

Improving the understanding of cancer treatment in patients

Bachelor thesis Industrial design engineering

Since 2009 cancer has been the number one cause of death in the Netherlands, and the number of people who are affected by cancer keeps growing. In practice, the healthcare staff of oncology departments see an increase in patient flow and an increase in workload. Added to this is the problem that patients do not understand and do not remember the information given about their treatment. This causes them to be unprepared for appointments, and causes them to have stress and be uncertain. Patients who do not understand medical education, will often have higher medical costs and have higher chances to be hospitalized.



Therefore there is a high need for a tool that shows clearly what a patient can expect from a treatment and what is expected from the patient. According to interviews with both patients and staff of the medical oncology department, there are a few main topics that need extensive explanation. These topics are: dosage and working of medication, planning for when to take certain medication, possible side effects, hygienic measures, nutrition advices, information on when to contact the hospital in case of health complaints, practical information on allowances and information about the necessary preparation for appointments.

There are already dozens of medical apps that claim to help patients with their treatments, some of these apps are provided with helpful tools while other apps are less helpful (or similar to existing apps). Market research did add a few topics which could be translated to features of the tool to the list that was the result of the interviews. These features are: a medical file of the patient, a form to add questions to ask during an appointment, a recording device to record an appointment and a notification on when to take certain medicines.

The ideation and iteration phases were mainly inspired by existing apps and possible layouts. Eventually the calendar with appointments became the center point and the rest was added in columns.





The design model and the subsequent improved system is only a short-term solution to the staff shortage problem, but the communication tool does offer a solution to a major problem in the department. The tool offers support and explanation where necessary, to reassure patients, to prepare for what is coming, to explain what the disease does and how medication works and much more, such as the practicalities. When patients clearly understand what will happen and what to expect, they are less stressed, afraid or insecure. Things that are unclear cause uncertainty and fear, while knowledge offers reassurance. In addition, healthcare staff spend less time explaining and answering questions, which in turn frees up more time for the patient and being the psychosocial part of a healthcare worker. Patients who clearly understand what will happen during the treatment(s) are also better able to participate in the discussion with the healthcare staff, and thus make better choices about what they want and what they don't want.



It is not clear whether other departments also have a similar problem, but because complex treatments are also performed there that are not cancer related, these departments may also require additional explanation tools. For example, with a complex operation and follow-up treatment in the cardiology department, it will probably be the case that patients do not understand the treatments well, do not understand the medication (such as dosage and when to take what), would like to know practical matters such as costs and hygiene, want to know when to contact the hospital and without a good explanation (in addition to verbal images also added) also have many questions and need a lot of explanation from healthcare personnel.