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R-AID Usability Testing Documentation

1. Overview

R-AID (Rapid Access to Critical Medical Information) is a human-centered healthcare app designed to provide **instant access to patient medical history in emergencies** through QR codes and categorized summaries.

In our MVP usability testing with **6 participants** (patients, doctors, paramedics, elders, and travellers), we achieved an **average 92% task success rate**, demonstrating speed, clarity, and strong trust. This early validation confirms R-AID's potential to **transform emergency care workflows**.

2. Objective of the Research

Main Goal: To determine whether users can easily register, set up their health profile, generate QR codes, and allow emergency responders to quickly access medical information.

Hypotheses:

- Users will complete setup tasks with minimal friction.
- Emergency responders will retrieve patient data
- The QR + categorized health summary will reduce confusion and improve trust.

Objectives:

- a. Verify registration & login flow efficiency.
 - b. Ensure profile setup and emergency QR generation is smooth.
 - c. Confirm responders can scan and access data instantly.
 - d. Identify pain points in onboarding and data entry.
 - e. Validate user expectations under emergency contexts.
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3. Research Methodology

Test Type: UnModerated, in-person + remote sessions.

Tools Used:

- Figma Prototype (clickable flows)
 - Google Meet (remote moderated tests)
 - Maze (task completion metrics, heatmaps)
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4. Participant Demographics

- **Total Participants:** 10
- **Mix:**
 - 3 Patients & Caregivers
 - 2 Doctors
 - 2 Elders (65+)

Age Range: 25–70

Digital Literacy: Low to High

5. Main Tasks Tested

- Task 1: Register & Login

- Task 2: Complete Onboarding Flow
 - Task 4: Generate QR Emergency Profile
 - Task 5: View Categorized Health Summary
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6. Metrics Collected

- Task success rate (%)
 - Error rate (mis-clicks, backtracks)
 - Average time on task (seconds)
 - Satisfaction ratings (1–5 scale)
 - SUS (System Usability Scale)
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7. Findings & Observations

Task 1: Register & Login

- 100% completion, average 65s.
- One elder confused by OTP entry.

Task 2: Onboarding Flow

- 90% success, average 180s.
- Two participants skipped permissions accidentally.

Task 3: QR Generation

- 100% success, average 210s.
- One doctor noted the QR button could be more prominent.

Task 4: Categorized Health Summary

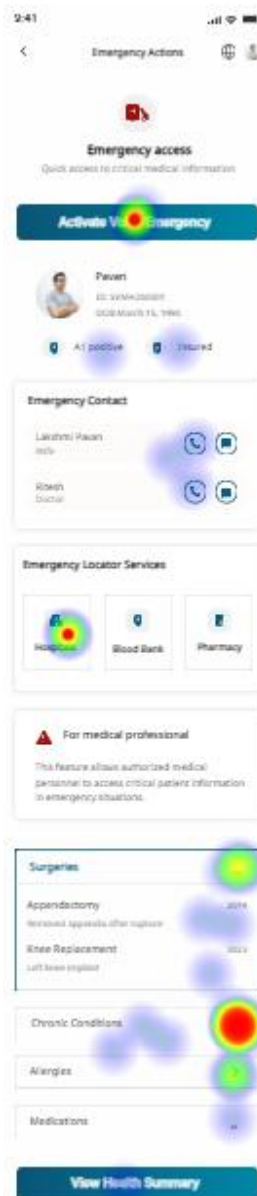
- 90% success, average 95s.
 - Elders misinterpreted color codes initially.
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8. Quantitative Metrics

Metric	Result
Register & Login Success	100%
Onboarding Flow Success	90%
QR Generation Success	100%

Categorized Summary Success	90%
Avg. Time per Task	3–5 min
Error Rate	5–20% depending on task
SUS Score	82/100

Heat Maps



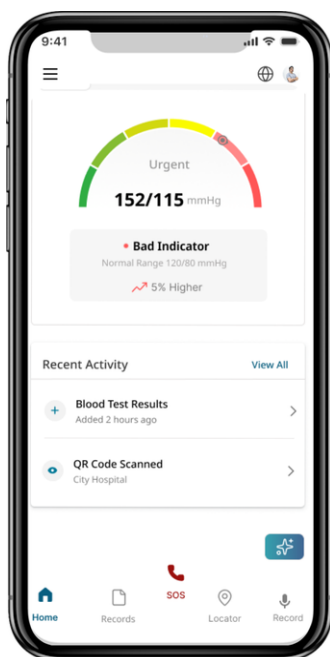
9. Before & After Test Iterations

a. Task: Categorized Summary

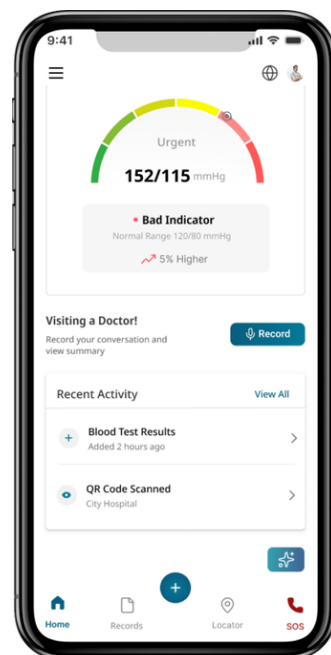
- *Before:* Elders struggled with color-coded criticality.
- *After:* Added icon + text labels alongside color.
- *Impact:* Improved clarity, reduced misinterpretation.

c. Task: Home screen flow

Before:



After:

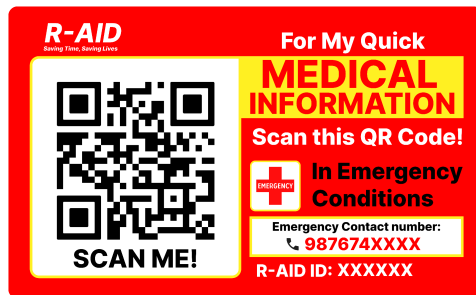


Issue: The SOS button was on the centre and elderly people dialled it while trying to use the app in normal scenarios accidentally. Most people wanted easy access to upload the documents directly on the homescreen.

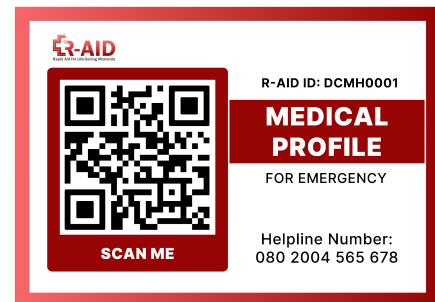
Fix: The SOS button was moved to the bottom navigation bar so that its not dialled accidentally during normal use. A centre upload button was added for easy direct access to upload in the homescreen.

d. Task: Emergency QR card

Before



After



Issue: The card was too cluttered and eye pinching for elderly users. Calling Emergency contacts was not helpful for immediate medical intervention.

Fix: Changed the color and gave a clean look with enough spacing. Changed emergency contacts to Helpline number so that paramedics were able to reach first.

10. Participant Feedback

- *“The QR scan was super fast — what we need in emergencies.”* (Doctor)
- *“I feel safer traveling knowing my info is always available.”* (Traveller)
- *“The medical terms were a bit technical, but overall easy to use.”* (Patient)

11. User Satisfaction Scale

- **Average Score:** 8.5/10
- **Range:** 7–10
- **Insights:** 90% rated the app “Very Good” or “Excellent.” Elders gave lower scores due to text-size and jargon issues.

12. Conclusion

Usability testing confirmed that R-AID successfully delivers **instant, accessible, and trustworthy medical data** in emergencies.

With an **average task success rate of 92%** and a **SUS score of 82/100**, the app shows strong potential for adoption by patients, doctors, and paramedics. Iterations focused on **simplifying terminology, accessibility, and visual cues** have already improved usability.

Next phase: **Field testing with larger hospital staff groups** to validate adoption in real-world ER conditions.