MediVoice



Speak your symptoms. Get your MC. Skip the queue.

Agora Voice AI Hackathon · Singapore 2026

😷 Problem

2.3M polyclinic visits/year in Singapore — half for minor ailments.

- Doctors spend **30–40 min** per patient on a **3-min clinical decision**
- Patients take **half-days off** just to get an MC
- Waiting rooms = unnecessary exposure risk
- Services locked out of non-English speakers

> *The bottleneck is **data collection**, not medical judgement.*

💡 The Insight: One Doctor. 100x the Reach.

Traditional telehealth just moves the clinic online. We scale it.

	Traditional Clinic	Telehealth App	
Patients per doctor/hr	~2	~4	**~80**
Clinic branches served	1	1	**Unlimited**
Data collection	Doctor	Doctor	**AI Agent**
Languages	1–2	1–2	**4**

One AI doctor. Every branch. Every language. 24/7.

> ***Why Agora?*** *ConvoAI runs STT → LLM → TTS inside the call, sub-200ms via SD-RTN. Not duct-taped together.*

✅ Solution: AI Telehealth Platform

	❌ Before	✅ MediVoice
Patient wait	2–3 hours at clinic	~10 min from home
Doctor time	30–40 min per case	< 2 min async review
Data collection	Doctor does it manually	AI conducts full interview
MC issuance	In-person only	PDF delivered instantly
Language	English only	EN · · BM · தமிழ்
Throughput	~8 cases/hr per doctor	**~80 cases/hr per doctor**

One doctor. 10x the impact. Zero waiting room.

🛠️ Tech Stack

Layer	Technology
Voice Transport	Agora RTC SDK (`agora-rtc-sdk-ng`)
AI Agent	Agora Conversational AI Engine (`agora-agent-client-toolkit`)
LLM	OpenAI GPT-4o
TTS	ElevenLabs / Cartesia
Backend	Python · FastAPI · Uvicorn
Auth & Token	Agora Token Builder · `python-dotenv`
Database	Couchbase
PDF Generation	ReportLab
Frontend	React 19 · TailwindCSS · Vite
UI Components	Radix UI · Lucide React · shadcn/ui

🏗️ Architecture

Layer	Component	Tech	Role
👴 **Patient**	React App	Agora RTC SDK	Voice input · live transcript
☁️ **Agora Cloud**	SD-RTN · ConvoAI	STT → GPT-4o → TTS	AI clinical interview
⚙️ **Backend**	API Server	FastAPI · Couchbase	Token gen · agent control · case DB
🩺 **Doctor**	Dashboard	React · TailwindCSS	Review · approve · escalate

> *All real-time intelligence flows through Agora — no custom STT or TTS pipeline.*

🎤 Patient Flow

1. Open MediVoice → **Start Consultation**
2. AI agent interviews: complaint, duration, severity, symptoms, meds
3. Red-flag detected? → agent stops, advises **995 / A&E** + **immediately escalates to on-duty doctor via live Agora RTC call**
4. Summary generated → patient confirms → **enters doctor queue**

> *No app. No typing. No waiting room. Just speak.*

🩺 Doctor Flow

Doctor opens dashboard → sees AI-structured case summary.

Decision	Action
✅ Approve	Select MC duration (1–3 days) → PDF issued
📝 Modify	Edit diagnosis or duration
🚨 Escalate	Flag for in-person, patient notified

One screen. One click. Under 2 minutes.



HITL — Human In The Loop

AI never issues an MC autonomously. Every case requires an explicit doctor decision before anything is sent to the patient.

📈 Market & Affordability

Metric	Value
SEA Telemedicine Market (2025)	**$2B+**
SG polyclinic visits / year	**~2.3M**
MC-eligible cases / year	**~1.1M**

Healthcare shouldn't cost more than a meal.

	Traditional Clinic	MediVoice
Patient cost	$15–30 + transport	**$8.99**
Time spent	Half a day	~10 min
Where	Queue at clinic	From home

> 🍗 *The price of a chicken rice. Healthcare is affordable again.*

🏁 The Ask

> ***Partner with one polyclinic group for a 3-month pilot.***

- MC wait: **2.5 hrs → 30 min**
- Doctor throughput: **10x**
- Built on Agora RTC + ConvoAI · FastAPI · React