New Technology & Old Age: Innovating the Future of Healthy Aging

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One American turns 62 nearly every seven seconds. The nation’s largest generation, the baby boomers, are now between 44 and 62 years old – chronic disease prime time. New technologies and industry-driven innovations in health services are now emerging to manage, motivate and monitor older adult health as well as to support eldercare. Not just in the clinic and home, but in the workplace, car, retail centers and beyond. What new technologies and delivery models are emerging? How will they impact health behaviors and healthcare as we know it today? Who are the new players that will be inventing the future of “healthness” for an aging population?

Presentation and discussion facilitated by a hypothetical patient case developed by Katherine A. Hesse, MD, Senior Health, Geriatric Medicine Unit, Massachusetts General Hospital:

Technology and Aging. The Case of the Innovative Daughter

Mrs. R is an 87 year old woman with coronary artery disease, congestive heart failure, atrial fibrillation, lower GI bleed, a gait disorder, cognitive impairment, hearing loss, and vision impairment. Over the past 5 years she has had multiple admissions for management of congestive heart failure, angina, syncope, GI bleeds and falls. Previously independent, over this time she decline functionally and was becoming a safety risk at home.

Widowed for many years, she has lived in a 2 family 2 story side-by-side duplex with her daughter next door. She and her daughter were very committed to supporting her in her own home. Her daughter, who worked full time in a high tech company, was a very creative woman and tried to use available technology to support her mother’s independence.

She installed a phone with an amplifier and later a preprogrammed phone with large numbers. She signed up for Life Line, the emergency call system. Mrs. R
became more unsteady on her feet and her daughter installed a stair chair to allow her mother to go up and down the stairs safely. She began to use a rollator which dramatically improved her stability.

As the patient's cognitive problems progressed, she became unsafe in the kitchen and her daughter had the gas stove turned off and installed a timer on the microwave. She purchased kitchen appliances with automatic turn off controls.

Mrs. R frequently forgot to take her mid-day medications and her daughter would come home daily at lunch to ensure her compliance. She continued this for over a year until she discovered an automatic pill dispenser with an alarm that would ring when the pill was to be taken and if not taken, would call her cell phone, alerting her that the pill was not removed from the dispenser.

After an episode of pulmonary edema and a fall in the middle of the night, her daughter installed a baby monitor and later a baby video monitor in her mother's bedroom so she could hear, then see, her mother next door and respond rapidly to her mother's distress.

However, Mrs. R's daughter was not successful in using all available technologies. Although the patient was often eligible for visiting nurse services because of her frequent hospitalizations, she was not in a community where the VNA had access to telemonitoring. Her daughter, however, took her mother's vital signs daily and used Patient Gateway to communicate this information to the doctor's office to help manage her congestive heart failure.

Even with these innovative technological supports, the patient has became unsafe alone in her home and Mrs. R is currently going to a day care program 5 days a week. Unfortunately, her daughter felt she needed to quit work to help manage her mother's care and now she and her sister alternate weeks sleeping at their mother's home to ensure her night time safety. Her daughter has commented that she does not know how she could have managed her mother's care over the past few years if she didn't have knowledge of these supportive innovations and the funds to purchase them.