



DESIGN PROCESS

SUPPORTING CAREGIVERS AFTER A CHILD'S EMERGENCY VISIT

MAGDALENA BRENNAN

NIGHTTIME...

- Rosie starts breathing heavily —her chest rising and falling quickly, but her breaths are short.
- Parents call After-Hours GP, who advises them to come in.
- It's **11 PM**—Rosie is awake but drowsy, still struggling to breathe.

ROSIE HOSPITAL EXPERIENCE

GIRL: 18 MONTHS OLD

AFTER HOURS GP

- The GP checks her oxygen levels —they're too low.
- A referral letter is given, and parents are told to go straight to the Emergency Department.
- **Worried sick**, they drive **40 minutes to the hospital**, with no guidance on what to do if she worsens.



'JUST' EXPERIENCE



POSITIVE EXPERIENCE



POOR EXPERIENCE

EMERGENCY DEPARTMENT

- They arrive **after midnight**.
- **Rosie, now fully awake, is exhausted and upset.**
- **Initial interaction is positive**—staff sees them quickly, **but...**
- **Rosie panics and screams during the check-up.**
- Her oxygen levels return to normal.
- **Parents are sent to wait in an empty, brightly lit room with no clear next steps.**
- Rosie, now convinced it's daytime, is **wide awake**.
- Parents, rushing out of the house, **didn't bring food**.
- **Rosie is now screaming from hunger.**



ROSIE HOSPITAL EXPERIENCE

GIRL: 18 MONTHS OLD

THE LONG WAIT & OUTCOME

- They're told there's nowhere to get food, except a vending machine.
- **4 AM—still no update.**
- **Parents feel forgotten. When they approach staff, they are told to wait.**
- **5 AM—finally, someone arrives but has no answers.**
- **Parents are told to follow up with a GP but receive no written report—just verbal advice.**
- **They leave the hospital exhausted, hungry, and still worried, with no clarity on what's wrong with Rosie.**
- **A night filled with anxiety, helplessness, and disappointment.**

● 'JUST' EXPERIENCE

● POSITIVE EXPERIENCE

● POOR EXPERIENCE

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INTERVIEW

A stylized illustration of a woman with long dark hair wearing a white lab coat with a pink flower pinned to it, and two young girls standing next to her. They are all standing on a light purple rounded hill.

WHO?

- 40 years old female
- Mother of 2 children:
4 and 6 years old
- Originally from Poland
- Lives in Ireland for the past
20 years
- Married to Irish citizen

WHY?

- 4 year old child
experienced seizures
- On both visits brought by
ambulance
- After 2nd seizure parent
requested discharge from
hospital
- Waited 2 years for referral
to specialist clinic

HOW?

- Interview in person
- Interview recorded
- Interview Transcript
- Line by line coding
- Thematic analysis

An illustration of a red hospital building with a white cross on its roof, set against a background of rolling hills, a winding path, and a single green tree under a clear sky.

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THEMATIC ANALYSIS

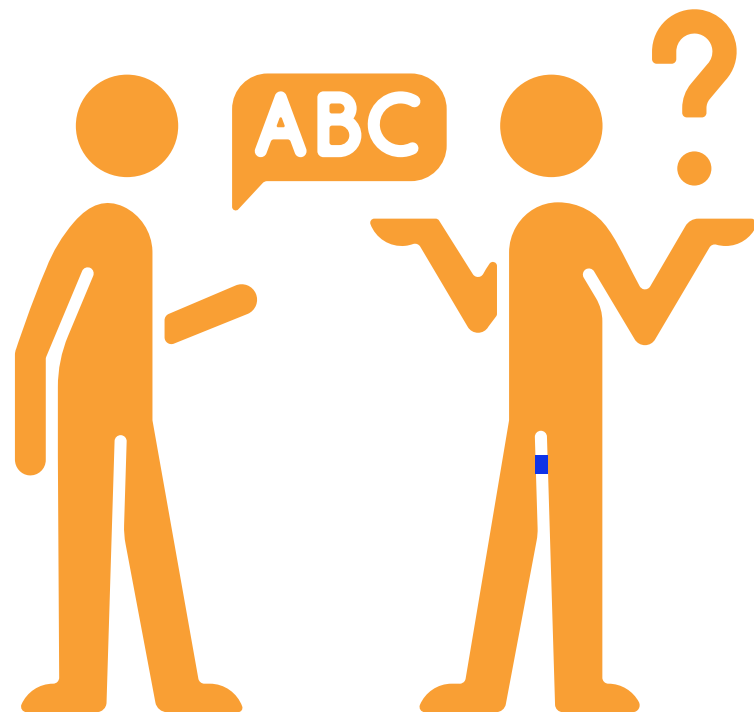
There is a major frustration around communication during the hospital ED visit. There is 3 main pain points:

COMMUNICATION CHALLENGES

REPETITION OF INFORMATION

Parent expressed frustration at having to repeat what happened to multiple staff, multiple times. This contributes to additional stress during already difficult situation.

“They asked me the story so many times, they could write it down, you know. And next time I'm coming, I'm just showing them on what happened. Read it for yourself. Let me be with my child. You know, because she's in distress and I'm here chatting to staff and she doesn't know what to do with herself, you know.”



THEMATIC ANALYSIS

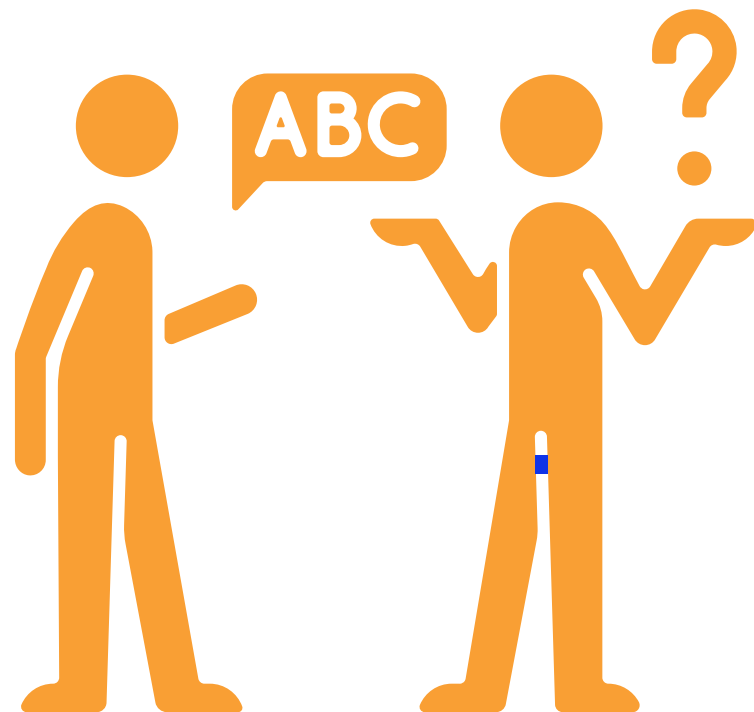
There is a major frustration around communication during the hospital ED visit. There is 3 main pain points:

COMMUNICATION CHALLENGES

LACK OF CLEAR INFORMATION

Upon discharge parent did not receive clear, written documentation of what happened, what tests were run, what the doctors suspected, no guidance on follow up care or what to monitor at home

“So even if you were to look for help yourself, you wouldn't really know what happened because you don't have any information about the situation at all. I don't know what exactly they were checking for, they took probably like 7 different samples they didn't really bother too much to inform me what their Suspicious or what their prognosis are.”



THEMATIC ANALYSIS

There is a major frustration around communication during the hospital ED visit. There is 3 main pain points:

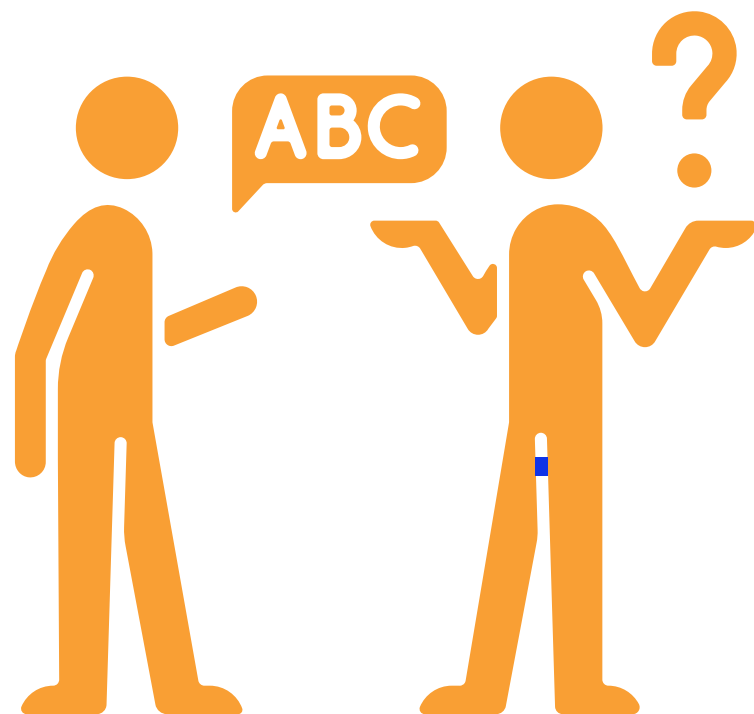
COMMUNICATION CHALLENGES

MEDICAL JARGON AND LANGUAGE BARRIERS

The parent of foreign background struggled to understand medical terms and found it challenging to follow explanations, particularly when interacting with staff from diverse linguistic backgrounds. The parent relied heavily on their partner to interpret complex information.

Non-native English speakers, including some healthcare providers, compounded the communication challenge, leaving the parent feeling more isolated.

“The doctors and trainees come from different countries, and I couldn't understand them. For example, when I was pregnant and my consultant was, I'm not sure what nationality she was. I had to have my husband with me all the time because I couldn't understand what they're talking about. First of all is the medical language and second of all, they don't really slow down while speaking. They just keep going and they don't make sure that you understand. So it was a big issue. I remember trying to change the doctor because I couldn't understand her. And it was COVID as well. So my husband wasn't actually allowed on the visits, but then they made an exception.”



THEMATIC ANALYSIS

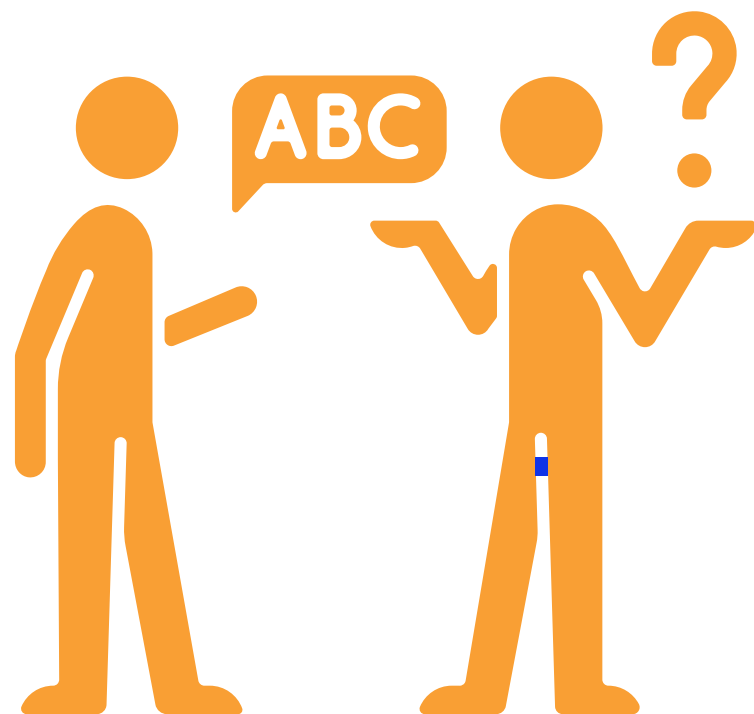
FRAGMENTED CARE AND CONTINUITY ISSUES

Parent interacted with multiple healthcare professionals during one, having to repeat what happened. Often time not being able to recall whom they had spoke to or what their names were. This lead to parent feeling there was lack of communication between hospital staff and sense of fragmented care. After the first visit parent waited 2 years to be referred to children hospital. During that wait another seizure happened to a child.

This prolongs family anxiety who already feel uninformed and worried about the upcoming visit.

“No emails, no documentation, nothing. Just pretty much ‘word’. Yeah. So even if you were to look for help yourself, You wouldn't really know what happened because you don't have any information about the situation at all.’

“We recently got a letter from Crumlin hospital after two years of seizure first happening. They send me letter after second seizure few weeks back. It's a very long waiting even when referred.”



THEMATIC ANALYSIS

EMOTIONAL AND PSYCHOLOGICAL STRESS

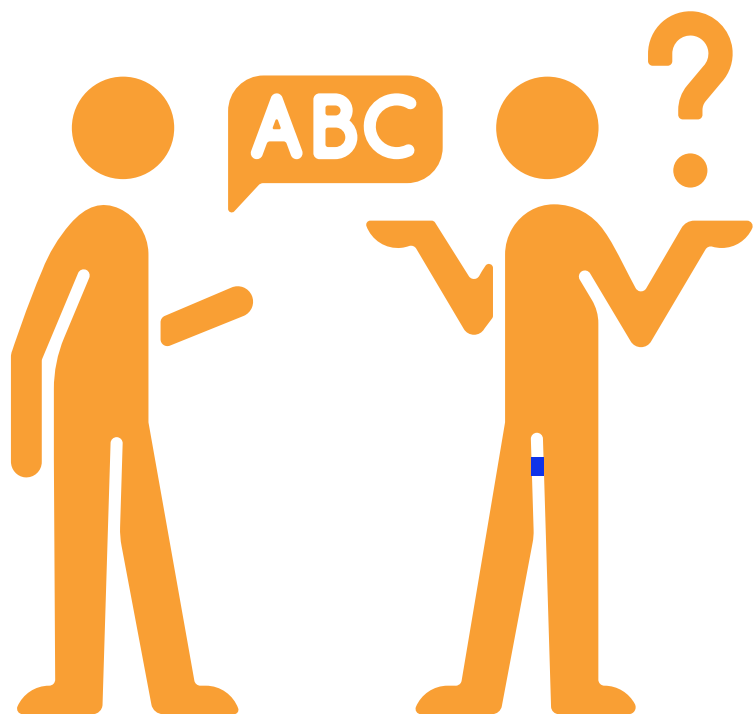
Parent describes the immense emotional distress of witnessing their child's seizure and the uncertainty surrounding the cause. The repeated hospital visits, long hours of waiting, and lack of concrete answers contribute to prolonged anxiety.

Emotional Distress: The parent described significant anxiety and fear, particularly during the first seizure episode when the child was non-responsive and the cause was unknown.

Lack of Emotional Support: Although the staff was described as generally kind, the parent felt there was a lack of compassion at times, particularly when the family's vaccination decisions led to perceived judgment.

Parental Guilt and Responsibility: The mother emphasized her personal responsibility for managing her child's diet and well-being and felt unsupported in navigating preventative measures. She also felt guilty that due to the language barrier she cannot accompany her child to specialist hospital.

“I can't really be there with her (language barrier). We have to choose who is going and you know, kind of comparing us and it feels like my husband is better equipped to go and better take care of her. But as a mother I would prefer to be there, you know.”



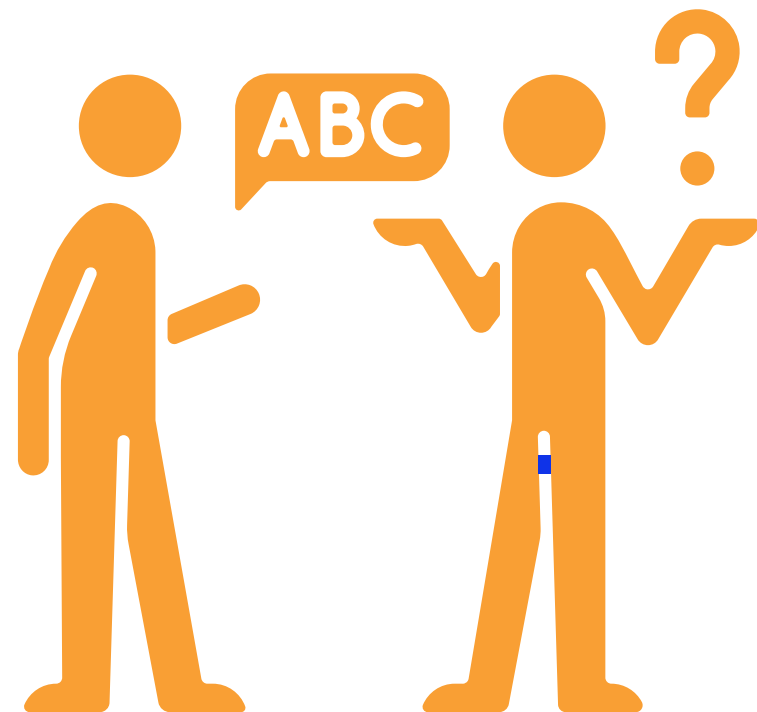
THEMATIC ANALYSIS

COMMUNICATION CHALLENGES

Repetition of Information

Lack of Clear Information

Medical Jargon and Language Barriers



FRAGMENTED CARE AND CONTINUITY ISSUES

EMOTIONAL AND PSYCHOLOGICAL STRESS

THEMATIC ANALYSIS

"WHEN WE LEFT HOME, WE
DIDN'T REALLY GET ANY
CLEAR INFORMATION ABOUT
WHAT TO DO."

"THEY SEND ANOTHER PERSON, AND
YOU START THE STORY FROM THE
BEGINNING. YOU KNOW IT'S RIDICULOUS.
I THINK I SPOKE TO 6 PEOPLE."

"THE DOCTORS AND TRAINEES
COME FROM DIFFERENT COUNTRIES,
AND I COULDN'T UNDERSTAND
THEM."



COMMUNICATION CHALLENGES

INSIGHT 1

Parents experience significant stress due to repeated storytelling, unclear discharge instructions, and language barriers in the ED.

Lack of streamlined communication, medical jargon and inability to understand staff from diverse linguistic backgrounds further isolate them.

Improving information sharing, providing written summaries, and ensuring clear, accessible language can enhance parental confidence, reduce frustration, and improve overall healthcare experiences.

FRAGMENTED CARE AND CONTINUITY ISSUES

INSIGHT 2

Parents experience frustration and anxiety due to fragmented care, long referral wait times, and lack of communication between hospital staff.

Repeated storytelling and delayed specialist access leave families feeling uninformed and helpless. Improving coordination, timely referrals, and clear communication can enhance continuity of care and reduce parental distress.

EMOTIONAL AND PSYCHOLOGICAL STRESS

INSIGHT 3

Parents endure intense emotional distress due to uncertainty about their child's condition, prolonged hospital wait on test results, and perceived lack of support.

Judgment, guilt, and language barriers further isolate them. Providing compassionate care, emotional reassurance, and inclusive communication can help reduce anxiety and empower parents in their child's care journey.

JOBS-TO-BE-DONE

● FUNCIONAL

Seek answers and resolution

Parents are seeking clarity and resolution regarding their child's health, desiring clear answers about the cause of the symptoms, a proper diagnosis, and a clear treatment and follow-up plan to manage their child's condition with confidence.

● EMOTIONAL

Reassurance and emotional support

Parents are experiencing immense emotional distress during their child's medical crisis and are looking for reassurance, compassion, and empathetic communication to reduce anxiety and help them navigate the uncertainty surrounding their child's condition.

● SOCIAL

Clear communication with medical professionals

Parents want clear, consistent communication from healthcare professionals, where both parents can understand and engage, especially when language or cultural barriers are present, so they feel supported and included in the decision-making process.

PAINS



Fragmented communication and repetition

The repetitive need to explain the same situation to different medical professionals without a clear, consistent point of contact creates additional stress and frustration for parents, who feel disconnected and overwhelmed by the fragmented nature of their care experience.

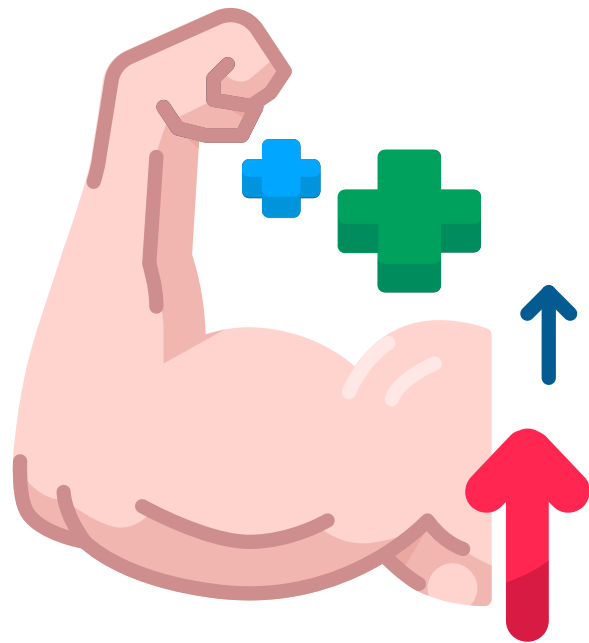
Lack of clear information and follow-up

The absence of clear documentation or concrete next steps upon discharge leaves parents feeling uncertain and unsupported in managing their child's ongoing care, particularly when follow-up appointments and referrals are delayed or unclear.

Language and cultural barriers

Language barriers and medical jargon prevent parents from fully understanding their child's condition and care plan, leading to feelings of isolation, confusion, and frustration, particularly when healthcare providers themselves have limited communication skills in the family's language.

GAINS



Clarity and resolution about child's condition

Parents wish for clear, actionable information about their child's diagnosis, treatment, and next steps, enabling them to feel secure and confident in managing their child's health and ensuring better care in the future.

Continuity and trust in care

Parents desire a more cohesive care experience, with a single point of contact to ensure continuity, which would foster trust in the healthcare team and provide emotional relief by alleviating the need to repeatedly explain their child's situation.

Effective communication and understanding

Parents want healthcare providers to communicate more clearly and slowly, avoiding medical jargon and ensuring the family understands all critical information, especially when cultural and language differences are present, fostering a sense of inclusion and respect.



PROBLEM STATEMENT

The hospital discharge process can be overwhelming for non-native speakers and parents experiencing stress.

Parents experience frustration and anxiety due to fragmented care, long referral wait times, and poor communication among hospital staff.

The lack of clear, written instructions and the need to repeatedly explain their child's condition to multiple healthcare professionals adds to their emotional distress.

This creates uncertainty in post-hospital care and difficulty in sharing information with family members.

There's an opportunity to make the discharge process clearer and more accessible, improving patient confidence, enhancing communication, reducing stress, and ensuring better health outcomes.

PERSONA



NAME Tatiana Adamchuk

AGE 37

OCCUPATION Former Accountant

LOCATION Rural Ireland, Recently Relocated from Ukraine as a Refugee

ABOUT USER

Tatiana, mother to 4 year old Artem, is navigating Irish healthcare system alone, while her husband stayed behind to fight in Ukraine. While she speaks some English, she struggles with medical terminology and doctors' accents.

She wants to keep her husband informed about their child's health, as he worries constantly but does not speak English, making it difficult for him to understand medical updates.

She worries about leaving out important details and feels stressed about follow-up care, especially with no clear indication of when it will happen.



FRUSTRATIONS

- Repeating what has happened
- Medical Jargon and Language Barriers
- Fear of misunderstanding instructions
- Distress due to uncertainty about their child's condition
- Difficulty Keeping Husband Informed
- No immediate support system

USER QUOTE

It was terrifying to see my son so sick, and I felt helpless when the doctors, especially non-native, spoke too fast, making it difficult for me to understand. It was also incredibly stressful to keep repeating what had happened over and over.

When we left, I was relieved but unsure if I had truly understood everything, including what tests were done.

I wish I had written instructions and visit overview in simple words and in Ukrainian so I could properly care for my son and send updates to my husband. He may be far away, but he still deserves to know what's happening with our child.

No mother should have to feel so lost and alone when her child is unwell."



GAINS

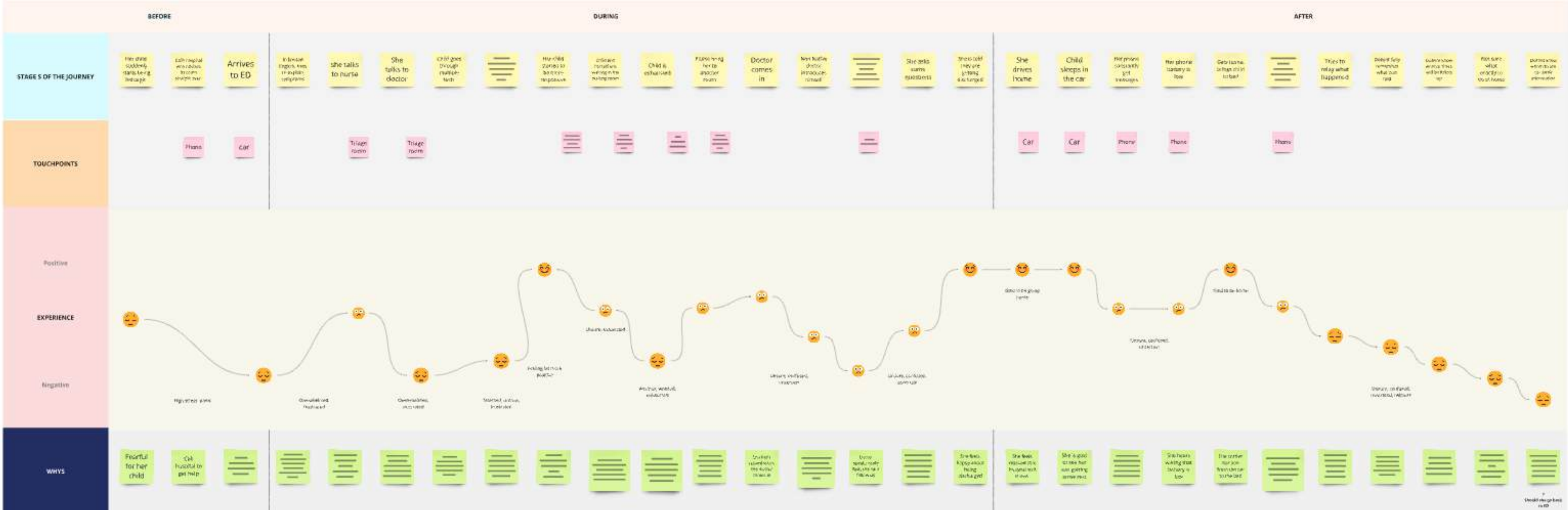
- Summary of what happened to be recorded so only most necessary information have to be repeated
- Doctors should speak slower, avoid jargon, and confirm understanding
- Written & Translated Discharge Summaries
- To be able to easily send medical information to her husband
- Post-Discharge Hotline or Check-Ins

JOBS TO BE DONE

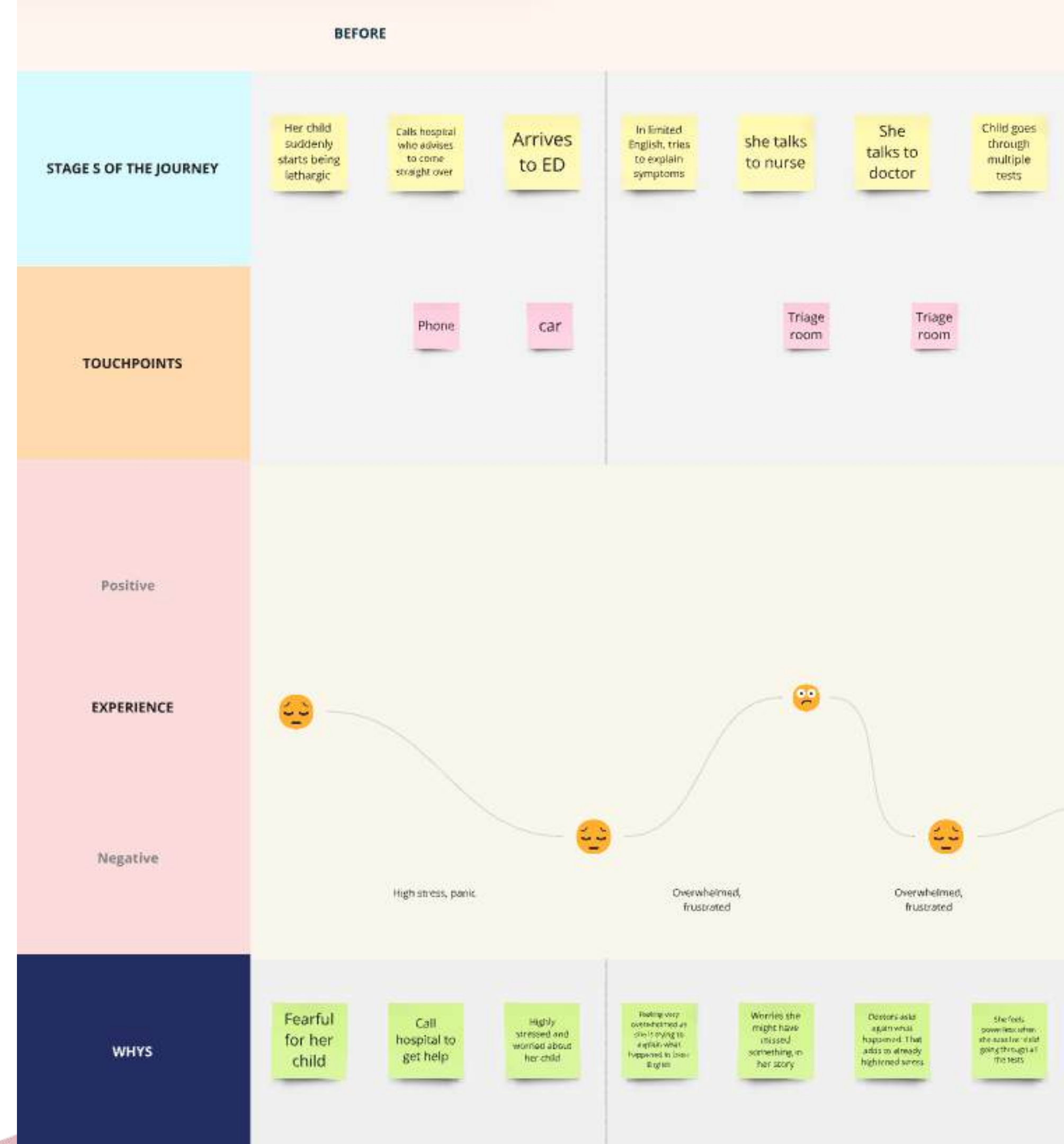
- **FUNCTIONAL** Cleary understand her son condition, treatment and follow up (if necessary)
- **EMOTIONAL** Feel supported and not lost and alone in managing her sons health
- **SOCIAL** Access to healthcare system that acknowledge her language barrier and empowers her to look after her son medical needs



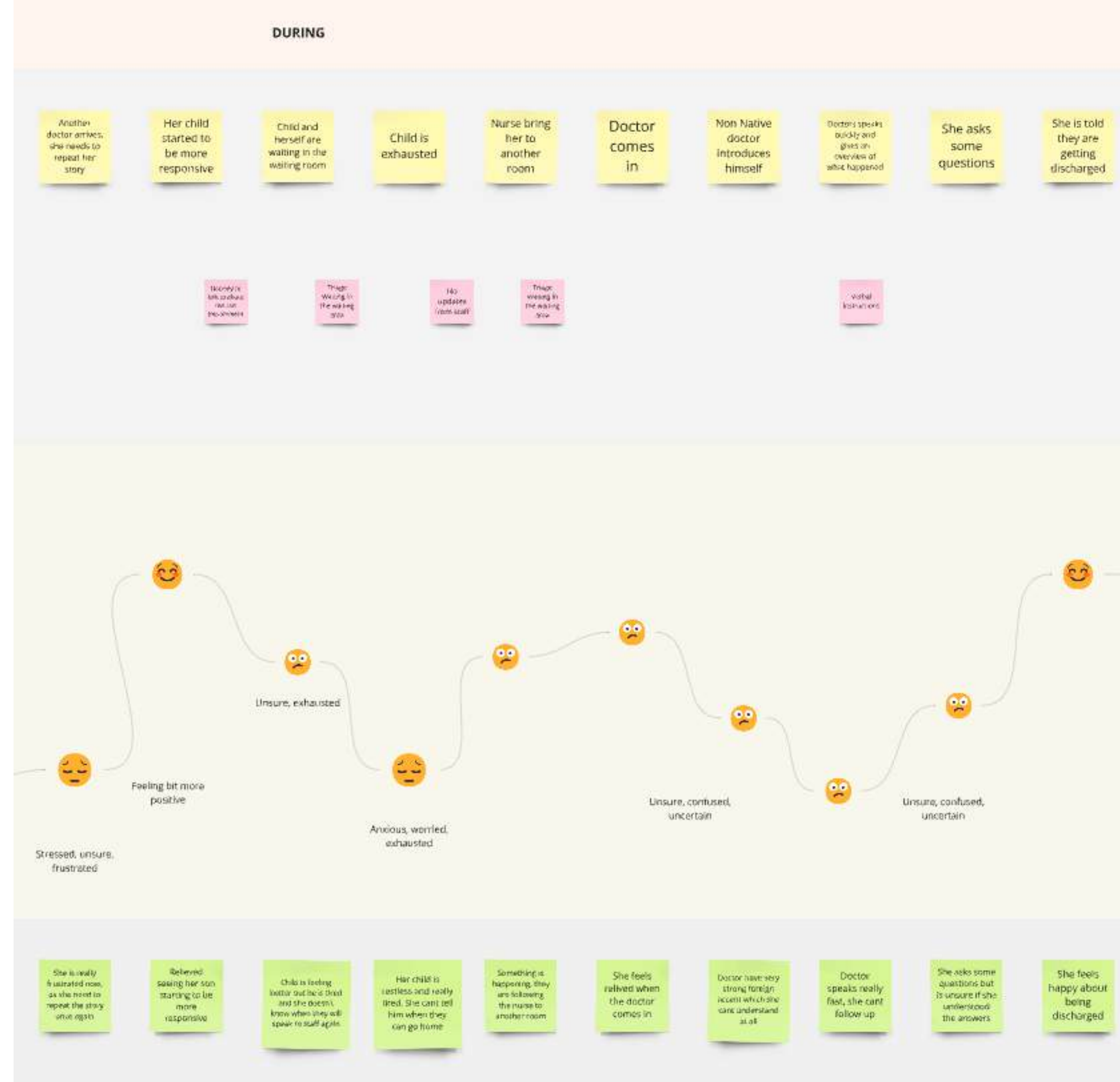
JOURNEY MAP



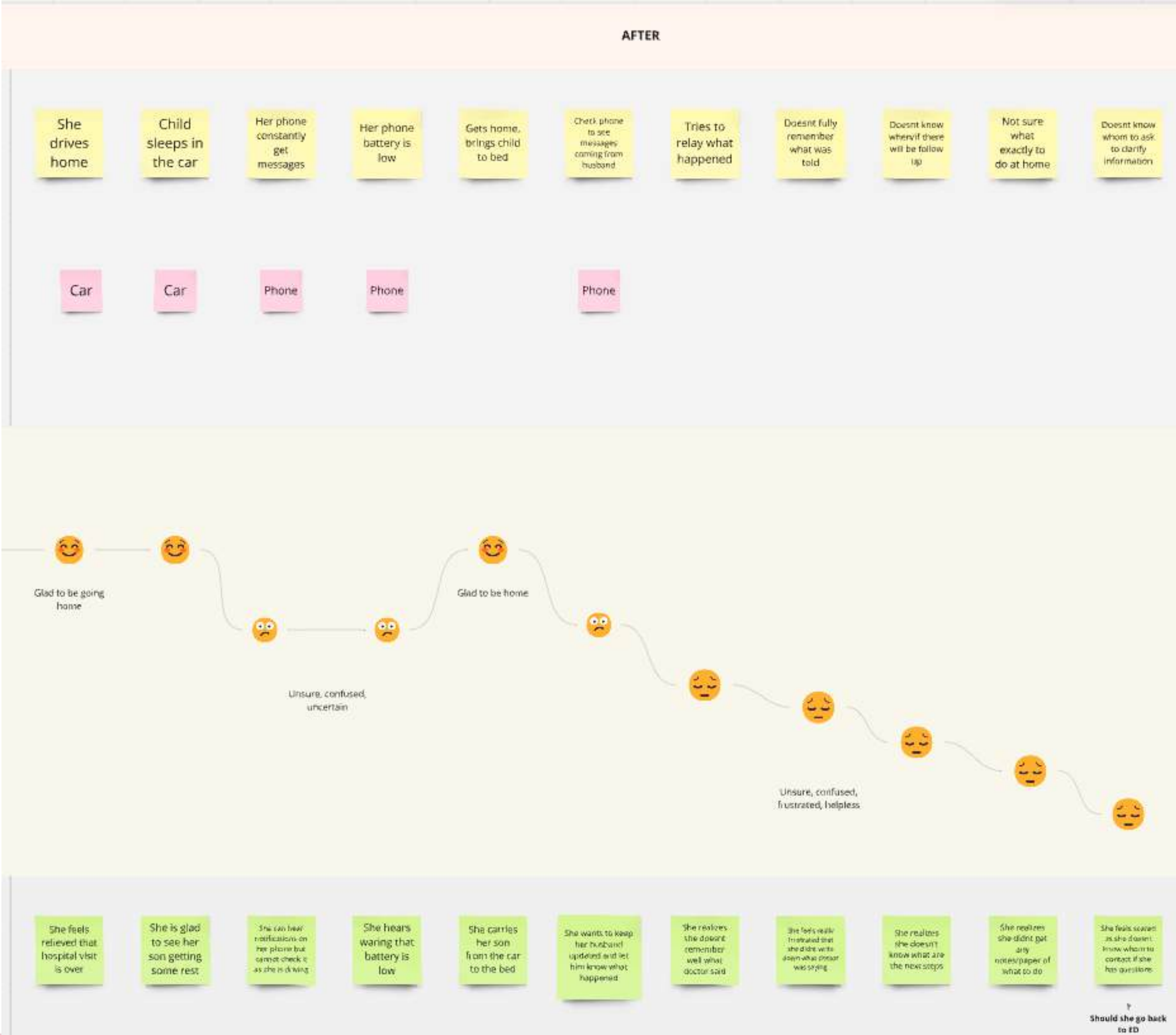
JOURNEY MAP- BEFORE



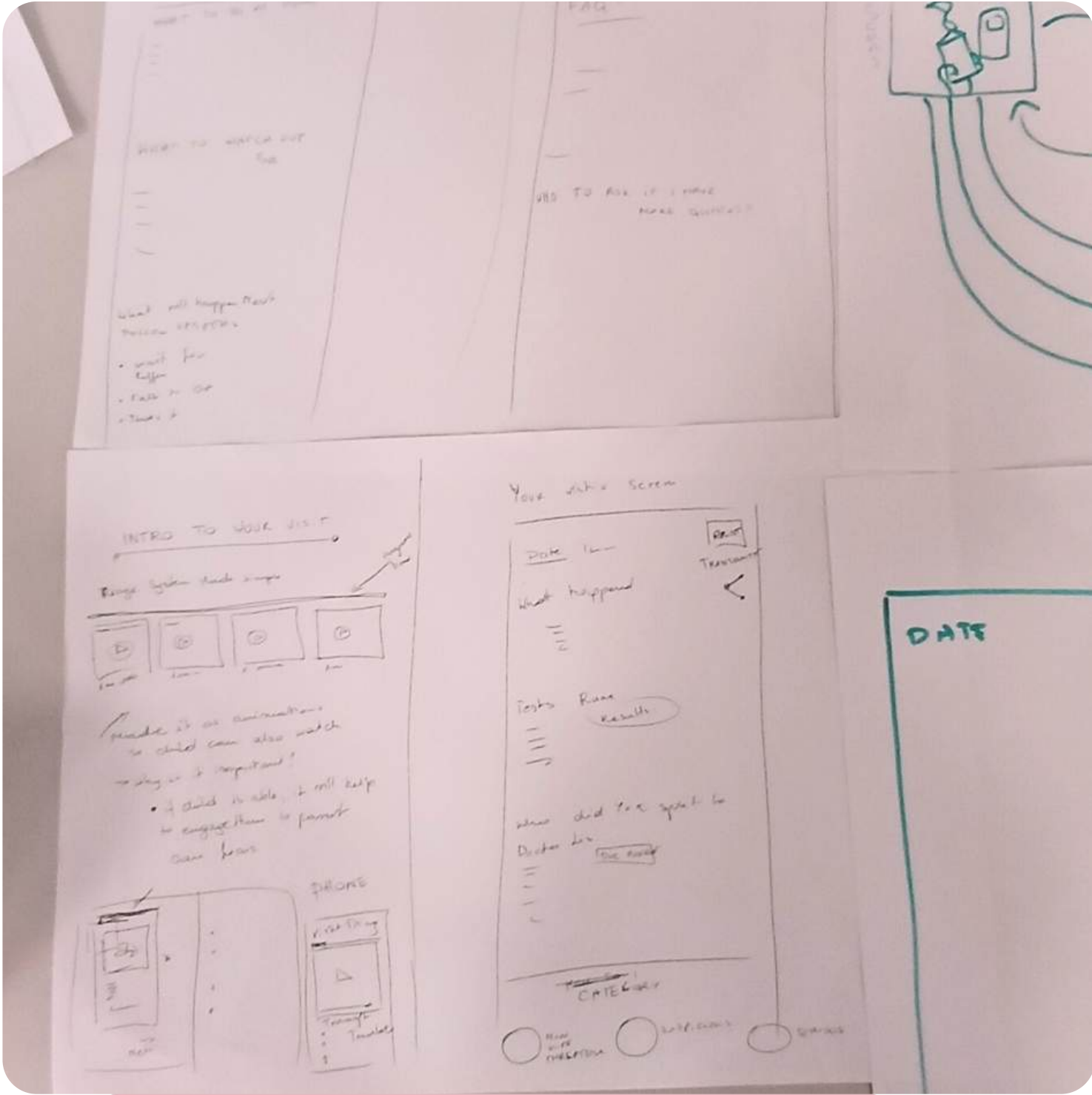
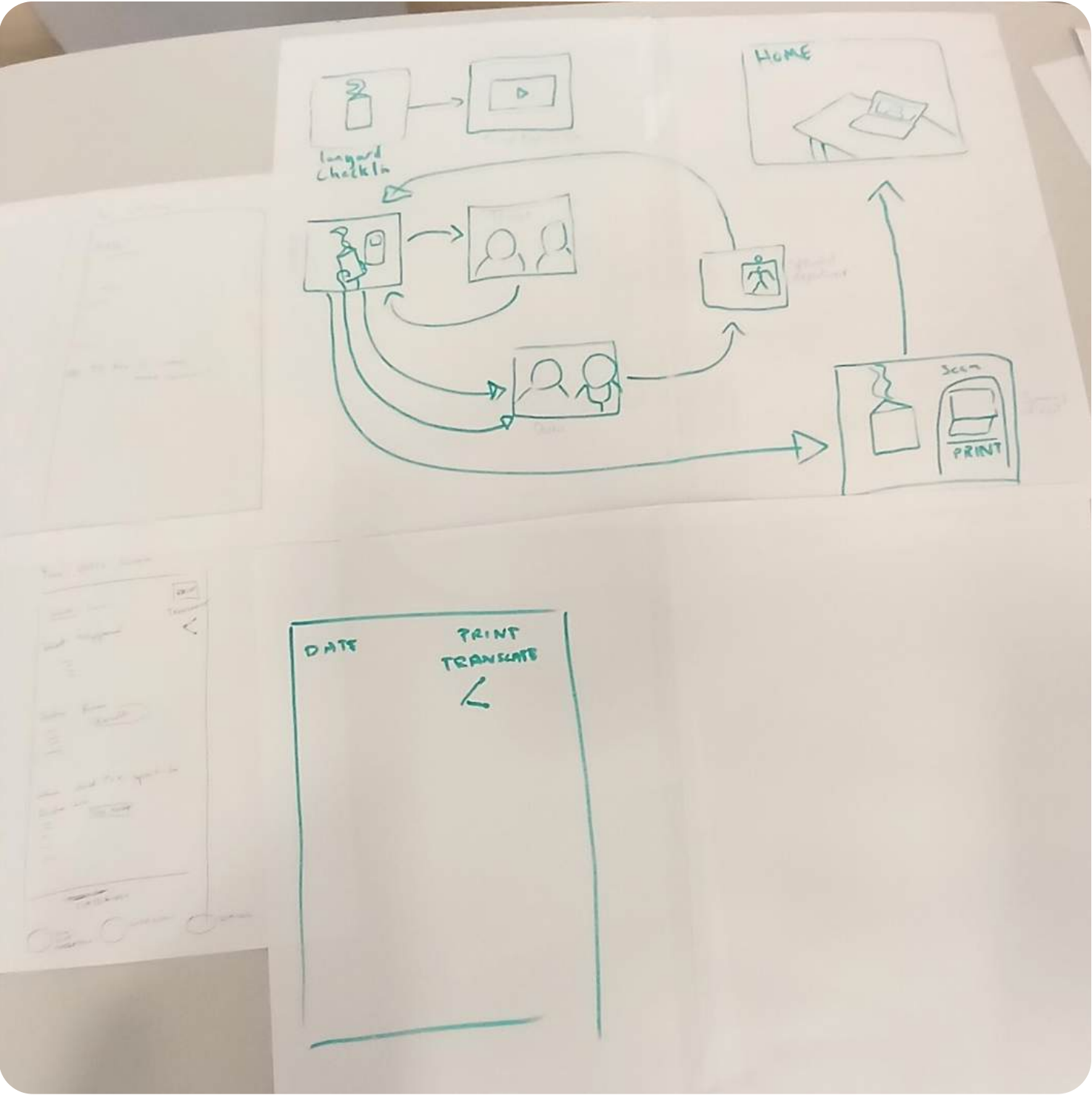
JOURNEY MAP-DURING



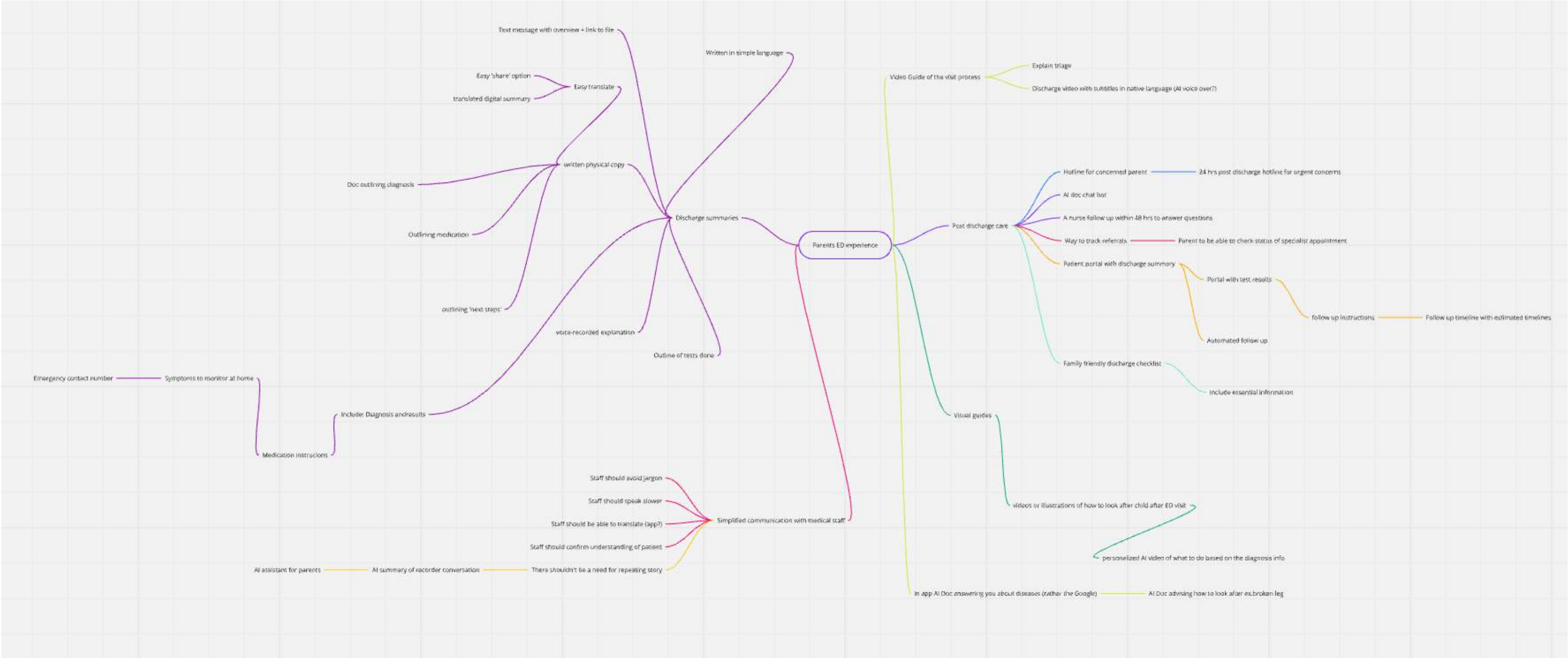
JOURNEY MAP-AFTER

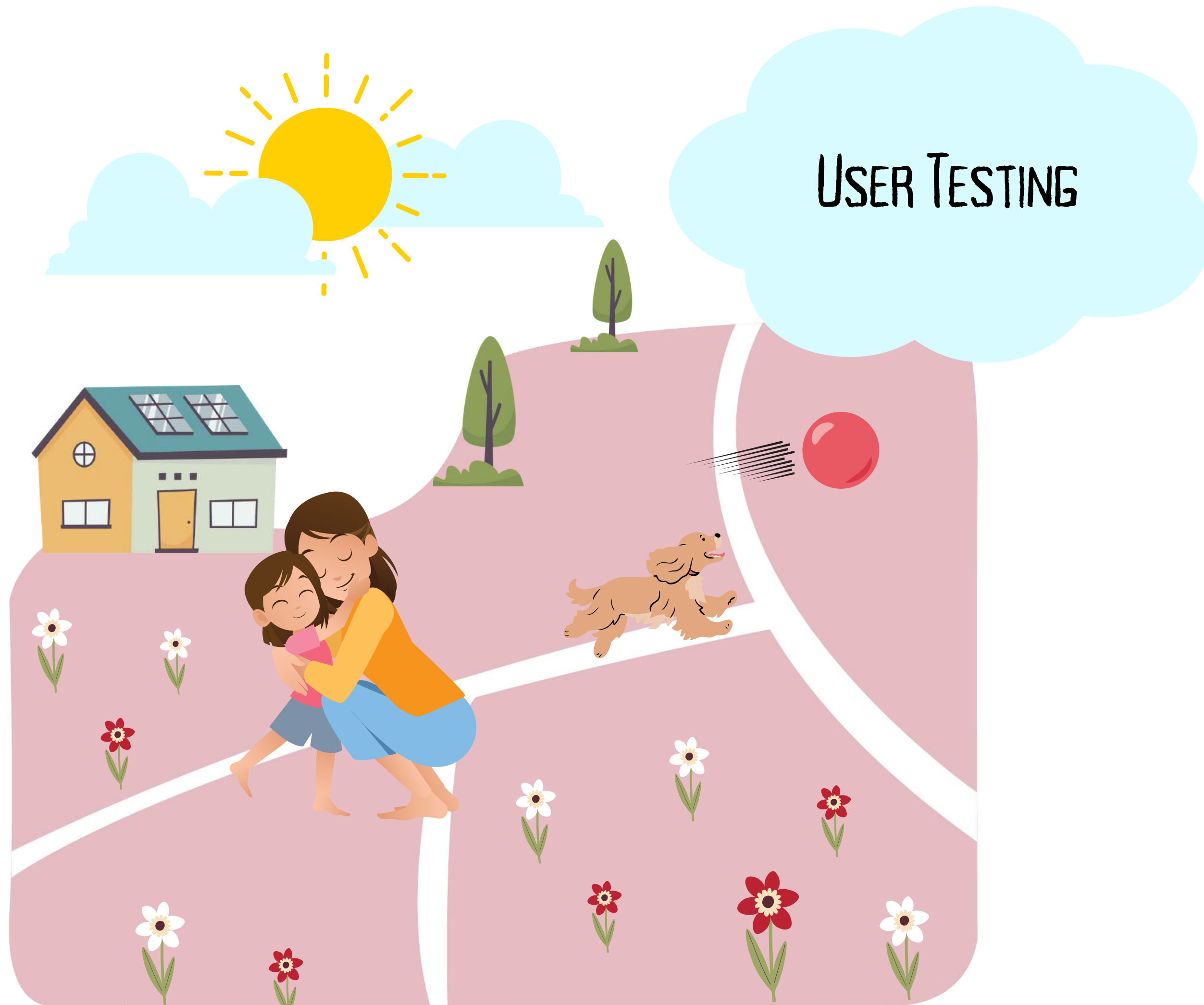


IDEATION



IDEATION





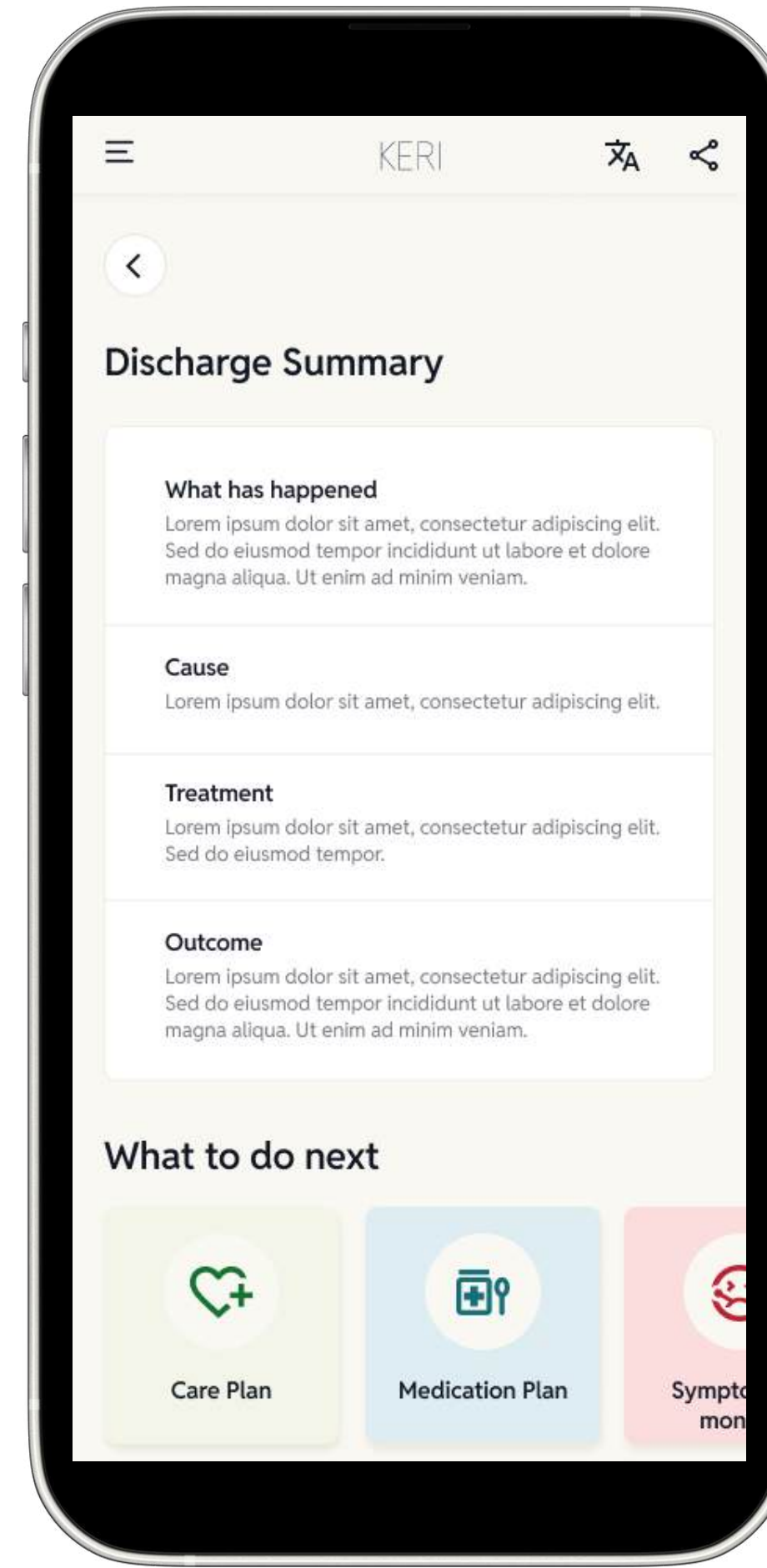
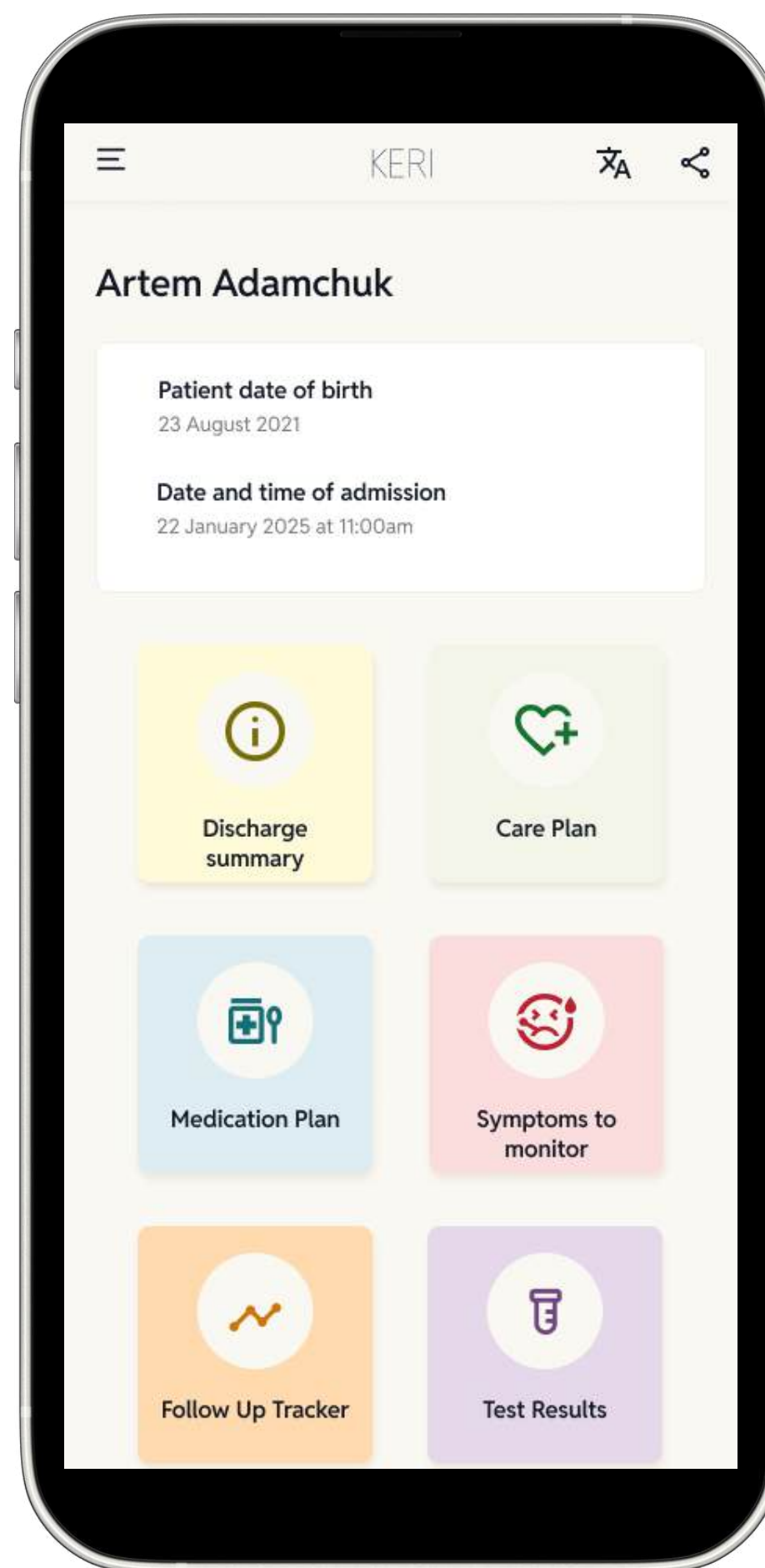
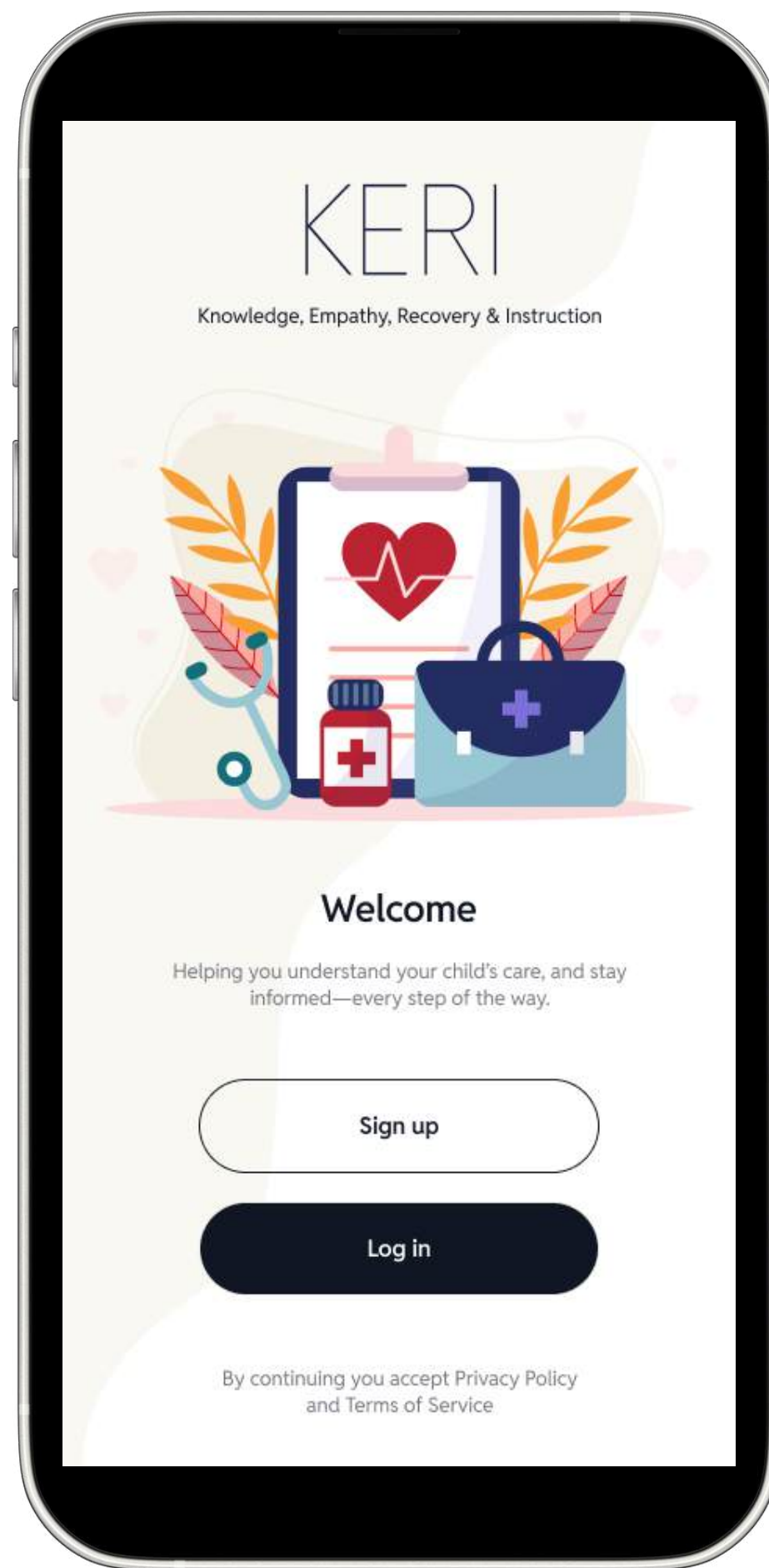
USER TESTING

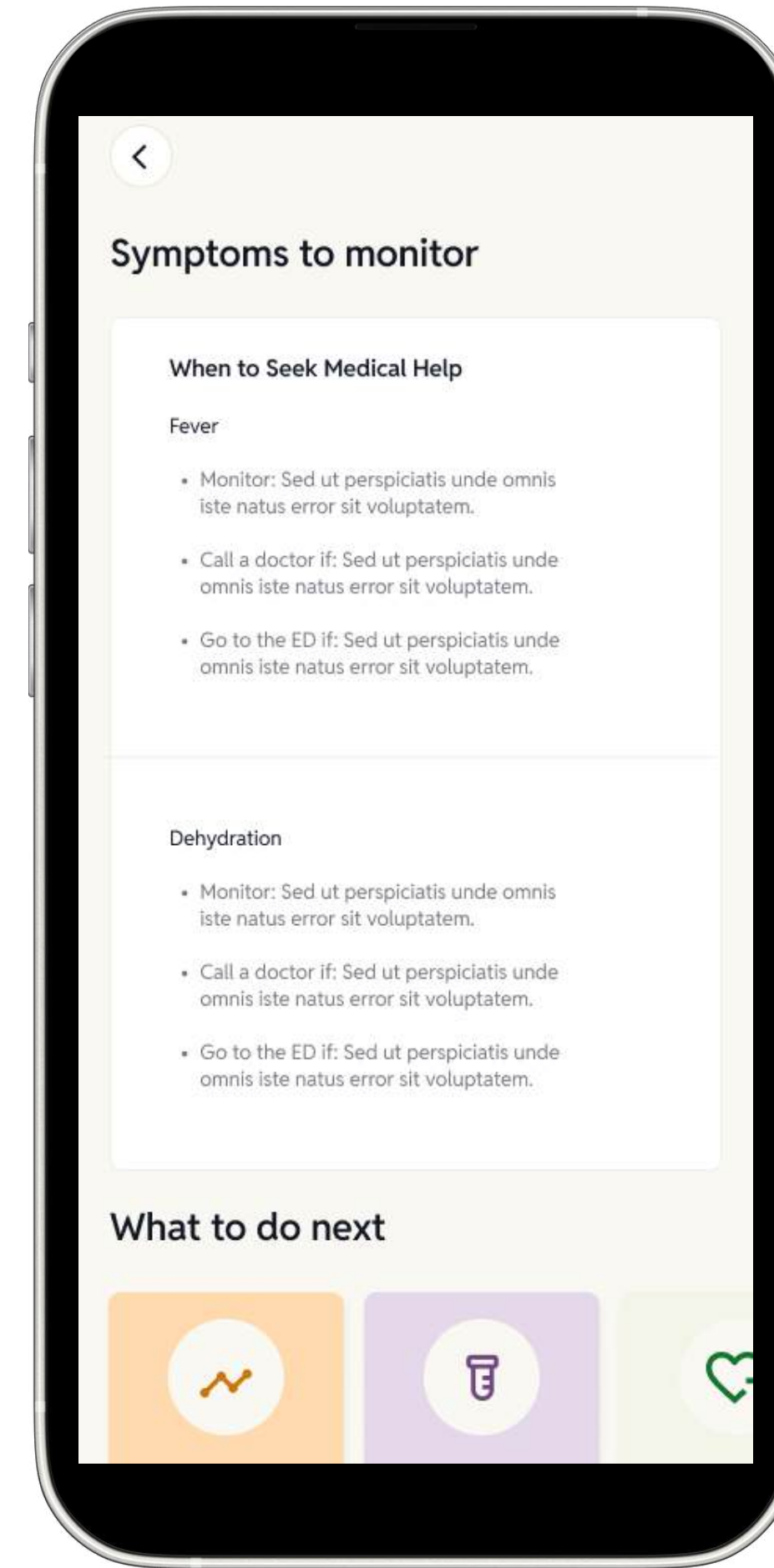
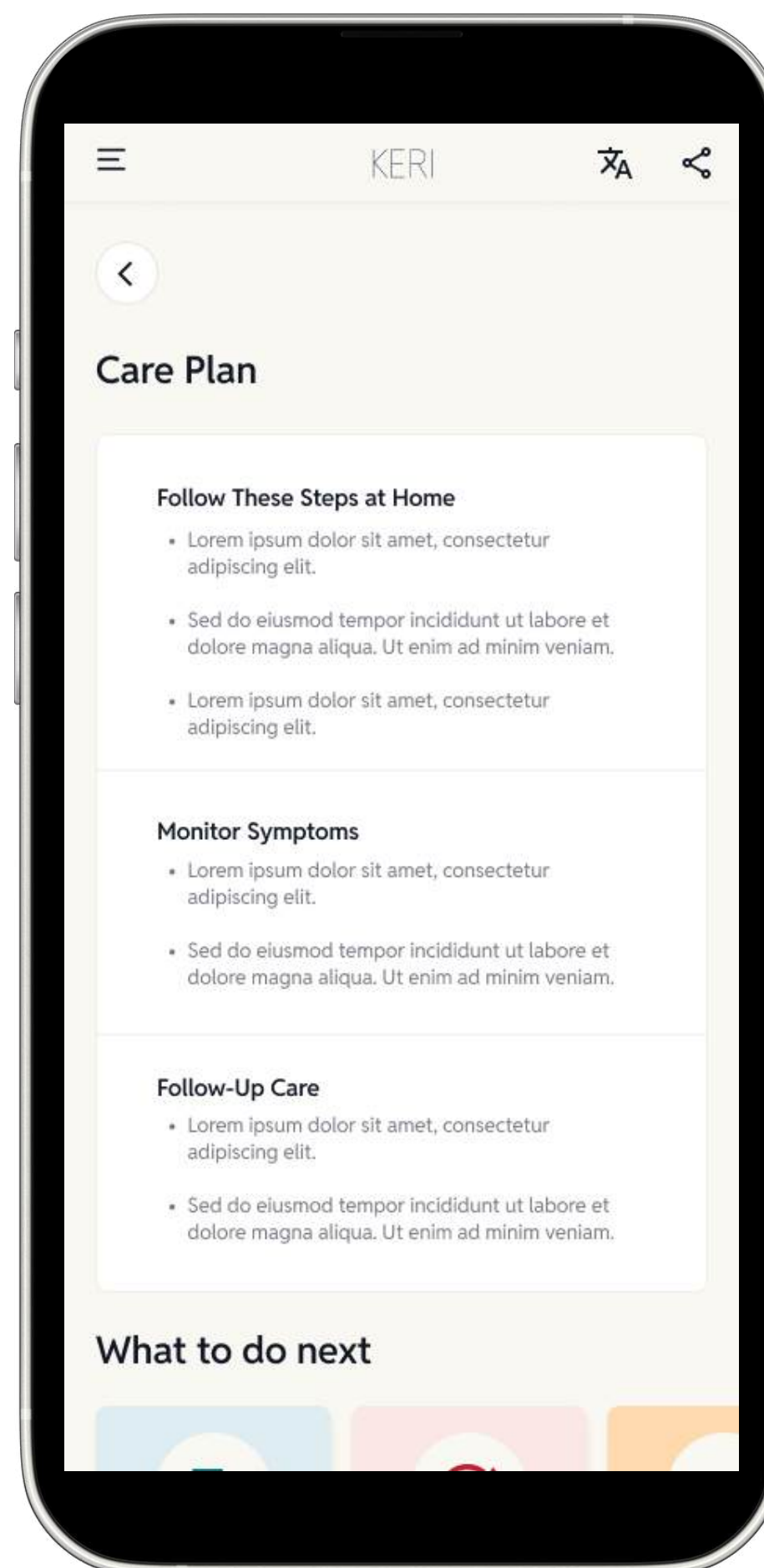
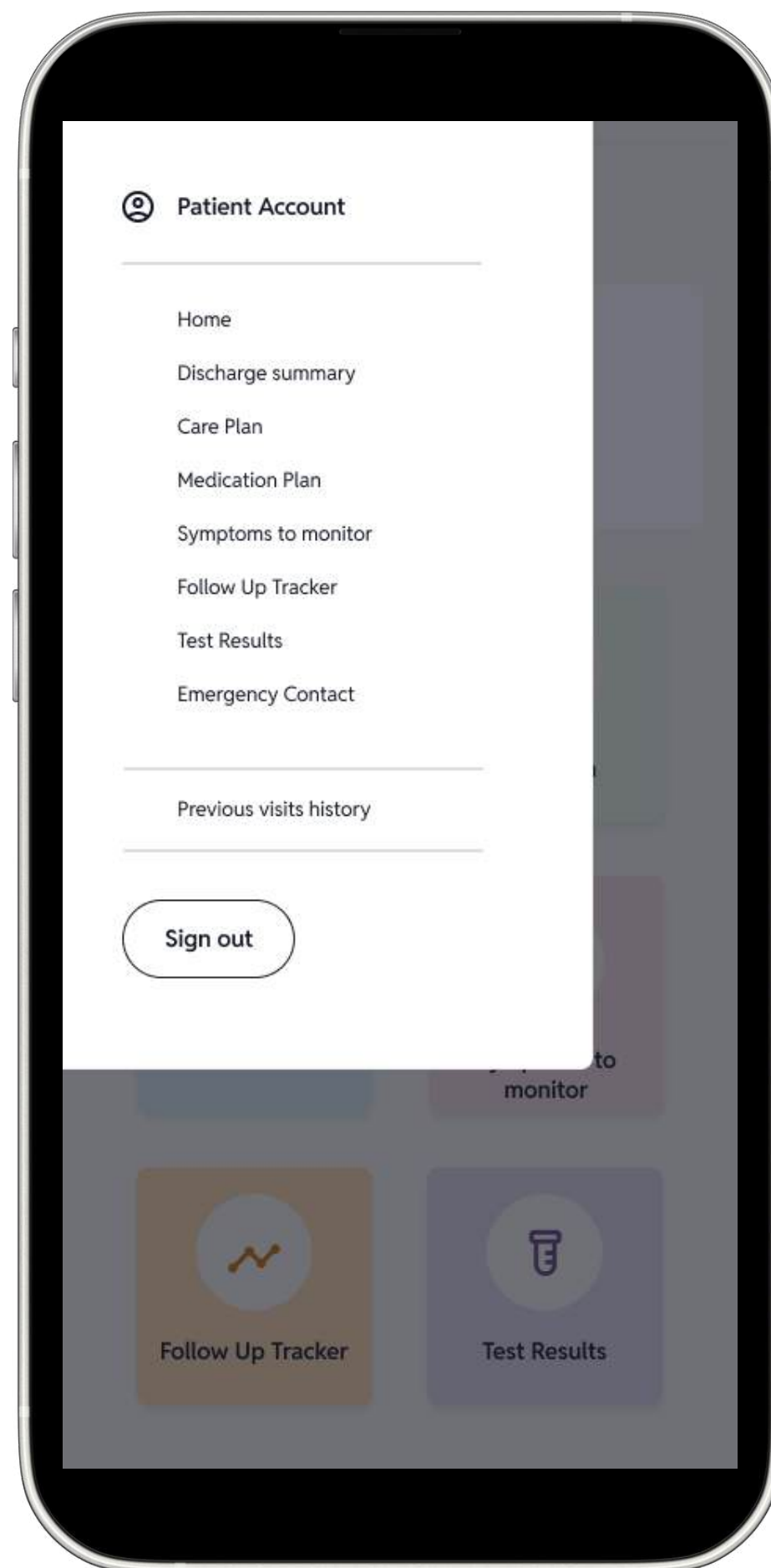
OVERVIEW

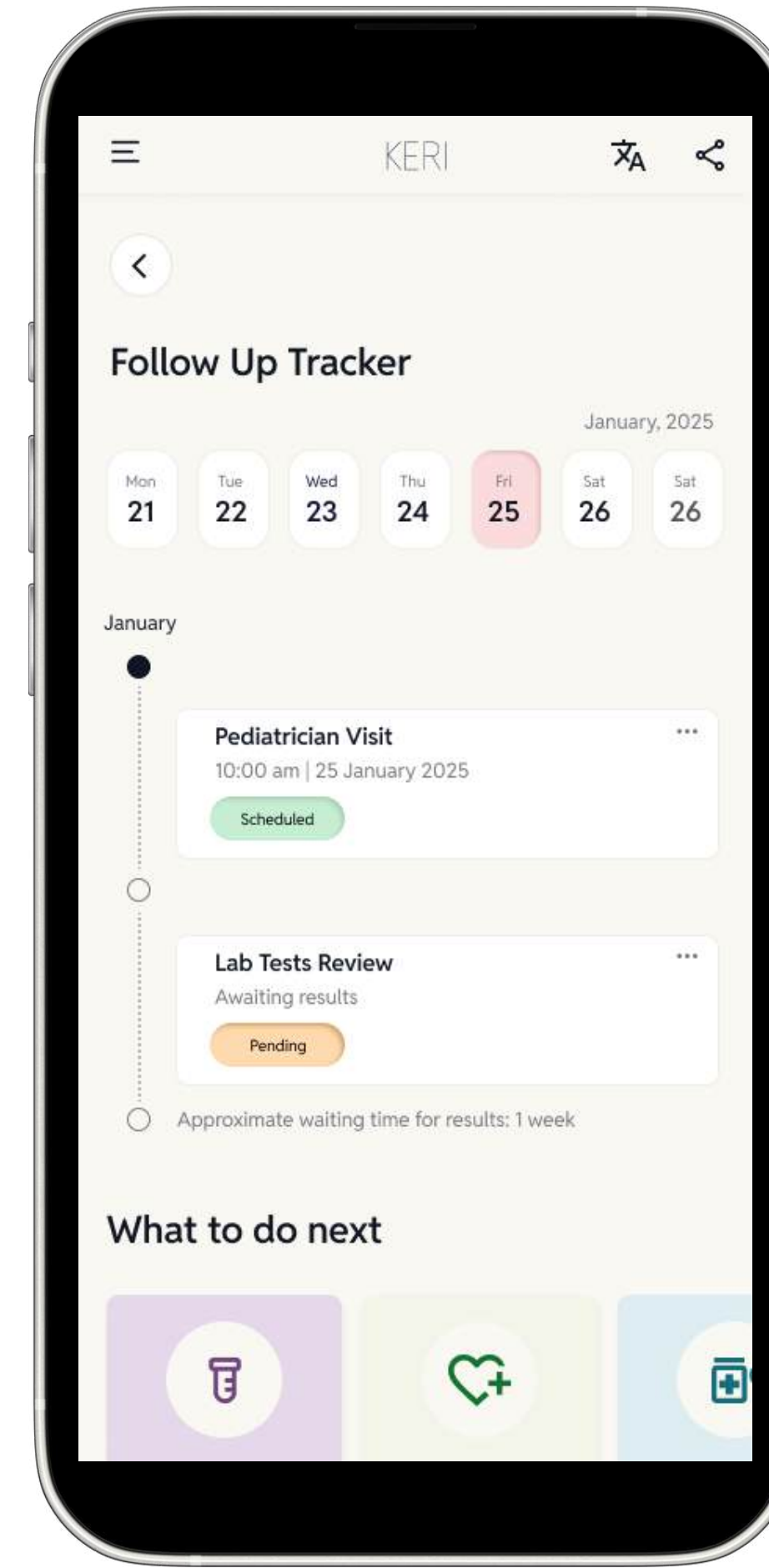
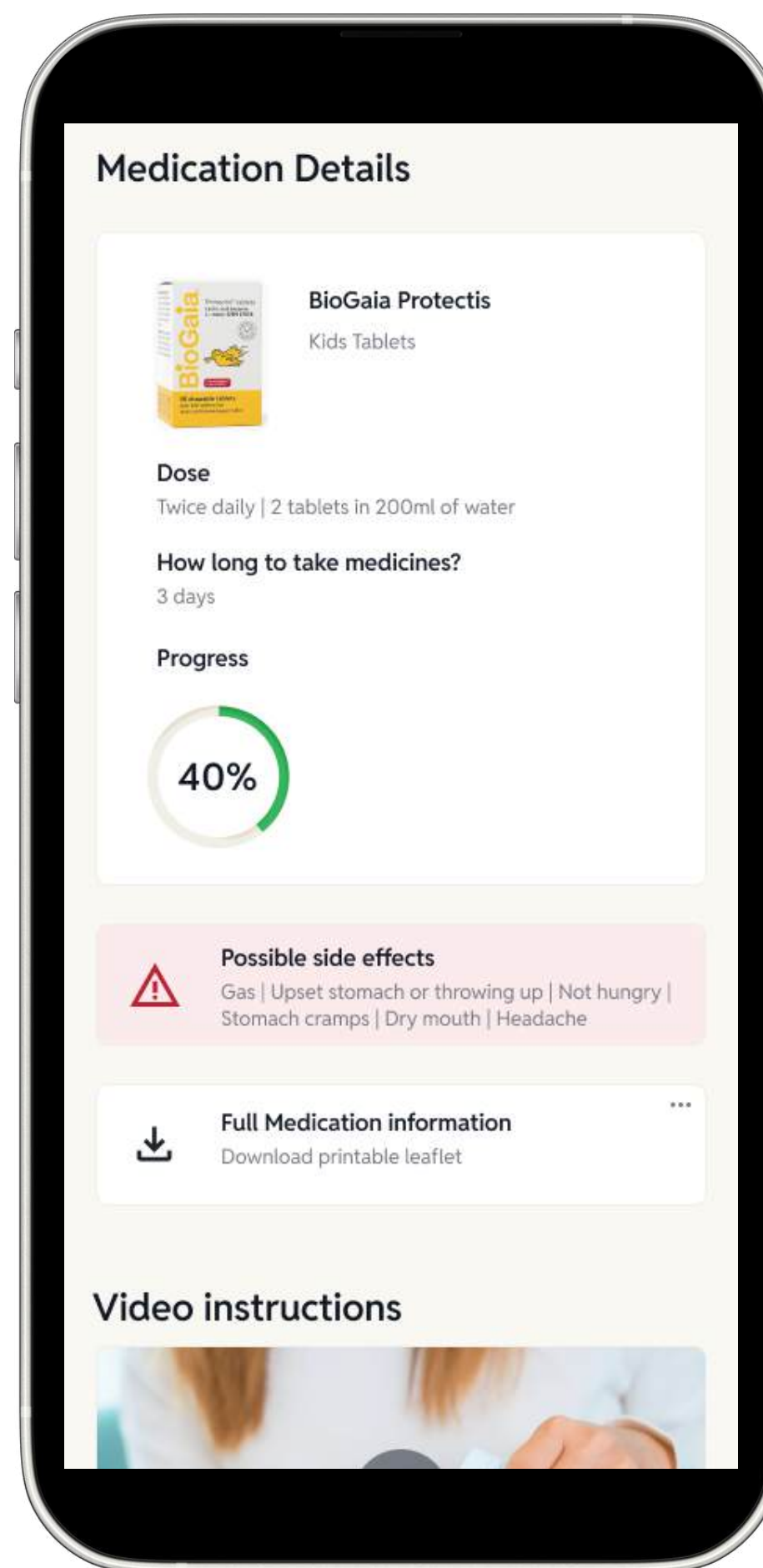
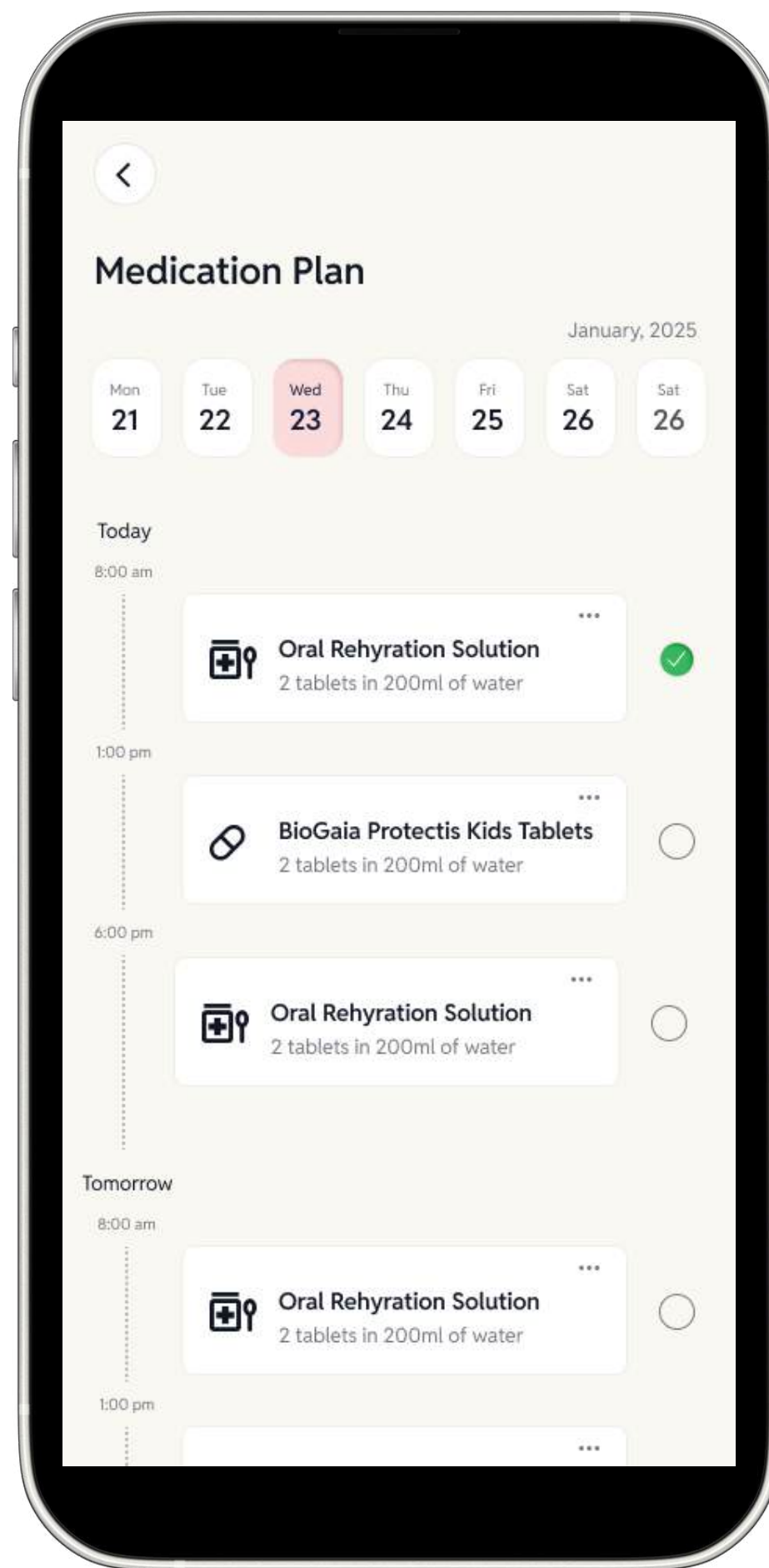
HEART FRAMEWORK

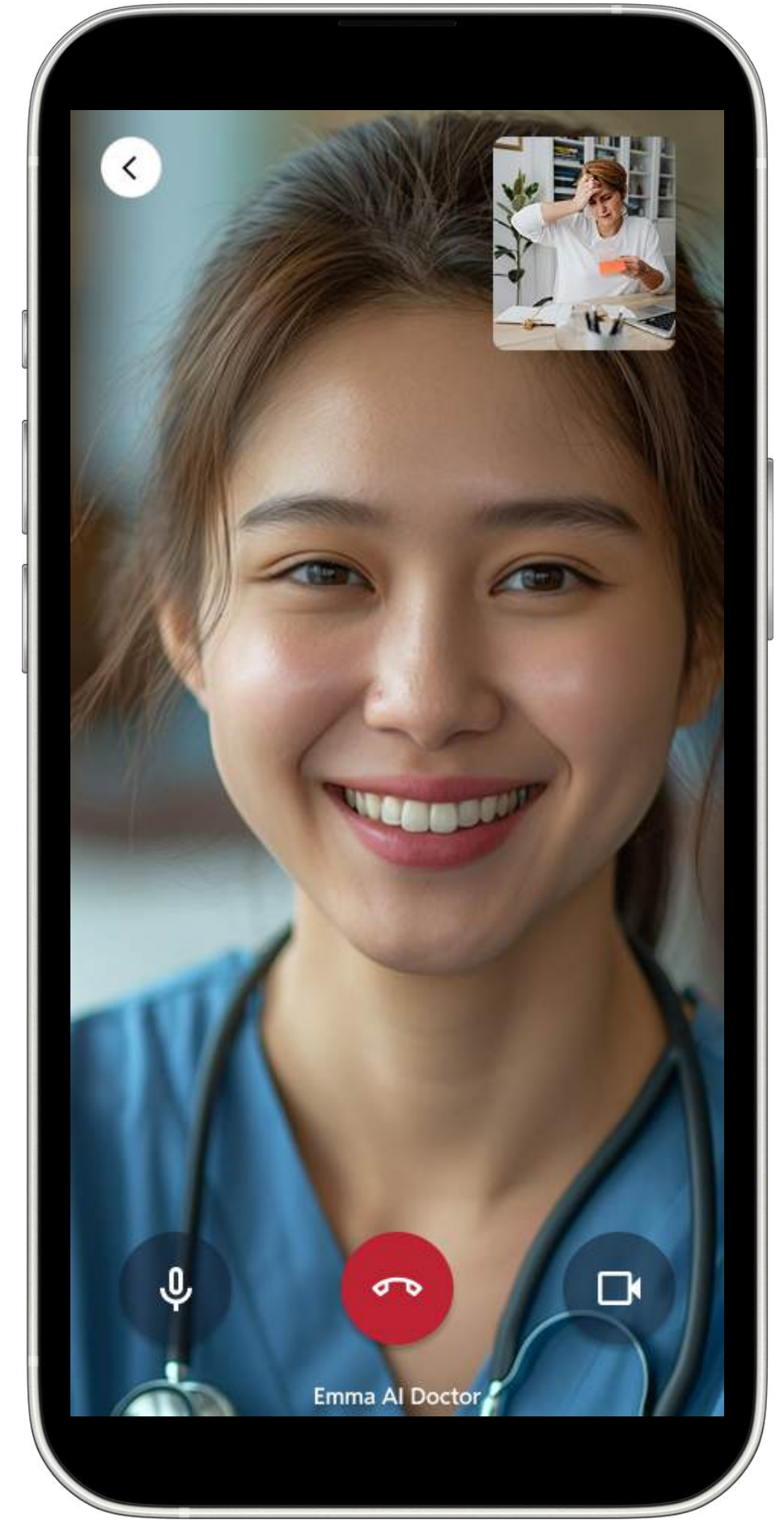
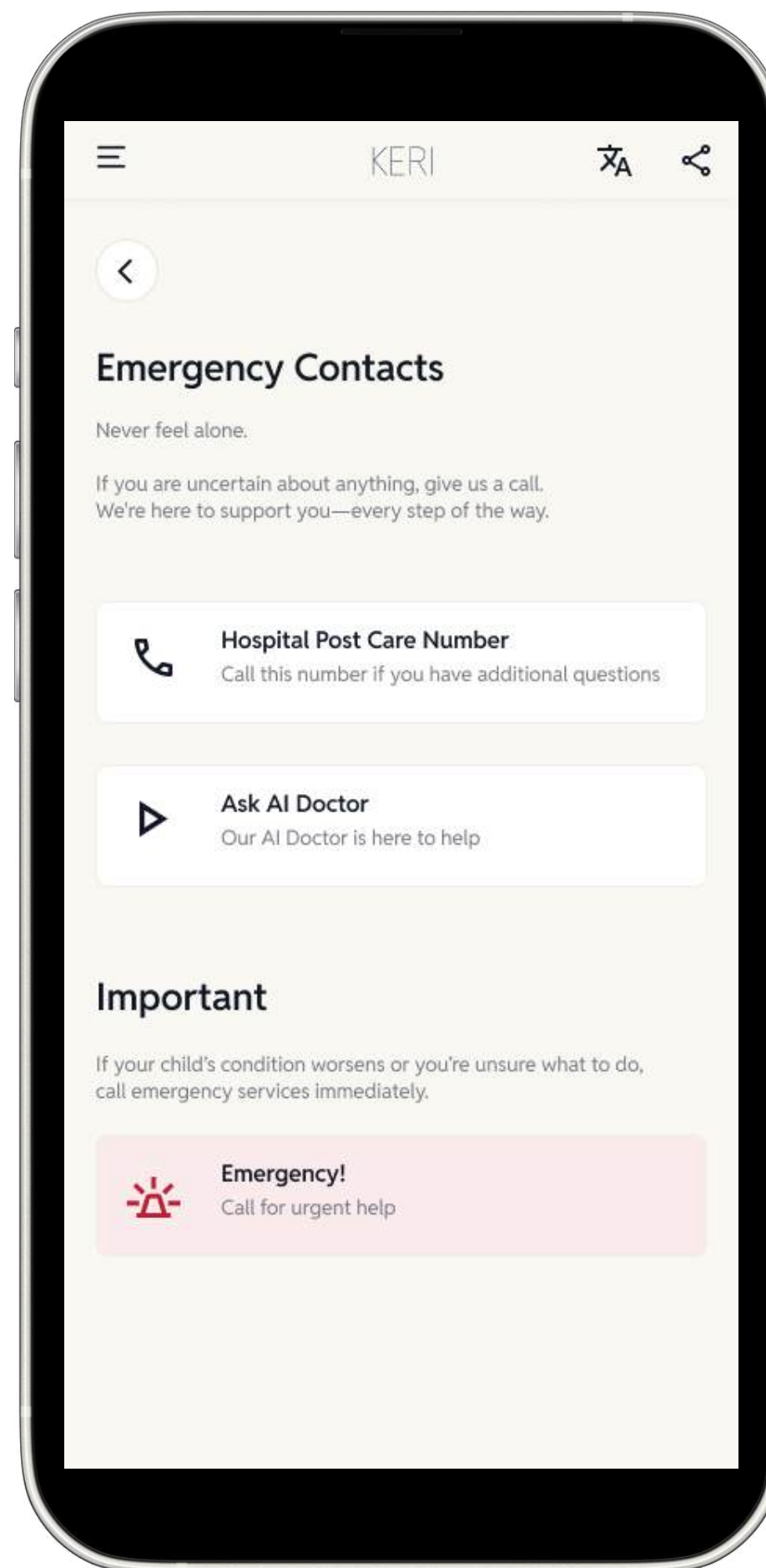
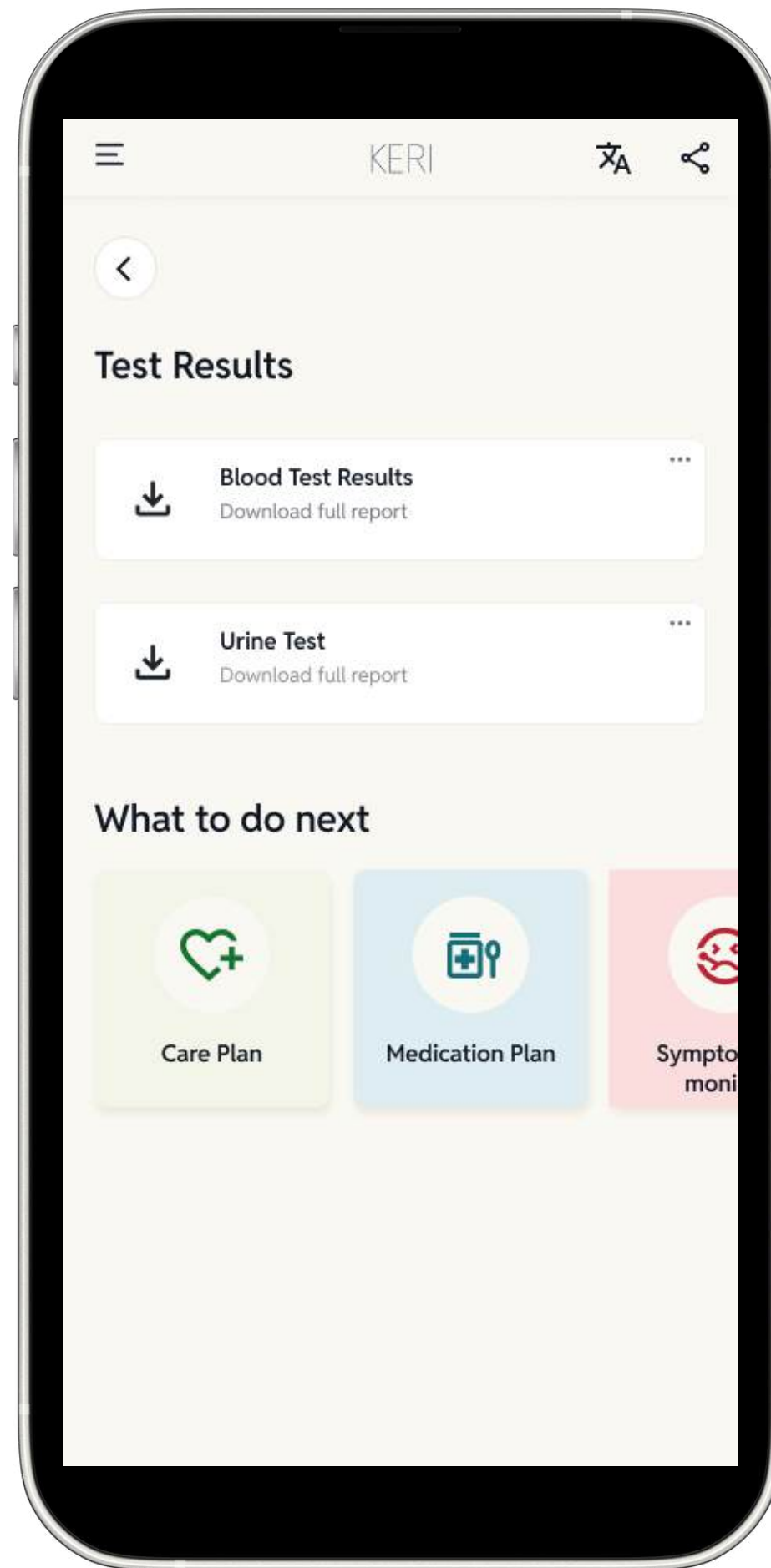
EVALUATIVE RESEARCH PLAN

RAINBOW SHEET & €100 TEST









HEART FRAMEWORK	GOAL	SIGNAL	METRIC
HAPPINESS	Parents feel confident and supported	Positive feedback	Satisfaction survey in the app
ENGAGEMENT	Parents use key features	Time spent exploring care plan, sharing option etc.	Session duration <i>(*if sessions are too long, it might indicate an issue)</i>
ADOPTION	Parents starts using app after leaving hospital	Activation within 24 hrs of discharge	% of new users within 24 hrs
RETENTION	Parents continue using app in days following discharge	Return sessions over care plan duration	Number of repeat sessions
TAKS SUCCESS	Parents complete essential tasks by themselves	Ability to find information, and usage of share button	Average number of errors or requests for help



EVALUATIVE RESEARCH PLAN

MODERATED USER TESTING

OBJECTIVE

- Can parents easily access discharge instructions?
- Can parents understand medication plan?
- Can parents confidently share updates with family?
- Do parents know where/when to seek help or call emergency if needed?
- Can parents find translate option easily?

WHO

- Parents who recently had a hospital ED visit

Participants selected

- **1 Polish mother (40 years old, rural location)**
- 2 children, 2 recent visits to hospital with 4 year old daughter
- **1 Irish father (35 years old, rural location)** - 1 child, 3 year old daughter, 1 recent visit to hospital
- **1 Irish father (46 years old, urban location)** - 2 children aged 12 and 15 years old.
- Visited Emergency few times over the years.

How

- In person and remote
- Rainbow sheet
- €100 Test



RAINBOW TEST

1		P	P	P	Possible solution	Notes
2						
3	Discharge Summary - Show me where to find what happened at the hospital.					
4	User scrolls down to click on the tile					User had no issue finding discharge summary.
5	Go to landing page, and click on 'discharge summary'				Rething 'Discharge summary phrasing	Phrasing Discharge summary is intuitive
6	No issue finding discharge summary					User found it easy to locate it in the tile section
7	Tries to find history option for previous visits				Add history section to the app	Would like to be able to see previous visits and
8						
9	Medication Plan - How would you check what medicine to give and when?					
10	User click on the medication plan					User had no issue finding medication plan.
11	Easy to find, in both tile and burger menu					User clicked burger menu and tile to find
12	User clicked on medication plan tile					User clicked straight on the tile
13						
14	Share Button - How would you share this app with others?					
15	User had no issue to find and identify share button					
16	Top right share option				Rethin why user would need 'Share' and what are	Rather share the app page then from the app
17	No issue to find the button					
18						
19	Emergency Contact Access - What would you do, if your child got worse?					
20	User was looking for emergency contact and opted out to click on burger menu				Add emergency contact to bottom navigation	User was looking for emergency contact amongst the tiles
21	Go straight to burger menu look for contacts there					
22	User commented that they would like to have this option on the home screen				Add emergency contact to bottom navigation	Would like to see emergency contact in the landing page
23	User went to the burger menu to look for emergency contacts				Add emergency contact to bottom navigation	Would like the button to be easier to find
24						
25	Translation button - How would you change language in the app?					
26	User had no issue to find and identify language switcher					
27	Not familiar with the icon				Rethink what icon would be more intuitive, or maybe word 'translate' should be used for better accessibility?	Would prefer 'Lan' or something that gives impression of language
28	User had o problem finding the icon					

€100 TEST



PARENT 1

- Polish mother
- 40 years old
- Rural location

2 children, 2 recent visits to hospital with
4 year old daughter



FEATURE/SECTION	Value to User (€)	REASON
Discharge Summary	5	Parent feels top level information aren't as necessary as follow up care home instructions.
Care plan	20	Parent thinks this is the most useful feature as their child has a complicated issue
Medication Plan	10	Parent thinks its an important feature, but prioritizes understanding of the condition and care plan.
Share button	3	Not as important when app used at home.
Emergency Contacts	10	Reassuring feature to know they don't have to worry whom to contact if needed.
Translate button	15	Really helpful with some of the medical term translation. Gives parent reassurance they understand correctly



PARENT 1

€100 TEST

FEATURE/SECTION	Value to User (€)	REASON
Medication Details	5	A lot of information covered in the Medication Plan. Parent would read leaflet attached to the physical medication.
Symptoms to monitor	15	Having clearly recorded symptoms helps parent monitor child better
Follow up tracker	10	Useful feature allowing parent to plan when they might need to take day off and organize care for their second child.
Test results	5	Good to have access to it, but would only use it, if showing to doctor who wouldn't have access otherwise.
AI Doctor	2	Would trust AI doctor, and would prefer to talk to real person.



€100 TEST



PARENT 2

- Irish father
- 35 years old
- Rural location

1 child, 3 year old daughter,
1 recent visit to hospital



FEATURE/SECTION	Value to User (€)	REASON
Discharge Summary	20	Father is now fully aware what the diagnosis in the hospital was
Care plan	5	Care plan is covered in medication plan and discharge summary
Medication Plan	15	This is the next action parent need to take. Medication dosage can be tracked
Share button	5	Using the app outside the hospital, when at home, this feature wouldn't be a priority
Emergency Contacts	10	If something bad happens, you can contact the same hospital so the hospital is aware of the hospital and you know where to go so you don't need to guess what to do.
Translate button	3	As both parents speak English this feature wouldn't be as important



FEATURE/SECTION	Value to User (€)	REASON
Medication Details	10	For the possible side effects. Its the most important. Other info is covered in medication plan.
Symptoms to monitor	15	Parent need to be aware of the symptoms that might indicate child is getting worst.
Follow up tracker	10	It is very useful to know when the follow up visits are.
Test results	5	Father feels he probably wouldn't understand the results, but it would be useful to have them if ever needed for another visit.
AI Doctor	2	Would prefer physical consultation for the child



€100 TEST



PARENT 3

- Irish father
- 46 years old
- Urban location

2 children aged 12 and 15 years old.
Visited Emergency few times over the years.



FEATURE/SECTION	Value to User (€)	REASON
Discharge Summary	10	If someone asks ‘How you get on’, you have access to all information and you don’t need to worry about remembering about all the details.
Care plan	5	Usefulness depends on the illness. If illness its complicated, that tab is great, but it it is ‘only’ broken bone, then it wouldn't be that useful.
Medication Plan	20	Something parent want to be most aware of, especially if treatment is complicated.
Share button	3	Not as important, feels can find ways around it.
Emergency Contacts	15	Parent feels reassured that they can contact someone for help.
Translate button	2	There are ways to translate the page.



FEATURE/SECTION	Value to User (€)	REASON
Medication Details	5	No that necessary, as you get that info on the packaging. Enough info on Medication Plan
Symptoms to monitor	10	Useful feature, if its complicated illness, as it gives reassurance.
Follow up tracker	15	Parent can follow appointments, and plan for it. Can see when results might come.
Test results	10	Parent trusts doctor interpretation, rather than their own. But likes the fact that they have the information needed if going to another doctor.
AI Doctor	5	Would be nervous about trusting AI recommendation, advice.



SUMMARY

Overall, I spoke to 3 parents:

1 female

2 males

All of them had very varied experiences in ED, as their children are in different age brackets and had different reasons to go to the ED.

I found all the HEART/GSM really useful.

Although I believe it would be really nice to be able to see the metrics on the live product and observe how users use it. As a plan and a way to be aware of what to look for and how to measure success, I think it is a really nice framework.

Rainbow test

It was really interesting to hear user feedback, and some of the things I thought were obvious (example: Translate icon) turned out to be challenging for some. This indicates a further need to ensure the app is rethought to improve accessibility.

€100 Test

I found this to be really enlightening. The reasons users were giving me were really useful, and to hear how they thought would be very helpful to improve the app further. I was surprised that the Discharge Summary wasn't seen as the most important feature by 2 parents. But when they gave their reasons, follow at home care takes priority, it made complete sense!

Final thoughts

I will definitely use these frameworks in my day-to-day work, as even with just 3 users, I found huge value in them.

