

Engaging Nurses in the Design and Adoption of mHealth Tools for Care Coordination

Judy Murphy
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Abstract: This panel will share ideas for the Nursing Informatics Specialists in the audience on how mHealth tools are being designed and used for clinical practice, education and research. They will describe specific mHealth projects they are involved in, give practical examples, and provide tangible tactics for nurses to make a difference. They will provide insight into new technology and standards developments that make it easy to connect the mobile app ecosystem - from open application program interfaces (APIs), to traditional health information technology tools like Electronic Health Records (EHRs).

Keywords. mHealth, Mobile Health, Mobile Technology, Care Coordination, Clinical Decision Support, Workflow

1. Panel Organization

The proposed panelists are:

Judy Murphy, IBM, murphyja@us.ibm.com

Ms. Murphy is Chief Nursing Officer (CNO) with IBM Healthcare. Prior to this she was CNO and Deputy National Coordinator for Programs and Policy at the Office of the National Coordinator for Health IT (ONC) in Washington D.C. In these roles she advanced the vision of using health IT to improve health care, lower costs, and promote consumers' use of health IT for their own health. She has published and lectured nationally and internationally and has won numerous awards, including the AMIA 2014 Don Eugene Detmer Award for Health Policy Contributions in Informatics and the HIMSS 2014 Federal Health IT Leadership Award. Before working at the ONC, she had more than 25 years of health informatics experience at Aurora Health Care in Wisconsin where she was VP-Applications and led their EHR program since 1995.

Susan Hull, Cincinnati Children's Hospital Medical Center, hull.susan.c@gmail.com

Ms. Hull is Chief Nursing Informatics Officer for Cincinnati Children's Hospital Medical Center in Ohio, USA. She previously was Chief Health Informatics Officer for Diversinet and VP for Elsevier's CPM Resource Center. Her background includes nursing, health system, and healthy community partnership/ community health information network (CHIN) executive. She is an author and speaker, advocating for design and delivery of healthcare solutions that are mobile, personally connected, interoperable, personalized and mass customized, with special interest integrating patient and device generated data. She co-leads the Alliance for Nursing Informatics

Consumer e-Health task force, serves on the Learning Health System Policy and Governance task force and advisory groups for consumer e-health technology standards.

Olivia Velez, HealthEnabled, olivia@healthenabled.org

Dr. Velez is currently Executive Director for HealthEnabled, a South Africa-based organization accelerating the integration of life-saving digital health solutions into the national health systems of low/middle-income countries. Prior to this, she served as Senior Technical Specialist with ICF International and eHealth Team Lead for USAID's Maternal and Child Survival Program. A 2010 Jonas Nurse Leaders Scholar and a 2014 Alliance for Nursing Informatics Emerging Leader, Dr Velez has authored over a dozen peer reviewed papers on health informatics and has presented her work on mHealth at international events including the mHealth Summit, the UN Economic & Social Council Partnership Clinic on Mobiles for Midwives, and numerous informatics conferences. She maintains a research scientist role with Columbia University, advising the Biomedical Informatics Department on the implementation of mobile point-of-care applications for midwives and nurses working in public health settings in Ghana.

Robin Austin, School of Nursing-Univ of Minnesota, robin.austin12@gmail.com

Dr. Austin is currently Clinical Assistant Professor in the School of Nursing, University of Minnesota, USA. Her teaching areas include Consumer Health Informatics for master's level students, and also teaching for Pre-Licensure Nursing. Her specialties include Nursing Informatics, Mobile Health, Consumer Engagement, Big Data Analytics, Integrative Health and Wellness. She is an author and frequent presenter, and recently served as the President of the Minnesota Informatics Nursing Interest Group (MINING).

2. Panel Description

2.1. Format

Judy Murphy will moderate the panel and begin by citing some of the recent studies and statistics demonstrating why mobile health for nursing care and care coordination is making a difference in how care is delivered and what outcomes are being seen across care settings internationally. She will describe the broad range of mHealth tools supporting this movement, as well as some of the issues and barriers to design, development and adoption. She will feature use cases where mHealth tools are improving clinical workflow for nurses and complementing tools already existing within electronic health records.

Next, Dr. Olivia Velez will discuss her work enhancing the role of nurses in Zambia through the use of mHealth. The use of mHealth in developing African countries has increased rapidly in the past decade. The majority of mHealth tools have focused on community health workers or on aggregate information systems. Dr. Velez will report on a recent scoping assessment, and its follow-up, to understand how nurses and nursing leaders could benefit from mHealth and other health information tools. This assessment was part of a Primary Health Care to Communities Initiative (PHC2C), led by IntraHealth International and partially funded by Johnson & Johnson.

Robin Austin will then describe how mHealth is the foundation for a university-based master and doctoral education program for nurses who are advancing their training in nursing informatics. She will give examples of mHealth solutions for education, practice and research as well as describe the competency roadmap to support

this evolution. Special emphasis will be on field experiences nurses are having in community settings, where mHealth tools are supporting care collaboration and coordination.

Last, Susan Hull will discuss the evolution of mHealth application development and adoption in healthcare settings in the US and Canada. Susan will describe technical advances in embedding mHealth apps within clinical workflow and EHRs, enabled with new innovation such as the Substitutable Medical Apps (Smart) and Fast Healthcare Interoperability Resources (FHIR®) ecosystem, which provide a set of data models with understandable terminology that speeds development of mHealth apps and their connection to EHRs.

The panel will wrap-up with time for interaction through Q & A with the audience, as well as encouragement to share other examples of mHealth projects that participants are involved in that help make a difference to nursing and health care around the world. Sample list of debatable questions:

- What mHealth tool has made a difference in your practice – and why?
- What are important design elements important in mHealth tools?
- How can we encourage nurses to adopt the use of mHealth tools?

2.2. Description

The use of mobile technology is pervasive in our daily lives and essential for our mobile lifestyles. This smart computer in our pocket is making a profound difference in the way we work, learn and interact with each other, as well as how we provide and obtain health care. Mobile Health (mHealth) is a wide-ranging term most commonly used to describe a variety of therapeutic interventions for patients - from something as straight forward as text messaging reminders for prenatal visits, to video visits, to stand alone point of care vital signs with and automated clinical decision support. mHealth tools are also being designed and developed by nurses, for nurses, to simplify clinical workflows and improve care coordination in care settings across the continuum and community. Some industry experts are predicting the rapid advance of an mHealth ecosystem with a variety of solutions for nurses, and for patients and consumers at large. New skills and competencies for designing and deploying these tools to support patient care, education and research are needed.

MHealth tools are beginning to transform the patient experience, including the ways in which patients and providers interact and how nurses care for patients. mHealth is also a strategy in health systems, health plans, developing countries and low resource areas, to extend the reach of nurses to enhance the delivery and coordination of care. Nurses have a significant need for assistance with health information management, clinical workflow, care supervision and care coordination, in a variety of settings where mHealth tools can be of great benefit. Leveraging many functions familiar to nurses that already exist in smart phones, mHealth solutions and data streams coming from these solutions can easily track movement, time and location to understand the impact of new workflow interventions to improve nursing care.

Yet, nurses have little exposure to the design, development and deployment of these mHealth solutions. New skills and competencies are needed for advancing these tools to support patient care, education and research. As nurses gain more experience with mHealth tools, they will become increasingly involved in developing and adopting solutions to optimize the way they work, as well as complementary health and care coordination solutions for patients and families.