

POCKET PATIENT

DRP39

HAM HUAN SWEN, LIANG YIN XIAN,
OOI SIU PEI, PATCHARAPOL TANGCHALERMKUL

People

In developing the Pocket Patient App, we conducted thorough research to gain a clear understanding of the needs and behaviours of the target audience, which includes both patients and doctors.

By empathizing with their challenges and pain points, we designed the app with their needs in mind, ensuring a user-friendly experience and streamlined operations.



return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number: 12345

Drug Allergies: NKDA

Past Medical History:

2023-06-20palpitations

2023-06-20diagnosed with goitre

2022-06-04Chest Infection

2020-04-08Fractured ankle

Current Medications:

Drug	Dose & Frequency	Start Date	End Date	Duration	Route	Comments	Submitted by
carbamazole	30mg	2023-06-20	2023-07-04	2 Week	Oral	diagnosed with goitre	Doctor
steroid	once daily	2023-06-20	2023-06-27	7 Day	oral		Patient
Triazolam	10mg	2023-06-13	2023-06-20	1 Week	Oral	Help with sleep	Doctor

last medication date: 20/06/2023

Bob Choy

NHS Number: 123 456 7890

D.O.B: 2017-12-22

Address: 123, Road to Heaven, London

My Medications

My Medical History

Hospital Visit History

Data Access Control

My Diary

To illustrate our understanding and empathy, we conducted interviews and surveys with patients to identify their **frustrations and concerns regarding **waiting times, data retrieval, and data privacy**.**

"It's disheartening to see older patients, myself included, spending excessive hours waiting for medical attention."

"Depends on the personality, some people are comfortable sharing."

"I think the basic information are okay to be shared"

"I will be making the judgement on what data to share or whether I should tell the doctor or not"

-- an elderly man



"I would like to be able to see my current prescriptions and past medical history on the app."

"I feel safe to give them all my medical information since doctors should know everything for safety"

-- an imperial student

"I think patient confidentiality is a big deal"

"If I think that a certain detail is not relevant for a doctor to know, sometimes it might be even though it is important to have the choice to hide certain medical history."

-- a highschool student



Additionally, we interviewed doctors in various healthcare settings to gain insight into their **workflow, challenges in accessing patient data, and their perspectives on data privacy.**

"Most hospitals here are paper-based."

"Data is not shared between hospitals so we need to call up other hospitals for each transferred patient."

"Sometimes it takes a few minutes but sometimes a whole morning, or even overnight!"
-- junior doctor in newcastle

"Hospitals in bigger cities like London, Oxford and Cambridge are fully digitalised, but there are so many different systems in place."

"Good systems are expensive to set up and difficult to train the staff."

"It's a huge pain to ring other hospitals if I need to know more about transferred patients."
-- junior doctor at oxford

"Imagine an 80 year-old patient coming in at 1am. He's on 20 medications and we don't know his medical history."

"The time spent to get patient's medical history from other hospitals is ridiculous!"
-- junior doctor in ireland

Through these interviews, we explored **existing patient data management systems and **identified areas for improvement** based on the experiences of healthcare professionals, which will be shown in testing and validation section.**

By **actively engaging with patients and doctors, we aimed to address their concerns, find solutions to improve data accessibility, and strike a balance between data privacy and effective healthcare delivery.**



Why do we need Pocket Patient...

when there is already the NHS App?

NHS APP VS PATIENTS KNOW BEST VS POCKET PATIENT

NHS APP

- Allows patients to keep track of their medical information from **GP appointments** only
- No information on patient's hospital visits

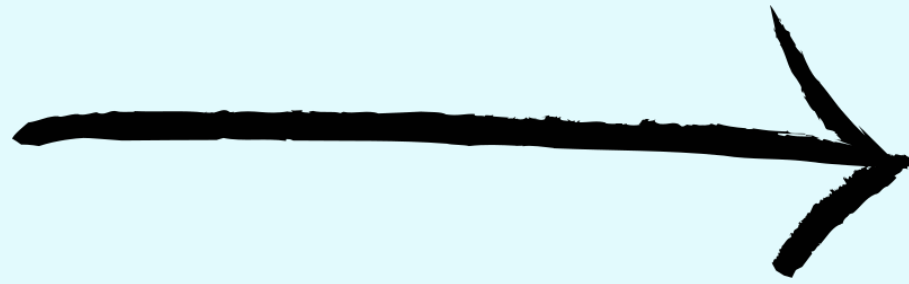
PATIENTS KNOW BEST

- Third party app that is part of the NHS app
- Allows patients to keep track of their medical information from **hospital visits** only
- No information on patient's GP visits
- **Sharing of data is manually done** in the app by doctors or patients to the relevant people

POCKET PATIENT

- Allows patients to keep track of their medical information from **both GP appointments and hospital visits**
- Full medical histories shared easily
- **Sharing of data is done automatically** as long as the patient's **NHS ID** is provided

Opportunity Statement



How might we enable **medical practitioners** to **quickly** and **reliably** **obtain patient medical history** for **safer** and more **efficient treatments**?



Desired Future State

What do the Patients want?

From our interviews from the **patients point of view**, we also obtained several valuable insights onto **what makes an ideal medical visit experience** for them.

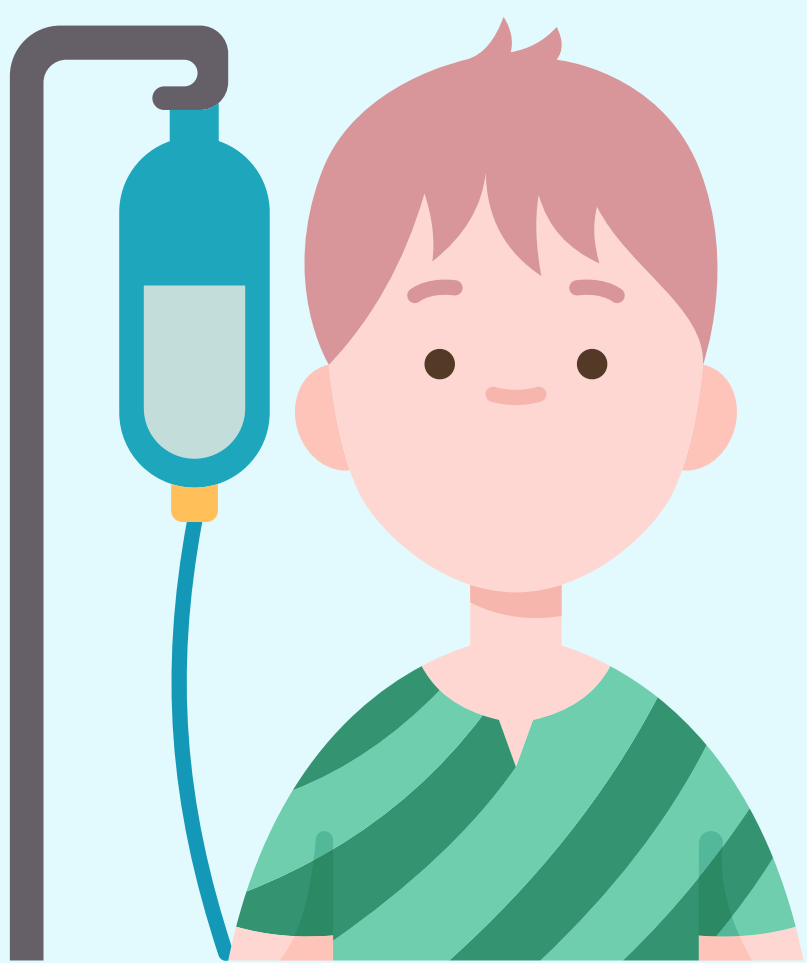
"Having an app rather than a stack of paper to explain my medical history is so much better. It has to happen. It should happen."

-- an elderly man

"It would be great if I can be admitted as soon as possible into the hospital and not wasting long hours waiting just to get admitted."

--- a lady in early twenties

It is clear to us that patients want the process of a medical healthcare visit to be **as efficient and quick as possible**, and one of areas that showed a massive opportunity to be improved upon was the **process of giving medical data to the medical practitioners**.



Desired Future State

What do the Doctors want?

Further interviews with **doctors practicing in the medical field** in the UK, we gained valuable insights regarding their aspirations for tools or solutions that could **simplify their work routines** and **enhance their overall quality of life**.

"Having a unified system accessible nationwide would be advantageous, despite individual trusts having their own databases."

"A mobile app that allows patients to store their medical records and provide additional information would be beneficial, particularly in situations where patients are from different locations and have limited access to their hospital records."

Overall, the conclusions drawn from the interviews emphasize the importance of **integrated systems** and **patient-centric solutions** in the healthcare sector. They underscore the **potential for technology to drive positive changes**, leading to more efficient workflows, improved communication, and enhanced patient care outcomes.

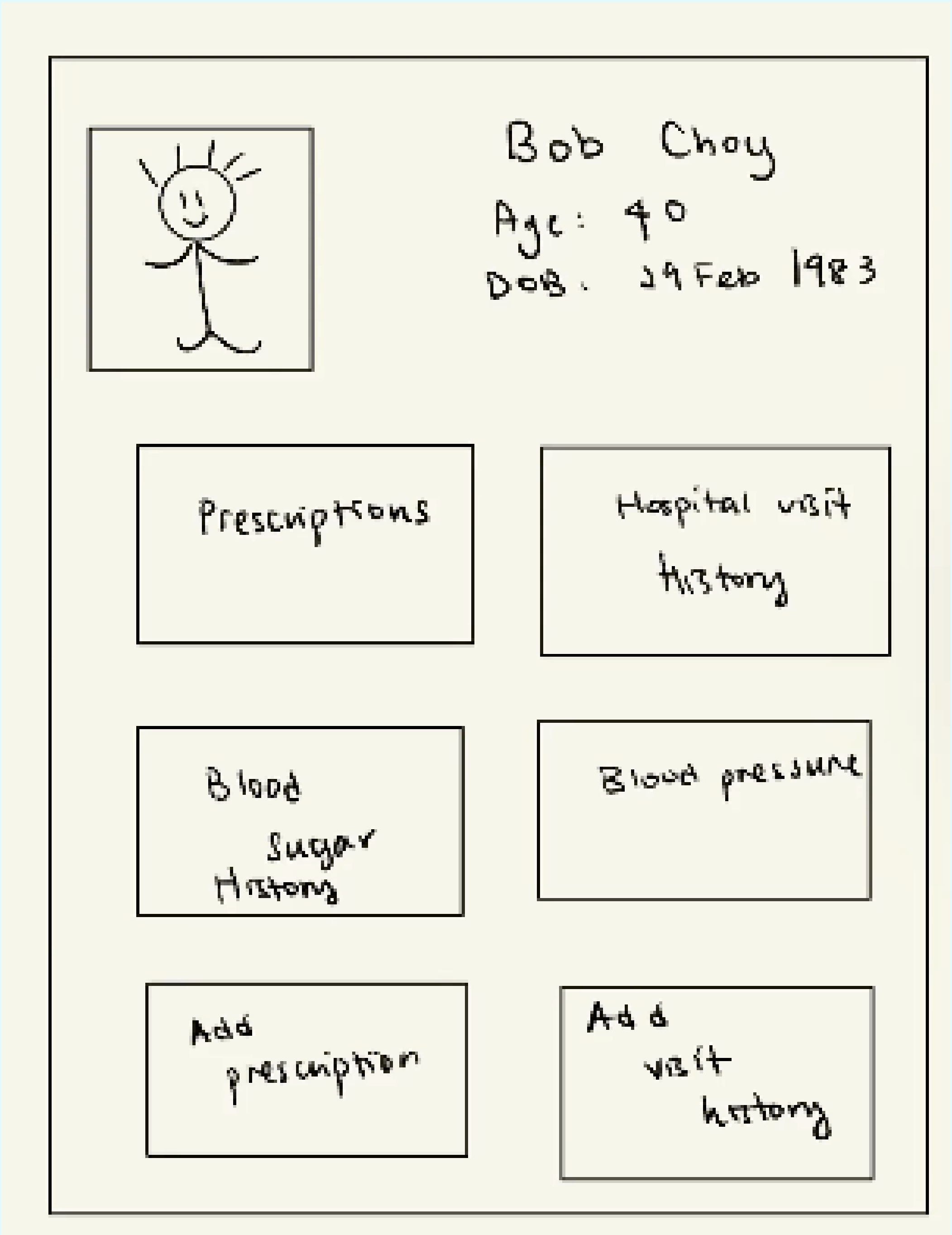


Testing & Validation

Doctor's View: The Website

1. At first glance?

This is our initial paper mock up of the first page for the doctor's view. We were initially planning to show all the possible data as buttons which links to the patient's respective data.



Testing & Validation

1. At first glance?

Bob Choy
Age: 40
DOB: 29 Feb 1983

Prescriptions Hospital visit history

Blood Sugar History Blood pressure

Add prescription Add visit history

"Some more useful subsections to have would be lab and imaging, as we sometimes require past reports for better diagnoses."

Bob Choy
Age: 40
DOB: 29 Feb 1983
address:
Allergy Status:

Prescriptions Hospital visit history

past medical history

Labs History Imaging History

Add prescription Add visit history

Through the first few iterations, we started to gain insights on what information the medical practitioners actually need.

"It is still not providing me an easy way to get the data I need. I don't want to waste time sifting through all their data trying to get their important medical history."

-- junior doctor in ireland

return to search

Patient Summary
Medication
Healthcare Visit History
Lab History
Imaging History
Patient Diary

Bob Choy
NHS Number: 12345
Drug Allergies: NKDA

Past Medical History:

2023-06-20	palpitations
2023-06-20	diagnosed with goitre
2022-06-04	Chest infection
2020-04-08	Fractured ankle

Current Medications:


Drug	Dose & Frequency	Start Date	End Date	Duration	Route	Comments	Submitted by
carbamazole	30mg	2023-06-20	2023-07-04	2 Week	Oral	diagnosed with goitre	Doctor
steroid	once daily	2023-06-20	2023-06-27	7 Day	oral		Patient
Triazolam	10mg	2023-06-13	2023-06-20	1 Week	Oral	Help with sleep	Doctor

last medication date: 20/06/2023

On the landing page, we now have their basic information, a summary of all significant past medical histories, and the medications that they are currently taking.

2. Hospital visits

Our initial hypothesis is that a record of hospital visits will be useful for doctors to get easy access to past medical information. The initial paper mockup lists out the informations that we think might be useful for doctors.



Bob Choy

Age: 40

DOB: 29 Feb 1983

Hospital visit History

<<Back

to when? can be one

X

Date	Hospital	Consultant	Attachment	Tags
20/4/23	St. Mary Hospital	Dr. John Lee	Scan Results	Scans
			Blood Test	Blood Test
			Discharge letter	Others

But our initial hypothesis was proven to have lacked some crucial information that makes the page useful for doctors.

"In this table, I'm unable to tell why the patient was admitted. It does not tell me anything."
-- junior doctor in ireland



return to patient search

Prescriptions

Hospital visit history

Lab History

Imaging History

Bob Choy

NHS Number: 123 456 7890

Hospital Visit History

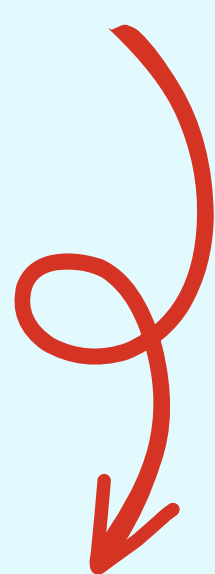
Date of admission	Date of discharge	Discharge Summary	Consultant
20/4/2023	25/4/2023	broken ankle	Dr. John Lee
13/2/2021	/	influenza	Dr. Ben Yang

Add visit entry

We added a **discharge summary** to the table to solve this.

"One suggestion I have is hospital visit history, making it more general, so healthcare visit history, so that it can encompass hospital and GP appointments, so that we can differentiate between the nature of visits."

-- junior doctor in London



return to search

Patient Summary

Patient Personal Information

Prescriptions

Healthcare Visit History

Lab History

Imaging History

Bob Choy

NHS Number:123

Healthcare Visit History:

Date of Admission	Date of Discharge	Discharge Summary	Consultant	Type of Visit	Letter
2023-06-08	2023-06-08	broke ankle	Dr John Lee	Hospital Visit	Discharge Letter
2023-06-06	2023-06-15	influenza		Hospital Visit	Discharge Letter
2023-06-06	2023-06-15	wrist fracture		Hospital Visit	Discharge Letter
2023-06-08	2023-06-08			Hospital Visit	Discharge Letter
2023-06-08	2023-06-08			GP Consultation	GP Letter

Add visit

We labeled each entry a "visit type" to easily differentiate between different types of entries.

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

Healthcare Visit History:

Date	Discharge Summary	Type of Visit	Consultant	Letter	Lab and imaging
2023-06-20	palpitations	Hospital Clinic	Dr Mel	Discharge Letter	
2023-06-15 - 2023-06-20	diagnosed with goitre	Hospital Admission	John Lee	Discharge Letter	Ultrasound(neck)
2022-06-01 - 2022-06-04	Chest Infection	Hospital Admission	John Lee	Discharge Letter	
2020-04-01 - 2020-04-08	Fractured ankle	Hospital Admission	John Lee	Discharge Letter	

Add visit

2.1. Adding a Visit

Before our first paper mockup, we got a very important insight from one of our doctor interviewee on our design direction for adding hospital visits.

"Documents such as discharge summaries are important, for future references. I want a quick way to find this document when checking the patient's visit history."

-- junior doctor in ireland

So, we came up with the initial paper mockup design below.

The mockup is a hand-drawn form on a light beige background. At the top left is a stick figure icon. To its right, the patient's name 'Bob Choy' is written, followed by 'Age: 40' and 'DOB: 29 Feb 1983'. Below the name is the title 'Add visit history'. To the left of the form is a '<Back' button. The form contains three input fields: 'Hospital Name' (with a dropdown arrow), 'Date' (with a dropdown arrow), and 'Attachments' (with a button labeled 'upload file'). Below these is a large empty rectangular box. At the bottom left is a 'Tags' section with two buttons labeled 'Scans' and 'blood test', and a dropdown arrow. To the right of the 'Tags' section is a red handwritten note: 'secretary job, doctors don't enter data, only discharge letter'. At the bottom right is an 'Add' button. A red arrow points from the 'Add' button to a red callout box on the right.

Initially, our input fields were mainly text fields, but this was deemed too much work by the doctors.

"We already have many systems in place, it should be as little work as possible."

-- junior doctor in London



To address the problem, we **automated as many fields as possible** to tackle the issue effectively. This included automatically filling consultant name, name as well as address of practice.

return to search

Patient Summary

Patient Personal Information

Prescriptions

Healthcare Visit History

Lab History

Imaging History

Bob Choy

NHS Number:123

Add Visit Entry

Admission Date:

2023-06-08

June 2023

Su

Mo

Tu

We

Th

Fr

Sa

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

Name of practice:

St Mary's Hospital

Address of practice:

12 Smith Street, AB 321 London.

Summary:

return to search

Patient Summary

Patient Personal Information

Medication

Healthcare Visit History

Lab History

Imaging History

Discharge Date:

2023-06-09

Visit Type:

Hospital Visit

Consultant:

John Lee

Name of practice:

St Mary's Hospital

Address of practice:

12 Smith Street, AB 321 London.

Summary:

Upload Letter:

Choose file

No file chosen

"Only hospital admissions should have admission dates, it's not intuitive for GP consultations or clinics."

-- junior doctor in London

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

back

Add Visit Entry

Visit Type:

Hospital Admission

Admission Date:

2023-06-22

Discharge Date:

2023-06-22

Consultant:

John Lee

Name of practice:

St Mary's Hospital

Address of practice:

12 Smith Street, AB 321 London.

Summary:

Upload Letter (optional):

Choose File

No file chosen

Add discharge summary to medical history:

Save

Visit Type:

GP Consultation

Date:

2023-06-22

2.2. Editing a visit

We showed the latest design to one of our doctor interviewee, she liked the improvements, but a problem arised from this design.

*"Must I add a letter? What if I don't have the time to make the letter now?
Sometimes the discharge letters won't be ready the moment when a patient is
discharged."*

-- junior doctor in Newcastle

So, with this problem in mind, this leads us to a solution: edit visit entry.
We created an "edit visit entry" page, so that doctors can create an entry
first, and **upload necessary attachments** (discharge letters, lab and
imaging reports) at a **later time**.

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

back

edit

Visit Entry: 2023-06-15

Visit Type:

Hospital Admission

Admission Date:

2023-06-15

Discharge Date:

2023-06-20

Consultant:

John Lee

Name of practice:

St Mary's Hospital

Address of practice:

12 Smith Street, AB 321 London.

Summary:

diagnosed with goitre

Letter:

[Discharge Letter](#)

Add discharge summary to medical history:

Lab Reports:

Add Lab

Imaging Reports:

Add Imaging

Ultrasound(neck):

https://balderstoncall-bucket.s3.amazonaws.com/medicalreports/ultrasound_report.pdf

In the case that the doctor would like to make amendments (e.g. they made a spelling mistake), we have made the contingency so that they can edit the entries they added.

and in edit mode:

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

back

edit

Visit Entry: 2023-06-15

Visit Type:

GP Consultation

Date:

2023-06-15

Consultant:

John Lee

Name of practice:

St Mary's Hospital

Address of practice:

12 Smith Street, AB 321 London.

Summary:

diagnosed with goitre

Upload Letter:

[Discharge Letter](#)

Choose File

No file chosen

Add discharge summary to medical history:

Save



In future works, we would expect all edited entries to be **logged for transparency**.

3. Lab & Imaging

Here is our initial design for listing and adding lab history pages.

Bob Choy

Age: 40

DOB: 29 Feb 1983

Labs History

Previous Report

Date: 20/04/2023

Latest Report

Date: 20/05/2023

Protein%	20	10
Zinc%	1	2
Fe%	3	4
FeO%	5	7
Ca%	8	10
...

cumulative?
not pdfs, images

Bob Choy

Age: 40

DOB: 29 Feb 1983

Add Lab Report

< Back

ID

→ auto filled

Test Administered

Date

Attachments: upload file

Lab Report .pdf

not pdf

by not doctor

Add

"It is quite important to know when these lab tests were conducted, and with your current design I can't really get this information."

Thus, we made sure that the new design includes a date column.

Q

Prescriptions

Hospital visit history

Lab History

Imaging History

Bob Choy

NHS Number: 123 456 7890

Lab History

	Units	30/4/2023	26/4/2023	19/4/2023	2/3/2023	...

Q

Prescriptions

Hospital visit history

Lab History

Imaging History

Bob Choy

NHS Number: 123 456 7890

Imaging History

	Units	30/4/2023	26/4/2023	19/4/2023	2/3/2023	...

"It is now just in one big list, which will be very hard to search. It should be better organized."

-- junior doctor in London

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:123

Lab History:

Full Blood Count Report

Cancer Blood Test

Electrolyte Test

Genetic Test

Liver Function

Thyroid Function

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Cho

NHS Number:123

Imaging History:

MRI

X-Ray

CT

Medical Photography

PET

ECG

Ultrasound

and here is the design for the details of one of the types of lab report.



"As doctors, we get lab reports, we don't enter numerical data ourselves."

Hence, we removed the idea of tabulated data and instead created a form for doctors to upload the necessary attachments. We focused on making entries as easy to populate as possible.

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

back

Add Lab Entry

Date of Report:

2023-06-22

Lab Type:

Full Blood Count Report

Upload Report:

Choose File No file chosen

Save

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

back

Add Imaging Entry

Date of Report:

2023-06-22

Scan Type:

Ultrasound

Region:

Indication:

Upload Report:


Choose File No file chosen

Upload Images:

Choose Files No file chosen

Save

Below is the reworked design for the details of one of the types of lab report.



return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:123


back

Full Blood Count Report

Date of Report	Report
2023-06-13	bob-choy-full-blood-count-report.-13-june.pdf.pdf
2023-05-15	bob-choy-full-blood-count-report.-15-may.pdf
2023-04-26	bob-choy-full-blood-count-report.-26-apr.pdf

Add Lab Report

Entries are displayed in a list of reports. For imaging, to help **reduce the time needed to search** for a particular entry, the entries can be filtered by region with the search bar.



return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

back

Ultrasound Scans

Filter by region..

Date of Report	Region	Indication	Report	Images
2023-06-20	neck	diagnosed with goitre	Ultrasound Report	neck-img-1

Add Imaging



For better representation of data in the future, we would have to **obtain numerical data by extracting from existing lab and imaging systems**, in order to display data or **better comparisons and analysis**.

4. Medication

We started off our prototype with how we thought it should be, as shown below, but we soon realised it needed to be way more complex.

"Sometimes I want to change the medications' details depending on the patient's conditions so I want to be able to edit upon it accordingly. Similarly, I want to be able to end the medication when needed."

"It would also be nice to know how the drug is administered and how long it is needed for"

-- junior doctor in Newcastle

Hand-drawn prototype of the Main Prescription Page. It features a title "Prescriptions" with a "<<Back" button and an "Allergies:" field. Below is a table with columns: Drug, Freq, Date From, Date To, and Route. The first row is highlighted in green and contains "Controloc", "twice a day", "19/5/22", "23/5/22", and "Oral". A red "edit" button is next to this row. The second row is empty. The third row contains "Prednisolone", "20/3/20", "30/3/20", and "2 tablets twice a day". A "+" button is at the bottom left of the table. A "Save" button is at the bottom right. A hand icon points to the "edit" button.

Drug	Freq	Date From	Date To	Route
Controloc	twice a day	19/5/22	23/5/22	Oral
Prednisolone		20/3/20	30/3/20	2 tablets twice a day

Main Prescription Page

Hand-drawn prototype of the Edit Prescription Page. It features a title "Edit Entry" with a "<Back" button. Below are fields for "Drug:" (Controloc), "Start date:" (19/5/22), "Duration:" (+ Day r), "Frequency:" (twice a day), and "Route:" (Oral). A hand icon points to the "Duration:" field. A "Day Week Month" selector is next to the "Duration:" field. An "Add" button is at the bottom.

Edit Prescription Page

Hand-drawn prototype of the Add Prescription Page. It features a title "Add Prescription" with a red-outlined "<Back" button. Below are fields for "Drug:", "Start date:", "Duration:", "Frequency:", and "Route:". The "Route:" field is a dropdown menu with options: oral, IV, ..., others. An "Add" button is at the bottom.

Add Prescription Page

We have created an interactive Figma prototype to enhance the feedback process and gather more relevant input.

return to patient search

Patient summary

Patient personal information

Prescriptions

Healthcare visit history

Lab History

Imaging History

Bob Choy

NHS Number: 123 456 7890

Current Prescription

Allergies:

print

prev

>>

Drug	Dose & Frequency	Start Date	End Date	Duration	Route

last prescription date: 1/1/2023

Make new prescription

return to patient search

Patient summary

Patient personal information

Prescriptions

Healthcare visit history

Lab History

Imaging History

Bob Choy

NHS Number: 123 456 7890

<< back

Edit Prescription

Drug:

Controlloc

Start Date:

19/5/2022

Duration:

7 Days

Frequency:

twice a day

Route:

Oral

Save

return to patient search

Patient summary

Patient personal information

Prescriptions

Healthcare visit history

Lab History

Imaging History

Bob Choy

NHS Number: 123 456 7890

<< back

New Prescription

prescription date: 25/4/2023

Current Prescription:

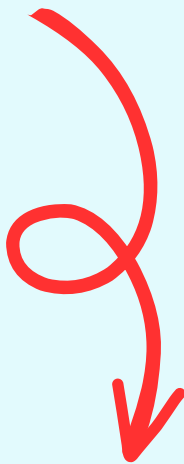
	Drug	Dose & Frequency	Start Date	End Date	Duration	Route	
✓							edit
✓							edit
✓							edit
✓							edit
✓							edit
✓							edit

add medication

Save

"Instead of prescriptions, it would be better to know their current and previous medication as medicines can interact with one another."

-- junior doctor in London



return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

Current Medications:

Drug	Dose & Frequency	Start Date	End Date	Duration	Route	Comments	Submitted by
carbimazole	30mg	2023-06-20	2023-07-04	2 Week	Oral	diagnosed with goitre	Doctor
steroid	once daily	2023-06-20	2023-06-27	7 Day	oral		Patient
Triazolam	10mg	2023-06-13	2023-06-20	1 Week	Oral	Help with sleep	Doctor

last medication date: 20/06/2023

Edit medication

Previous Medications:

Drug	Dose & Frequency	Start Date	End Date	Duration	Route	Comments	Submitted by
Antibiotics	100mg	2023-06-06	2023-06-13	1 Week	Oral	Chest infection	Doctor

Final Medication Page

"Seeing all the current medications while editing can help me see the bigger picture and reduce the chances of misprescription."

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

back

Edit Current Medication

medication date: 20/06/2023

allergies: NKDA

Current Medications:

Save

Action	Drug	Dose & Frequency	Start Date	End Date	Duration	Route	Comments	Submitted By	Confirmation		
<div>Edit</div>	carbimazole	30mg	23/06/2023	<div></div>	2023-07-04	2	Week(s)	Oral	diagnosed with goitre	<div>Doctor</div>	<div>Save</div>
<div>Saved</div>	Triazolam	10mg	2023-06-13	2023-06-20	1 Week	Oral	Help with sleep	<div>Doctor</div>	Confirmed		

Add Medication

Final Edit Medication Page

"When I end some medication abruptly, other doctors may want to know why I did that, similarly, I also want to know why some medication was cancelled since it may be due to allergies which may cause severe adverse reactions"

We made it such that in the case where the doctor decides to **delete a medication**, there will be a pop-up which will allow the doctor to have a chance to **add comments** on the reason as well as to confirm their actions.

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

back

Edit Current Medication

medication date: 20/06/2023

allergies: NKDA

Current Medication

Save

Action	Drug	Dose & Frequency	Start Date	End Date	Duration	Route	Comments	Submitted By	Confirmation	
<div>Delete</div>	carbimazole	30mg	23/06/2023	<div></div>	2	Week(s)	Oral	diagnosed with goitre	<div>Doctor</div>	<div>Delete</div>
<div>Saved</div>	Triazolam	10mg	2023-06-13	2023-06-20	1 Week	Oral	Help with sleep	<div>Doctor</div>	Confirmed	

Add Medication

diagnosed with goitre

Save Comment

Cancel

Final Edit Medication Page (comments)

Testing & Validation

Patient's View: The App

"I would like to be able to see my current prescriptions and past medical history on the app."

-- *Elderly man*

1. My Medical History

"As a patient, I want to be able to update my doctor/GP on my most recent medical history so that they can get accurate updates on my condition even if I go to another hospital."

These are our initial mockups for patients to view their medical history.

Hospital visit History

Back

Add a visit to a GP or hospital

Date of Admission	Date of Discharge	Discharge Summary	Consultant
20/4/23	22/4/23	Summary	Dr. John Lee St. Mary Hospital
⋮			
20/4/22	22/4/22	Summary	Dr. John Tan St. John Hospital

Past Medical History

Hospital visit History

Edit Entry

Visit to Dr John Lee, St. Mary Hospital

Back

Date of Admission : 20/4/23

Date of Discharge : 22/4/23

Discharge Summary :

Broke a leg, fixed the leg.

Attachments :

[MRI Scan](#)
[Full blood Count](#)
[Discharge letter](#)
⋮

6:52

My medical history

Date	Condition
20/4/23	Broke a leg, fixed leg
20/4/23	
20/4/23	
20/4/23	
20/4/23	Diagnosed w hypertension

Add history

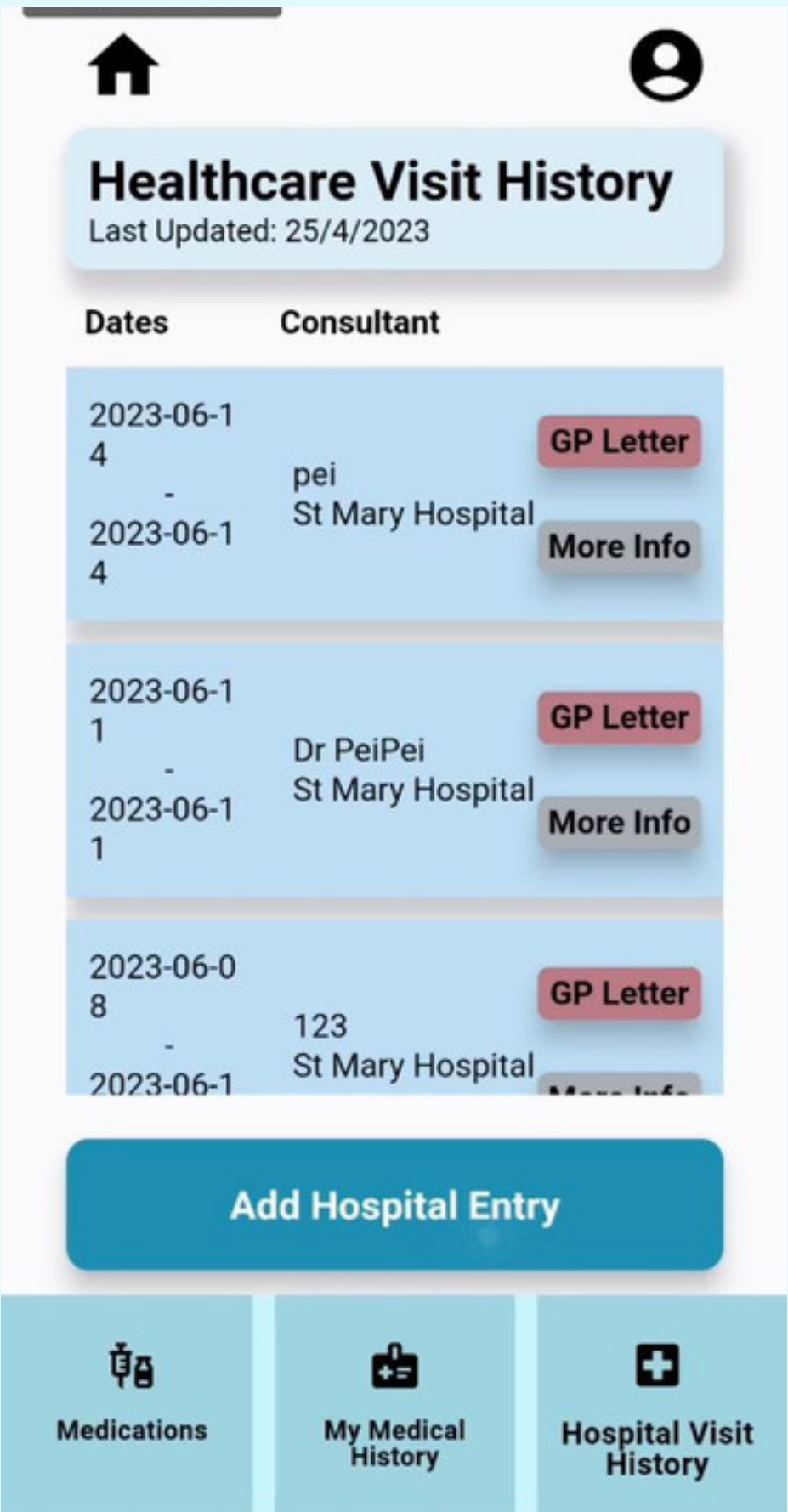
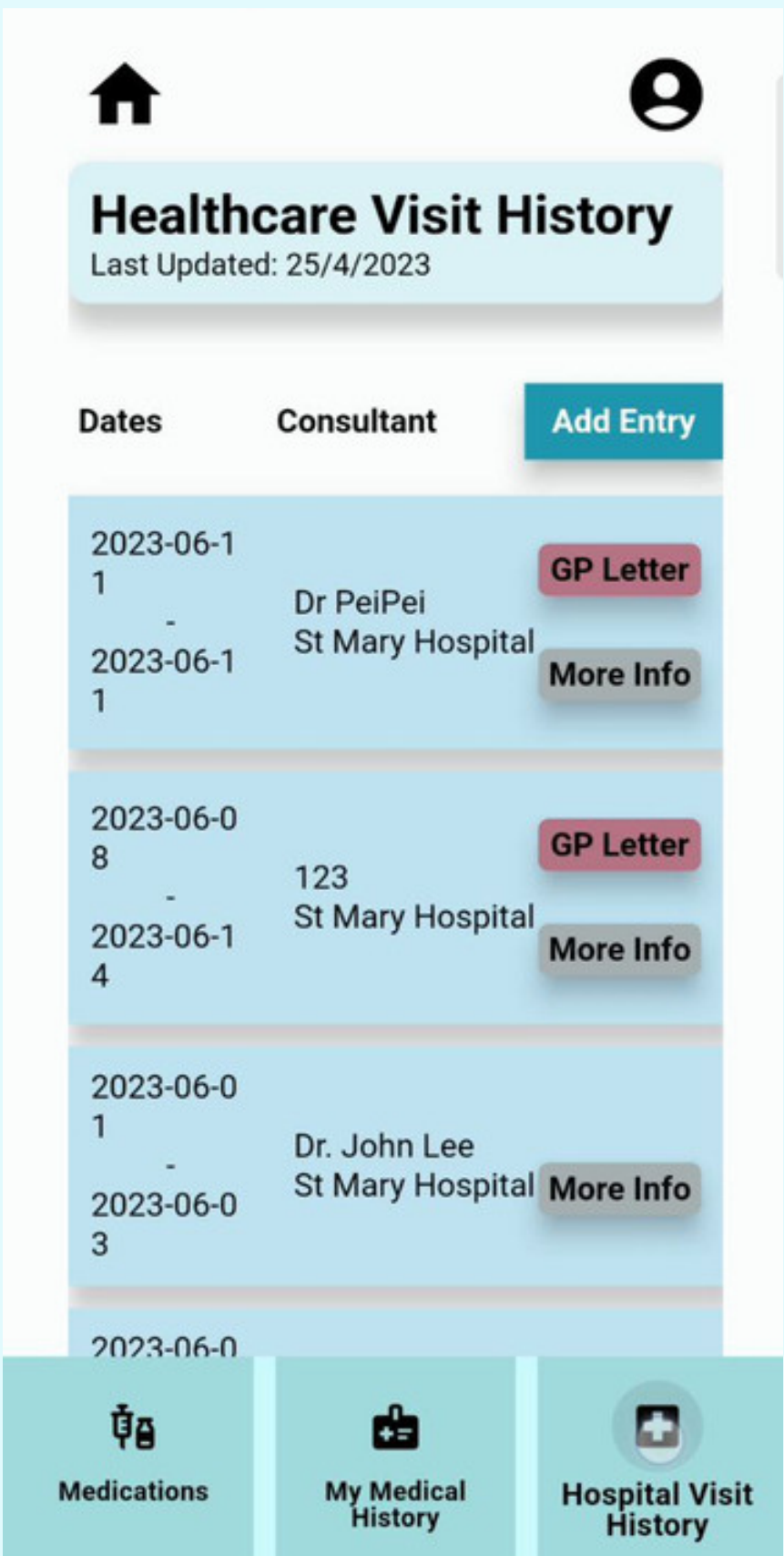
Prescription

My medical history

Hospital visit history

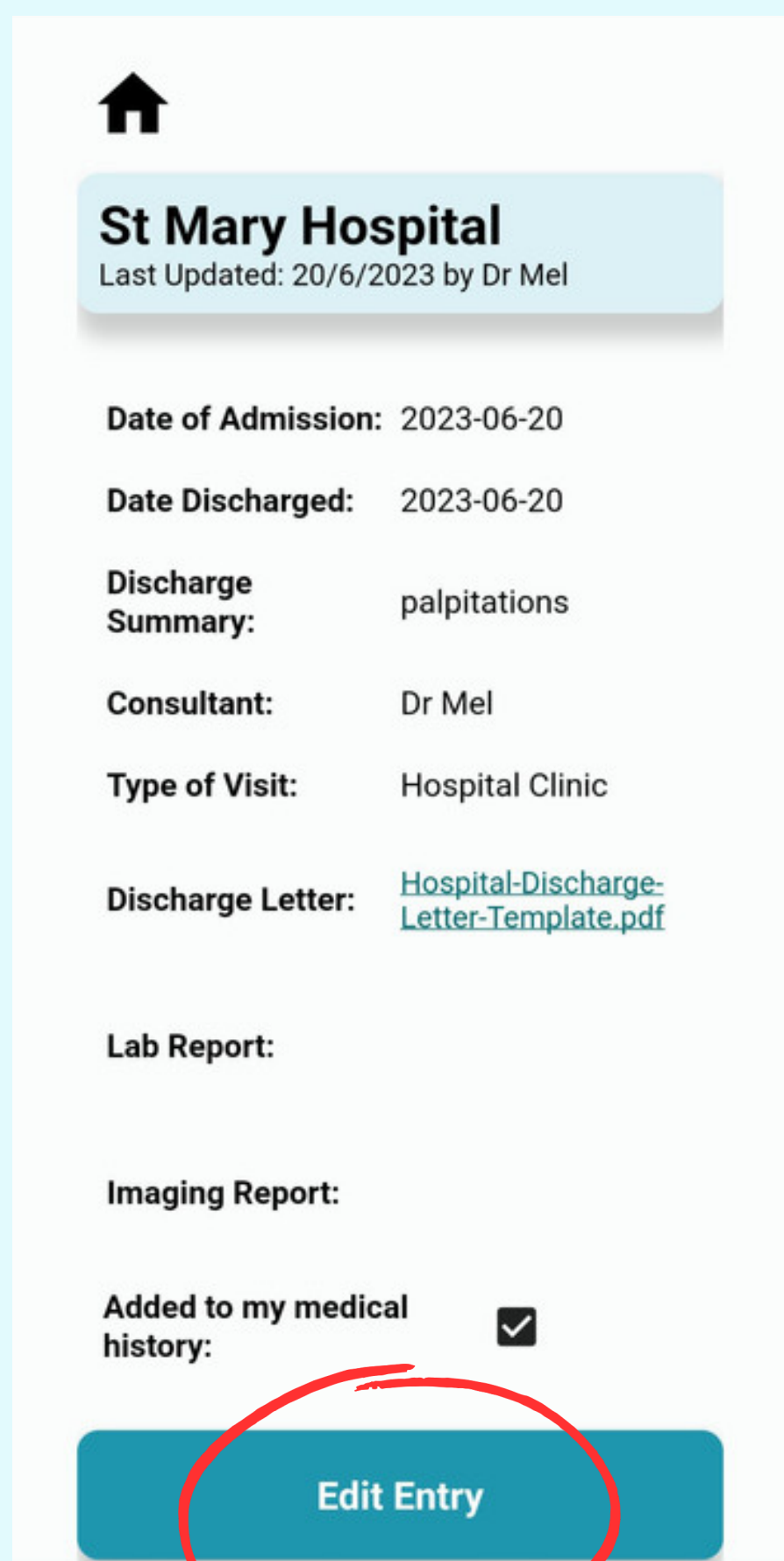
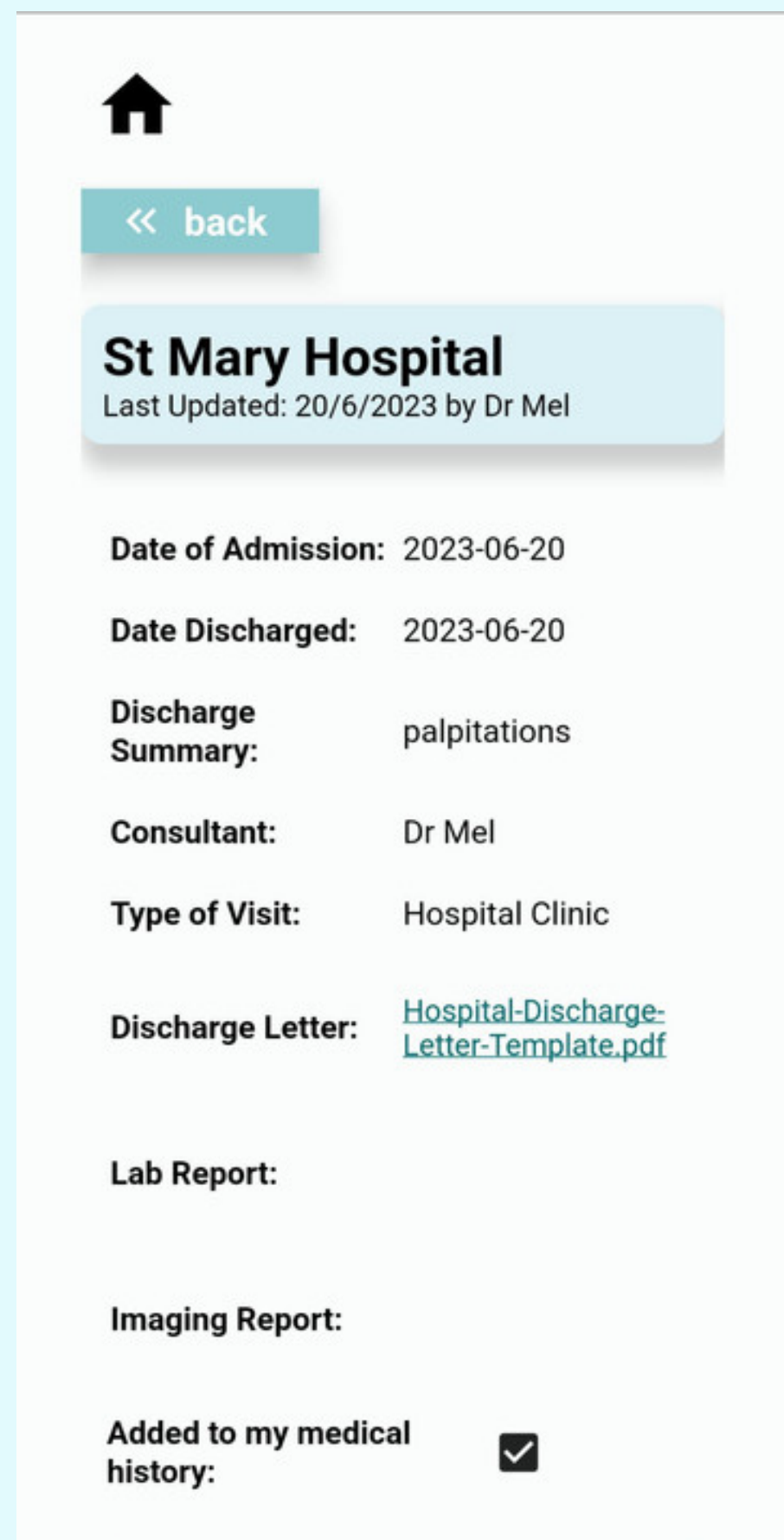
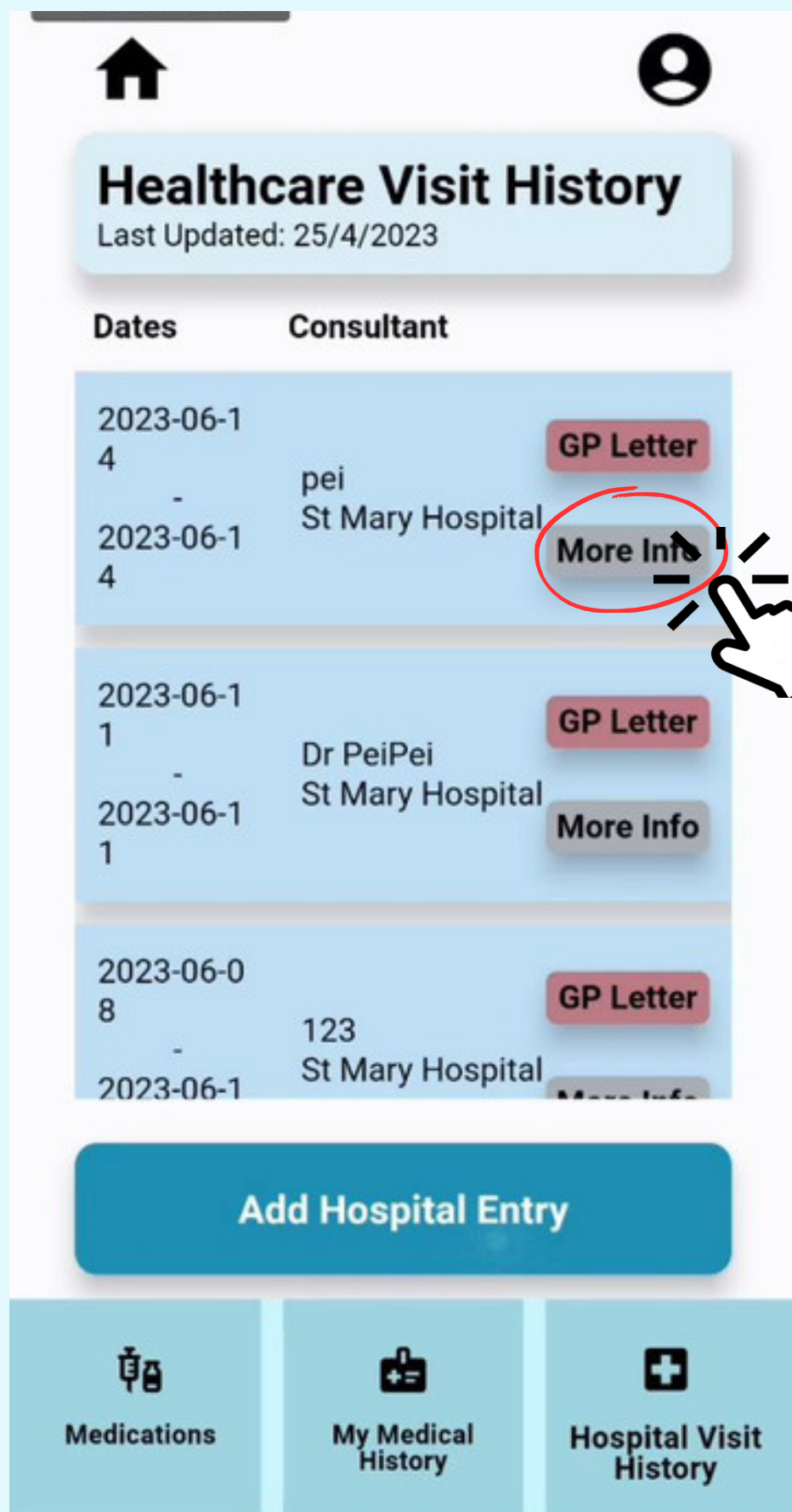
"I would want to see more details about my past visits to the hospital."
-- Imperial Student

We then added the **Healthcare Visit History** page for patients to see their past visits.



Final Product

"My first instinct would be to look downwards of the page of the app to add an entry. I think the add button should be bigger so that I can find it easier."
-- Imperial Student



"What if I make a typo? I would want more ownership over the data I uploaded."

-- Middle-aged man

Final Product

2. My Medications

These are our initial mockups for patients to view their current medications.

"As a patient, I want to be able to update the medications that I am currently taking so that my GP/doctor can know my medications without asking me and I don't need to remember all the medication names."

-- Middle-aged man

Bob Choy
Age: 40
DOB: 29 Feb 1983
Address:

Hospitals with access to my data

Add Prescription

Current Prescriptions

Print

Drug	Frequency	Date To
Prednisolone	2 times a day, everyday	20/5/23

Past Medical history

Hospital visit history

Add Prescription

Back

* Drug :

* Start date :

* Duration :

* Frequency :

Route :

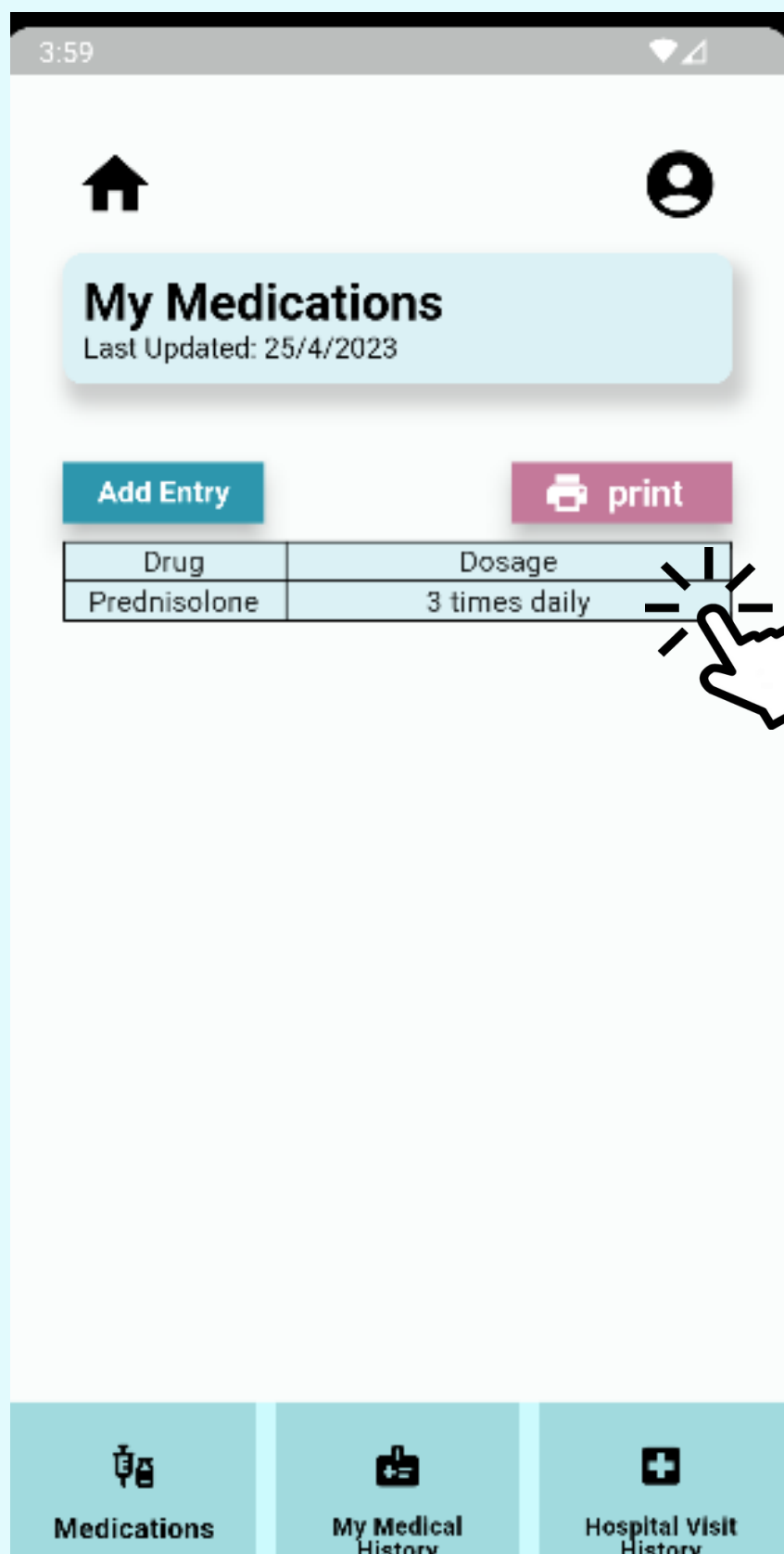
oral

IV

...

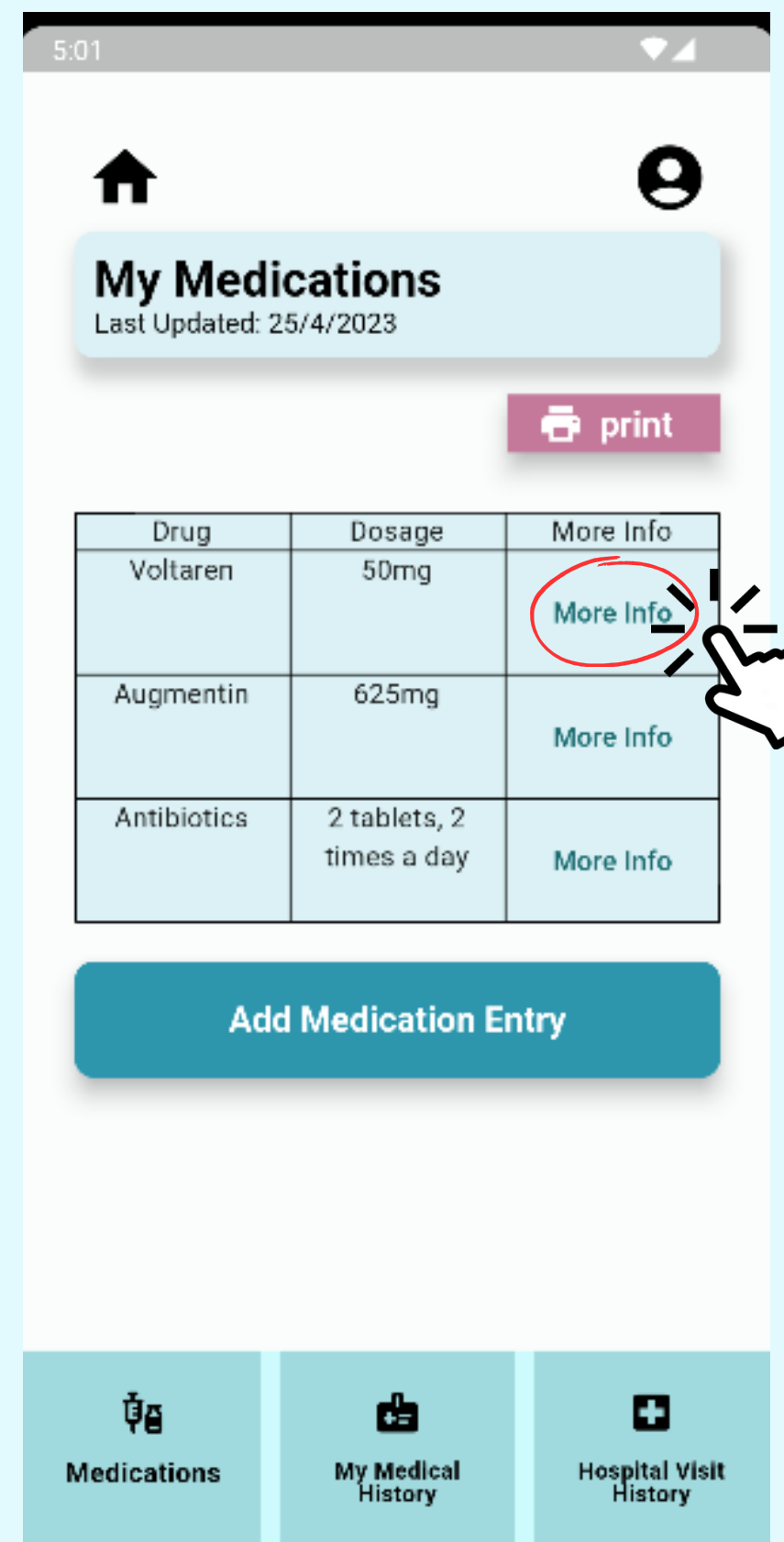
others

Add



Previous Version

"I would also like to know more details about my current medication but I did not know the rows were clickable until you told me. Maybe make it more obvious so that it is easier to check."
-- Imperial Student



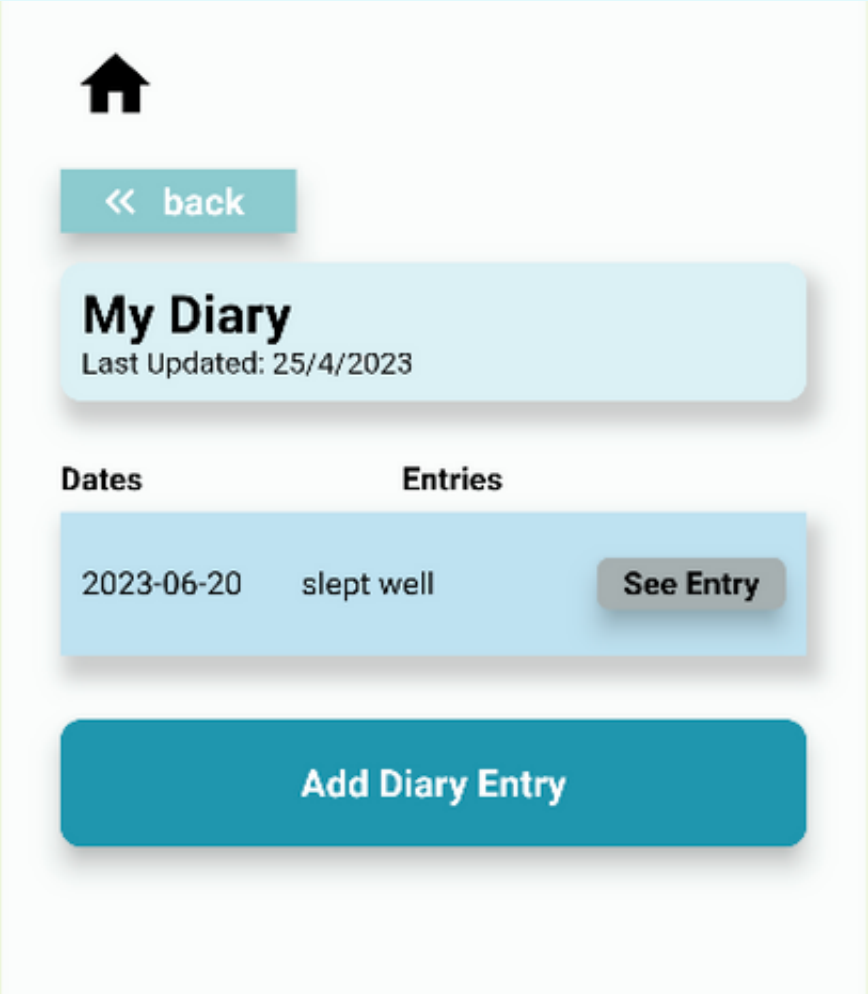
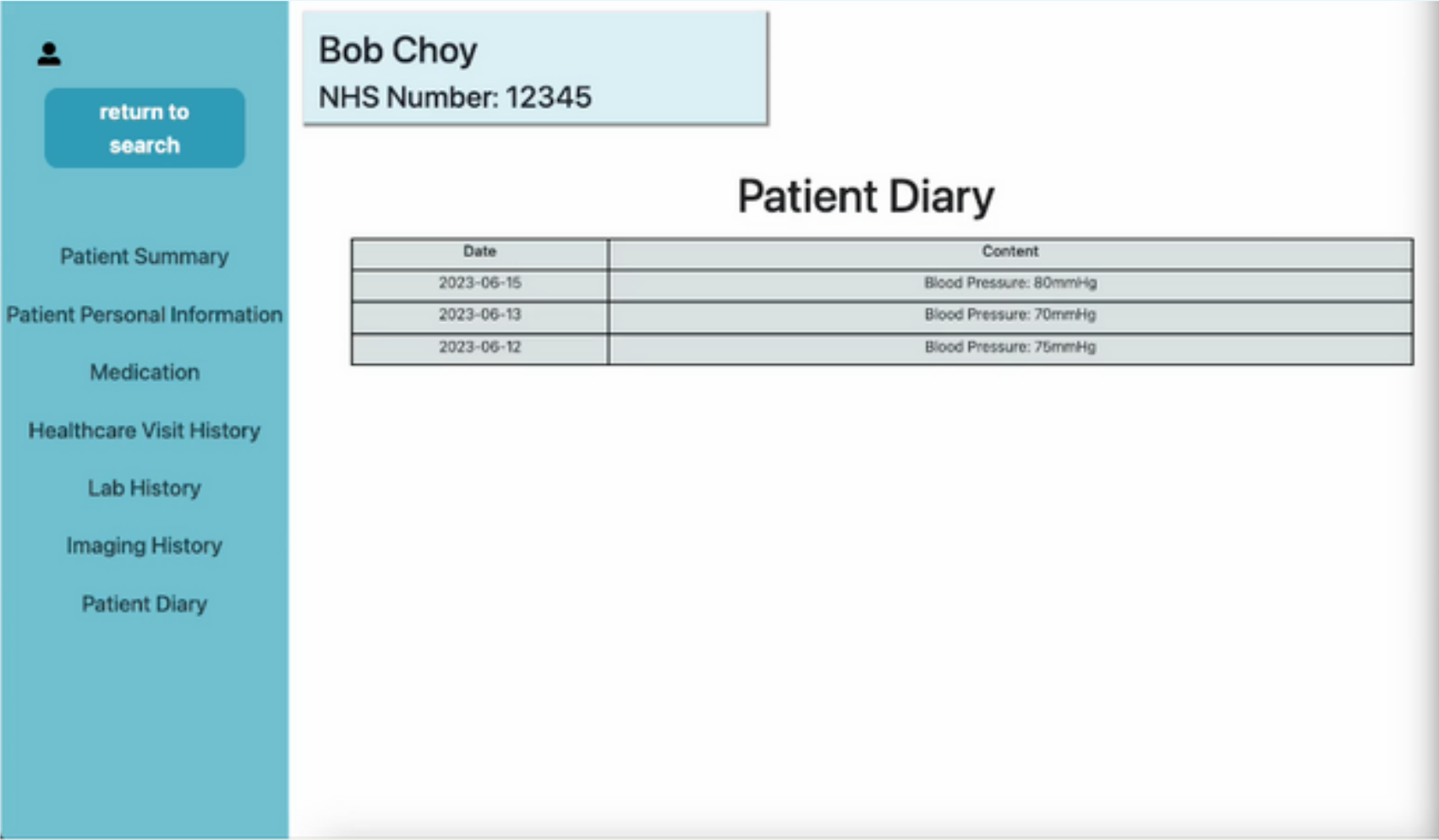
Final Product

3. Patient Diary

Initially, the patient diary section didn't exist, but with insights from patients, we decided to implement it.

"As a patient with chronic illness and needs to measure my health every day, I want to be able to store those measurements easily and reliably so that my doctor can see it easily."

-- Middle-aged man

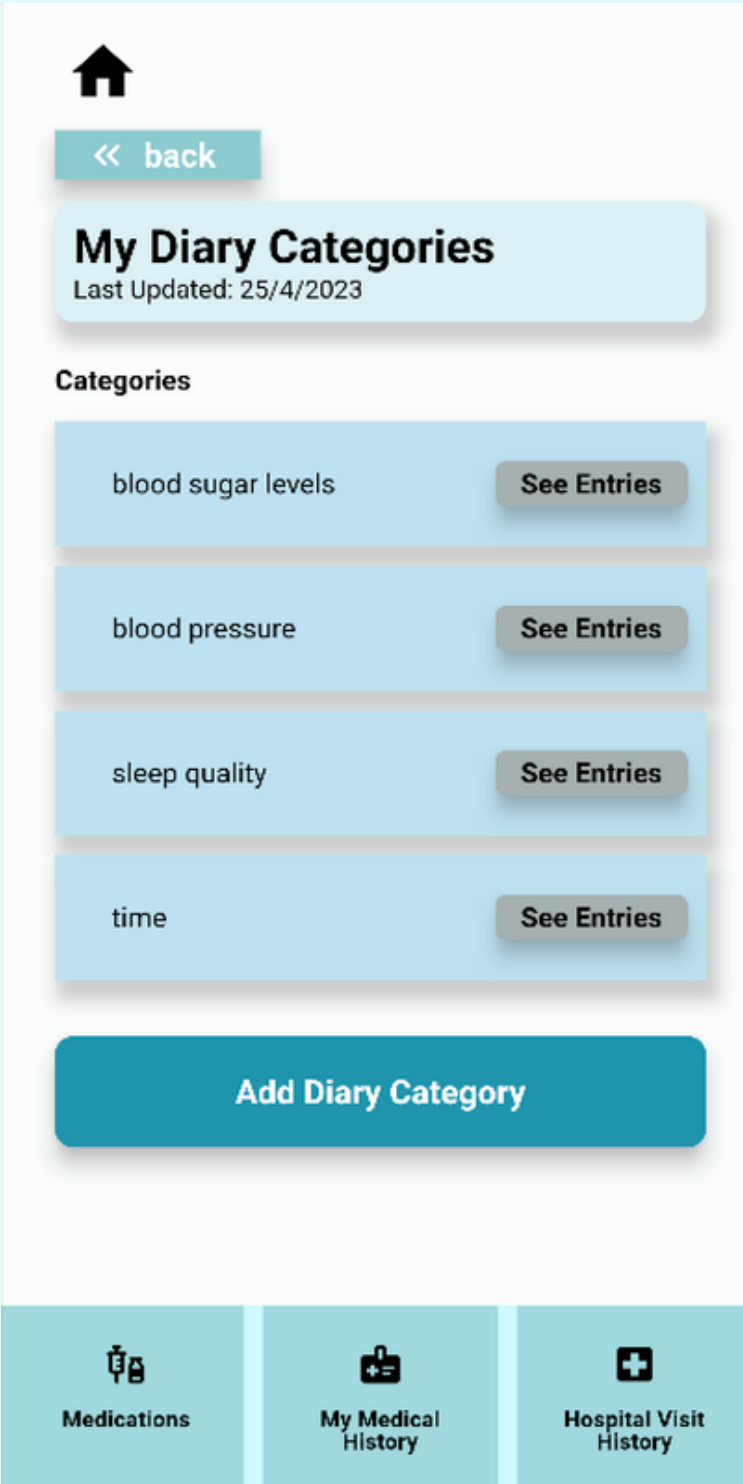


"The entire list of diary entries will get really long, and its hard to keep track and read the diary history"

-- Imperial Student

"Some patients have to record many things at different intervals and this can cause it to be hard to find the relevant entries"

-- junior doctor from London



*"It would also be helpful to know if I have viewed the entry."
-- junior doctor from London*

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

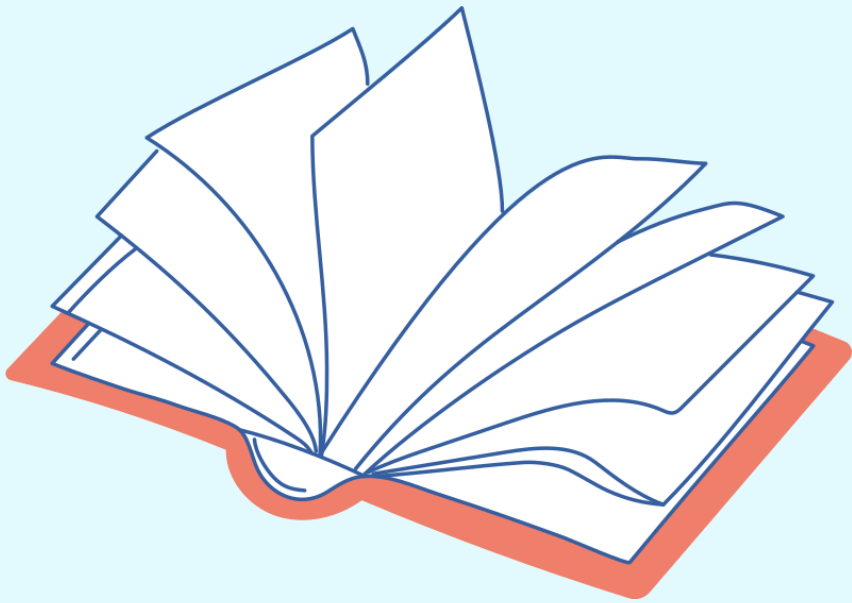
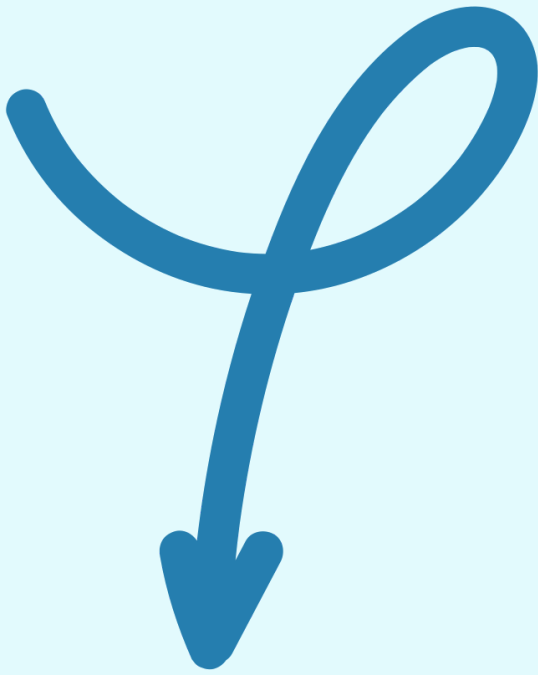
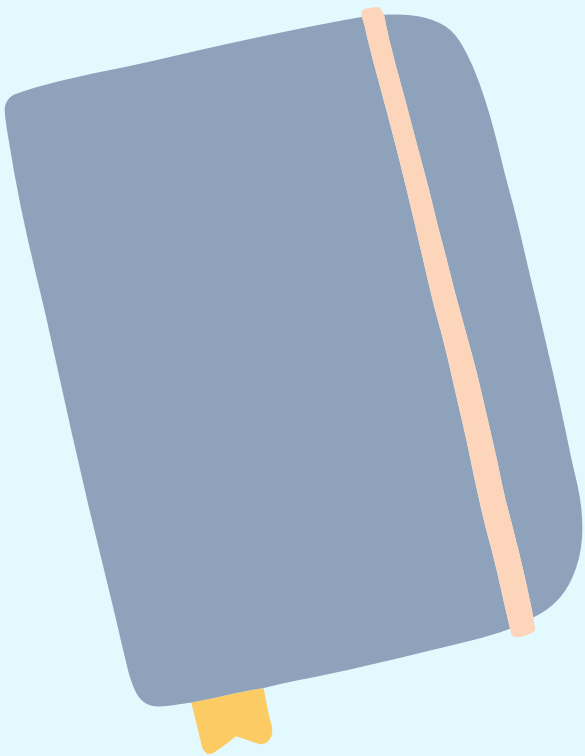
NHS Number:12345

back

Patient Diary

Category: blood pressure

Date	Content
2023-06-23	82 mmHg
2023-06-21	75 mmHg
2023-06-20	80 mmHg



return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

Bob Choy

NHS Number:12345

back

Patient Diary

Category: blood pressure

Date	Content
2023-06-23	82 mmHg
2023-06-22	85 mmHg
2023-06-20	80 mmHg

We have implemented a feature where, if a diary entry has not been read, a red asterisk is displayed next to it and it is highlighted in cream color. Once the entry is clicked and read, the red asterisk disappears and the row becomes grayed out.

4. Sharing my medical data?

Since we were dealing with **sensitive health data**, we wanted to know what the general public thought about having their data on the app. We interviewed different demographics and here are some responses.

"I feel safe to give them all my medical information since doctors should know everything for safety"

-- university student

"As a patient, I would want to control what data I give because there are so many things in people's lives that they don't want to expose."

"Depends on the personality, some people are comfortable sharing."

"I think the basic information are okay to be shared."

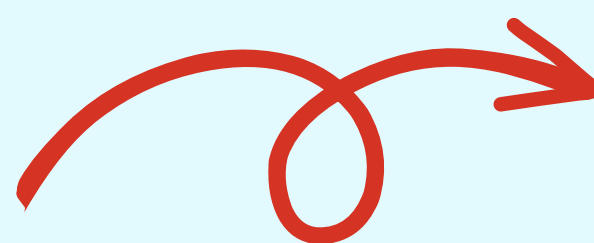
--elderly man with health conditions

It is clear to us that people from different demographics have **very different views on this topic**.

From that we have added a functionality to **hide medical history** when giving access to hospitals.

Handwritten paper mockup of a data sharing consent form. At the top, it lists user information: "Bob Choy", "Age: 40", "DOB: 29 Feb 1983", and "Address:". Below this is a box containing the text "St Mary Hospital is requesting for your data". Underneath, there are two checkboxes: the first is checked and labeled "I consent to share all medical data to this hospital for treatment purposes only for 7 days", and the second is unchecked and labeled "select specific data". At the bottom of the box are two buttons: "ACCEPT" (outlined in green) and "DECLINE" (outlined in red). Below the main form area are two tabs: "Past Medical history" and "Hospital visit history".

Initial paper mockup



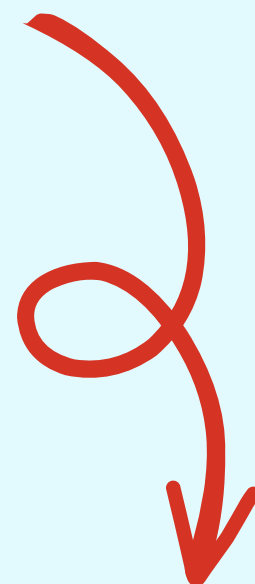
Digital final product of the data sharing consent form. It features a grey rounded rectangle on a white background. The title "St Mary Hospital is requesting for your data." is at the top. Below it, there are two options: the first is selected with a blue checkmark and reads "I consent to share all medical data to this hospital for treatment purposes only for 7 days"; the second is unselected with a grey square and reads "I wish to share selected data only for 7 days". At the bottom are two buttons: a red "decline" button and a green "accept" button.

Final product

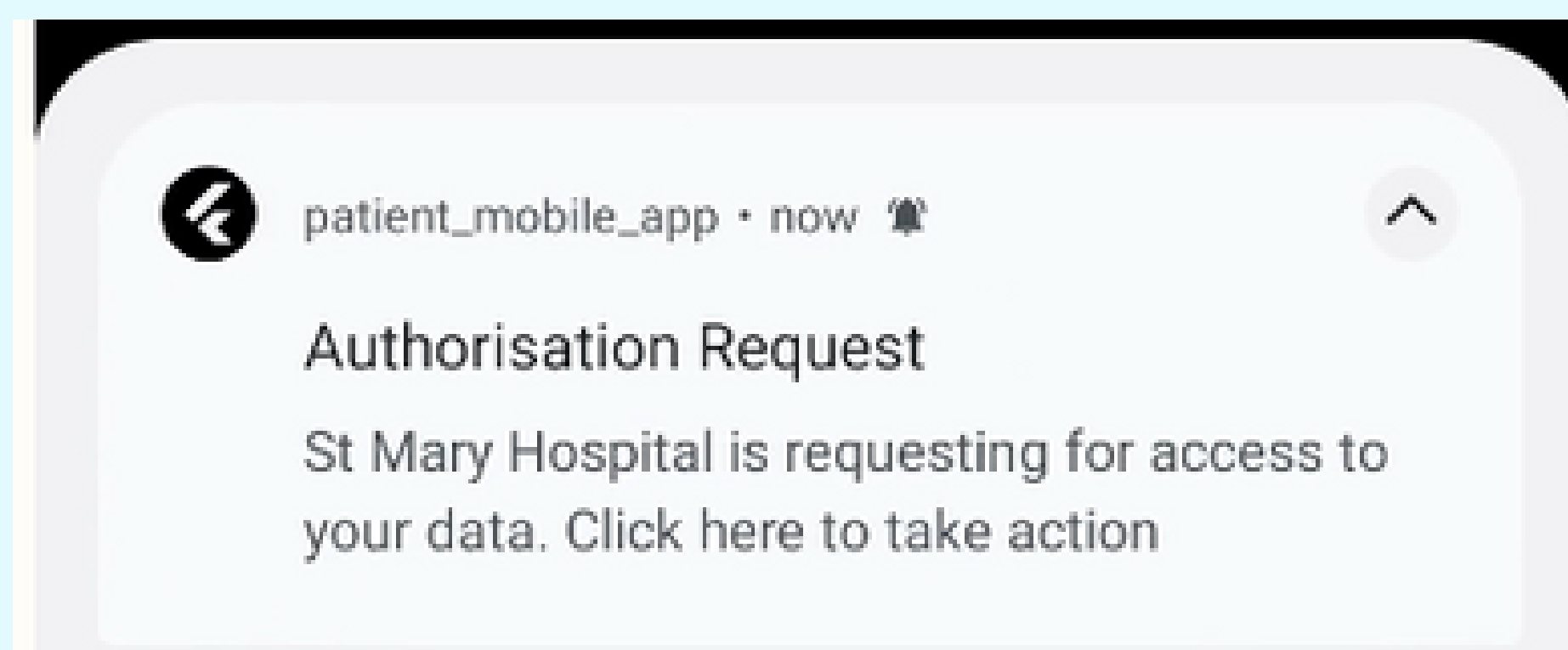
With this functionality, we have interviewed a few other members of the general public and they are generally happy with it, but there were still a few comments on it.

"Would it be possible to have notifications outside of the app when an authorisation request is sent so that I don't need to login to the app to know?"

-- university student



To make the authorization process easier, we implemented **push notification.**




Push notifications will be sent when **authorisation request is sent by the doctor.**



We then asked a doctor on their thoughts about the authentication process. We asked them to imagine that they are the first point of contact in a hospital, asking for medical history from a patient.

"I feel like it will be quite dangerous if the patients were able to hide information so easily. Patients might hide some information that they think is not important but in reality contributes a lot to the decision making of the doctor."
-- junior doctor in London

It was clear that doctors that we interviewed were quite concerned about this feature. So, we came up with showing a **disclaimer** on the doctor's side so that they **can be notified** if the patient is hiding information.



return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

DISCLAIMER: This patient only disclosed selected medical data. Please seek necessary clarification from the patient.

Bob Choy

NHS Number: 12345

Drug Allergies: NKDA

Past Medical History:

2023-06-20

diagnosed with goitre

2022-06-04

Chest infection

2020-04-08

Fractured ankle

Current Medications:

Drug	Dose & Frequency	Start Date	End Date	Duration	Route	Comments	Submitted by
carbamazole	30mg	2023-06-20	2023-07-04	2 Week	Oral	diagnosed with goitre	Doctor
Triazolam	10mg	2023-06-13	2023-06-20	1 Week	Oral	Help with sleep	Doctor

last medication date: 20/06/2023

A warning disclaimer will also be shown on the patient's side before proceeding to make sure the patient knows the risk!

DISCLAIMER: Hiding medical data might post serious risk to your medical diagnosis.

Are you sure you would like to hide your data selection?

decline

accept

Hence the authentication in the final product!

Patient Search

12345

bobchoy

Go

(doctor) searches for patient

waiting for patient confirmation

Cancel

(doctor) waits for approval

(patient) pop up for approval, given selection either to give all information, or hide certain ones

St Mary Hospital is requesting for your data.

☒ I consent to share all medical data to this hospital for treatment purposes only for 7 days

☐ I wish to share selected data only for 7 days

decline

accept



DISCLAIMER: Hiding medical data might post serious risk to your medical diagnosis.

Are you sure you would like to hide your data selection?

decline

accept

(patient) disclaimer so that they know the risk of hiding

My Medical History

Last Updated: 25/4/2023

Date

Condition

2023-06-20

palpitations

2023-06-15

diagnosed with goitre

2022-06-01

Chest Infection

2020-04-01

Fractured ankle

Confirm Data Selection

(patient) select what information to hide

return to search

Patient Summary

Medication

Healthcare Visit History

Lab History

Imaging History

Patient Diary

DISCLAIMER: This patient only disclosed selected medical data. Please seek necessary clarification from the patient.

Bob Choy

NHS Number: 12345

Drug Allergies: NKDA

Past Medical History:

2023-06-20

diagnosed with goitre

2022-06-04

Chest Infection

2020-04-08

Fractured ankle

Current Medications:

Drug	Dose & Frequency	Start Date	End Date	Duration	Route	Comments	Submitted by
carbamazole	30mg	2023-06-20	2023-07-04	2 Week	Oral	diagnosed with goitre	Doctor
Triazolam	10mg	2023-06-13	2023-06-20	1 Week	Oral	Help with sleep	Doctor

last medication date: 20/06/2023

(doctor) gets a disclaimer that patient has hidden some information

Our Impact

Watch how Pocket Patient impacts lives by clicking this [link!](#)

Direct Impact

We showed our app to some of our interviewees and heres what they said:

"Its very good because you go to different hospitals then you would just need give access to the doctors from your app!"

-- a high school student

"I can imagine the impact of this app in the case when it is fully integrated into the system, it would enable instant access to critical patient's data."

-- a junior doctor in ireland



The app would directly impact users, both patients and medical practitioners, by providing easy access to comprehensive and up-to-date medical information. It can **facilitate efficient data transfer** and **improve coordination between healthcare institutions**, leading to better-informed decision-making and enhanced patient care.

Our Impact

Indirect Impact

"I can do other things instead of spending a lot of time just trying to get the patient's medical data."

-- junior doctor in london

"I can see my medication list which can remind me if I ever forget."

-- middle aged man

"I can now know if the patient has withheld any information from me so that I can take corresponding risk."

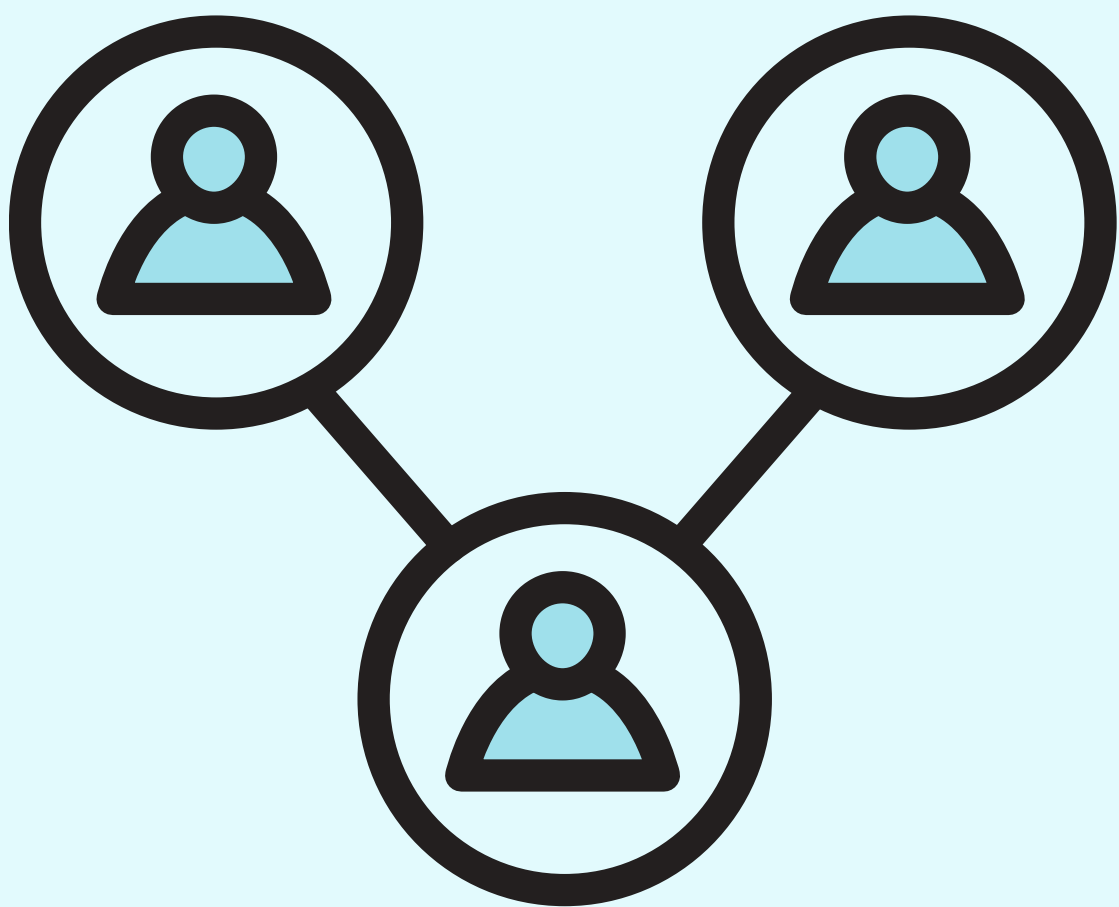
-- junior doctor in oxford



By promoting better data sharing and collaboration, the app indirectly contributes to the overall efficiency and effectiveness of the healthcare system. It can **reduce redundancy, streamline processes, minimize errors and improve resource allocation.**

Our Vision

The app aligns with the bigger vision of **transforming healthcare through digital innovation.**



By promoting interoperability and data exchange, it can contribute to the development of a **more connected and patient-centric healthcare system.**

Ultimately, the app's widespread adoption can lead to improved health outcomes and a **more efficient healthcare services** for the community as a whole.

