

# Improving Outcomes in Complex Populations

Study Reveals the Benefits of  
Engaging Family Caregivers



# Human Touch, Technology & Clinical Protocols

**In 2015 AARP estimated that the U.S. is home to 44 million family caregivers who provide \$470b in unpaid care per year.**

## A combination that transforms care management in the home.

An American who turns 65 today can expect to live nearly 5 years longer than one who reached the same age in 1960. For many of today's elders, one outcome of a longer life is more years spent living with complex health conditions and the concomitant need for personal care. Many elders will choose to receive that care in their own homes for as long as they are able.

Home-based care is not only important because it reflects what the majority of elders actually desire - to age in place - but also because the health care system will increasingly depend on it. While today more long-term care is provided by community-based services and supports than at any point since the 1960s, demographics demand yet more progress. With roughly 10,000 Baby Boomers turning 65 each day and expecting to live well into their 80's, failing to address the cost of care will push the health system further toward financial peril. Shifting complex care to the lowest-cost setting, the home, represents a significant opportunity to reduce overall health care costs.

With elders living at home longer, family members are inevitably filling in to help. In 2015 AARP estimated that the U.S. is home to 44 million family caregivers who provide \$470 billion in unpaid care per year\* - a figure nearly matching what the government

\*Source: <https://www.aarp.org/content/dam/aarp/ppi/2015/caregiving-in-the-united-states-2015-report-revised.pdf>  
<https://www.sciencedirect.com/science/article/pii/S1064748112609518>

spent on Medicaid in that year. The services and supports family caregivers provide include help with activities of daily living (ADLs) like bathing, dressing and feeding, as well as nursing-like activities such as wound care and medication administration. While family caregivers operate out of love and sense of duty, many enter the role unexpectedly and are untrained. They are not equipped to effectively manage chronic conditions and complex care needs. This imbalance has created demand for home- and community-based care models that support and coach caregivers, helping them to be more effective, reliable, and safe.

Advances in digital communication are providing for new approaches that help to meet this demand by transforming care management in the home. While the home- and community-based services sector has been slower to adopt modern technologies than, for example, large hospitals, the tide is beginning to turn. Technologies that enable greater collaboration are being combined with updated methods of care management – in particular, ones that focus on supporting the family caregiver – to impact how millions of individuals with complex needs receive care.

A recent report by authors Anne Tumlinson, CEO, Anne Tumlinson Innovations and Founder of Daughterhood, and Jay V. Patel, Clinical Transformation Officer of Seniorlink, Inc., focuses on one such model for care management. The results describe a model that blends **human touch, technology, and clinical protocols** and allows elders to live at home longer by providing coaching and support for family caregivers. The study results reveal that the team-based, collaborative care model resulted in a significant decrease in healthcare utilization by participants, including hospitalizations and emergency department visits. As the report shows, it's a model that, when scaled to large populations, may yield significant financial savings for payers and providers.

## Meet Caregiver Nation\*

**44**  
million

caregivers in the United States

**60%**  
female

50 years old on average

**6 in 10** caregivers perform tasks known as “medical/nursing tasks” (injections, tube feedings, catheter and colostomy care)

**4 in 10** caregivers consider their caregiving situation to be “highly stressful”

**23%** higher risk of anxiety disorder among caregivers for patients with Alzheimer's disease





# A Home-Based

# Care Model

## Providing Human Touch with Technology

The subject of the study is a home-based care model that offers a coordinated approach to caregiving through the use of technology.

Since the majority of family caregivers have no formal training in medical care, they are not often equipped to face the complex challenges of caring for someone with multiple chronic conditions like diabetes, depression, or dementia, all of which lead to demanding physical and behavioral health care needs. A caregiver's effort may be Herculean, but without proper training he or she may still leave a loved one open to risk of certain adverse health events. The risks extend to the caregiver herself, as well. According to an AARP report, caregivers tend to be sicker than non-caregivers, and suffer from depression and anxiety at higher rates.\*

Seniorlink's care model provides each participating family with a team of trained care managers, nurses, and social workers. After initially evaluating the care recipient and the home environment, care team members visit the home at regular intervals and advise the caregiver on a range of topics such as condition-specific care, caregiver self-care, and access to services like respite care or food assistance. The proprietary technology platform offers the caregiver a way to connect with the care team each day, to communicate the health status of the care recipient and ask questions immediately as they arise.

\*Source: <https://www.aarp.org/content/dam/aarp/ppi/2015/caregiving-in-the-united-states-2015-report-revised.pdf>

The idea behind the model is that caregivers who are paired with an interdisciplinary care team can provide more thorough and informed care to their loved one. Through frequent contact, the coordinated model can help professionals identify risk factors in the home or subtle changes in behavior in the patient. **The caregiver serves as the “eyes and ears” in the home** on behalf of the care team, providing key surveillance, while the care professionals in turn provide an experienced, contextual perspective to the caregiver. Necessary interventions happen faster, and can be preventative, rather than reactive. When existing symptoms worsen or new ones arise, the care team can advise the caregiver on whether to go to the ER, both saving unnecessary trips and ensuring necessary ones are made without delay. The care team is also equipped to address gaps in care related to the social determinants of health, such as ensuring the presence of adequate food and heating oil.

Supported family caregivers may also feel less frustrated or helpless, creating a healthier environment. They may find they are more emotionally available to do the work of caregiving.

This is what Seniorlink’s home-based care model aims to accomplish: better outcomes for patients driven by caregivers who are confident, capable and informed.

## Building Confidence in Caregivers

In practice, having direct access to professional opinion in real time helps caregivers decide if they need to elevate the level of care with a trip to a hospital or physician’s office or if they are able to manage on their own. If a connected caregiver had a question about accessing care or a change in health, being able to reach out to a team who already knows the full context of their loved one’s conditions and can offer informed suggestions has proven highly valuable. With that kind of professional assessment and available support, caregivers learn the skills and gain the confidence to make more informed and accurate care decisions.

In short, those patients who had caregivers at home and a team of coordinated care managers accessible through a technology platform had significantly better health outcomes, including fewer negative events like falls, medication errors, or misread symptoms.



# Study

## Methodology

The Seniorlink study compared health outcomes for a population of patients with complex care needs in Massachusetts (1,846 total) and Indiana (101 total) enrolled in Seniorlink's home based care model to a similar population group of Medicare beneficiaries. Both groups were identified to have similar levels of functional decline, cognitive level (including dementia and psychiatric diagnosis), and medical complexity of their diagnoses and conditions.



Caregivers in Seniorlink's group submitted daily incident and medical services questionnaires that provided data for this study. These responses provided information about events including hospitalizations, emergency department visits, and falls. To submit electronic information, each caregiver had an electronic device that linked them to Seniorlink's proprietary technology platform.

For comparison, Seniorlink used the 2013 reported results from the Medicare Current Beneficiary Survey (MCBS) Cost and Use File. Information was compared and analyzed to develop a benchmark based on demographics and care needs. Subgroups were further identified based on behavioral needs (psychiatric diagnosis, Alzheimer's or dementia, or assistance with one or more activities of daily living [ADLs]); high complexity (no psychiatric or Alzheimer's, but needs assistance with three or more ADLs and had five or more chronic conditions); and low complexity (no psychiatric, Alzheimer's or dementia diagnosis, and fewer than five diagnosed chronic conditions, but needs help with one or two ADLs).

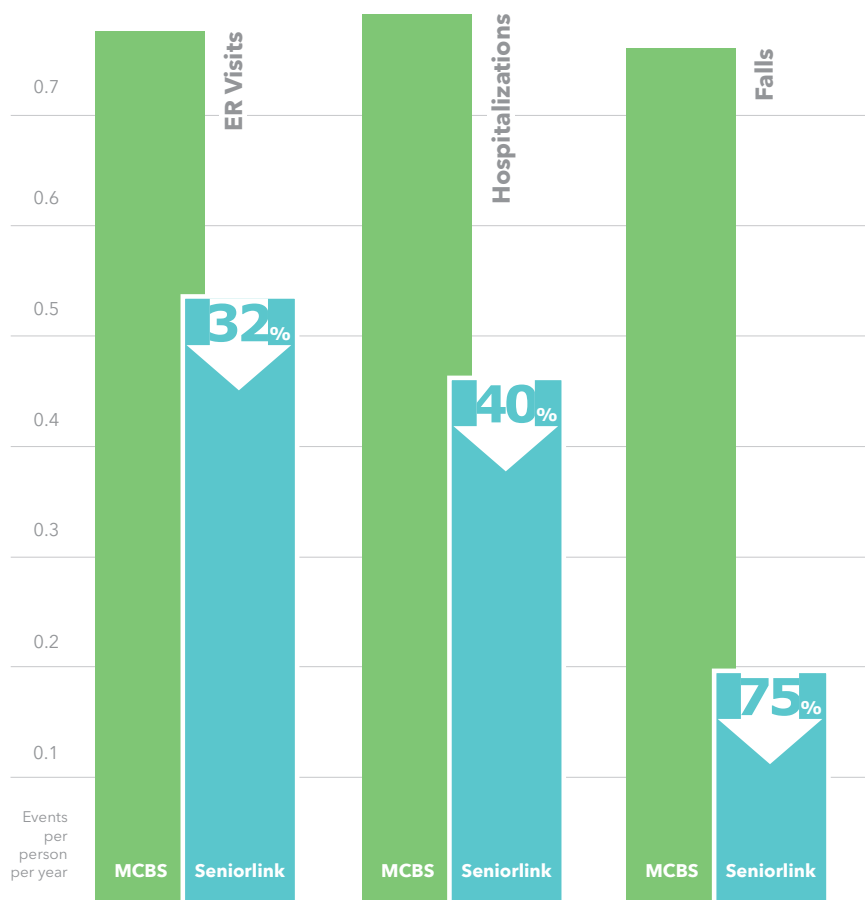
The outcomes of the Seniorlink population, including rates of falls, hospitalizations, and ER visits, were compared to this MCBS population.

**Responses provided information about events including hospitalizations, emergency room visits, and falls. To submit electronic information, each caregiver had an electronic device that linked them to Seniorlink's proprietary technology platform.**

# Results

## Medicare Current Beneficiary Survey (MCBS) vs. Seniorlink Study Population

Segment: age 65+, high complexity



### Study Method Details

Researchers analyzed information collected by Seniorlink staff for descriptive data on members of the Seniorlink population. Parameters assessed were:

- **Dementia and/or psychiatric diagnoses**
- **Functional limitations**
- **Chronic conditions**

Utilization data were gathered from caregiver responses to daily incident and medical services questionnaires that were submitted through a web-based platform. Caregivers were provided notebook computers to access the platform. Questionnaires reported:

- **Hospitalizations**
- **ER Visits**
- **Falls**

# The Cost-Saving Impact of

## Collaborative and Connected Health

According to the report,  
based on the average  
cost of emergency  
room visits and  
hospitalizations, the  
reduction in healthcare  
utilization and needs  
suggests a potential

**\$2.8**  
million

in savings per year for  
every 1,000 patients with  
similarly high needs,  
if a payer/provider  
organization were to  
implement a similar  
model.

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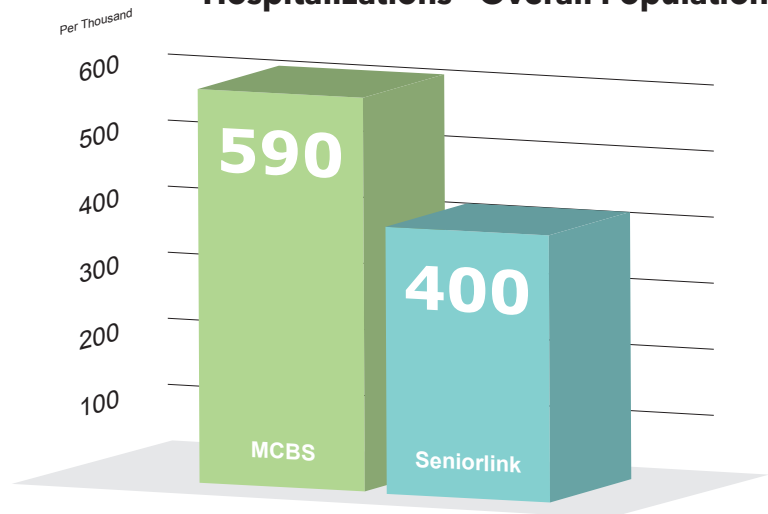
Cost Savings

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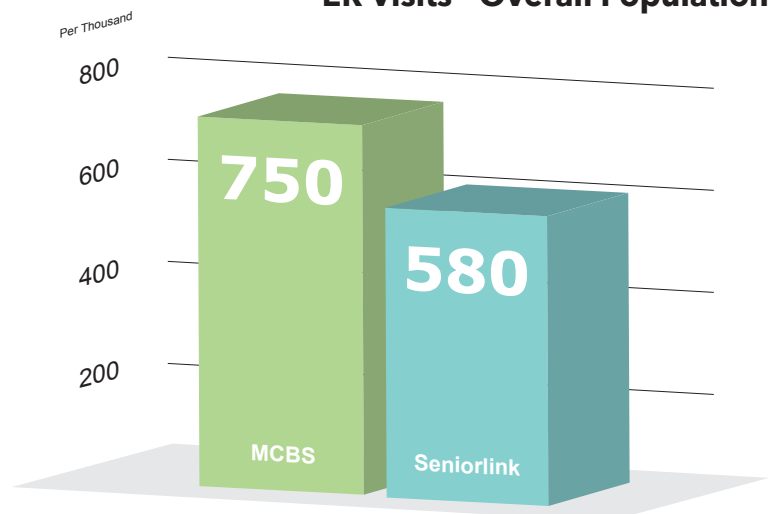
**\$2,540,000**  
Hospitalizations

**\$224,570**  
Emergency Room Visits

**Hospitalizations - Overall Population**



**ER Visits - Overall Population**



# Results

## Summary

The overall results show significant reductions in utilization of health care resources.

Seniorlink reported nearly one-third fewer hospitalizations and 23 percent fewer trips to the emergency department for the population studied. From these figures, Seniorlink estimated potential savings of \$2.8 million

per 1,000 patients who utilize a home-based care model that focuses on supporting family caregivers. In the cases where the individuals receiving care had the highest levels of complexity and were 65 years and older, the reductions in hospitalizations and emergency room visits were even greater: **reductions of 32% for ER visits and 40% for hospitalizations.**

In general, the Seniorlink sub-population had greater cognitive impairment and more disability than the similar Medicare benchmark group, including a higher proportion with Alzheimer's and other dementias. The population might have been better compared to a Medicaid-eligible cohort, but a lack of available data prevented such a comparison. In other words, the Seniorlink cohort had higher risk for events like the ones measured than the population it was compared to, making these results conservative.

The results offer risk-bearing payer and provider entities a strong example of how their members could be supported in a cost-efficient way that also improves outcomes and member satisfaction. Millions of family caregivers already provide care to the most complex and costly individuals at home. Rather than replacing that care, at great cost, with that of care professionals - either a home health aide or through facility-based care - the study shows it can be augmented with support and coaching. The results show the value payers and providers can derive by not just recognizing caregivers, but deputizing them as active members of the interdisciplinary care team.

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# The Promise and Potential of Collaboration Technology

The positive health outcomes and associated cost savings of care models like Seniorlink's are achievable in part due to advances in collaboration technology.

Seniorlink's newly released **Vela** care collaboration platform, for example, offers an extensive set of features to enable community-based care models to scale to serve large populations. Vela replaces a care team's dependency on inefficient phone calls and voicemails with modern, HIPAA-secure messaging capabilities, increasing a case manager's rate of reach from 20% to 90%. Case managers have the ability to message individuals, groups, or the entire care team at once, alleviating the inefficiency of siloed communication. They can share images, calendars, and files, as well as record and archive phone calls.

This kind of coordinated, asynchronous communication is essential to planning and delivering individualized, person-centered care plans and driving greater accountability among individual team members. It enables each care team member – including the caregiver – to be as efficient and effective as possible and minimize wasted time.

Broadly, the scalability of collaboration technologies like Vela will enable home-based care models to be brought to many more families across the country, with the potential to impact the economics of long-term care at a national scale.

**To learn more about Vela and Seniorlink's Care  
Collaboration Solutions, visit [www.seniorlink.com](http://www.seniorlink.com)**





[www.seniorlink.com](http://www.seniorlink.com) | 866-797-2333 | 120 St. James Ave | Boston, MA 02116

Seniorlink is a tech-enabled health services company transforming care management in the home. Our care collaboration solutions blend human touch and technology to connect care teams, family caregivers and patients. Seniorlink's team of compassionate, experienced professionals uses a proprietary platform, Vela, to encourage real-time collaboration among the extended care team that results in better outcomes at a lower cost.