openSAP

IMAGINE IOT
PROTOTYPE CHALLENGE

ME AND MY GP –
LIVE BETTER WITH ILLNESS
In Denmark as well as in many other countries around the world, diseases such as high blood pressure, heart failure, and strokes are becoming more and more common.

Many of the affected persons live quite well with their conditions, but for many anxiety is a constant companion, because their ailments are potentially life threatening. For doctors, general practitioners as well as specialists, measurements of key bodily functions is an important factor in ensuring that the patients get the best medical treatment and advice. But the doctors meet their patients infrequently, and tests are often taken in the doctors’ office, which may in itself affect the test results, and which at best gives only a snapshot of the patients’ conditions.

The purpose of this research is to identify ways in which technology may help patients as well as doctors remove some of the pain points that the two groups experience on a daily basis.
Personas

John
Patient

I am grateful that I survived a heart attack and subsequent bypass operation. I want to do what I can to live a good life after my illness.

About
- 67 years of age
- 3 adult children and 2 grandchildren
- Retired from a job as IT specialist
- Has a huge interest in ancient Greek culture, learns Greek, and likes to travel in Greece
- Exercise and sport is not high on John’s personal agenda

Responsibilities
- I must make sure that prescription medicine is bought at the right time
- I must take the right medication in correct quantities at correct times
- I must follow a healthy diet at least most of the time
- I must be physically active every day for at least ½-1 hour

Needs
- In order to get the best medical treatment, I need regular monitoring of e.g. my blood pressure
- I need to be able to give exact input to my doctor about my day to day feeling of wellbeing or the opposite.
- I need to focus on being physically active.

Main Goals
- Avoid another heart attack
- Reduce anxiety over my condition
- Make the best possible use of my doctor’s expertise
- Live a good life in spite of my condition

Pain Points
- When I go to the doctor’s office and have my blood pressure measured it is always higher than if I measure it at home.
- When I visit my doctor I cannot always remember the exact experiences I have had since last consultation.
- I have no clear idea of how much exercise I get during a day.
- I often feel that I leave my doctor after a consultation without having asked all my questions.
Point of View

As a patient with a heart condition that requires daily medication

I need help to ensure that I take the correct medicine in correct dosage and at the right time

so that I am sure that I follow doctor’s orders
<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>MINDSET</th>
<th>FEELING</th>
<th>TOUCH POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Wake up</td>
<td>• “I’ve slept well, but my legs ache”</td>
<td></td>
<td>• Bed</td>
</tr>
<tr>
<td>• Get out of bed</td>
<td>• “The warm water helps my aching</td>
<td></td>
<td>• Breakfast equipment</td>
</tr>
<tr>
<td></td>
<td>legs”</td>
<td></td>
<td>• Test device – an ‘arm band’</td>
</tr>
<tr>
<td></td>
<td>• “Oops, was it one or two blue</td>
<td></td>
<td>that can measure blood</td>
</tr>
<tr>
<td></td>
<td>pills, that I should take?”</td>
<td></td>
<td>pressure, pulse etc.</td>
</tr>
<tr>
<td></td>
<td>• “I’d better hurry”</td>
<td></td>
<td>• Breakfast utensils, food.</td>
</tr>
<tr>
<td></td>
<td>• “I’m really late. I need to walk</td>
<td></td>
<td>• Medicine containers</td>
</tr>
<tr>
<td></td>
<td>very fast”</td>
<td></td>
<td>• Bus table</td>
</tr>
<tr>
<td></td>
<td>• “I’m out of breath and feel a</td>
<td></td>
<td>• Watch</td>
</tr>
<tr>
<td></td>
<td>kind of chest pain”</td>
<td></td>
<td>• Bus</td>
</tr>
<tr>
<td></td>
<td>• “Great. I made it in time.”</td>
<td></td>
<td>• Teacher</td>
</tr>
<tr>
<td></td>
<td>• “I feel well again. It was</td>
<td></td>
<td>• Fellow students</td>
</tr>
<tr>
<td></td>
<td>probably nothing”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• “I’m looking forward to the lesson – Xenia is a good teacher”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
An ‘arm band’ that can be carried 24/7 will continuously measure certain key figures: Blood pressure, body temperature, pulse, intensity of movement etc. The data that the ‘arm band’ collects are made available to the patient and his GP in an app.

In the app the GP can enter information about the patients medicine. Ideally via data transfer from electronic patient files, or otherwise manually. Each day the patient can confirm real time as he takes his medicine, and the time stamp is registered so that it can be linked to the test results. Other features in the app are view of test results, possibility of commenting on test results or on state of health, and the possibility to note down questions for next consultation with the GP.

Below are two mock ups from the app:

Welcome screen that reminds John of appointments and can be used to nudge John to more exercise, or can show messages from the GP to John:
In the morning when John is to take his first medicine, John opens the app and clicks ‘Medicine’, and he gets information of the medicine he is to take on this date, and he can confirm as he takes the various types: