



ARKAVIDIA HACKATHON • TEAM AI SLOP

# Medisync

*AI Hospital Orchestration*

Transforming fragmented hospital operations into one cohesive,  
intelligent system.

**Alfito Juanda**

5220411229

Universitas Teknologi Yogyakarta

**Denis Arsyatya**

103032330107

Telkom University

**Farhan Aulianda**

2702471183

BINUS University

**Larasati Putri Maharani**

103032300006

Telkom University

# 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

# 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.

2



## Smart Anamnesis

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

3



## AI Symptom Summary

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

INPUT

Patient data & chief complaint

PROCESS

Guided questionnaire & symptom capture

OUTPUT

Pre-built summary ready at consultation

# 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.



5°



▼ 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

### TECH STACK

FASTAPI + STRANDS AI

NEXT.JS 16 + REACT 19

SUPABASE (POSTGRESQL)

OPENROUTER LLM

AWS APP RUNNER

DOCKER + TERRAFORM

EXPERT VALIDATION

## Validated by a Medical Practitioner



dr. M Hafizd Saleh

General Practitioner  
Klinik Institut Pertanian Bogor

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*"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

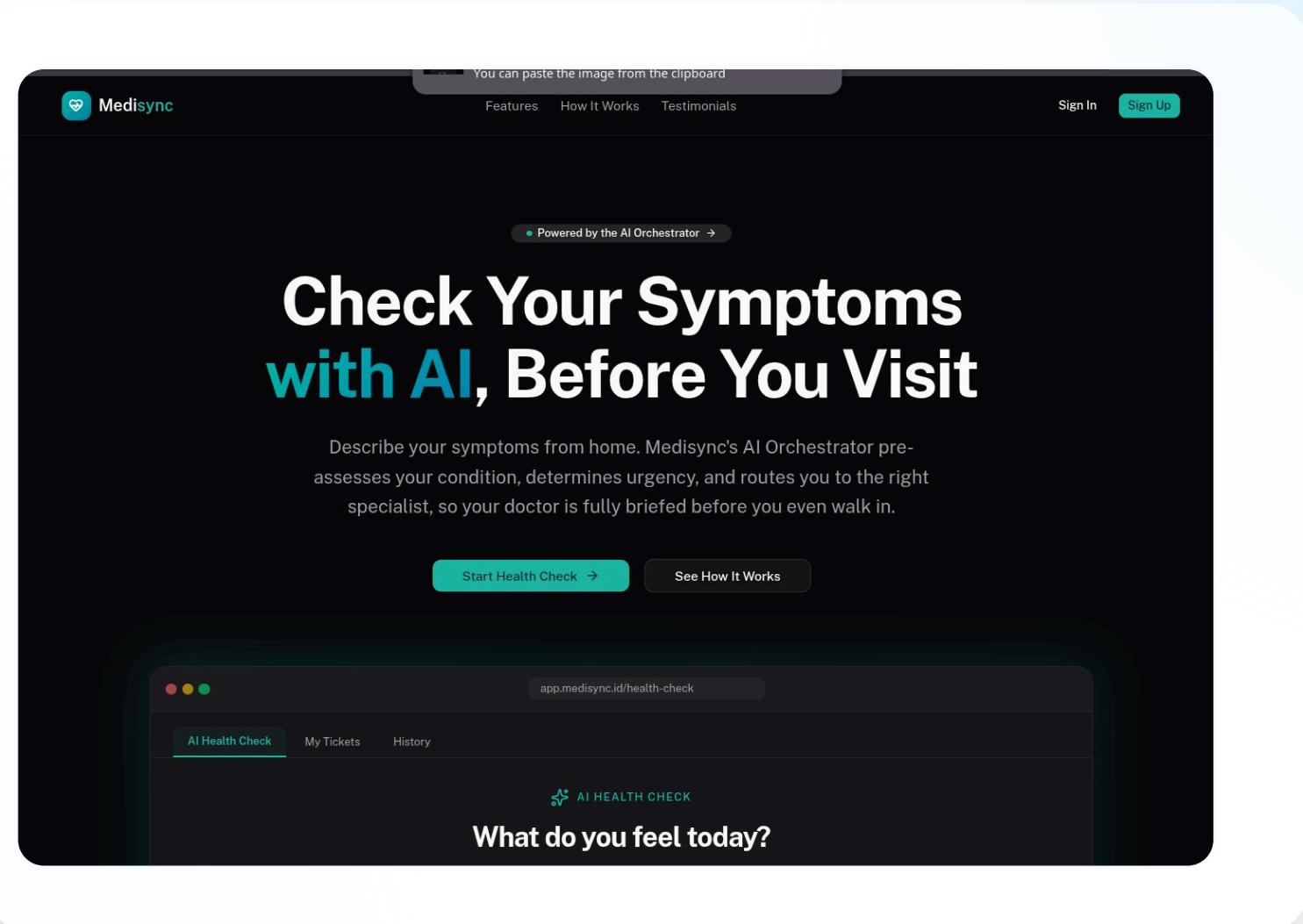
REAL FIELD NEED

READY TO IMPLEMENT

DEMO

# Prototype Demo

Experience the Medisync Interface



The image shows a prototype demo of the Medisync interface. At the top, there's a green button labeled "DEMO". Below it is a large title "Prototype Demo" and a subtitle "Experience the Medisync Interface". The main content area has a dark background with white text. It features the Medisync logo and navigation links for "Features", "How It Works", and "Testimonials", along with "Sign In" and "Sign Up" buttons. A callout bubble says "You can paste the image from the clipboard". Below this, a sub-callout says "Powered by the AI Orchestrator →". The central message is "Check Your Symptoms with AI, Before You Visit". A descriptive paragraph explains: "Describe your symptoms from home. Medisync's AI Orchestrator pre-assesses your condition, determines urgency, and routes you to the right specialist, so your doctor is fully briefed before you even walk in." Two buttons at the bottom are "Start Health Check →" and "See How It Works". At the bottom of the page, there's a mobile device screenshot showing the "AI Health Check" tab selected, with the URL "app.medisync.id/health-check". The mobile screen also shows "My Tickets" and "History" tabs, and a "What do you feel today?" input field.

# 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



BUSINESS ROADMAP

1

### Q2 2025 — Initial Clinic Partnerships

Launching pilot programs in 10+ primary clinics to validate the core workflow and AI orchestration.

2

### Q3 2025 — Hospital Network Expansion

Partnering with 50+ regional hospitals (Type C & D) to implement AI-driven triage and coordination.

3

### Q1 2026 — National Healthcare Ecosystem

Scaling to 200+ healthcare facilities nationwide, including major Type A & B hospitals and medical groups.

# 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