

Company: Jeroen Bosch Ziekenhuis

Project: Design of a system to monitor patients at home after colorectal surgery

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Qualified Medical Engineering

Bowel cancer is among the most common diagnosed types in the Netherlands. Because complications after surgery are difficult to predict, this often results in unnecessarily long hospitalization duration for low-risk patients.

This project was performed at the JBZ in collaboration with IMEC. The goal was to design a tailored system for bowel cancer patients that enables safe recovery and monitoring from home after surgery.

The proposed design relies on a unique combination of accurate predictions of the chance of complications before surgery (i.e., machine learning models) and timely identification of deterioration at home (i.e., wearable smart sensors and digital questionnaires).

This design focussed on the patients. The most important benefit is an overall improved recovery experience and better outcome. This is mainly achieved by merging a trusted environment surrounded by loved ones, better sleep (and healing), stimulating independency and reducing the chances of hospital acquired infections.

Simultaneously, a positive outcome for the hospital translates to a safe reduction of hospitalization duration. Also resulting in satisfied patients, optimal usage of the available capacity or financial savings.

Currently the system is being tested by real patients outside the hospital. With small modifications the system could also be tailored to benefit other patient groups.

