

# EVALUATING THE ECONOMIC IMPACT OF AN INNOVATIVE COMMUNITY-BASED VOLUNTEER MODEL



## Lori's Hands Generates Value by Reducing Social Isolation

### Background

Community Care Corps (C3) is a groundbreaking initiative to provide volunteer-based nonmedical assistance to family caregivers, older adults, and adults with disabilities. The program's overarching goal is to help older adults and adults with disabilities live independently in their own homes. The Administration for Community Living (ACL) funds the program; Oasis, Caregiver Action Network, and USAging administer it; and Altarum evaluates its impact. C3 has funded 79 grants nationwide, helping them start or enhance volunteer programs.

### Research Objectives

Oasis and Altarum partnered to examine the economic costs and benefits of providing nonmedical volunteer assistance for two grantee organizations, Ascension Saint Agnes and Lori's Hands. The research aims to support efforts to sustain and expand nonmedical volunteer assistance programs. Using Ascension Saint Agnes and Lori's Hands as pilot case studies, we intend to create replicable analytic approaches that can be leveraged for other organizations nationwide.

In this brief, we focus on Lori's Hands and present preliminary findings on the economic impact of reducing social isolation among the people they serve, focusing on program expenditures and cost savings to Medicare and Medicaid.

### About Lori's Hands

Lori's Hands trains and equips volunteer college students to assist people living with chronic illnesses who are primarily older adults and people with disabilities. Volunteers provide nonmedical services, such as picking up prescriptions and groceries, doing laundry, offering technology training, facilitating connections with other community resources, and providing companionship, among other essential tasks. These services aim to help these individuals live with dignity and independence at home.

Volunteers provide various types of assistance, but in all cases, their companionship alone may reduce loneliness among clients. According to one recent qualitative study involving interviews with 19 clients, "Perhaps the most significant impact of Lori's Hands is its ability to provide companionship to clients who may be isolated." (Karpyn et al., 2019) A subsequent quantitative study of 109 clients using the UCLA Loneliness Scale showed that older adults reported less loneliness after engagement with students in the Lori's Hands program, reinforcing the qualitative results noted above. (Chan et al., 2020)

There is evidence that loneliness has wide-ranging adverse effects on health for older adults, including increased risk of stroke, dementia, heart attack, depression, anxiety, and premature death, (National Academies of Sciences, Engineering, and Medicine, 2020). In this analysis, we investigate the relationship between the impact of the Lori's Hands program on client loneliness and healthcare spending. Specifically, we conduct a benefit-cost analysis to estimate the extent to



which the cost of the program is offset by reduced Medicare spending on acute and long-term care and reduced Medicaid spending on nursing home care.

## Methods

To evaluate the costs and benefits of the companionship offered by Lori's Hands students to older adults, we follow a three-step approach. First, we measure the impact of Lori's Hands student volunteers on reducing loneliness among the elderly. Second, we estimate the cost savings to Medicare that result from this reduction in loneliness. Finally, we assess the effects of decreased loneliness on the likelihood of nursing home admission and its subsequent impact on Medicaid spending. We combine these findings with program costs to generate a benefit-cost ratio.



## Measuring Loneliness

Lori's Hands currently measures loneliness among program participants using the De Jong-Gierveld instrument. (De Jong-Gierveld and Van Tilburg, 1999) Participants who fill out the loneliness survey also indicate the duration they have received services.

Results of the De Jong-Gierveld survey questions are scored on a scale from 0 to 11, with higher numbers indicating a greater degree of loneliness. Based on a previous analysis (De Jong-Gierveld and Van Tilburg, 1999), individuals with a score of two or lower are deemed to be not lonely. To identify the impact of the Lori's Hands intervention on loneliness and Medicare spending on healthcare, we estimate the probability that an individual is not lonely among clients who have received any services and clients who are still awaiting services.

Similarly, the previous analysis by De Jong-Gierveld and Van Tilburg (1999) suggests that individuals with loneliness scores of 9 or greater are "quite lonely" (scores of 9 or 10) or "extremely lonely" (score of 11). To identify the impact of the Lori's Hands intervention on these higher levels of loneliness and associated Medicaid spending on nursing home care, we estimate the probability an individual is quite or extremely lonely among clients who have received any services and clients who are still awaiting services.

## Relating Lori's Hands Impact on Loneliness to Medicare Spending

A national study of older adults showed that "connected" older adults who lived at home had monthly fee-for-service Medicare costs that were \$134 lower than "isolated" adults in 2012. (Flowers et al., 2017) These savings stemmed



primarily from reduced inpatient care and nursing home utilization. To calculate the effect of program participation on Medicare spending, we assume that individuals who are categorized as "connected" in the Flowers study would also be considered "not lonely" in Lori's Hands survey data.

#### [Relating Lori's Hands Impact on Loneliness to Medicaid Savings in Nursing Home Care](#)

Quantitative evidence of the impact of loneliness as a risk factor for nursing home admission has been documented by Russell et al. (1997) for a rural elderly population in the United States. After controlling for numerous covariates, Russell observed that individuals with "extreme loneliness" were significantly more likely to be admitted to a nursing home within the four years following the loneliness assessment than those with lower scores. Using data from the Russell paper, we estimate individuals assessed as highly lonely have a nursing home admission rate of 32.5% within four years, versus an admission rate of 10.8% for those who are not highly lonely, a difference of 21.7 percentage points. The Russell study indicates that the average time between loneliness assessment and nursing home admission is 2.5 years for those entering a nursing home within 4 years after assessment.

We assume that "extremely lonely" individuals would be categorized as "quite" or "extremely lonely" on the De Jong-Gierveld scale. Based on this assumption, we estimate the impact of Lori's Hands participation on the frequency of high loneliness and subsequently evaluate the program's effect on nursing home admission. To estimate the Medicaid cost savings associated with nursing home admission, we use data provided by the American Council on Aging (2021) for the average Medicaid cost for a semi-private room in a nursing home in Delaware (where the Lori's Hands Newark program is located).



## Results

### Savings to Medicare

Results from the De Jong-Gierveld survey of Lori’s Hands participants indicate that 14.2% of participants who have not yet started the program score as “not lonely”, whereas 36.5% of those with any program experience score as “not lonely”, an increase of 22.2 percentage points (the discrepancy is due to rounding). These results are highly statistically significant ( $p < .001$ ).

We assume that eliminating loneliness for a Medicare beneficiary saves an average of \$134 per month in Medicare expenditures, or \$1,606 per year in 2012 dollars. After adjusting for inflation to using Altarum’s Health Care Price Index, this figure becomes \$1,911 in 2022 dollars. Applying these savings to the 22.2 percentage point decrease in the proportion of Lori’s Hands population that is lonely results in an average Medicare savings of \$425 per Lori’s Hands client.

### Medicare Cost Savings from Lori’s Hands Program Participation

Probability of Not Being Lonely Without Services	14.20%
Probability of Not Being Lonely Following Any Services	36.50%
Percentage Point Difference	22.20%
Annual Medicare Savings Per Not Lonely Adult	\$1,911
Lori’s Hands Annual Medicare Savings Per Client	\$425

### Savings to Medicaid in Nursing Home Care

Results from the De Jong-Gierveld survey of Lori’s Hands clients indicate that 26.3% who have not yet started the program score as severely or quite lonely, versus 18.8% of those receiving services, a decrease of 7.6 percentage points (the discrepancy is due to rounding). These results are approaching statistical significance ( $p = .158$ ) and show some evidence of an effect. (The lack of significance is likely attributable to the small sample size in the Lori’s Hands data.) If we apply these results to those from the Russell paper, we find that Lori’s Hands clients who have received services are 1.64% less likely to be admitted to a nursing home in the next four years as compared to clients awaiting services.

Data from the American Council on Aging (2021) indicates that annual out-of-pocket nursing home costs for a semi-private room in Delaware averaged \$147,278 in 2021. Inflating this value using Altarum’s Health Care Price Index for nursing care facilities yields a cost of \$151,696 in 2022 dollars. On average, Medicaid pays 70% of the out-of-pocket rate,



for an annual Medicaid cost of \$106,187. Discounting the resultant value at 3% per year (to account for the time value of money) and assuming subsequent nursing home admissions occur in 2.5 years on average results in annual savings to Medicaid of \$98,602 for each avoided nursing home admission by Lori’s Hands clients. After accounting for the decreased likelihood of nursing home admissions (1.64), the overall impact of these savings is \$1,621 per Lori’s Hands client.

### Medicaid Cost Savings on Nursing Home Care from Lori’s Hands Program Participation

Probability of Being Quite or Severely Lonely Without Services	26.30%
Probability of Being Quite or Severely Lonely with Services	18.80%
Percentage Point Difference	7.60%
Probability of Nursing Home Admission for Older Adults Who Are Severely or Quite Lonely	32.50%
Probability of Nursing Home Admission for Older Adults Who Are Not Severely or Quite Lonely	10.80%
Percentage Point Difference	21.70%
Decreased Probability of Nursing Home Admission from Lori's Hands Services	1.60%
Estimated Cost of Nursing Home Placement Per Resident per Year	\$98,602
Lori’s Hands Annual Medicaid Savings on Nursing Home Care Per Client	\$1,621

### Overall Costs and Benefits

The Lori’s Hands Newark chapter reports annual operating costs of \$175,100 and serves 162 clients. Therefore, the total Medicare cost savings on healthcare generated by the program are \$68,860, and the total cost savings to Medicaid on nursing home care alone are \$262,588, for total savings of \$331,448 to the two programs. The net benefit of the Lori’s Hands program is, therefore, \$156,348, which amounts to a benefit-cost ratio of 1.89. In other words, for every dollar invested in Lori’s Hands yields a benefit to Medicaid and Medicare of \$1.89.



## Overall Costs and Benefits

Program Costs	\$175,100
Population Served	162
Total Medicare Cost Savings on Healthcare and Long-Term Care	\$68,860
Total Medicaid Cost Savings on Nursing Home Care	\$262,588
Total Medicare and Medicaid Cost Savings	\$331,448
Net Benefit to Medicare and Medicaid	\$156,348
Benefit-Cost Ratio	1.89

## Conclusion

### Summary of Findings

Our analysis demonstrates that Lori's Hands student volunteer services likely lead to significant savings to both Medicare and Medicaid. These savings are associated solely with the lower levels of loneliness experienced by Lori's Hands participants, relative to individuals who have not yet entered the program.

### Limitations

This study has several limitations. First, the Flowers study used a measure of social isolation rather than of loneliness to predict Medicare savings. While the two concepts are closely related, they are not the same (not all isolated people are lonely and not all lonely people are socially isolated). Research suggests, however, that the two concepts have overlapping and similar effects on health (Singer 2018). Similarly, the Russell study used a version of the UCLA Loneliness Scale that differs from the De Jong-Gierveld scale that Lori's Hands uses. However, De Jong-Gierveld and Van Tilburg summarize analyses that suggest a strong correlation between the two scales.

Additionally, our estimates were based solely on Medicare Part A and B spending, and nursing home care for Medicaid. Most of Lori's Hands clients were low-income older adults and were likely enrolled in these programs, but some may not have been. As a result, the actual cost savings and how they were distributed among clients may have varied depending on the public and private payers clients used.

Our analyses have also not fully accounted for the economic benefits of the Lori's Hands program. Our analyses exclude savings on Medicare prescription drug expenses, and other services that student volunteers provide (e.g., nutrition



counseling and home maintenance) may provide further benefits to participants' health and well-being, with corresponding cost savings.

Despite these limitations, our analysis suggests likely potential savings to society in health care costs that might more than offset the cost of the Lori's Hands program.

### Implications

The results of the study show that Lori's Hands and other C3 programs have a positive effect on the well-being of their clients. We found that the student volunteers from Lori's Hands make a significant difference in reducing loneliness among their clients, potentially leading to better health outcomes and a lower risk of illness. This, in turn, may result in lower service utilization, including a reduced risk of nursing home admission, which can translate into substantial cost savings for Medicare and Medicaid. In summary, the volunteer efforts of Lori's Hands and other C3 grant recipients can help improve the health and long-term care of older adults and people with disabilities by fostering community and intergenerational connections.



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**Authors:** Stephen McCall, MPA; George Miller, PhD; Zainab Khan, MPH; Helen Dawson, MPH, Altarum Institute; Sara Paige, OT, PMP, Oasis.

**Contact:** Stephen McCall, Long Term Care Senior Analyst, Altarum, [stephen.mccall@altarum.org](mailto:stephen.mccall@altarum.org)

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