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The future of informatics in aged care: an international perspective

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The future of informatics in aged care: an international perspective

Abstract

The panel will share global technology research initiatives in aged care. Panel objectives: 1) Describe international informatics research initiatives by experts addressing health needs of the aged, 2) Contrast health technologies used to manage aging patients, and 3) Explain challenges and opportunities to improve healthcare informatics for aging patients. Intended audience: researchers, consumers, practitioners, vendors, care providers, and policy makers with interests in aged care technology design, development, implementation and management.

Keywords

aged, care, future, international, informatics, perspective

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The Future of Informatics in Aged Care: An International Perspective

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Abstract: The panel will share global technology research initiatives in aged care. Panel objectives: 1) Describe international informatics research initiatives by experts addressing health needs of the aged, 2) Contrast health technologies used to manage aging patients, and 3) Explain challenges and opportunities to improve healthcare informatics for aging patients. Intended audience: researchers, consumers, practitioners, vendors, care providers, and policy makers with interests in aged care technology design, development, implementation and management.

Keywords: Aging, Health Information Technology, IT adoption, Quality of Care

1. Panel Description

The panel includes five interdisciplinary experts with backgrounds in aging, engineering, informatics, health systems, quality improvement, mobile health, and patient engagement from three continents, including Australia, Norway, and the U.S. The expert panelists are all leading novel research efforts in aging with an emphasis on informatics or technology to improve quality of care and health of older citizens.

During the presentation we will introduce a variety of interdisciplinary projects to illustrate the breadth and depth of aging research globally. Dr. Abbott will first present a discussion about disruptive innovations in aged care, which includes an extensive and futuristic plan to facilitate patient-engagement. Dr. Alexander and Dr. Fossum will contrast the use of IT in resident care activities, clinical support, and administrative activities in nursing home settings in two countries including the U.S. and Norway. Dr. Yu will report the results of an evaluation project about the implementation, adoption, usage and impact of electronic nursing documentation systems in 17 residential aged care homes in three states in Australia. Lastly, Dr. Shaw will present innovative mobile health technology investigations using social media and social networks to improve health of older adults'.

Following presentations, 3-5 discussion groups will be formed. Each group, will be facilitated by one (or more) workshop organizers for 10 minutes using discussion questions. The final 20 minutes will be used for each discussion group to report back and discussion by workshop participants. This is followed by a brief closing summary of the workshop by the moderator. The action items will be elicited and circulated to the attendees interested in following-up after the conclusion of the workshop.

2. Panelist and Moderator

Patti Abbott, Associate Professor, University of Michigan School of Nursing, USA pabbott@umich.edu. Dr. Abbott is focused on e-Health/mHealth applications for low-resource settings and vulnerable populations, with a primary focus on non-communicable diseases and digital education.

Gregory L. Alexander, Professor, University of Missouri Sinclair School of Nursing, USA, alexanderg@missouri.edu. Dr. Alexander has a broad research background in human factors, informatics, gerontology, patient safety and quality improvement.

Mariann Fossum, Associate Professor, University of Agder, Norway, mariann.fossum@uia.no. Dr Fossum's research is focused in the area of decision-making and information technology used in healthcare. Dr Fossum has experience in many care environments including hospitals, nursing homes, and home health care services in Norway.

Ryan J. Shaw, Assistant Professor, Duke University School of Nursing, USA ryan.shaw@duke.edu. Dr. Shaw has interdisciplinary training in nursing, health informatics, and computer science. Dr. Shaw's research focuses on the science of patient-generated data, specifically, how to improve health outcomes and care delivery through the use of real-time data from wearable technologies, embedded environmental sensors, and electronic health records.

Ping Yu, Associate Professor, University of Wollongong, Wollongong, NSW, Australia, ping@uow.edu.au. Dr. Yu is Director Centre for IT-enabled Transformation in School of Computing and IT. She is a pioneer researcher on Australian nursing home's adoption of IT. She leads research projects on the impact of technology on residential aged care quality, chronic disease management with mobile technology and exploring impact of technology on dementia care.

Mary M. Alexander is a clinical nurse with nearly 30 years of bedside nursing experience in a variety of areas including intensive care, hospice, school health, ambulatory and outpatient surgical care.

3. Timeline of Panel Activities

M. Alexander will provide brief introductions of panel topics, panelist introductions, and discussion guidelines – (10 minutes).

P. Abbott will present the results of one-year project, "Care at Home". A team of 15 cross-disciplinary experts from University of Michigan schools and health system was formed and tasked with analysis of current and future state projections to address challenges for an aging and chronically ill population. The task force, specifically named the "Disruptive Innovations Group" developed an extensive and futuristic plan centering on facilitating patient-engagement, patient-driven and patient-facing gerotechnology, the creation of intergenerational campus housing affiliated with the UM senior-care community to support embedded "Gero-preneurs in Residence", and other inter-professional efforts. The results of the analysis will be shared with the expectation that the overall findings and plans will be generalizable to others. (10 minutes)

G. Alexander will provide Year 1 results of a federally funded national study about IT adoption in US nursing homes. The goals of the 4-year study are to recruit

nursing homes from across the US to determine level of IT sophistication. IT sophistication is defined as IT capabilities, extent of IT use, and degree of internal/external IT integration. Additionally, the results will be correlated with nationally reported quality measures using Nursing Home Compare data to provide insights into how IT sophistication, including health information exchange systems, influence quality in these facilities. Drawing on findings from other published studies we will draw some international comparisons of IT sophistication with our US study. (10 minutes)

M. Fossum will present a study describing the level of diversity in IT tools and software used in a purposive sample of four Norwegian municipalities. The healthcare services in the Norwegian municipalities, including nursing homes and home healthcare services have used electronic healthcare record (EHR) systems since the end of 1990. However, highly sophisticated computerized systems and opportunities to transferring information between different stakeholders have been limited. After an overview of the level of IT sophistication identified, the perceived enablers and barriers identified by participants will be reported and compared with findings of other international studies. Specific issues regarding the need for standardization; the lack of interoperability of systems; and poor user-interface features will be discussed with examples from usability studies conducted of EHR systems used in the municipalities. (10 minutes).

R. Shaw will describe the development, testing, and study results from a one year dissemination and implementation study evaluating how communication channels including social media and social networks lead older adults' to use mobile health technology—e.g. The Sixth Vital Sign mobile ResearchKit application (app)—for evaluating gait speed as an indicator of health. The Sixth Vital Sign mobile app developed at Duke University enrolls older adults using their social network to evaluate walking speed and health status. The participating older adult immediately receives assessment feedback, a summary of personalized health risk for negative health events, population based comparisons, recommendations and action steps for preventing falls and dependence, and an individualized report that can be shared with health care providers and family. (10 minutes).

P. Yu will report the findings of an evaluation project about the implementation, adoption, use and impact of electronic nursing documentation systems in 17 residential aged care homes in three states in Australia. She will present an overview of the project and major findings about the implementation, adoption, usage and impact of electronic nursing documentation on nursing care processes and quality of nursing records. The strategies and pitfalls in implementing technology in aged care nursing, the benefits and unintended consequences and the challenges for technology evolution will be discussed. The impact of electronic nursing documentation on quality of nursing care will be further validated through the evidence extracted from the official aged care accreditation reports all over Australia. (10 minutes).

• **Example Discussion Forum Questions (30 minutes)**

1. What are strategies to engage older adults in the use of innovative technologies?
2. How do we ensure the long term sustainability of technology in aged care settings (i.e. nursing homes, assisted living, home health, etc.)?
3. Is nursing practice keeping pace with evolving and existing technologies, which are being used to care for the aged?
4. What are opportunities and challenges for technology use in aged care?