CiMor

With Erasmus MC

Why CiMor?
Patients who have a cancerous tumor in their face or breast can opt for plastic surgeries to restore the original shape of their face or breast. Before, during and after these surgeries a lot of pictures need to be taken in a studio by a medical photographer. This can be experienced as an uncomfortable confronting moment.

If patients undergo a facial plastic surgery they need to have several surgeries. During this process they have big open wounds and scars in their face. Their faces may never look like before they had cancer. Therefore this picture taking process can be confronting.

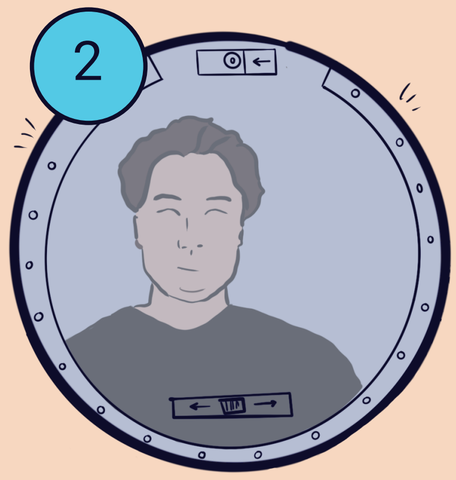
For the breast surgeries patients have to stand rather naked in front of the photographer. This can feel uncomfortable.

If these people encounter a camera in their everyday lives they may be reminded of this whole process, which can evoke negative feelings and emotions.

CiMor shifts the medical picture taking process to a more private and comfortable environment: the patient's home. CiMor focuses on making this process more comfortable and less confronting, so the patients have a more pleasant experience of being captured.
Next to this, by using AI CiMor makes sure that the right data is captured for the surgeons.

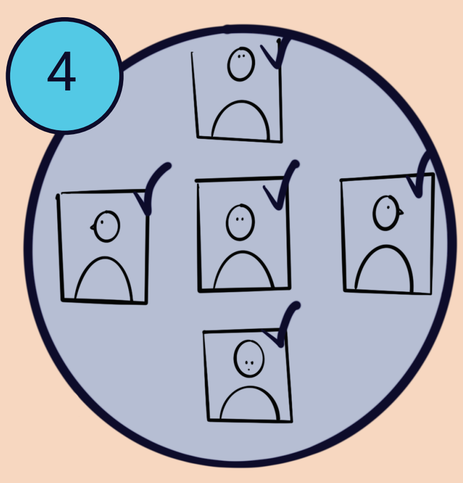
The Process

Conversation with Surgeon
Via the secure hospital environment you get a video message from your plastic surgeon. She discusses the next steps in your medical journey and explains that you have to take some pictures.
How: prerecorded message of teammate dressed up as doctor



Adjustments and Tutorial
The picture taking program, CiMor, is sent to your magic mirror in your bathroom. Once you have some time, you log in to the program by scanning your hand print. CiMor explains to you what is going to happen, will adjust the lightning and camera angle and show you via a tutorial how to use the program.
How: Arduino, p5.js, Face Mesh, webcam, LEDs, Wizard of Oz

Picture Taking Process
Before you open the camera you can adjust the blurriness, so you will look at yourself in a way that you find comfortable. The higher the blurriness, the more foggy the mirror appears.
On your magic mirror you'll see a line art of a face. You see the coordinates of your eyes and nose highlighted and try to mimic the pose of the line art. CiMor is giving visual and auditory feedback to guide you and help you were needed. Once you're standing in the right position CiMor snaps a picture of you and shows the next line art that you can mimic.
Core: p5.js measures the coordinates of the eyes and nose with the help of Face Mesh. Once they align with the eyes and nose of the line art, the webcam takes a picture. This process is repeated five times. All the taken pictures are printed on the screen, but hidden for the user. In the end, they are all be revealed.
How: Arduino, p5.js, Face Mesh, webcam, Wizard of Oz



Results
After all the pictures are taken, you'll see an overview of all the pictures that are taken of you and a confirmation that the pictures are all of good quality.
How: p5.js

Message from Surgeon
Next, you can send the pictures to your plastic surgeon. She will discuss the pictures with you during your next appointment. Now you're all done and you can continue with you day.
How: Wizard of Oz, prerecorded message of doctor.

Curious? Feel free to step inside your own home and to try it out!

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