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Building a Digital Ecosystem for Vulnerable Populations

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In consideration of worldwide economic conditions and the fragile state of emerging economies, sustainable health promotion and disease prevention interventions rely upon primary, primordial prevention strategies and calculated use of scarce health resources. The use of integrated health IT supported by risk stratification protocols to prevent overloading the health infrastructures is fundamental, particularly in low and middle income nations. Informed decision making by policy makers is reliant upon comprehensive and current data that rapidly moves from the field to the analytic engines. Getting a handle on chronic diseases that are threatening to swamp emerging economies requires integrated, educated teams and systems with the capacity to tackle the complex and multifactorial nature of disease prevention and health promotion. Most developing countries lack comprehensive programs of risk stratification; systems and teams remain disconnected; the knowledge necessary for efficient and competent healthcare practice remains out of reach; and effective prevention/treatment strategies are not adopted for a multitude of reasons.

In this presentation "Building a Digital Ecosystem for Vulnerable Populations" ideas for integrating eHealth/mHealth, evidence-based best clinical practice, health promotion, education of care providers, and enhancing provider coordination will be shared and debated. Innovative ways to reach vulnerable populations, whether they are in a village in Latin America or in a US inner city - are critical - and it requires team science and team application to overcome.

Dr. Patricia Abbott is an Associate Professor at the University of Michigan School of Nursing. Prior to arriving at the University she was an Associate Professor at the Johns Hopkins Schools of Nursing and Medicine. Dr. Abbott is passionate about developing IT for low-resource settings to increase health knowledge distribution to nurses and other care-givers in remote communities. She recently co-authored an AHRQ commissioned white paper regarding the use of information and communication technology (ICT) in medically underserved areas to improve health of people and communities. Her pioneering work in using knowledge networks optimized for low bandwidth areas has led to involvement with the Rockefeller Foundation, the Pan American Health Organization (PAHO), and the World Health Organization (WHO). She is currently collaborating with a NHLBI Center of Excellence in low-resource areas of Guatemala on a mHealth project focused on cardiovascular disease.

Dr. Satinder Singh (Baveja) is a Professor of Computer Science & Engineering and Director of Artificial Intelligence Laboratory at the University of Michigan, Ann Arbor. Singh's research is in the area of designing and analyzing new machine learning algorithms for artificially intelligent agents in sequential decision-making problems. Specifically, his focus is on agents that learn good decision-making policies from experience in large-scale, unknown, and stochastic environments. Singh received his B.Tech in Electrical Engineering at the Indian Institute of Technology, New Delhi, India, and his Ph.D in Computer Science at the University of Massachusetts, Amherst. Following his Ph.D, he worked as a postdoctoral fellow at the Brain and Cognitive Science department at the Massachusetts Institute of Technology, as an Assistant Professor at the Department of Computer Science at the University of Colorado, Boulder, and as a member of technical staff at AT&T's Artificial Intelligence Principles Research Department. He has co-authored over 100 refereed papers in the areas of reinforcement learning, and more recently in computational game theory and human-computer interaction. He is a Fellow of the Association for the Advancement of Artificial Intelligence (AAAI) and a recipient of the EECS Outstanding Achievement Award.

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