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Review

# Acceptance and use of health information technology by community-dwelling elders☆

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ABSTRACT

*Objectives:* With the worldwide population growing in age, information technology may help meet important needs to prepare and support patients and families for aging. We sought to explore the use and acceptance of information technology for health among the elderly by reviewing the existing literature.
*Methods:* Review of literature using PubMed and Google Scholar, references from relevant papers, and consultation with experts.
*Results:* Elderly people approach the Internet and health information technology differently than younger people, but have growing rates of adoption. Assistive technology, such as sensors or home monitors, may help 'aging in place', but these have not been thoroughly evaluated. Elders face many barriers in using technology for healthcare decision-making, including issues with familiarity, willingness to ask for help, trust of the technology, privacy, and design challenges.
*Conclusions:* Barriers must be addressed for these tools to be available to this growing population. Design, education, research, and policy all play roles in addressing these barriers to acceptance and use.

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## 1. Introduction

The proportion of elderly adults is rising across the world, primarily due to increased life expectancy [1]. This demographic shift is creating many new challenges for healthcare systems. In the US, one notable measure known as the dependency ratio—the ratio of people 65 and older to every 100 people of traditional working ages—is projected to climb from 22 in 2010 to 35 in 2030 [2]. Although families have always had a role in the care of elderly, children and other family caregivers will need to shoulder an increasing burden of care for their loved ones who are at risk of experiencing functional and cognitive decline [3].

The complexity of modern healthcare coupled with the current dearth of good tools to support seniors and their families make information technology a promising aid for an aging population [4]. Health information technology may be able to help older people in independent living and to stay in their own homes longer and "will aid care delivery in an environment of a shortage of carers." [5] Improvements in communication, information transfer, mobile health and monitoring, and clinical data sharing all have potential to help seniors and their families manage their health at home [6]. In this paper, we review the literature on health information technology tools for the elderly and their families and caregivers, addressing challenges in acceptance of technology in general, HIT-specific barriers, and recommendations for the future. We look at the way the elderly approach information technology and how they might be different in their willingness to use this technology.

## 2. Methods

We reviewed the existing literature, beginning with a PubMed search for [("older adults" OR "elderly") AND ("Internet" OR "information technology")], which yielded 772 articles, including 106 reviews. We searched Google Scholar with the same search term and the additional word "health" to expand our reach beyond those journals indexed by PubMed, reviewing the first 100 results for additional relevant articles. Given the pace of change in technology, we limited our search results to the last 5 years, though key earlier examples were also cited if no newer research had been done. Abstracts were reviewed by an author (either S.F. or D.D.) and articles consistent with the aims of the review—addressing health IT interventions for the use of community-dwelling elderly or their caregivers—were read in their entirety. We then examined the relevant references in the articles we identified. We also consulted other known primary sources, such as the Pew Surveys [7–14] and Cochrane reviews [15]. Lastly, we consulted with geriatricians and IT researchers who have been working on the topic of health IT and the elderly for any relevant articles we may have missed. Many studies found were small, qualitative studies conducted in specific locations or specific disease populations. Selected articles are cited in this narrative review. The search strategy is diagrammed in Fig. 1.

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