Ansh — Opening & Problem

Sepsis is one of the deadliest but most overlooked medical emergencies. Every hour of delayed treatment raises mortality by 8%. Globally, 1 in 3 patients with sepsis die. In India, with only 1 doctor for every 1000 people, frontline staff are stretched thin. Tools like NEWS2, qSOFA, SIRS exist, but in crowded hospitals they're rarely used. Patients often slip into septic shock before doctors can act.

Adithya — Why Now

Automation has already shown its impact. In California, early sepsis detection protocols reduced mortality by 20–30%. Scaled globally, that could save 100k–200k lives annually. Healthcare is moving towards AI decision support. Our challenge was: How do we bring this same life-saving automation to India's rural clinics and busy emergency rooms?

Sayan — Solution Overview

We built the Sepsis Early Warning RAG Assistant — a lightweight digital tool. - Enter vitals in a Streamlit app. - It instantly calculates NEWS2, qSOFA, SIRS. - A KMeans model profiles patients into risk groups. - A RAG system retrieves sepsis guidelines and generates clear recommendations with citations.

Adithya — Technical Approach (Part 1)

Under the hood: - Streamlit frontend and Python scoring functions. - FAISS database to store and retrieve guideline chunks. - Sentence Transformers for embeddings.

Sayan — Technical Approach (Part 2)

On top of that: - OpenAI GPT-3.5 with RAG makes sure answers are grounded in guidelines. - The design is modular, so tomorrow we can add pneumonia, dengue, or trauma without major changes.

Ansh — Small Tech Slice

We also added a KMeans model with a scaler to cluster patients — helping doctors spot high-risk groups faster.

Kanishk — Challenges We're Solving

We solve key problems: - Scoring that's skipped in busy wards is now automated. - Long guidelines become quick, actionable snippets. - With doctor shortages, AI supports frontline staff. - And every recommendation shows its source.

Adithya — Challenges We Faced

Building this in 36 hours wasn't easy. We had to align FAISS, LangChain, and OpenAI packages, preprocess messy medical PDFs, and balance accuracy with speed. We also kept Streamlit lightweight for use in low-resource hospitals.

Sayan — Scaling & Business

Next steps: - Add more diseases. - Mobile-first version for clinics. - EMR integration for real-time alerts. - Multilingual support. Business model: freemium — free core tool, paid hospital integrations, and partnerships with governments and NGOs.

Ansh — Impact

Doctors save minutes → Patients gain hours. This tool could save 100k–200k lives annually. It’s trusted, affordable, and globally scalable.

Adithya — Closing

Sepsis is a silent killer — but with the right automation, it doesn’t have to be. In this hackathon, we proved you can go from patient vitals → risk scores → evidence-based guidance in under 5 seconds. We don’t just predict risk. We deliver timely, trusted guidance — and save lives.