IS447 FINAL PRESENTATION

Smart Healthcare in Asia

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IHH Healthcare Berhad

SINGAPORE MANAGEMENT UNIVERSITY

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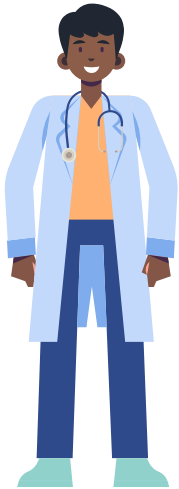
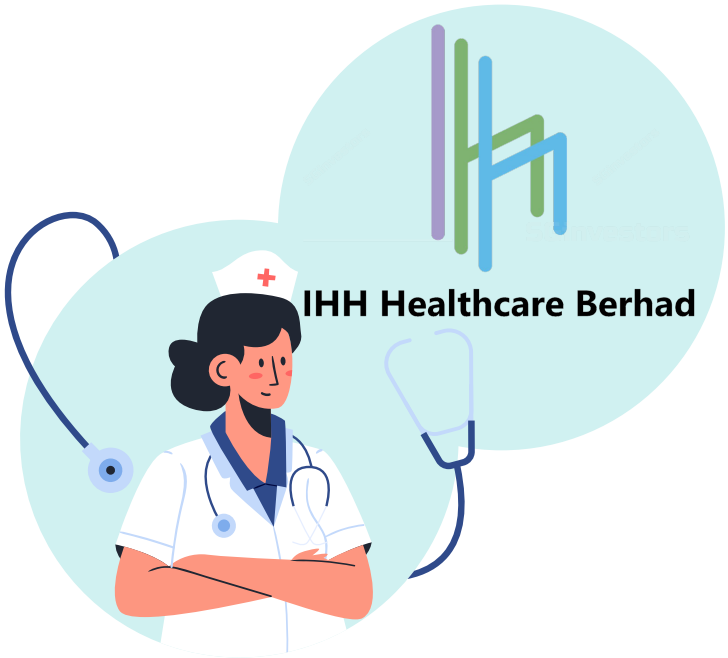




PROJECT OVERVIEW

OUR TEAM

NADIYA

Project Manager

SHERMIN

Client/Product Manager

SHAZARIFAH

Business/UX Analyst

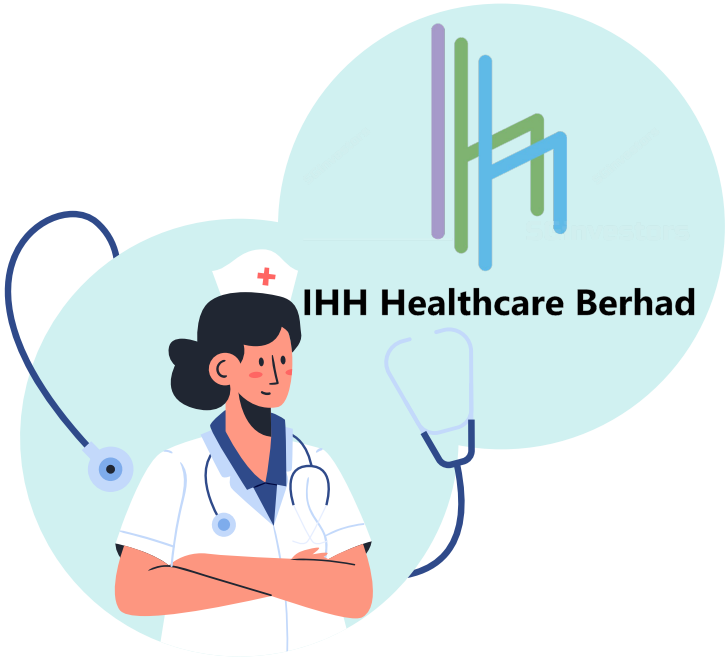
ROYSTON

Product Developer

NICOLE

QA/Testing Manager

INTRODUCTION



Patient Experience (PX) Dept

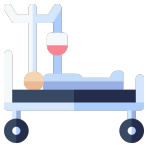
Quality of Care and Patient Satisfaction
Continuously reviews, monitors, reports hospital patient experience performance, and supports hospital improvement processes.
Critical aspects of the patient's journey *from the time they arrive to when they exit the hospital*.


Mount Elizabeth Hospital


Mount Elizabeth Novena Hospital


Gleneagles Hospital


Parkway East Hospital



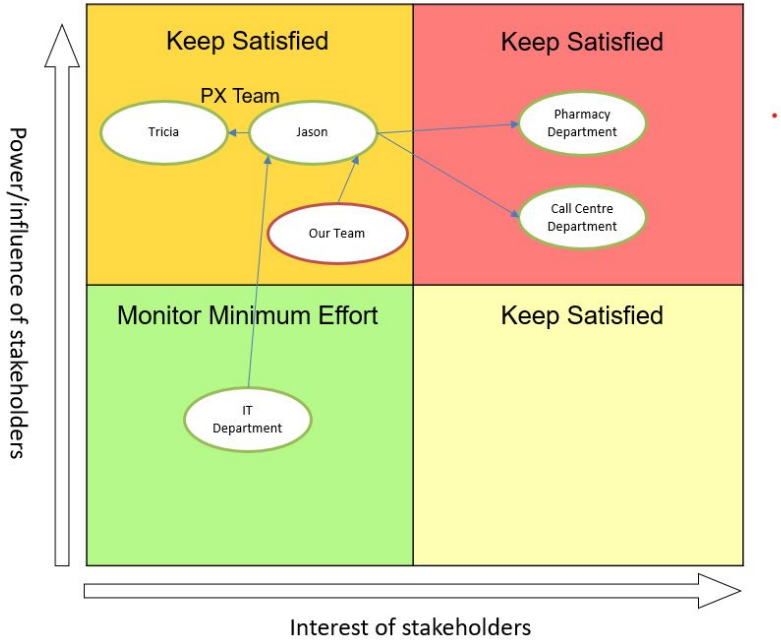
Services: outpatient, inpatient and emergency services, etc.

PROBLEM STATEMENT

Various functional departments within the 4 hospitals are experiencing manual, unproductive data consolidation and report generation without a **real time overview of their relative performance**.

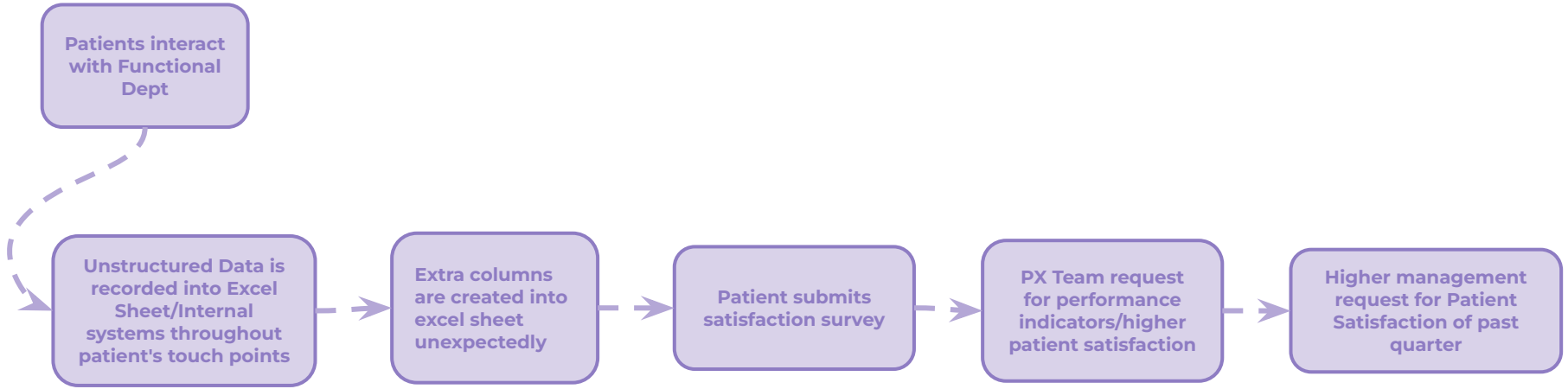
STAKEHOLDERS

Users who have access to our dashboard solution

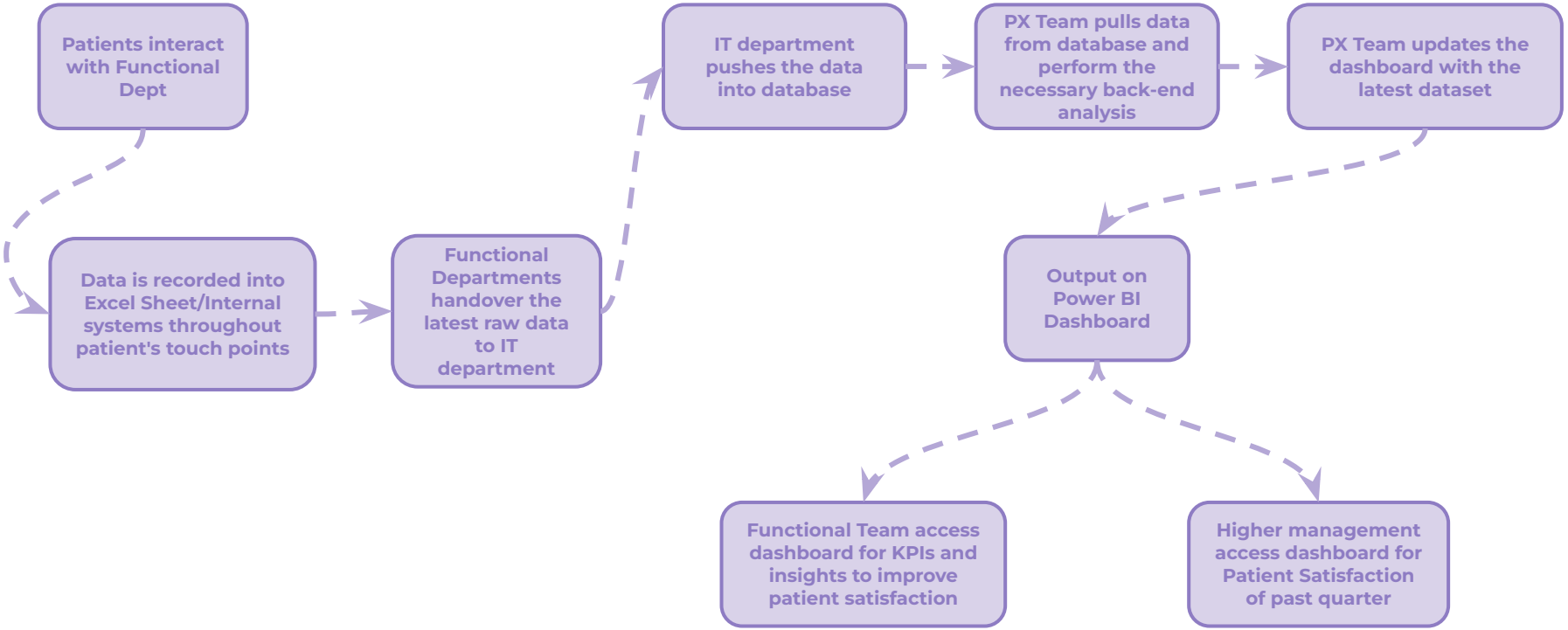


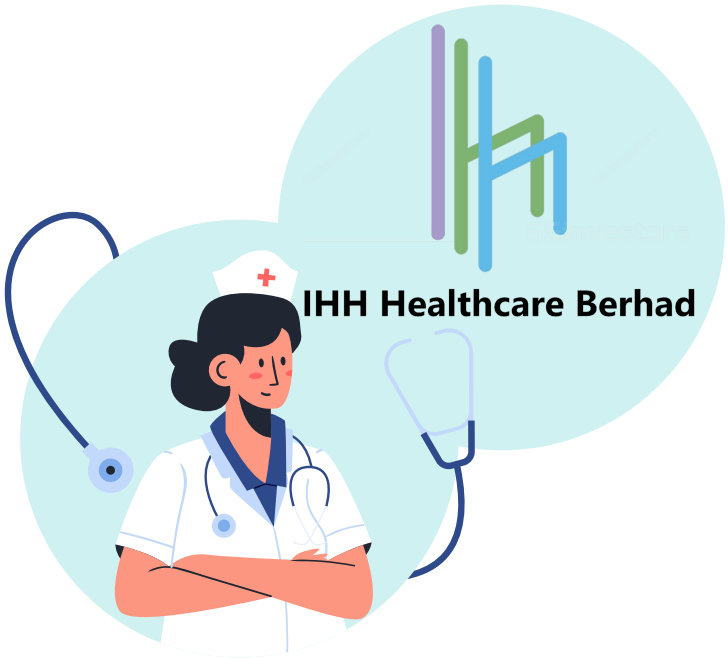
- Patient Experience (PX)
- Pharmacist Dept
- Call Centre
- IT Department

CURRENT USER JOURNEY



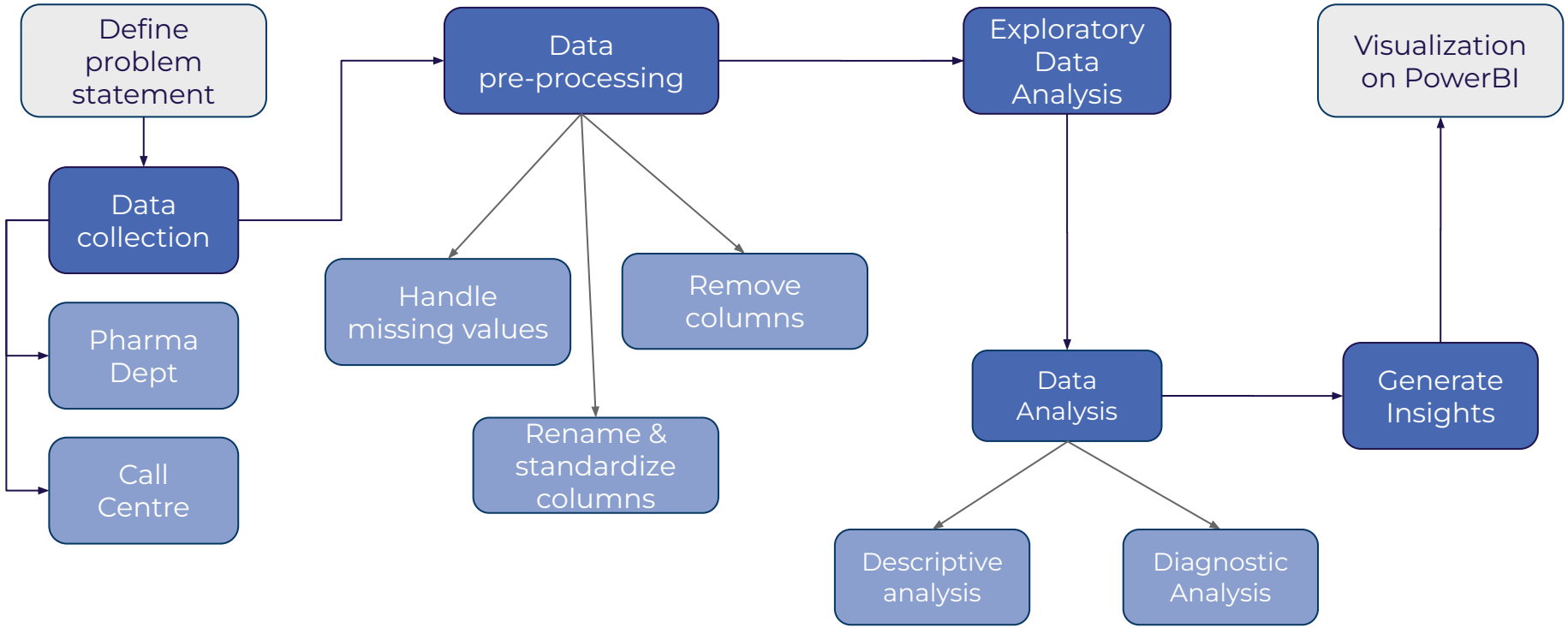
NEW USER JOURNEY





SOLUTION OVERVIEW

CURRENT METHODOLOGY



DATA CLEANING: *Call Centre Dept*

13 **CSV FILES**

Dataset of Calls Distribution & Reporting Aventa

12 **FIELDS**

Type of Calls, Name of Agent, Wait Time, Talk Time, Team

785k **ROWS**

Missing 248 rows in one column

MAIN ISSUES	SOLUTIONS
❑ Different data format of date, time attributes	❑ Standardize data type to DD HH:MM:SS format
❑ No clarity on Agent's respective country & respective team	❑ Create new column to map country and type of calls to the functional group
❑ No column to indicate if call is inbound or outbound	❑ Creation of new columns for analysis on dashboard

DATA CLEANING: *Pharmacy Dept*

20 CSV FILES

4 different hospitals, additional csv file on wards

>15 FIELDS

Time taken to Received/Packed/Dispensed, Date, Comments

33k ROWS

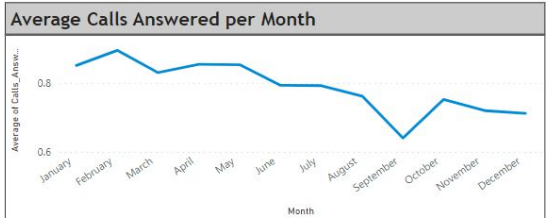
Missing rows in multiple columns for different hospitals

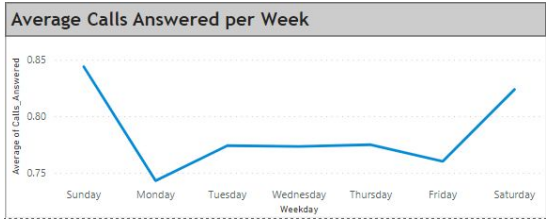
MAIN ISSUES	SOLUTIONS
❑ Different data format of time attributes	❑ Standardize data type to DD HH:MM:SS format
❑ Different header name due to different workflow process	❑ Rename to DateTime XXX ❑ Rename of Packing to Checking for standardization [GEH]
❑ Missing metrics for KPI	❑ Creation of new columns for analysis on dashboard

DATA ANALYSIS: Call Centre Dashboard

Descriptive Analysis

- SLA within 20 secs and 30 secs, Average Speed Answered, Average busiest day/hour



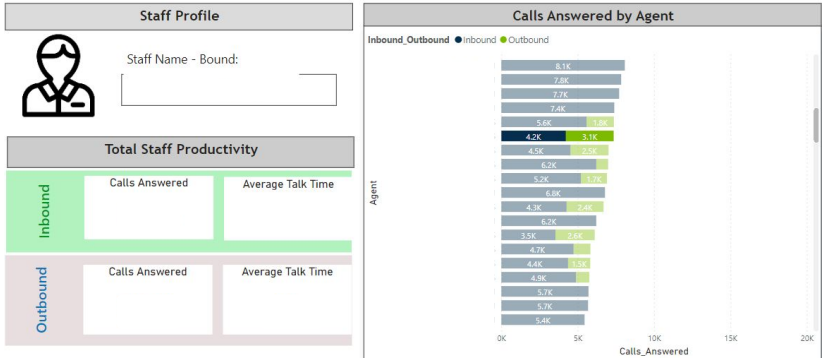


To discover and compare the distribution of calls across the different hospitals segmented by Inbound & Outbound

To understand how many calls were answered per monthly or daily. Estimate the management of future working staff on a specific busiest day.

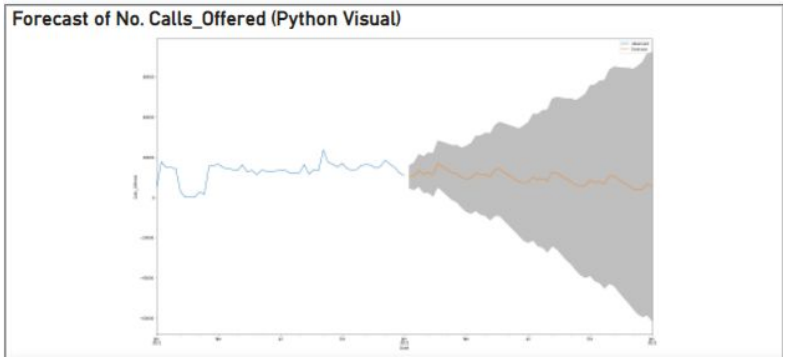
DATA ANALYSIS: Call Centre Dashboard

Descriptive Analysis



To understand the staff productivity by analysing how many of calls were answered and average talk time (secs) per staff

Predictive Analysis

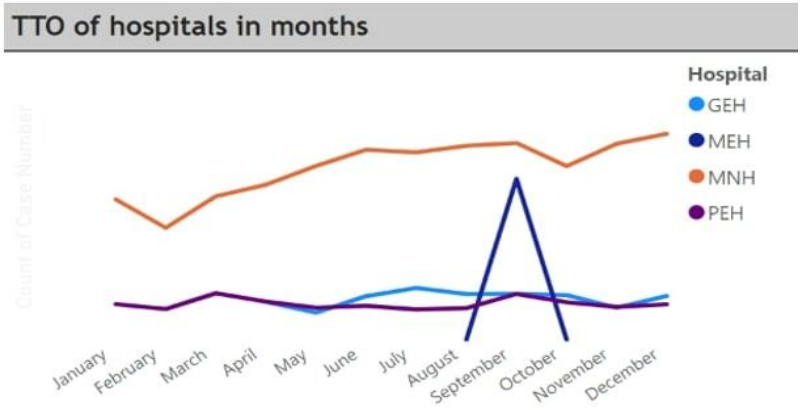


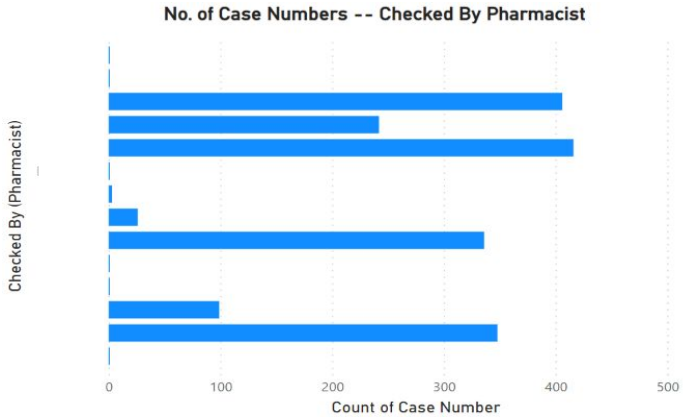
To leverage on historical data and predict the no. of calls offered in the future so as to proactively optimise better call performance

DATA ANALYSIS: Pharmacy Dashboard

Descriptive Analysis

- Avg time taken by month, average number of drugs handles per day, average busiest day/hour



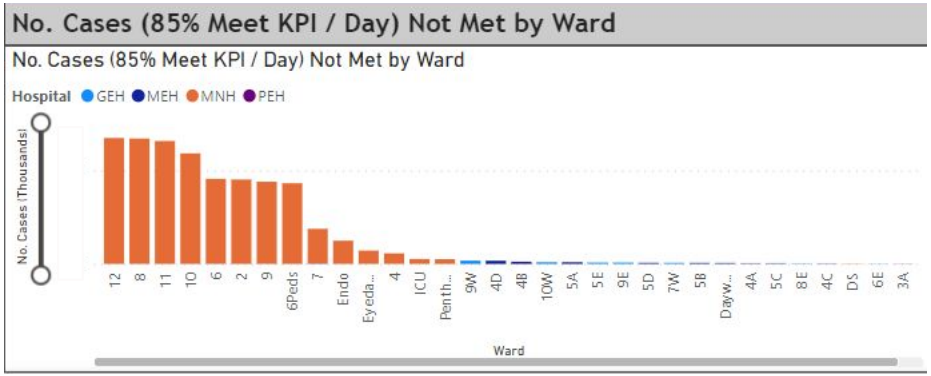


To discover and compare the distribution of cases across the different hospitals

To understand the staff productivity by analysing the number of cases managed by pharmacists

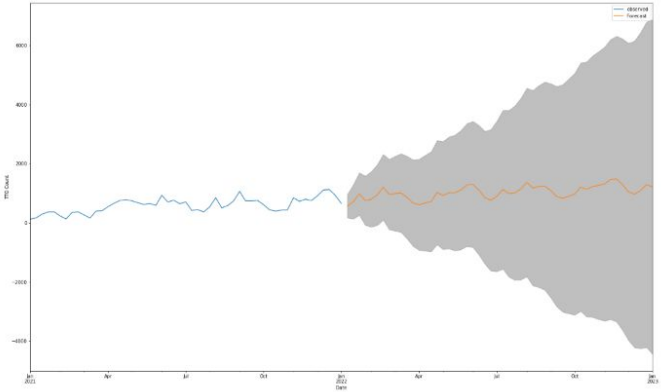
DATA ANALYSIS: Pharmacy Dashboard

Diagnostic Analysis



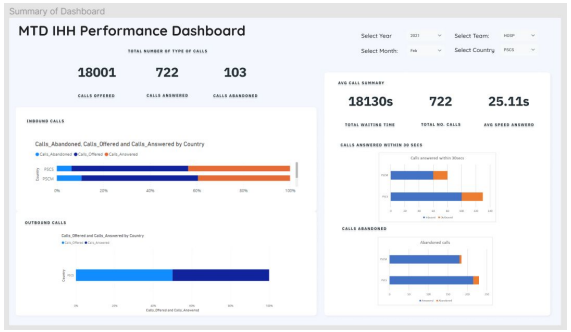
To discover insights and understand why some cases did not meet the KPI by comparing the average time taken per day/month and the actual time taken for each case

Predictive Analysis

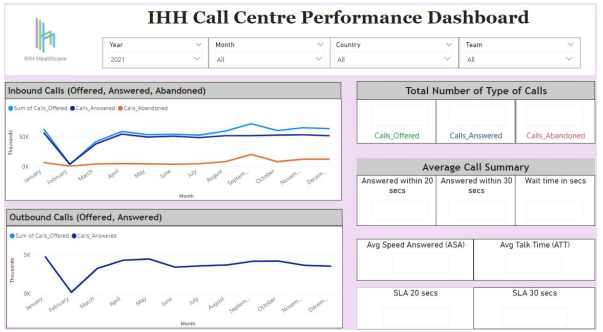


To leverage on historical data and predict the case number distribution in the future so as to proactively optimise production performances

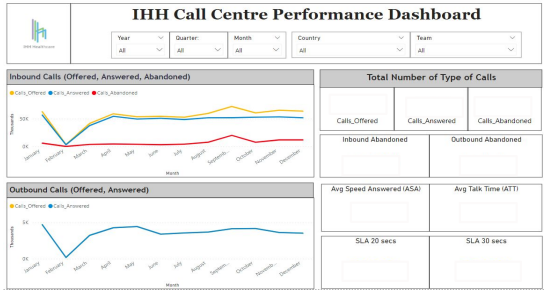
DESIGN ITERATION



Phase 1:
Ideation on Figma



Phase 2:
First PowerBI draft

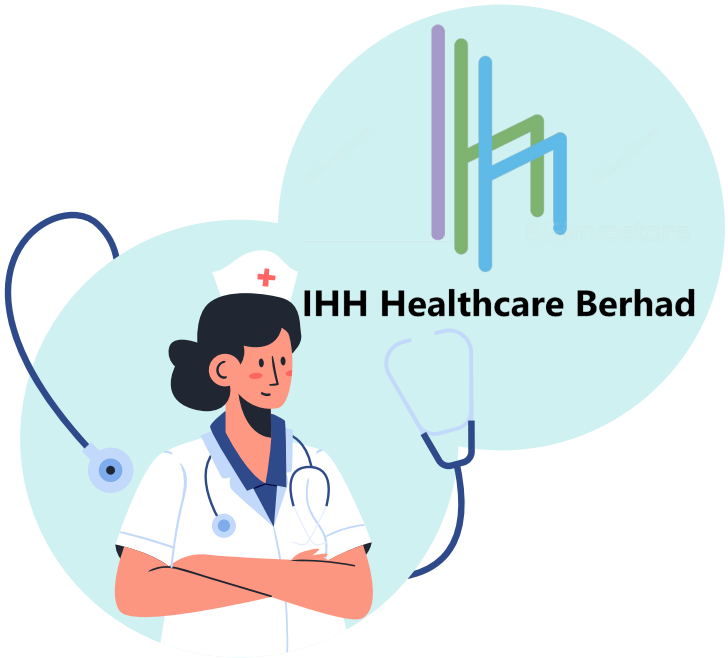


Phase 3:
Prototype Review

In Progress

Phase 4:
Changes after UAT

VIDEO DEMO



WAY FORWARD

LIMITATION

Solution Limitation

- Data received were filtered hence data was not raw
  - Due to the nature of industry being confidential with their data and process.

Project Limitation

- Time Constraint (~8 Weeks)
- Project Re-scope

FUTURE WORK

Call Centre Dashboard

1. Hourly-based Visualizations
2. Staff Productivity:
   - Understanding individual Staff Performance
   - Check the number of staffs working per day to determine the avg number of calls picked up.
3. Forecast Analysis

Pharmacy Dashboard

1. Medical Reconciliation KPI
2. Dispensary Errors
3. Inventory
4. Forecast Analysis

REMAINING PROJECT TIMELINE

Call Centre Department

- Analyse patient walk through and user needs
- Clean raw data and ideate dashboard
- First prototype of dashboard
- PX Team and Call Centre Department Review
- Refine dashboard
- UAT Test

Pharmacy Department

- Analyse patient walk through and user needs
- Clean raw data and ideate dashboard
- First prototype of dashboard

REMAINING PROJECT TIMELINE

SPRINT 5

Week 13-14

Pharmacy Department

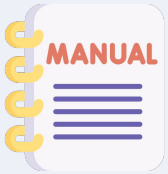
Week 13
- Review
- Reiteration after Review

Week 14
- UAT testing

Final Presentation
- Prototype
- Test

IHH Closure
- Project handover

Implementation Guide

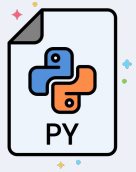


User Manual

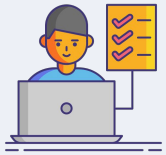
Cleaned Data

Power BI

Call Centre and Pharmacy Dashboard



Cleaning and Analysis Algorithm



UAT Test Cases and Results

THANKS!

Do you have any questions?