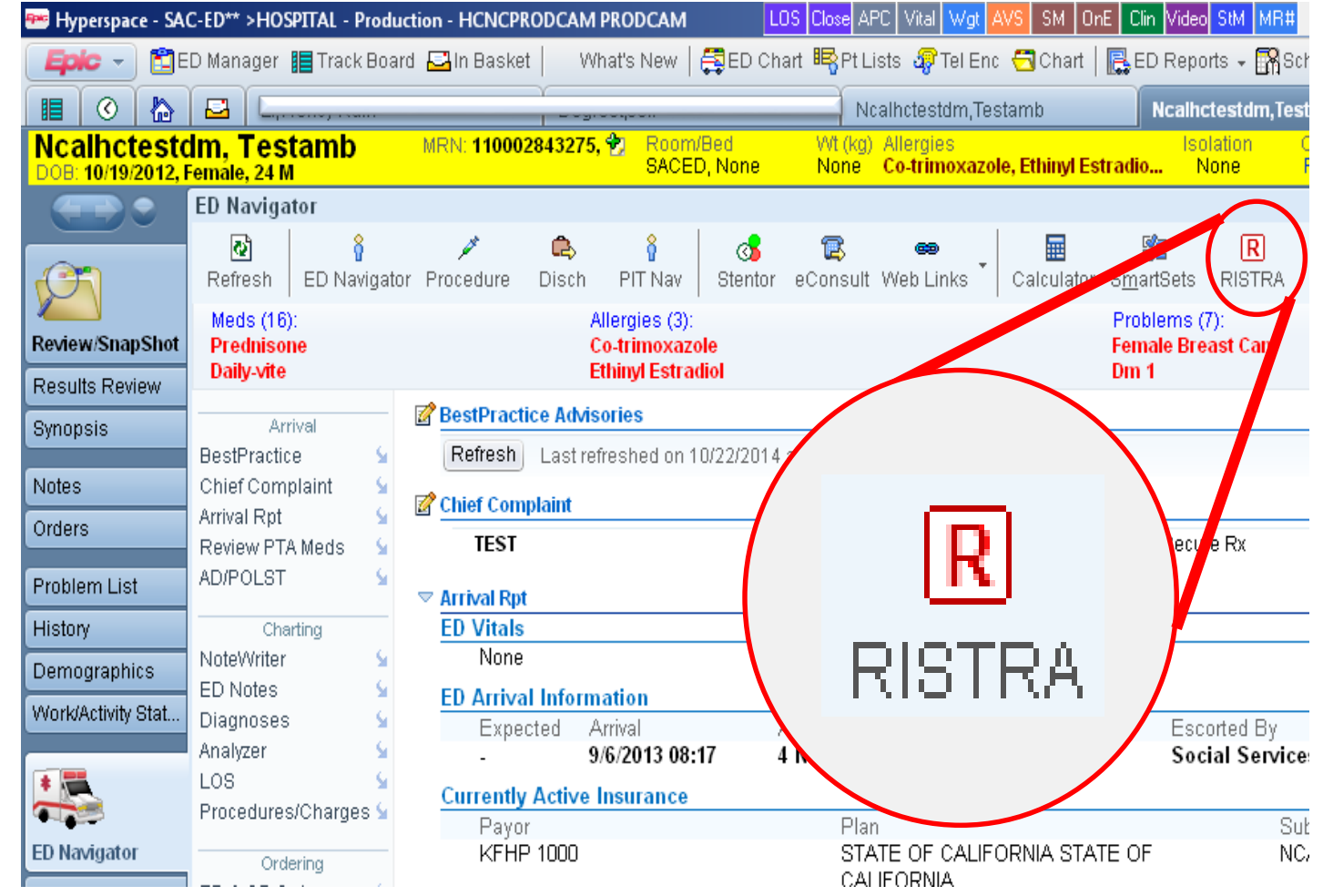
- Developed RISTRA (Risk STRAtification), a web application embedded in an Epic-based EHR.
- A validated evidence-based risk calculator—the Pulmonary Embolism (PE) Severity Index—used as a proof of concept.
- The application extracted patient information from the EHR to predict the risk of 30-day all-cause mortality in patients with PE.
- Web services were used to import patient-specific data into RISTRA to provide real-time guidance to the treating physician.

RESULTS

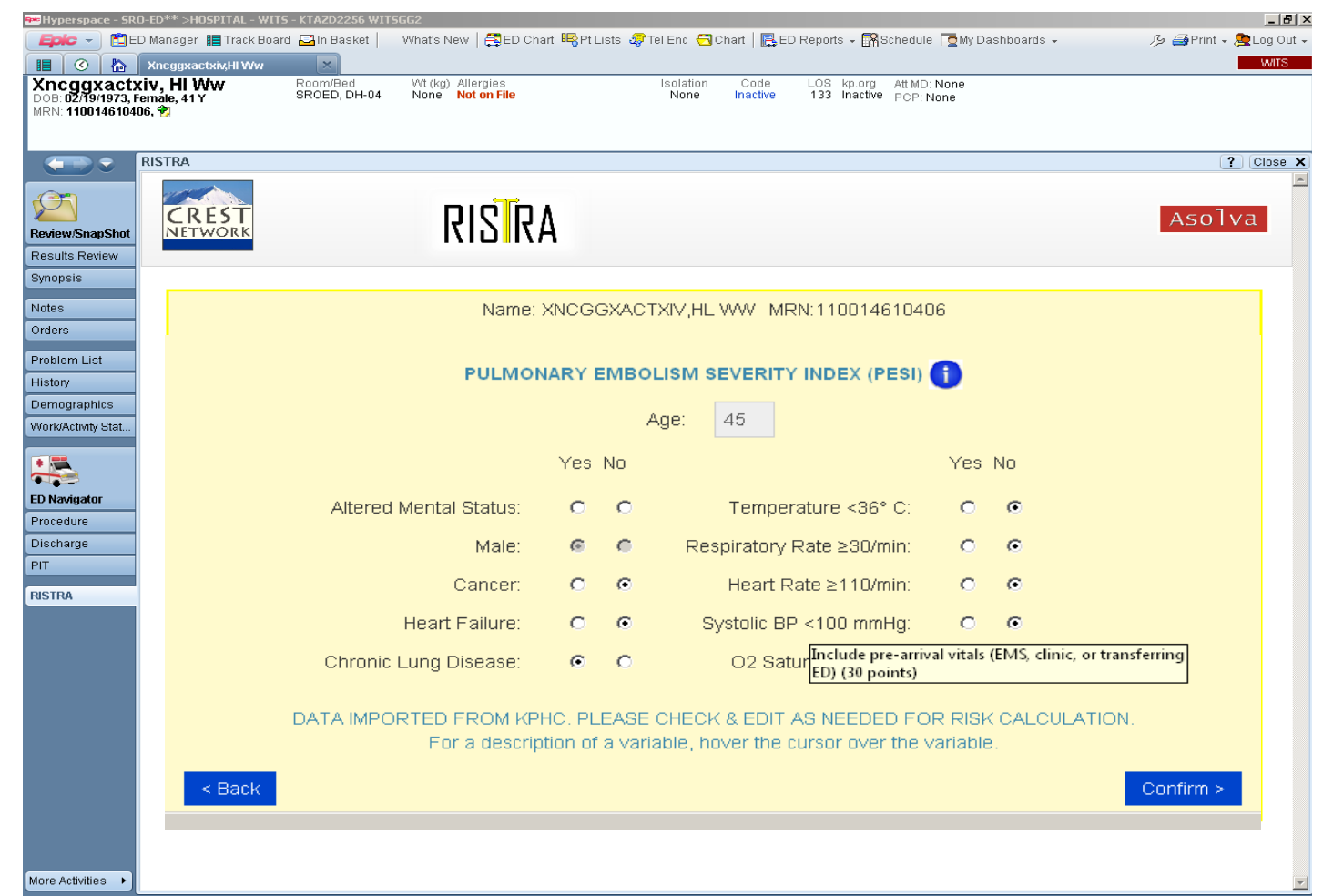
- RISTRA loaded in less than 3 seconds and calculated a patient-specific risk score in a few steps, taking less than a minute.
- RISTRA successfully identified patients at low risk for PE-related complications for outpatient treatment.
- ED physicians were satisfied with the design and ease of use of the application.

DISCUSSION

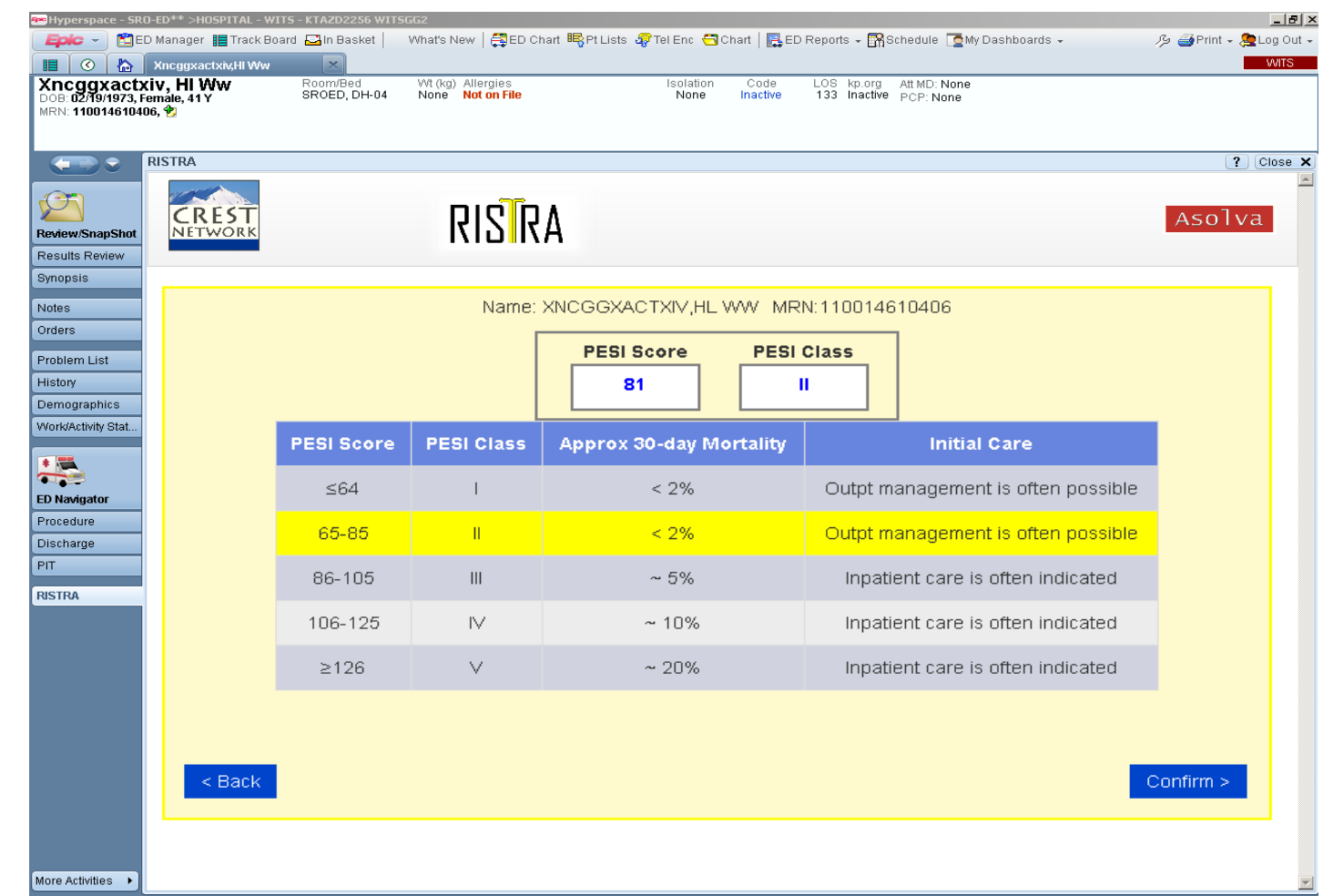
- RISTRA has since been rolled out to 21 Kaiser Permanente Northern California EDs.
- In the fast-paced ED environment, it was imperative that the CDS application be fast and simple.
- Engaging stakeholders across the organization was essential.



Application launches from ED navigator



Patient variables imported automatically



Risk score and recommendation