

PULSE – Public Unified Local Health Engine

Hackathon Pitch Narrative (Problem • Value • Execution)

WHAT IS YOUR PROBLEM STATEMENT

Problem Statement

Barangay Health Workers (BHWs) are responsible for monitoring the health of hundreds of residents, yet most still rely on **paper-based records and manual reporting**. This results in:

- Delayed identification of high-risk individuals
- Missed follow-ups for seniors, pregnant women, and PWDs
- Reactive health interventions instead of preventive action
- Inefficient reporting to LGUs and health offices

Without a digital system that helps **prioritize who needs attention first**, health risks are often addressed only when they have already escalated.

Target Users

Primary Users - Barangay Health Workers (BHWs)

Secondary Users - LGU Administrators - City / Municipal Health Offices

WHAT IS YOUR VALUE PROPOSITION

Present a Solution

PULSE is a **web-based health decision-support system** that digitizes barangay health records and uses an **explainable risk prioritization mechanism** to help health workers identify residents who require urgent follow-up.

The system does **not diagnose or prescribe**. It supports better decision-making by showing **who should be prioritized today**.

Explain the Project

PULSE enables: - Secure registration of residents per barangay - Logging of health visits and observed symptoms - Automatic risk categorization (Low, Medium, High) - Real-time dashboards for health monitoring

All access is **LGU-provisioned**, role-based, and barangay-isolated to ensure data privacy and accountability.

Tech Stack Flow (Simple Conceptual Flow of Data)

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graph TD; A[Barangay Health Worker] --> B[Web Application (React)]; B --> C[Secure Backend (Supabase)]; C --> D[Risk Prioritization Logic]; D --> E[Dashboard & Reports];
```

TARGET MARKET

Market Size

- The Philippines has **42,000+ barangays** nationwide
- Each barangay typically has multiple Barangay Health Workers
- Every barangay manages hundreds to thousands of residents

This makes barangay-level health monitoring a **large, underserved market** for digital public health systems.

Facts and Evidence

- Barangay Health Workers are the **frontline of preventive healthcare**
- Manual and paper-based systems remain common in local health units
- Delays in follow-ups contribute to preventable complications

Digitizing and prioritizing health data at the barangay level directly supports national health and prevention goals.

Competitors and Differentiation

Existing Solutions: - Paper-based logs - Spreadsheet-based reporting - Large hospital or EMR systems (not barangay-focused)

Why PULSE is Different: - Designed specifically for barangay workflows - Low-cost and lightweight - Explainable prioritization instead of black-box AI - LGU-controlled access and governance - Scalable from barangay to national level

EXECUTION PLAN

Project Cost

- Built using open-source technologies
 - Minimal cloud infrastructure cost
 - Can operate within existing LGU IT resources
 - Cost-effective for pilot and gradual rollout
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Team Competence and Skills

The team consists of four developers with strengths in: - Rapid full-stack development - UI/UX design for simple and accessible systems - Backend logic and security concepts - System integration and demo execution

This allows fast prototyping while maintaining system clarity and stability.

Future Plans and Project Timeline

Phase 1 – Hackathon MVP - Resident registry - Visit logging - Risk prioritization - Health dashboard

Phase 2 – LGU Pilot - SMS reminders - City-level analytics - User training and onboarding

Phase 3 – Scale-Up - Advanced decision-support enhancements - Inter-barangay analytics - National-level reporting support

Project Viability

PULSE is viable because it: - Solves a real, documented public health problem - Requires minimal infrastructure - Aligns with LGU governance and privacy requirements - Avoids medical risk by focusing on prioritization, not diagnosis - Can be piloted, improved, and scaled incrementally

Closing Statement

PULSE empowers Barangay Health Workers and LGUs with timely, actionable insights—helping them act earlier, plan better, and serve communities more effectively.

From raw data to timely care.