

# Waiting experience



## DEVELOP DIRECTION:

**Estimating wait time:** patients may move freely and return to the waiting room if they know the wait time .

**Add more activities:** Extra activities could be added to reduce the perceived waiting time, including completing unfinished preparations before, experiencing digital session in advance.

**Social connection:** The social connection of the patient can be strengthened by increasing interaction with other patients.

## RISK POINT:

The patient's weak state doesn't allow them to complete many activities, and they are too anxious to focus on these.

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*“I was so sick and tired of having to sit in the hospital waiting room for too long every time.”*

*---Patient*

*“Because the only thing we do now is show how long you have to wait; it would still be fun to let people move around more freely and do what they want instead of sitting anxiously in the waiting room.”*

*---E-health advisor*

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# AI Decision making system



## DEVELOP DIRECTION:

**Integrate more digital tools and data:** More tools and patients data could be added to the system for HCPs decision making, e.g., showing previous discussion topics for navigating nurses, calculate program for a dietitian.

**Recommendations for making plan:** The system could help specialists and patients develop a care plan by analyzing the data from patient files and make recommendations, like what, when, and where to make the intervention.

## RISK POINT:

HCPs and patients are still masters of decision-making and need to be taught how to deal with the recommendations from the system.

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*“AI is going to play a huge role in supporting doctors and patients in their decisions. Now there's just there is already too much to know as a doctor. Protocols are becoming too complex to do it from memory, so they're going to need support and advice.”*

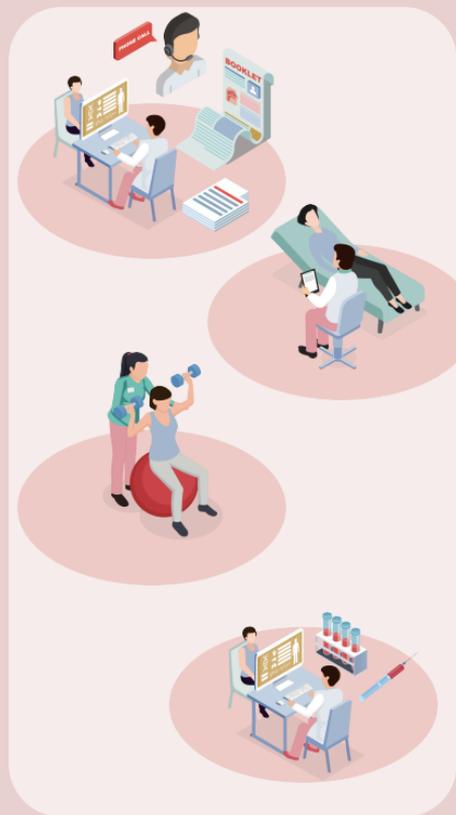
*---IT expert*

*“Using AI as basis for plan seems good, but important that everyone understand who is actually make the plan.”*

*---Health provider*

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# Physical consultation or treatment



## DEVELOP DIRECTION:

**Help patients treat the information:** In consultation, there is often a lot of information to bring to the patients. We could help digital tools to help them deal with the overload information, for example, the video to visualize the information, the tools which could record the consultation process...

**Help HCPs understand the patients quickly:** Digital tools could help HCP understand the patient's condition faster by collecting more data. For example, in physiotherapy, visualization of patient body motion allows HCPs to better guide.

## RISK POINT:

HCPs sometimes need to spend extra time and effort in using digital tool.



*"It's nice if you have recorded the conversation and you can let it be heard at home!"*

*---Patient*

*"I think I have too many patients sometimes, so sometimes it's really busy day and I also have to make notes in system and sometimes I don't have time for that. What I found the most difficult to find time to also make to do my administration."*

*---Health providers*

*"So we need visual tools and official aids (in consultation room) to help us understand the meaning of things. So it can help a lot if you can provide better images."*

*---Health providers*



# Physical consultation or treatment



## DEVELOP DIRECTION:

### Help organize the activity of peer group:

The physical experience of peer group help patients build social connection. There are many peer group events. When it comes to digital tools, they can help organize events through digital registration, digital gamification tools, and so on.

## RISK POINT:

Peers with more negative emotions can cause stress to patients

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*“We have become a close-knit group of women who encourage and support each other during classes and in between.”*

---Patient

*“I also participate in the first Dutch training of the Healthy Breast Program: six first Sundays of the month, I immerse myself with twelve other women in all possible aspects that influence your (breast) health.”*

---Patient

*“NOT!!! So I read there, however, the most terrible stories about recurring cancer, terrible metastases, abandoned relatives, second opinions that make you deeply stressed”*

---Patient

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# Preparation



## DEVELOP DIRECTION:

### Help patients make preparation at home:

The nurse or staff help patients prepare for the consultation or physical visit in advance. For example: filling out the questionnaire, preparing the questions, watching the video about supportive care and trying some digital services in advance.

## RISK POINT:

Too much preparation can be intimidating for patients.

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*“Most of the time we came in patients don't even know that we came to him. It would be better if they are preparing.”*

*---Health providers*

*“Patients not fill the form because they feel too much workload, too busy to do. Preparation is huge workload.”*

*---Health providers*

*“Increase the questionnaire experience:  
-Let patients understand the aim of questionnaire*

*-Only put the most important one in questionnaire*

*-The questionnaire also could be finished before the hospital visiting or during hospital waiting*

*-Staff could help orderly people to finish the questionnaire.”*

*---IT expert*

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# Digital self management



## DEVELOP DIRECTION:

**Online session:** Patients could use the online course to guide daily exercise, daily diet and emotion change. These session could be reviewed by HCPs

**Self-monitoring:** The healthcare devices to check body status and record daily exercise. Thus, patients and HCPs could understand the result of care plan and make a adjustment.

**Diary record:** Patients could write a diary for reflection about current care plan. HCPs could check it for understanding the condition of patients.

## RISK POINT:

Treatment effectiveness highly depends on patients' motivation.

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*“Self-management supports the care plan: the patient should be responsible for their health.”*

---Health providers

*“I mean, it's just getting bigger and bigger and the number of people, so we're forced to go to digital self-management”*

---Health providers

*“To develop some programs, a patient can have a diary from what they take for food and send it to us in the patient file. This would also be helpful. ”*

---Health providers

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# Online course or lecture(e-learning)



## DEVELOP DIRECTION:

**Build more resource:** The online course or specialist-led conference is a reliable resource for patients to get more information.

It may include supportive care, treatment, side effects, etc. HCPs could recommend some courses for patients; patients could record the lecture for reviewing.

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*“They(patients) can read a lot of information and about some problems. For example, the program about anxiety or depression or tiredness. They can read it at home and also do some exercises at home. They can also be more independent from the psychologist and do it more on their own.”*

*---Health providers*

*“I thought it might be helpful to see some digital videos about breast cancer operations or all the things they need to know when getting treatment. ”*

*---Health providers*

*“Not only do you get no information about this, but you don't get accurate information about anything. And that doesn't just apply to cancer patients.”*

*---Patient*

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# Online peer group



## DEVELOP DIRECTION:

**Build an online community:** The platform could be built to help patients find an online peer group or care buddy. In platform, they could share the story for finding a help, find the care buddy who could accompany them through their care plan and so on.

## RISK POINT:

Peers with more negative emotions can cause stress to patients.

“

*“I think there's not one platform for it, and it helps patients to have some contact with other patients. And also, they can communicate online to find more information or to have some questions.”*

*---Health providers*

*“I felt very much at home here on the forum. I feel so much warmth and connection for each other when I am active on cancer.nl. Depending on what I read, this can touch me. But I also often feel very happy. It is so special to support each other.”*

*---Patient*

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# Online information source



## DEVELOP DIRECTION:

**Build more resource:** HCPs provide a reliable source of information or digital files. The patient could use the digital file, app, or website to search for the needed information.

## RISK POINT:

The information should be easily understandable for patients.



*"It could steer patients in the right direction; So that they don't Google themselves, silly in the right direction instead of Google."*

*---Health providers*

*"It would require you to train the health care professional to think digitally, to recognize the benefits"*

*---Health providers*

*"I think when we are going to more digital health, then we also need good online sheets to give people."*

*---Health providers*



# Online consultation or therapy



## DEVELOP DIRECTION:

**Record for reviewing:** Therapy could be held via online video conferencing. Patients could record the therapy process for reviewing.

**Design different interface for different sides:** Personalized interface for different sides offering practical guidance:

Patient: example displayed on the screen;

HCPs: patient file, information on the patient movement to support diagnosis...

**Extend timeline:** Extra social time to establish a relationship.

**Online chat:** In non-emergency situations, patients could contact HCPs by online chat.

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*“During the physical therapy treatment, it is very difficult to know what’s wrong. I can’t do it with a camera; if you have shoulder pain, I have to take tests, but I can’t (do it by camera).”*

*---Health providers*

*“We(dietitian) can do more digital(video consultation). We talk a lot, so it’s more possibly online I think”*

*---Health providers*

*“When patients want to ask questions, now is call the general phone number, but sometimes the caregiver doesn’t have time to answer or call back.”*

*---E-health advisors*

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# Patients files



## DEVELOP DIRECTION:

**Include more data:** More data about supportive care should be involved in the patients file, such as general information, treatment plan, body condition for health device, supportive care plan, and previous consultation topics. Patients and doctors have access to these data. These data of patients could help specialists choose the type of digital intervention.

**Organize the information better:** The information in current EHR system is very chaotically organized, and it is difficult for HCPs to quickly grasp important information and make decisions.



*"If everyone who has access to the patient's file can see what has already been discussed, then the patient wouldn't have to repeat information, and caregivers could expand on conversations already had with the patient. For example: if I discuss with a patient where they would like to be when they die, then I can make a note of that so other (future) caregivers know this."*

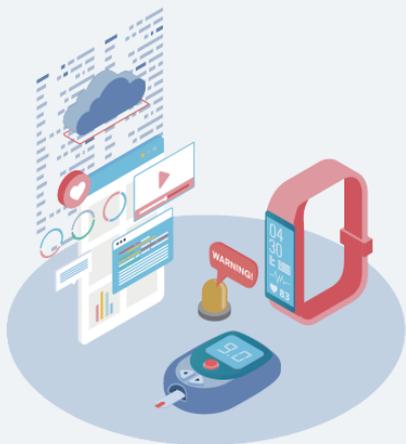
---Health providers

*"The biggest problem was there was no good way to link it to the data of the specific patient you want to and make the decision for at that moment."*

---IT Expert



# Health devices



## DEVELOP DIRECTION:

**Multi-dimensional monitor:** This health monitoring data helps patients and patients check the body's condition, which could help prevent other worse situations, and, sometimes, can support a diagnostic decision. The accuracy and scope of the current monitor of healthcare devices needs to be improved.

**Warning system:** It could identify unusual patterns and trigger an alarm when an anomaly is detected.

## RISK POINT:

The data from devices can be overwhelming. It leads the patients with negative condition worse.



*"It can be helpful. But the health advice could produce overwhelming information. It could stress the patients when they are in a worse situation"*

*---Health providers*

*"That's why I take my temperature a few times with my fancy digital thermometer. Unfortunately, this thermometer also turns out to be untrustworthy."*

*---Patients*

*"My activity tracker indicated that I slept all Sunday. The night from Sunday to Monday was also terrible."*

*---Patients*



# Schedule manage



## DEVELOP DIRECTION:

**Help patients manage schedule:** The system help manage all aspects of supportive care and balance life and treatment;

**Help HCPs manage schedule:** scheduling specialists for assisting with health system planning, uploading the schedule of HCPs on website where patients make an appointment by checking HCPs time availability; helping schedule the collaboration among all stakeholders.



*"I try to plan everything from family activities to housekeeping and work. By planning and noting everything in my digital agenda in the count, I don't forget anything, and it also gives peace of mind, both physically and mentally."*

---Patient

*"Plan the appointments for the follow-up examinations. All sorts of things are whizzing through my head."*

---Patient

*"If patients were able to plan the appointments byself, it would be more helpful to manage their schedule"*

---E-health advisor



# Digital tools training



## DEVELOP DIRECTION:

### Train all stakeholders to use digital tools:

Digital videos or support services help patients or hospitals know how to use digital tools and set up the software or health devices.

Also, it provides a guideline to help doctors think digitally.

## RISK POINT:

Excessive mandatory training increases the burden on doctors and patients.

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*“For building online information sheet, it would require you are also going to have to train the health care professional to think digitally, to recognize the benefits.”*

*---Health providers*

*“We only have the training about safety.”*

*---Health providers*

*“For patients, they don’t know how to set up a video connection, don’t know how to get their webcam working, don’t know how to set up sounds”*

*---Health providers*

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# Connect with other medical institutions

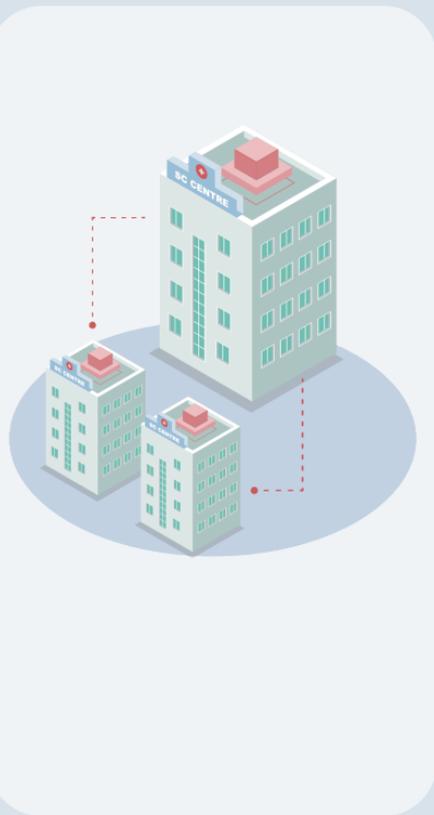
## DEVELOP DIRECTION:

**Easy way to communicate:** Providing contact information or building a platform for helping healthcare providers from different institutions communicate with each other easily.

**Optimizing referral methods:** Facilitating referrals may increase the effectiveness of the work of health care professionals.

## RISK POINT:

The privacy problem of sharing the patients data should be considered



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*“Some people want to have a psychologist or psychiatrist within their own region, so if we have a good connection with other HCPs in other hospital, we could build a better work together from our hospital with others.”*

*---Health providers*

*“It would be easier if you click and you could send the patient file from our system to their system, instead of you having to make a new story about patients.”*

*---Health providers*

*“Discussing with other HCPs in our hospital is more accessible than with other hospitals because the connections are short here. .”*

*---Health providers*

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