SMART INDIA HACKATHON 2024

- Problem Statement ID - SIH2025001
- Problem Statement Title – Smart Detection And Early Warning System for the WaterBorne Diseases In the North East of India
- Theme- MedTech/BioTech
- PS Category - Software
- Team ID-S005
- Team Name – Sehatsutra

Solution Title

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Stakeholders

ASHA Workers

District Health Officials

Local Communities & Citizens

State Health Ministry

Problems

Delayed Reporting

No Real-Time Visibility

Reactive System

Connectivity Barriers

Need

An offline-first tool for reliable data collection in any location.

A real-time dashboard for officials to visualize health data.

A predictive engine to analyze data and provide early warnings.

A simple, multilingual UI for easy adoption by non-technical users.

Solution

A responsive web app for real-time reporting by both ASHA workers and citizens.

An AI model that analyzes reports to predict the risk of a disease outbreak in specific areas.

An automated alert system that instantly notifies officials of predicted hotspots.

A central dashboard with a live map for data-driven resource allocation.

TECHNICAL APPROACH

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	B	C	D	E	F	G	H
report_id	asha_worker_id	village_name	date_of_report	symptom_report	number_of_case	water_source_status	
101	ASHA-ANJALI-0	Chingai	2025-09-15	Diarrhea	3	Unsure	
102	ASHA-ANJALI-0	Phungyar	2025-09-18	Fever	2	Clean	
103	ASHA-ANJALI-0	Chingai	2025-09-20	Diarrhea	5	Contaminated	
104	ASHA-ANJALI-0	Kamjong	2025-09-21	Vomiting	1	Clean	
105	ASHA-ANJALI-0	Chingai	2025-09-22	Vomiting	2	Contaminated	
106	ASHA-ANJALI-0	Hungpung	2025-09-23	Fever	4	Clean	

Conventional Method

- Manual Paper-Based Reporting
- Slow, Error-Prone, & Purely Reactive

Our Proposed Method

- AI-Powered Predictive Engine
- Fast, Automated, & Proactive

Continuous Stream of Real-Time Field Data (Symptoms, Location, etc.)

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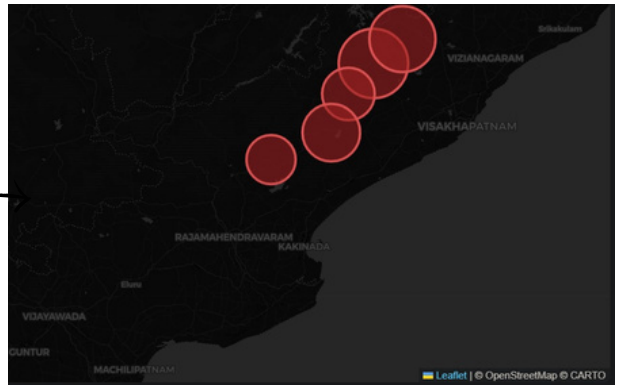
Risk Score = AI_Model(Symptom Data,)

→

Thresholding: The model's output is categorized based on a pre-defined risk threshold.

- Low Risk < 0.5
- Medium Risk > 0.5
- High Risk > 0.8

→



FEASIBILITY AND VIABILITY

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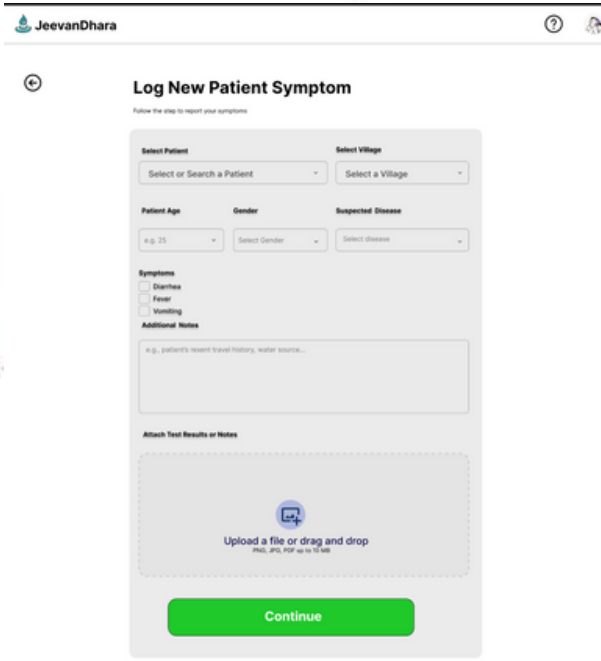
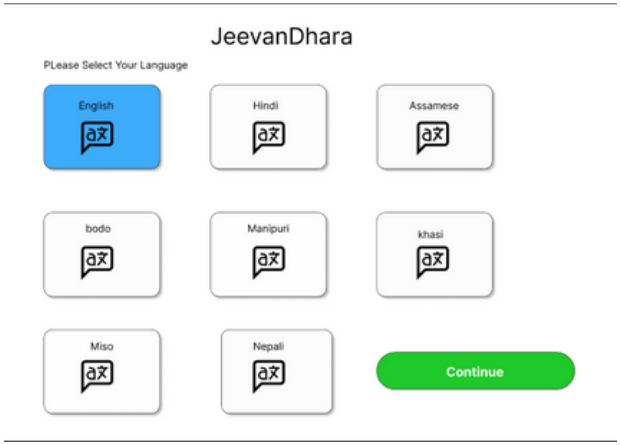
- **Developed using a lightweight web stack, making it accessible on any device with a browser, with no app installation needed.**
- **Designed with an AI model that can be simulated with simple, effective rules for the MVP, guaranteeing a working demo for the hackathon.**
- **Architected to scale from a single village pilot to a full regional and national implementation.**

Before: Paper register



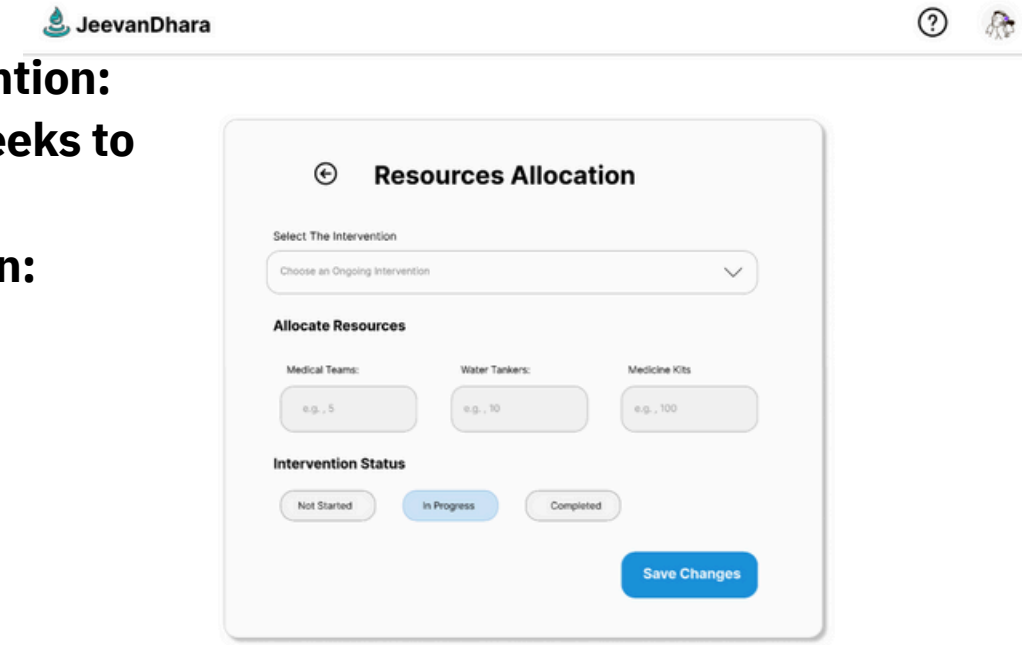
After: ASHA Worker Reporting Form

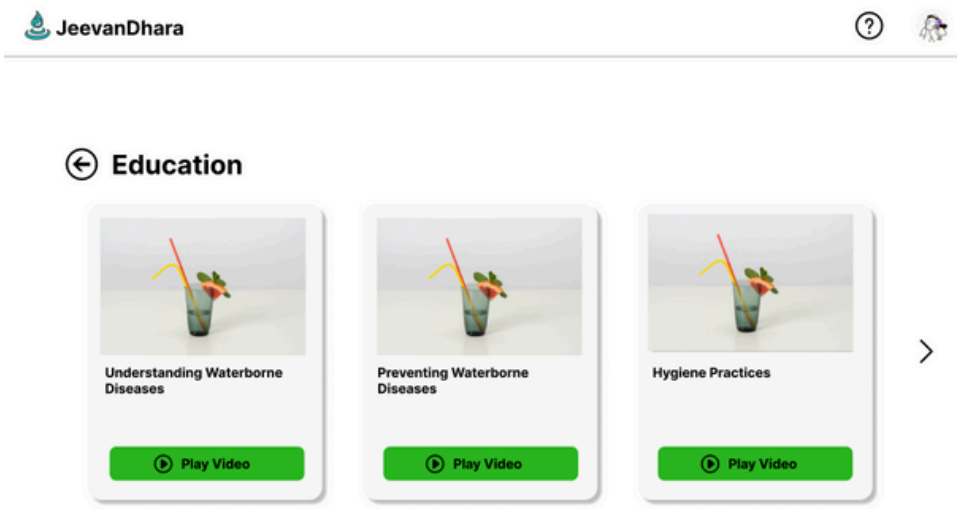


Multilingual UI for the people in the rural areas

IMPACT AND BENEFITS

- **Saves Lives by Enabling Proactive Prevention:**
- **Reduces Critical Response Time from Weeks to Hours:**
- **Improves Emergency Resource Allocation:**
- **Empowers Data-Driven Health Policy:**
- **Empowers ASHA Workers and Citizens:**





RESEARCH AND REFERNCES

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Comprehensive guidelines for Accredited Social Health Activists (ASHA), detailing their roles, selection process, training, compensation, and integration within India's National Rural Health Mission.

-National Health Mission

A cross-sectional study that investigates the high prevalence of waterborne diseases in the Karang Islet of Manipur, linking it to inadequate water, sanitation, and hygiene (WASH) practices among the residents.

-Case Study by B. Surajkumar Sharma and Ak. Bojen Meetei

A mini-review that summarizes the significant burden of various infectious diseases in North-East India, attributing it to a combination of unique geographical, social, and infrastructural factors.

-Indian Council of Medical Research-Regional Medical Research Centre, India

A cross-sectional study that investigates the high prevalence of perceived stress, its academic sources, and the coping mechanisms among undergraduate medical students at a medical college in Delhi.

-All India Institute of Medical Sciences, Rishikesh