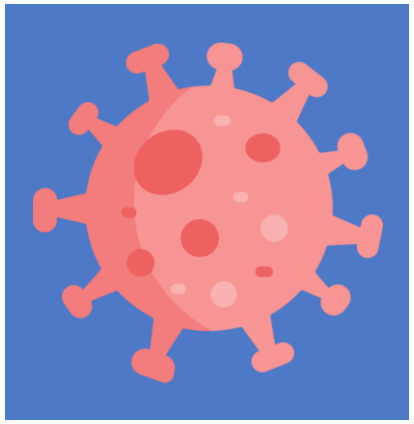
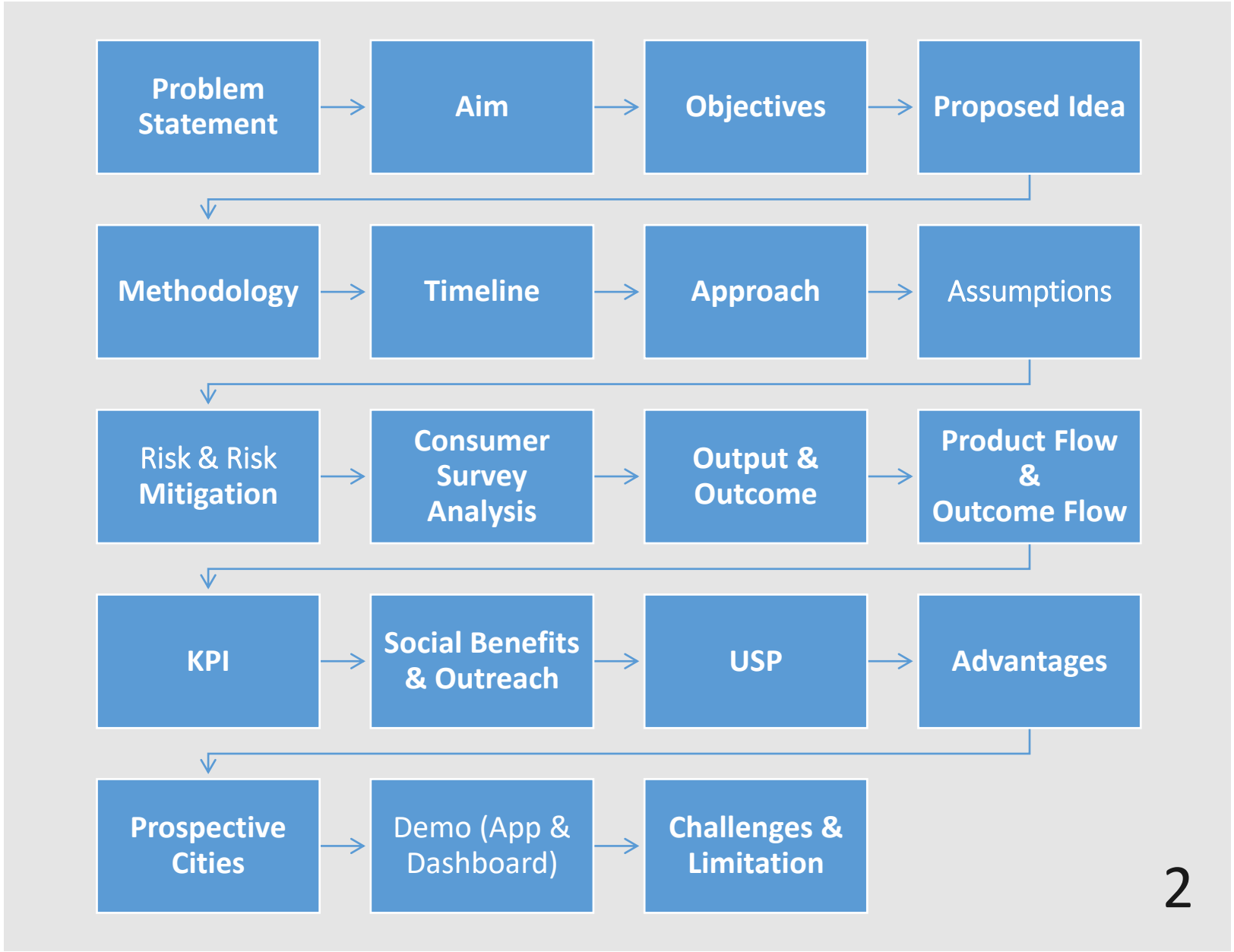
Integrated Healthcare Accessibility and Monitoring Tool



Contents


Problem Statement
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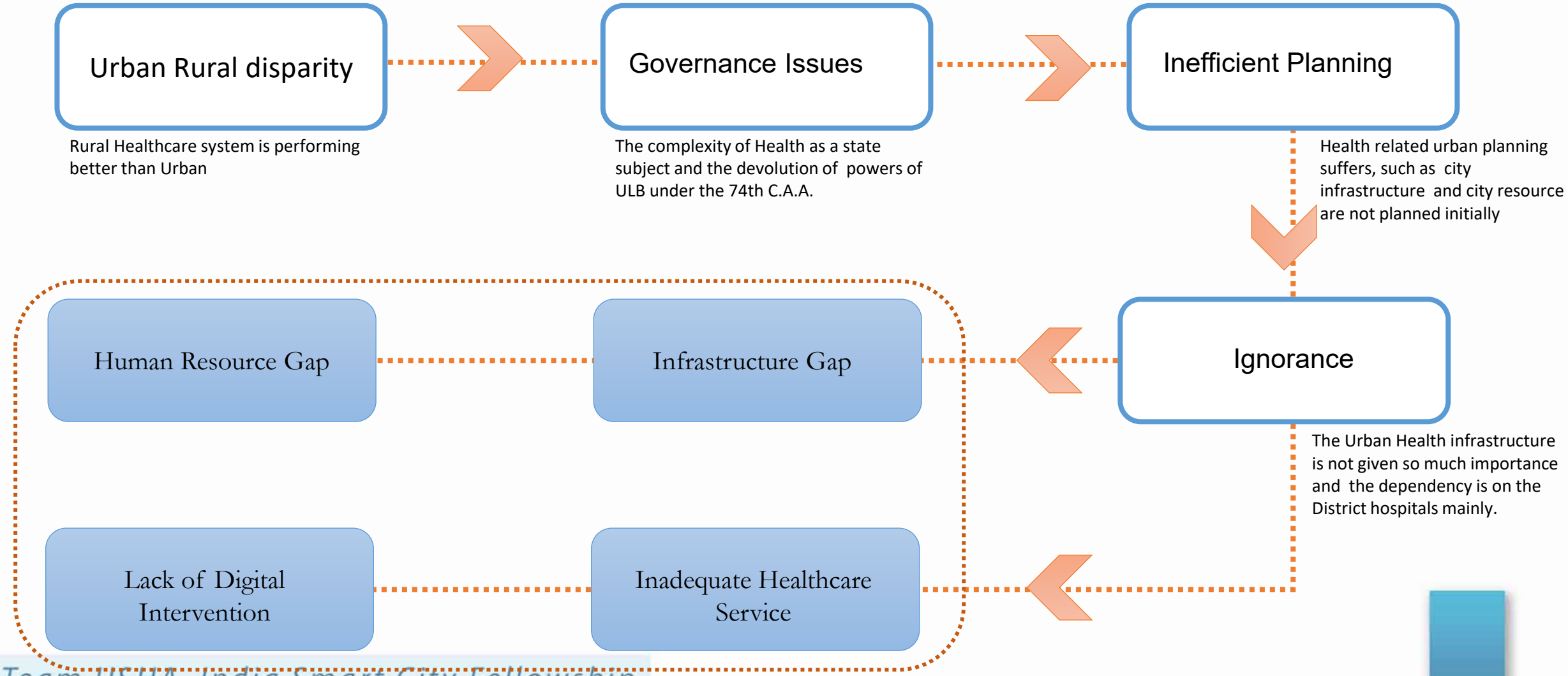
Consumer Survey Analysis
Output & Outcome
Product Flow & Outcome Flow
KPI
Social Benefits & Outreach
USP
Advantages
Prospective Cities
Demo (App & Dashboard)
Challenges & Limitation

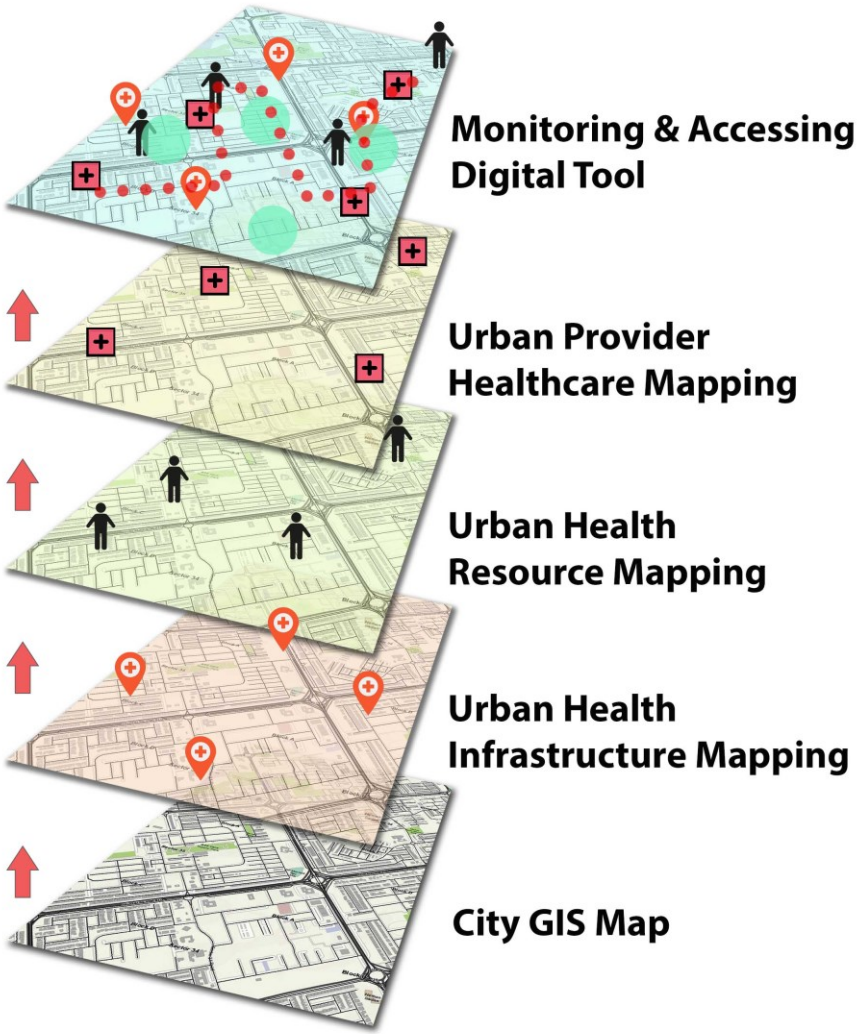
Problem Statement

Lack of proper data and ineffective mapping of healthcare infrastructure and provider leading to less accessibility, unsystematic healthcare planning and Inadequate healthcare service



Aim

To enhance healthcare accessibility for communities through integrating ULB, Service providers and citizens using data driven digital platform



Approach for Developing Tool

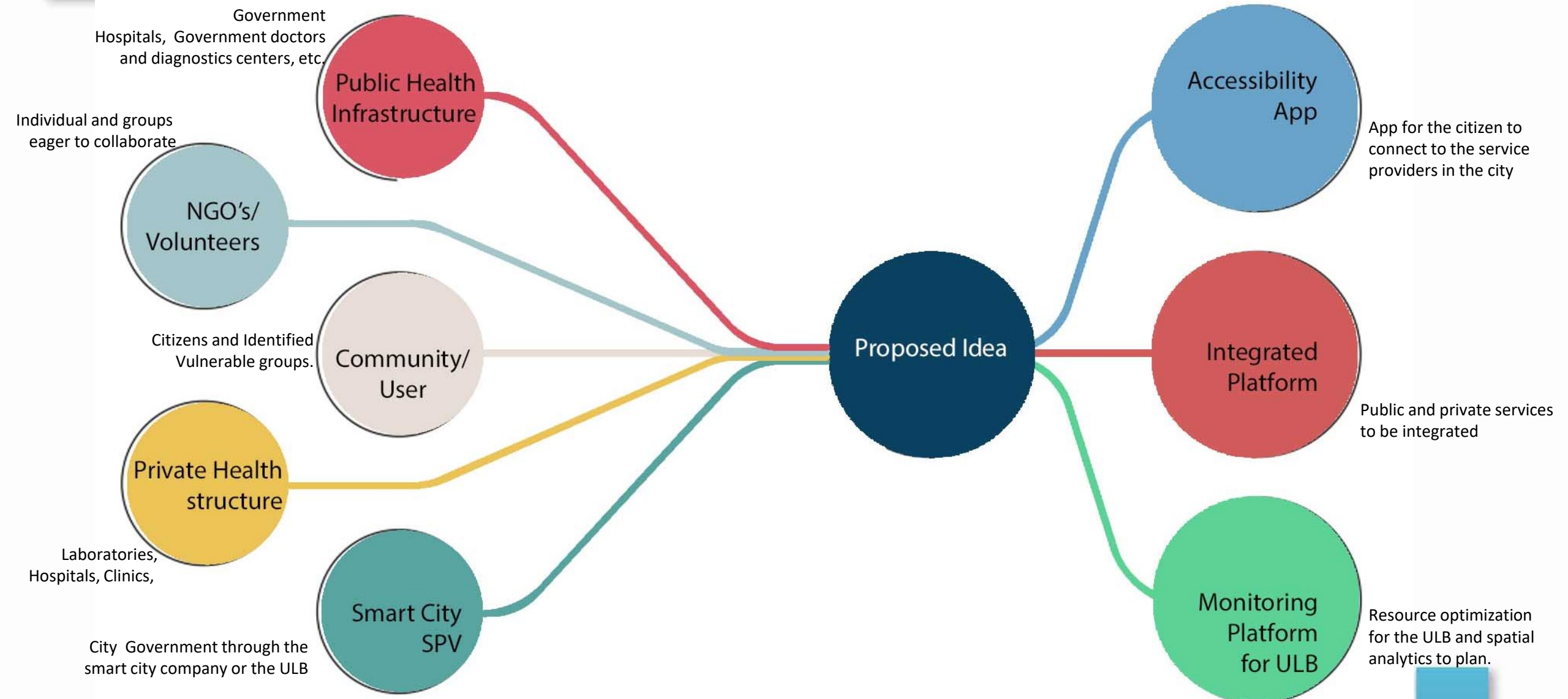
Stakeholders

- Smart City SPV / ULB
- **Citizen** & Community
- **Public** Healthcare Providers & Workers
- **Private** Healthcare Providers

Objectives

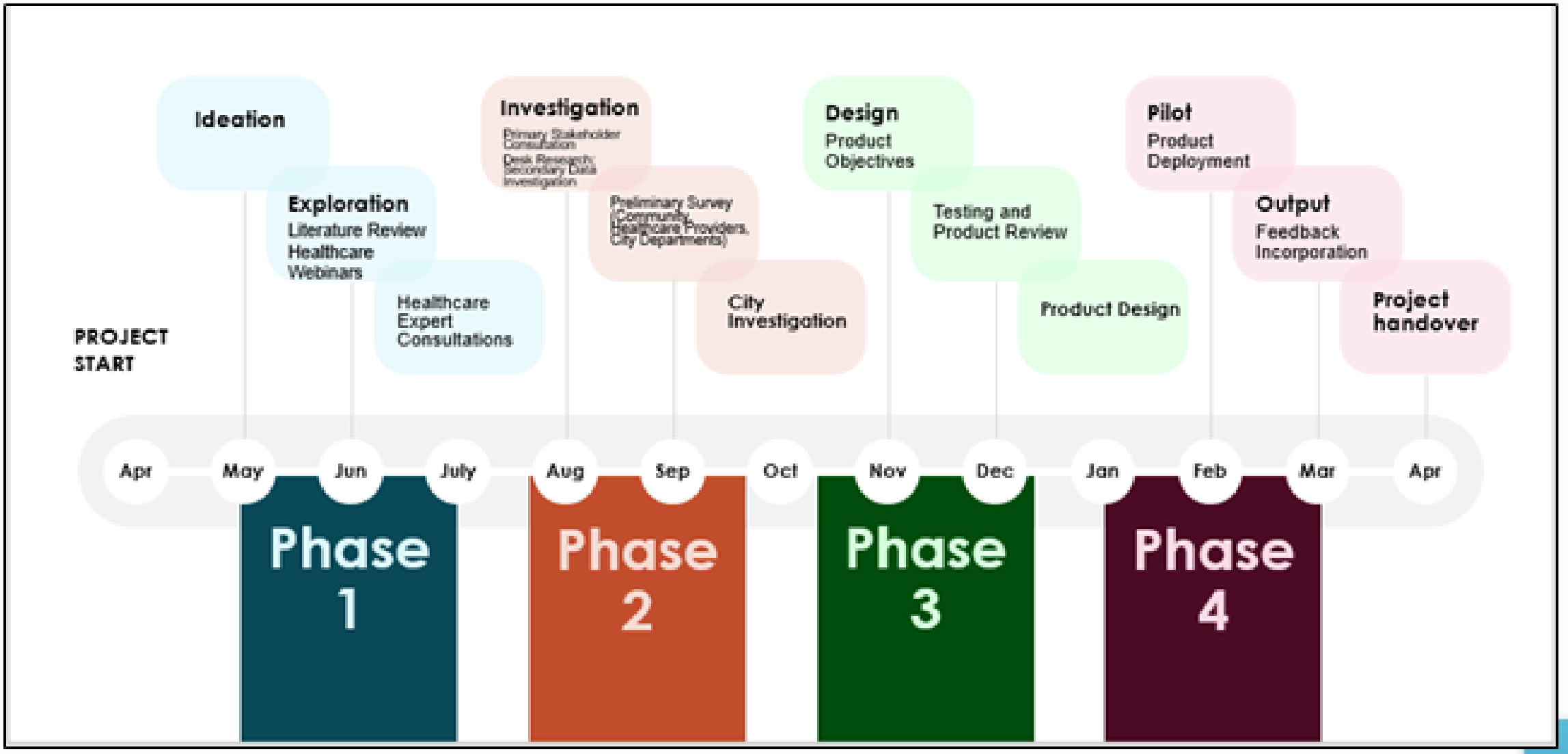
- *To explore and investigate the existing healthcare system and accessibility in urban areas*
- *To integrate data with city layer mapping (Health infrastructure (public & private), vulnerable communities, Healthcare Humar Resource etc.) using GIS/ICCC*
- *To design & develop accessibility app for citizens and healthcare workers using technological intervention*
- *To provide an integrated platform for SPV/ULB to monitor and systematically plan for healthcare services using AI and Machine learning*

Proposed Idea

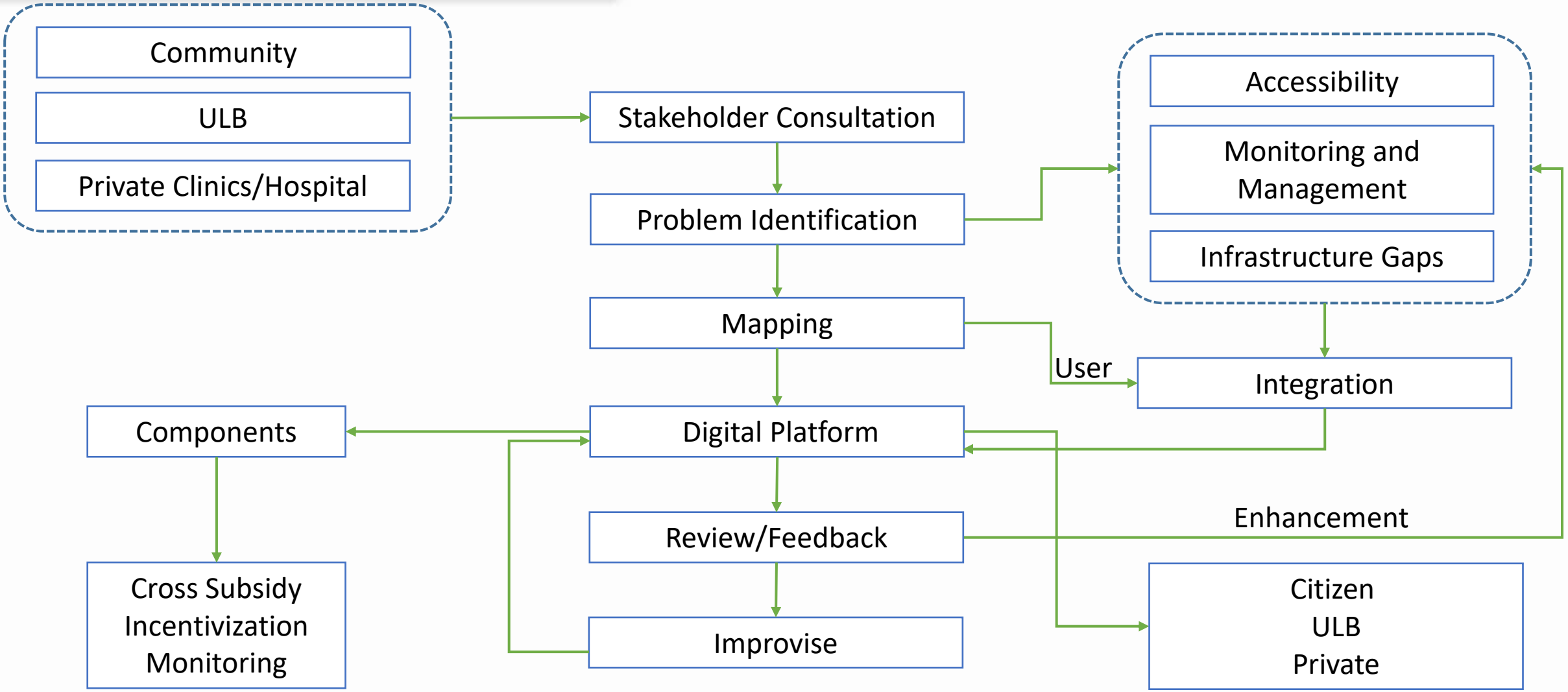


Methodology

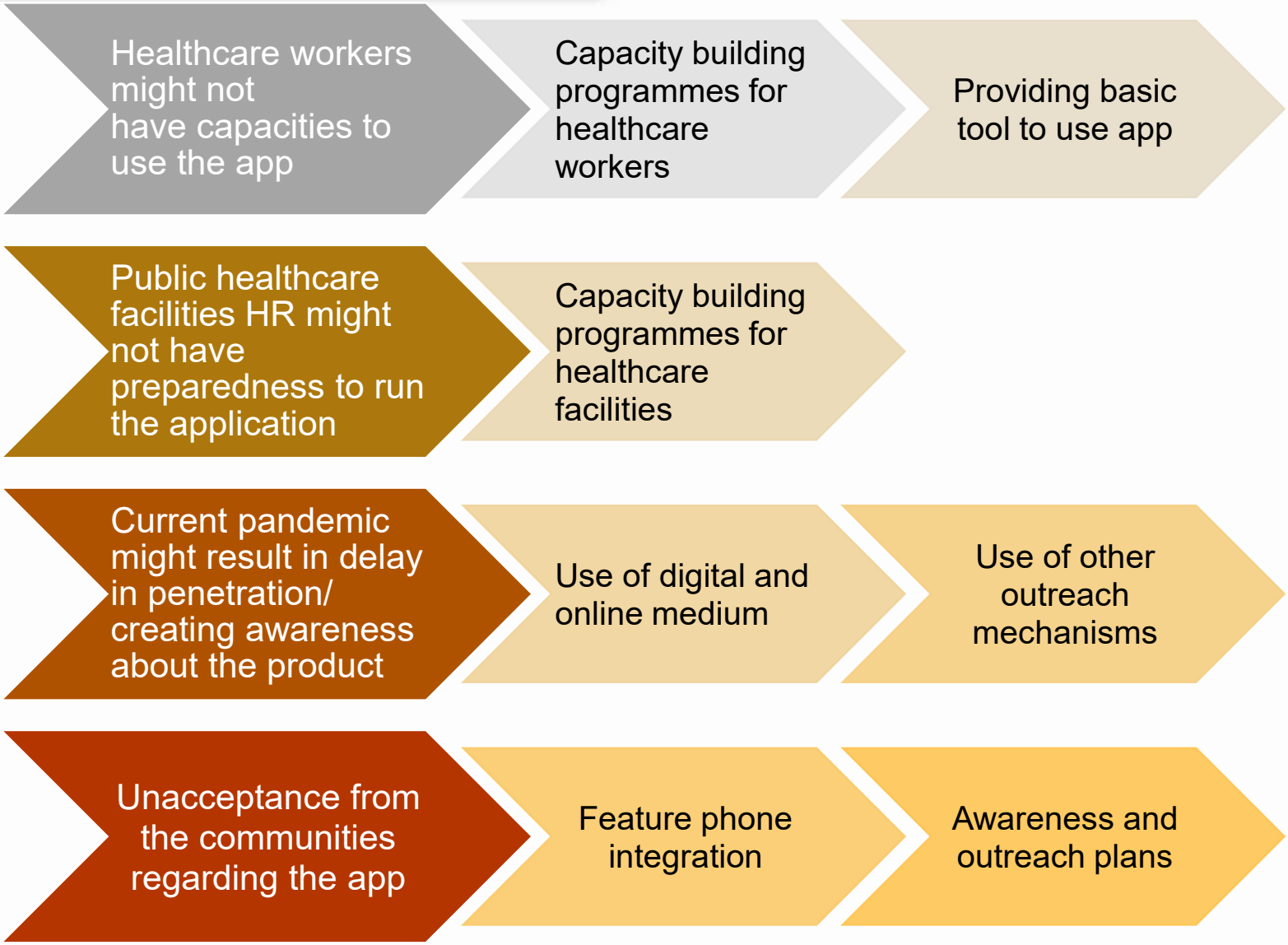
Timeline


Ideation
Investigation
Primary Stakeholder Consultation
Desk Research: Secondary Data Investigation
Design
Product Objectives
Pilot
Product Deployment
Exploration
Literature Review
Healthcare Webinars
Preliminary Survey (Community, Healthcare Providers, City Departments)
Testing and Product Review
Output
Feedback Incorporation
Healthcare Expert Consultations
City Investigation
Product Design
Project handover
PROJECT START
Apr
May
Jun
July
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
Phase 1
Phase 2
Phase 3
Phase 4

Approach


Community
ULB
Private Clinics/Hospital
Stakeholder Consultation
Problem Identification
Mapping
Digital Platform
Review/Feedback
Improvise
Components
Cross Subsidy
Incentivization
Monitoring
Accessibility
Monitoring and
Management
Infrastructure Gaps
User
Integration
Enhancement
Citizen
ULB
Private

Risks & Risk Mitigation



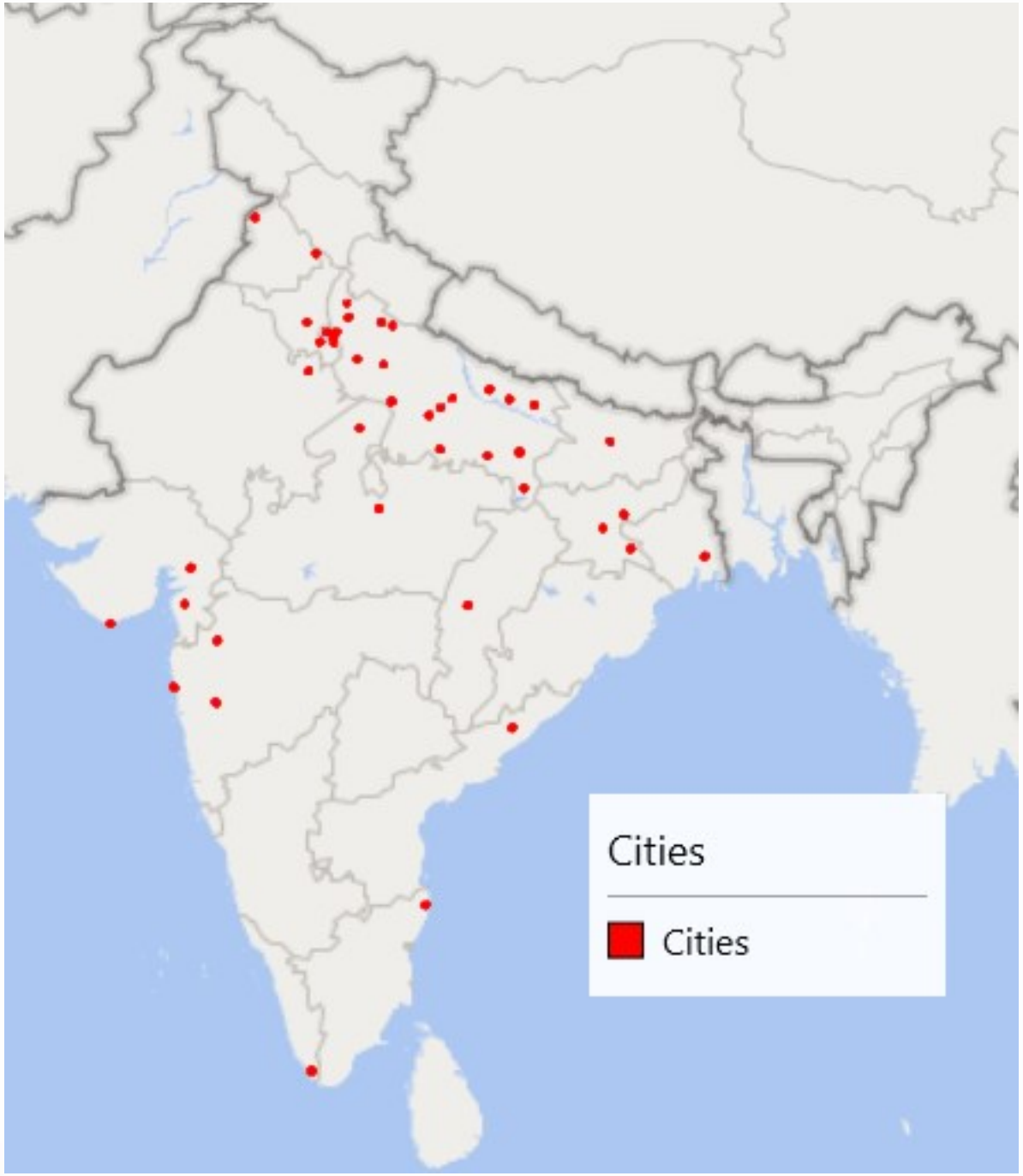
Survey Analysis

106

₹ 10,000

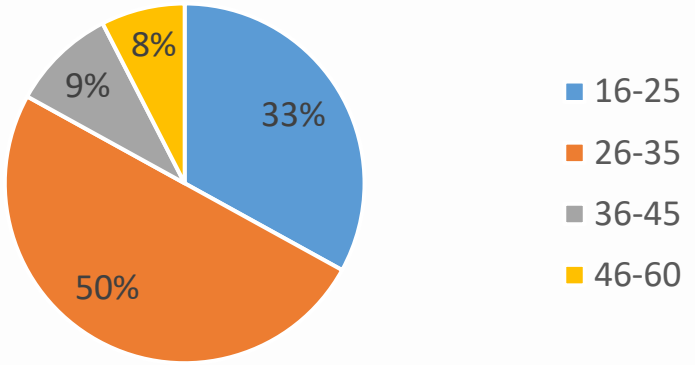
26-35 Years

Government Employee,
Private employee,
Self Employed

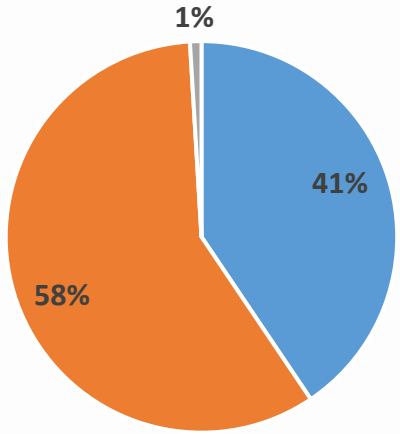


Survey Analysis - Insights

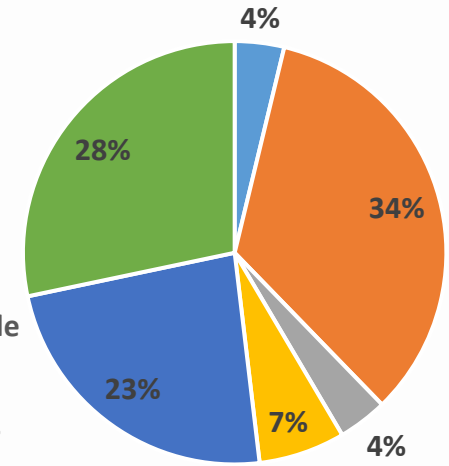
Age Distribution - Citizen Survey Online



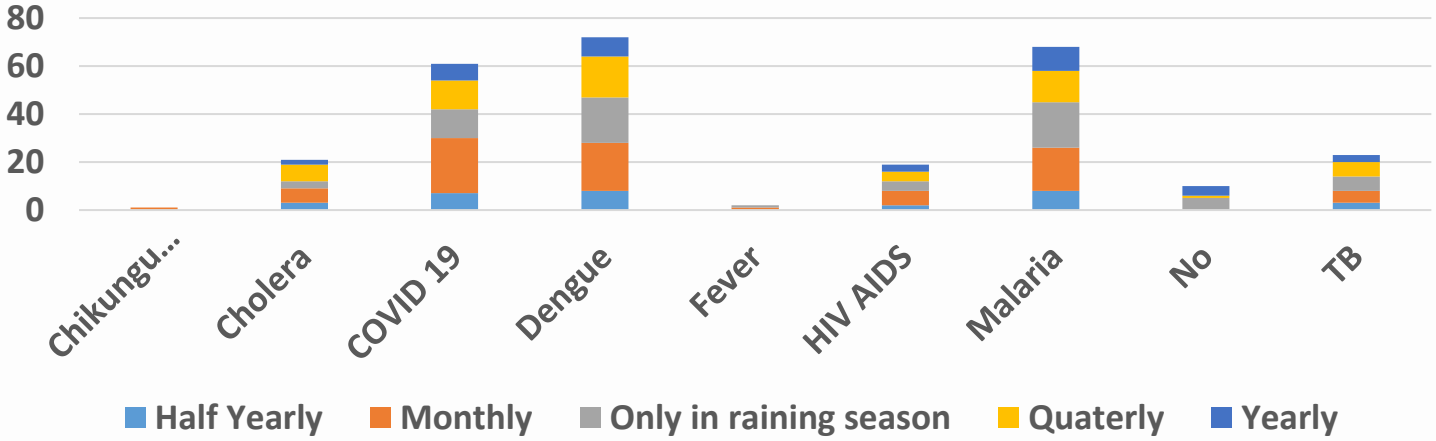
Gender Distribution - Citizen Survey Online



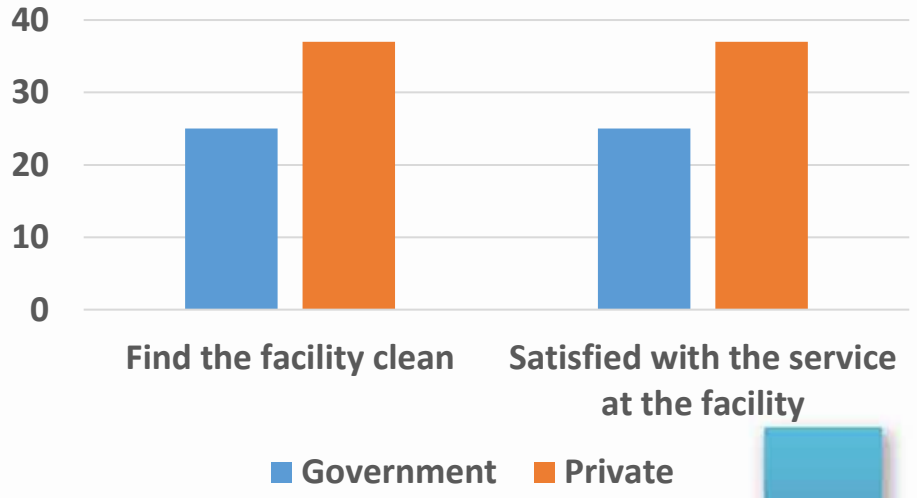
Distribution of Type of Hospital Visited - Citizen Survey Online



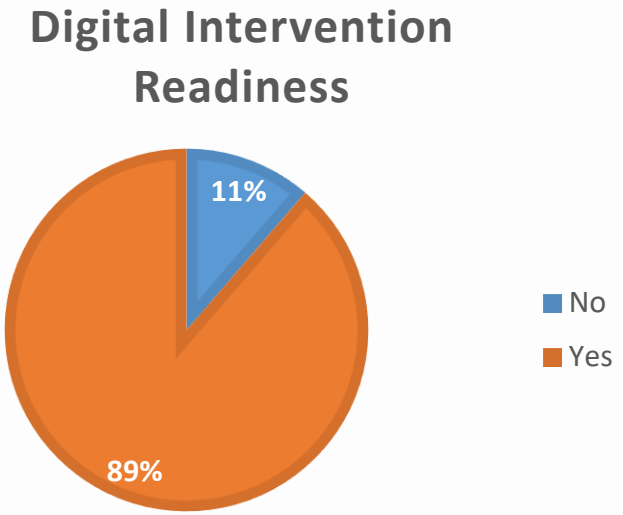
Preventive Measures by ULB wrt Disease and Time

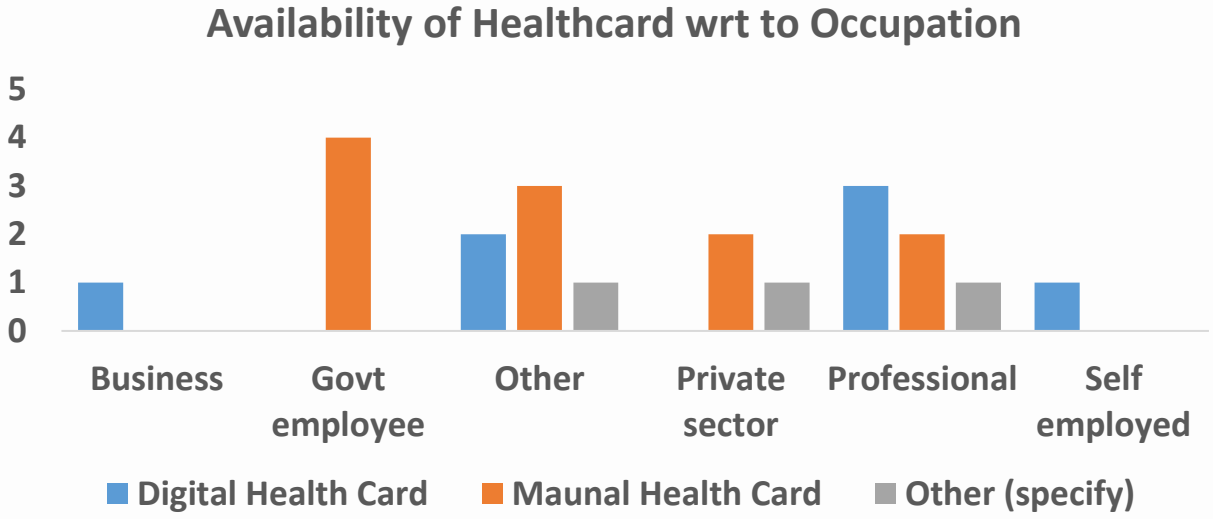


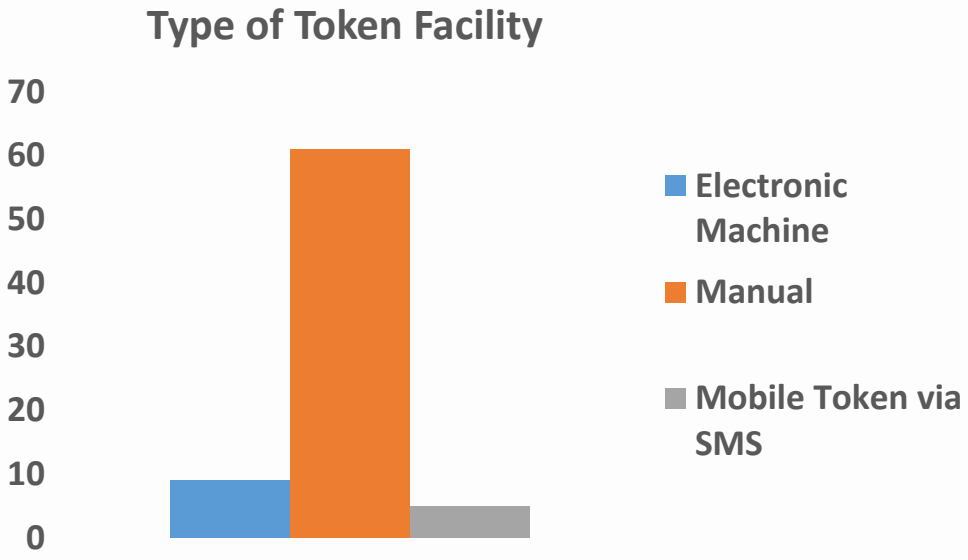
Facility Satisfaction wrt Type of facility

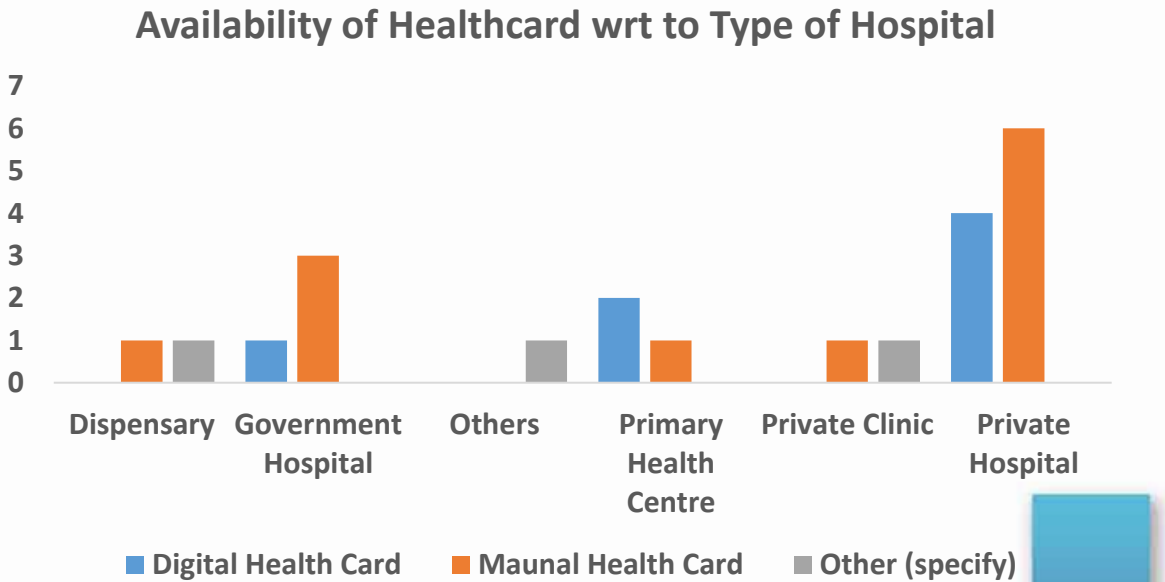


Analysis Charts – 1_Healthcard/Digital Readiness



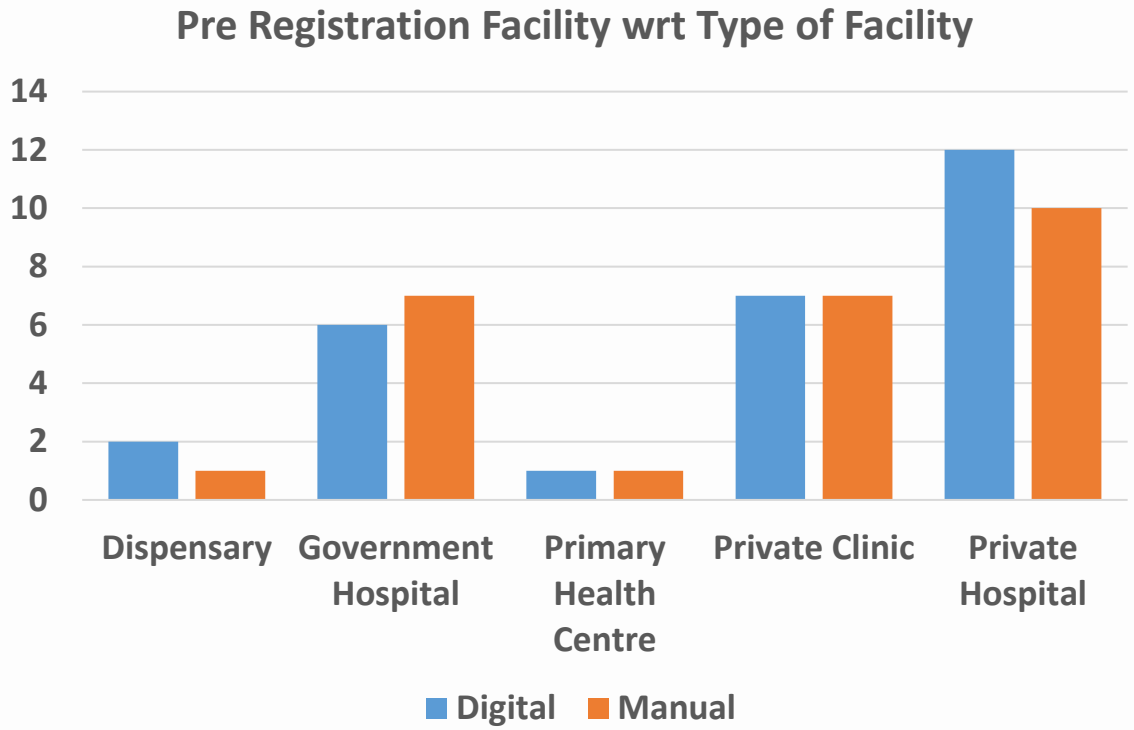


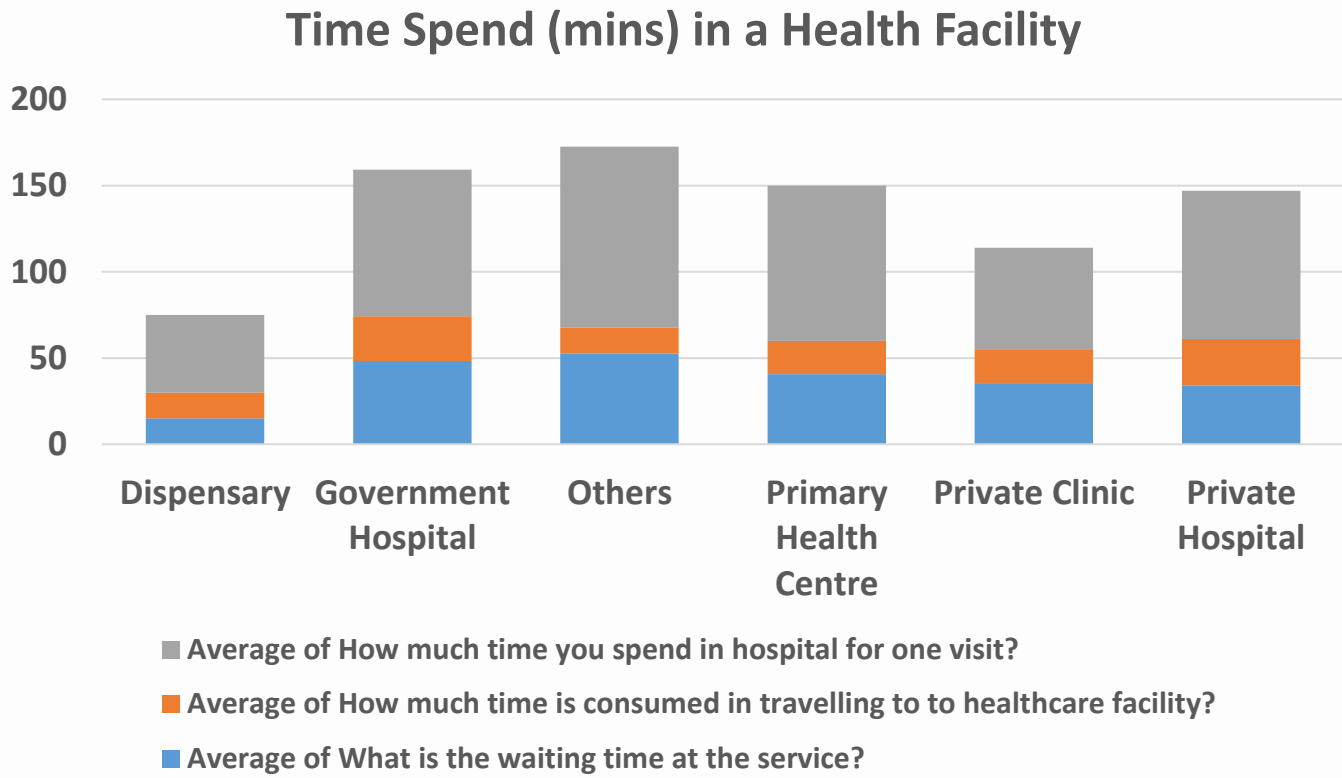




Healthcard/Digital Readiness….

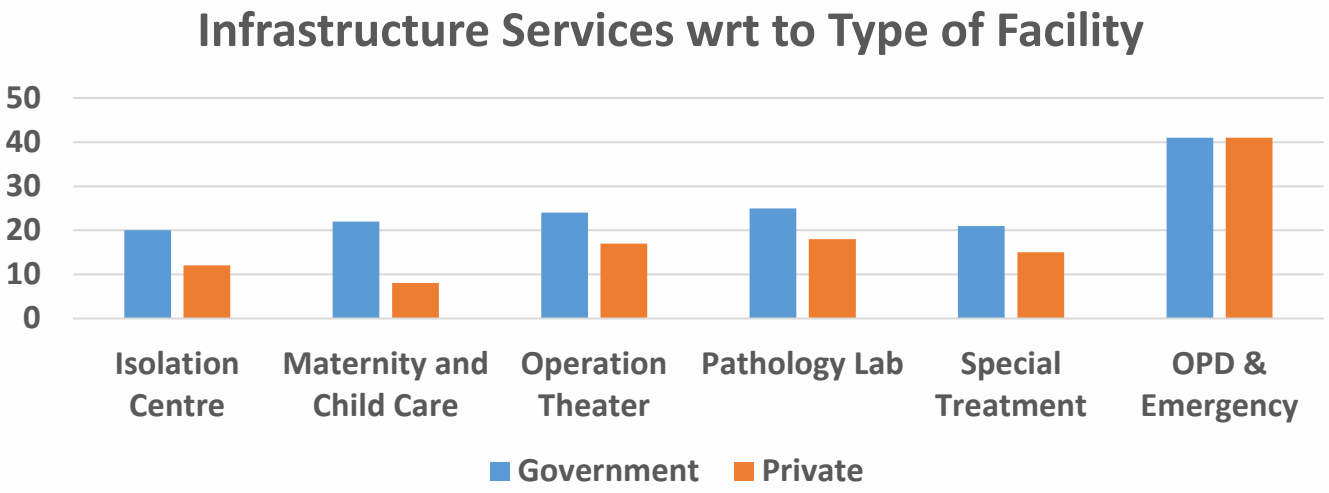
2_ Time Consumption

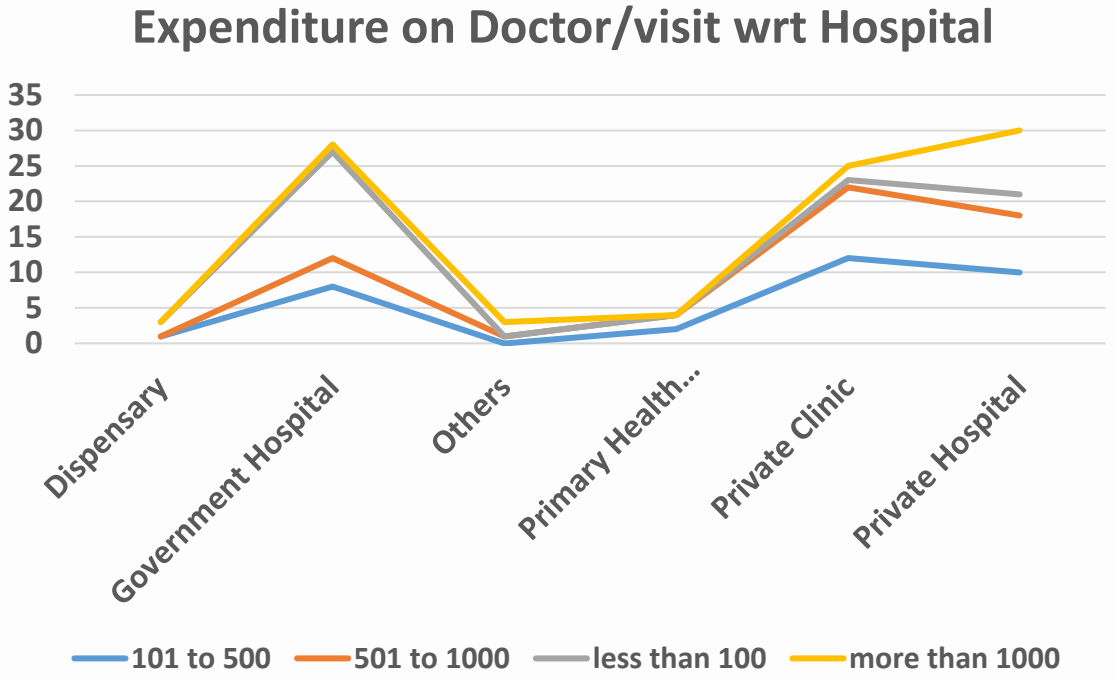


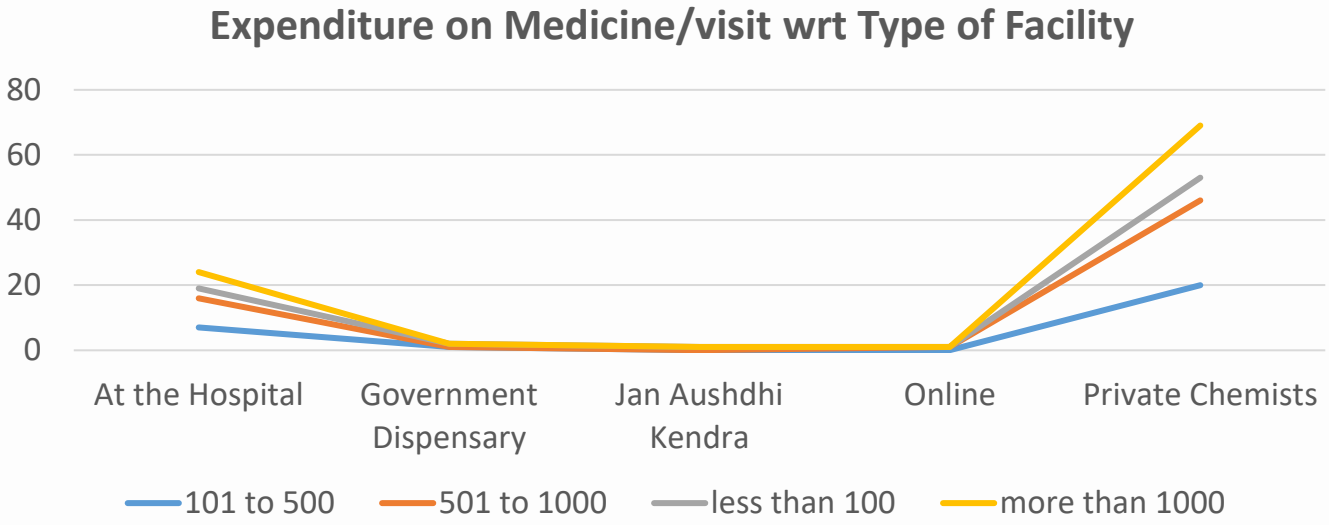


Due to non-availability of digital intervention and long waiting hours, citizen find the public healthcare facility inaccessible and non-reliable

Infrastructure & Finances....

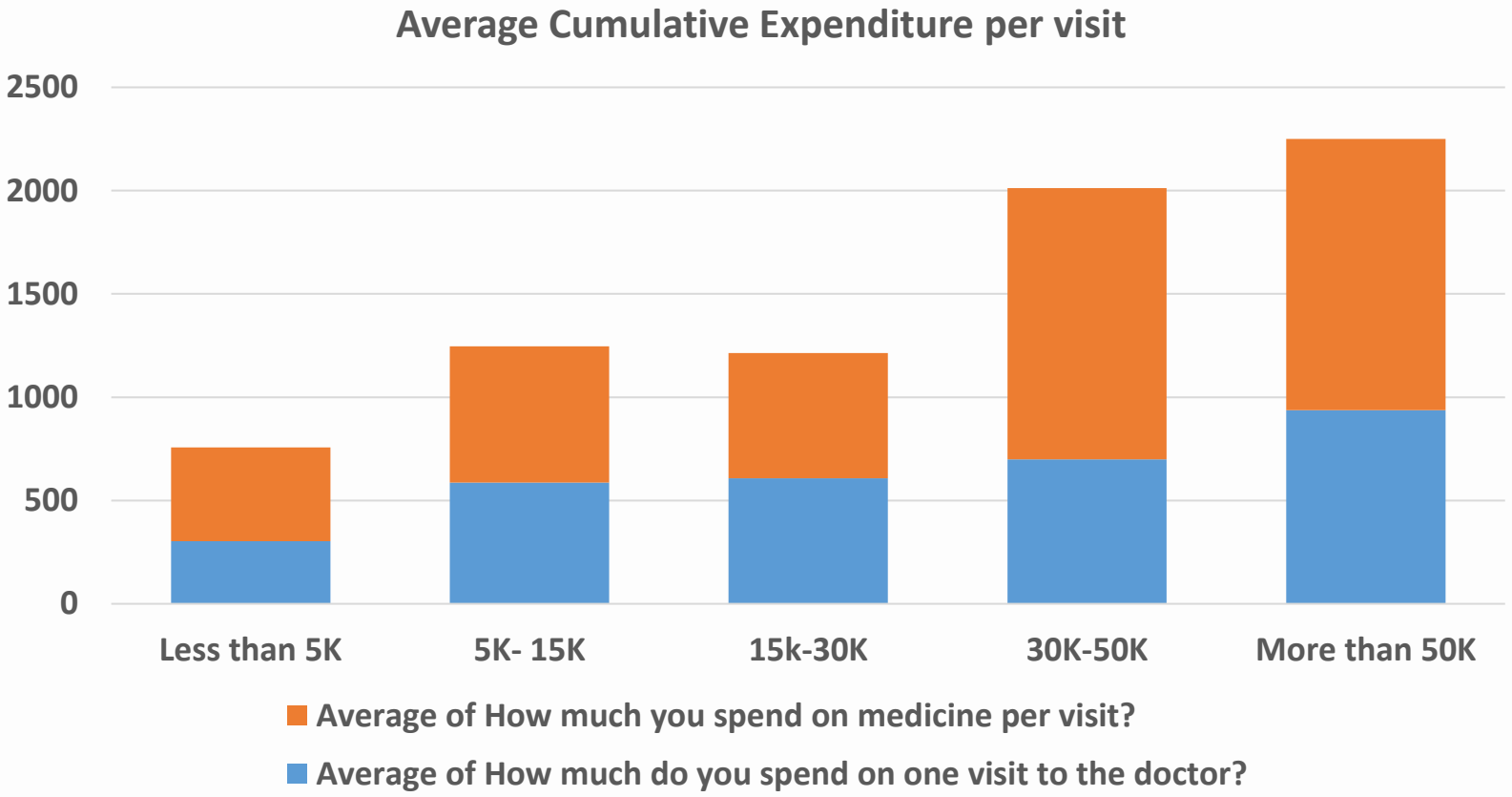






Inference

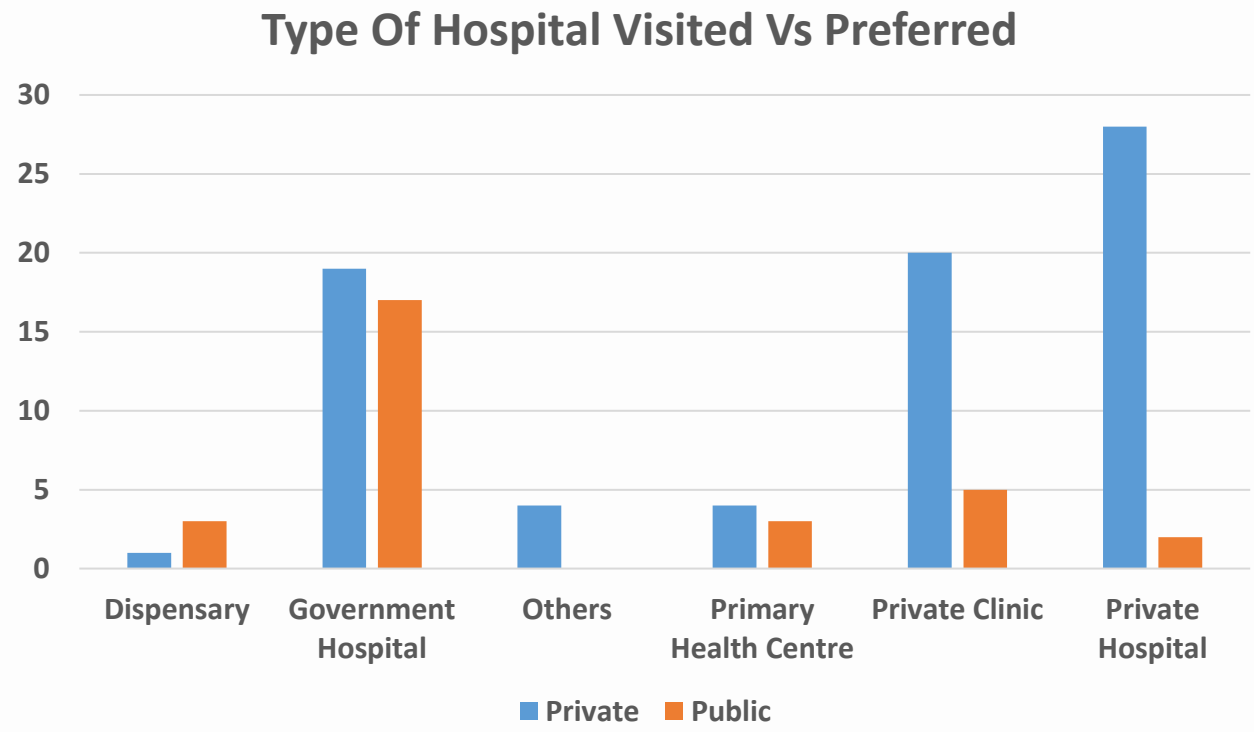
More expenditure in private sector healthcare services on medicines and doctors due to much reliability, trust and majorly better and responsive service

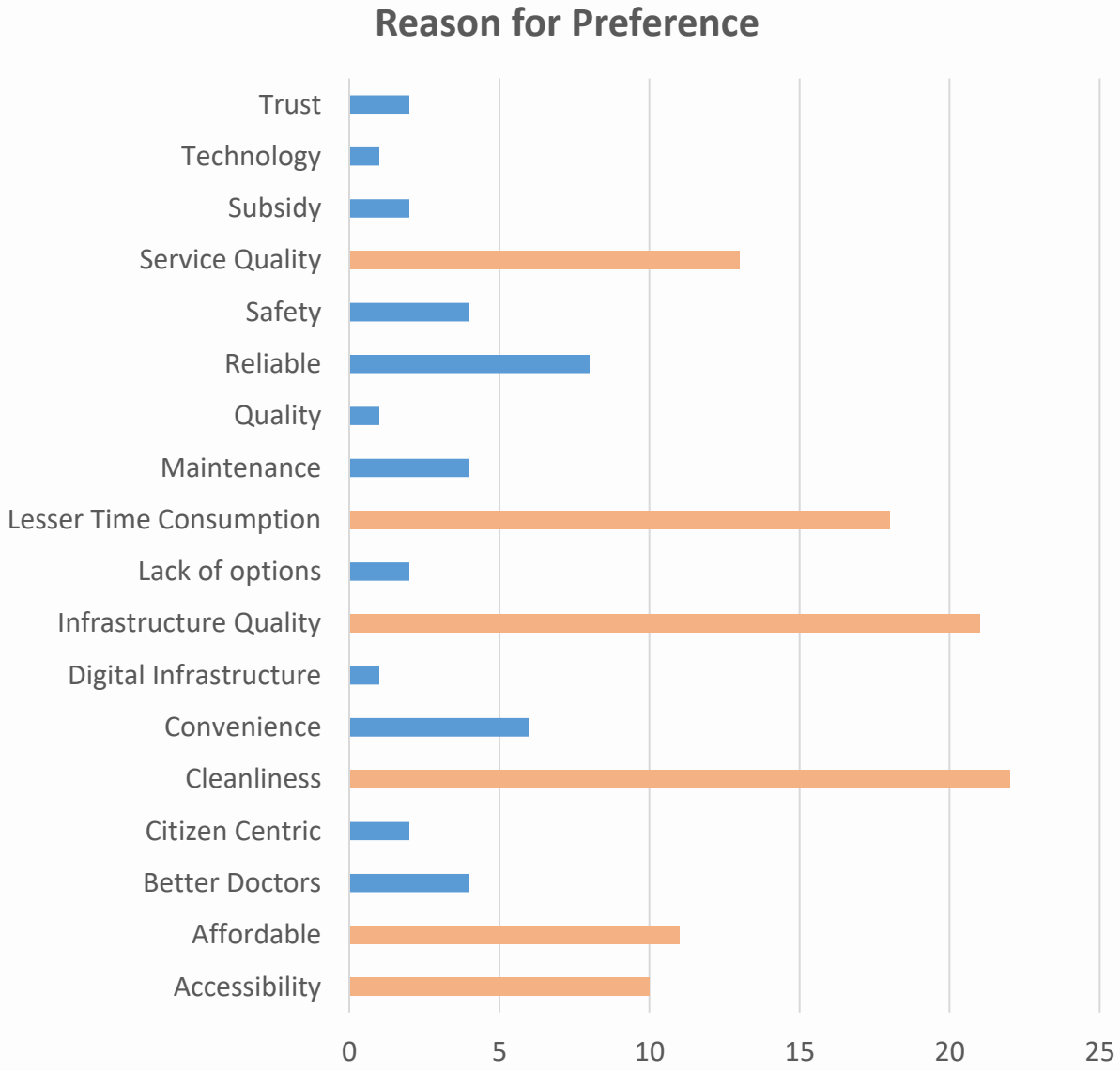


Inferences

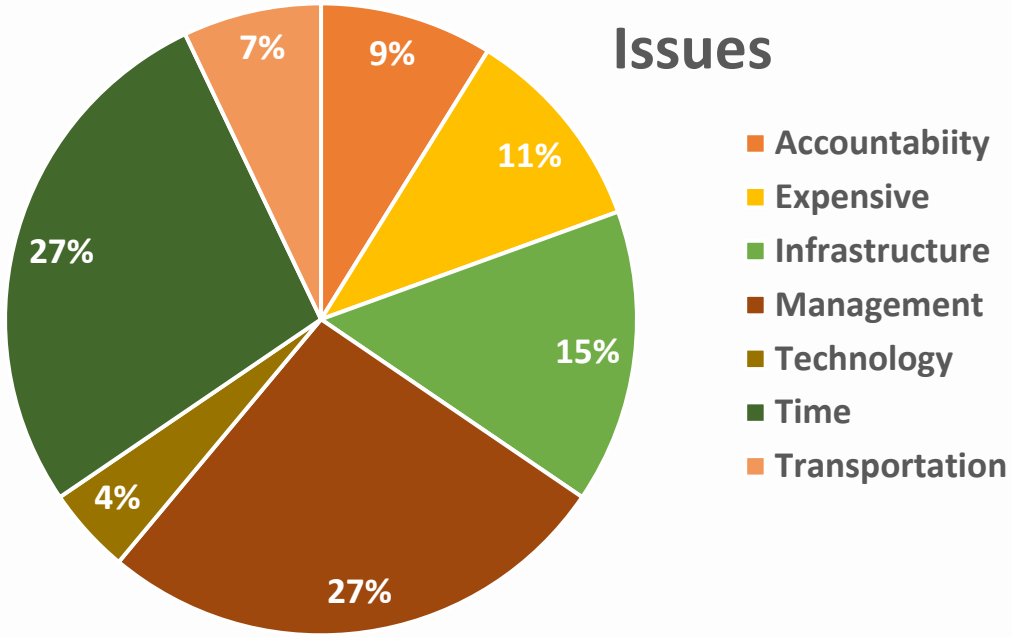
- Citizens spend more money in purchasing medicines in one visit to doctors which results in more share of expenditure in availing a service
- As per the survey it has been predominant that majority of citizens purchase medicines from the nearest private chemists

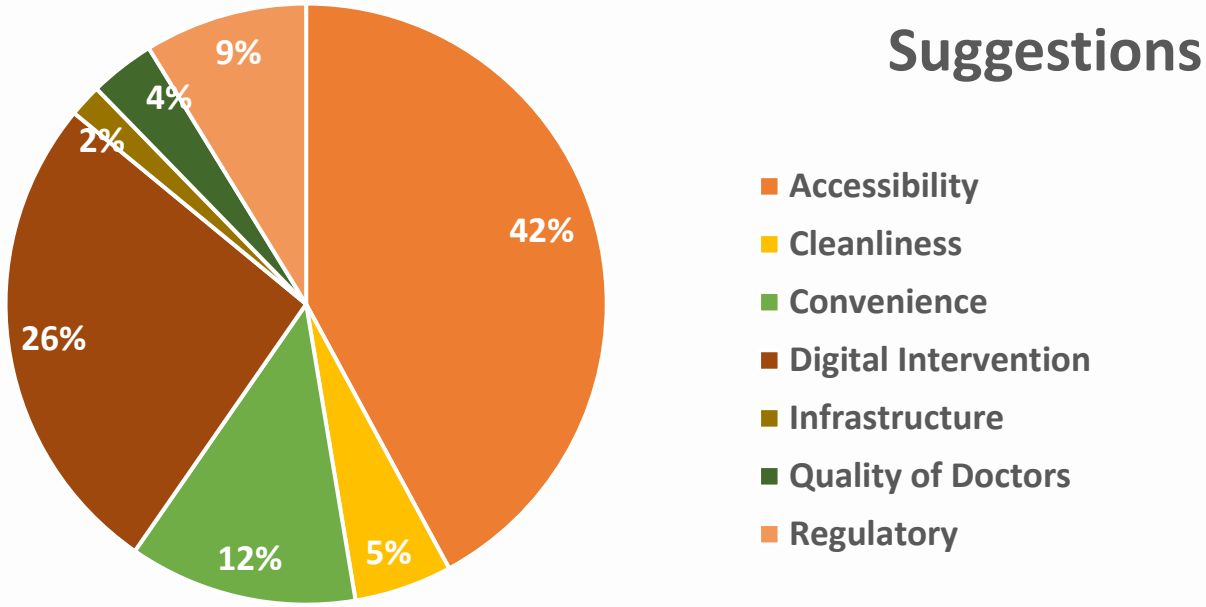
Preferences....





Issue and Suggestions





Output & Outcomes

Output

Community Based mobile application

- To communicate with healthcare workers digitally
- Check timings
- Make appointments
- Apply for subsidy

SPV Health Monitoring Platform

- Spatial Analysis Healthcare, infrastructure service, HR
- Monitor/Manage - Private users
- Management of Healthcare Schemes (Subsidy)

Integrated Platform for Providers

- Private/ Public Healthcare Providers – To communicate with citizen & ULB, for visibility & credibility

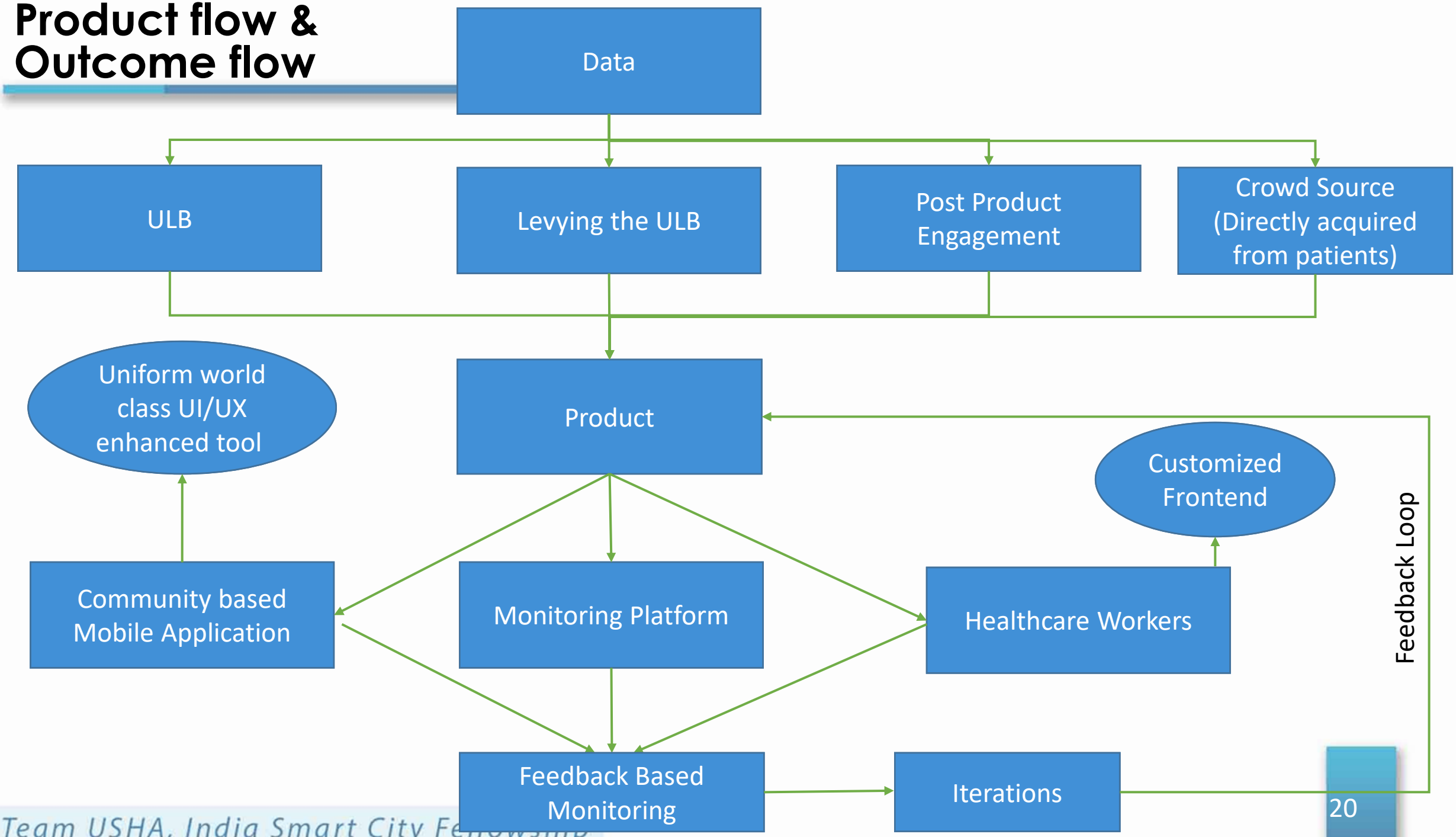
Outcomes

Improved Healthcare Accessibility

Improved decision making

Better resource management

Product flow & Outcome flow



Key Performance Index

Data Flow

Stakeholders/Beneficiaries	Type of Users	KPI	Data Points
Public	Citizen/public- all groups of population	Total time, Cost Incurred, Distance, Satisfaction, Disease	Age& Gender, Occupation, Location, Type of Disease, Type of facility availed, Travel time & mode, wait time, Consultation cost, Diagnostic cost, Medicine cost
Healthcare Provider	• Public Provider • Urban ASHA, ANM, Community Volunteer, • Private Provider • Clinics, • Diagnosis centers/Lab-Pharma	Human Resource, Infrastructure, Patient Record, Time	Type of facility, Footfall, Specialities, Staff strength, Location,
SPV		Demography, Socio-economic profile, City Health Infrastructure, City Health HR, Diseases, Time, City Spatial Data	City Infra Layers, Disease records, type of Health resource, Administrative boundaries, Social Classification

Social Benefits & Outreach

Social Benefits

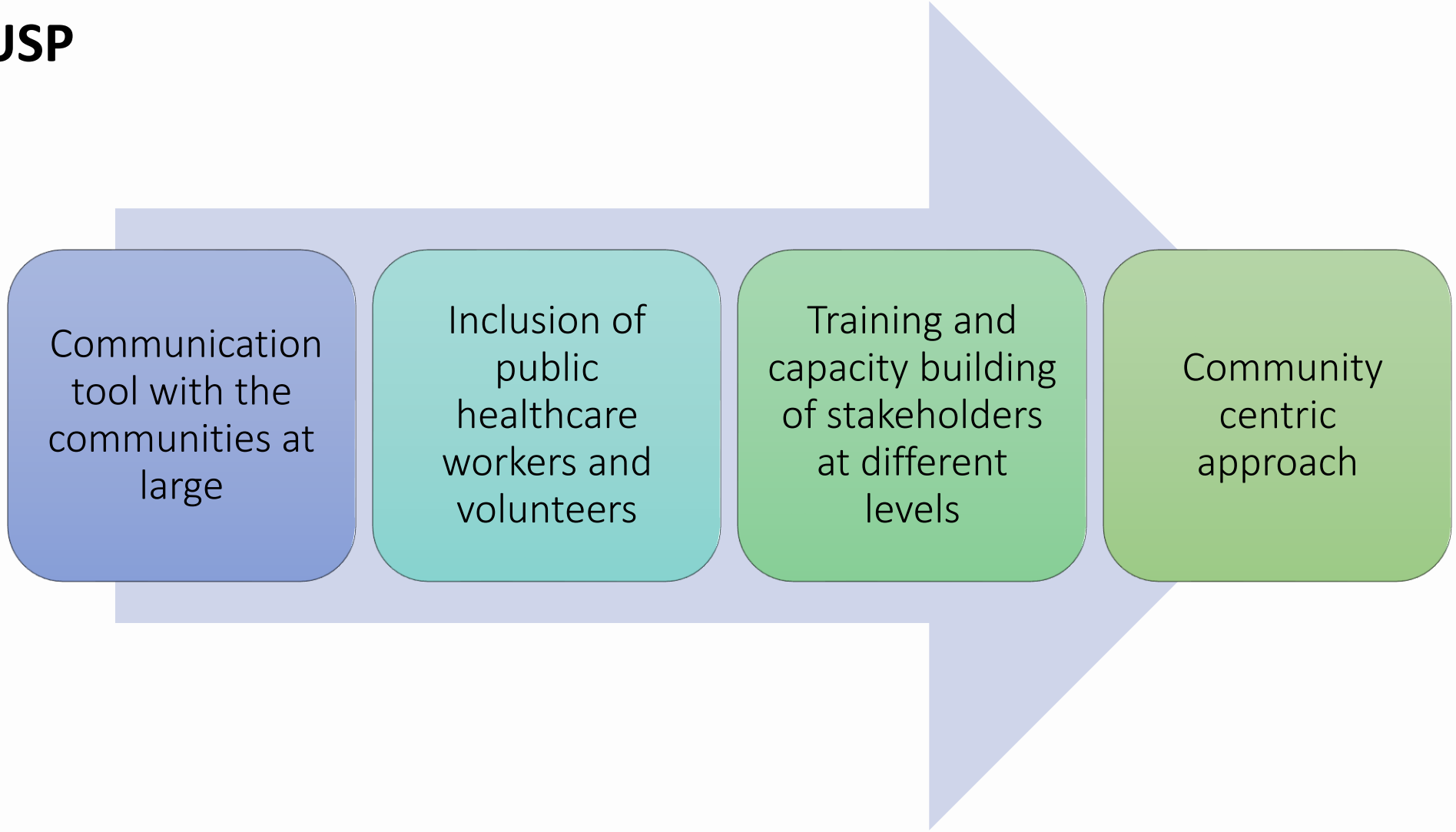
- Enhanced Accessibility
- Shifting and managing crowd at public healthcare facilities
- Implementing Social Distancing norm
- Benefactress will get pre-informed decision making
- Increased time for the beneficiaries
- Monetization of the social benefits at later stages

Outreach Strategy

- Social Media outreach
- City Website
- Camps and Kiosks for awareness
- Training and Capacity Building programs
- Partnerships

USP

Product USP



Advantages

Predictive Modelling and Analytics for different diseases

Systematic Healthcare Planning at ULB

Betterment of Value Chain

Opportunities for future innovations and intervention in healthcare sector

Reduction in physical burden on urban healthcare systems

Prospective Cities

ICCC

- Identified Smart cities with Functional ICCC

Healthcare Project in SPV

- Filter Smart Cities on ongoing Smart Healthcare project

Availability of Digital Data

- Filter Smart Cities on ongoing Smart Healthcare project

Possible Area of Intervention

Pilot will be carried within city boundary, around 2 to 3 wards.

OR

Pilot will involve around 2 to 3 U-PHCs and one or two Hospitals.

Agra

Chandigarh

Indore

Shimla

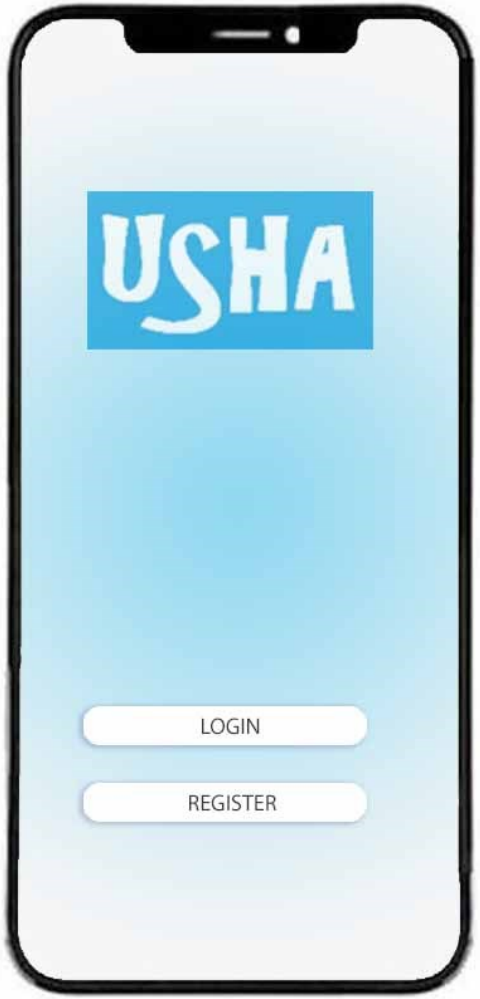
Ahmedabad

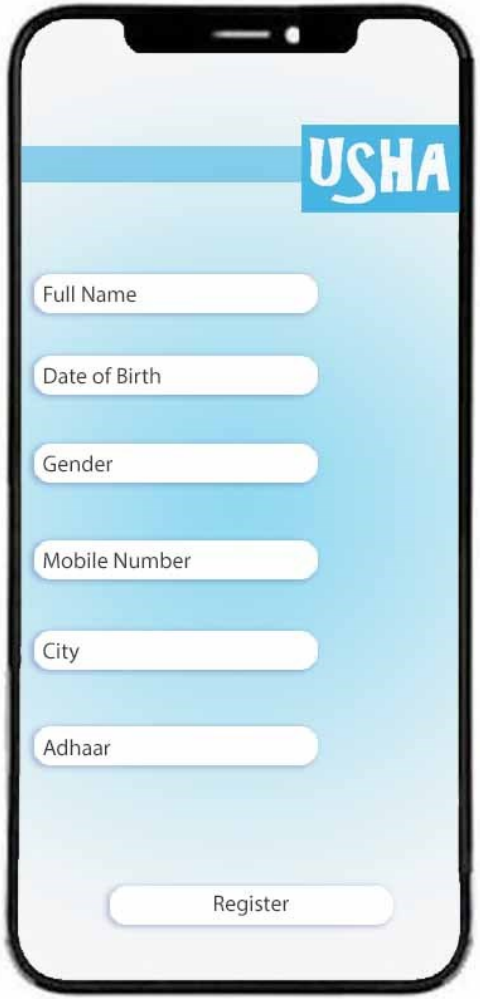
Namchi

Varanasi

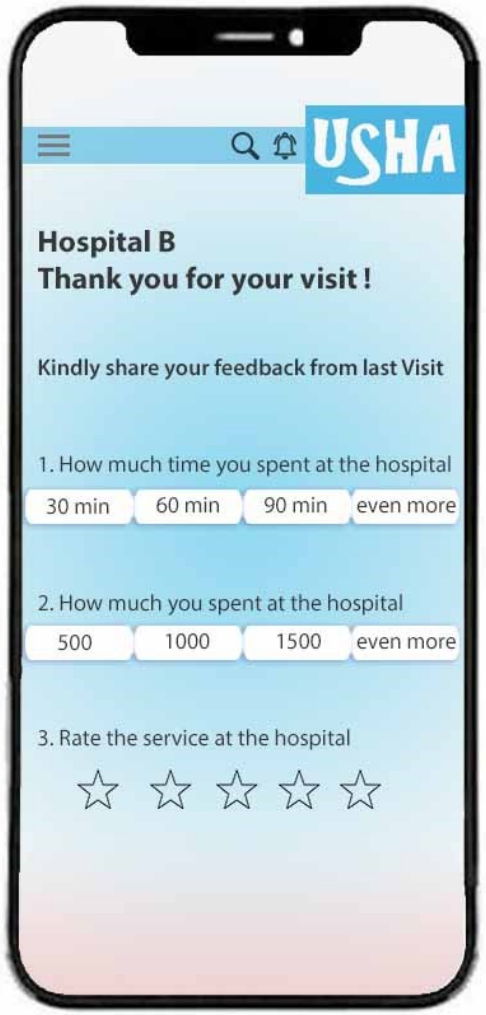
Lucknow

Demo – App for Community

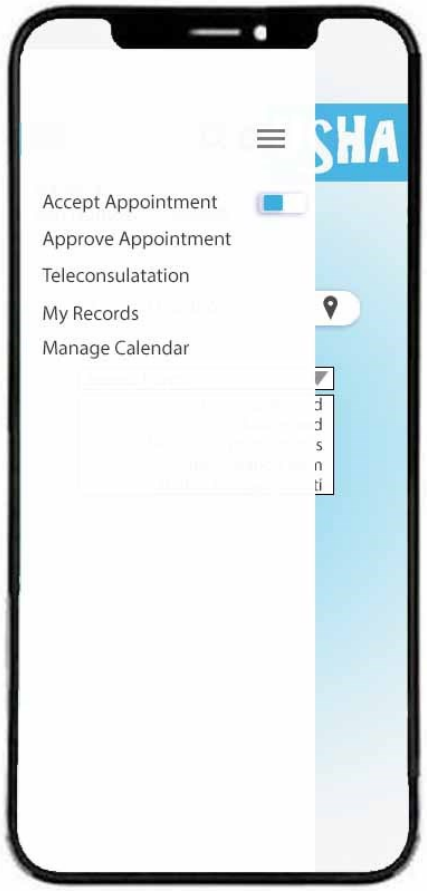


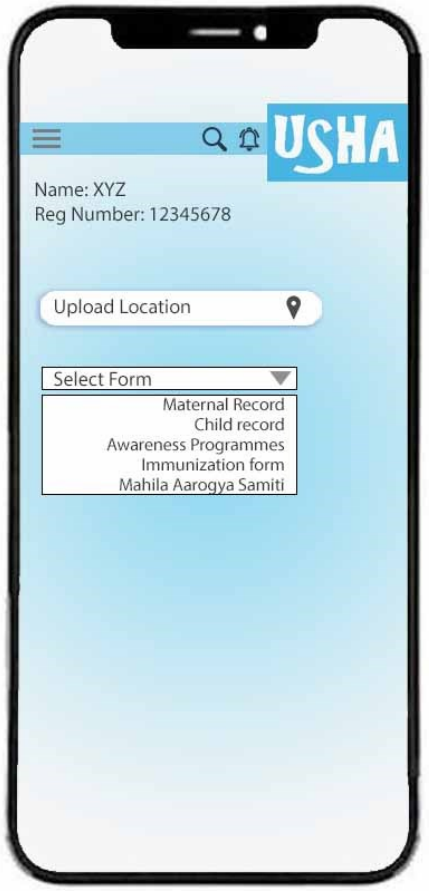


Demo- App for Community



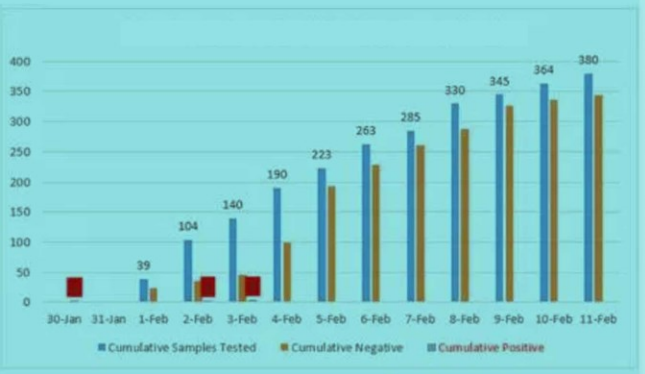
Demo- App for Healthcare Providers





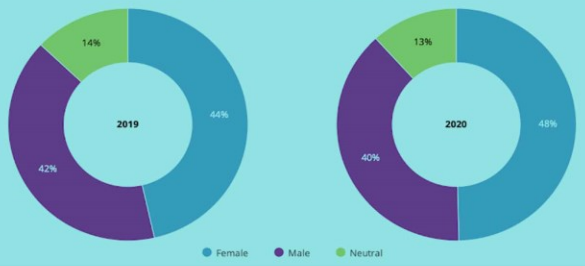
SMART CITY HEALTH DASHBOARD

Search

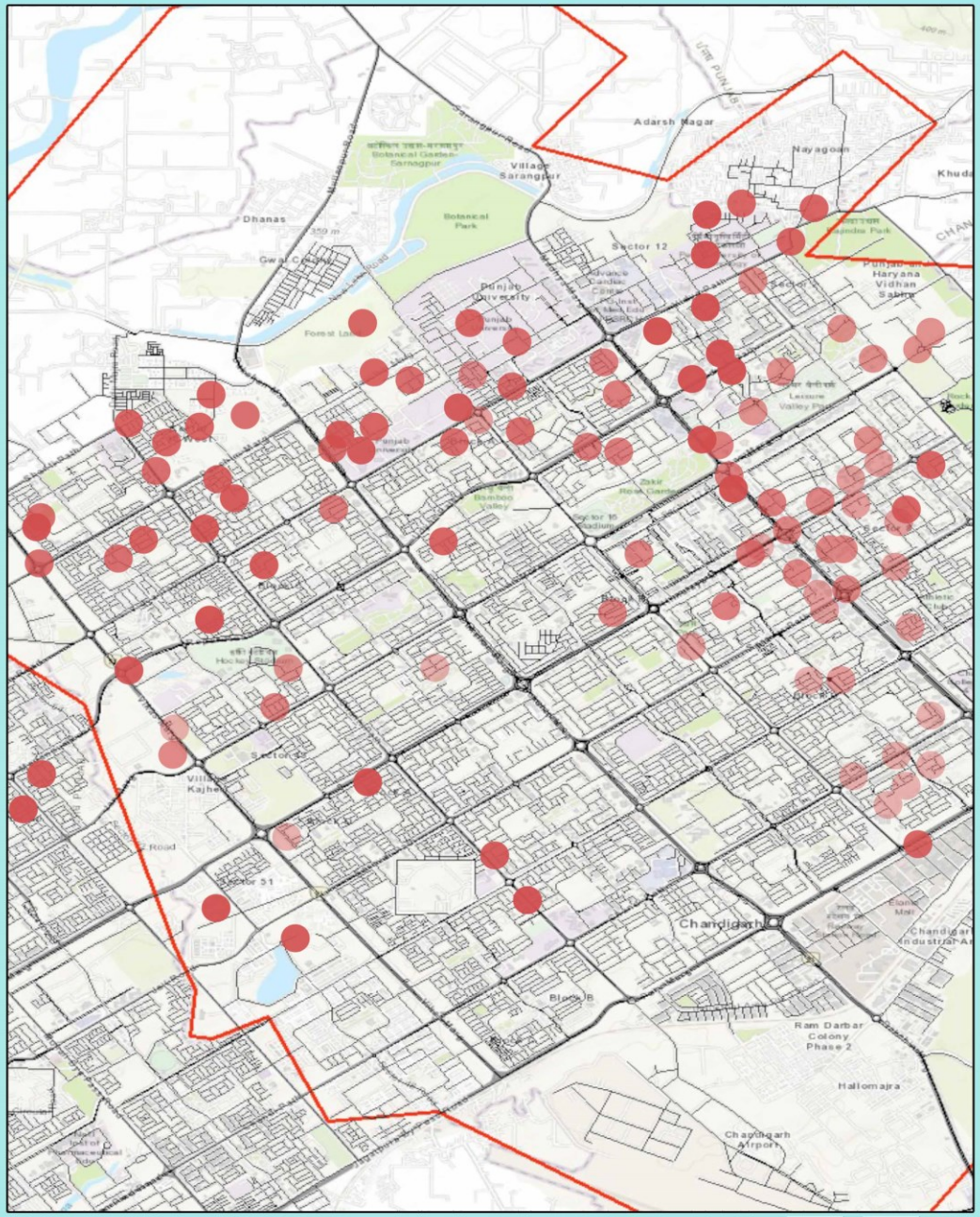


Source: Directorate of Health Services, Kerala

Ecomm by Gender TY vs LY (Stores Closed)



Demo Dashboard for SPV



Export PDF | Download Data | + | -

Select Facility Type

- [x] U-PHC/U-CHC
- [x] Hospitals
- [ ] Diagnosis Centres
- [ ] Clinics

Select Data Layes

- [x] Roads
- [ ] Building Density
- [ ] Open Spaces
- [x] Water Supply
- [ ] Sewer Line

Frequency

Daily
Weekly
Monthly
Yearly

Sort by

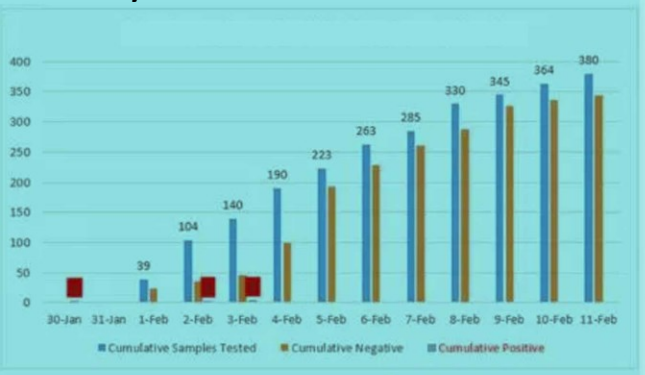
Ward Wise
Zone Wise
Slums Only

Mar Apr May Jun Jul Aug

SMART CITY HEALTH DASHBOARD

Search

Analytics



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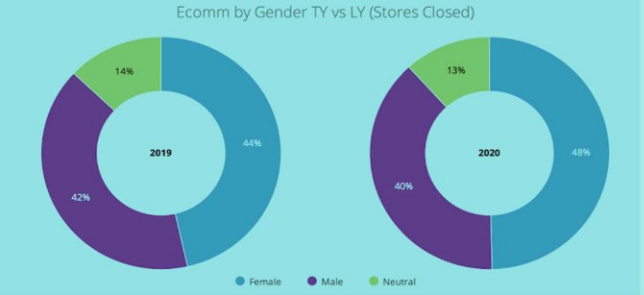
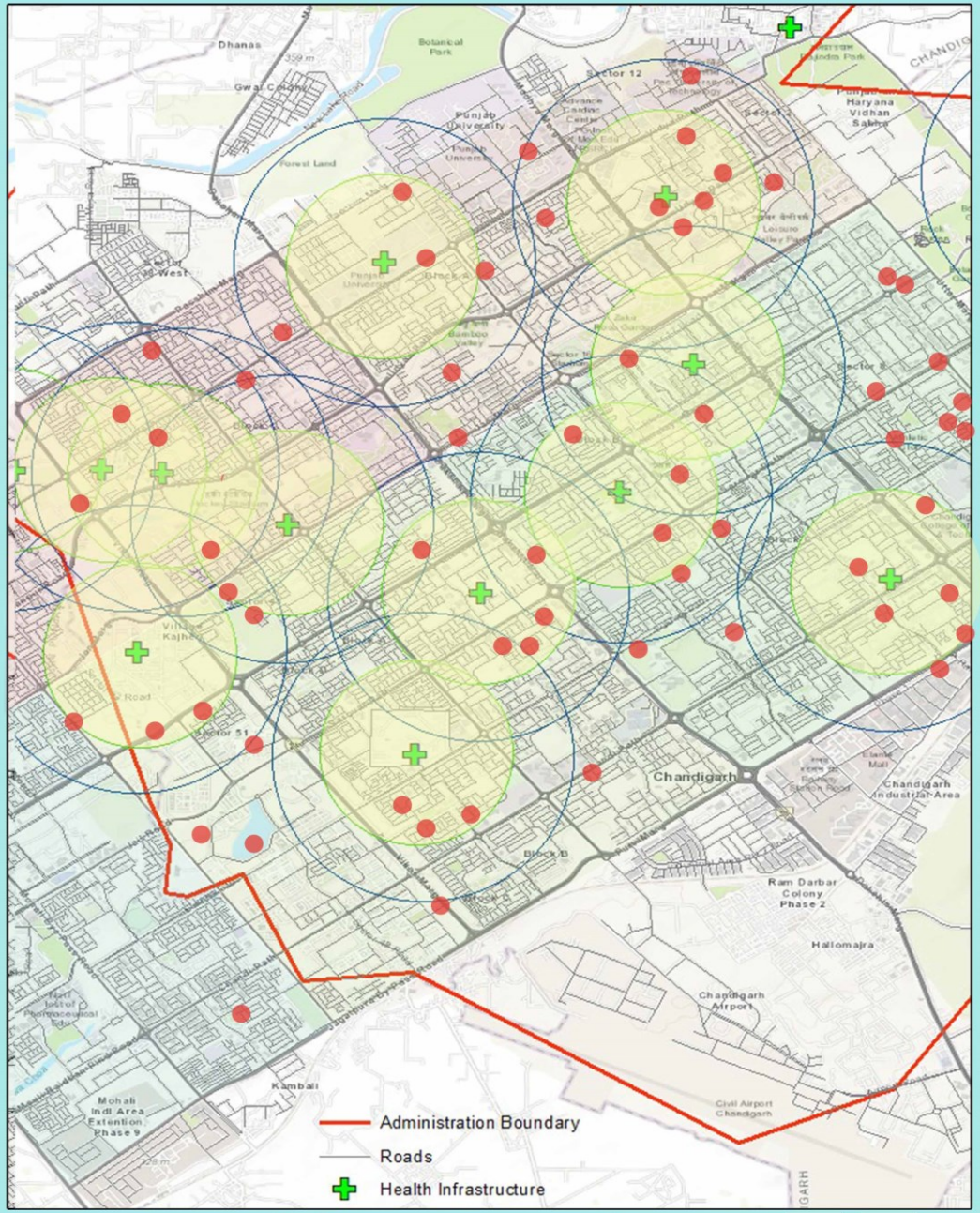


Demo Dashboard for SPV



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- [x] Roads
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- [ ] Sewer Line

Frequency

Daily
Weekly
Monthly
Yearly

Sort by

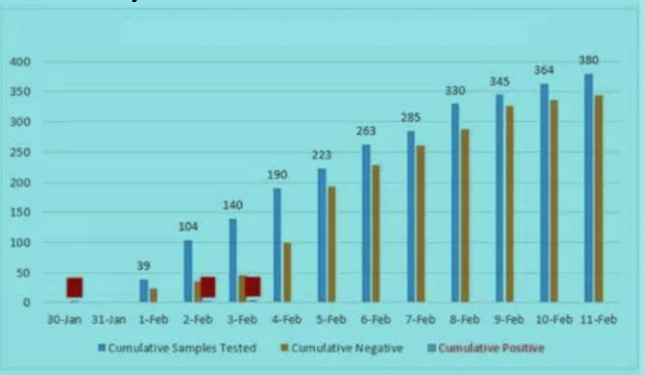
Ward Wise
Zone Wise
Slums Only

- Reported case of Malaria
- Existing Health Centre
- Served Areas

SMART CITY HEALTH DASHBOARD

Search

Analytics



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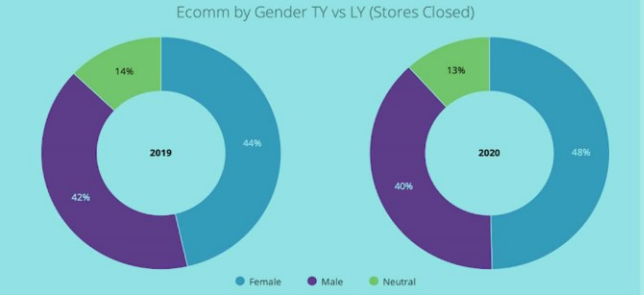
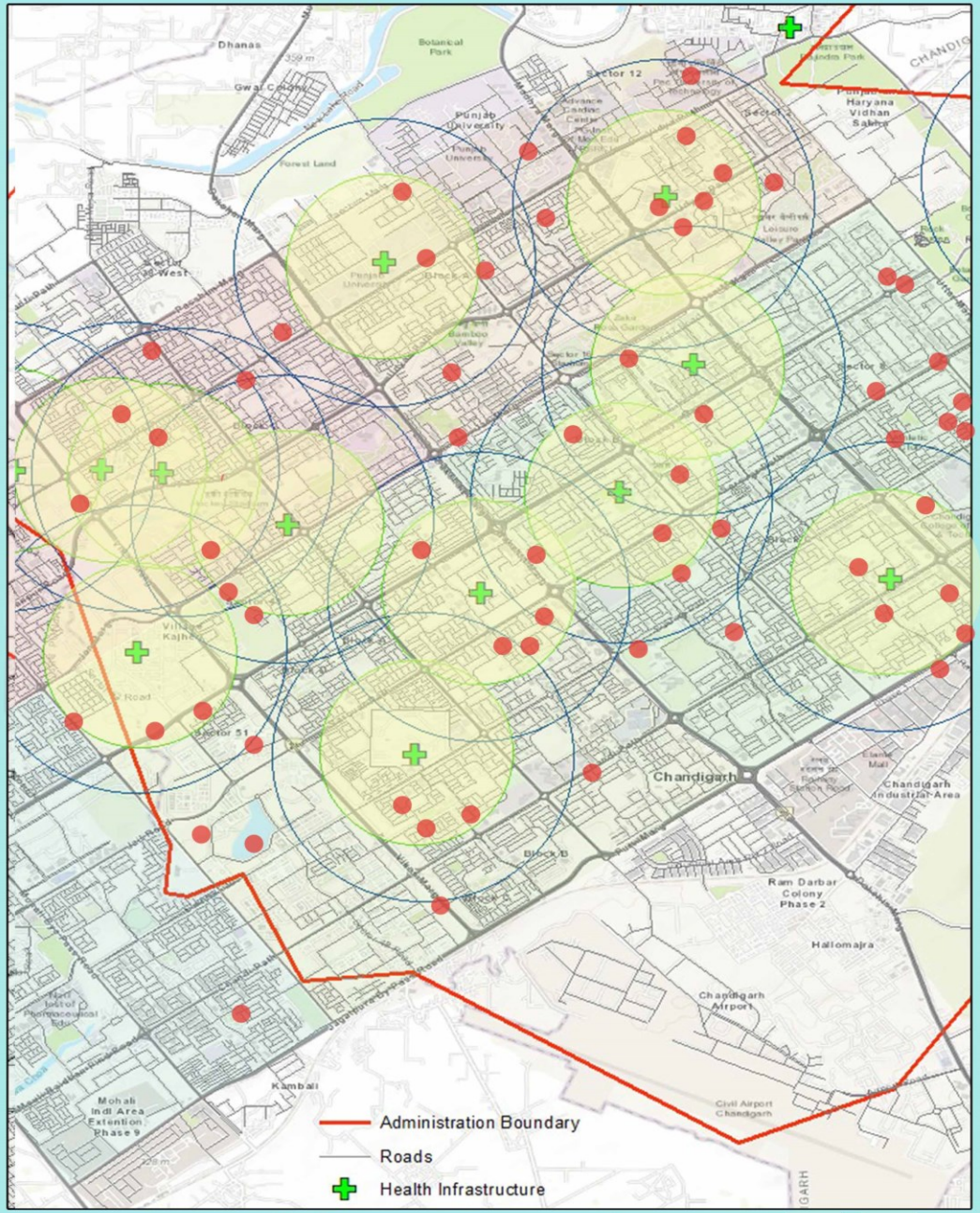


Demo Dashboard for SPV



Export PDF | Download Data

Select Facility Type

- [x] U-PHC/U-CHC
- [x] Hospitals
- [ ] Diagnosis Centres
- [ ] Clinics

Select Data Layes

- [x] Roads
- [ ] Building Density
- [ ] Open Spaces
- [x] Water Supply
- [ ] Sewer Line

Frequency

Daily
Weekly
Monthly
Yearly

Sort by

Ward Wise
Zone Wise
Slums Only

- Reported case of Malaria
- Existing Health Centre
- Served Areas

Challenges and Limitation

Unavailability of service providers due to current COVID situation for surveys

Consumer Surveys are broadly captured from different cities using online surveys

Unavailability of health sector data at City level

Lack of response from the stakeholders online as well as offline

Due to pandemic situations, on ground surveys could not be completed

Low Tecnhology peresistence in public Healthcare system

Thank You

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iscf
Ministry of Housing and Urban Affairs

Assumptions

Community will use the app

The problem identified is true to cities

The city has necessary basic digital penetration to implement the project

The city has some role and responsibility to address the issue of healthcare services