

TESAHEALTH

**Development of a web-based diagnostic support*
platform integrating AI services with clinician
verification.**

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*Orientation only – not diagnosis or prescriptions.





Summary

01-03	Motivation & scope (what it is / is not)
04	Project approach (what I actually did)
05-06	Method: use cases + traceability matrix
07	Data model (ER) + consensus rule
08-09	End-to-end workflow + safety governance
10	Implementation & architecture (MVP)
11	Portals (patient / clinician / admin)
12	Exploratory usability & acceptance
13	Limitations & Next Step
14	Demo



1- Where this idea started



CONCEPT
(Year 2, Anatomy):

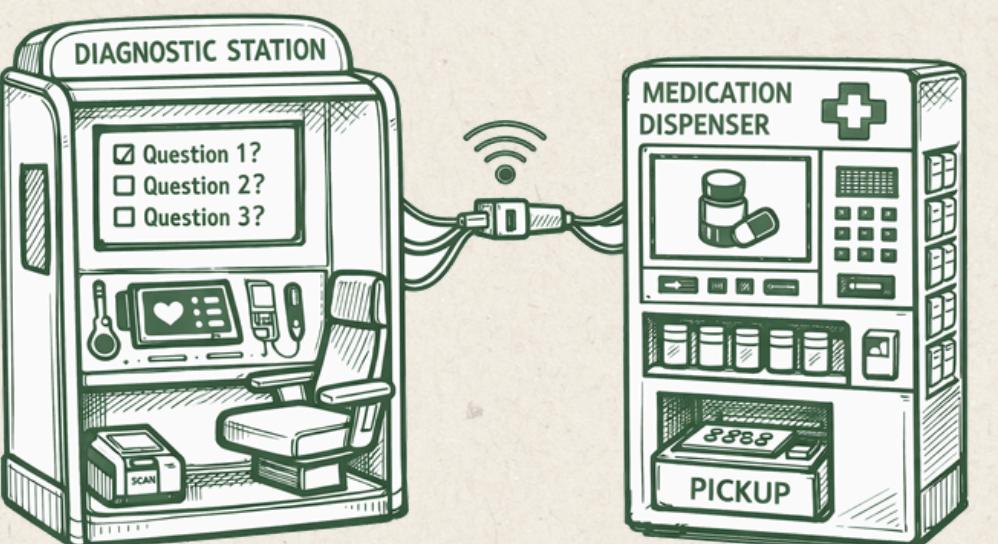
Augmented
telemedicine booth +
AI diagnosis +
multi-doctor review

INSIGHT:

In healthcare, the
problem isn't "AI exists"
– it's safety and
accountability

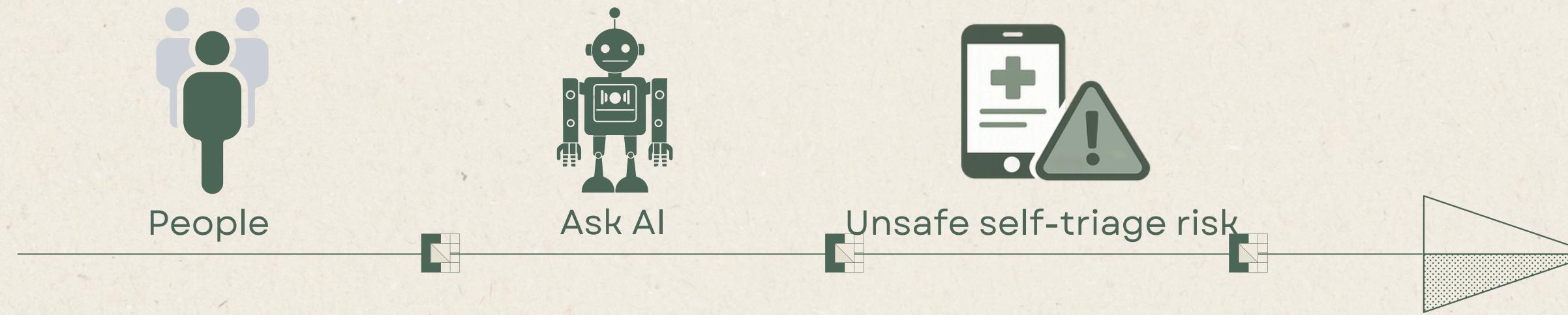
MVP (TFG):

AI generates
structured artefacts,
clinicians provide
blinded consensus, the
output is orientation





2- Problem & motivation



01 People already ask AI about symptoms, often without context or accountability.

02 The risk isn't "AI exists", but unsafe self-triage and overconfident outputs.

03 Health systems face pressure and workforce constraints.

04 Opportunity: safe early orientation that improves "what to do next" while keeping clinicians in control.



3- What TesaHealth is (and is not)



TesaHealth IS:

Likely category
shortlist (for
orientation)

Conservative
urgency level

Recommended
next step +
patient-friendly
explanation



TesaHealth IS NOT:

Provide
diagnosis

A prescription
tool

Emergency
decision-making



4 Project approach (what I actually did)

04/13



Research & framing



Design artefacts

use cases → mockup → ER model



Methods writing in parallel



Implementation

DB + backend + external services



Frontend last

portals + iteration (emails, PDF, governance)

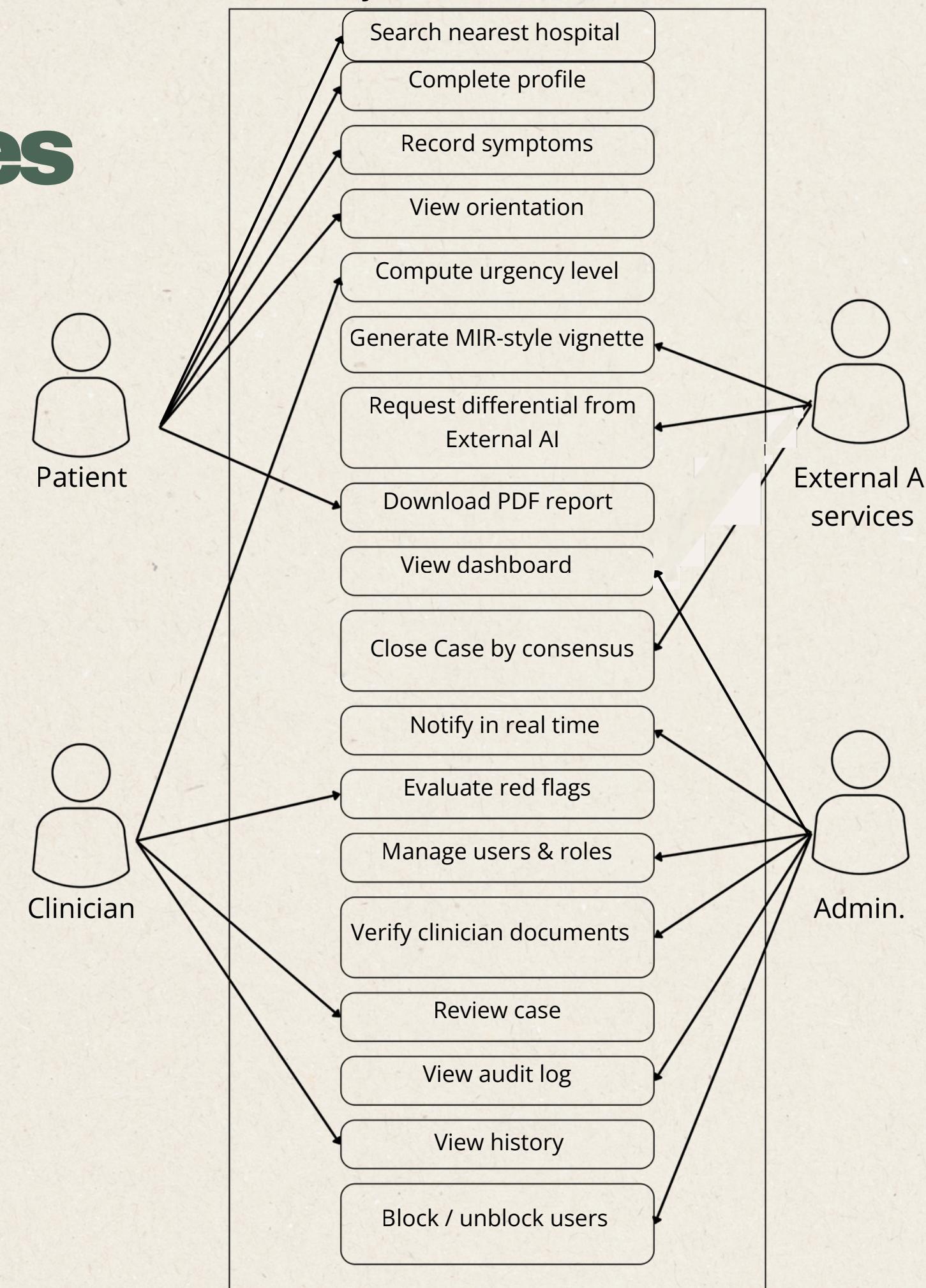


Evaluation + write-up

SUS (n=20) + results/discussion/conclusion



5- Use cases & actors





6- Traceability Matrix

06/13

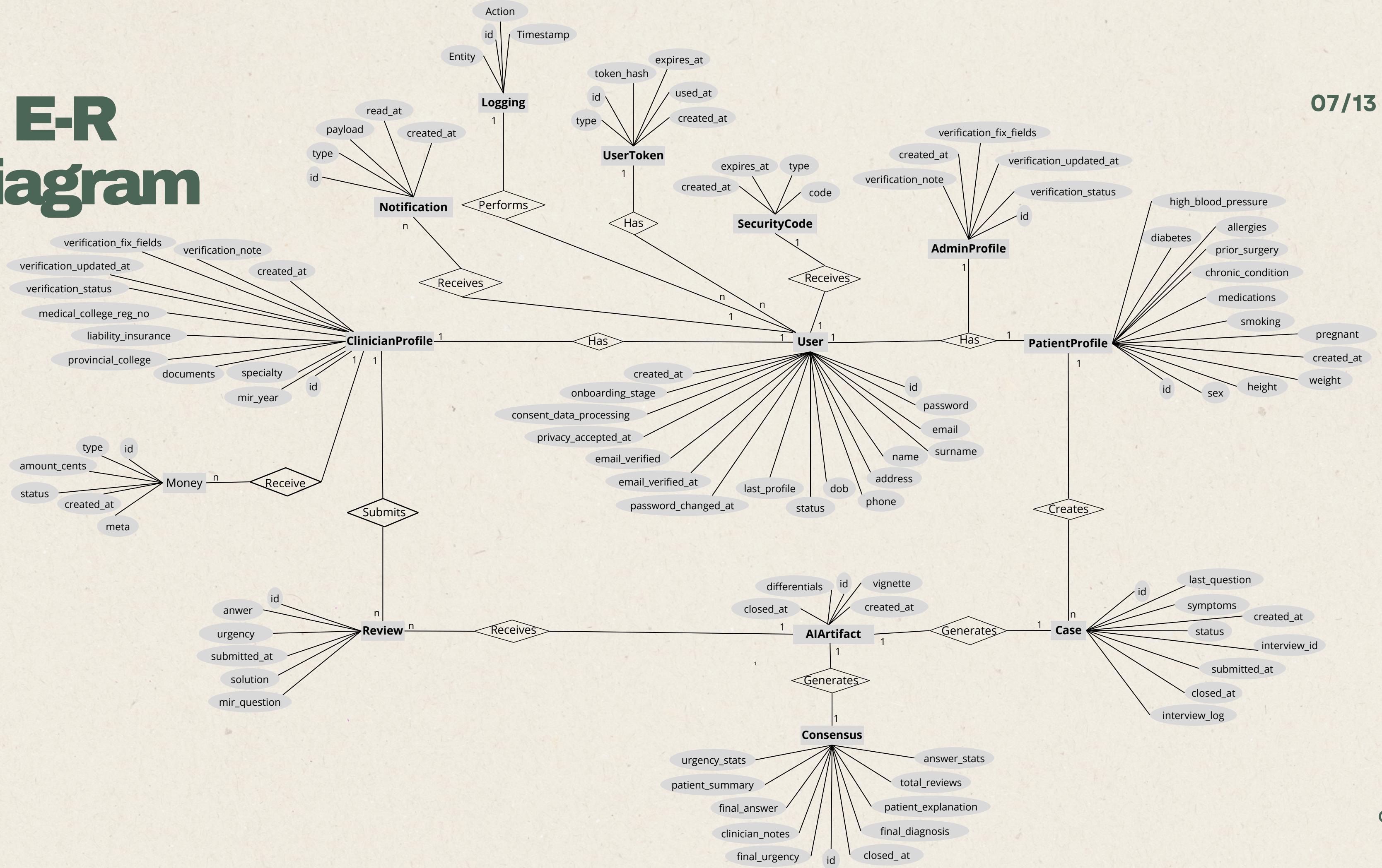
FR	Requirement	Status/ Evidence
FR1	JWT authentication + RBAC	✓ Patient/Clinician/Admin portals after login
FR2	Patient profile stored/updated	✓ Profile editing
FR3	Guided symptom intake + free text	✓ Guided questions + post-interview summary
FR4	Patient-facing orientation (category + urgency + explanation)	✓ Case details + PDF download

FR	Requirement	Status/ Evidence
FR5	External AI orchestration under strict JSON schema	✓ AI artefacts visible in workflow
FR6	Blinded clinician review	✓ MIR-style review UI
FR7	Quorum-based consensus + conservative urgency	✓ Consensus closure screen
FR8	Real-time updates via sockets	✓ Case state changes visible to users
FR9	Admin console (verification, management, audit logs)	✓ Admin dashboard + verification + logs



7- E-R Diagram

07/13

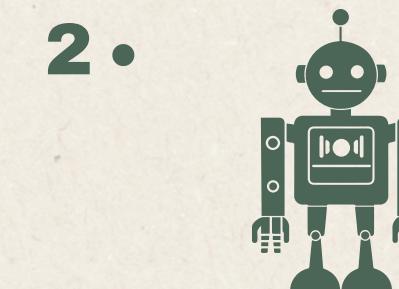




8- How it works end-to-end



1 •
Patient completes
profile + symptom
interview



2 •
Backend generates
AI artefacts
(validated & stored)



3 •
Clinicians review cases
(blind, independent)



4 •
Consensus
closes the case
(rules-based)



5 •
Patient receives orientation
+ downloadable PDF +
Find nearby hospitals



Safety rule: urgency = highest
urgency selected by any clinician.



9- Safety, governance & regulatory framing

09/13



Output is orientation only

(no prescriptions / no treatment plans)



Prototype settings

quorum k=3, agreement ≥80%; ties remain open.



Conservative urgency rule

(highest urgency wins)



Schema validation + consistent formats

for AI outputs



Traceability

logs, timestamps, role-restricted access

ai_ready MIR #9
Date: 4/2/2026 • Options: 5
A 25-year-old woman presents with moderate abdominal pain and a headache, both starting less than 2 days ago. ... Open →

MIR ID	9
Status	ai_ready
Created	4/2/2026, 11:46:51

Question
A 25-year-old woman presents with moderate abdominal pain and a headache, both starting less than 2 days ago. She reports a fever, increased thirst, and a diminished appetite. There's also a history of exposure to gastroenteritis from caring for an ill child. She denies any chronic conditions, has no known allergies, and is not currently pregnant. Upon examination, her vital signs are stable, and there is no abdominal tenderness or significant findings otherwise. What is the most likely diagnosis?

Your answer

A — Rotavirus infection
 B — Adenoviral respiratory disease
 C — Physical injury of unknown location
 D — Pneumonia
 E — BLANK

Urgency (optional)

Within 72h

Optional solution / reasoning

Submit answer **Copy ID**

Clinician Review view



10- Implementation & architecture (MVP)

Backend

- **Backend:** Node.js + Express
- **DB:** SQLite + Sequelize (sync-based schema for fast iteration)
- **Security:** JWT auth + RBAC middleware, safe file upload constraints
- **Realtime:** Socket.io updates for queues and case state changes.

External services:



Infermedica

Infermedica

(triage/differentials)



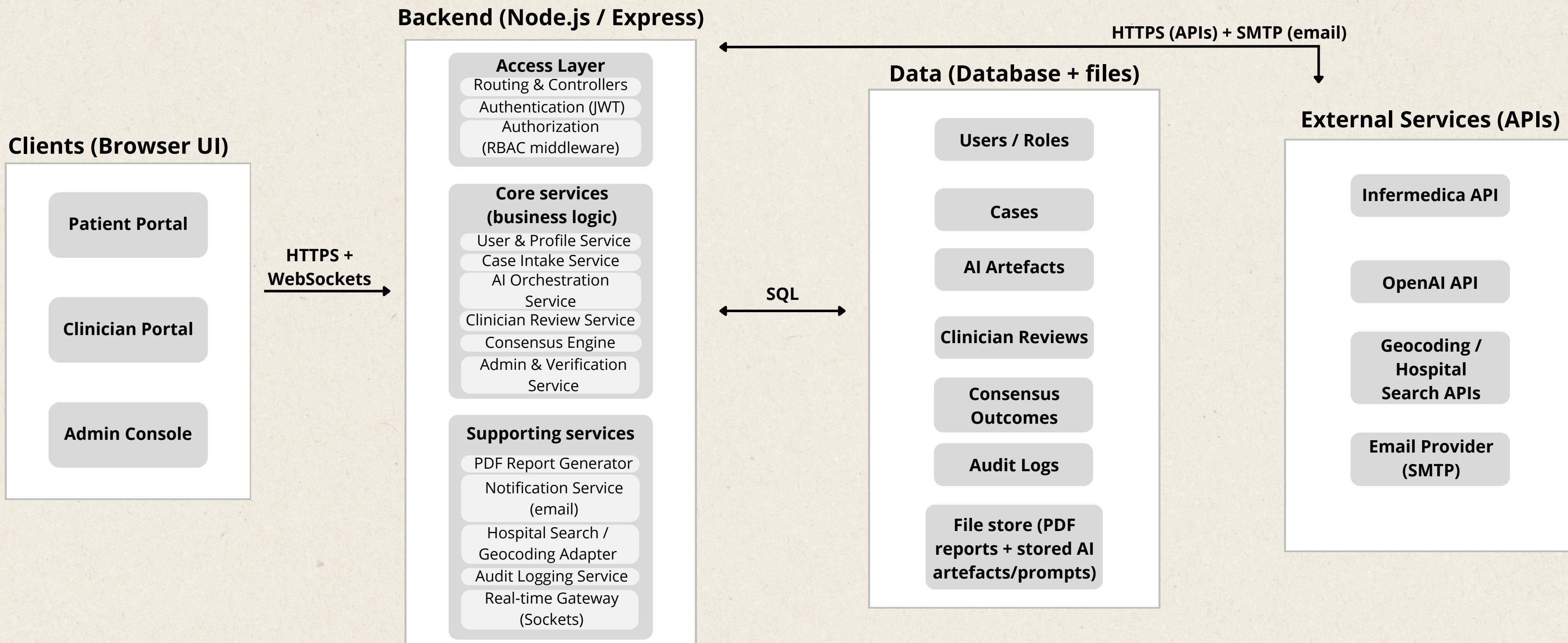
OpenAI

(structured clinical text)



10- Implementation & architecture (MVP)

10/13





11- Portals

11/13

Patient portal Intake → waiting → result + PDF + history + hospital search

The screenshot shows the TesaHealth Patient portal homepage. At the top, there is a navigation bar with links for Home, Patient (which is currently selected), Clinician, Admin, Logout, and New case. The main content area is titled "Patient area" and contains a message: "Your cases, results, and next steps — in one place." Below this, a user profile section shows a placeholder for a photo, the name "Olivia Gallego Toscano", and the email "oliviagallegotoscano2003@gmail.com". A call-to-action button says "Warning signs? Call 112.". The page is divided into several sections: "Main actions" with "Create new case" (link to "Start a guided symptom interview"), "Edit profile" (link to "Update your account & health info"), "Case history" (link to "View all your previous cases"), and "Find hospital" (link to "Map of hospitals in Spain"). The "Overview" section at the bottom provides a snapshot of activity with links for "Total cases", "Open", "Completed", and "Last case (ID, date)".

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11- Portals

11/13

Clinician portal

Verification → blind review queue → history/rewards

The screenshot shows the TesaHealth Clinician area portal. At the top, there is a navigation bar with links for Home, Patient, Clinician (which is highlighted in green), Admin, Logout, and Answer MIR. Below the navigation bar, there is a section titled "Clinician area" with the sub-instruction "Answer MIR questions, track your history, and manage your profile." It displays a user profile for "Olivia Gallego Toscano" with the email "oliviagallegotoscano2003@gmail.com". A note says "For emergencies, call 112." Below this, there is a "Main actions" section with four buttons: "Answer MIR questions" (Review assigned cases and submit your choice), "Response history" (View your submitted answers), "Edit profile" (Update credentials and account data), and "Report an issue" (Contact support by email). At the bottom left is an "Overview" button, and at the bottom right is a "Refresh" button.



11- Portals

11/13

Admin portal Verify clinicians + oversight + user management + audit logs

The screenshot shows the TesaHealth Admin portal. At the top, there is a navigation bar with links for Home, Patient, Clinician, Admin (which is highlighted in a grey box), Logout, and Refresh. The main content area has a light grey background with rounded corners. It features several sections:

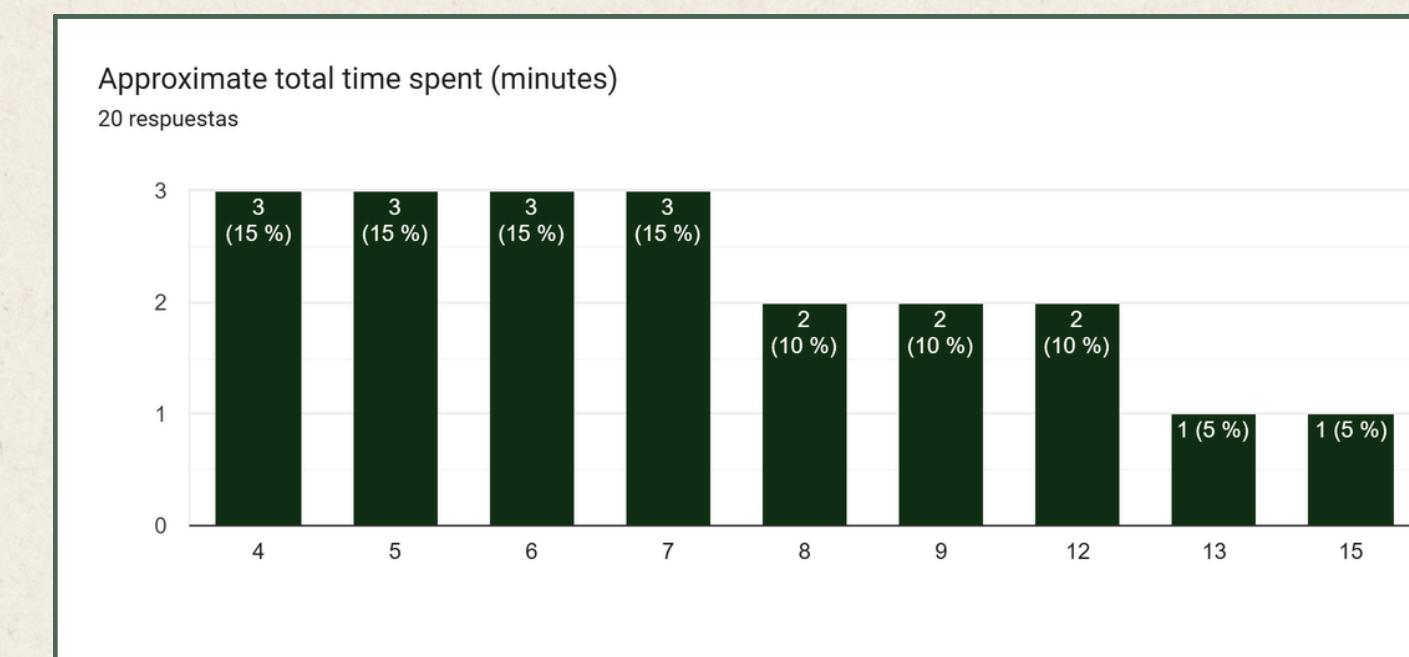
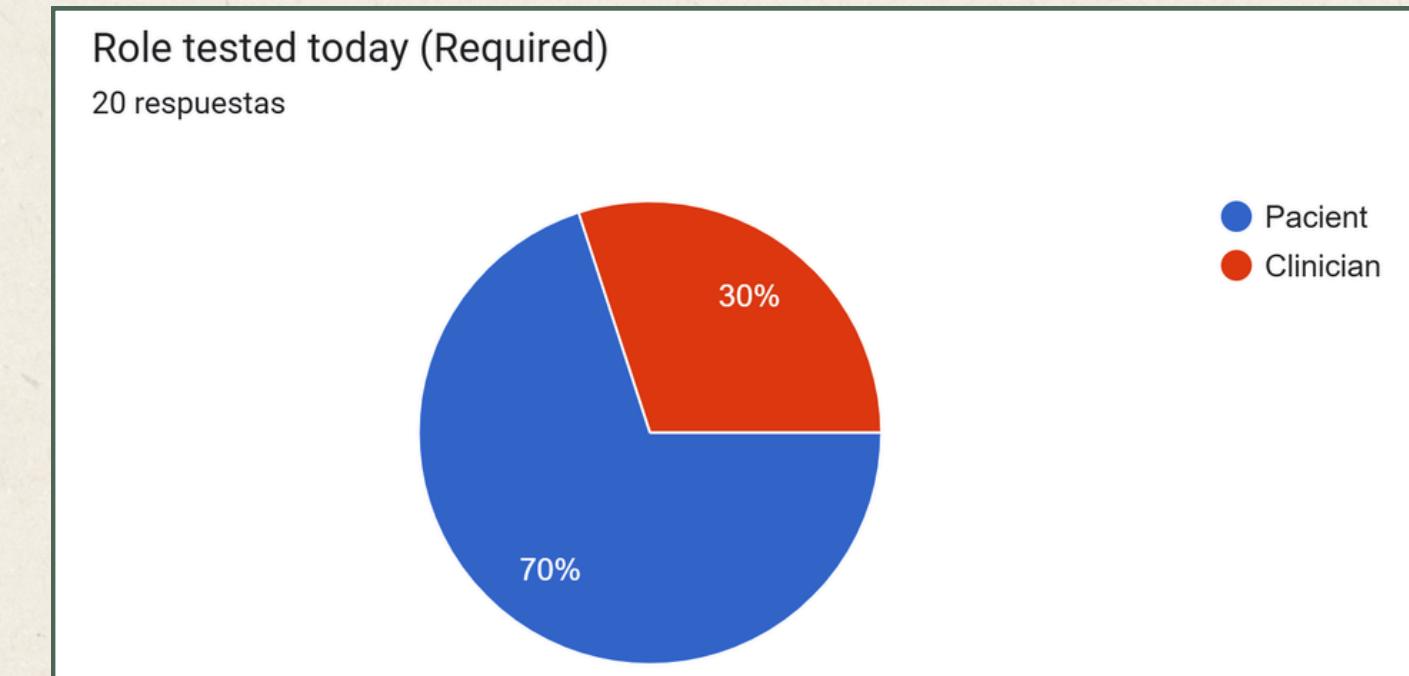
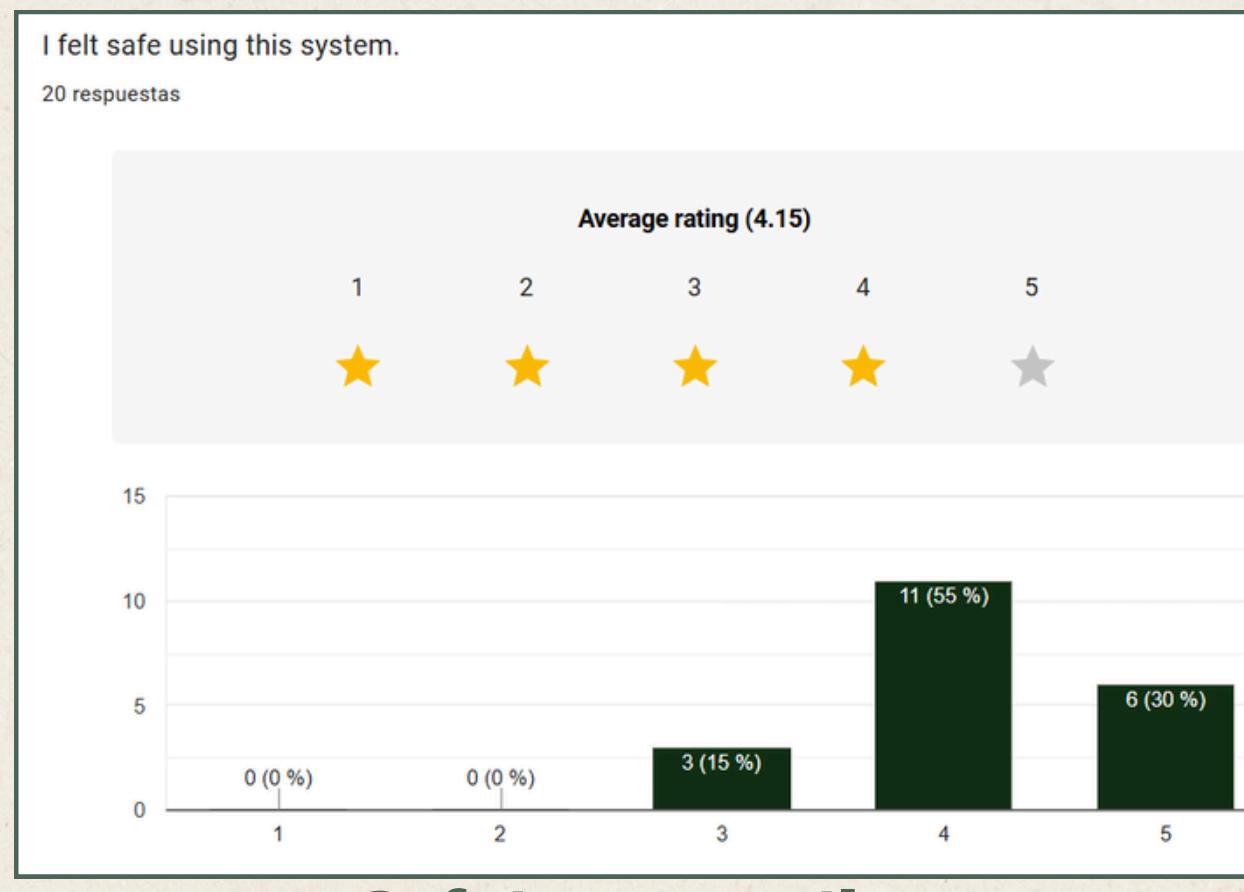
- Admin area:** A box containing the text "Verify profiles, monitor cases, and view internal stats." Below this is a user profile card for "Olivia Gallego Toscano" (email: oliviagallegotoscano2003@gmail.com) with a small placeholder icon. A note below the card states: "Internal tool • Access is logged."
- Admin tools:** A grid of six buttons:
 - Dashboard:** TesaHealth overview
 - Verify accounts:** Pending: 0
 - Verify patients cases:**
 - Edit profile:** Update your account
 - Audit logs:** Trace actions
 - Users:** Search & block
- Dashboard:** A box at the bottom with the text "Snapshot of verifications and cases (pseudonymized)."



12- Exploratory usability & acceptance

- **n= 20** 14 patients (70%) / 6 clinicians (30%)
- **Time on task:** 4–15 min (most 4–7)
- **Mean SUS:** 82.8 / 100
- **Safety perception:** 4.15 / 5
- **Top improvements:** shorter flow, PDF reliability
- **Usability target:** SUS \geq 70

*Simulated cases; no real personal health data collected.





13- Limitations & Next Step



Limitations:

MVP feasibility,
not clinical
validation

Human review adds
latency / clinician
availability

External
dependencies (APIs,
PDF export, geo)

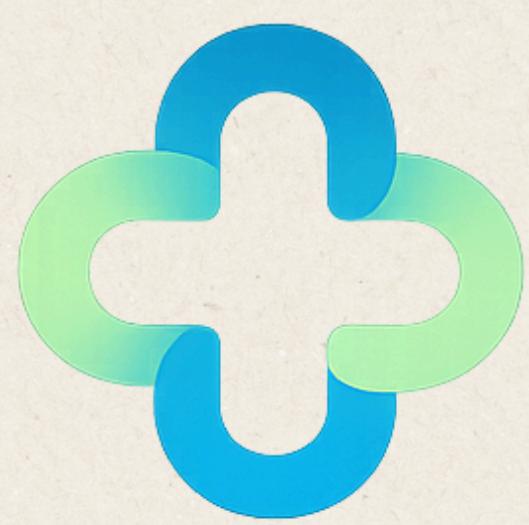


Next Step:

Pilot with clinicians: kappa,
time-to-consensus, escalation
patterns

UX: Spanish +
shorter interview +
clearer onboarding

Reliability/monitoring:
PDF stability + audit
dashboards



TesaHealth



Thank you very much!
QUESTIONS?