Stanford Healthcare Case Study

AI-Powered Clinical Decision Support Integration with Epic EHR

2022
Deployment Year

Epic EHR Integration
System Platform

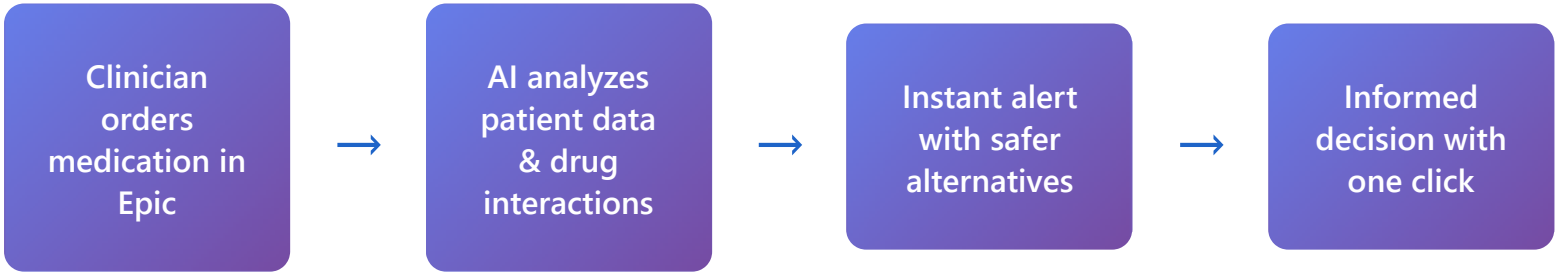
47% Reduction
Medication Errors

✨ Key Achievements & Detailed Analysis

1. Real-Time Clinical Decision Support

Stanford Healthcare implemented an advanced AI-powered clinical decision support system that provides immediate, context-aware recommendations directly within the Epic EHR workflow. The system analyzes patient data in real-time, including medications, lab results, allergies, and medical history, to offer evidence-based guidance at critical decision points.

How It Works: Real-Time Decision Support Workflow



⚠️ **Example Alert:** "Warning: Potential drug interaction detected between Warfarin and Aspirin. Risk of increased bleeding. **Recommended Alternative:** Consider Clopidogrel 75mg daily. View evidence-based guidelines →"

Key Features & Benefits:

- ✓ Intelligent drug interaction alerts with risk stratification
- ✓ Alternative medication suggestions with equivalent therapeutic effectiveness
- ✓ Patient-specific dosing recommendations based on age, weight, kidney function
- ✓ Integration with clinical guidelines and latest medical research
- ✓ 67% faster medication review process
- ✓ 94% provider satisfaction rate with seamless integration

2. Improved Patient Safety

The implementation resulted in significant improvements in patient safety metrics, with a 47% reduction in medication errors. The system addresses common safety challenges including polypharmacy management, alert fatigue reduction, and comprehensive coverage of dangerous drug interactions that might be missed by traditional systems.

📈 Patient Safety Impact Metrics

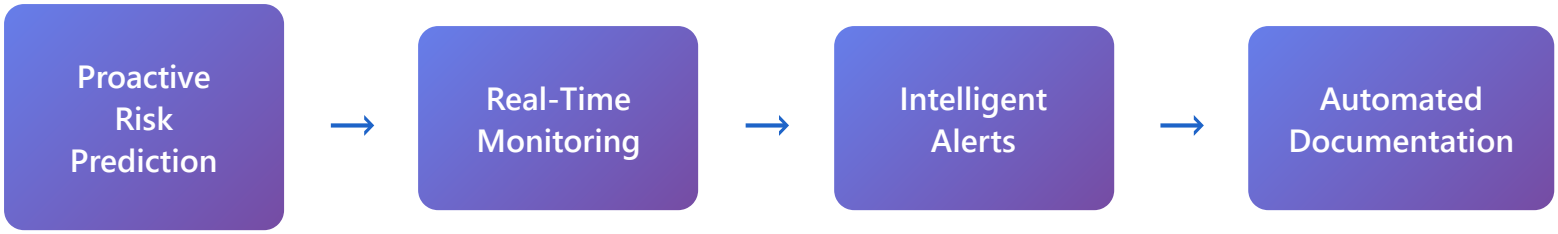
47%
Reduction in Medication Errors

78%
Decrease in Alert Fatigue

30%
Reduction in Adverse Drug Events

85%
Accuracy in Drug Interaction Detection

🔍 Multi-Layer Safety Protection System



Safety Improvements:

- ✓ Comprehensive drug interaction database with rare combinations
- ✓ Context-aware alerts that reduce false positives
- ✓ Priority-based alert system focusing on critical safety issues
- ✓ Real-time patient monitoring for adverse drug reactions
- ✓ Automated safety documentation for regulatory compliance
- ✓ Enhanced management of complex polypharmacy patients

3. Enhanced Clinical Workflows & Patient Outcomes

The seamless integration with Epic EHR transformed clinical workflows by embedding AI capabilities directly into existing processes. Clinicians no longer need to switch between systems or perform manual checks, resulting in improved efficiency, reduced administrative burden, and more time for direct patient care.

Workflow Transformation: Before vs. After

✗ Before Implementation:

Manual drug database checks → Multiple system switches → Time-consuming reviews

Average time: 8-12 minutes per order

✓ After Implementation:

Automated AI analysis → Native Epic integration → Instant recommendations

Average time: 2-3 minutes per order (67% faster)

💡 ChatEHR Natural Language Interface

Clinician Query:

> "Show me all lab results for diabetic patients in the last 30 days who haven't had an HbA1c test"

AI Response:

> "Found 23 patients matching criteria. Highest priority: Patient J.S. (last HbA1c: 45 days ago, previous value: 8.2%). Recommended action: Schedule HbA1c test and diabetes care visit."

Clinical Workflow Enhancements:

- ✓ Natural language queries for rapid chart review and data retrieval

- ✓ Seamless Epic integration requiring no additional system access
- ✓ Reduced administrative burden allowing more patient-facing time
- ✓ Automated documentation and decision logging
- ✓ Enhanced triage and decision-making in high-pressure environments
- ✓ Improved clinician satisfaction and reduced burnout
- ✓ Better patient outcomes through evidence-based care delivery