



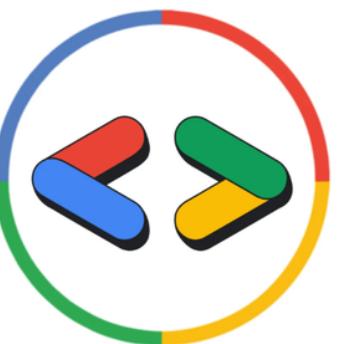
GDG Cloud Pune

X

GDG Cloud Mumbai

Google Developer Group

Build and Grow AI Hackathon 2.0



Problem Statement: AutoReferral: Agentic AI Doctor

Referral System

Domain: HealthTech

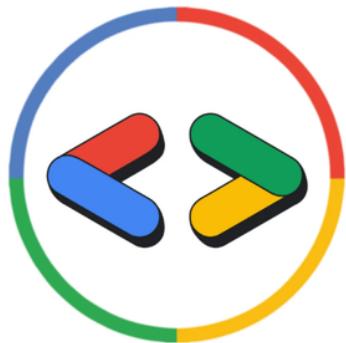
Team Name: CodeForge

Team Members



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PROBLEM STATEMENT



1. Problem to Be Solved

Many patients in government hospitals face delays due to inefficient inter-hospital referrals. Existing hospital management systems do not communicate directly, causing repeated transfers and administrative overhead. This project provides a coordination platform that automates referral routing, ensuring patients reach the right hospital efficiently.

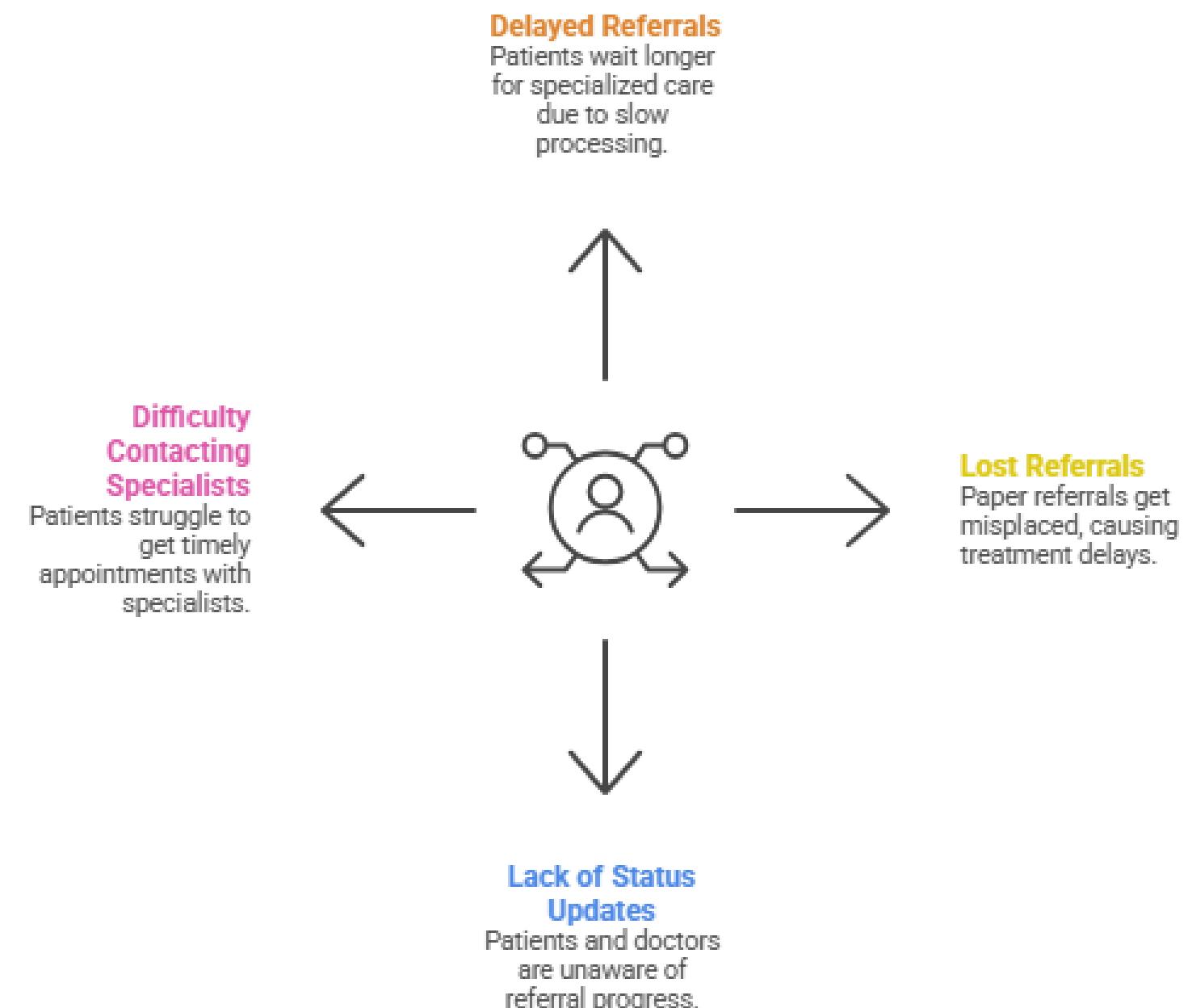
Problems with Traditional Referral Systems

2. Target Users

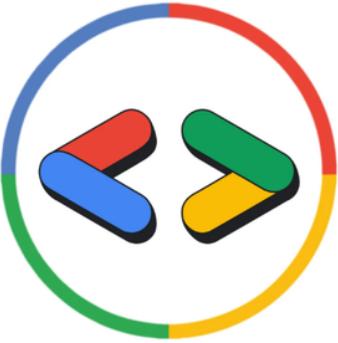
- Primary users: Hospital staff and doctors responsible for initiating and receiving referrals
- Integrates alongside existing Hospital Management Systems without disrupting workflows
- Offloads coordination and tracking so clinicians can focus on medical decisions

3. Importance or Relevance

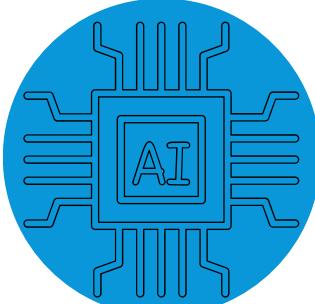
- Preventable patient deaths: Multiple Indian cases show patients dying due to delayed or mismanaged referrals between hospitals.
- System inefficiency: Overcrowding and repeated unnecessary referrals, especially for routine cases, worsen outcomes and strain resources.



Proposed Solution



The proposed solution is an AI-powered referral coordination platform that independently manages the inter-hospital referral workflow. An agentic AI model determines clinical priority, selects the most suitable hospital, and handles rerouting when needed. All referral actions are recorded in an audit trail to ensure transparency and accountability.



Agentic AI

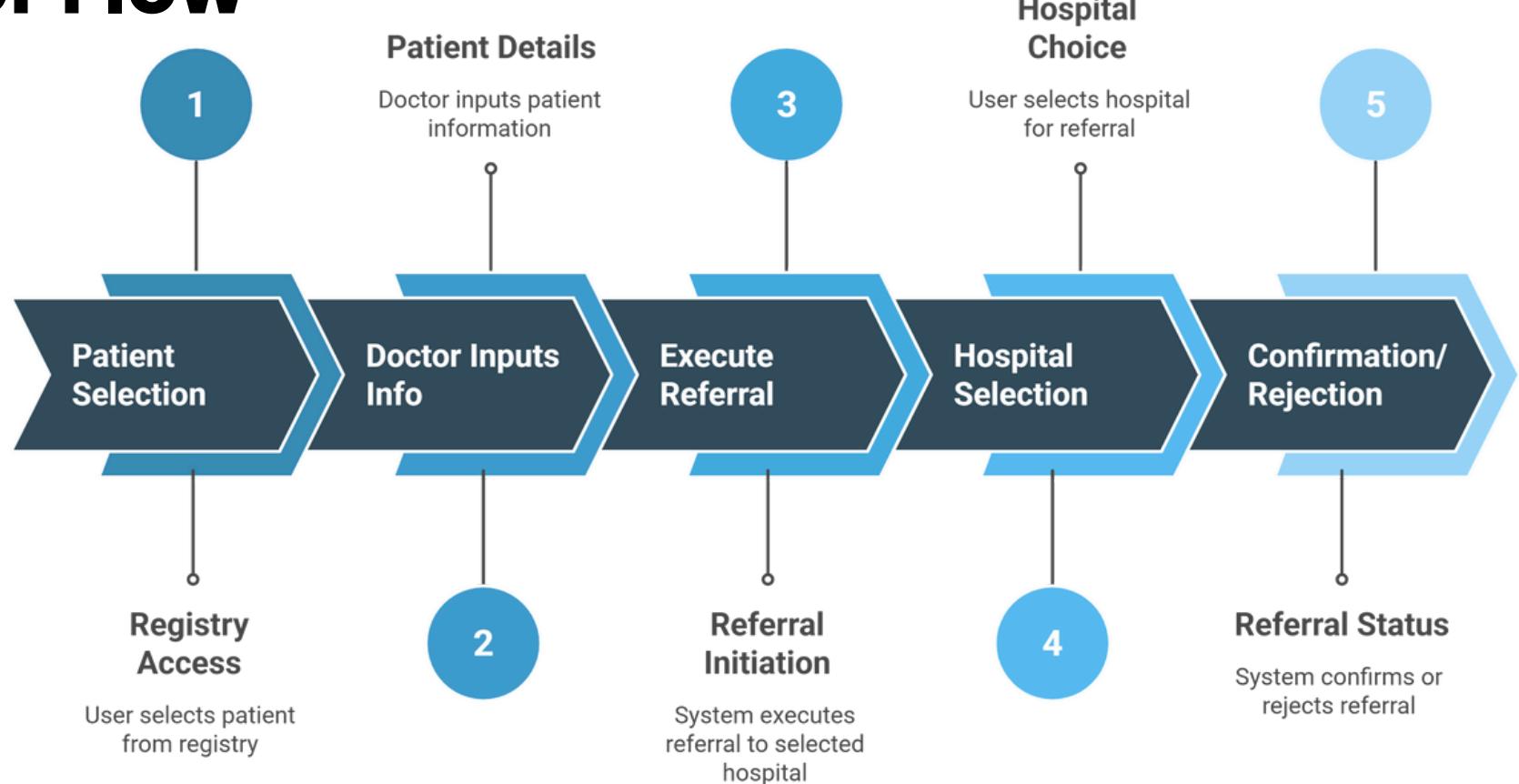


Human-in-the-loop



Audit Trail

User Flow



USPs



First in India
No other referral system like this exists in India



API Nature
Allows for integration in a wide range of HMS



Use of Agentic AI
Google Gemini 2.5 Flash model carries out referral process

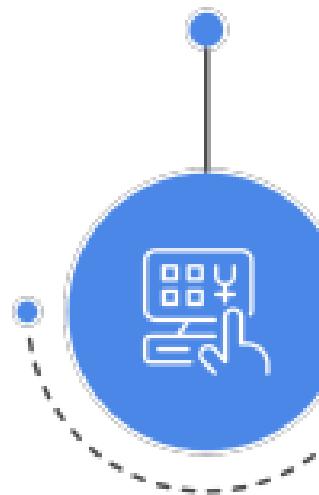
TECHNICAL APPROACH



Methodology

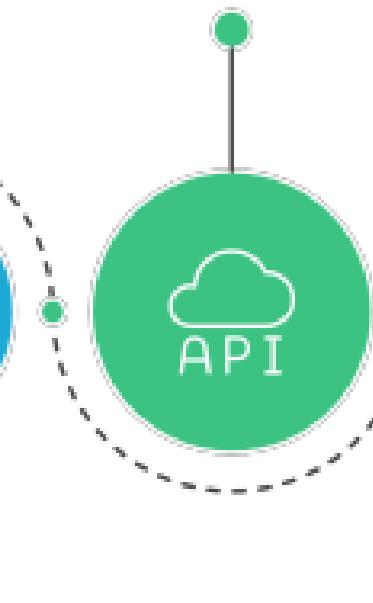
Doctor-Facing Web Application

Doctors use the web app to initiate referrals



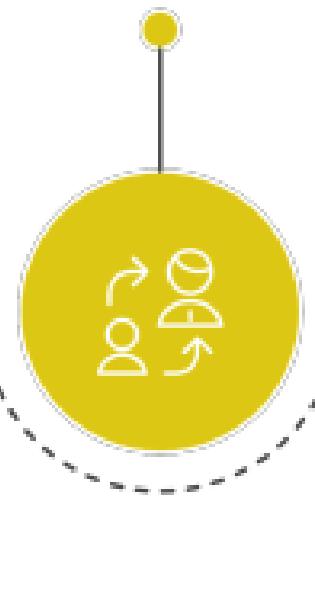
Gemini AI Reasoning Layer

AI processes context and provides recommendations



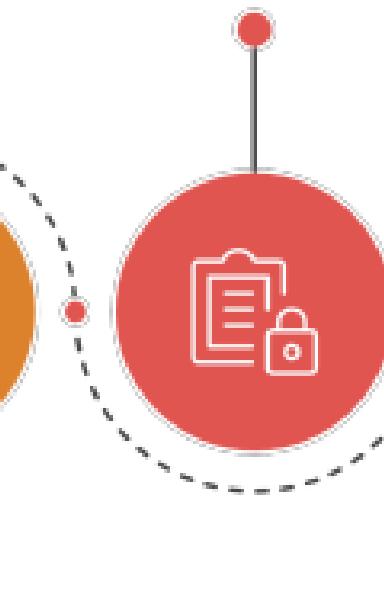
Referral State Management

Referrals move through different states



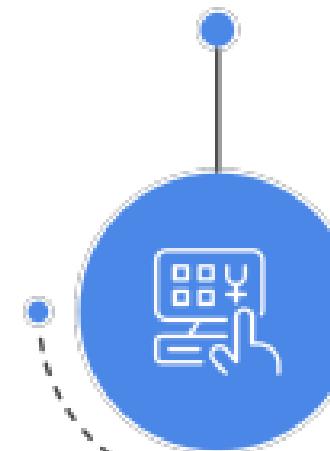
Compliance-by-Design Principles

Principles ensure data privacy and security



Clinical Context Ingestion

Structured inputs and documents are gathered



Human-in-the-Loop Decision Control

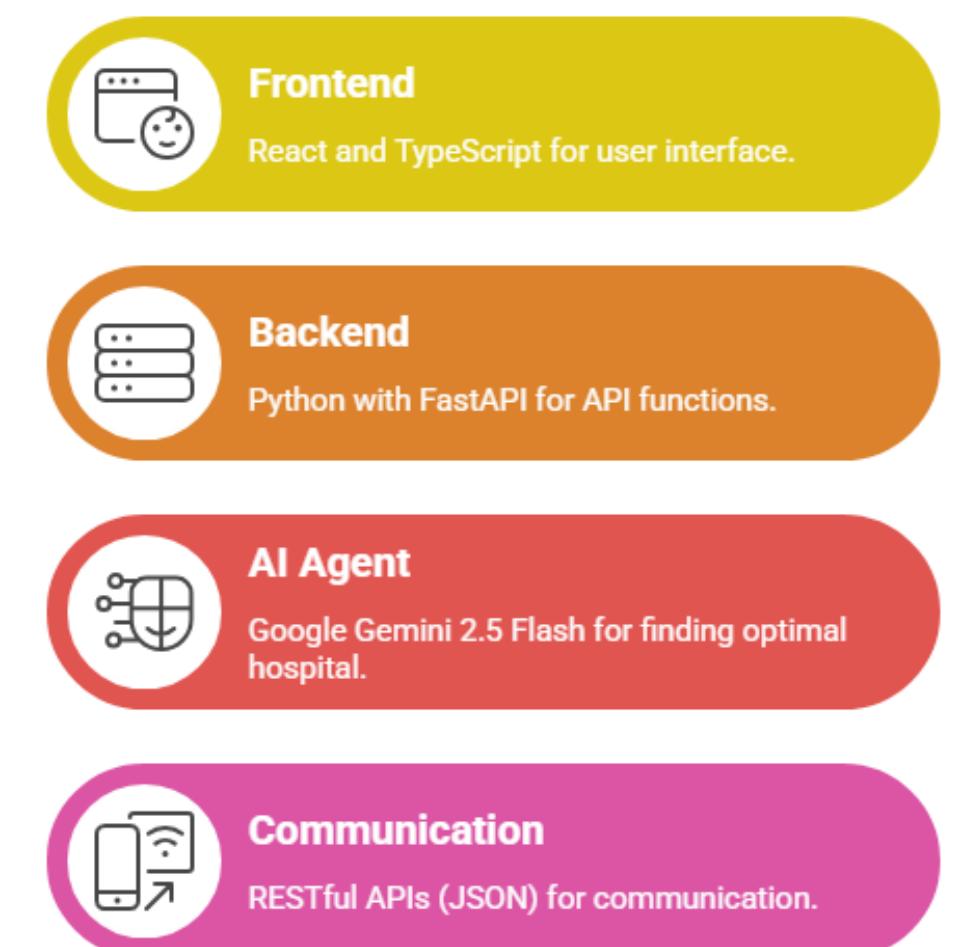
Doctors review and approve referrals



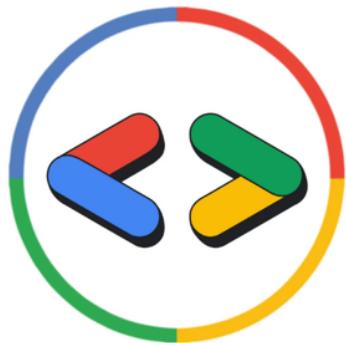
Audit & Accountability Layer

Logs are maintained for accountability

Tech Stack



COMPLIANCES



DPDP (DIGITAL PERSONAL DATA PRIVACY) ACT

- Can't process data without explicit doctor consent.
- Only collect clinically necessary data.
- Referral only, not analytics.
- Auto-delete data after 90 days.

CLINICAL ACCOUNTABILITY

- Human in The Loop
- AI Explainability
- Doctor Overriding

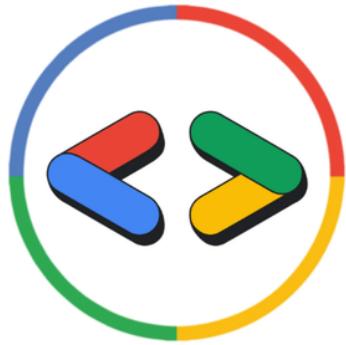
DPDP (DIGITAL PERSONAL DATA PRIVACY) ACT

- ABHA ID Support
- Consent Artifacts
- Federated Architecture
- Structure prepared for HIU/HIP integration

CLINICAL ACCOUNTABILITY

- Logs cannot be edited or deleted
- Captures the complete timeline
- Actor Identification

FEASIBILITY AND VIABILITY



Traditional Referrals

Time-Consuming Process



Inefficient Communication



Lack of Transparency



Limited Data Analysis



Potential for Bias



Administrative Burden



Increased Costs



Traditional Referral System



AutoReferral's Solution

Improved Efficiency

Enhanced Communication

Increased Transparency

Data-Driven Decisions

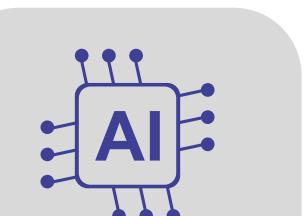
Reduced Bias

Reduced Burden

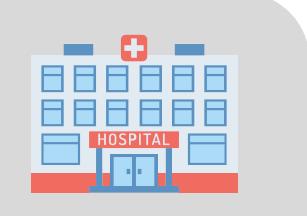
Cost Savings



API-first design



Proven AI models



Existing HMS integration



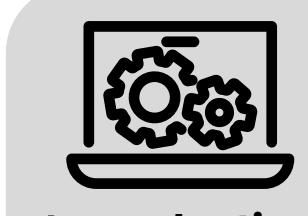
Scalable backend



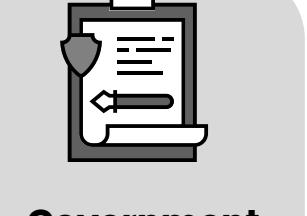
Mock hospital systems

Feasibility

Viability



Low adoption friction



Government relevance



Policy-aligned solution

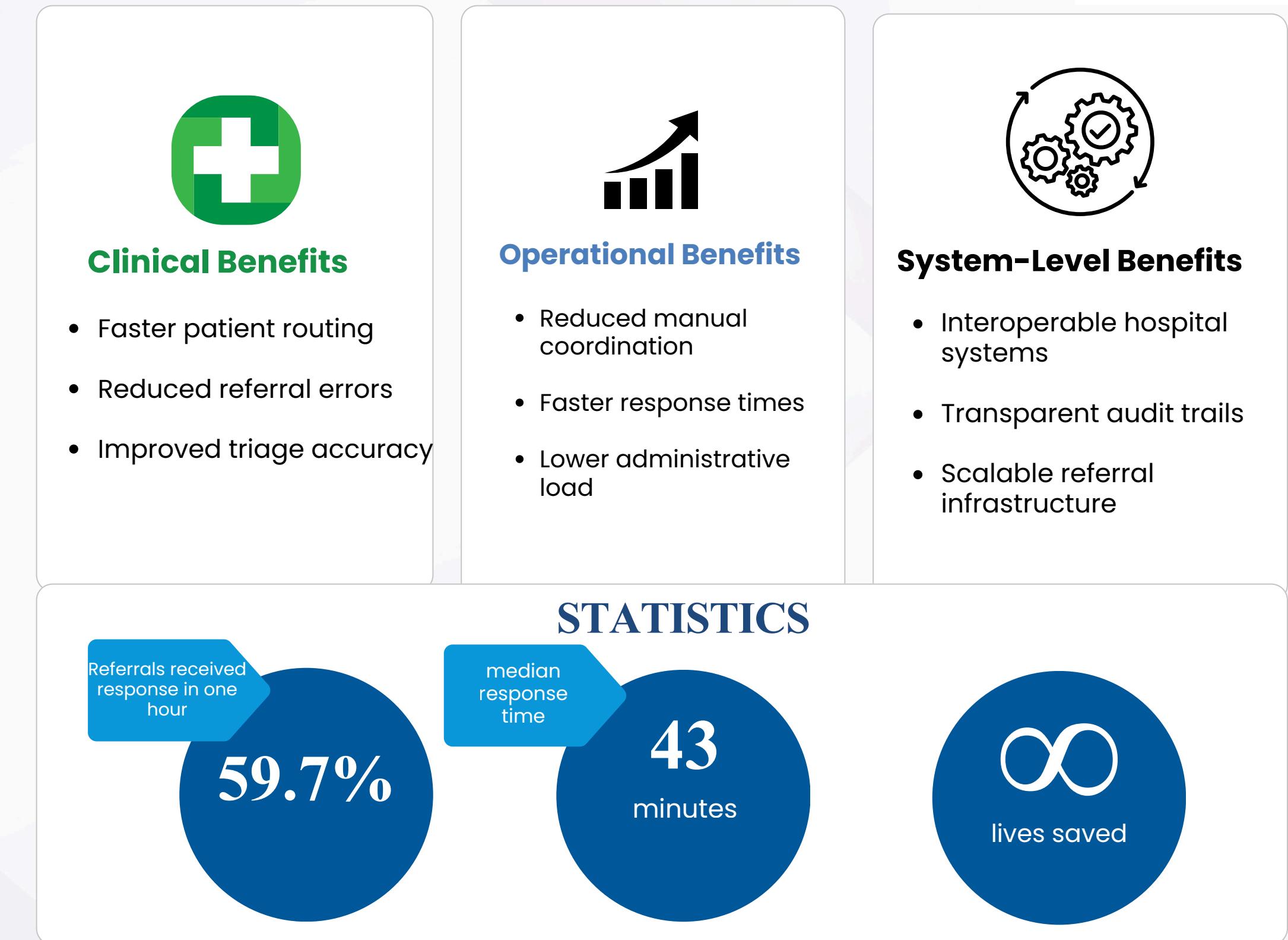
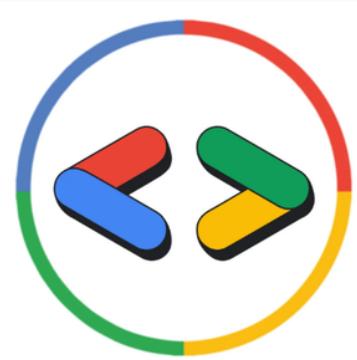


Addresses real need



Cost-effective deployment

IMPACT & BENEFITS



FUTURE SCOPE



Planned Improvements / Next Phases

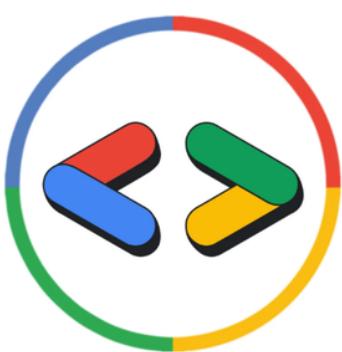
- Patient Notification:** Notify patients about referral status through SMS or WhatsApp.
- Expanded hospital network:** Scale the system to support referrals across districts and states for wider coverage.
- Advanced agent reasoning:** Enhance the AI agent with feedback loops to continuously improve referral decisions.
- Configurable hospital rules:** Allow hospitals to define simple acceptance or rejection rules (capacity, department hours) to make referral decisions more realistic.

Long-Term Vision / Scaling Strategy

- Nationwide referral backbone:** Establish the system as a common coordination layer connecting hospitals across states and regions.
- Standardized referral workflows:** Create uniform, policy-aligned referral processes to reduce variability and errors in care delivery.
- Continuity of patient care:** Ensure seamless handoffs between referring and receiving hospitals to reduce treatment delays.
- Trustworthy AI adoption:** Build long-term clinician trust through reasoning, auditability, and system behavior.



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Thank You