

# ICU Communication App

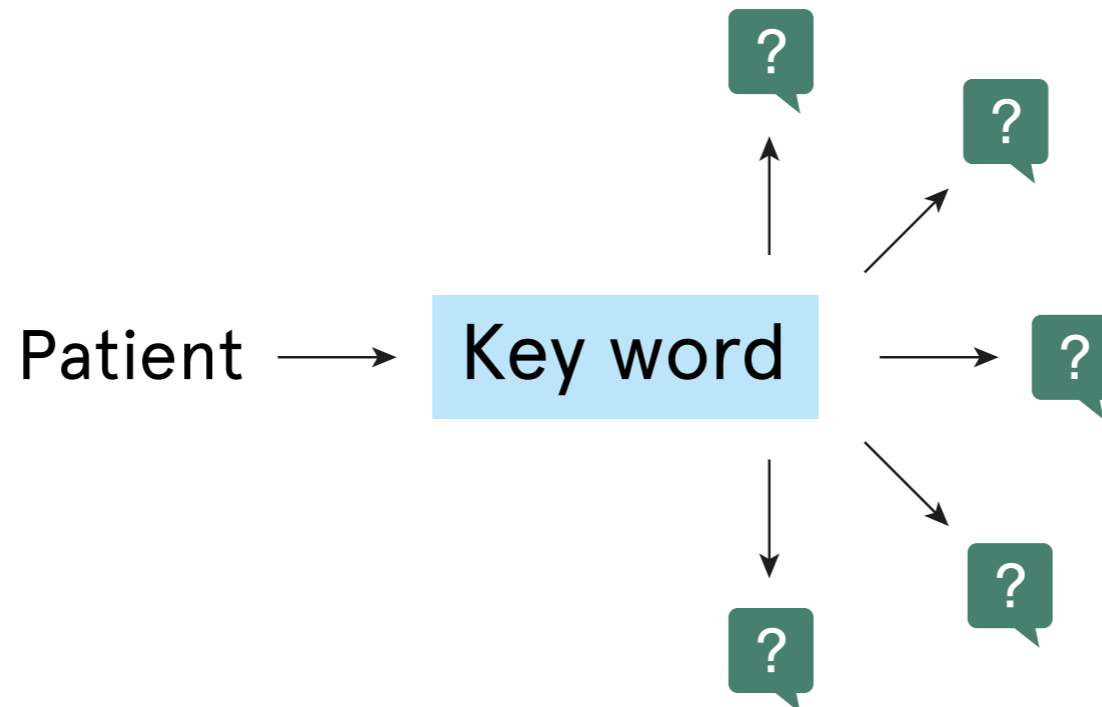
Explanation document

# ICU Communication App

---

This app is designed for communication in intensive care and other high dependency hospital settings, specifically for patients who are intubated (have a breathing tube in their throat) and so unable to speak.

The app is designed around some key principles:



## 1. Communication builds from a key word or image

The app does not try to replicate normal back and forth conversation, it puts the emphasis on the participant who is able to talk; the relative or staff member.

Past patients and their relatives described the most effective communication happening when the person who can talk would do the majority of the work. The patient, who could not talk, would describe a key word any way they could and the relative or staff member would guess with multiple questions what context and meaning that could have. The app aims to allow the patient to get to that key word in as few steps as possible. The aim is to get to a word or phrase on the app that prompts verbal questions in the room.



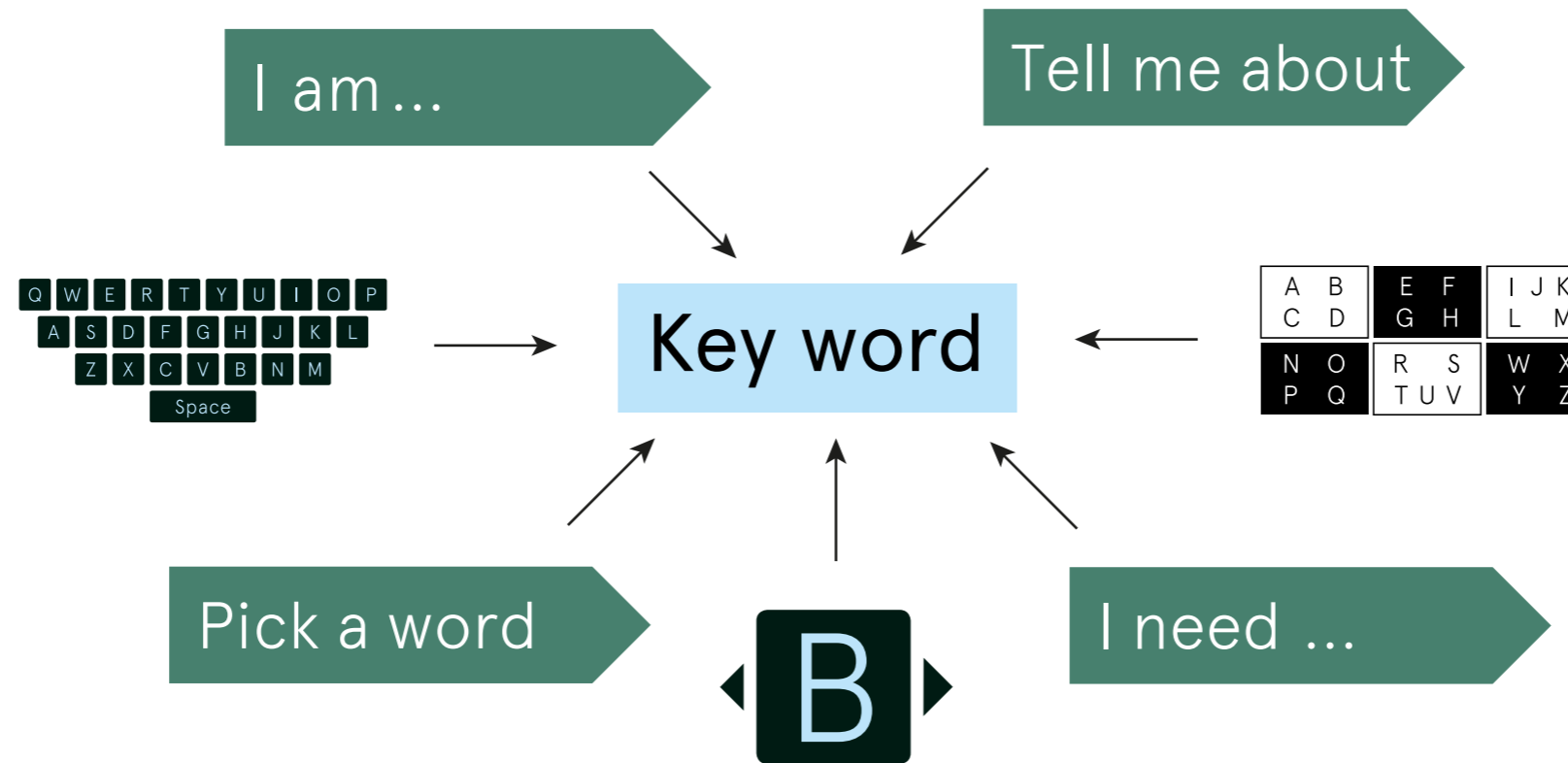
## 2. Communication can happen over a long period of time and is recorded

As well as communicating in the moment the app can be left with the patient and they can construct a message over a long period of time. Patients described having moments of lucidity and moments of hallucination, fatigue and confusion. The ability to communicate over a longer period of time means communication is not limited to specific times or on demand, so they can still ask a question during doctors rounds, even if they are not able to communicate at that moment.

The app was designed to record any and all communication over a period of time so all steps to communicate are recorded and therefore useful to medical professionals. If someone is consistently asking for pain relief at certain times it could be time to review their medication. It can also show when in the day the patient is most responsive and able to communicate which could help with scheduling interactions.

# ICU Communication App

---

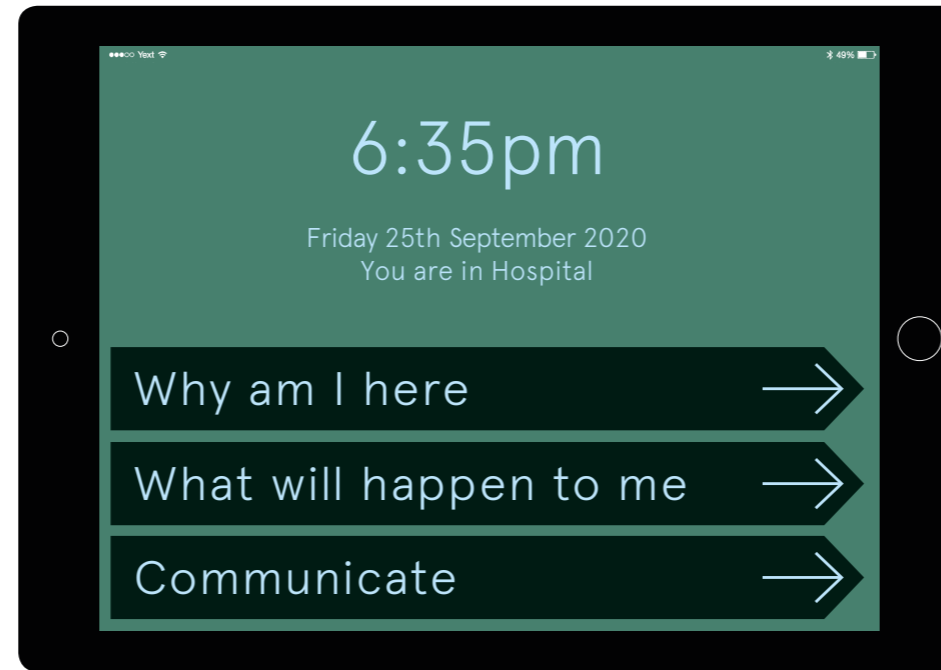


### 3. Multiple routes to a key word or phrase

The app aims to give options in order to articulate something, from picking a word, starting a phrase and typing. This reflects that users will not always have the same level of time, energy and cognitive ability. Also all users do not think in the same way.

# ICU Communication App

---



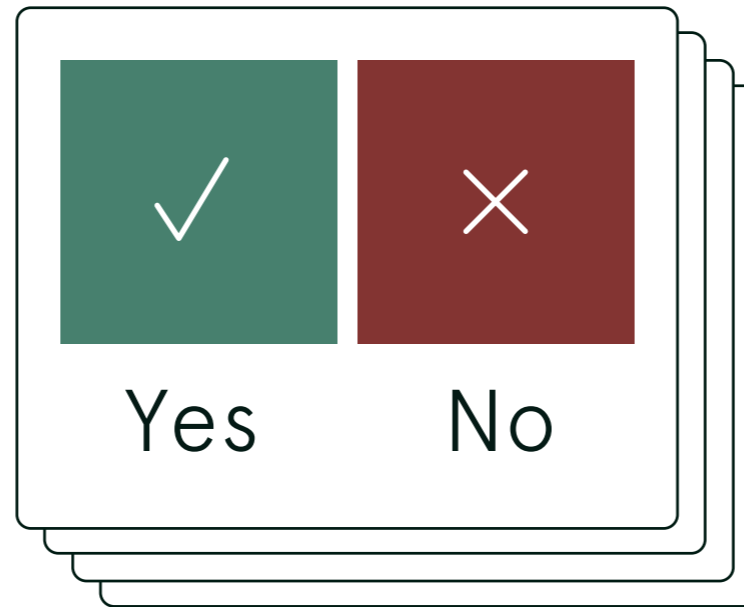
## 4. Patients need reassurance

Patients described waking up in a state of confusion not knowing where they were and what would happen to them. Patients also described being confused and delirious during their time in ICU and not being able to understand what was happening.

The app is designed to provide reassurance to patients about where they are and what happened to them. This may prompt the patient to communicate about what happened to them, or about their concerns about this.

# ICU Communication App

---



## 5. Communication can happen using a variety of methods

Patients may attempt many different ways of communicating, and the App is designed to provide an additional method - but other methods such as gesture, vocalisations and use of paper based resources should also be looked for and responded to.

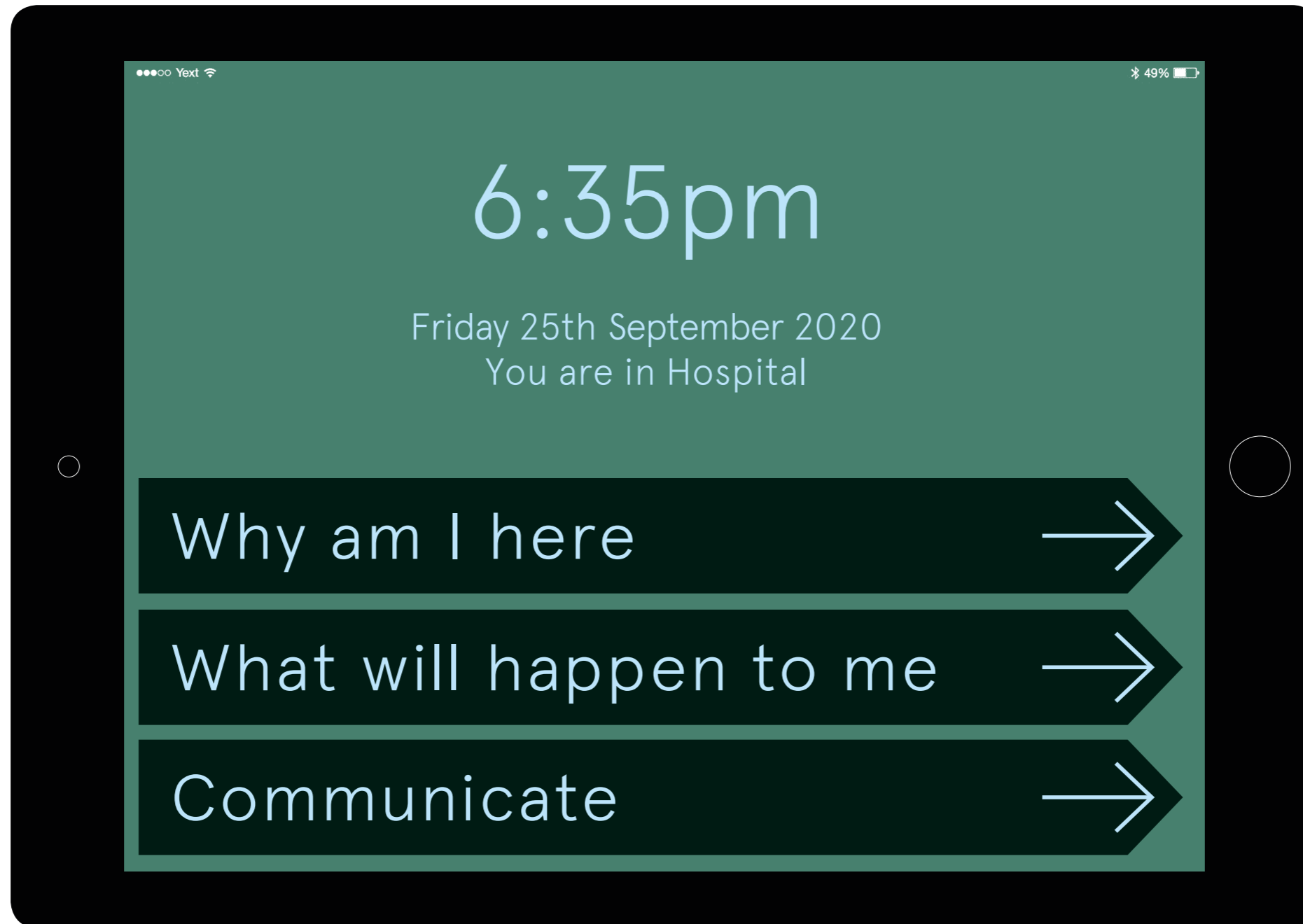
Patients may be able to express themselves, or indicate, in a variety of ways depending on their condition. This can include pointing, head movements, eye movements, mouthing words or vocalisations. All of these can be used to support communication.

Paper based resources are also provided to support communication through pointing, or partner assisted communication - where the communication partner chooses each of the options in turn, and the patient indicates 'Yes' in whatever way they can (eyes up, head nod etc).

# App Walkthrough

# ICU Communication App home screen

---

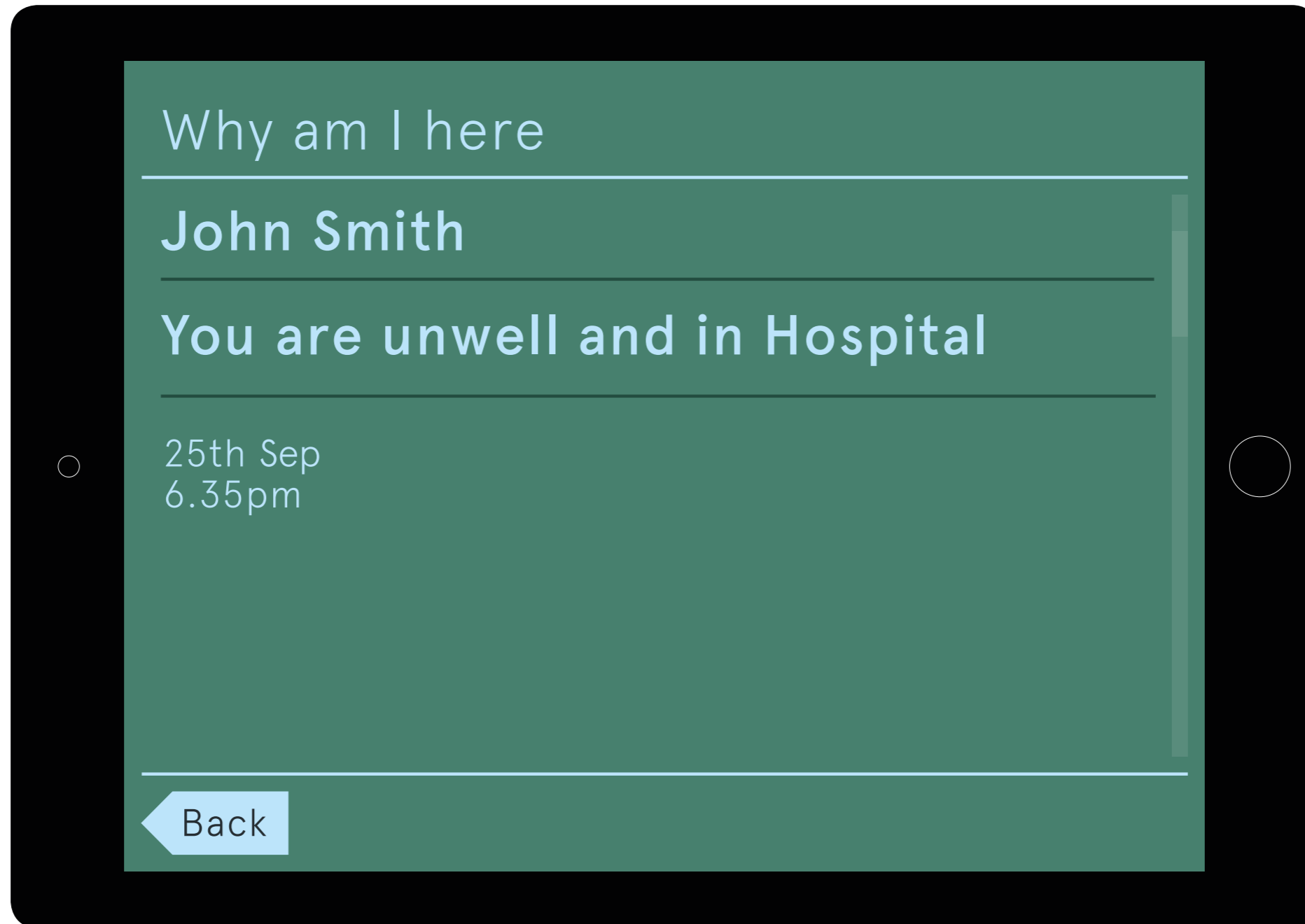


Patients described waking up in a state of confusion not knowing where they were and what would happen to them. This screen is the default state for the app and provides reassurance for the patient. The screen confirms the context for the patient, specific information about the context – the hospital and ward, can be entered in the settings. Together this information should reduce confusion.



# “Why am I here”

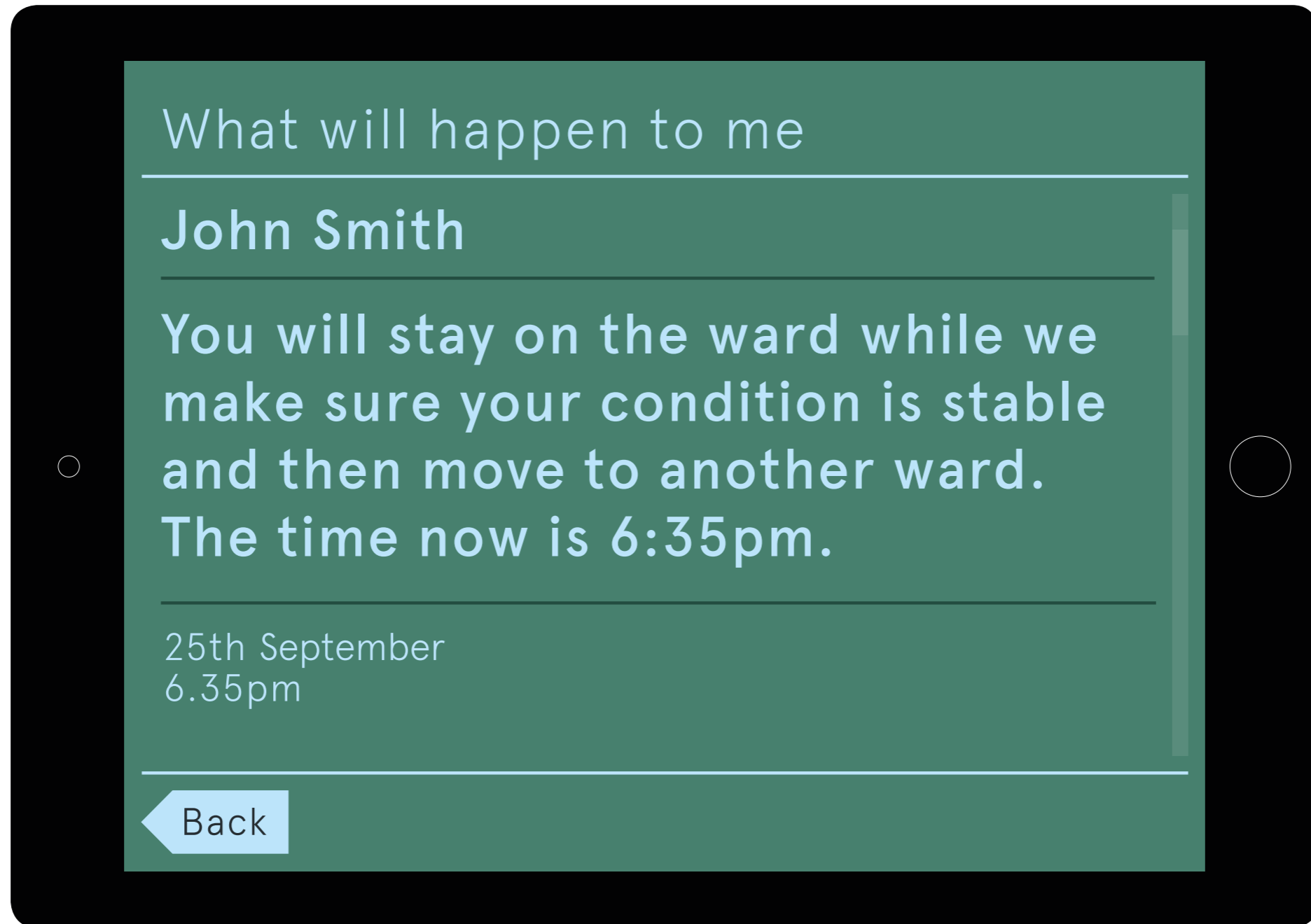
---



Explaining why the patient came to be in intensive care will give provide more context and also answer one of the key questions patients said they wanted to ask; “Why am I here?”, meaning it’s one less question to articulate. As the patient’s condition is diagnosed this information can become more specific. This screen can also be the starting point for further communication about events leading up to the hospital stay.

# “What will happen to me”

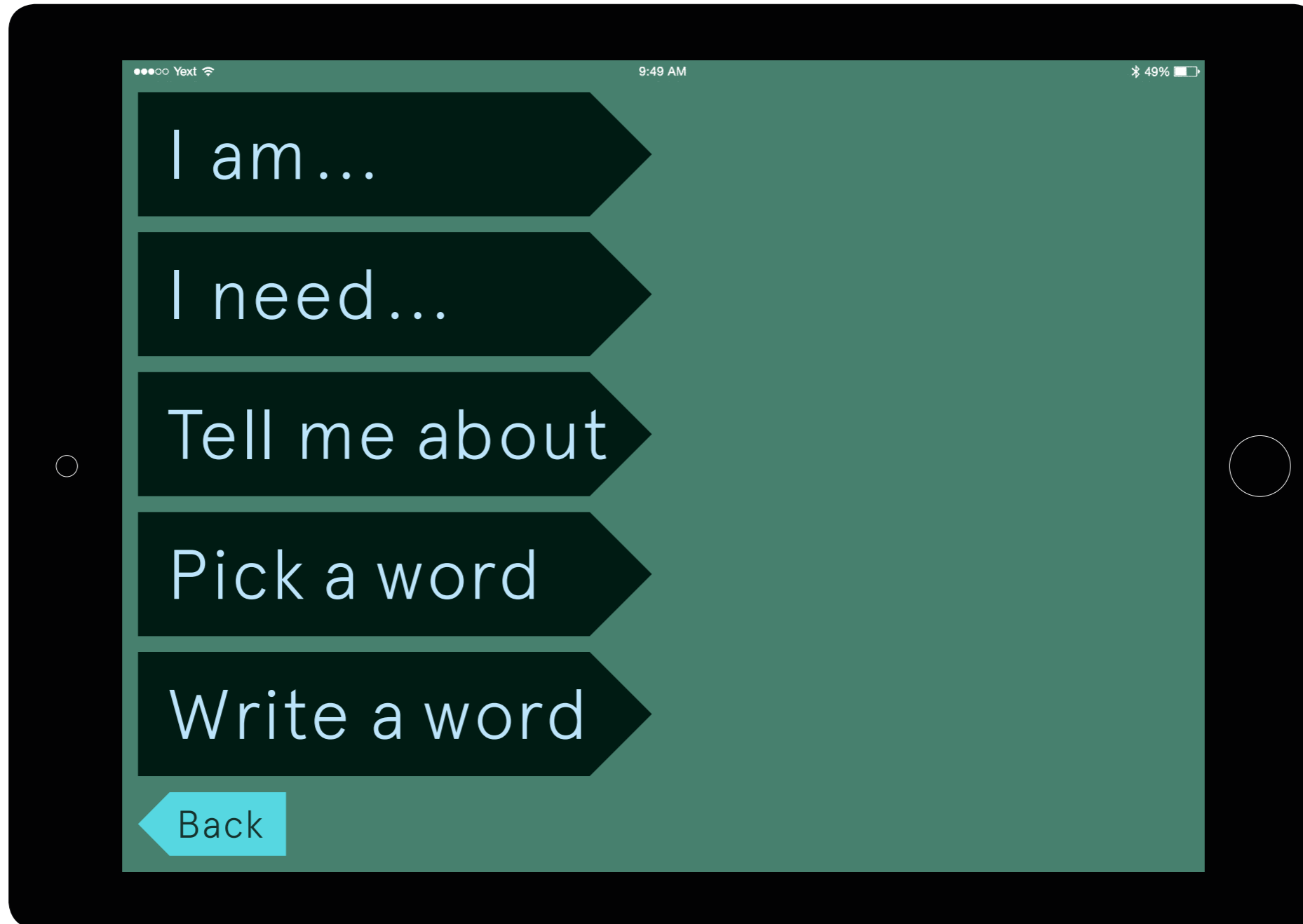
---



This screen is to ground patients in a context and to reassure them that they are in a process and they are being cared for.

## “Communicate” > Communication home screen

---



When the user presses 'communicate' they bring up the communication home screen. This displays the starting point for saying something. The options are designed to be the most suitable starting points for saying a key word or phrase. The words and phrases are directly based on the experiences of previous patients and reviews of the literature.

By pressing either of the top three options the patient is able to start communication in one touch, this follows the principle that the patient gets the communication in to the area of the conversation and the staff or family member starts guessing from there.

# Communication process

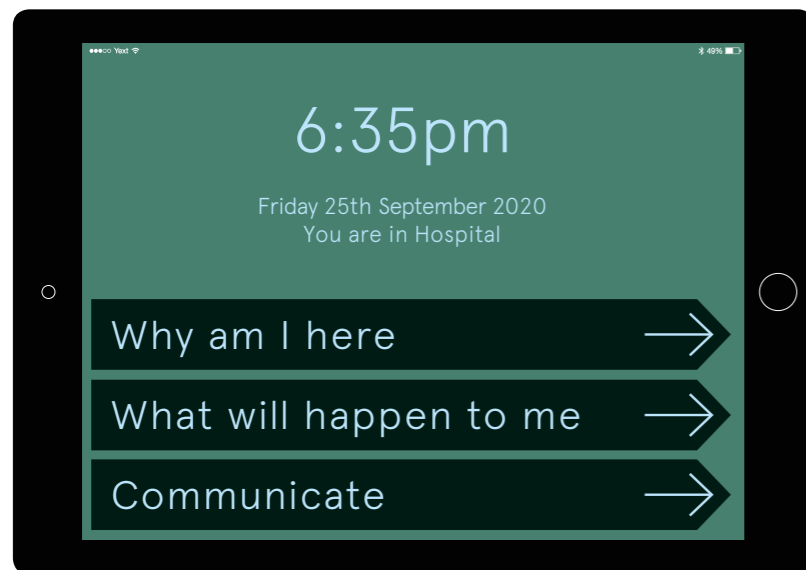
---



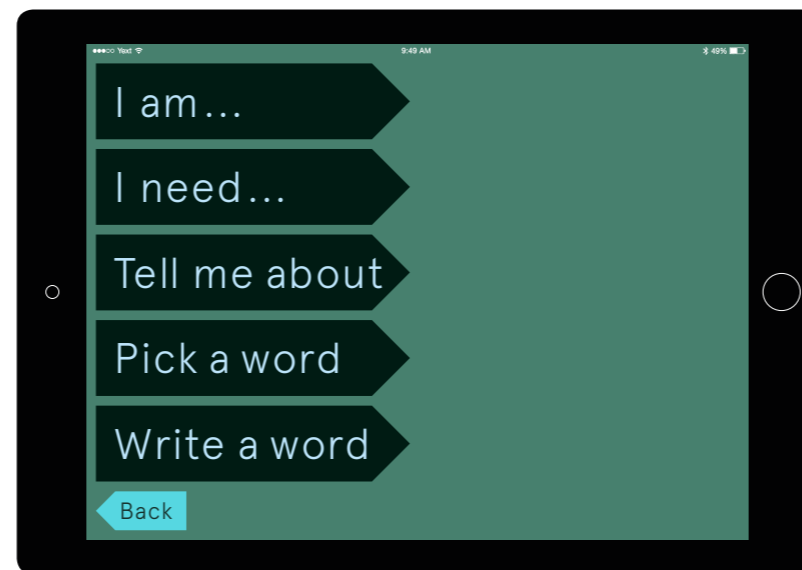
Once one of the options is pressed the other half of the screen shows words that complete the statement. If the correct option isn't there then the user can press `...more` and bring up a library of options. On personal devices the options will change depending on which are most frequently used.

# Communication process from the home screen

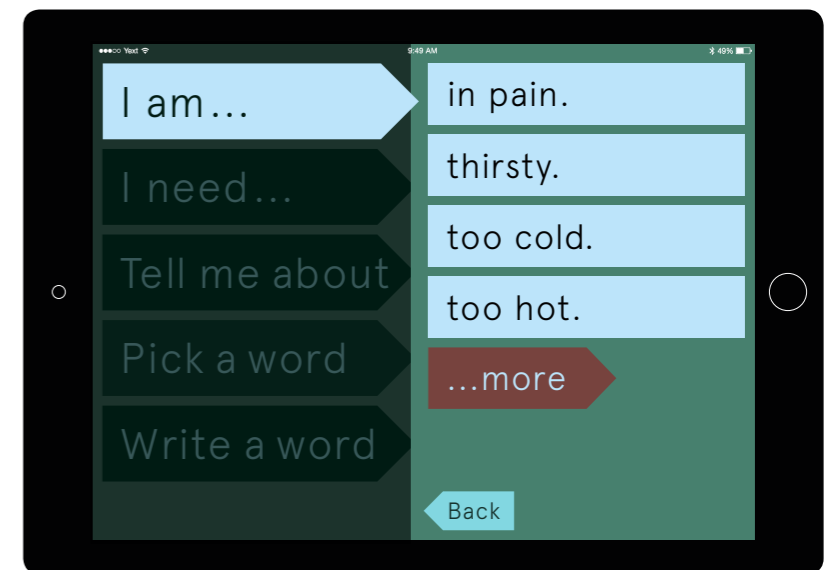
---



"Communicate"



"I am..."



"I am in pain"

# Communication process - subject areas

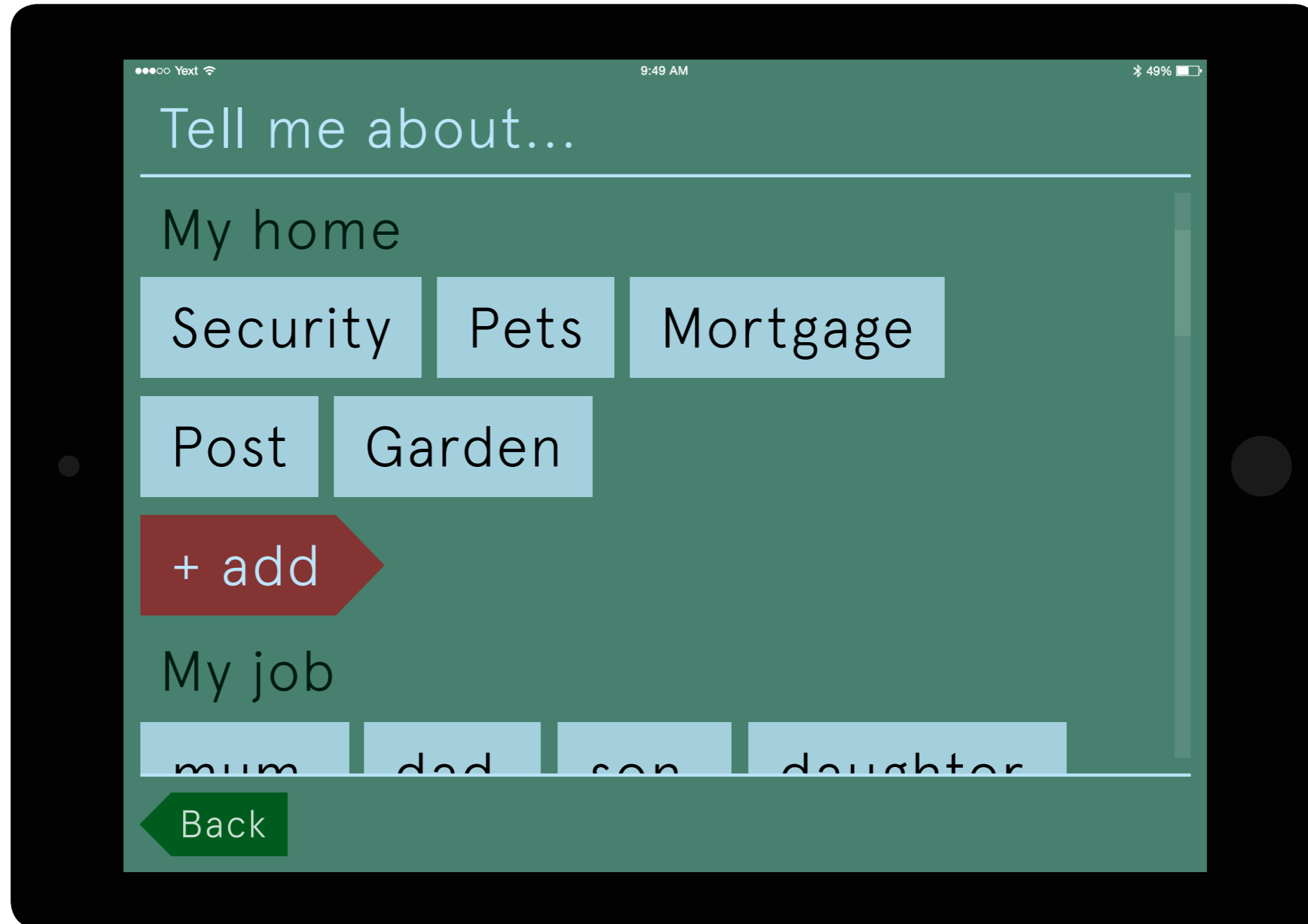
---



Some questions may not have simple articulations and the user may want to be more specific. In this case the user can access subject areas and then choose specific words.

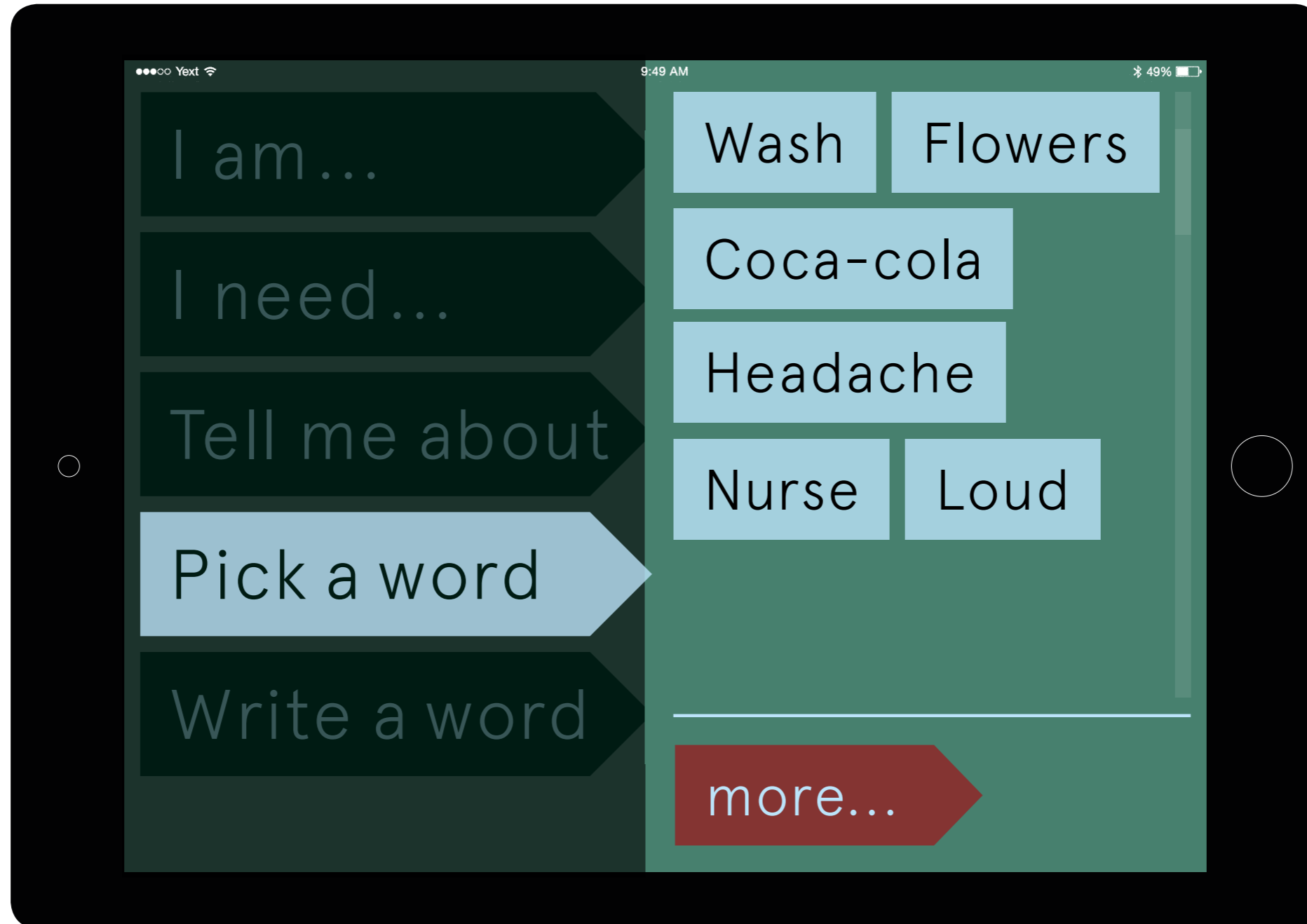
# Communication process - subject areas

---



If the right word is still not available the user can press '+add' to create their own new word.

# Communication process - pick a word



It is also possible to start the communication by choosing a key word instead of a phrase.



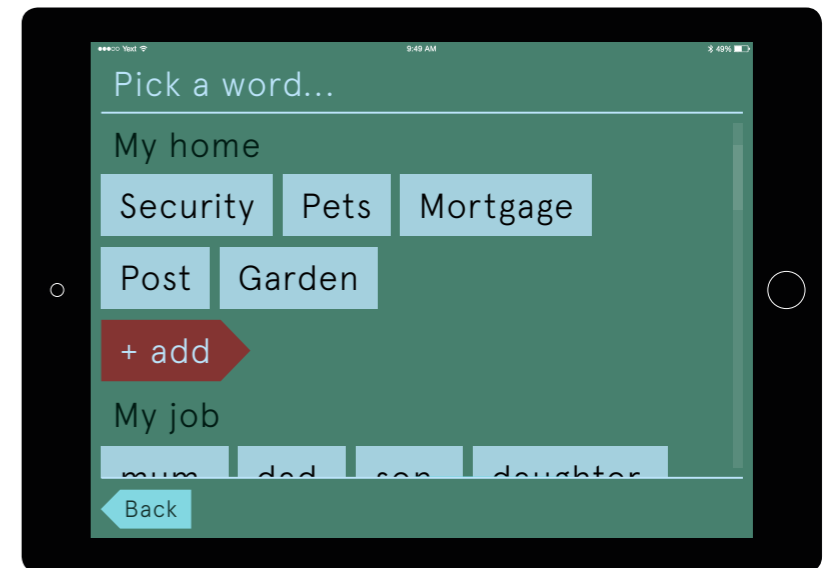
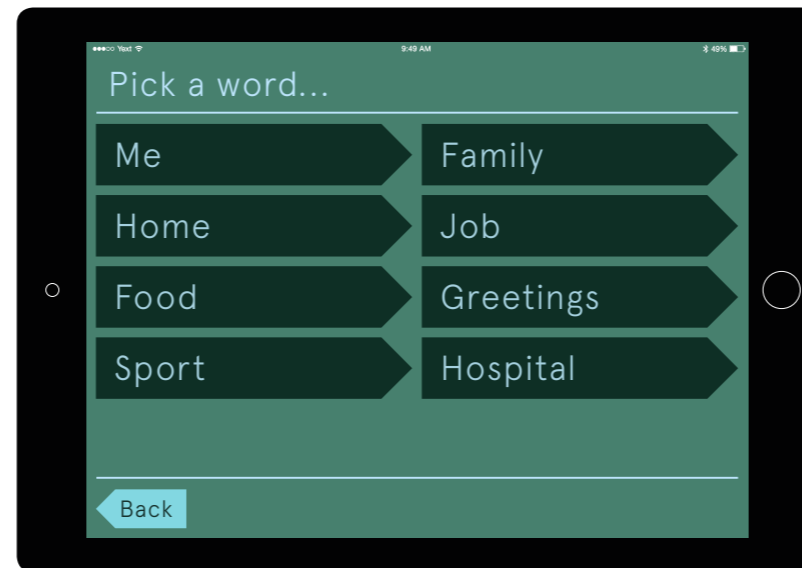
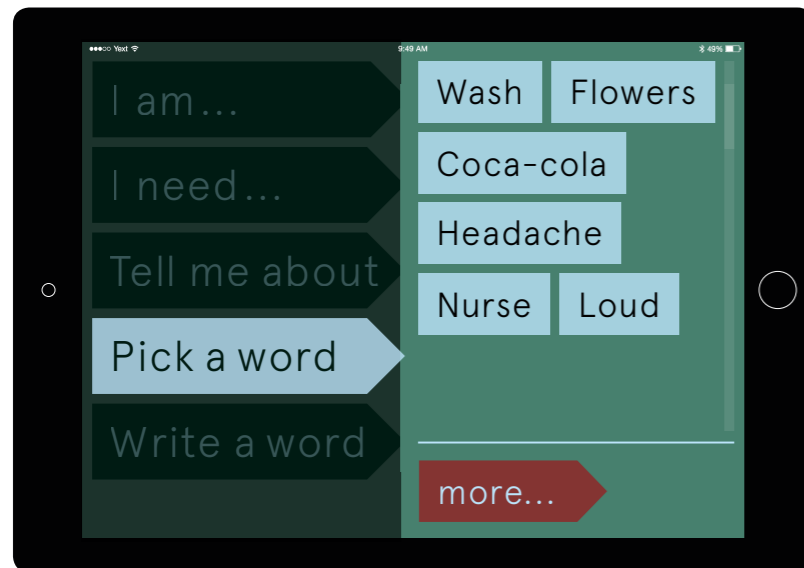
# Picking a word from subject library

---

Option

Category

Word



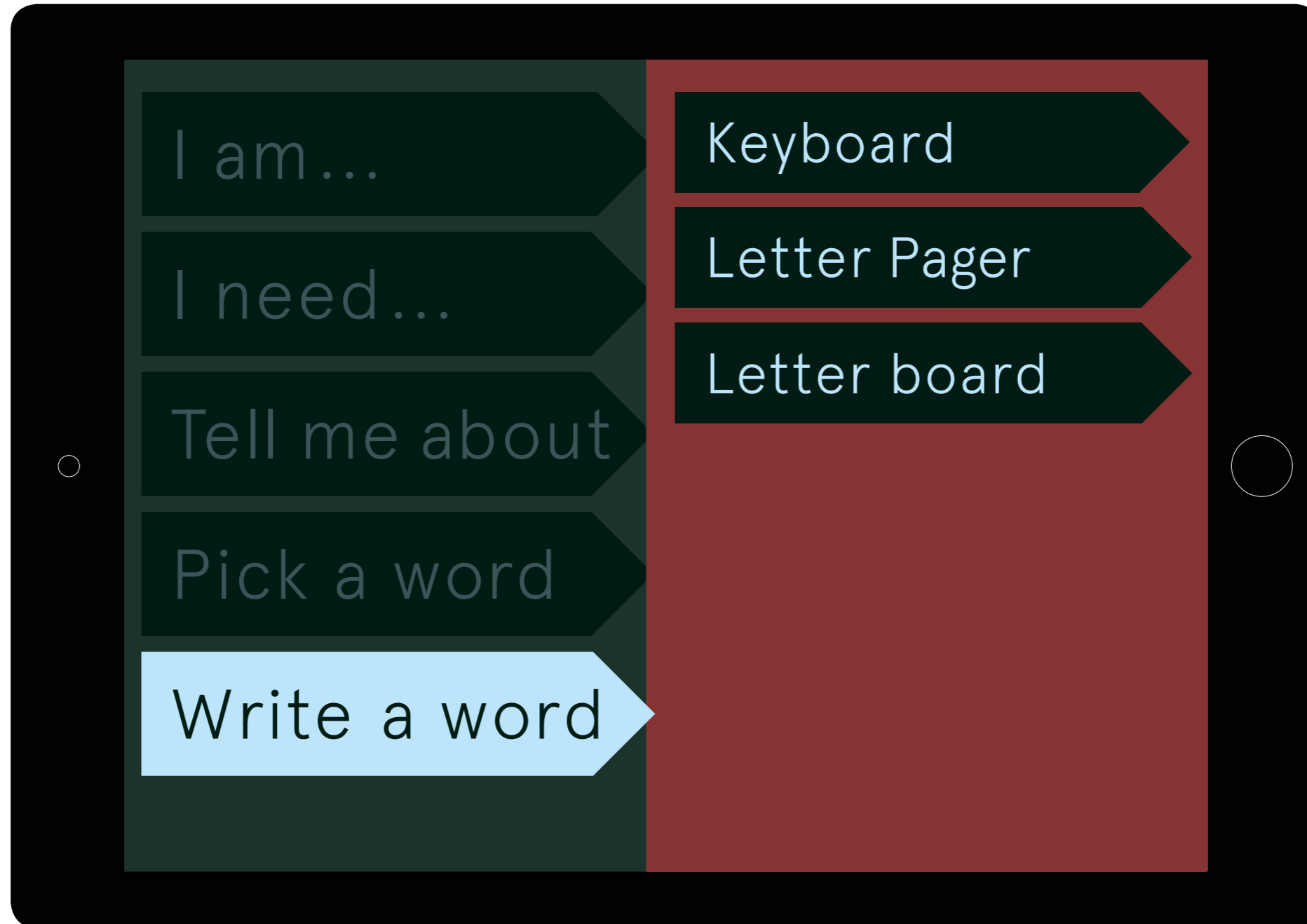
"Pick a word"

"Home"

"Mortgage"

## Communication process - Write a word

---



It is also possible to start the communication by writing a word. There are multiple ways to do this to allow for ability at any given time. Drawing or mouthing a word may be easier than typing, these are actions patients described doing.

## Communication process > Write a word > Letter pager

---



The letter pager allows the patient or communication partner to scroll through the alphabet. Tapping on the big letter when it is the correct one

## Communication process > Write a word > Keyboard

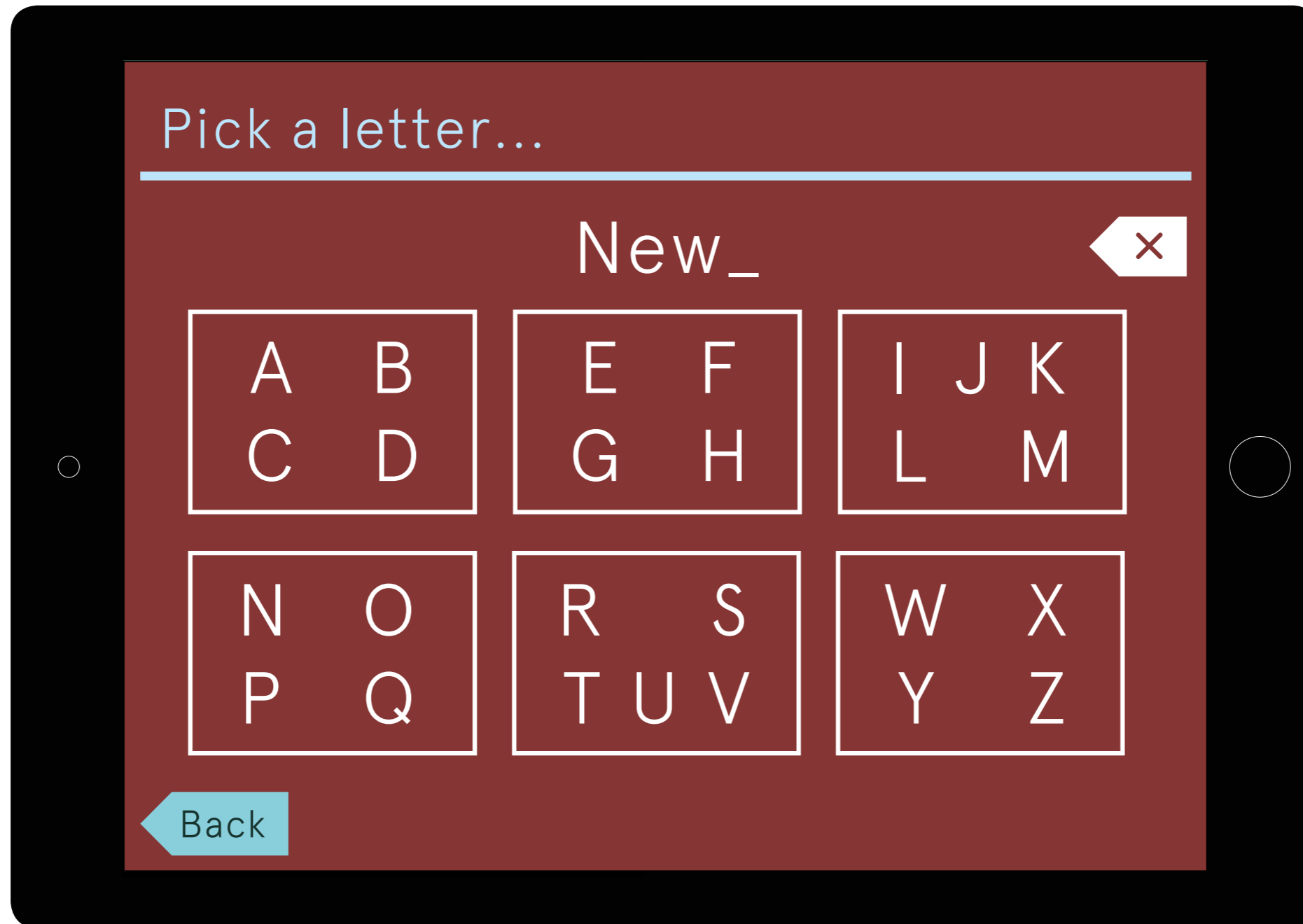
---



Alternatively the patient or communication partner can type using a qwerty keyboard.

## Communication process > Write a word > Letter board

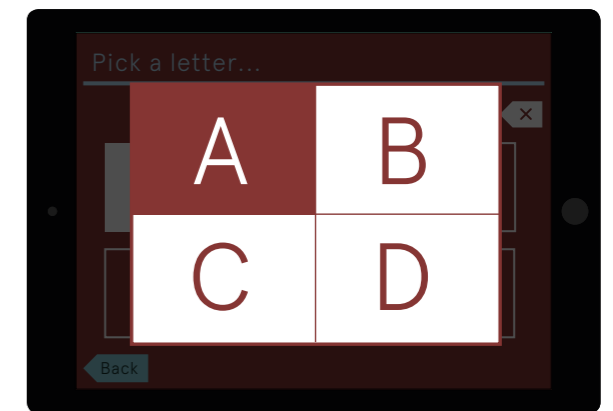
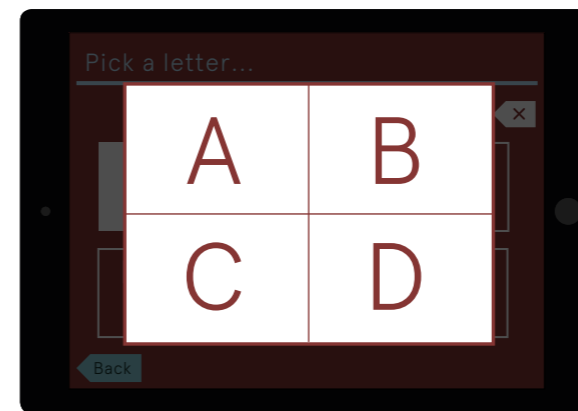
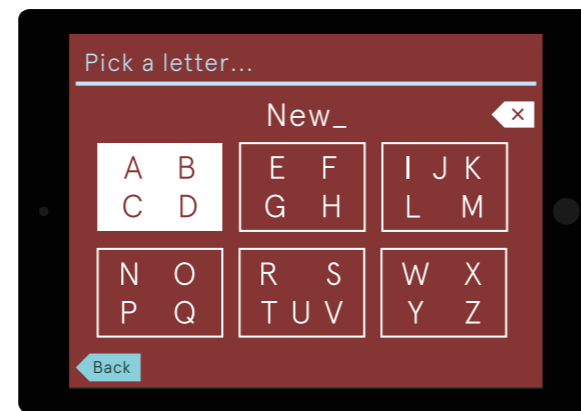
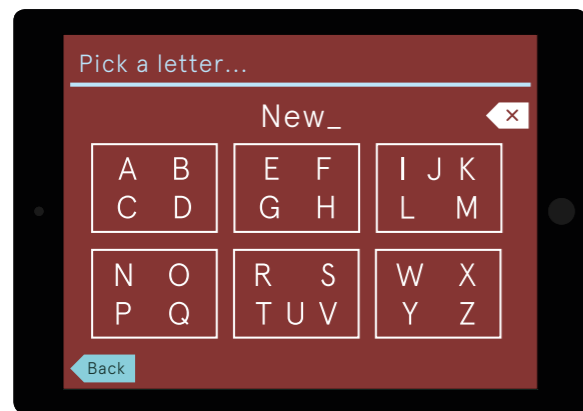
---



Alternatively the the patient or communication partner can construct a word by picking letters from a letter board. The letters are grouped around vowels.

# Communication process > Write a word > Letter board

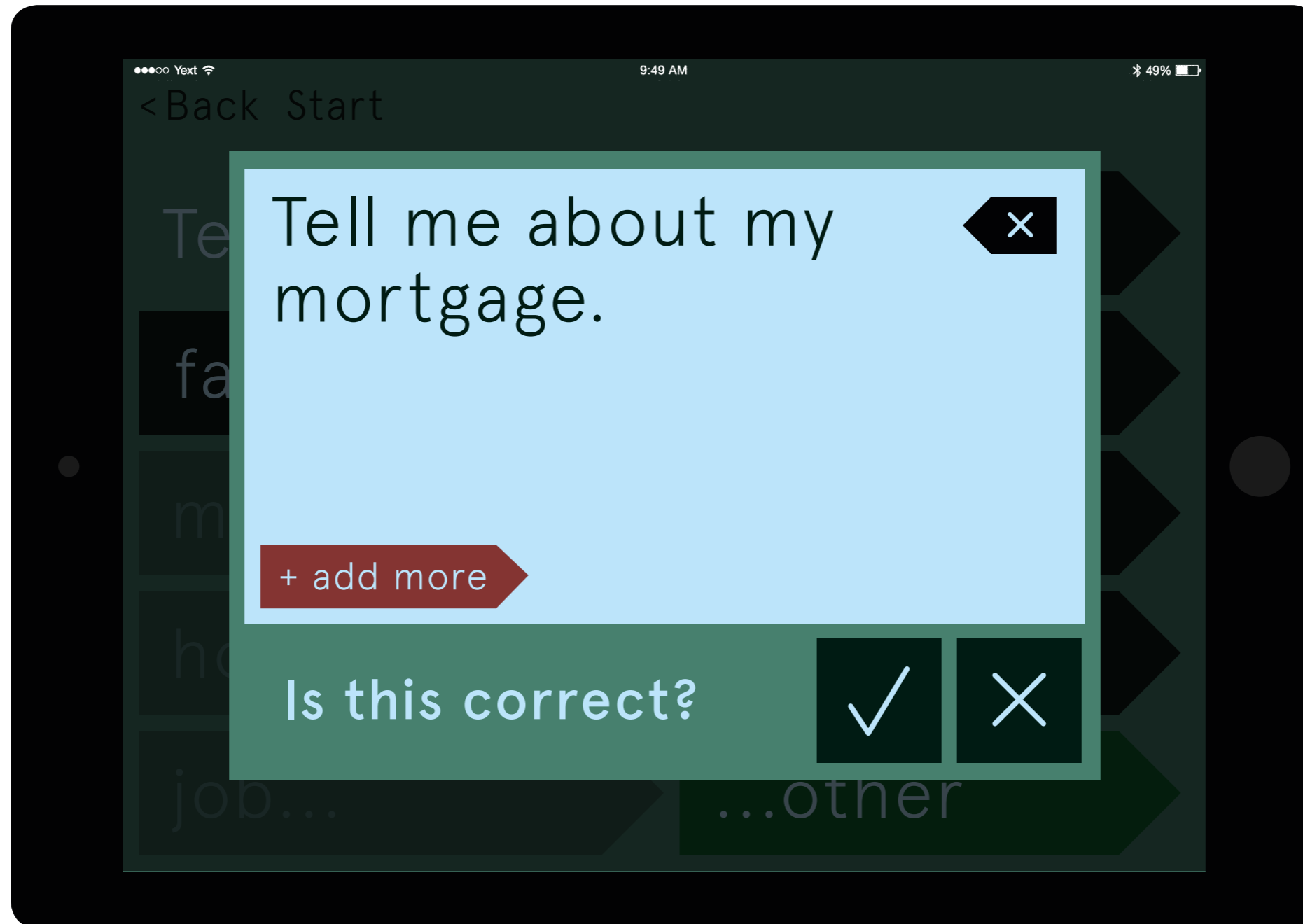
---



Picking an 'a'

# Communication process - confirmation

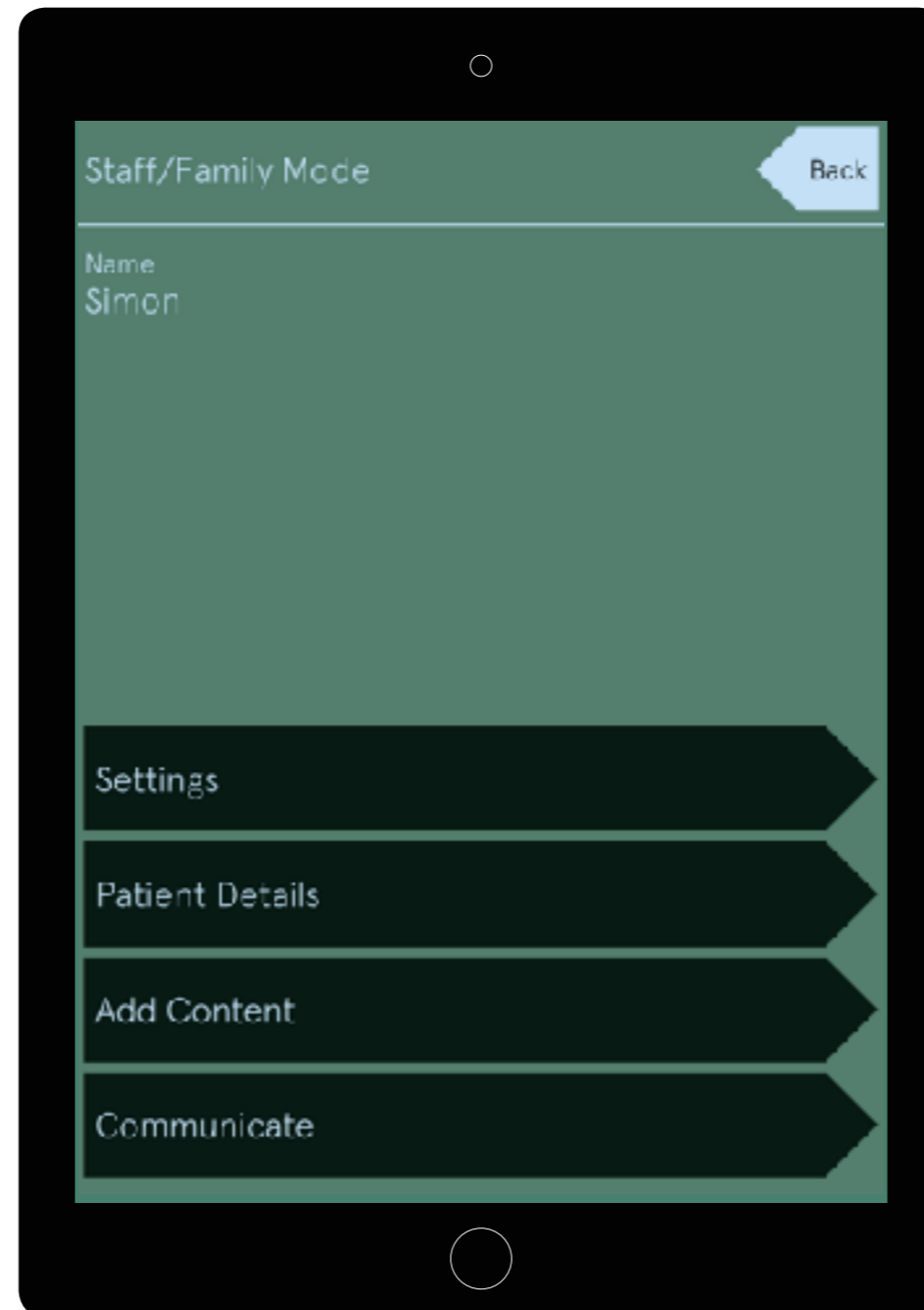
---



Once the the patient or communication partner has picked a words or completed a phrase they will have a review screen to confirm or add to what they have written.

## Staff / patient mode

---

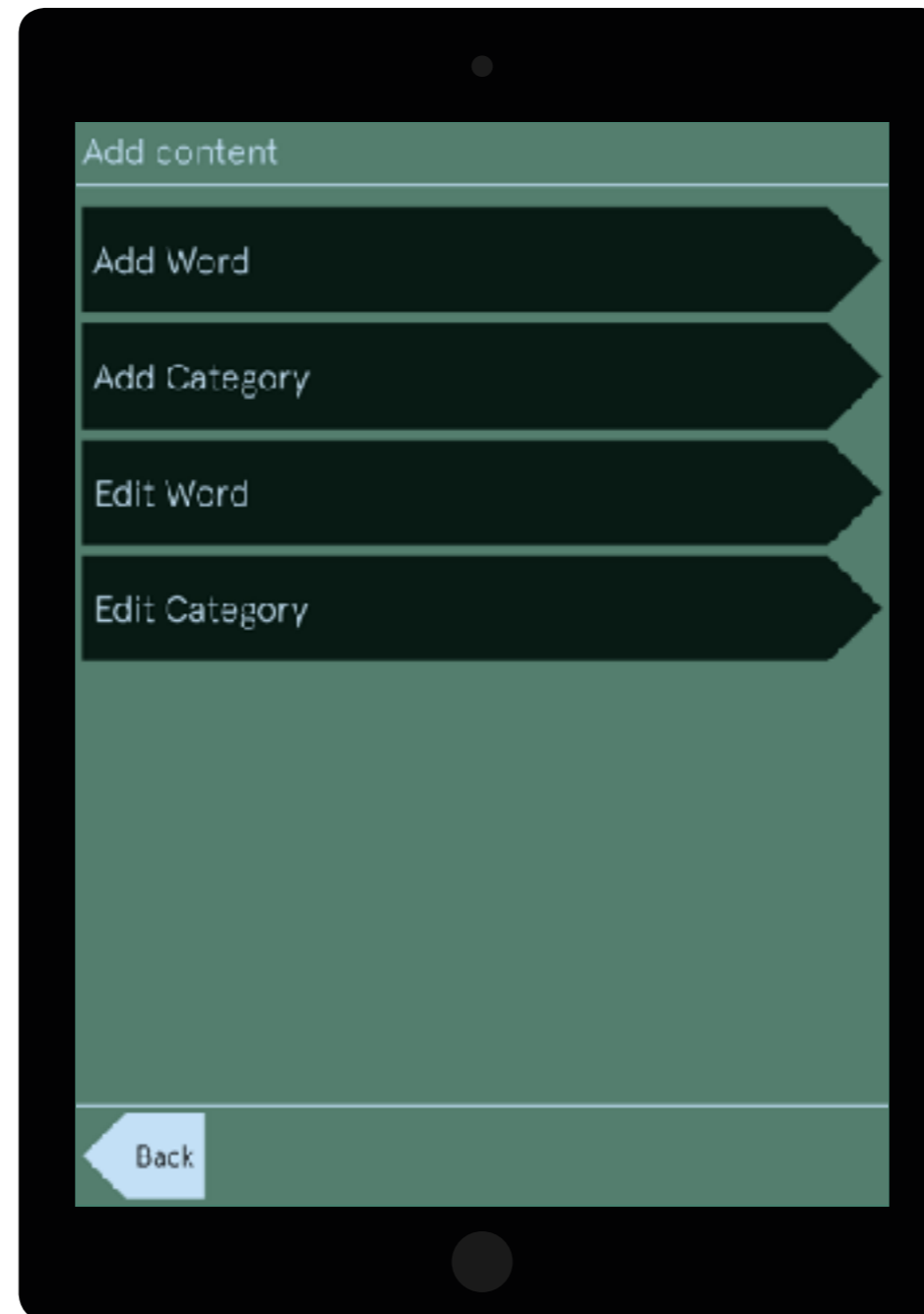


By clicking the gear icon and entering the code 2020, Staff and family can access a mode that the patient cannot see. The interface switches to portrait to signify it is a different mode. Contextual information can be added in this mode. The Key words that may be specific to that ward or to that person. Personal information such as names of friends and family can also be added.



## Staff / patient mode

---

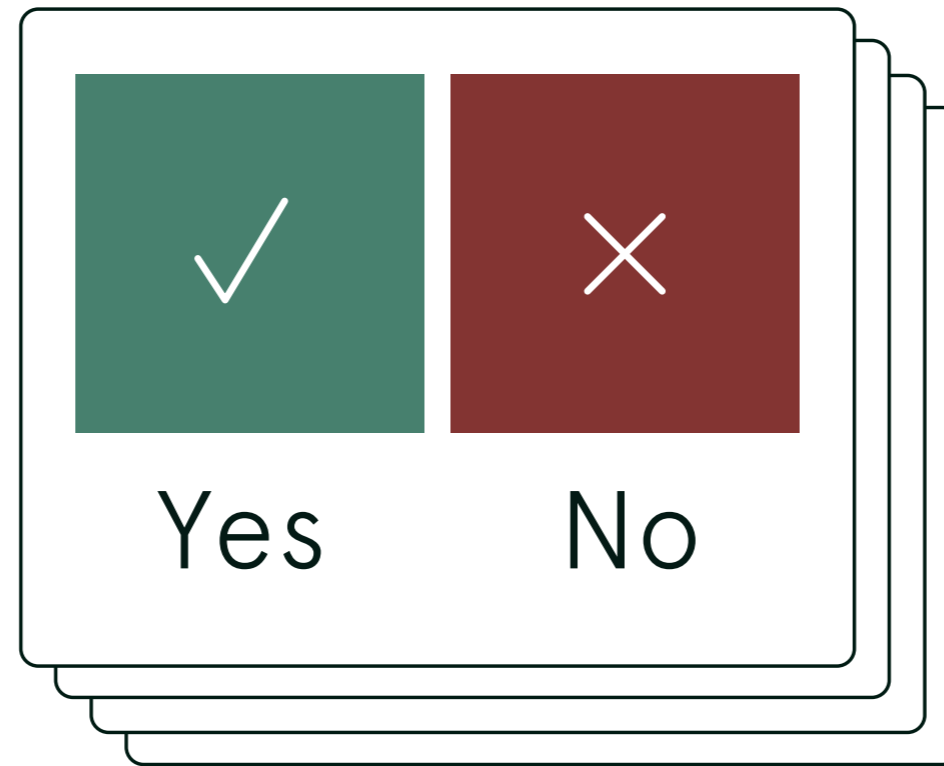


The patient and hospital details can be added. ICU staff could add useful and procedural information, relatives could add personal information. For relatives there can often be a lot of waiting around, this time could be used personalising the app.

# Paper Based Resources for Communication

# Paper Based Resources for Communication

---



In addition to the app, communication cards are provided as an alternative paper based resource for communication. These cards can be printed, laminated and clipped together as an alternative to the app in some situations.

The communication cards can be used in a number of ways:

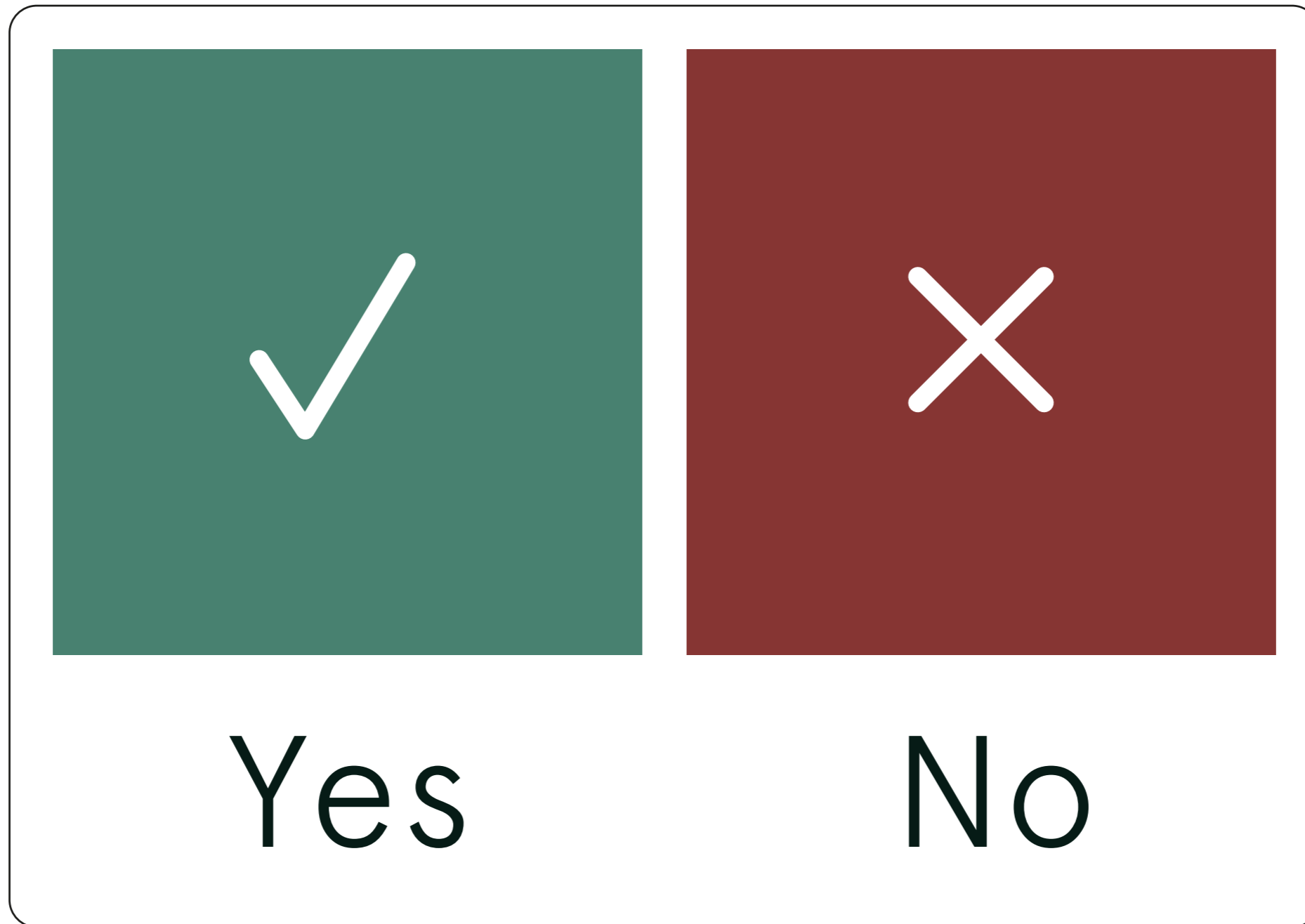
**Pointing and Partner assisted scanning** - where the communication partner points at each option in turn and the patient indicates to choose that item.

**Eye gaze** - where the patient looks at the symbol they want (this is easier if printed on see through plastic - Acetate)

**By asking closed yes/No questions**, that then narrow down, such as 'do you want something?', 'is it in the room?', ....

## Communication cards > YES/NO

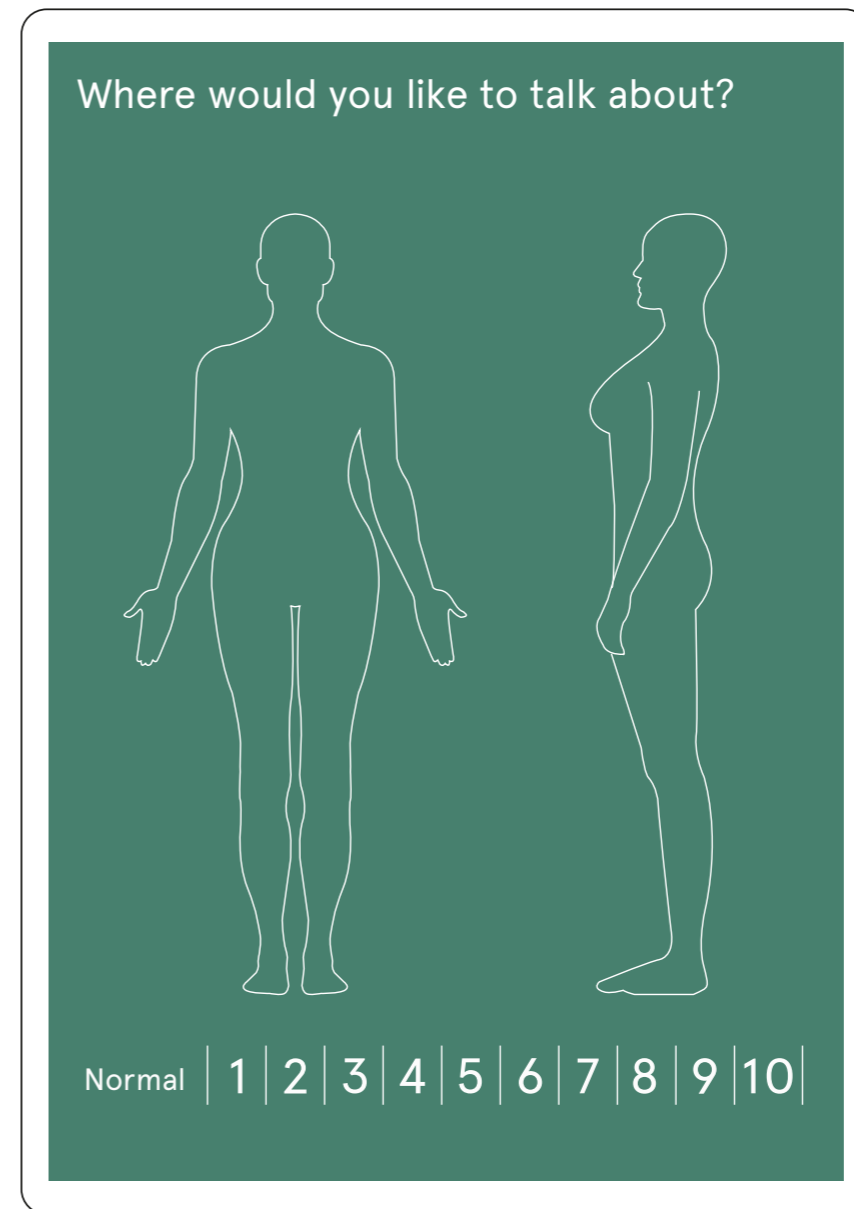
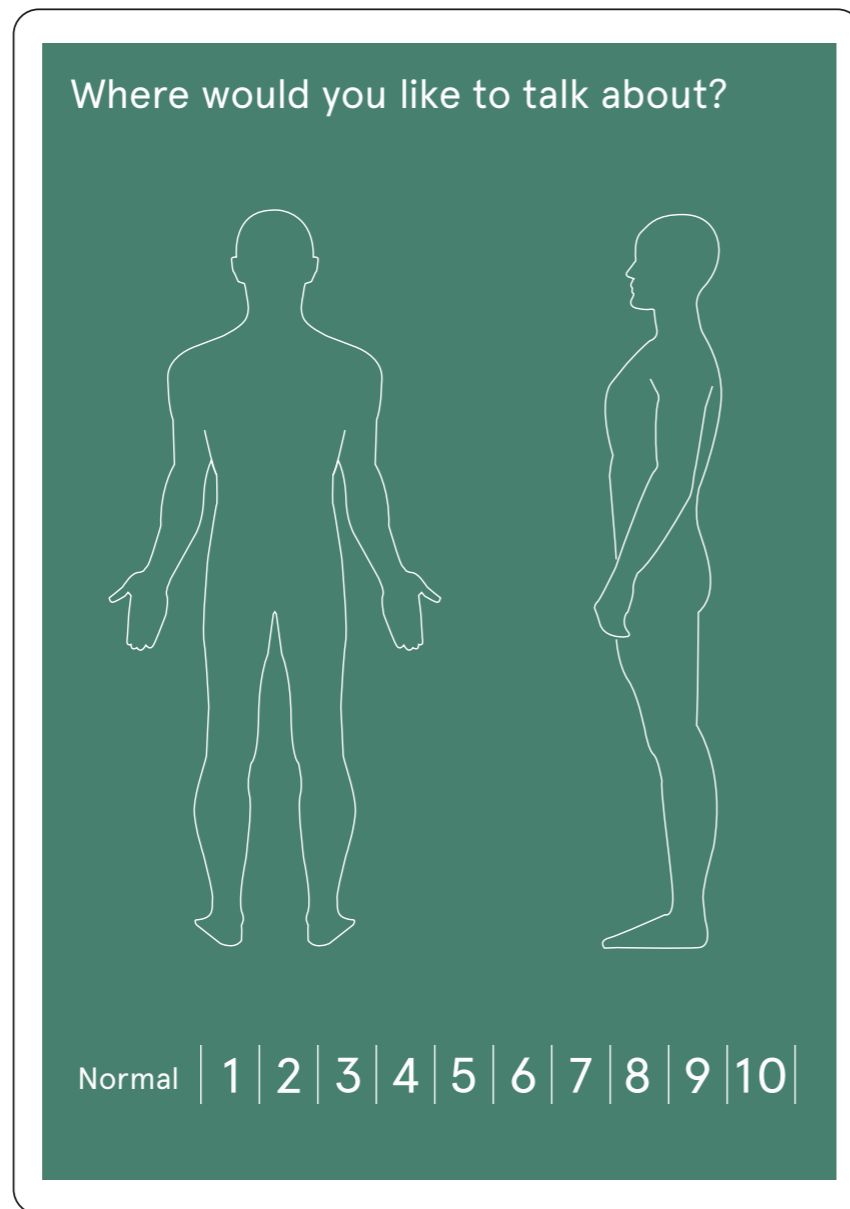
---



The Yes/No card is designed to be used if a staff or family member is using the app and need the patient to confirm options eg. which letter or word to press. It can be used to allow the patient to indicate the answer to closed questions or to confirm words or phrases chosen in the app. The patient may indicate using these cards by pointing, by indicating when the communication partner points, or by looking at the symbol.

# Communication cards > Body map

---

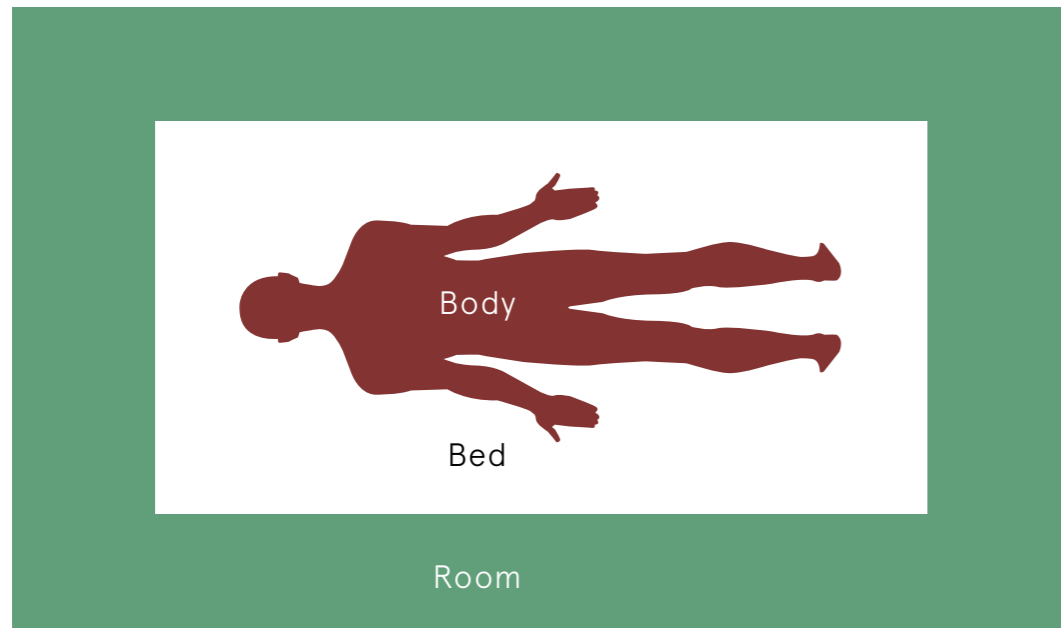


Body maps can be used to describe pain, discomfort, or to find out what may be happening. The scale at the bottom of the card is to score pain.

# Communication cards > I am uncomfortable...

---

I am uncomfortable...



I am uncomfortable...

