ARKAVIDIA HACKATHON • TEAM AI SLOP

Medisync

AI Hospital Orchestration

Transforming fragmented hospital operations into one cohesive, intelligent system.

BACKGROUND

Hospital Service Crisis in Indonesia

Based on 3 empirical studies at Indonesian healthcare facilities

2023 • RS MARTHA FRISKA

Patient Dissatisfaction with Healthcare Services

Unbalanced staff workload; nurses lose focus and patients feel neglected due to excessively high patient volumes.

KEY FINDING

Staff burnout → service quality drops

2024 • LITERATURE REVIEW

Analysis of Patient Service Complaint Handling

Fragmented workflow system; triggers complaints due to long waiting times at the initial hospital service stage.

KEY FINDING

Fragmented workflow → waiting times increase

2024 • RS PUTRI HIJAU

Patient Dissatisfaction with Hospital Services

Slow medical response; doctors are not punctual and convoluted procedures trigger long patient queue build-ups.

KEY FINDING

Slow response → patient queue build-up

RELEVANCE TO MEDISYNC | S1 → ROLE ASSIGNMENT AGENT | S2 → AI ORCHESTRATOR | S3 → SMART SCHEDULING & NOTIF

THE SOLUTION

Meet Medisync

A Central Nervous System for Hospitals

CORE CONCEPT

Multi-Agent System

Multiple AI agents working in parallel — each with a specific task, communicating with each other in real-time.

AI LAYER

Orchestrated Intelligence

One central system manages patient flow from admission to discharge — doctor assignment, medication validation, automated billing.

OUTPUT

Full Digitalization

From digital patient tickets, real-time Telegram alerts, to auto-generated invoices — fully automated.

KEY OUTCOMES

WAIT TIME ↓

ZERO REVENUE LEAKAGE

STAFF BURNOUT ↓

Poliklinik (Outpatient) Flow

100% Digital — No Front Office Needed

1

AI Online Booking

No Front Office needed. Patient registers via app and is automatically scheduled by AI based on doctor availability.

INPUT

Patient data & chief complaint

2

Smart Anamnesis

While waiting in the queue, patients fill in a guided symptom questionnaire on their own device — structured by AI.

PROCESS

Guided questionnaire & symptom capture

3

AI Symptom Summary

AI processes the questionnaire and generates a structured symptom summary for the doctor — eliminating repetitive questions during consultation.

OUTPUT

Pre-built summary ready at consultation

THE WORKFLOW — PART 2 OF 2

IGD (Emergency Room) Flow

AI Triage & Smart Routing

1

Patient Arrival

Patient arrives at the Emergency Room. AI initiates triage assessment based on reported symptoms.

2

AI Triage

AI determines the patient's emergency level and routes them to the correct care pathway automatically.

▲ EMERGENCY

Priority Front Officer Lane

Handled immediately. AI assigns a doctor and room in real-time. Telegram alert sent to on-duty staff.

▼ NON-EMERGENCY

Self-Service Kiosk / Regular FO

Patient chooses self-service kiosk or regular Front Officer, then merges into the Poliklinik digital flow.

Result: ZERO MANUAL TRIAGE DECISIONS · INSTANT STAFF NOTIFICATION · SEAMLESS HANDOFF TO POLIKLINIK FLOW

THE BRAIN

AI Orchestrator — all Agents

Each agent has a specific role, working in parallel and real-time

Agent 1

Role Assignment

Assigns the optimal doctor based on real-time workload balancing

Agent 2

Health Check

Performs automated patient health screening and flags abnormal vitals for immediate attention

Agent 3

Doctor Assistant

Supports doctors with AI-generated clinical summaries, drug suggestions, and decision support during consultation

EXPERT VALIDATION

Validated by a Medical Practitioner

dr. M Hafizd Saleh

General Practitioner
Klinik Institut Pertanian Bogor

"This system addresses a real need that we have long felt in the field. The inter-departmental coordination that has been manual — if automated with AI — would greatly improve service efficiency and patient safety."

CLINICALLY FEASIBLE

REAL FIELD NEED

READY TO IMPLEMENT

IMPACT

Who Benefits from Medisync?

Management

MONITOR

Real-time analytics dashboard, strategic oversight, and data-driven decision-making.

Doctors

DIAGNOSE

AI clinical support, instant EMR access, and automated charting to reduce admin work.

Nurses

EXECUTE

Balanced task assignments, real-time notifications, and less manual paperwork.

Patients

EXPERIENCE

Faster service, shorter wait times, transparent billing, and 24/7 AI support.

BUSINESS VIABILITY

Value-Based Pricing

Scalable pricing designed for healthcare facilities of all sizes.

TRANSACTION-BASED

Pay-Per-Ticket

Low-risk transaction model for smaller clinics and puskesmas. Billed per patient journey fully processed by the AI Orchestrator.

Zero commitment required to get started

STRATEGIC ANALYSIS

SWOT Analysis

Strengths

- AI automation minimizes human error
- Centralized coordination via multi-agent system
- Real-time data visibility for better decisions
- Scalable architecture for any hospital size

Weaknesses

- High initial implementation cost
- Requires staff training & change management
- Dependent on reliable internet & server uptime
- Healthcare data compliance complexity

Opportunities

- National push for hospital digitalization
- Potential licensing to hundreds of hospitals
- Integration with BPJS & SatuSehat systems
- Growing demand for AI in healthcare

Threats

- Established competitors (Oracle Health, Epic)
- Staff resistance to system change
- Evolving healthcare data regulations
- Cybersecurity risks on sensitive medical data