FUJITSU
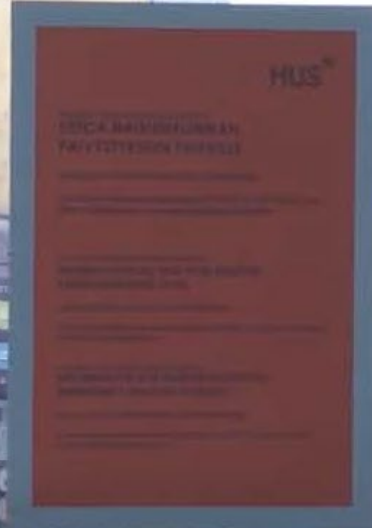
Helsinki University Hospital (HUS)

Improving diabetes care during pregnancy

Gestational diabetes occurs when the body cannot produce enough insulin during pregnancy. It does not usually cause symptoms, but can lead to difficulties in childbirth. Fujitsu is supporting an app that enables healthcare professionals to recommend personalized treatment.

Challenge
Of the 52,000 women who give birth in Finland each year, around 18% have gestational diabetes. This amounts to 5,000 new diabetics per year, and treatment costs can total 28 million euros.

Solution
A new mobile application has been developed to measure a mother's blood glucose level, activity, nutrition, pulse, and daily weight, and make the data available to healthcare professionals in real time.

Outcomes
- Better monitoring and visibility of how diet, physical activity, sleep, and stress can influence patient health
- Clearer communications with patients
- Smarter insights for physicians

"People are expecting high-quality public care, but with no additional investments. This is why we have to go digital."

Seppo Heinonen, Senior Medical Director, Professor, Gynecology and Obstetrics, Helsinki University Hospital

About the customer

Helsinki University Hospital (HUS) is Finland's largest secondary care operator. This gives it the opportunity to both solve challenges encountered in healthcare and also act as a pioneer in managing the country's most demanding specialist medical care. The CleverHealth Network development projects combine the competence of Finnish health technology enterprises, leading experts in healthcare, and high-quality health data collected by HUS.

Combining health and social care for better well-being

Due to changing diets and lifestyles, more and more women are developing gestational diabetes. The condition is very expensive to treat and is bad both for the health of mothers and their unborn children.

The monitoring of individuals with gestational diabetes is currently insufficient. Blood glucose levels are measured a few times a week, and fingertip measurements and instructions are dated. Helsinki University Hospital (HUS) therefore wanted to develop an easy-to-use mobile application to improve the treatment and monitoring of gestational diabetes without the need for additional human resources. The application would forward data in real time to healthcare personnel, who would then provide any necessary guidance.

"People are expecting high quality public care, but with no additional investments. This is the equation we have to solve and this is why we have to go digital," explains Seppo Heinonen, Senior Medical Director, Professor, Gynecology and Obstetrics at Helsinki University Hospital.

Using data to transform patient outcomes

Fujitsu Finland is supporting a new initiative that leverages artificial intelligence (AI) to improve the detection and treatment of diabetes during pregnancy. Fujitsu is delivering data integration and modeling services in addition to creating a user interface to visualize patients' data, enabling healthcare professionals to recommend personalized treatment.

The project uses machine learning to provide guidance and treatment tailored to each patient's individual needs, based on their unique risk profile. The deployment of AI also makes it possible to predict both the mother's and child's future health in unprecedented ways. For example, AI-powered insights can anticipate a mother's future blood glucose levels, in addition to their newborn baby's birth weight and body mass index (BMI), making it possible to provide highly-targeted preventive advice on lifestyle and food choices.

A data-driven transformation making healthcare more efficient

Fujitsu is designing a mobile application for patients, and a user interface that will enable healthcare professionals to easily interpret the information provided. Fujitsu is also responsible for delivering the data into the Microsoft Azure-based HUS Data Lake to enable secondary use for further cases.

"The unique data collected from HUS and by the Helsinki University Hospital maternity center – one of the largest in Europe – provides an excellent starting point for collaboration between multiple stakeholders.

"We have a remarkable opportunity to revisit how we prevent and treat many medical conditions by integrating high-quality research into clinical practice to develop an entirely new service. The agility of the CleverHealth Network ecosystem has enabled us to progress rapidly, and we are now starting to develop new services for the first project," concludes Heinonen.

Fujitsu

info@fi.fujitsu.com