DEMARKED

JUST TRACK IT

PARTICIPANT'S ID:- **LHMC004**

BACKGROUND

Lack of efficient intra and inter-departmental communication leads to delay in emergency services like:-

- Radiodiagnosis eg:- CT scans, MRIs etc.
- Surgical interventions
- Interdepartmental consults
- Administratitive delays

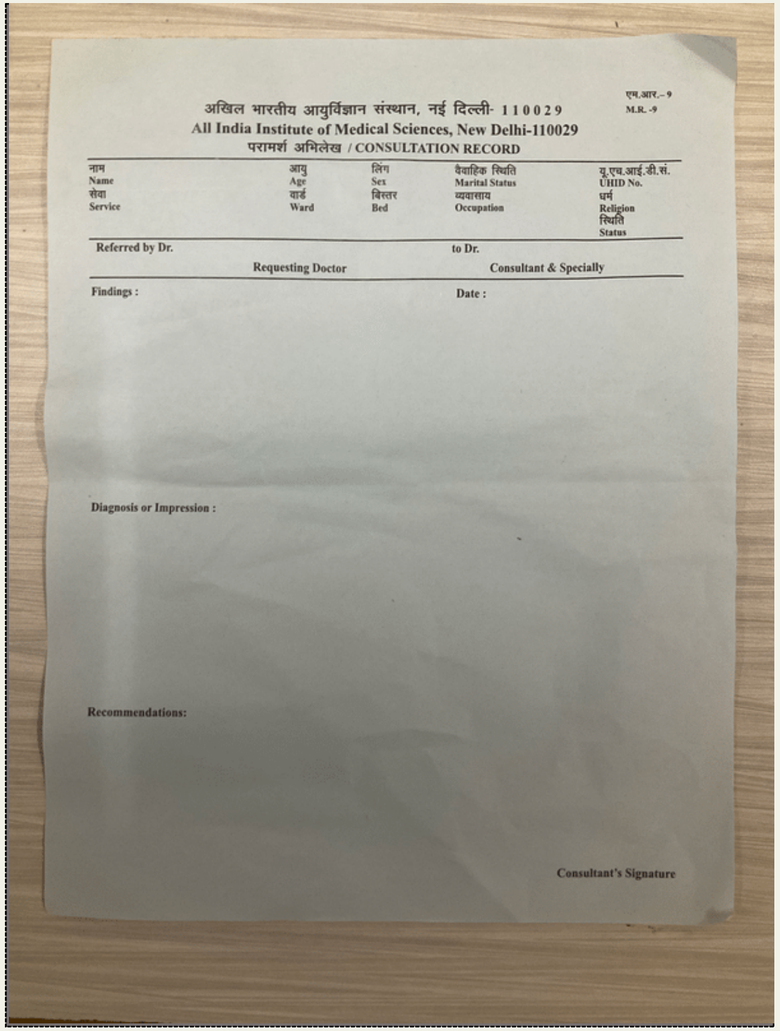
CURRENT PROBLEM

If a consult eg:- from the general surgery department, is required in AIIMS, the following steps are to be followed:-

The following form is needed to be filled out by an SR.

A nurse fills out the patient details and the on-call doctor requested.

An HA “walks” to the general surgery department and informs its administration to contact the requested doctor, who then arrives for the consult.



एम.आर.– 9
M.R. -9

अखिल भारतीय आयुर्विज्ञान संस्थान, नई दिल्ली- 110029
All India Institute of Medical Sciences, New Delhi-110029
परामर्श अभिलेख / CONSULTATION RECORD

नाम Name	आयु Age	लिंग Sex	वैवाहिक स्थिति Marital Status	यू.एच.आई.डी.सं. UHID No.
सेवा Service	वार्ड Ward	बिस्तर Bed	व्यवसाय Occupation	धर्म Religion
				स्थिति Status

Referred by Dr. to Dr.

Requesting Doctor Consultant & Specially

Findings : Date :

Diagnosis or Impression :

Recommendations:

Consultant's Signature

CURRENT PROBLEM

The second major problem is lack of:

Real time monitoring of services

Data digitalisation, leading to overflowing paperwork

Data centralisation leading to inefficiency in delay recognition and rectification in most of the hospital set ups in our country.

SOLUTION

- OUR SOLUTION IS IN THE FORM OF AN APP

  Click here to access the prototype website version of it.

- 2-WAY ENCRYPTED ALERTS AND MESSAGES

  A big breakthrough over the previously in-use pager systems.

- ESCALATING ALERTS

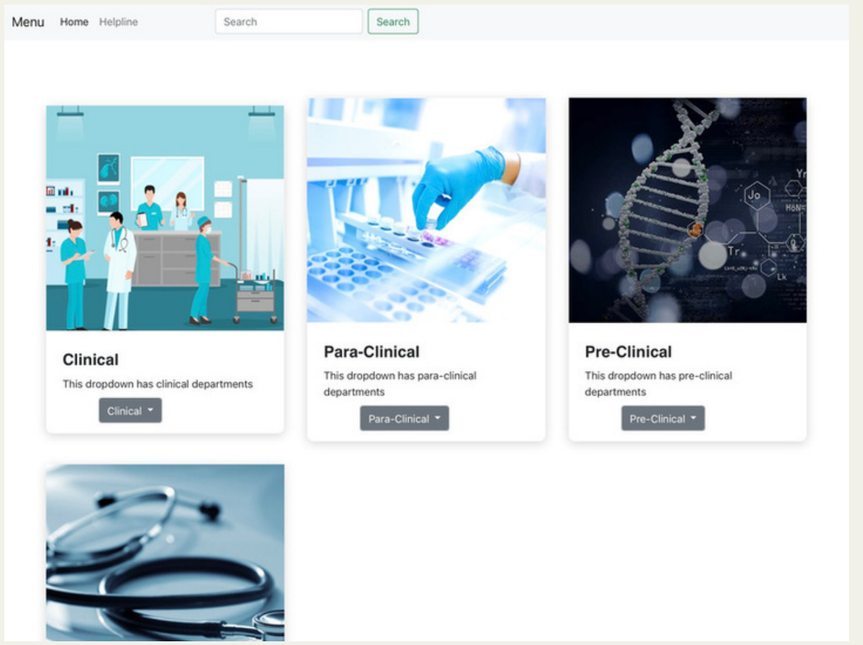
  Reduces the probability of missing out messages.

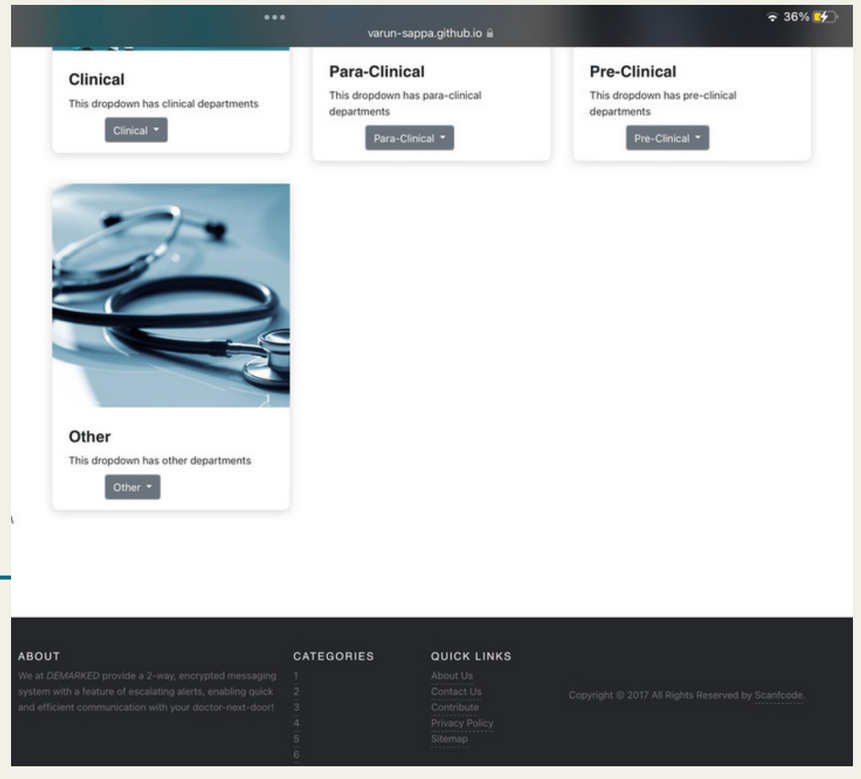
- DELIVERED AND READ RECEIPTS

  Supplemented by mandatory confirmation by recipient

- INTRA AND INTER-DEPARTMENTAL COMMUNICATION

  Efficient communication between clinical, para-clinical, pre-clinical and other departments of the concerned hospital





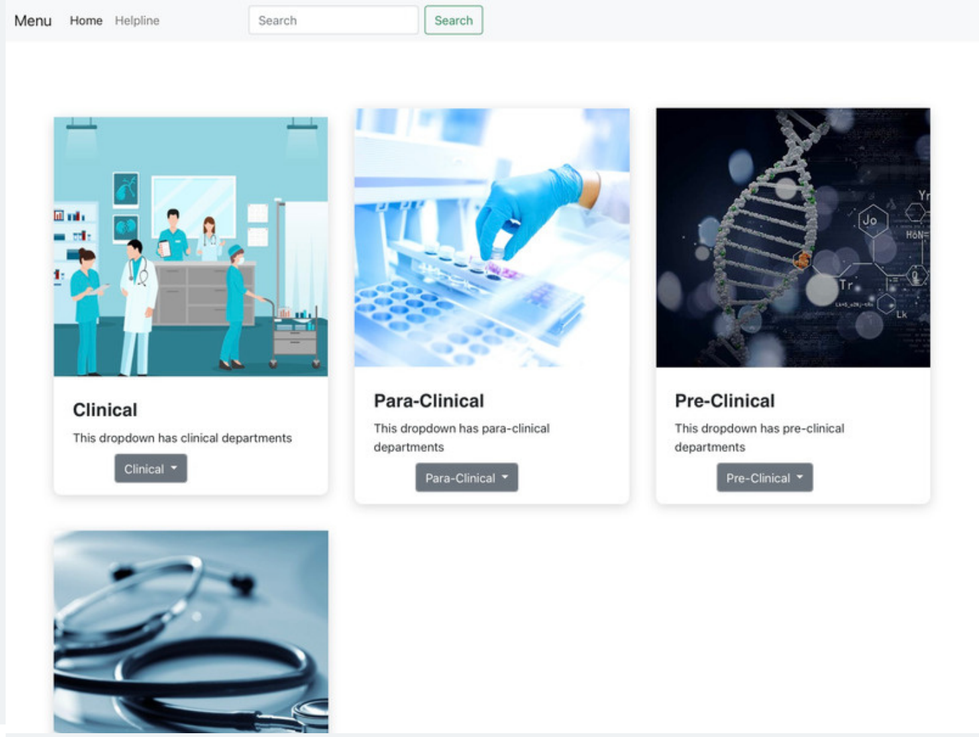
DEMARKED

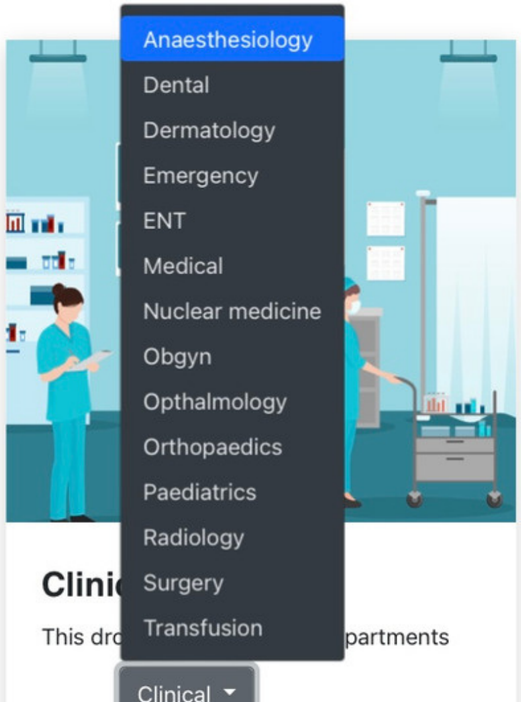
JUST TRACK IT

Demo for a Radiology Consult

Step #1

Open the homepage by clicking here.





Step #2

Select “Radiology” under the Clinical Departments.

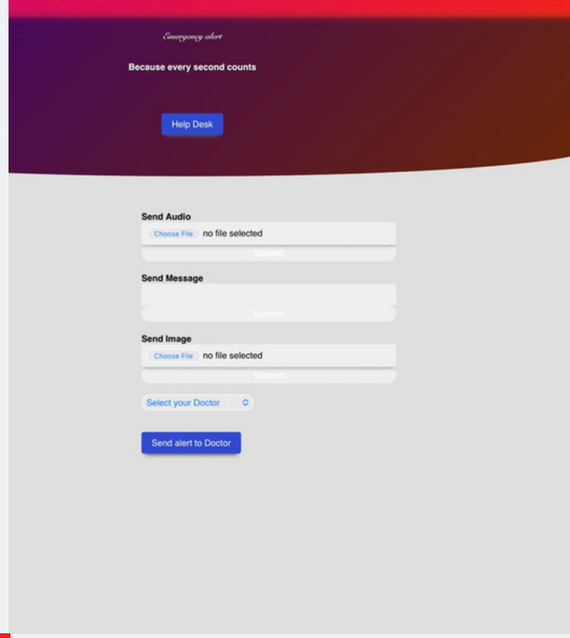
DEMARKED

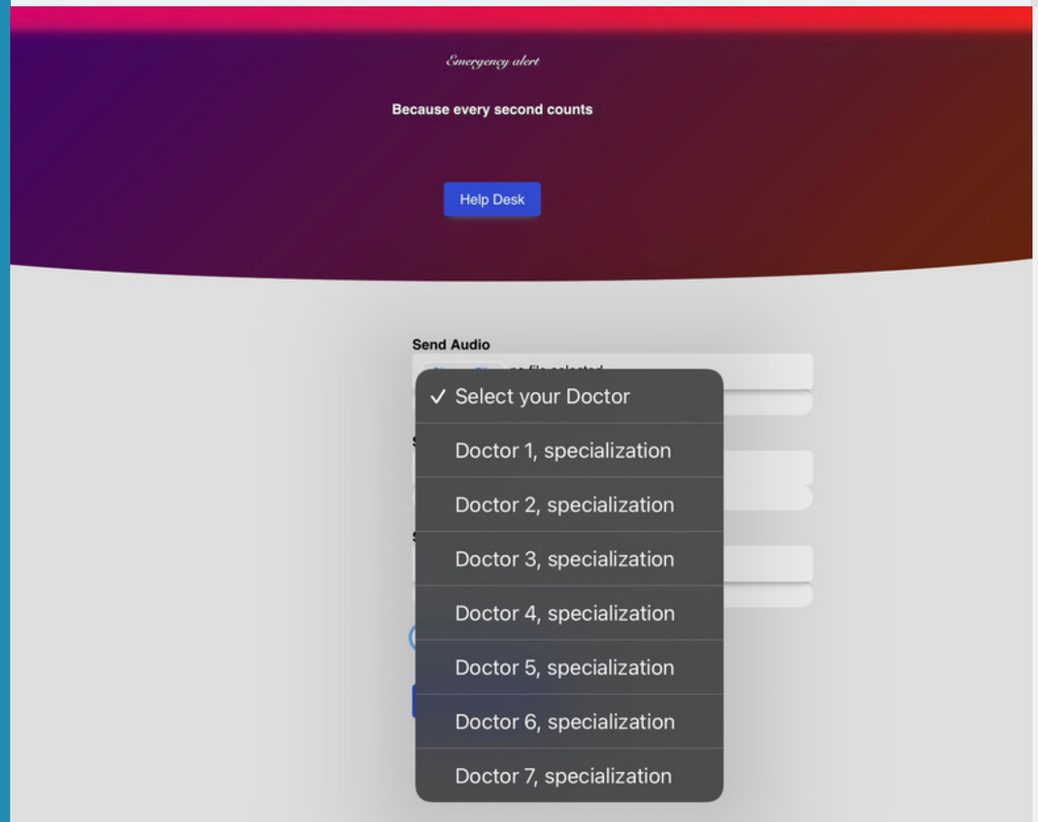
JUST TRACK IT

Demo for a Radiology Consult

Step #3

The Doctor has an option to upload the consultation form/ relevant information in the form of an image, an audio or a text message.





Step #4

Choose the on-call Doctor you want a consult from.

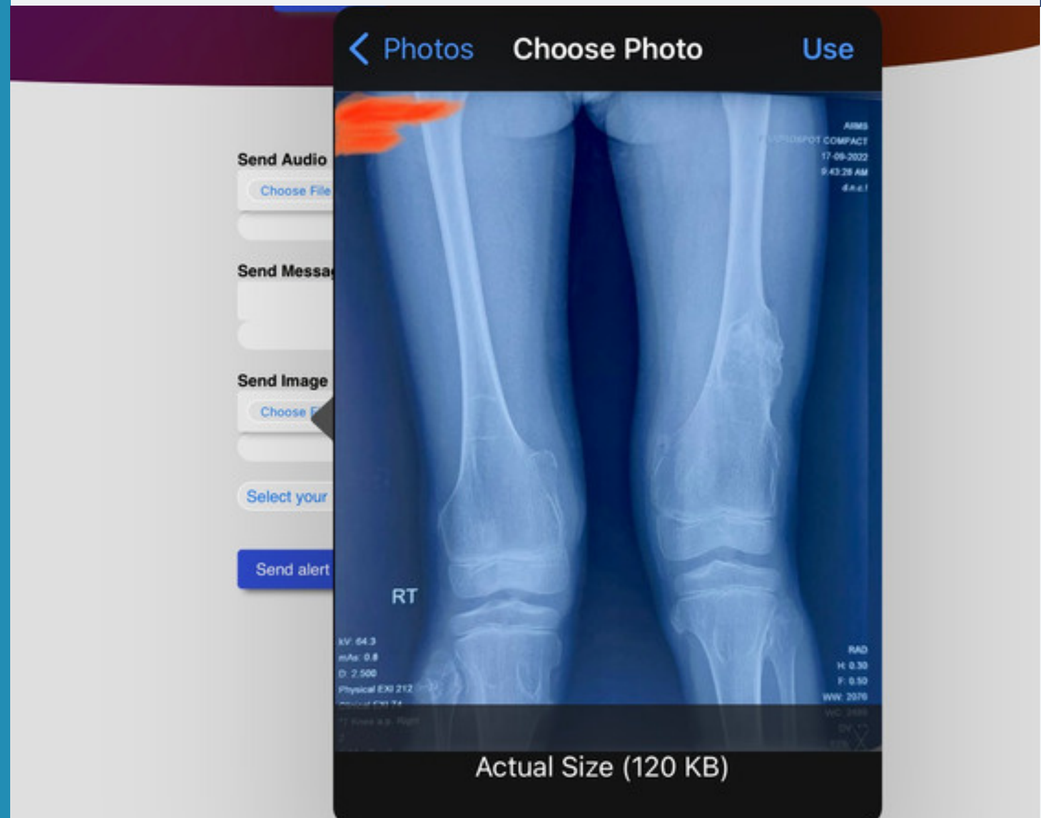
DEMARKED

JUST TRACK IT

Demo for a Radiology Consult

Step #5

Click a picture of the Radiograph



Step #6

Upload the picture from the “Send Image” option.

DEMARKED

JUST TRACK IT

Demo for a Radiology Consult

Step #7

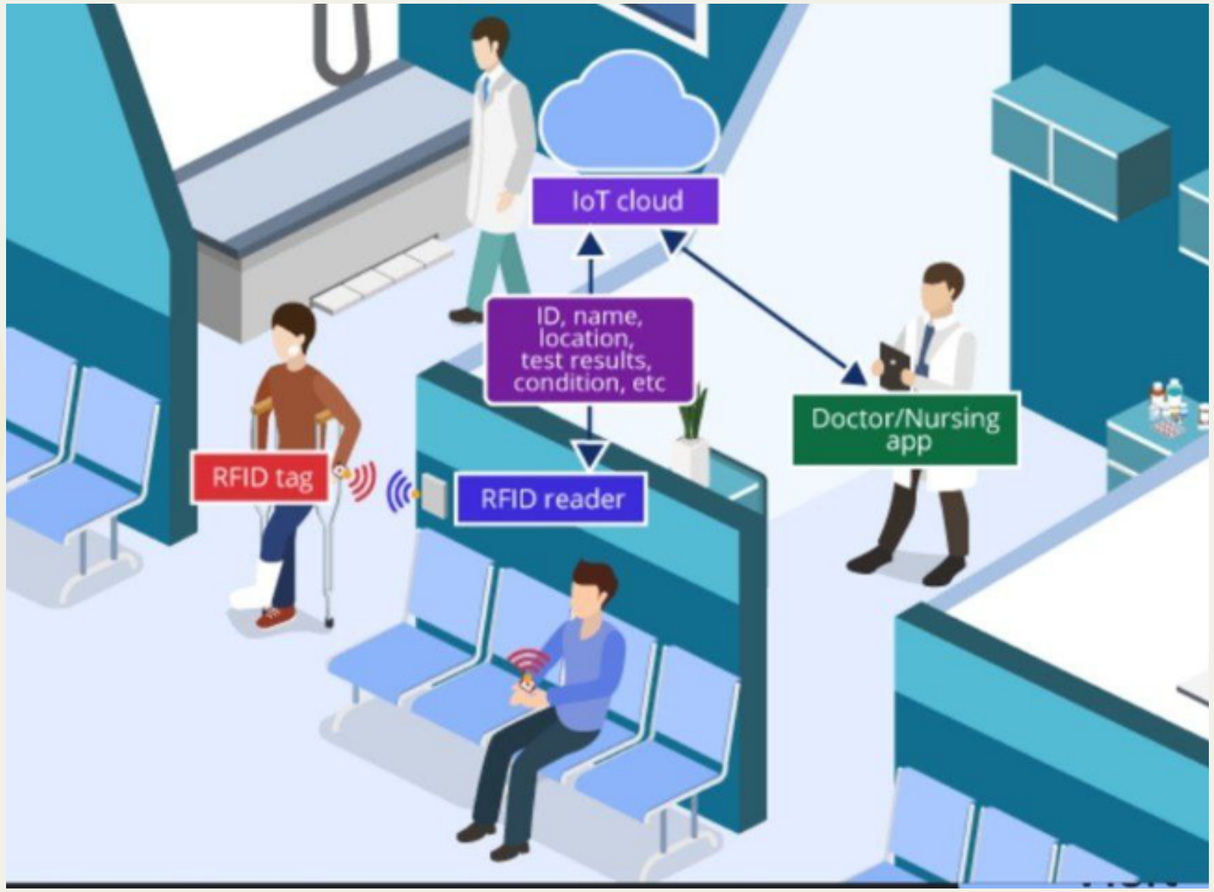
The consulting doctor recieves an “ALERT” with the attatched radiograph.

Step #8

Read and Seen receits would be supplemented with this, with the alerts gradually increasing till the consulting Doctor “CONFIRMS”.

RFID TRACKING

THE SECOND PART OF OUR SOLUTION WOULD BE TO IMPLEMENT THE USE OF RFID TRACKING WITH THE TRACKERS BEING ATTACHED TO PATIENT AS SOON AS THE PATIENT IS ADMITTED INTO EMERGENCY WHICH WOULD ALSO BE LINKED TO THE UHID OF THAT PATIENT AND WOULD BE REMOVED WHEN THE PATIENT IS DISCHARGED.



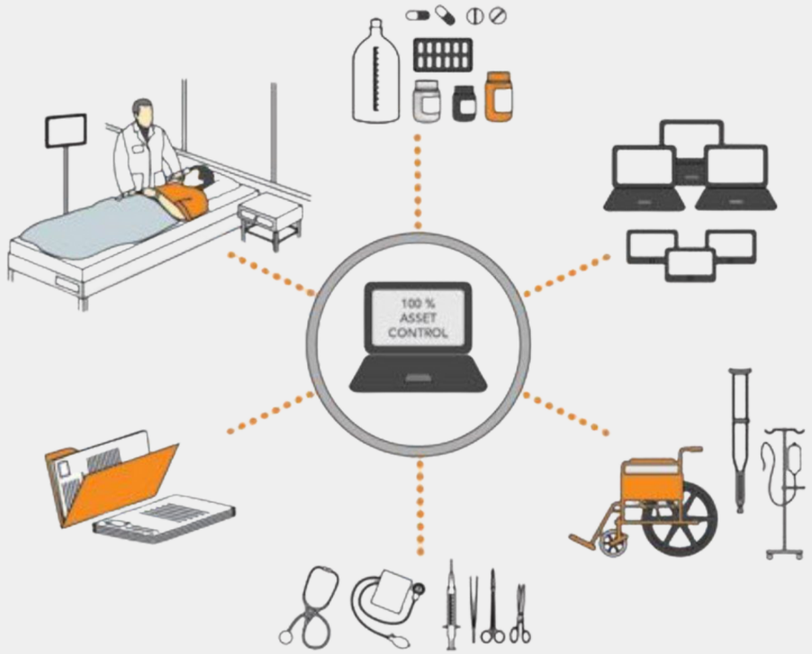
RFID TRACKING

Real-time monitoring of patients, doctors and expensive equipment.

Time taken in arrival of consulting doctors, laboratory procedures, radio diagnostic procedures.

Assessment of clinical performance of doctors and other staff.

Assessment of implications of managerial and policy modification.



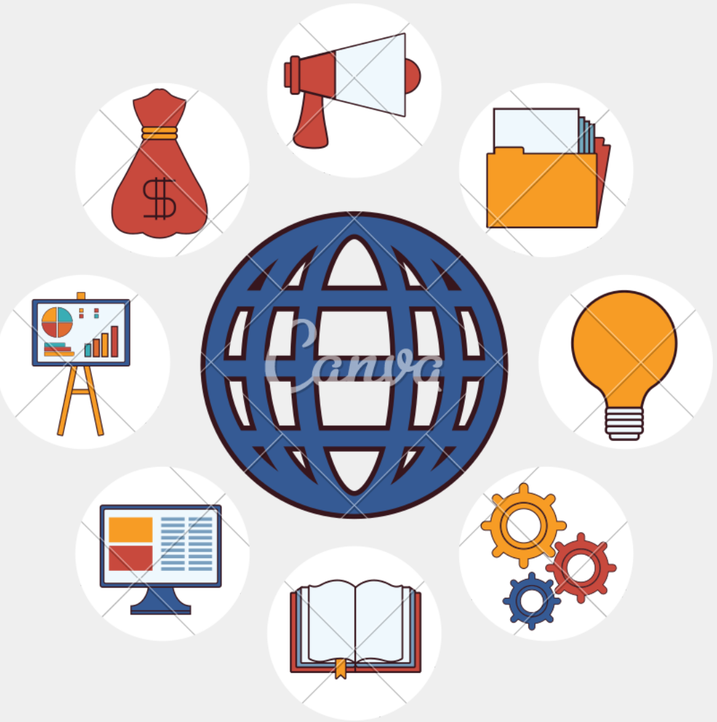
MARKET STRATEGY

Extending customer support team to local stores

Updating products with new/advanced technology

Reduction in prices by employing mass production hence attracting more customers

The health care market is vast and disorganised offering ample oppurtunity for us to establish a niche



SUPPLY CHAIN

Establishing a proper supply chain for speedy transportation

RFID tags for patients can be sourced directly to hospitals and products can tagged at the source, where process and labor efficiencies are far greater than in distribution centers.

Retailers onboarding & Parterning with Hospitals

Taking Orders and receiving advance payment

Storage and transportation

Hospital Relationship Management

Shipment of order (tracking order status)

Fulfillment of Payment

COST STRUCTURE FOR APP

Estimated cost of implementing and developing APP at healthcare level would be:-

Cost factors associated with equipments	Operational costs
• Monetary remittance for the offshore app Developers and Testers	• Cloud Services - Aws/ Google Cloud/ Microsoft Azure • Real time data streaming - Azure event hubs/ Apache Storm • Database - Oracle • App Deployment Charges • Third-party apps integration • Maintenance plan

The cost for developing the software and app interface and integration is expected to be around Rs.60,000 to 1,00,000.

COST STRUCTURE FOR RFID TRACKING

Estimated cost of implementing RFID tracking system at healthcare level will be

Cost factors associated with equipments	**Operational costs**
• RFID tags (active (for patients and doctorsand/or passive (for lab equipment) • Embedding RFID tags into the tools, devices, etc. • RFID readers • RFID collectors	• Cloud Services - Aws/ Google Cloud/ Microsoft Azure • Real time data streaming - Azure event hubs/ Apache Storm • Database - Oracle • Iot Data Analytics - AWS IOT Analytics • Webste Maintenance cost

For an emergency department of the size and patient flow-rate of AIIMS, the cost for installing the hardware is expected to be around Rs. 5,00,000-5,50,000 and of the software to be around Rs. 2,50,000-3,00,000, making our net investment requirement of **Rs 7.5L-8.5L** for the *tracking system* and **Rs 60k-1L** for the *app*.

NOVELTY

- OUR SOLUTION OF LINKING THE UHID OF PATIENTS WITH THEIR RFID, WOULD AUTOMATICALLY PROVE/ DISPROVE THE EXTENT TO WHICH OUR APP IMPROVES THE DISCHARGE OF QUICK EMERGENCY SERVICES.

- OUR SOLUTION WOULD PROVIDE A STRUCTURED FORMAT TO THE DATA (WHICH IS VIRTUALLY ABSENT IN OUR COUNTRY) COLLECTED FROM THE EMERGENCY DEPARTMENT, WHICH IN FUTURE COULD BE EXTENDED TO OTHER CLINICAL DEPARTMENTS, LEADING TO A SUBSTANTIAL TIME REDUCTION IN PERFORMING RESEARCH WITHOUT VIOLATING PATIENT CONFIDENTIALITY.

SWOT Analysis

Strengths

Helps in cutting operational costs, streamlining hospital workflows and asset utilization, reducing medical errors, and improving patient safety.

Weaknesses

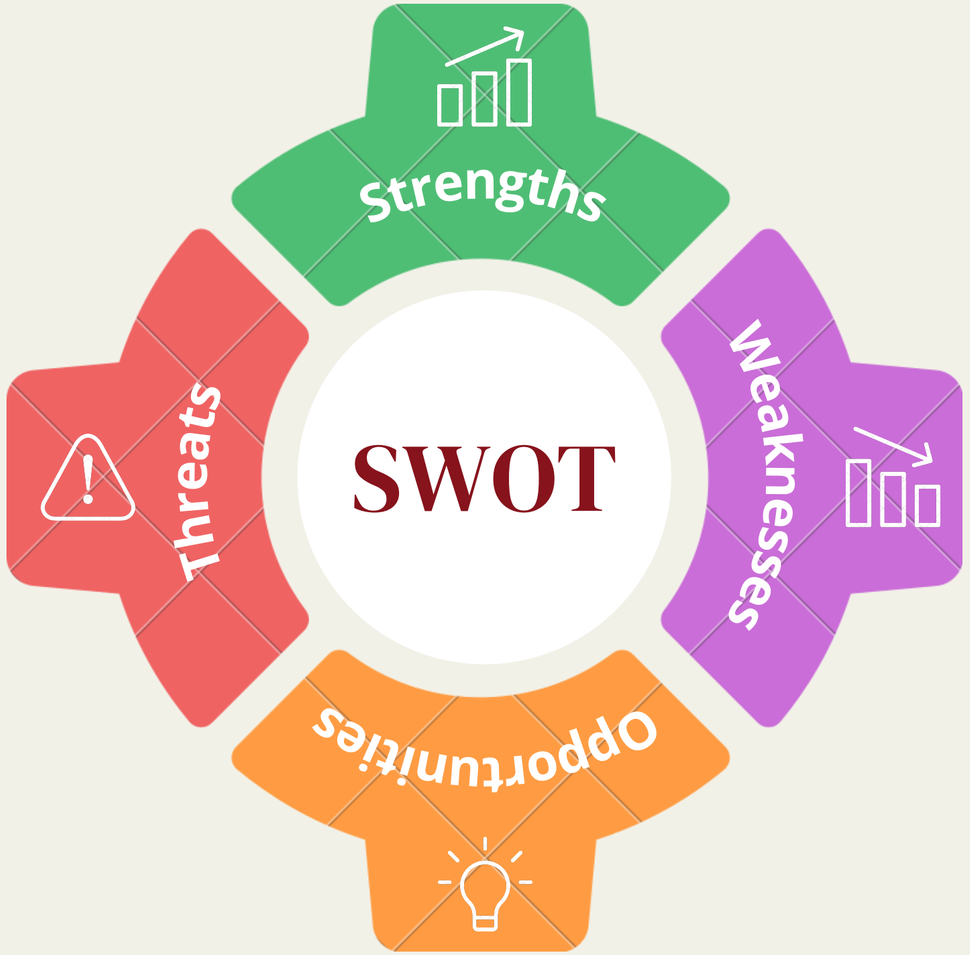
Ethical issues of tracking people, monitoring can be interrupted if a patient loses or throws away their tagged bracelet.

Opportunities

Increased Price of High Value consumables.

Threats

Smart patient tracking implies dealing with private and vulnerable information (patient data, medical conditions, and so on). Even if a hospital resorts to HIPAA-compliant patient tracking software, it makes sense to mention that careless actions of hospital personnel who have access to tracking info and patient databases and can reveal it (deliberately or not) may provoke data leakages.



DRAWBACKS

- OUR SOLUTION REQUIRES THE HOSPITAL TO HAVE ALL THEIR PATIENTS LINKED WITH A UHID, WHICH ISN'T PREFERABLE FOR ALL PRIVATE INSTITUTIONS.
- INTER-DEPARTMENTAL COMMUNICATION WOULDN'T BE A MAJOR ISSUE IN SMALL-SCALE HOSPITALS.
- ANY NETWORK ISSUE COULD LEAD TO THE DISRUPTION OF APP-FUNCTIONING.

REFRENCES

1. IMPACT OF RADIO-FREQUENCY IDENTIFICATION (RFID) TECHNOLOGIES ON THE HOSPITAL SUPPLY CHAIN

2. FRAGILITY AND CHALLENGES OF HEALTH SYSTEMS IN PANDEMIC: LESSONS FROM INDIA'S SECOND WAVE OF CORONAVIRUS DISEASE 2019 (COVID-19)

3. THE PROGNOSTIC VALUE OF SURGICAL DELAY IN PATIENTS UNDERGOING MAJOR EMERGENCY ABDOMINAL SURGERY:

4. DELAY IN DIAGNOSIS OF PULMONARY THROMBOEMBOLISM IN EMERGENCY DEPARTMENT

THANK YOU