

Wk 13 Team Assignment (Team H5)

IIP Deliverable 8: Integrated Innovation Presentation



Executive Summary

Industry:

Health

Industry Question:

How might we improve the health of rural / remote populations and create awareness?

1

Original Innovation Challenge

How might we create an efficient and improved environment for doctors, caregivers, patients and families in rural and remote areas to make healthcare and well-being accessible and sustainable?

2

Research

- Identified unmet needs and pain points for users in rural/remote areas
- Identified who can be interested in solving the problem

3

Reframed Innovation Question

How might we improve the working conditions to encourage healthcare providers to work in rural areas?

4

Solution

Multi-sided Artificial Intelligence powered platform¹ for patients and medical providers

Team Members

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Initial Understanding of the Problem

What are the healthcare needs of the rural or remote populations?



Identify the Gap

- Identify the unmet needs of the rural and remote communities.
- Who might be interested in solving the problem?

Unmet Needs

- Diseases and health issues spreading in areas lacking healthcare services.²
- Inability to get medical care when needed.³
- Shorter lifespan due to diseases that could have been otherwise cured⁴



Target Audience

- Rural/Remote area patients
- Medical professionals
- Government

Who can solve the Problem

- Pharma companies like Pfizer⁵ - can leverage their existing knowledge base built over the years and create innovative healthcare solutions that are affordable for the low-income group.
- Companies like Google/ Meta can use the latest technology like Artificial Intelligence and develop solution to solve the problem of healthcare in rural/remote areas.

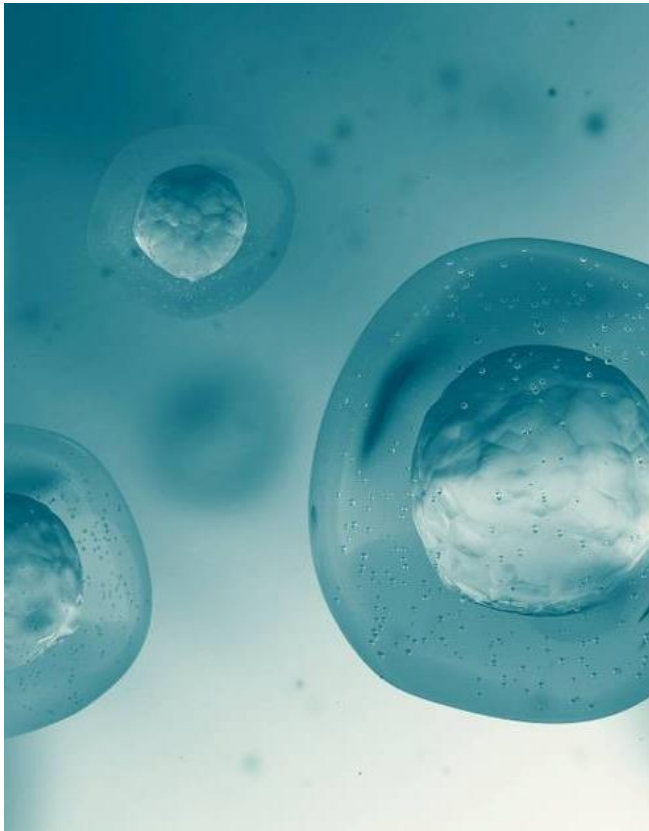
2. Medical Entrepreneurship: A New Movement to Accelerate Cures

3 Saiesha. "How Health and Poverty in India Overlap.The Borgen Project

4. Barriers to adoption of information technology in Healthcare.

5. Mikulic, Matej. "Topic: Pfizer."

Field Research Design



We designed a field research plan using human centered design (HCD6) approaches to observe population in the rural and remote areas. The data we gathered helped us understand the unmet needs of these people. We identified some extreme users, and each team member applied an HCD method to study the user and their pain and gain points.

Methods Used

- Extreme User Interview - Novice User
- Extreme User Interviews - Pro User
- Error Analysis
- Activity Analysis
- Guided Tour

Users Observed

- Family members of patients in rural/remote areas
- Doctors/healthcare providers in rural/remote areas
- Patients

Research Objectives

- Gather insight on the unmet needs of the rural/remote population in healthcare
- Identify pain points and gain creators
- Gather feedback from users on how healthcare can be improved

Tools & Techniques tried in the Field



Our team members spent time connecting with doctors and patients and took a virtual tour of a day in the life of the subjects.



Day in the Life

Teammates observed the activities of doctors and patients without interfering in the process.



Fly on the Wall

This method led us to see the people, objects, environment, messages and services holistically.



POEMS

Detailed analysis was done by checking visual evidence using personal items of the subjects.



Personal Inventory

Extreme User Interview



We interviewed medical doctors and “novice users” like kids to understand the problem better.

Activity Analysis



Tasks at a hospital in a rural area were broken down and studied to get a better idea.

Error Analysis



Many wrongs can happen in a hospital setting, we found all the ways and studied them in detail.

Camera/ Video Journal Method



We recorded everyday actions and behaviors of our users, and it helped us analyze and synthesize various data points.

Synthesis of Field Data collected



Doctors struggle with high workload due to shortage of healthcare staff leading to burnout and eventually moving to urban Areas in spite of their willingness to serve the rural community

Lack of health awareness and basic hygiene amongst older population. Some of the younger population in rural areas had sound knowledge of hygiene and healthy habits, while others did not.

Lack of up to date medical equipments to provide proper diagnosis and treatments,

Emotional wellbeing of doctors' family impact their decision making.

Remote areas have limited healthcare professionals.

Hospitals are far off. Patients have to travel long distance for treatments.

Lack of post discharge support and resources for patient's family.

Family members face anxiety about taking care of the patient,

Despite telemedicine being available in remote areas, older generation cannot make use of it effectively due to lack of familiarity with technology,

Key Insights



Exhausted Medical Staff

Doctors struggle with **high workload** due to **shortage of healthcare staff** leading to **burnout** and eventually **moving to urban areas** despite their willingness to serve the rural community



Lack of Health Awareness

Lack of **health awareness** and **basic hygiene** amongst older population. Some of the younger population in rural areas had sound knowledge of hygiene and healthy habits, while there were others that had always seen their parents unhealthy and had no idea why.



Faulty Medical Equipment

Lack of **up-to-date medical equipment** to provide proper diagnosis and treatments.

Reframing of the Problem HMW

High workload burns out the healthcare providers and impacts their willingness to work in rural areas.

Improved workload condition is essential.

+

Lack of basic hygiene and health awareness education leads to more health issue in remote areas.

+

Limited accessibility of medical equipment generates more workload to healthcare staff

How might we improve the working conditions to encourage healthcare providers to work in rural areas?



Analysis of Field Data



Lack of Equipment and Healthcare Staff

- Lack of up-to-date medical equipment to provide proper diagnosis and treatments.
- Doctors struggle with high workload due to shortage of healthcare staff leading to burnout.



Lack of Basic Hygiene and Health Awareness Education

- Lack of health awareness and basic hygiene amongst older population. Some of the younger population in rural areas had sound knowledge of hygiene and healthy habits, while there were others that had always seen their parents unhealthy and had no idea why.



Lack of Professional Support to caregivers Post Discharge

- Lack of post-discharge support and resources for patient's family. Family members face anxiety about taking care of the patient.

Personas Developed



Healthcare Providers in Rural Areas

- Work and live in the remote areas.
- Struggling with the workload and schedules as well as the limited equipment and resources.
- Willing to serve the community but also have concerns in taking care of their own families.



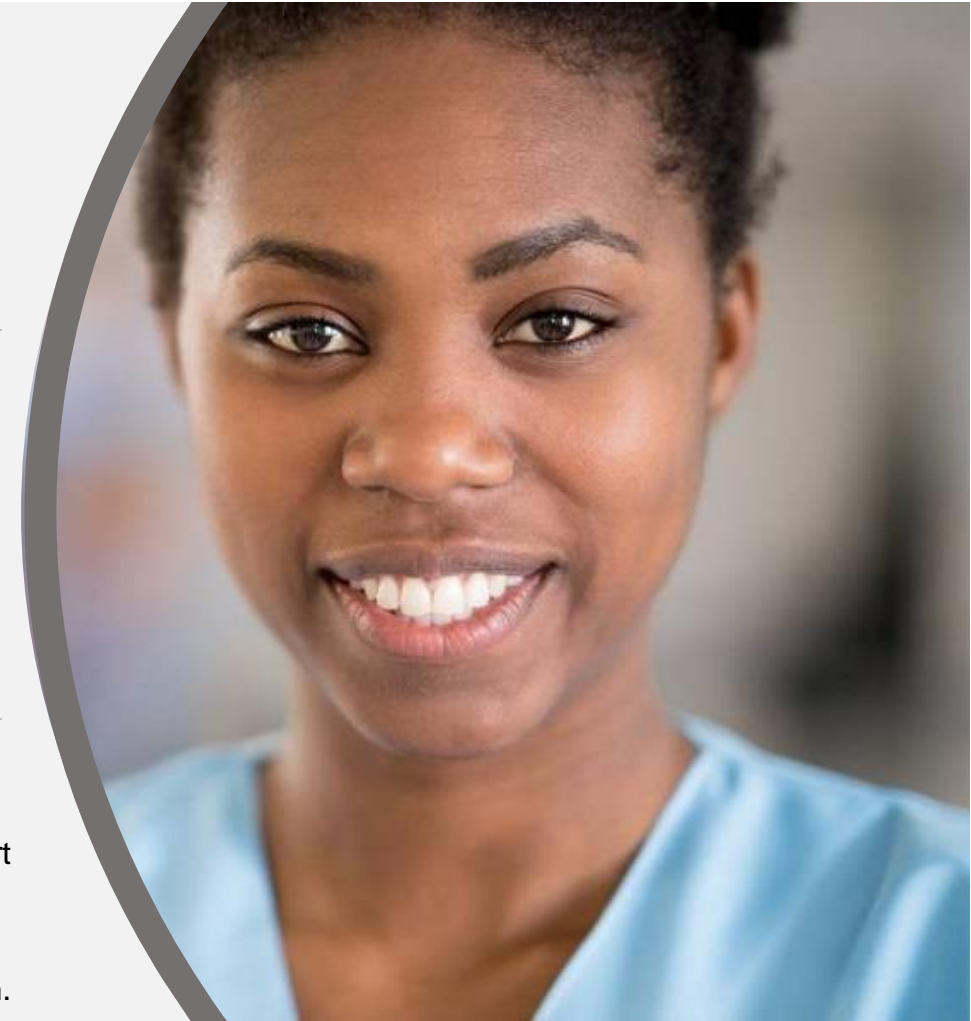
Patients in Rural Areas

- Living in remote/rural areas with limited medical service around.
- Lack of hygiene and health awareness in general
- Usually need to travel long distance to the nearest hospitals to get healthcare service.
- Limited knowledge to new technologies, particularly for those senior citizens.



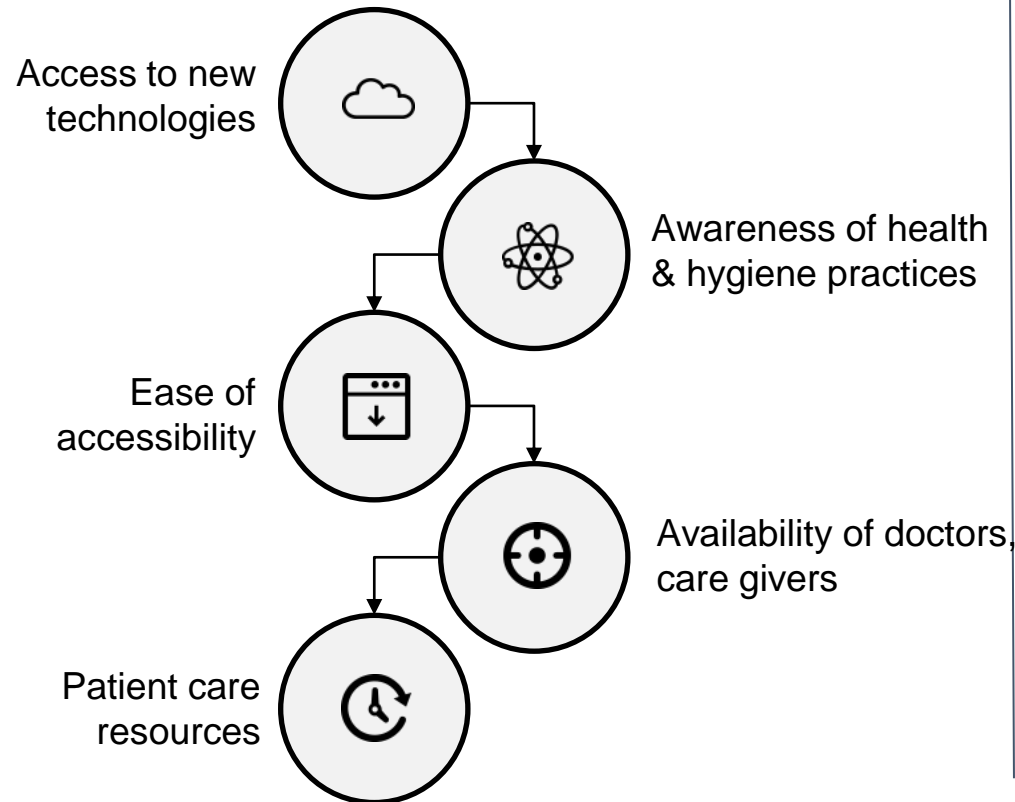
Caregivers

- Family members want to have sufficient post-discharge support from healthcare professionals.
- Family members need to sacrifice their work/life to support their family members to get healthcare service.
- Parents with young children want to know how they can help their children with health management and education.

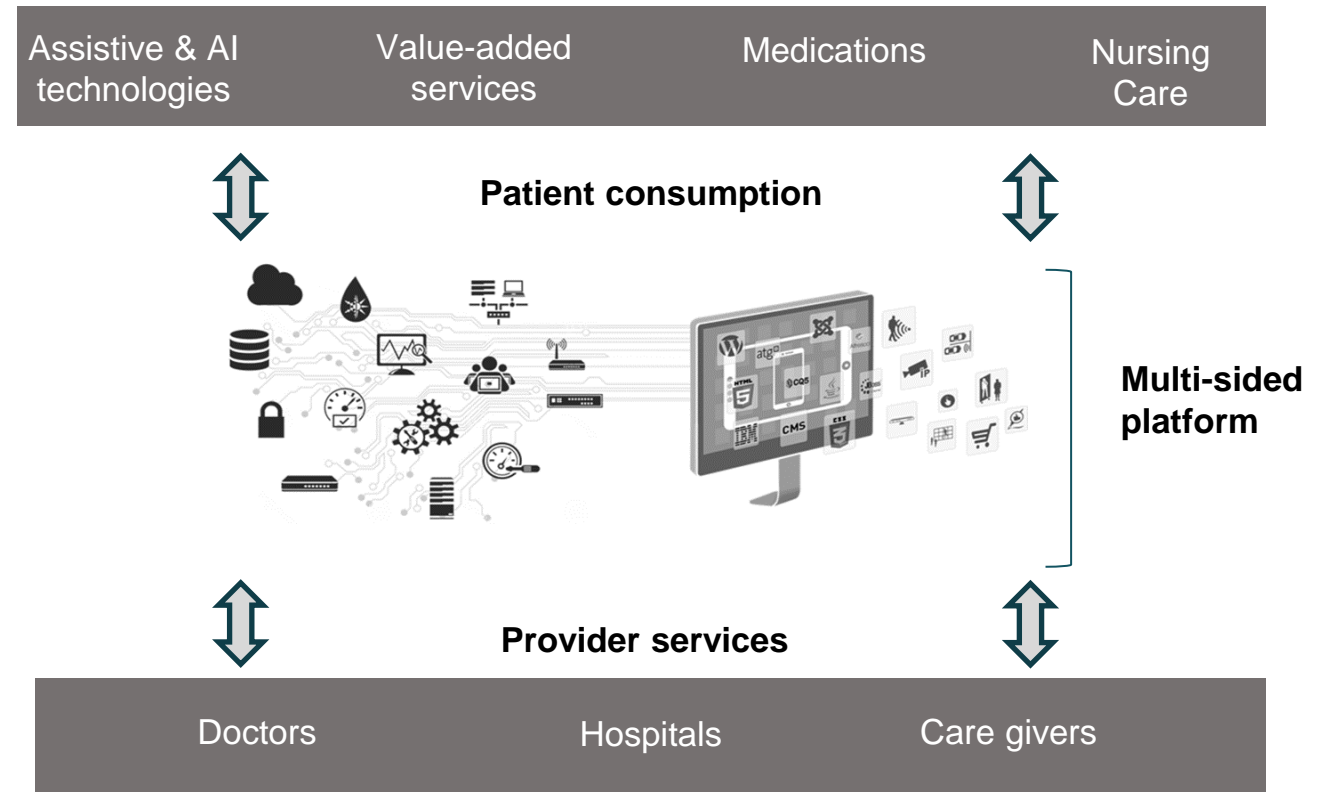


Brainstorming Results + Criteria Applied to Select Ideas

Unmet Healthcare needs of Rural/ Remote populations



Idea selection

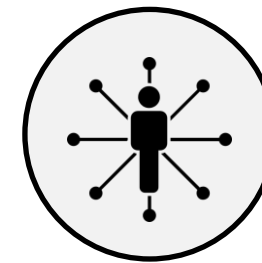


Decomposition & Recombination

Decomposition of Potential Solution Components

Patient access	AI Chat	Patient surveys	Patient history	Interactive discharge
Profile patients	Track traffic	Demonstrate empathy	Apply SCAMPER	Post discharge visits
Channel accessibility	Special needs	Wait & queue management	Internship opportunities	Caregiver access
Channel diversification	Channel relevance	Referral management	Innovation challenge	Health & well being sessions

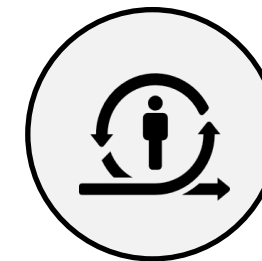
Combination of Feasible Solutions



More access points for patients to make appointments



Simplify navigation, access to relevant information



Conduct information sessions through various channels



Empower doctors with tools, data to provide best-in-class care to patients

Prototyping & Visualization of New Concept

Panel 1: Patient visits the doctor



Panel 2: Doctor works with Interns



Panel 3: Doctor helps Interns evaluate AI technology to treat the patient



Panel 4: Intern and patient engaging in a conversation - AI working in background, analyzing data and providing instant information to support the doctor's decisions



Panel 5: AI enabled quick diagnosis thereby empowering doctors and interns to provide the best treatment to patients



Panel 6: Patient spend less time waiting for diagnosis result and doctors can use their time effectively.

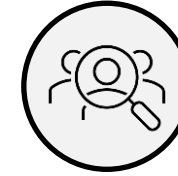


Evidence of Testing, Iteration & Feedback



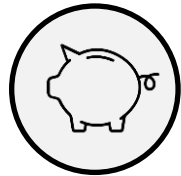
Close the Gap

- Leveraging technology to bridge the healthcare gap in rural and remote areas
- Provide timely access to healthcare professionals, essential diagnostics, and medical information



Target Audience

- To effectively engage the rural and remote populations, utilize a combination of medical professionals, community outreach, local influencers, and digital media



Cost Savings

- Reduce expenses of medical supplies by eliminating the need to buy at market value
- By preventing advanced-stage illnesses through early detection and preventive care, emergency treatments expensive will be reduced



Easy to Use

- A simple product gives customers the information they need in order to stock their hospitals with the right equipment
- Well-trained healthcare professionals can guide patients through the process, ensuring a comfortable and hassle-free experience



Design of Experiment

Frontstage

- Customers are willing to share their health information
- All customers have ability to learn and use new technology
- Measure volume, and quality of patient data collected to validate building trust in our product



Backstage

- Enough Financial support from government and other investors is necessary
- Information of doctors is accessible to campaign and promote the platform
- Validate financial investment plans and doctors' willingness to use the platform

Profit Formula

- Importance of understanding how wait times for physicians and patients will be reduced
- Customers' understanding of the long term value of investing in the product
- Investors' understand the importance of long term financial support



Demonstration of Viable Business Model

Customers	Activities	Profits	Partners	Value Proposition	Resources
<ul style="list-style-type: none">• Rural population with lack of proper medical facilities• Remote area population with lack of sufficient medical staff	<ul style="list-style-type: none">• Selling, and maintaining the software• Survey analysis to check how product meets customers' needs	<ul style="list-style-type: none">• Hospitals• Medical schools• Insurance providers• Government agency	<ul style="list-style-type: none">• Hospitals, physicians, caregivers• Marketing agency• Tech firm for development of the software	<ul style="list-style-type: none">• Providing AI based multi-sided platform• Services are quickly accessible, affordable, and reliable	<ul style="list-style-type: none">• Government grants• Research team• Marketing team

Consideration of Implementation/ Adoption Barriers

Considerations of Implementation

Our Key Partners:

- Tech firm that creates the software for us
- Firm that helps us integrate the software into medical hardware
- Hospitals, doctors, caregivers and interns
- Marketing company to sell our software as a service

Our Cost and Revenue:

- Subscription model for our AI powered multi-sided platform
- Revenue is generated by selling to Hospitals, Insurance Providers, Government agency, Individual customers

Our Target Customers:

- Rural population that is lacking proper medical facilities
- Remote area population that lacks sufficient medical staff
- Hospitals in remote areas



Adoption Barriers

Privacy Concerns

Our assumption is that customers are willing to share their health information on the platform. What if that does not happen!

Lack of Incentives

Vendors have not been incentivized to make interoperability with competing software a key capability in their software⁷.

Shortage of Capital

We assume that there will be enough financial support from government and other investors.

If this does not hold true, there will be significant barrier to adoption.

Resistance to Product Trials

Our product has the potential to reduce wait times for doctors/ interns/ patients. Institutions must try our products. It'll take a certain length of time to accomplish stability. Their impatience is a significant barrier to adoption.



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THANK YOU

