



## Developing eHealth for Home Dialysis: Clinicians' Needs for a Digital Patient Engagement Platform

Johanna Viitanen

Assistant professor, Aalto University, Finland

Co-authors: Sini HÖLSÄ<sup>a</sup>, Paula VALKONEN<sup>a</sup>, Tinja LÄÄVERI<sup>a,b</sup> and Virpi RAUTA<sup>c</sup>

<sup>a</sup> Department of Computer Science, Aalto University, Espoo, Finland

<sup>b</sup> Department of Infectious Diseases, Inflammation Center, University of Helsinki and Helsinki University Hospital, Helsinki, Finland

<sup>c</sup> Department of Nephrology, Abdominal Center, University of Helsinki and Helsinki University Hospital, Helsinki, Finland





## Introduction

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- Digital patient engagement platforms (DPEPs) aim at enhancing collaboration between patients and clinicians
- From the clinicians' viewpoint, concerns exist about new information systems (IS) increasing workload
- Aim of the article: To support the development of DPEPs by studying clinicians' needs for a new home dialysis (HD) care solution
  - The study is part of a larger 'Development of Home Dialysis' project, more information available: <https://www.cleverhealth.fi/en/development-of-home-dialysis/>



## DPEP solution: 'eCare For Me'

- For clinicians and patients with chronic kidney disease (predialysis, home peritoneal dialysis, and home hemodialysis)
- Patients can document information from each dialysis treatment, order dialysis supplies, and respond to symptom questionnaires
- The solution includes a smart scale, blood pressure monitor, wristband actigraphy, and sleep tracking device
- Artificial intelligence-based decision support notifications are to alert the patient of risk for adverse outcomes



## Research questions

- What kinds of benefits related to patient care can HD clinicians (physicians and nurses) expect from the new DPEP for HD care?
- What kinds of user needs do they have for the implementation and use of this solution?



## Methods

- 2 physicians and 6 nurses from HD Unit in Finnish hospital
- Semi-structured interviews (remotely) in 2020
  - Pre-task: a visual time-line of HD care path and digital tools
  - Themes of the interviews: overview of dialysis patients and their care, training and follow-up of HD patients, roles and responsibilities of clinicians, work-related digital solutions for patient-clinician collaboration
- Data analysis: a thematic analysis methods using Atlas.ti



## Analysis

Theme	Code / explanation
Work-related tasks	<ul style="list-style-type: none"><li>• Clinicians' work tasks</li><li>• Patients' tasks</li><li>• Care pathway</li></ul>
Digital solutions / technology	<ul style="list-style-type: none"><li>• Digital solutions and experiences with them</li><li>• Communication practices and experiences with them</li><li>• Stakeholders</li></ul>
Future	<ul style="list-style-type: none"><li>• Future hopes and fears</li><li>• Challenges in dialysis care</li></ul>



## Results (1/2)

- Clinicians use multiple ISs and channels to communicate with patients and other professionals

EHR, patient portal, digital care pathways, telephone, data from dialysis machines, Microsoft Teams, email

- Experienced benefits of digital solutions: easy access to patient data, informative materials for patients, remote communication, ability to motivate the patients



## Results (2/2)

**Table 1.** Clinicians' needs for the new DPEP solution for HD patient care.

Needs related to HD patient care	Needs related to a new DPEP solution as an integrated part of clinicians' existing socio-technological work environment
Release time during the patient visit	A fluent and usable entity of different ISs
Get an overall picture of a patient's situation	Common practices solution use
Enhance patient's self-care	Implementation (change of work routines)
Support patients between follow-up visits	IT support
Follow-up and monitor patients' overall situation together with the patients	Customizability





## Discussion (1/2)

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- Clinicians had positive expectations of the new 'eCare For Me' solution regarding patient care
- When developing and implementing new digital solutions
  - it is paramount to understand the variety and amount of separate ISs and communication channels
  - the usability of DPEP solutions along with their fluent use among other ISs should be considered
- Only after this process can the effectiveness and quality of work and patient care be improved.



## Discussion (2/2)

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- Limitations of the study
  - Small number of participants
  - The participants had not yet used the new DPEP solution
- Further research
  - Clinician's user experiences after implementation in clinical work context
  - HD patients' experiences with the new DPEP solution and the effects of the new solution on patients' quality of life



## Conclusions

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- Digital solutions enable new ways of organizing patient care and communicating with chronically ill patients
- However, **complexity** in clinical ISs, **poor usability** of eHealth solutions, and **lack of integration** may interfere with clinicians' workflows and create challenges for efficient work
- It is important to design and agree on **changes in work practices** and patient care when implementing new DPEP solutions.



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## Thank you!

**Johanna Viitanen**, [johanna.viitanen@aalto.fi](mailto:johanna.viitanen@aalto.fi)

*Assistant Professor*

*Human-Centred Health Informatics (HCHI) research group, <https://www.aalto.fi/en/departments-of-computer-science/hchi>*

*Department of Computer Science, Aalto University, Finland*