🏥 Mayo Clinic AI Implementation Case Study

Transforming Healthcare Through Artificial Intelligence

📅 **2025**

Latest Deployment

20M slides

Digital Pathology

10M records

Patient Data

200+ projects

Active AI Initiatives

✨ Three Pillars of AI Implementation

Digital Pathology Platform

Advanced Diagnostic Imaging & Analysis

Overview

Launched in early 2025, Mayo Clinic Digital Pathology represents a revolutionary approach to diagnostic medicine. The platform leverages AI foundation models trained on over 1.2 million histopathology whole-slide images to accelerate diagnostic speed and accuracy, leading to faster, more personalized treatments.

Key Features & Technologies

✓ Atlas Foundation Model with 1.2M+ training images	✓ 20 million digitized pathology slides	✓ NVIDIA Blackwell DGX SuperPOD infrastructure

✓ Real-time diagnostic insights

✓ Automated morphological analysis

✓ Enhanced pattern recognition for rare diseases

Impact Metrics

4→1 week	75%	85%+
Analysis Time	Faster Processing	Accuracy Rate

Digital Pathology Workflow

1 Slide Digitization — **2** AI Analysis — **3** Pattern Recognition — **4** Clinical Report

AI-Powered Clinical Decision Support

Enhanced Diagnostic Accuracy & Patient Triage

Overview

Mayo Clinic has deployed AI algorithms across multiple specialties to enhance diagnostic accuracy and improve patient outcomes. The system analyzes vast amounts of clinical data to provide physicians with differential diagnoses and predictive insights, demonstrating high agreement with physician diagnoses.

Clinical Applications

- ✓ Cardiovascular disease early detection
- ✓ Pancreatic & breast cancer screening
- ✓ Epilepsy seizure hotspot localization
- ✓ Silent cardiac arrhythmia detection
- ✓ Rare disease identification using real-world data
- ✓ Stroke outcome prediction algorithms

Performance Results

70%+	**102K+**	**99.9%**
Diagnostic Agreement	Analyzed Encounters	Time Saved (Imaging)

Clinical Decision Support Workflow

1 — Patient Data Input

2 — AI Analysis

3 — Differential Diagnosis

4 — Physician Review

Intelligent Documentation Automation

Reducing Administrative Burden & Physician Burnout

Overview

AI-powered documentation tools transform clinical workflows by automating time-consuming administrative tasks. Natural language processing and generative AI capabilities enable physicians to focus on direct patient care while maintaining comprehensive and accurate medical records.

Automation Capabilities

✓ Real-time patient encounter transcription	✓ Automated EHR data entry	✓ Clinical note generation & summarization
✓ Order and prescription processing	✓ Medical literature analysis and synthesis	✓ Years of clinical data accessible in seconds

Efficiency Gains

70%	**90%+**	**85%**
Time Saved	Task Automation	Data Reduction

Documentation Automation Workflow

1 Patient Encounter — **2** AI Transcription — **3** Auto EHR Entry — **4** Physician Review