

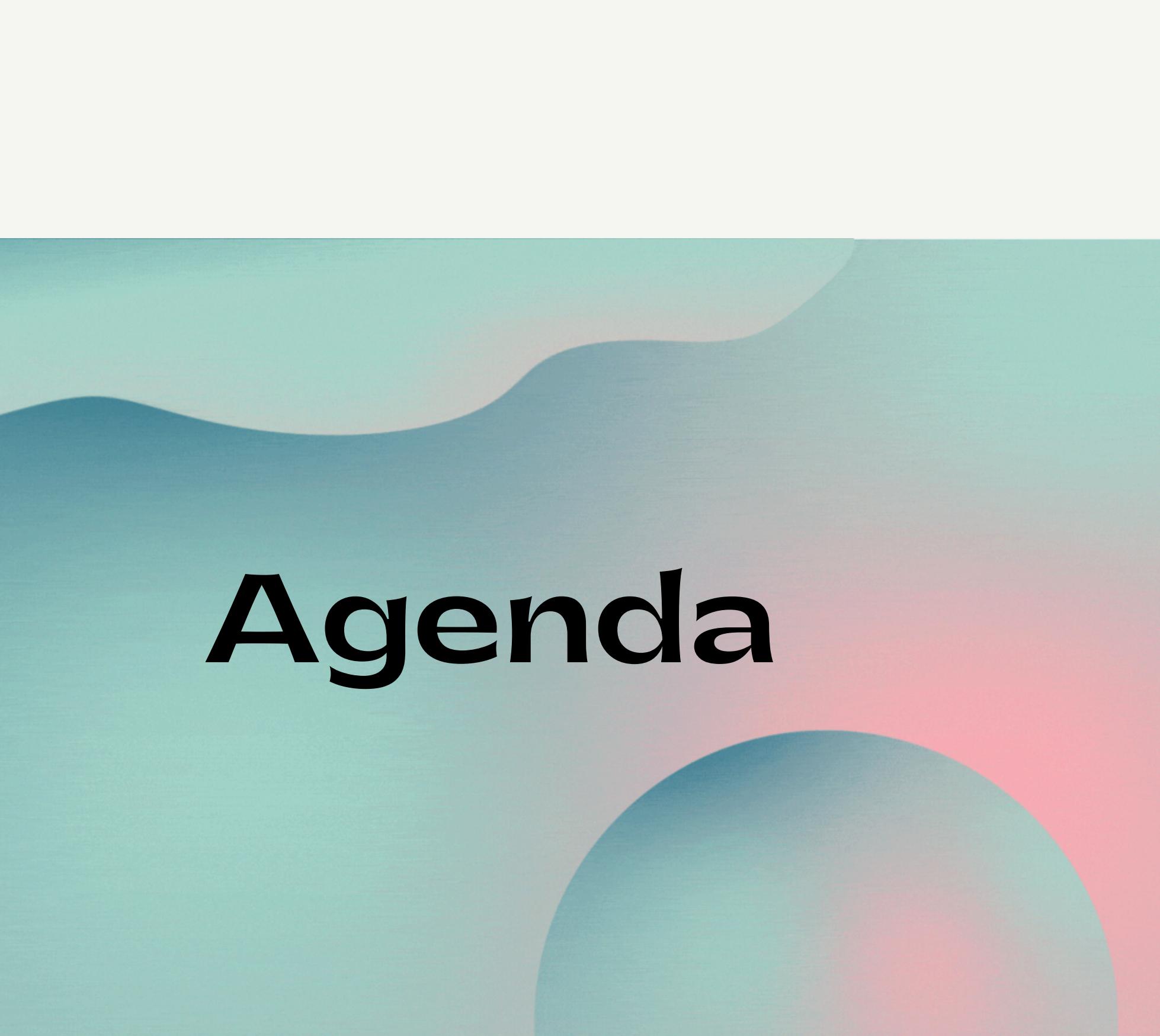


HealthSense

Transforming Rural Healthcare with AI-Driven Diagnostics

Presented By:
Null Pointers

CodeRed 4.0



Agenda

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- 03** Our Mission
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Overview

A peek into our journey



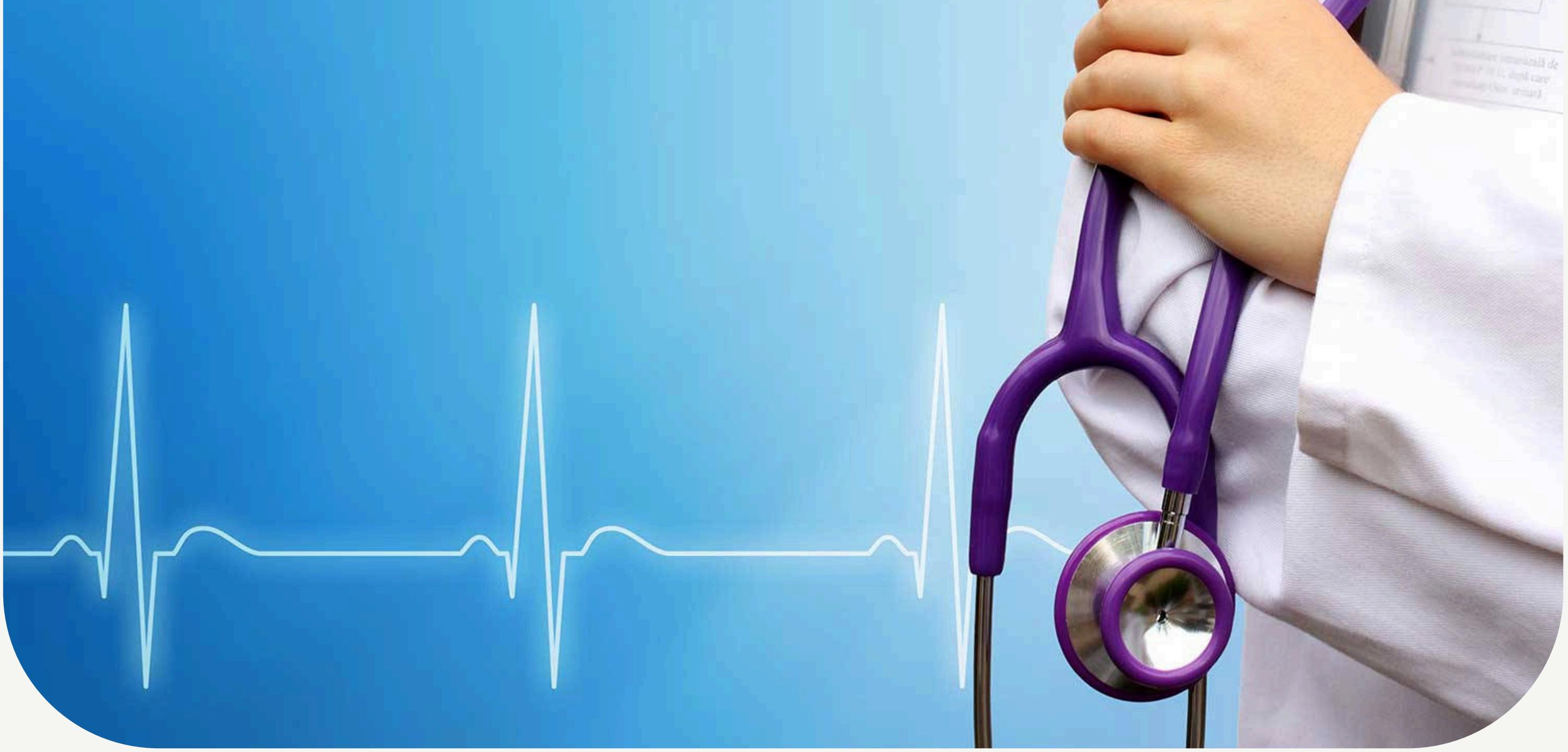
Millions in remote areas lack timely healthcare due to geographical constraints and limited resources.



Early disease detection, especially for critical diseases like pneumonia tuberculosis or cancer, is often missed due to unavailability of medical imaging tools and specialists.



Our project deliver early-stage disease detection through a mobile app, allowing underserved communities to access diagnostic services directly from their smartphones.



Problem Statement

We aim to bridge this gap by leveraging AI-powered analysis on basic medical imaging tools like X-rays, MRI Scans etc. available via a mobile app

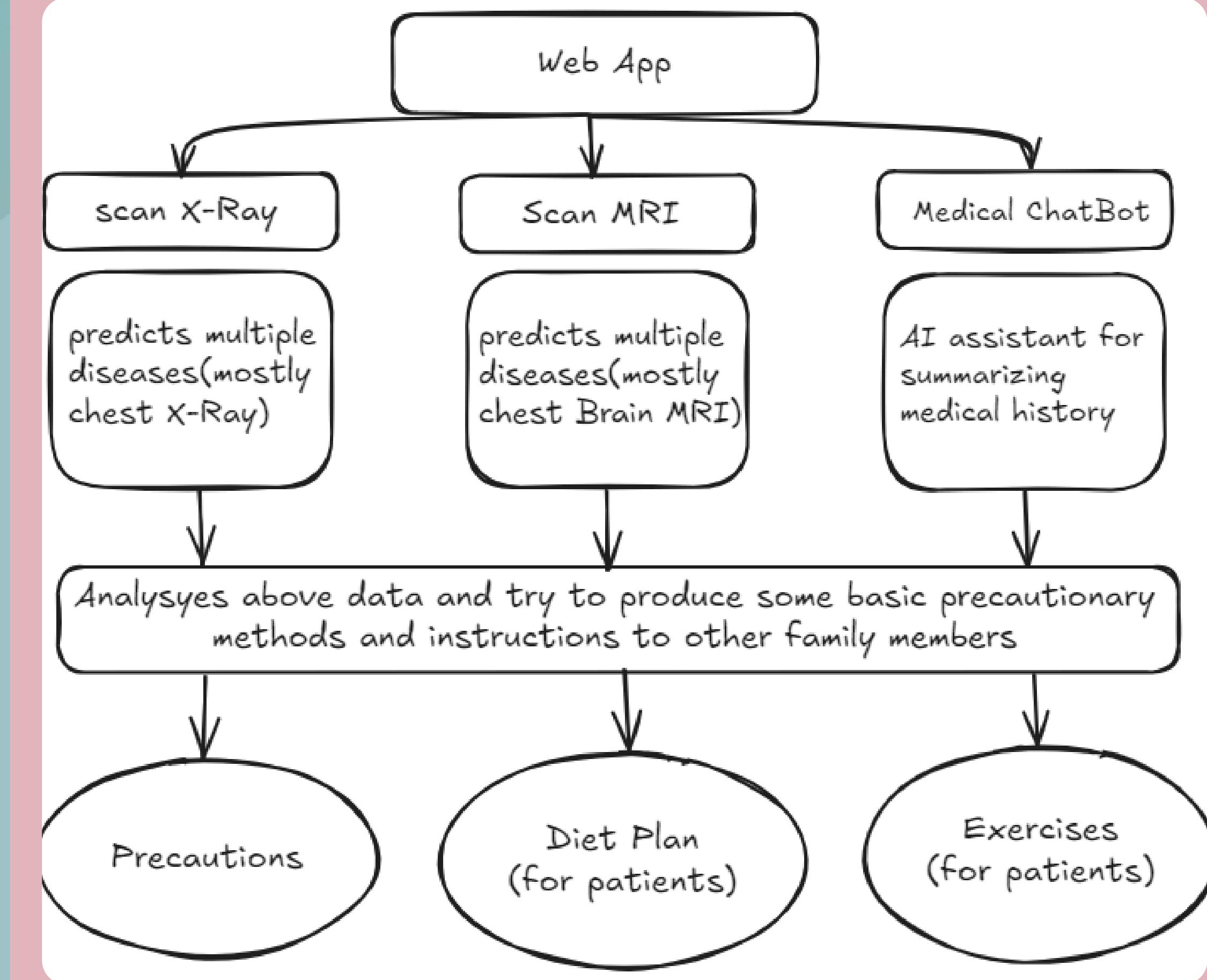
Our Mission

C.A.R.E.

- ▶ **Continuous Health Monitoring** : Keep users aware of potential health risks.
- ▶ **Actionable Advice** : Offer clear, preventive steps.
- ▶ **Rapid First Aid** : Provide quick, reliable first aid guidance.
- ▶ **Empowered Well-being** : Encourage proactive, comprehensive health support.



Strategy



Tech stack

Libraries

Transformers
Torch
Torchvision
NumPy

Models

BioGPT
Vision Transformer
CheXNet

Languages & FrameWork

Python 3.12
Dart
Flutter
Flask

DevTools

VSCode
GitHub
HuggingFace
Ngrok



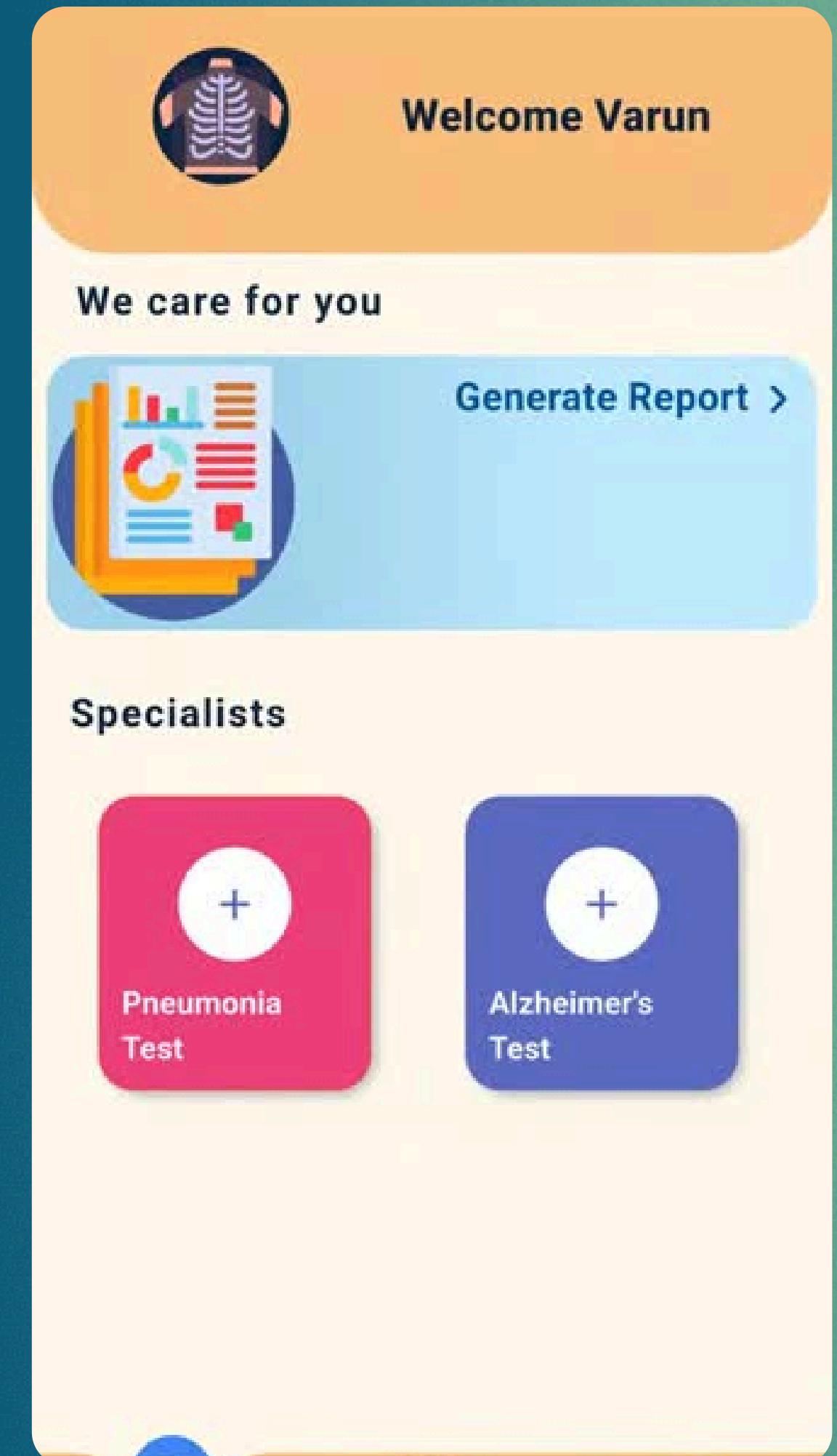
Our Prototype

► Objective: AI-driven predictions for pneumonia (chest X-rays) & Alzheimer's (brain MRIs)

► Process: Pick Image → Upload → Flask Backend → AI Prediction → Return Results

► Tech Stack: Frontend (e.g., Flutter), Flask API, CNN models (CheXNet, Vision Transformer)

► Quick Diagnosis: Provides immediate results to users
User-Friendly: Simple UI for non-experts



Timeline

Cuz a goal without a timeline is just a dream



**Research &
Planning**

6h

**Dataset Preparation
and Modelling**

.24h

**API integration
and Backend**

Frontend and UI



AI for Societal Good

Machine Learning and AI models used

Vision Transformer

Used a base version of Vision Transformer fine tuned on Brain MRIs. Performes better than CNN on large datasets.

CheXNet

A 121-layer convolutional neural network (DenseNet-121) pre-trained on ImageNet and fine-tuned on chest X-rays.

Next Course of Action



Enhancing and Expanding Models

Expanding Datasets, Improving Model Architecture and introducing Regularization Techniques



Scaling Our Solution

Explore opportunities to expand our solution to other regions, demographics and diseases



Collaborate with Stakeholders

Partner with NGOs, tech companies or AI experts to leverage their resources and knowledge.

Thank You !!