



inDemand: Demand driven co-creation for public entities

CHALLENGE 4: Electronic services before and after an outpatient clinic appointment (case: paediatric and adolescent diabetes care pathway)

Pitch

There is a need for an electronic notes and communication platform to guide children and young people with diabetes and their families through the initial care practices.

Motivation and description

Type 1 diabetes, where insulin is not produced in the pancreas, is one of the most common long-term diseases in Finland. It is more common in Finland than anywhere else in the world. Life-time therapy for type 1 diabetes is insulin injections under the skin. The outpatient clinic for children and young people with diabetes at Oulu University Hospital regularly monitors approximately 470 patients who are under 19 years old; moreover, approximately 50 to 60 under 16-year-old children and young people develop the disease every year. In other words, we are looking at a considerable number of new therapy onsets and monitoring appointments (3 to 4 times a year) annually. When a child is diagnosed with diabetes, he or she, when admitted to the hospital, will be transferred from an outpatient clinic to the Intensive Care Unit or to a hospital ward; after the episode at the Intensive Care Unit his or her care continues at a general ward. Diabetes therapy education is started at the ward to the child and his or her family: the introduction includes insulin administration and injection education, education on blood sugar monitoring, diet guidance, exercise guidance, guidance on social security issues and guidance by diabetes nurse and doctor. In addition to this, blood sugar is monitored from your finger tip approximately every 2 to 3 hours, tissue sugar measurements may be started and daily insulin dosage determined.

Main objective

There is a need for development of electronic communication platform for children and young people with diabetes and their families for guidance of initial care practices. The platform shall allow saving real-time blood glucose and tissue glucose monitoring data, mealtime carbohydrate quantity and insulin dose counting as well as other insulin doses used in therapy. Moreover, the platform should contain the essential diabetes education materials and information about physical activity in relation to changes in blood glucose levels and a chat option for questions and guidance (once the client is transferred to home care). The solution enables a consistent continuum to education and monitoring (for instance blood glucose measuring and implementation of insulin therapy) when transferred from one ward to another or discharged. Also the application shall allow for communication between his or her care facility and home when the child is discharged (this promotes the client's education and increases safety when learning the care procedures at home). Need for development regards the outpatient clinic for children and adolescents with diabetes at Oulu University Hospital but the solution could be applied nation-wide.

Requirements for the proposals

Through the inDemand Project you have an opportunity to present your proposal for solution to Northern Ostrobothnia Hospital District and develop it further in cooperation with healthcare professionals.

The proposals shall respond to the challenges discovered in the hospital environment. The best proposals will be accepted into a unique process where hospital services are developed in cooperation with professionals and other stakeholders providing national and international visibility through the organisations implementing the inDemand Project.

- Shall respond to one of the development needs described here
- Must be an e-health application
- Equal to TRL 7

Business opportunity

Diabetes is one of the existing and future challenges in global scale. In Finland, about 50 000 people suffers from type 1 diabetes. In Sweden, estimated amount is about same. People under 40 are most likely to develop type 1 diabetes. Each year 500 children under 15 years gets type 1 diabetes. Child diabetes ratio is one of the highest in the world. The incidence of this disease has multiplied during the past 50 years in many countries and is annually increasing by 3%-4% in most developed countries.