

Breakout Session I: Health Informatics

Title: Use of mobile technology and developing quality indicators for health care collaboration and to patients with COPD

Authors: *Carl Erik Moe, UiA; Elin Thygesen, UiA.*

Chronic obstructive pulmonary disease (COPD) is a serious, progressive, chronic disease which provides substantially reduced quality of life and where mortality is high. Patients with COPD often experience anxiety and insecurity, especially during periods of acute exacerbation.

It is important that the organisation of the health care services meet their needs for security and predictability, and it is important that they receive necessary medical care when they need it. Caring for these patients requires high expertise and good procedures. Due to this we need clarification with regard to the classification of individuals with COPD, and clarification of division of responsibilities between local and specialist health services in diagnosis and management of the patients. In addition, there is a need to test the role mobile technology and the internet can have on management of patients with COPD.

The Centre for eHealth and Healthcare Technology at the University of Agder is involved in a European research project, "United4Health", together with Sørlandet Hospital, where new technologies for management of patients with COPD after hospitalization are tested. In addition, this project aims to improve the quality of life for COPD patients and empower them to stay longer at home by developing a model for the management of patients with COPD in a home situation.

Some relevant issues may be:

- *What quality indicators are adequate for care in a collaborative workspace (mobile platform) involving personnel at different levels of care (home nurse, local doctor, hospital specialist)?*
- *How does the treatment program affect patients' perception of security, predictability, and overall quality of life?*
- *To what extent do patients with COPD experience the telemedicine solution as user-friendly?*

Breakout Session I: Health Informatics

Title: HCI and User Interface Usability

Author: *Ann Fruhling, Ph.D., UNO*

I am interested in collaborating in research related to designing and evaluating user interfaces in all domains. I have published papers on health consumer's perception of trustworthiness and usability of e-health web portals, heuristics evaluations for a public health emergency response system, for mission critical systems for the Department of Defense, and for Electronic Health Record systems. I have also conducted research using cognitive walkthroughs and worked with student developers in designing various user interfaces and then evaluating their usability. In my public health informatics research laboratory we analyze, design, develop and implement various information systems that help improve public health such as a watershed monitoring experiment using citizen scientists, an urban planning and decision support system that utilizes open-source geographical information system technology, and a juvenile diversion case management system for the Nebraska Crime Commission.

Currently, I have a thesis student doing research on what are the user design practices for children that have hemiparesis. He is very interested in the physical side of interaction so we are looking at hardware design considerations. A recent graduate student and I worked on a research project examining the impact of user involvement in developing heuristics for a specialized business information system (Customer Relationship Management). Currently I am working with a cardiologist, emergency department physician, and doctoral student on usability issues that clinicians are experiencing using a well-known electronic health record system. We are planning to employ a wireframe tool to improve the design and then conduct various usability evaluation experiments to examine the impact. I am also working with Dr. Mariann Fossum on trying to improve the quality of the exchange of patient health information when a patient is sent to the hospital with an emergency from a nursing home.

In the future, I am very interested in moving in the direction of analyzing complex medical workflow situations and how medical information systems can be developed so that they adapt to these complex workflow environments. I would also like to explore ways to design a user interface to reduce cognitive load due to information overload through better user interface visualization techniques.

Other areas I have done research in is evaluating and developing best practices for agile development methods, measuring user satisfaction and surveying information system success with end users. Improving the healthcare for rural citizens is usually an underlying theme of my research. I welcome new ideas and collaborations as well as building on current research interests with new partners.

Breakout Session I: Health Informatics

Title: Research Interests in Healthcare Sciences at UNO, UNMC and UiA

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Mariann Fossum is a PhD and Associate professor at the University of Agder, Faculty of Health and Sport Sciences, Department of Health and Nursing Science, Norway

The University of Nebraska, Omaha (UNO), the University of Nebraska Medical Center (UNMC) and the University of Agder (UiA) have bachelor programs and master programs in health care sciences or related fields. All higher education is research-based and the partners may have possible common research interests in health care sciences. It would be interesting to explore some of the possible joint areas in health care research and discuss opportunities for further collaborations. The main focus will be on clinical research and potential collaboration research areas will be identified on three different levels; institutional, research groups and individual researchers.

The potential research areas might be risk assessment and symptom management, clinical reasoning, high-fidelity simulation, nursing informatics, health care quality indicators, research methods, effects and interventions studies and health care outcome studies.

To establish collaboration on already collected data and/or establish new comparative studies may be some ways to bring this collaboration further.