



*Aapke Jeevan Ka Saathi*

**SARTHI**

**System of Accessible & Rapid Treatment Healthcare Information**



# TEAM UJJAYI



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# PROBLEM

Rural India faces many healthcare challenges due to lack of regular workforce, underdeveloped infrastructure and low financial investment in healthcare expansion.

**How Might We create a system to increase access to healthcare information in rural india to improve prediction of future epidemics and its prevention ?**

*"At times, it becomes very difficult to manage the number of patients visiting the clinic. The frustrating part is most of the patients could have gotten treated successfully through teleconsultation if they had been made aware."*

**- A doctor based in rural Odisha**

*"Often I need to go to bigger hospitals located far away from my place of residence since the nearby health center does not provide the proper facilities."*

**- A farmer based in rural Odisha**





# URGENCY / IMPORTANCE



- Rural India faces many healthcare challenges due to lack of regular workforce, underdeveloped infrastructure and low financial investment in healthcare expansion.
- However, these pitfalls do not undermine the importance of access to healthcare in village communities and small towns of India for
  - Disease prevention,
  - Detection, diagnosis treatment of illness
  - Decreasing mortality
  - Increasing trust in communication with healthcare providers, across languages and health literacy.



- The second wave of Covid-19 has unearthed many shortcomings in the healthcare system, making it a need of the hour to track the spread of disease in communities across rural India.
- There is also a lack of unified methodology for health data collection and sharing between concerned stakeholders, which makes it impossible to carry out horizon scanning, disease surveillance, capacity planning, and targeted intervention strategies etc.



Of the nation's population (which is rural) as of 2020, is plagued with multiple challenges that make it difficult to modernise the ageing health infrastructure

- Digital healthcare gap
- Lack of internet connectivity,
- Low medical literacy
- Low technological skills of medical professionals
- Uneven coverage of PHCs and CHCs, and uneven quality of medical treatment.

*These challenges and shortcomings of indian healthcare system inspired us to develop innovations in the resource constrained settings of rural India.*

# TARGET CONSUMER



## Dr. Jay Prakash Mishra

Title: General Physician

Income : ₹40,000 - ₹ 80,000 per month

Education: MBBS

## Goals

- Prepare and maintain medical records of patients.
- Lack of Proper equipments for better medical records
- Easily detect and diagnose ailments of patients.
- Understand and accurately prescribe treatment to patients.

## Motivations

- Maintain work life balance
- Reduce clerical work
- Increase the time given to patient
- Coordinate and share health information with sister organisations and authority

## Fears

- Unable to track and treat outbreak of diseases
- Mistakes in prescribing incorrect medication
- Unable to encourage medical schemes in village communities
- Unable to reduce preventable deaths in rural india

## Frustration

- Mistrust of villages in healthcare system
- Outdated medical infrastructure of PHCs
- Lack of modern technology implementation in PHCs

## Challenges

- Low Technological Skills
- Unable to manage patients during epidemics
- Uneven flow of medical equipments and basic medicines
- Unable to contact the medical specialists



# TARGET CONSUMER



## Jagdeep Kumar Samal

Title: Farmer

Income : ₹8,000 – ₹ 10,000 per month

Education: 8th Standard

## Goals

- Get successful & efficient treatment
- Does not have to carry multiple documents all the time
- Getting treatment I can trust
- Getting free medical treatment

## Motivations

- Be healthy and work efficiently.
- Does not have to visit health center multiple times
- Easy to understand medical care
- Receive medical care close to home

## Fears

- Do not understand the symptoms of diseases
- Fear of social stigma if infected with serious disease
- Unable to know if correct medicines have been prescribed

## Frustration

- Do not understand which documents are important
- Do not understand what doctor prescribes
- Do not understand symptoms and treatments
- Frustrated due to the frequency of visits to health center

## Challenges

- High medical expenditure
- Need to visit large city hospital due to uneven PHCs treatment.
- Long waiting time in PHCs due to lack of medical staff

# Design Process





# People Interaction



## Doctors

Interaction with Doctors directly dealing with the patients and their families.

Following were their statements regarding the problems they faced

*"Too many patients for a single doctor is exhausting and tiresome."*

*-Dr B. Singh, ENT*

*"We are not able to manage our day to day appointments along with Labs"*

*-Dr. Mukesh, Physician*

*"Too much time to find the files/report of a patient who has visited in the past"*

*-Dr. Gupta, Neurologist*



## Patient

Interaction with Patients who are undergoing treatments and need to visit the hospitals frequently for consultation

Following were their statements regarding the problems they faced

*"I don't like to go to hospital frequently while taking along the reports."*

*-Dinesh Jain, suffers from T.B*

*"If I get to know about proper treatment at home, I wouldn't need to go to a hospital every now and then"*

*- Swapan Kumar Debnath, Diabetes*

*"I have a baby at home, I can't spend too much time at hospital to enquire about doctor's availability"*

*-Mamta Sharma*



## Hospital Management

Interaction with Hospital Management who are taking care of day to day activities and resource management

Following were their statements regarding the problems they faced

*"Often people call at the reception to know about doctors, beds, medicine availability or price"*

*-Receptionist at a Private Hospital*

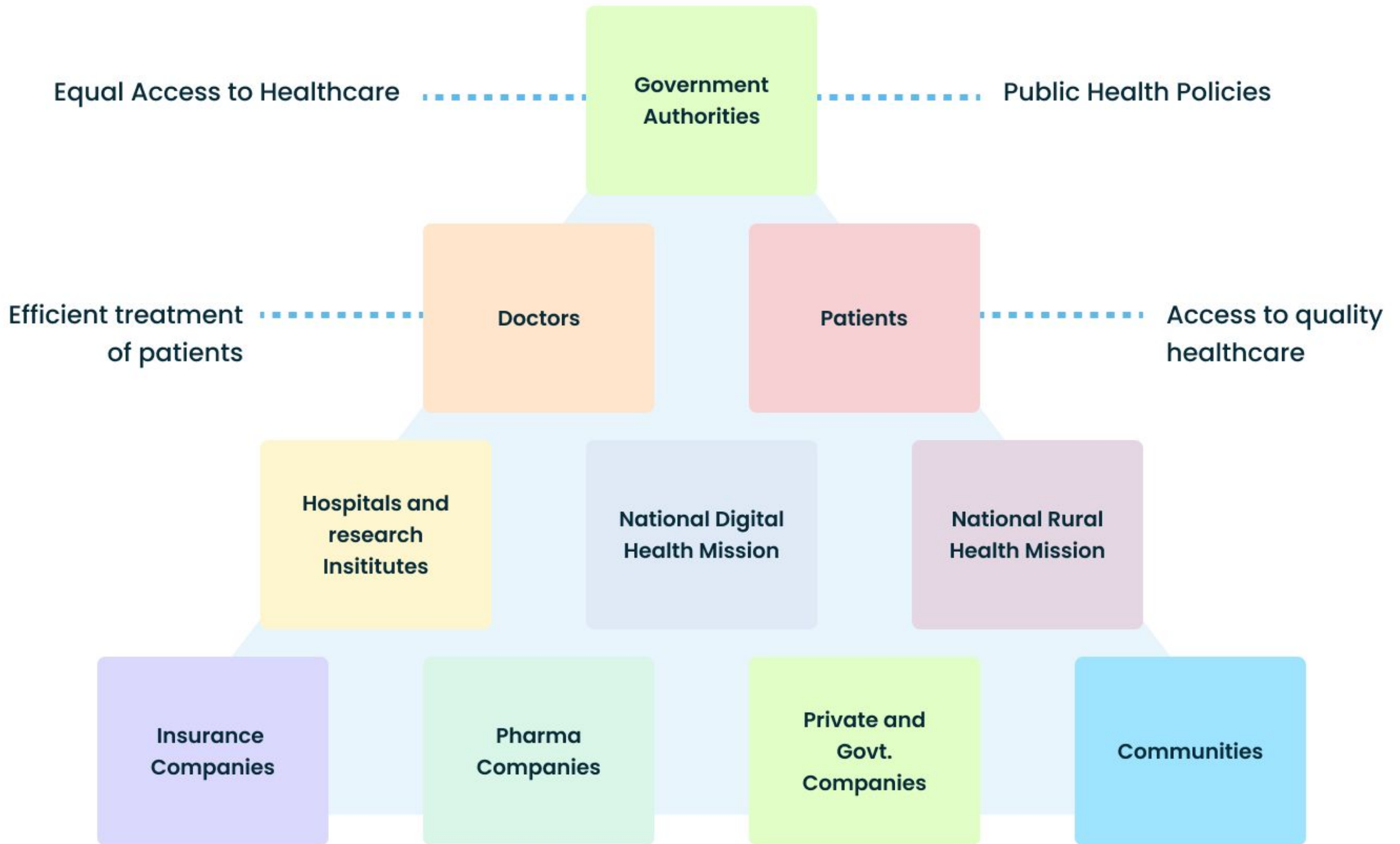
*"Due to COVID, our resources get depleted faster and we are not able to manage it while we also have pressure from authorities to maintain logs"*

*-Resource Manager at a PHC*

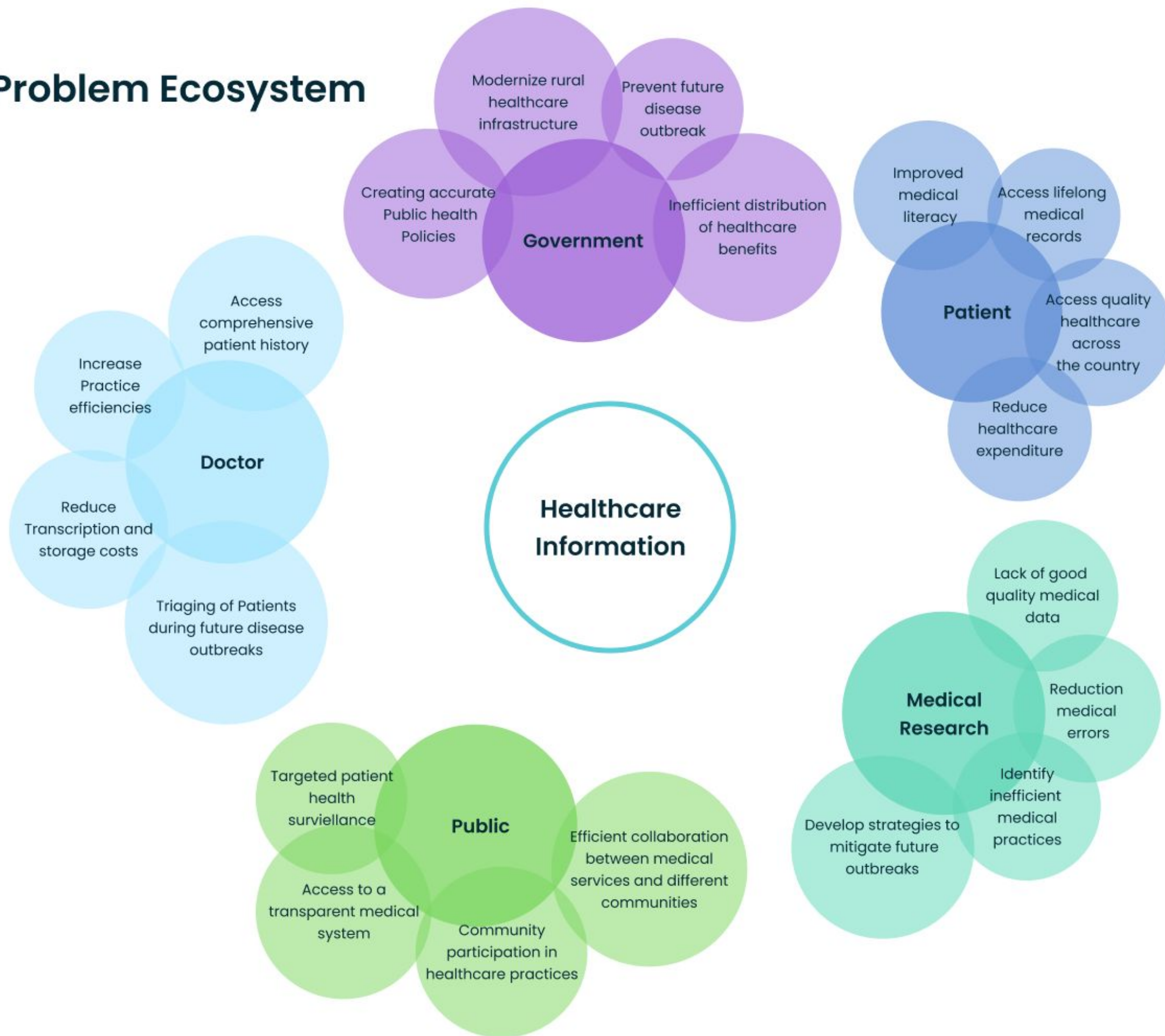
*The statements gave us more in-field insights about problems and issues people face regarding healthcare system and information.*



# Potential Stakeholders



# Problem Ecosystem







**Introducing**



**SARTHI**

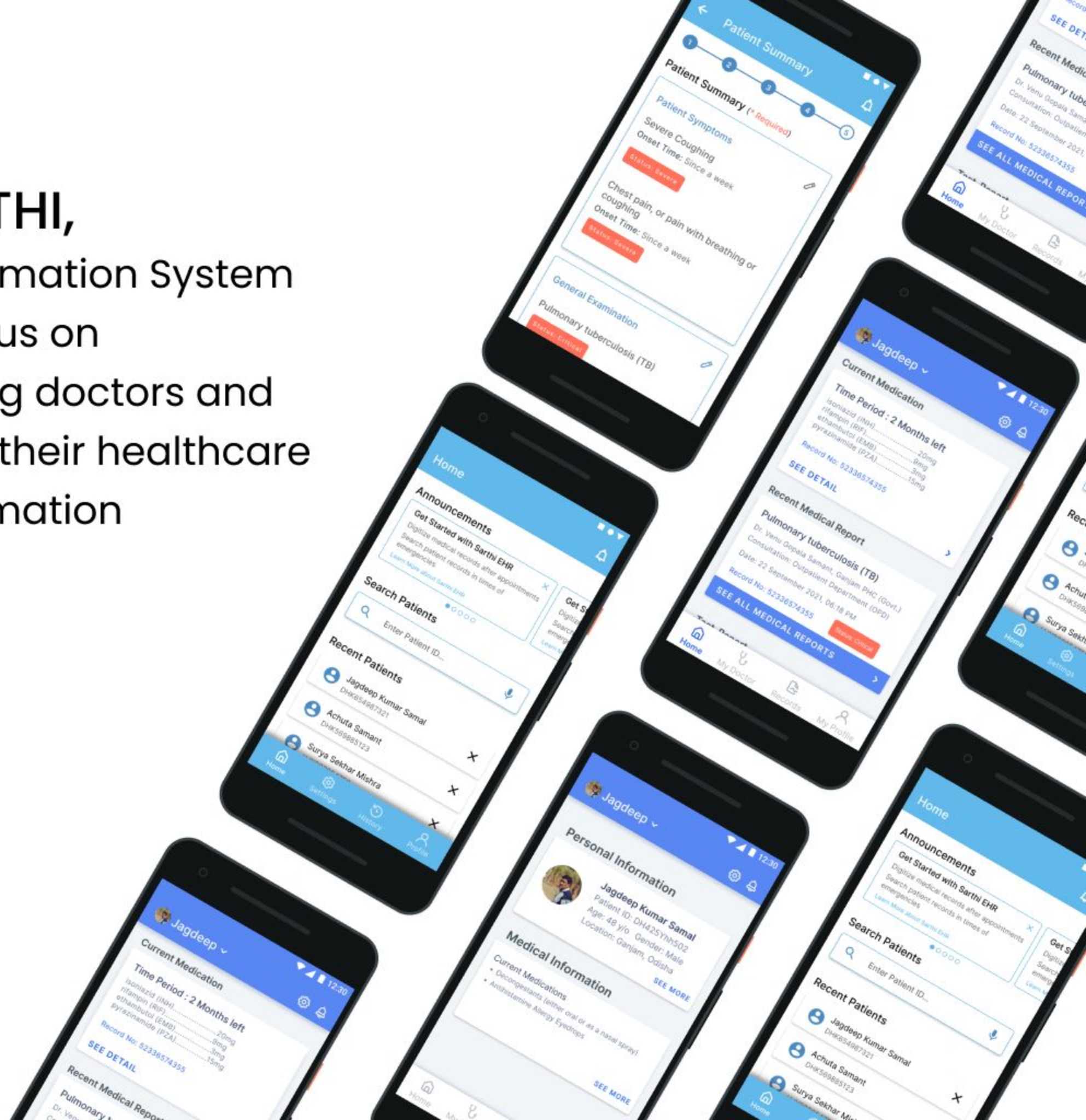
System of Accessible & Rapid Treatment Healthcare Information

*"Aapke jeevan ka saathi"*



# Solution

Introducing **SARTHI**,  
a Healthcare Information System  
designed with focus on  
accessibility helping doctors and  
patients manage their healthcare  
& treatment information





## What makes SARTHI so Special ?

*“Aapke Jeevan ka Saathi”*

### Lifetime Care

SARTHI enables patients and doctors to maintain up to date medical records for use during emergencies, natural disasters and disease outbreaks. By maintaining an Audit trail and only allowing verified individuals to update SARTHI, we ensure quality and safety of medical records of patients.

### Inclusive Care

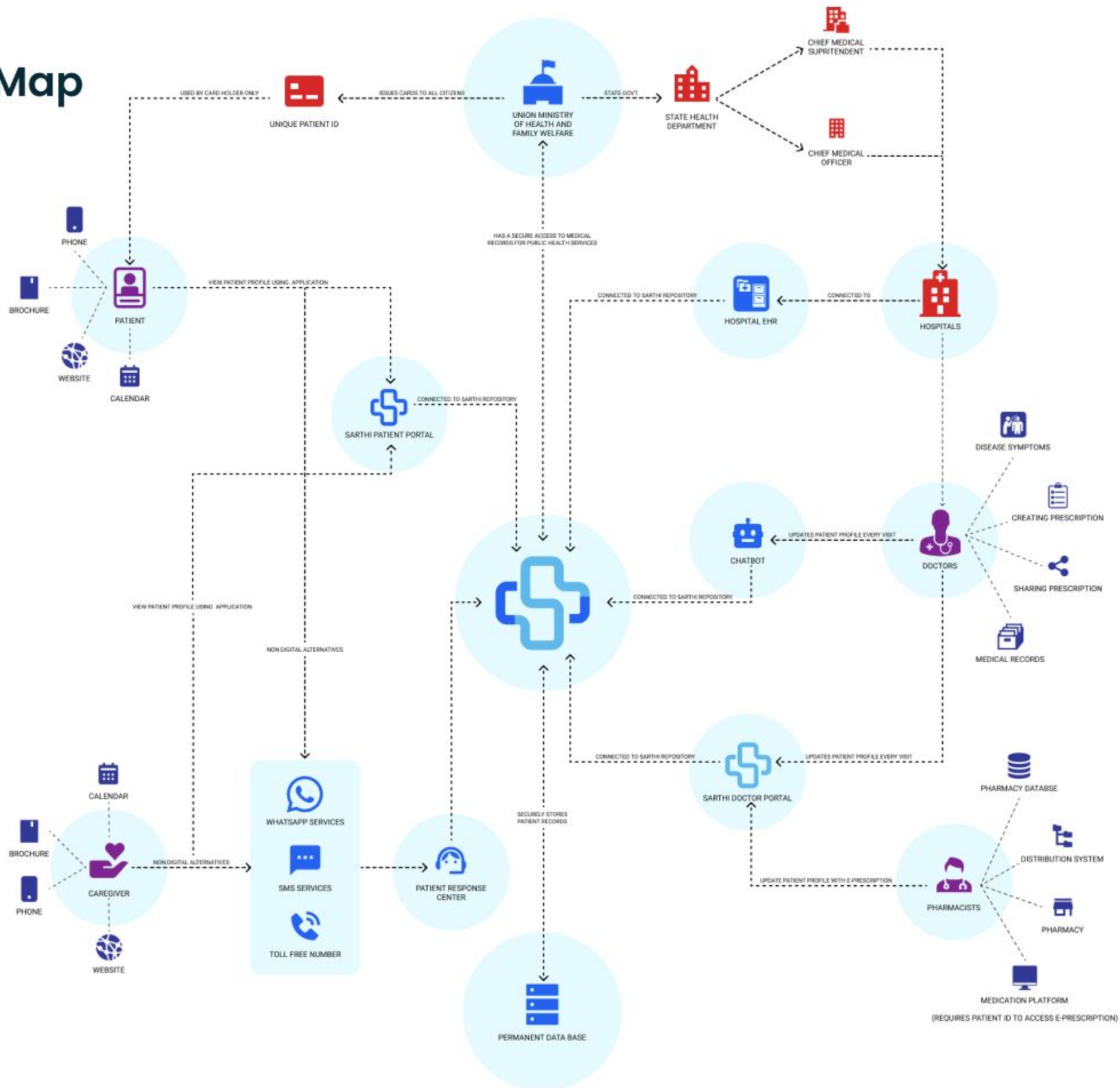
SARTHI enables multiple channels for patients to access records through SARTHI Patient Portal App, SMS services, WhatsApp and Toll Free Number. The medical records contain patient summaries, E-prescriptions and detailed medical reports. Registered doctors maintain medical records using SARTHI Doctor Portal App and SARTHI Fast Records Update Services for regions with weak internet connectivity.

### Affordable Care

SARTHI improves efficiency of clinical and administrative workflow and creates a transparent system enabling patients on SARTHI to make educated healthcare decisions. SARTHI empowers citizens to access government schemes for its social and financial benefits.



# System Map



(A CENTRALISED REPOSITORY OF PATIENT RECORDS FOR INDIA)

Logo



# SARTHI





# Typography

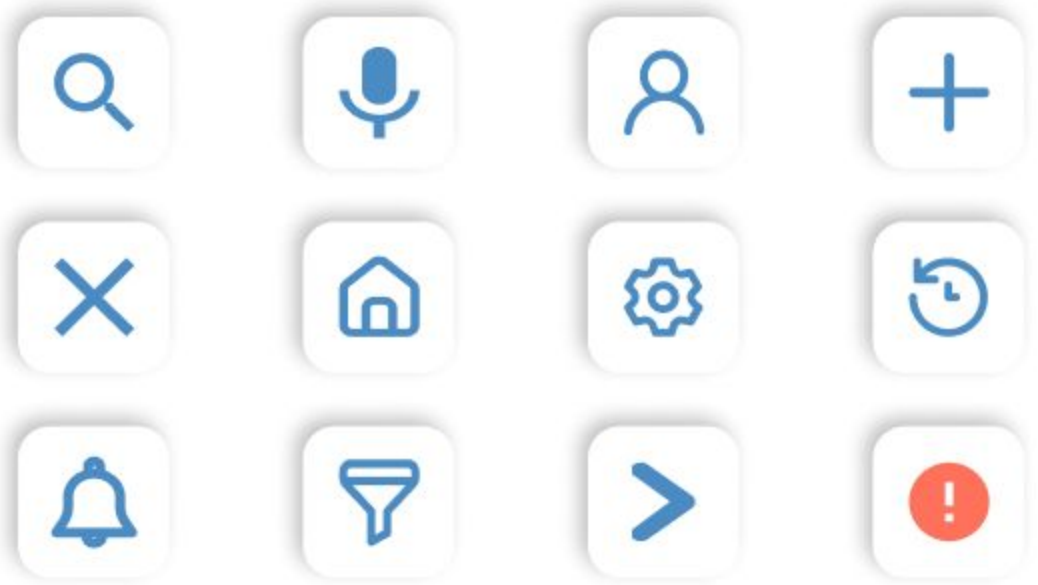


# Inter

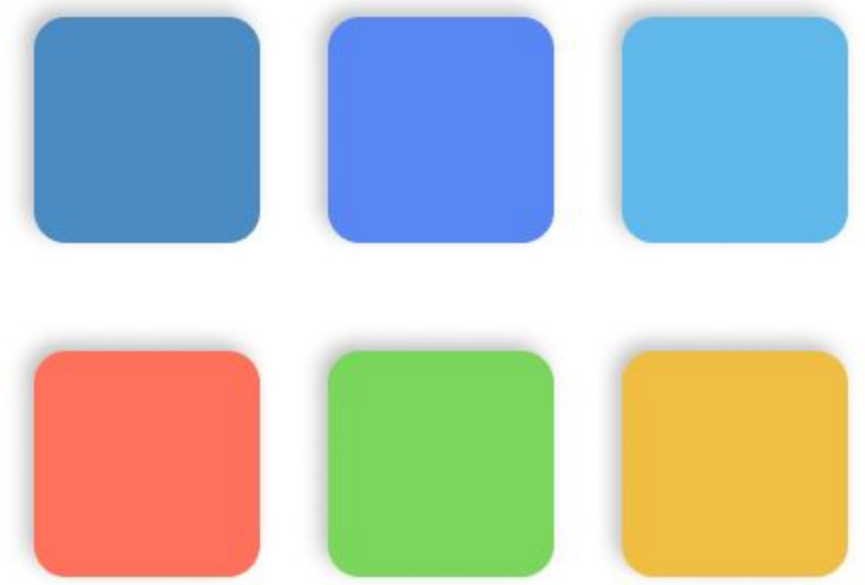
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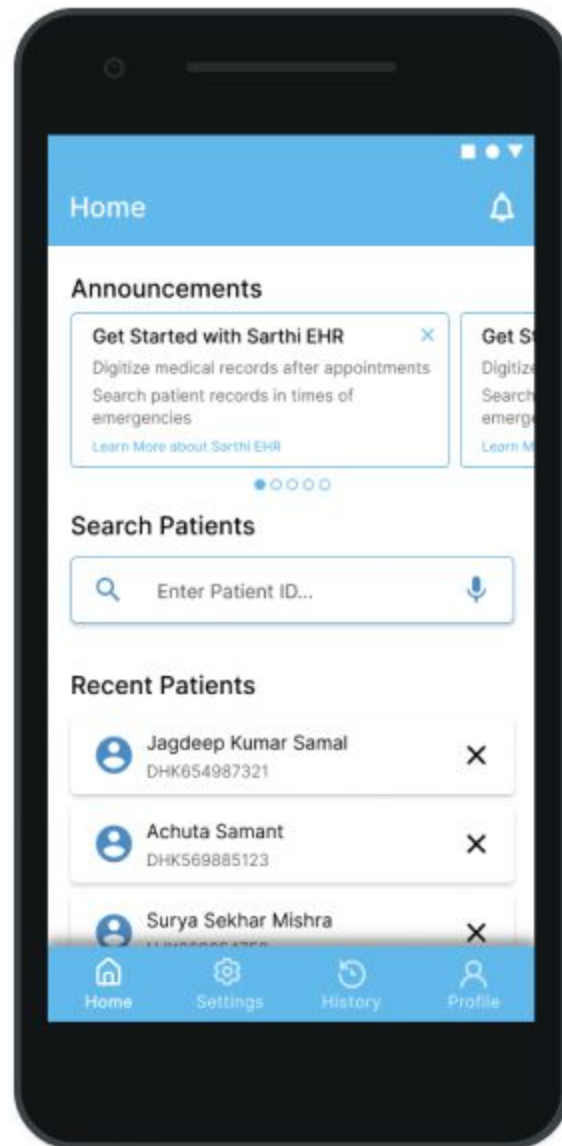
# Iconography



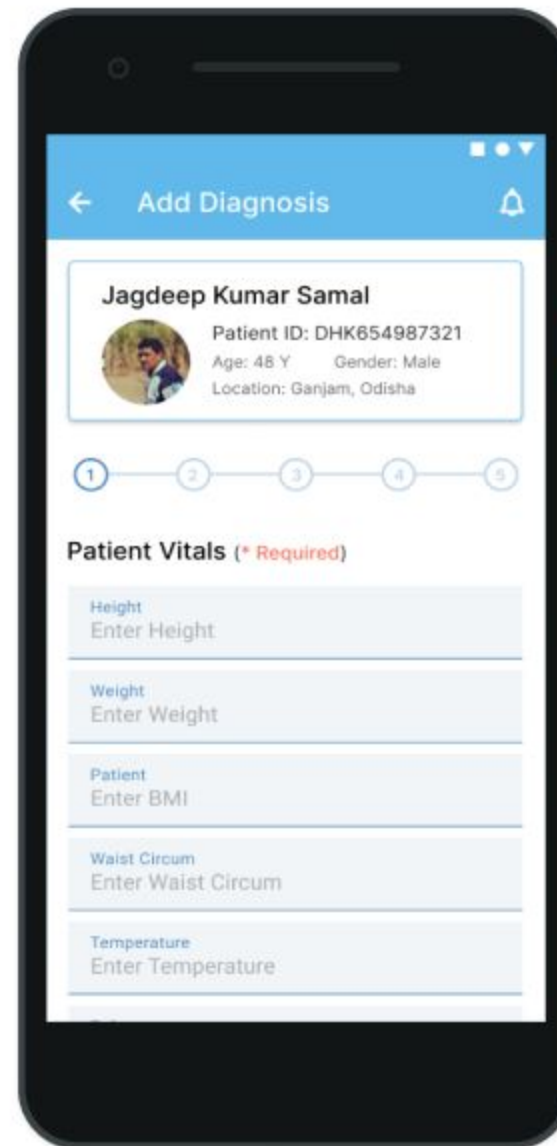
# Colour Palette



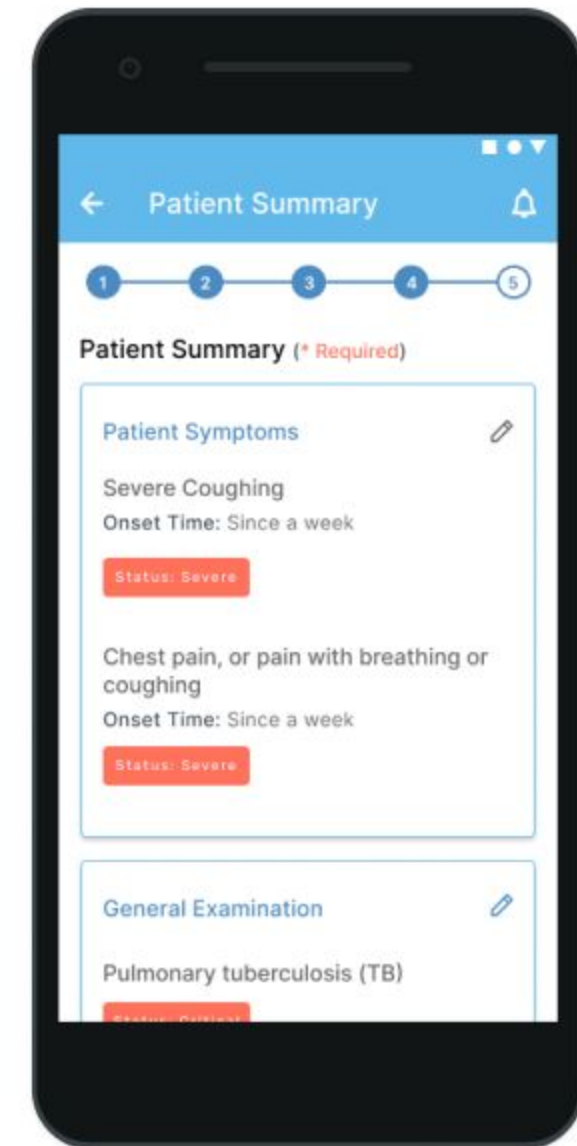
# U.I Screens



1. Search Patient Profile to update EHR after appointment
2. Access Patient medical reports, patient summaries and prescriptions
3. Search Patient Profiles to find high risk patients treated by you.



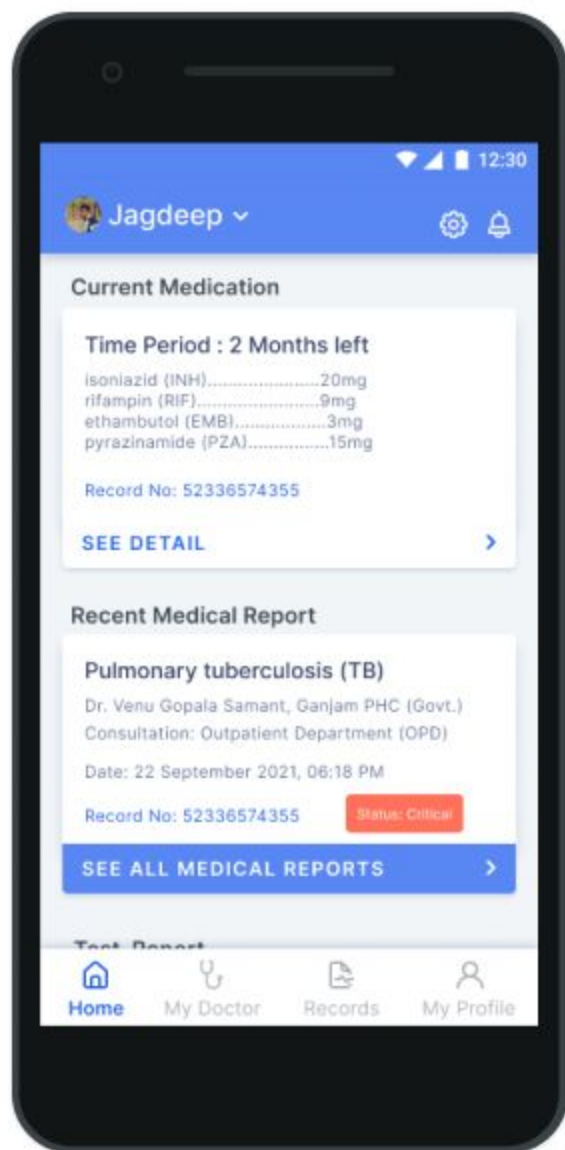
1. Update patient's EHR easily with your mobile phone without any hassle.
2. Intuitive UI to promote quick updation of EHR and reduce load on doctors during work hours



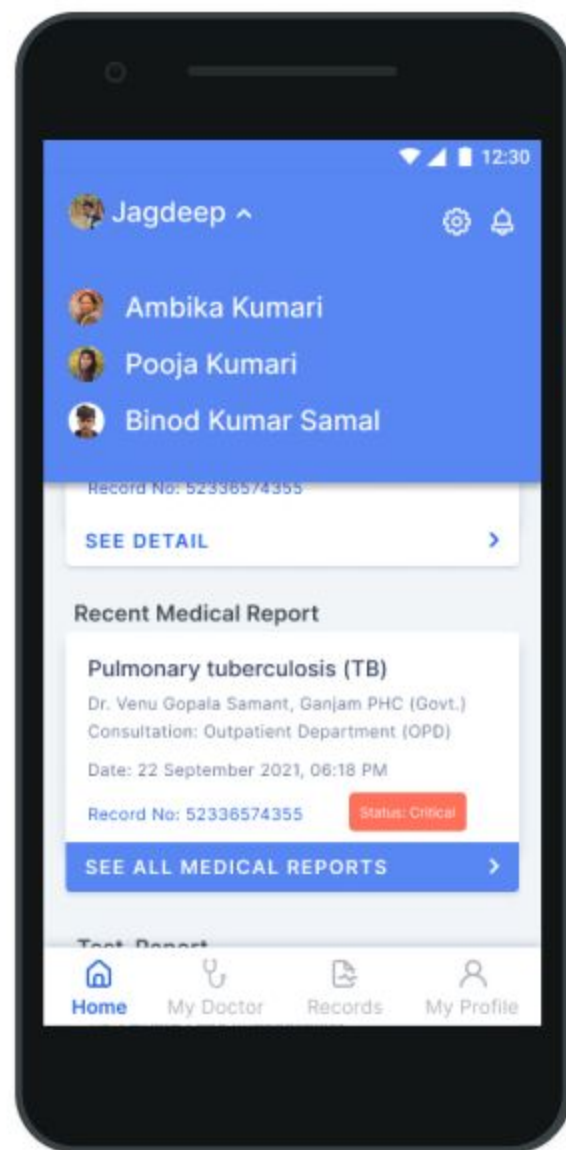
1. View and edit patient summary of your medical diagnosis.
2. Approve updation of EHR to patient profile with your personal approval ID.



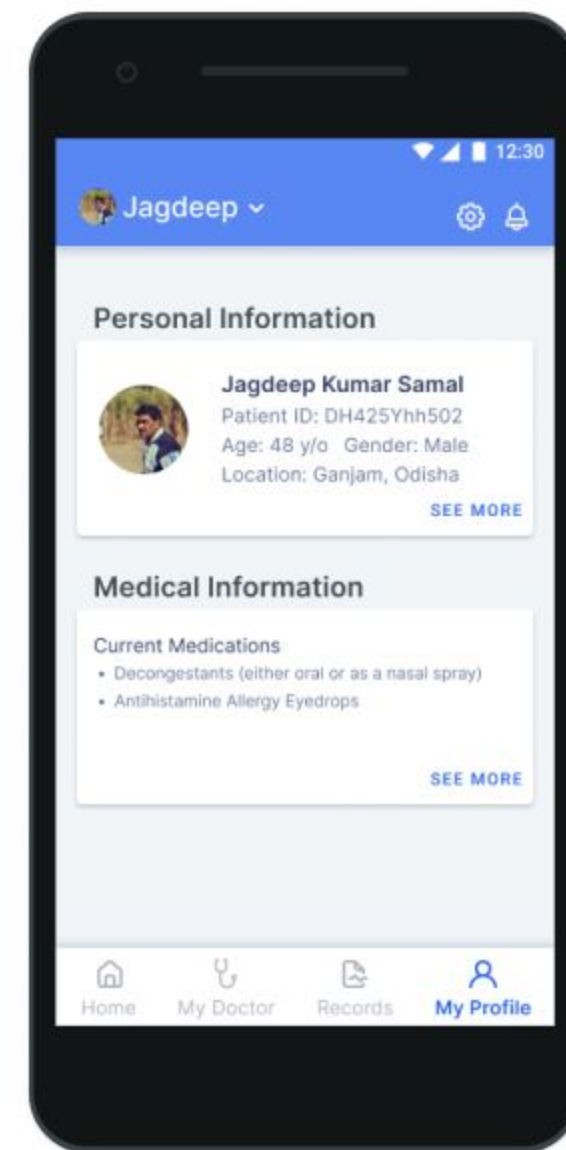
# U.I Screens



1. See current medications and reports with your patient portal App
2. Access latest prescriptions and reports for appointment.
3. Access your entire medical history in one go.



1. Create and maintain multiple patient profiles of your family from a single device.
2. Edit, share and track your family member's patient profile without affecting other's medical records



1. Access and edit personal health information and keep it up to date.
2. Access your permanent medical history, reports and archived prescriptions.

# User Experience Principles Followed....

## Gestalts Laws

Gestalt Principles are principles/laws of human perception that describe how humans group similar elements, recognize patterns and simplify complex images when we perceive objects.



Hence, while designing our solution we made sure that the information and visual elements on the platform followed these Laws for a better perception from the users of the platform.

## Jakob's Laws of Internet

People spend most of their time on internet websites & applications.

This means that users prefer our application or website to work the same way as all the other sites or apps they already know, hence a conventional design language must be followed.



Hence, we designed the platform such that it follows a similar design style like other applications which are commonly used by people.

## Miller's Magic Numbers

A human can have only 7 (+ or - 2) pieces of information in their short-term memory at a single moment.

Hence chunking information into smaller, more logical groups, makes it easier for users to remember, navigate, and choose between them.



Therefore we limited the pieces of information we provided in a region/screen so that it does not confuse or overwhelm the user.



# User Experience Principles Followed

## Fiits' Law

The time needed to make a single movement to a resting position over a target is influenced by the distance between the starting point and the target & it's size.



Hence we kept the size and distance of buttons and other elements in the nominal distance so that user don't take too much time.

## Hick's Law

The time taken to make a decision increases as the number of options or choices increases



Therefore we made sure to provide the right the number of choices and option to choose from for the user

## Aesthetic-Usability Effect

Good Looking Design is perceived as more usable than one that is less appealing, whether or not that is actually the case.



While we mostly focused on function over form we still made sure that the platform followed good aesthetic usability so that users perceive it as easy to use than seeing it as a complex platform.

# Benefits of SARTHI for...



## PATIENT

### Medical Reimbursement

Ease of Medical reimbursement and cashless transaction for patients during treatment in hospitals for life threatening illness and Expensive medical procedure.

Reduces effort for employers to process reimbursement claims and support patients during need.



### Efficient Healthcare Program

Improved access to vaccination and other healthcare programs in urban and rural India by helping patients and doctors conduct targeted medical surveillance in affected communities.



### Standardised Medical Records

Life long access to standardised medical records can improve interoperability of medical records between institutions and assist patients in retrieving medical records for treatment within and outside india.





# Benefits of SARTHI for...



## HEALTHCARE SERVICES

### Modernize Rural Healthcare

Integrating rural healthcare into the Digital healthcare system can improve accessibility of doctors and communities to specialists, new treatments and modern technology for efficient treatment of diseases.



### Accurate Public Health Policies

Designing accurate healthcare strategies during disease outbreaks can improve with access to updated medical records.

Use of medical records by different levels of government can improve our ability to fight the pandemic.



### Standardised Medical Records

Identifying high risk patients during future disease outbreaks using medical records to reduce avoidable deaths in affected communities across the nation.

It can also help in creating localised public policies based on needs on the ground.



# Benefits of SARTHI for...



## ECONOMIC PROGRESS

### Cost Reduction

Reduce administrative effort and costs in companies, hospitals and government agencies by introducing a digital platform accessible to all stakeholders and requiring minimum training and maintenance.



### Streamline Insurance Claims

Streamlining medical insurance claims of patients during emergencies and disease outbreaks. It can also remove the bureaucratic red tape and create a working channel between stakeholders.



### Improve Practice Efficiency

Automate and streamline medical history and data for practice efficiencies in hospital management, research institutes, companies and government offices.

Automation can reduce human errors in medical research, treatment and assist in quickly developing new treatment methodologies.





# Sustainable Pillars of SARTHI

## People

SARTHI is a system that is built on transparency, accountability and trust. The design intervention is socially sustainable as it maintains standardised medical records of all patients and ensures access to it.

The system strives to maintain social harmony, cohesion and encourage improvement in public health of Indian society.



## Planet

SARTHI reduces the carbon footprint of the healthcare industry by decreasing the use of natural resources in the administrative and clinical workflow.

It strives to slowly eliminate the use of paper and physical printing by shifting Indian healthcare to cyberspace aided by the expansion of high speed internet connectivity.



## Profits

SARTHI maintains for-profit economic ties with its customers in private sector industries including healthcare as well as government backed organisations and companies. Our mutually beneficial relationship with the stakeholders can help offset the cost incurred by our system in extending the use of SARTHI to villages, PHCs, CHCs and sub centers.

With support from the government of India, the system has the capability to serve underserved communities and unify the scattered healthcare system of India.



# Business Model





# Value Proposition

## Pain Relievers

Safe and accessible storage of medical records

Increased efficiency in medical reimbursement

Reduction in healthcare cost

Increased patient participation

Improve medical literacy among patient

Improve access to govt. programs

## Gain Creators

Efficient creation of lifelong medical records

Efficient documentation of lifelong medical records

Ease of Operation of Apps

Portable and light weight

Ease of access to lifelong medical records

Multiple channels of access to patients

## Pains

Loss of important medical records

Unable to access records during emergencies

Inaccurate PHP due to lack of Data

Obstruction in identifying high risk patients

Lack of patient participation in healthcare practices

Lack of quality patient data for medical research

## Gains

Reduction in healthcare cost

Prevention of large scale disease outbreaks

Easy medical reimbursement and transactions

Medical records accessible at fingertips

Improved access to quality healthcare

Standardised medical records across the country

## Product & Services

SARTHI Doctor Portal

SARTHI Patient Portal

Patient Response Center

SARTHI Fast Records Update Services

## Jobs to be done

Access to lifelong medical records during emergencies

Access to Govt. healthcare programs in rural and urban India

Fast clinical workflow in govt. and private hospitals

Patient tracking & implement preventive measures during Outbreaks

## Future Prospects

SARTHI collections of medical records can help in medical research of treatment for important life threatening diseases.

SARTHI can further incorporate emergency services like ambulance services and geriatric care.

SARTHI can reduce bureaucratic red tape in administrative services like death certificates and help institutions track community health during infection outbreaks.

SARTHI can help educate and establish data driven medical practices to prevent future outbreak of novel diseases in India.

SARTHI can set and adopt international standards for medical records to ensure smooth medical tourism between the developed nations and global south.



# Thank You

Team UJJAYI