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Estimating The Potential Cost Savings From The New York University Caregiver Intervention In Minnesota

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ABSTRACT No therapies are known to substantially alter the course of dementia and associated treatment costs. However, enhanced support services for caregivers of people with dementia have been shown to improve caregivers' capabilities and well-being and delay patients' institutionalization. Using a model that simulated disease progression, place of residence, and direct costs of care, we estimated the potential savings to Minnesota from offering the New York University Caregiver Intervention, a program of enhanced support services for spouse and adult child caregivers of community-dwelling people with dementia, to all eligible people in the state from 2010 to 2025. Results indicate that approximately 5 percent more people with dementia would remain in the community from year 3 (2013) on and that 19.3 percent fewer people with dementia would die in institutions over fifteen years. During those years Minnesota could save $996 million in direct care costs (with a range of nearly $100 million to $2.64 billion under worst- and best-case scenarios, respectively). These findings suggest that broader access to enhanced caregiver supports could produce a positive return on investment or be cost-effective—assuming widespread implementation, reasonable program costs, and substantial caregiver participation.

The burden of dementia is widely documented and increasingly recognized by policy makers. Estimates of the prevalence of dementia in the United States vary. However, few researchers and policy makers doubt that the number of people affected is already large and is increasing as the population ages.[1] One estimate is that 14.7 percent of people ages seventy and older, or approximately 4.1 million people nationwide, had dementia in 2010.[2]

Annual direct health care costs for this population that were attributable to dementia have been estimated at $109 billion.[2] Thus, expenditures for dementia are near those for heart disease and much higher than expenditures for cancer. Expenditures for dementia are projected to more than double by 2040.[2]

Recognition of this burden led Congress to pass and President Barack Obama to sign the National Alzheimer's Project Act of 2011. The act required the creation of a national strategic plan to address the escalating crisis of Alzheimer's disease and to coordinate efforts to combat the disease across the federal government.[3]

Even in an era of limited research resources, the National Institutes of Health distributed $45 million in new funding in 2013 to support innovative studies of Alzheimer's disease.[4] Furthermore, the fiscal year 2014 budget included an increase of $122 million for Alzheimer's research, education, outreach, and caregiver support.[5]

More than forty states are developing their own Alzheimer's disease plans, which are in various stages of implementation.[6] The ACT on Alzheimer's Collaborative was founded in Minnesota in 2011 with the goal of implementing legislative recommendations to prepare the state for the personal, social, and budgetary impacts of dementia.

One of the collaborative's five leadership groups seeks to identify and encourage investment in promising approaches to reduce the costs and improve the quality of care for Alzheimer's patients. This leadership group commissioned an economic model to estimate the cost-saving potential of proven interventions in Minnesota.

The group convened several times to discuss the evidence, based on a systematic literature review, about tested interventions. Pharmacologic options initially held great promise to delay the disease's progression and manage patients' behavioral symptoms. However, more recent reviews have suggested that such options are more likely to be supportive or palliative than capable of altering disease progression and can have adverse effects. Thus, their use remains somewhat controversial.[7–10] Even if pharmacologic options are effective, they have a substantial cost and are not likely to be cost-saving or even cost-effective.[7,10]

A growing body of literature demonstrates that nonpharmacologic treatments are effective in ameliorating behavioral and psychological symptoms in people with dementia and reducing distress in their caregivers.[9,11,12] Positive results have been observed in multiple controlled and translational studies in clinical and community settings.[11,12]

The primary care setting, where many people with dementia are diagnosed, has been the focus of collaborative care models designed to integrate dementia treatment guidelines more effectively into clinical care. These models have been shown to improve the quality of care, and research suggests that they reduced the use of acute care in the short term.[13–15] However, the short durations of the studies make it difficult to know whether the models would have sustained economic benefits. And, as Laura Gitlin commented in a recent meta-analysis of nonpharmacologic treatments, "cost analyses for almost all of the included interventions are woefully missing."[9(p895)]

Models of community-based caregiver support that include education and support programs for informal—that is, unpaid—caregivers for people with dementia have demonstrated multiple benefits. Some of the programs that have been studied have multiple components, combining individual counseling, family sessions and support, and ongoing ad hoc assistance to the caregiver. These programs aim to educate caregivers about dementia, involve the family to support the primary caregiver, and provide the caregiver with tools to cope with the behavioral symptoms that often accompany the progression of disease. Repeatedly documented benefits include reduced levels of caregiver stress and depression, reduced time spent caregiving, and delayed residential placement of the person with dementia.[16–20]

Formal economic evaluations of enhanced caregiver support interventions were not available. However, the ACT on Alzheimer's Collaborative leadership group reasoned that because the cost of residential care can greatly exceed the cost of community-based care, these interventions currently offer the greatest chance for savings in the long term.

New York University Caregiver Intervention

Delayed residential care placement as a result of enhanced caregiver support was repeatedly observed in the New York University Caregiver Intervention (NYUCI), which was originally implemented at the NYU Langone Medical Center.[16,21,22] In the final analysis of the NYUCI randomized controlled trial, 406 spouse and adult child caregivers of people with dementia living in the New York metropolitan area were randomly assigned to receive either enhanced support services or usual services and were followed for up to eighteen years.[16] Of the spouse and adult child caregivers, 60 percent were female, and their average age was seventy-one. Few of the caregivers had minority ethnic backgrounds.

Enhanced support services consisted of six sessions of individual and family counseling within four months of enrollment in the NYUCI, encouragement to participate in an ongoing weekly support group, and ad hoc telephone counseling as needed for an indefinite period. Counseling sessions were tailored to meet the needs of the spouse caregiver and family. The trial demonstrated improved caregiver well-being and capabilities and an estimated median delay of 557 days before the person with dementia was placed in a residential facility.[16]

A recent adaptation of the NYUCI to adult child caregivers in Minnesota also demonstrated substantial delays in residential placement.[17] The NYUCI model has been implemented in multiple demonstration projects, including the Family Memory Care Program in fourteen urban and rural sites in Minnesota.[12,23] This made the

NYUCI model of care familiar to the leadership group of the ACT on Alzheimer's Collaborative and a likely candidate for statewide implementation.

Another randomized trial, Resources for Enhancing Alzheimer's Caregiver Health II, or REACH II, failed to confirm delayed residential placement with a similar program of enhanced caregiver support.[20] However, the limited follow-up period in that trial made it difficult to detect a longer-term effect. Thus, the leadership group requested that the economic model it commissioned estimate the potential for savings in care costs of the NYUCI for all Minnesota adult caregivers of people with dementia living in communities throughout the state. ACT leaders asked what the health system could save during fifteen years—not taking program costs into account—if this model of enhanced caregiver services were widely available to caregivers of people with dementia and used statewide.

Study Data And Methods

We developed a population-based Markov model to simulate disease progression and place of residence of Minnesotans ages 65–100 with Alzheimer's disease or other dementias. The model tracked people as they moved through discrete health states and accumulated costs during a period of fifteen years under two scenarios: with enhanced caregiver supports, in which their spouse or adult child caregivers participated in the NYUCI; and with usual services only—that is, without enhanced caregiver supports in the form of the NYUCI.

The model was designed to assess the potential cost savings associated with the NYUCI without incorporating variable implementation factors such as program and marketing costs and less-than-complete participation rates. The model's development was informed by the literature on the epidemiology, natural history, costs, and evidence-based management of dementia.[24–31] The online Appendix provides further details on the model's specifications.[32]

HEALTH STATES Our model included three discrete Markov health states: living in the community, being institutionalized in a residential care facility (a nursing home or assisted living facility), and dead. The eligible population included people with dementia who all initially lived in the community with a spouse or adult child caregiver. Based on severity-specific annual probabilities of transitions between health states, the model projected and tracked from 2010 to 2025 the number of people who remained in the community and their associated costs of care; the number who required residential placement, thereby incurring additional facility fees; and the number who died.

Enhanced caregiver support is a promising way to moderate the growing economic burden of dementia.

PREVALENCE AND INCIDENCE OF DEMENTIA IN MINNESOTA To estimate the number of people with dementia, we applied to state population trends the prevalence and incidence rates that the Rochester Epidemiology Project observed in Rochester, Minnesota.[24–26] We adjusted rates upward to account for Rochester's educational level, which is higher than the state average, because that level is known to be inversely correlated with the risk of dementia.[27]

We also adjusted the rates upward to account for a documented bias that might be associated with improved recognition of dementia in clinical practice since the early 1990s, when the Rochester Epidemiology Project's rates were estimated, for cases that might have been missed because of the project's reliance on medical records alone to identify people with dementia, or both.[28] An additional discussion of prevalence rates can be found in the online Appendix.[32]

We distributed the estimated prevalence across disease severity (mild, moderate, severe) as observed in the Canadian Study of Health and Aging, and we assumed that incident—that is, newly diagnosed—cases were of mild severity.[29] Exhibit 1 shows the estimated numbers of community-dwelling Minnesotans with dementia living with an adult caregiver by severity used in the primary-case (standard model assumptions) and alternative-case (alternative model assumptions) analyses. The model assumed that incidence rates remained constant over time; the increase in the number of incident cases reflected the projected demographic changes in the state's population.[33]

TRANSITION PROBABILITIES Minnesota residents with dementia in our model had an annual likelihood of moving among the defined health states based on the estimated probabilities of disease progression, residential placement, or dying. We based the likelihood of disease progression and residential placement on analyses of the Consortium to Establish a Registry for

EXHIBIT 1

Estimated Prevalence Of People With Dementia Living In The Community With A Spouse Or Adult Child Caregiver In Minnesota Who Were Eligible For The New York University Caregiver Intervention (NYUCI), 2010, And Incidence Of Dementia In Selected Years 2011–2025

	Primary-case analysis (20% upward adjustment)	Alternative-case analyses, with adjustments of:		
		15% upward	25% upward	50% downward
PEOPLE ELIGIBLE FOR NYUCI, 2010				
Mild dementia	14,359	13,761	14,958	7,180
Moderate dementia	13,641	13,073	14,210	6,821
Severe dementia	2,872	2,752	2,992	1,436
Total	30,872	29,586	32,160	15,437
ANNUAL INCIDENCE OF DEMENTIA IN MINNESOTA, SELECTED YEARS				
1 (2011)	5,913	5,667	6,160	2,957
5 (2015)	6,496	6,226	6,767	3,248
10 (2020)	7,493	7,090	7,706	3,699
15 (2025)	8,711	8,348	9,074	4,356

SOURCE Authors' analysis of data from the following sources: (1) Kokmen E, et al. Time trends in the prevalence of dementia and Alzheimer's disease in Rochester, Minnesota (Note 24 in text); (2) Knopman DS, et al. Incidence and causes of nondegenerative nonvascular dementia (Note 25 in text); (3) Minnesota Department of Administration. Dataset (Note 26 in text); (4) Meng X, D'Arcy C. Education and dementia in the context of the cognitive reserve hypothesis (Note 27 in text); (5) Minnesota Population Center. National Historical Geographic Information System, version 2.0. Minneapolis, MN: University of Minnesota; 2011; (6) Knopman DS, et al. Passive case-finding for Alzheimer's disease and dementia in two U.S. communities (Note 28 in text); (7) Graham JE, et al. Prevalence and severity of cognitive impairment with and without dementia in an elderly population (Note 29 in text). **NOTES** People eligible for the NYUCI were ages 65–100 living in the community with a spouse or adult child caregiver. All incident cases were assumed to be of mild severity. The primary-case analysis assumed that all eligible caregivers participated in the NYUCI, and it reflected a 20 percent upward adjustment for potentially improved recognition of dementia in clinical practice since rates of disease were assessed in the 1990s. The alternative-case analyses with upward adjustments used different percentages to reflect potentially improved recognition of dementia. The alternative-case analysis with a 50 percent reduction, relative to the primary-case analysis, reflected a lower prevalence of dementia recognized in primary care settings.

Alzheimer's Disease (CERAD) database.[30,34]

CERAD enrolled 1,145 patients with Alzheimer's disease from twenty-two academic medical centers between 1986 and 1995, and its data have been widely used in health economic evaluations of dementia care.[35–37] The members of this relatively large and fairly diverse enrolled population receive annual assessments. CERAD data enable reliable estimates of severity-specific transition probabilities before enhanced caregiver interventions became widely available.

We assumed, as has been observed in CERAD and other Alzheimer's disease registries, that residential placement rates increased by disease severity but did not differ by duration within a given disease stage.[30,38] No data similar to those in the CERAD database were available for patients with dementias other than Alzheimer's disease. Thus, we assumed that the rates of transitions as observed in the CERAD data applied to all people with dementia.

We reduced the probability of permanent residential placement for people whose caregivers received enhanced services, according to the results observed in the NYUCI randomized trial that was conducted at the NYU Langone Medical Center. This trial is by far the largest and longest application of enhanced caregiver support to date.[16]

We adjusted the CERAD-based probabilities of residential placement for the 28.3 percent reduced risk of placement compared with usual-care controls reported for the NYUCI. We varied this effect size based on the variability in estimated risks in the alternative-case analyses (Exhibit 2).

We based the annual probability of death on statewide mortality rates calculated by the Center for Health Statistics, Minnesota Department of Health, to conform to the model's specifications. In our primary-case analyses we assumed a differential mortality of 1.5 for moderate dementia and adjusted for mild and severe disease based on the estimated likelihood of death by severity in the CERAD data.[30] We assumed that mortality was unaffected by the NYUCI.

COSTS We estimated direct costs for people with dementia by residence (community versus residential facility) based on analyses of the Medicare Current Beneficiary Survey (MCBS).[31] The costs were those for medical care and the use of nursing homes and assisted living facilities across payer types (including out-of-pocket expenses). We adjusted these costs to reflect prices in Minnesota and stratified them by disease severity.[39,40]

The estimated annual direct costs for people with dementia living in the community were

EXHIBIT 2

Estimated Annual Probabilities Of Residential Placement For People With Dementia In The Community, With And Without The New York University Caregiver Intervention (NYUCI)

Level of dementia		Probability of transition			
			With NYUCI		
				Alternative-case analyses	
In community (starting status)	In residential facility[a] (transitioned status)	Without NYUCI	Primary-case analysis	Larger NYUCI effect	Smaller NYUCI effect
Mild	Mild	2.33%	1.68%	1.26%	2.24%
	Moderate	1.22	0.88	0.66	1.17
	Severe	0.16	0.12	0.09	0.15
Moderate	Moderate	6.22	4.53	3.53	5.97
	Severe	3.73	2.72	2.06	3.58
Severe	Severe	21.90	16.38	12.59	21.14

SOURCE Authors' analysis of data from the following sources: (1) Mittelman MS, et al. Improving caregiver well-being delays nursing home placement of patients with Alzheimer disease (Note 16 in text); (2) Neumann PJ, et al. Measuring Alzheimer's disease progression with transition probabilities (Note 30 in text). **NOTES** The alternative-case analyses reflected larger and smaller effects of the NYUCI based on the 95% confidence interval for the adjusted risk of residential placement observed in the NYUCI (see Note 16 in text). [a]Assisted living facility or nursing home.

$16,177 for mild dementia, $20,643 for moderate dementia, and $32,213 for severe disease. The corresponding estimates for people with dementia in residential facilities were $43,299, $55,253, and $86,221. The NYUCI did not assess direct health care costs. Therefore, we assumed that these MCBS-based annual costs per person with dementia were not affected by the NYUCI.

ANALYSIS In our model, people with dementia progressed through the three health states—incurring costs over a period of fifteen years—under the two scenarios described above. Our analyses projected and compared population-level direct costs by year of follow-up, discounted 3 percent annually.

The model tracked outcomes by sex and age group for subgroup analyses. In addition, we performed several alternative-case analyses to test the strength of the results.

LIMITATIONS Assembling the multiple parameters required for our model entailed making several assumptions and therefore imposed limitations on our results. Rates of dementia prevalence and incidence show considerable variation, likely based on trends in clinical diagnosis, methods of ascertainment, sampling strategies, and varying access to health care.[1,28]

We performed adjustments and analyses using alternative rates of disease detection. However, the current and future rates of clinically diagnosed cases of dementia (as opposed to cases identified by proactive screening) in Minnesota remain uncertain.

Furthermore, rates of dementia increase with age but are generally considered to be unchanging over time. Our model followed this consensus. Recent studies from Europe have raised the possibility that rates are declining.[41] No recent US studies exist, but if rates are decreasing, our estimated savings are exaggerated.

Residential placement rates based on CERAD data may not apply across Minnesota, even though CERAD enrolled patients from national academic medical centers. Nonetheless, we assumed that transitions to nursing homes for patients with Alzheimer's disease found in CERAD data applied to all people with dementia and to other institutional settings. The impact of these assumptions on our results is unclear.

For estimated direct costs, our model assumed that future patterns of care would remain similar to current ones. If the relative difference in costs between community- and facility-based care changed, our results would differ.

People with dementia who remain in the community with the NYUCI might incur marginally greater costs for support services than the average community-dwelling person with dementia as assessed in the MCBS. If that were the case, our estimated savings would be overstated. However, our results might be conservative since the NYUCI (and therefore our model) did not assess the potentially cost-saving impact of reduced use of emergency departments, hospitals, and pharmaceuticals that might occur with enhanced caregiver support.[14]

The NYUCI did not assess the impact of enhanced caregiver supports on the hours spent by informal caregivers. Furthermore, no consensus exists regarding methods to value this caregiver burden. Thus, we chose to focus only on direct costs and omitted the substantial indirect costs associated with care provided by informal caregivers.[2] If time spent caregiving was greatly reduced in the NYUCI, as was observed in REACH II, then inclusion of these indirect costs would increase our estimated cost savings.[18]

We also did not consider the indirect effects on caregivers of reduced depression and associated health care costs.[42] Nor did we perform a cost-effectiveness analysis that incorporated the potential effects on mortality and quality of life associated with delayed residential placement. Including these additional caregiver outcomes, as well as mortality and quality-of-life effects for the person with dementia, might demonstrate different types of NYUCI benefits.

Study Results

Our model predicted a 38.6 percent increase in the prevalence of people with dementia in Minnesota from 2010 to 2025 who initially lived in the community with a spouse or adult child caregiver. Exhibit 3 shows the proportion of our population in each health state with and without the NYUCI for selected years of follow-up.

With the NYUCI, the proportion of people with dementia remaining in the community increased by approximately 5 percent at year 3, compared to the results without the NYUCI, and that difference persisted in years 5, 10, and 15. For instance, the proportion of people remaining in the community increased from 60.5 percent to 65.4 percent, from 58.4 percent to 63.3 percent, and from 59.4 percent to 64.0 percent in years 5, 10, and 15, respectively (Exhibit 3). In addition, the number of people who died in an institution from 2010 to 2025 decreased from 32,897 to 26,557 a 19.3 percent reduction with the NYUCI. However, the number of people who died in the community during these fifteen years increased from 64,137 to 70,286, a 9.6 percent increase with the NYUCI (data not shown).

The estimated cumulative population-level potential cost savings associated with the NYUCI were substantial. They increased from $289 million after five years to $996 million after fifteen years (Exhibit 4). At the population level, estimated savings with the NYUCI in residential placement costs after fifteen years were partially offset by the higher costs estimated for the care of people with dementia in the community, because of the higher proportion of community-dwelling patients and no assumed savings in per person costs with the NYUCI.

Analyses by age group suggested that the cumulative savings would be highest for people with dementia ages 75–84 ($432 million), reflecting projected population trends for Minnesota. In addition, cumulative savings would be higher for women than for men ($616 million versus $380 million).

We performed alternative-case analyses on the variables and methods of greatest uncertainty. The variability in estimated cost savings was most affected by the NYUCI's effect size and the assumed prevalence and incidence of eligible people with dementia.

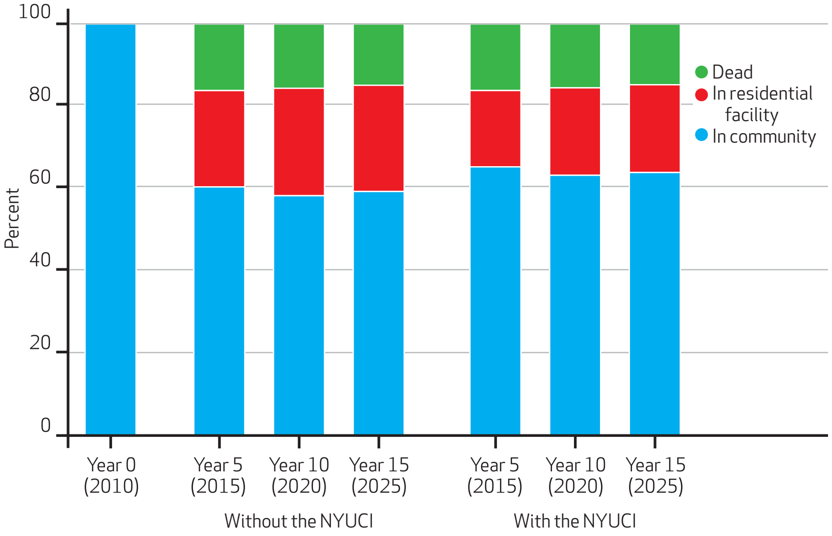
For instance, we varied the NYUCI effect based on the estimated 95% confidence interval for the risk of residential placement.[16] The potential (undiscounted) savings with the NYUCI differed from $135 million to $2.3 billion, compared to the primary-case analysis (undiscounted) result of $1.24 billion. Similarly, we assumed a 50 percent reduction in the prevalence and incidence of dementia, to reflect a lower prevalence of dementia recognized in primary care settings—where most people with dementia would be offered a chance to participate in the NYUCI. In that case, the estimated (undiscounted) savings were reduced to $608 million.

We constructed best- and worst-case scenarios by varying several model inputs simultaneously. The best-case scenario assumed higher numbers of people with dementia, a lower mortality rate, and a larger intervention effect, and it did not discount costs. In contrast, the worst-case scenario assumed lower numbers of people with dementia, a higher mortality rate, a smaller intervention effect, and a higher discount rate for costs, compared with the primary-case analysis.

Potential savings in these best- and worst-case

EXHIBIT 3

Distribution Of Three Health States Among People With Dementia In Minnesota Eligible For The New York University Caregiver Intervention (NYUCI), By Year



SOURCE Authors' analysis of model results. **NOTE** People eligible for the NYUCI were ages 65–100 who initially were living in the community with a spouse or adult child caregiver.

EXHIBIT 4

Potential Cumulative Direct Cost Savings With New York University Caregiver Intervention (NYUCI) For People With Dementia In Minnesota, By Year

	Cumulative savings for people with dementia ($)		
Year	**All**	**In residential facility[a]**	**In community**
5 (2015)	288,964,986	461,172,862	−172,207,876
10 (2020)	673,127,779	1,072,761,818	−399,634,039
15 (2025)	996,033,190	1,618,120,046	−622,086,856

SOURCE Authors' analysis of model results. **NOTES** Direct costs (in discounted 2011 dollars) are medical and facility costs. Positive dollar values indicate potential population-level savings with NYUCI compared to without NYUCI. Negative dollar values for people living in the community indicate higher population-level costs with NYUCI compared to without NYUCI because more people with dementia remained in the community. [a]Assisted living facility or nursing home.

scenarios were estimated at $2.64 billion and at nearly $100 million, respectively, driven largely by the variation in the assumed NYUCI effect. (See the online Appendix for further details and complete results from the alternative-case analyses.)[32]

Discussion

A key question for policy makers is how to reduce the massive increase in dementia-related expenditures that is anticipated as the US population ages. Our study demonstrates that if a program providing multicomponent support for informal caregivers of community-dwelling patients with dementia were widely available and used, it could lead to substantial savings in direct health care spending. That would be the case even if there were no major breakthrough in the prevention or treatment of dementia.

Our model projected $996 million in cumulative savings in direct costs over fifteen years in Minnesota. This estimate was highly sensitive to alternative assumptions. Nonetheless, the savings remained substantial in alternative-case analyses, ranging from $100 million to $2.6 billion.

The estimated savings were driven by the demonstrated effectiveness of the NYUCI in delaying residential placement. In addition to offering a potential financial benefit for payers and society at large, that delay is concordant with the wishes of most people with dementia and their caregivers to avoid or delay residential placement. Consistent with this scenario, our model projected that after fifteen years of having the NYUCI available statewide, 19.3 percent fewer people with dementia would die in institutions.

Several studies have estimated the expenses attributable to dementia, but estimates of the economic impact of nonpharmacologic interventions are rare. David Weimer and Mark Sager simulated the early identification of Alzheimer's disease combined with pharmaceutical treatment and caregiver support in Wisconsin and found the approach fiscally attractive.[43] However, the efficacy of drug treatment remains controversial, and Weimer and Sager assumed that caregiver support was equally effective in cases identified by proactive screening—which is not the standard of practice in most clinical settings—and in clinically diagnosed cases. To our knowledge, ours is the only model to estimate the population-level cost savings of enhanced caregiver support under current practices of identifying patients with dementia.

The observed sensitivity of our results to the assumed NYUCI effect size raises the issue of the NYUCI's generalizability. Treatment in an urban university hospital setting among caregivers of limited ethnic diversity may differ in effectiveness from treatment applied statewide. Cultural, demographic, and socioeconomic factors such as interest in counseling and levels of education and income may alter rates of program completion and, ultimately, residential placement.[23]

However, substantially delayed residential placement with the NYUCI was observed not just in the New York metropolitan area with spouse caregivers, but also in Minnesota with adult child caregivers. This suggests that the NYUCI may be generalizable to other populations.[17]

We designed our model to investigate savings under the assumption of widespread program availability and complete participation, without factoring in program costs, so we could determine whether sufficient economic potential existed to warrant analyses of return on investment. The sensitivity of our estimated savings to the assumed NYUCI effect size and number of participants suggests that actual savings in Minnesota could differ greatly depending on the fidelity with which the NYUCI was implemented, program costs, and caregiver participation rates. In fact, these important factors varied greatly across sites in the Minnesota NYUCI demonstration project, which indicates the need for further research on the effective statewide replication of the NYUCI.[23]

Conclusion

Our results indicate that enhanced caregiver support is a promising way to moderate the growing economic burden of dementia. By quantifying the potential savings for a single state, we demonstrated that substantial long-term savings in direct costs would be possible even without a breakthrough in the pharmacologic treatment of dementia. Our findings are relevant to the larger policy question of where resources should be directed in the fight against dementia. Multicomponent support programs for informal caregivers, such as the NYUCI, may be cost-effective ways to manage dementia while researchers continue to seek effective treatments. ■

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32 To access the Appendix, click on the Appendix link in the box to the right of the article online.

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