# AI for Bharat Hackathon

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Team Name : **Team Sahrova**

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Problem Statement : **Professional Track - AI for Healthcare & Life Sciences**

Brief About ClinicalSetu

- ClinicalSetu is an AI-powered clinical intelligence bridge that captures clinical intent once during a doctor—patient consultation and transforms it into structured documentation, patient-friendly summaries, referral packets, and research eligibility signals.

- The system reduces duplication of effort across healthcare workflows while maintaining strict human-in-the-loop validation.

- ClinicalSetu does not diagnose or recommend treatments. It supports efficiency, continuity, and research readiness using only public and synthetic data.
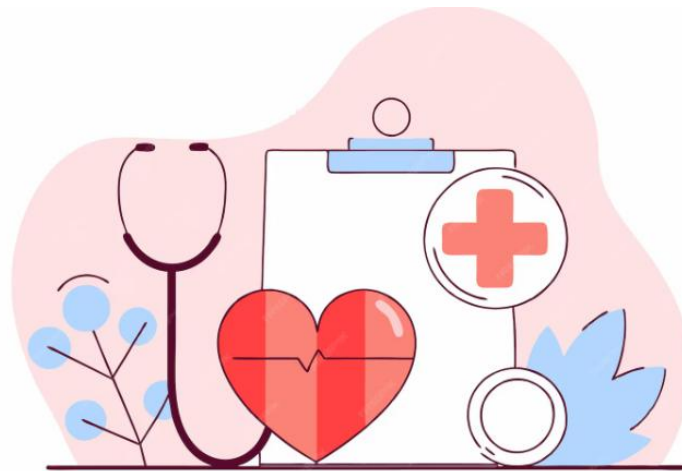
The Fragmentation Problem in Healthcare

After a doctor–patient consultation:

- Doctors spend excessive time documenting visits
- Patients leave without clear understanding
- Referrals lack structured context
- Potential clinical trial candidates go unnoticed

This fragmentation leads to:

- Clinician burnout
- Poor care continuity
- Inefficient referrals
- Missed life-sciences opportunities
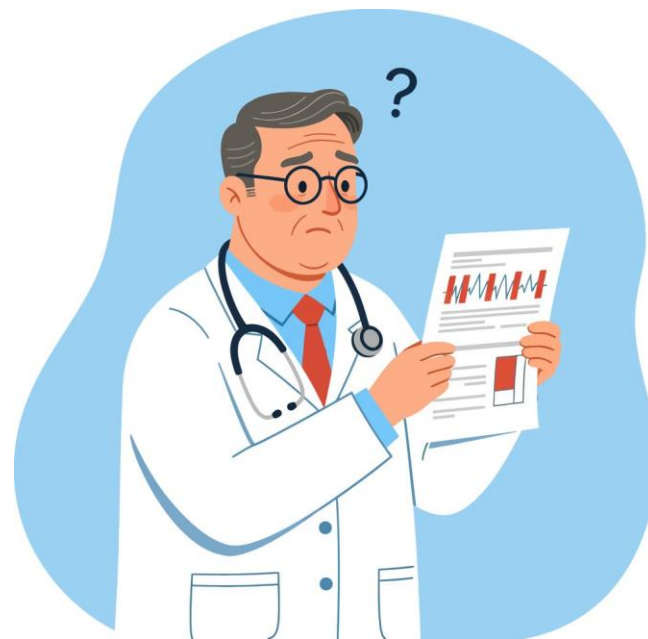
Current Solutions Are Siloed
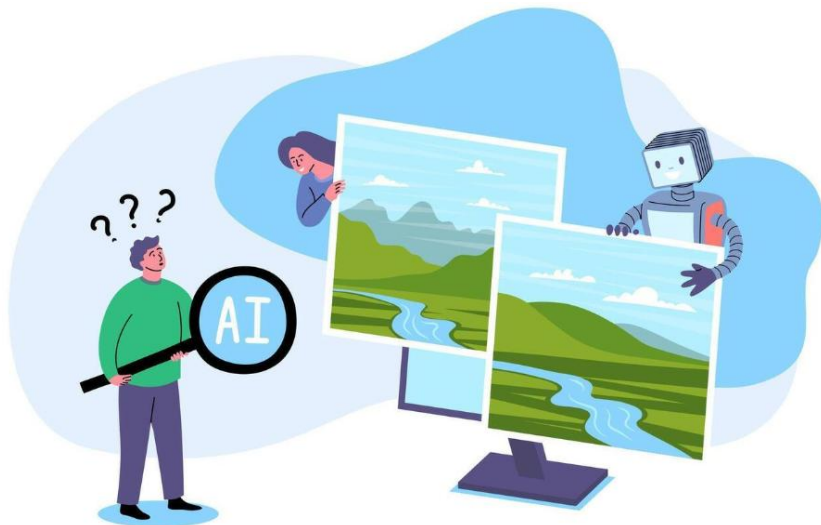
Existing Approaches:

- AI scribe tools (documentation only)
- Patient chatbots (education only)
- Trial matching platforms (research only)
- Heavy EHR-dependent systems

Limitations:

- Repeated manual data entry
- Workflow duplication
- No shared clinical intelligence layer
- Not designed for India's OPD & referral ecosystem

ClinicalSetu ... Capture Once. Reuse Responsibly.

ClinicalSetu captures clinical intent once during consultation and transforms it into:

- Structured clinical documentation
- Patient-friendly summaries
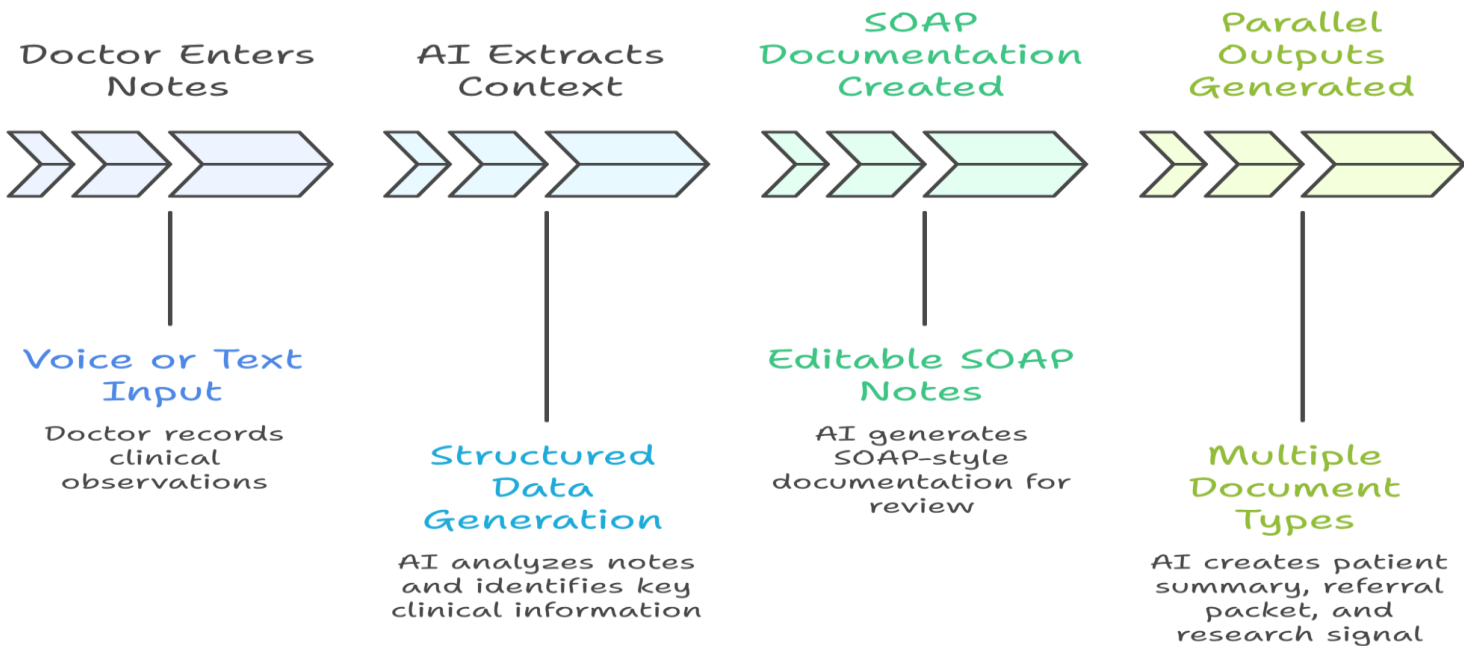- Intelligent referral packets
- Research eligibility signals

Important:
- No diagnosis
- No treatment recommendation
- Doctor-in-the-loop mandatory

Key Principle: Single source of clinical truth

How ClinicalSetu Works

Doctor Enters Notes

AI Extracts Context

SOAP Documentation Created

Parallel Outputs Generated

Voice or Text Input

Doctor records clinical observations

Structured Data Generation

AI analyzes notes and identifies key clinical information

Editable SOAP Notes

AI generates SOAP-style documentation for review

Multiple Document Types

AI creates patient summary, referral packet, and research signal

Key Capabilities

🧠 **Clinical Intent Structuring**
- Extracts symptoms, findings, context

📄 **Documentation Generation**
- OPD notes & Discharge summaries
- Referral letters

🧑‍⚕️ **Patient Communication**
- Plain-language visit summary
- Follow-up explanation
- Red-flag symptoms

🧪 **Research Signal Layer**
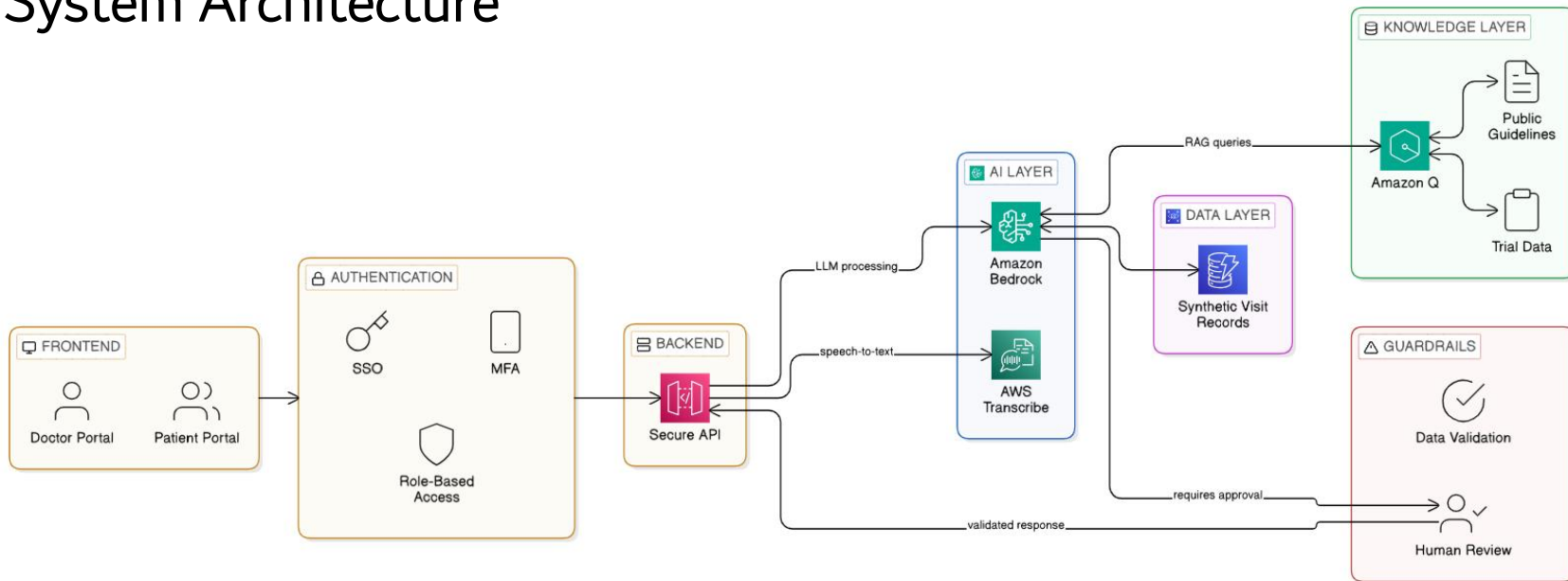- Uses public trial criteria
- Flags potential eligibility indicators

🔁 **Referral Intelligence**
- Structured referral packet
- Missing investigation checklist

System Architecture

FRONTEND
- Doctor Portal
- Patient Portal

AUTHENTICATION
- SSO
- MFA
- Role-Based Access

BACKEND
- Secure API

AI LAYER
- Amazon Bedrock
- AWS Transcribe

DATA LAYER
- Synthetic Visit Records

KNOWLEDGE LAYER
- Amazon Q
- Public Guidelines
- Trial Data

GUARDRAILS
- Data Validation
- Human Review

LLM processing
speech-to-text
RAG queries
requires approval
validated response

Responsible by Design

ClinicalSetu:

- Does not diagnose
- Does not recommend treatments
- Requires doctor validation
- Uses only synthetic & public datasets
- Provides explainable structured outputs

Limitations :

- Not a medical device
- Not integrated with live hospital systems in prototype
- Research signals are non-binding indicators

Market & Sustainability

Primary Buyers:
- Clinics
- Hospital networks
- Specialty care chains
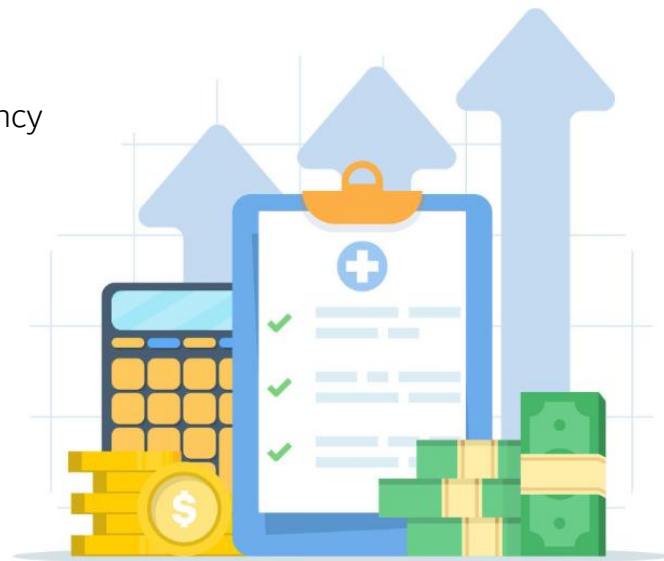
Secondary Buyers:
- CROs
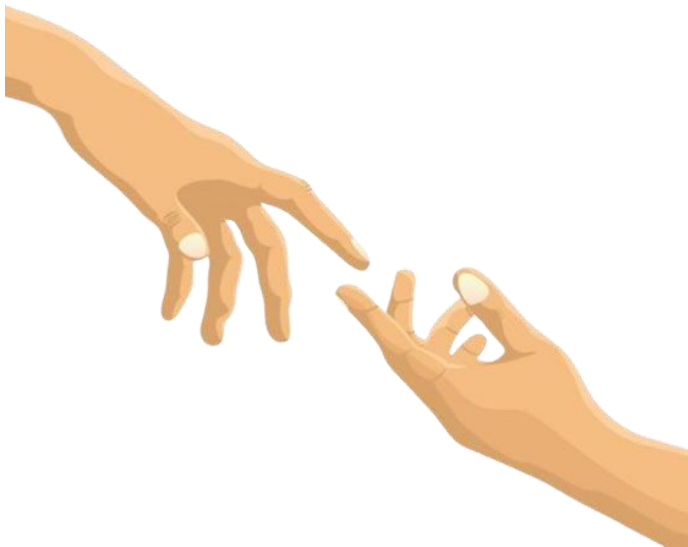- Academic research hospitals

Revenue Model:
- Per-doctor SaaS subscription
- Enterprise licensing

ROI:
- Reduced documentation time
- Improved referral efficiency
- Increased trial readiness

Impact Across the Ecosystem

- **For Doctors:** Reduced burnout
- **For Patients:** Better clarity & adherence
- **For Hospitals:** Structured workflows
- **For Life Sciences:** Passive research readiness

Why We Stand Out:

- Unified intelligence layer
- Strong AWS-native architecture
- India-context design
- Responsible AI approach

ClinicalSetu bridges the gap between clinical conversations and downstream healthcare workflows.

Technologies Used

Core AI Services:
- Amazon Bedrock
- Amazon Q
- AWS Transcribe

Backend & Infrastructure:
- AWS Lambda
- API Gateway
- Amazon DynamoDB
- Amazon S3

Design Principles:
- Serverless architecture
- Pay-per-use AI inference
- Human-in-the-loop validation

Estimated Implementation Cost (Prototype)

Assumptions
~10 doctors
~9,000 consultations / month

Monthly Operational Cost
- Infrastructure (serverless): ₹10k – ₹15k
- AI inference (Bedrock + Transcribe): ₹25k – ₹40k

Total Monthly Cost - ₹35k – ₹55k

Cost Characteristics
- Pay-per-use
- No custom model training
- Scales linearly with usage

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Thank You