PDB40

OBJECTIVE

Examine the cost and capacity benefits of eHealth (Virtual Hospital 2.0 care path) for insulin-dependent diabetes patients

ANALYSIS

Dynamic predictive modelling considering population structures, morbidity, resource use and costs for years 2018-2022

KNOWLEDGE GAINED

Digital care path for insulin-dependent patients is potentially capacity-freeing and cost-saving

KEY MESSAGE

Virtual Hospital 2.0 care path may increase availability and achievability of secondary care services for insulin-dependent patients

Predictive Analysis of Cost and Capacity Benefits of the Digitalized Secondary Care Services for Insulin-Dependent Diabetes Patients @ Virtual Hospital 2.0

Erkki Soini [1], **Saku Väätäinen** [1], **Reeta Rintamäki** [2], **Erja Huttunen** [2], **Sirpa Arvonen** [3], **Pasi Kuosmanen** [4]

[1] ESiOR Oy, Kuopio, Finland; [2] Department of Medicine, Kuopio University Hospital, Kuopio, Finland; [3] Virtuaalisairaala 2.0 -hanke, Helsinki University Hospital, Helsinki, Finland; [4] Virtuaalisairaala 2.0 -hanke, Kuopio University Hospital, Kuopio, Finland.

Contact author and presenter: Mr. Erkki Soini, ESiOR Oy, Tulliportinkatu 2 LT4, 70100 Kuopio, Finland. www.esior.fi, erkki.soini@esior.fi, +358 40 053 3971

BACKGROUND

Virtual hospital 2.0 (VH2.0) platform, a joint project between Finnish university hospitals produces and implements client-oriented digitalized secondary care services.[1]

Instead of just digitalizing old services or providing new services within the old service framework, VH2.0 aims to have the potential to create value for the patient, professional and organization through a complete operational change.

VH2.0 was previously predicted to have potential to free, in total, up to €1.3 Billion of secondary health care capacity in five years at the Finnish national setting.[2]

OBJECTIVES

We examined the cost and capacity benefits of VH2.0 digital care path for insulin-dependent diabetes patients.

METHODS

Analyses were carried out within the Patients-Intervention-Comparator-Outcomes-Setting-Time-Effects-Perspective-Sensitivity analysis *(PICOSTEPS)* framework for the evidence-based health economic evaluations.[3-5]

COMPONENT	CONTENT
Patients	Insulin-dependent diabetes patients, with newly diagnosed diabetes, transitioning from paediatric to adult care or with poor treatment balance using secondary care services in 1) Kuopio University Hospital Catchment Area (KUH ERVA) or 2) Finland generally.
Intervention	VH2.0 digital care path operational change.
Comparator	Conventional practice.
Outcome	*Potential capacity freed (PCF, cost difference; 2017 real value).* PCF represents the 2017 monetary value available for other uses within the health care system.
Setting	*Dynamic predictive modelling* considering the predicted patient cohort changes based on the population structures and morbidity.
Time	Five years (2018 to 2022) in annual cycles; assuming implementation completed gradually in three years at the KUH ERVA level and in four years at the national level. No discounting.
Effects	Predicted over-time changes in population structure and morbidity, resource use (e.g., clinician and nurse visits, letters and calls, inpatient days, e-appointments, e-messages, travelling, patient fees) and unit costs based on the real-world data and expert information.
Perspective	Payer including only direct secondary care and travelling costs.
Sensitivity	The gradual implementation in two or five years.

CONCLUSIONS

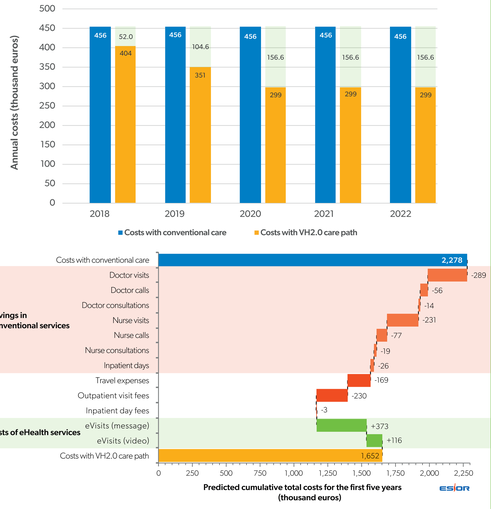
VH2.0 is a digital care and eHealth platform aiming at increasing the availability and quality of secondary health care services for all Finns through a complete operational change. [1,2]

VH2.0 digital care path for patients with insulin-dependent diabetes is potentially capacity-freeing and cost-saving, possibly increasing availability and achievability of the secondary care services for these patients.

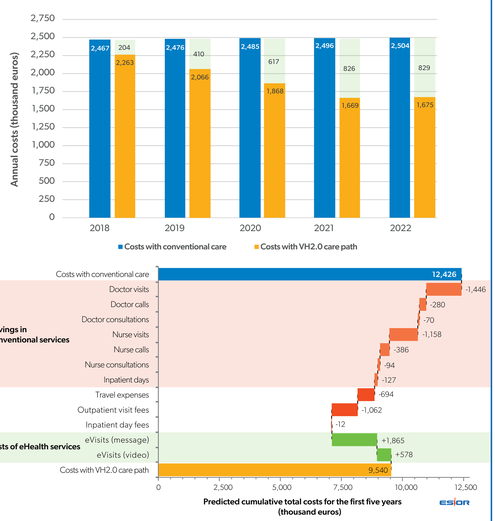
Digitalization efforts and eHealth services like VH2.0 could be a solution to improve the quality and availability of care.

RESULTS

At the KUH ERVA level, average annual PCF was estimated at €125 thousand for the first five years, reaching estimated five-year PCF of €626 thousand in 2022



At the national level, average annual PCF was estimated at €577 thousand for the first five years, reaching estimated five-year PCF of €2.89 million in 2022



The predicted PCF was 27.5 % and 23.2 % of the total conventional practice costs at HUS ERVA and national level, respectively. The five most important PCF drivers were physician visits, nurse visits, patient fees, travelling and nurse calls.

In the sensitivity analyses with faster 2-year application rate, the total PCF was 12.5 % (€78 thousand) and 28.4 % (€820 thousand) higher over the first five years at KUH ERVA and national level, respectively. With slower application rate of five years, the total estimated PCF was 25.0 % (€157 thousand) and 14.2 % (€411 thousand) lower over the first five years at KUH ERVA and national level, respectively.

Generally, the results were robust. VH2.0 care path for patients with insulin-dependent diabetes is expected to result to cost savings or at least cost containment from the perspective of PCF.

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