Evaluating Telemedicine for Acute Illnesses in Senior Living Communities

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Purpose and Specific Aims

The system of medical care for older adults with acute illnesses often serves them poorly. Many factors limit these patients' access to safe, patient-centered, efficient, high-quality, acute care. These factors include a shortage of geriatricians and primary care physicians; limited availability of timely, acute-illness, patient appointments; emergency department (ED) crowding; interruptions to the continuity of care when patients use the ED; and poor transitions of care from the ambulatory setting to the ED. These conditions foster unnecessary ED use, adverse events in the ED for which older adults are particularly at-risk, and unnecessary medical costs. As the population ages, the magnitude of these problems will only increase.

Telemedicine is a potential solution with demonstrated effectiveness in other vulnerable populations. Previous work by members of this research team has shown that telemedicine isan effective health information technology solution to address similar challenges in multiple vulnerable populations, demonstrating both improved access to care and reduced ED visits. The existing telemedicine program in Rochester, Health-e-Access (HeA), has been both successful and sustained, and well accepted by all key stakeholders including patients, families, clinicians, and insurers. This existing program, combined with the experience and multidisciplinary expertise of our research team, creates a unique opportunity to (1) develop a model of care that leverages this technology to improve geriatric acute care, (2) evaluate this model through a prospective cohort study, and (3) identify key barriers and drivers of implementation to promote dissemination.

The overarching study goals are to **develop and evaluate a telemedicine-enhanced care model** that improves access to safe, high-quality, acute illness care for older adults; fosters appropriate use of health services; and reduces unnecessary expenditures. Specifically, this study aims to:

1. Expand the existing pediatric HeA telemedicine network to older adults by providing senior living communities with an alternative on-site care option for individuals with an acute illness episode.
Hypothesis 1: 90% of requested telemedicine visits will be successfully completed.

2. Evaluate the impact of the HeA telemedicine model on utilization, quality of care, and patient safety.
Hypothesis 2: The rate of ED use will be lower at senior living communities with access to care via telemedicine, as compared to senior living communities without such access to care.
Hypothesis 3: Quality of care and patient safety measures will be better for senior living community residents with access to telemedicine-enhanced care than for residents without this form of access.

3. Evaluate the economic benefit of the care delivered through the telemedicine network
Hypothesis 4: The net cost of healthcare per patient-month will be less for senior living community residents with access to telemedicine-enhanced care than for those without this form of access.

4. Use qualitative methods to identify strategies and assets that promote and conditions that impede the implementation, acceptance, and success of the HeA telemedicine network in senior living communities. This knowledge will inform efforts to develop a toolkit to be used to disseminate this technology broadly.