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The Alzheimer's Disease Waiver Program Does Not Delay Nursing Home Entry More Effectively Than Other Waivers and Costs the State More Per Participant Than Most Waivers That Serve Similar Persons

at a glance

The Alzheimer's disease waiver program was established in 2005 to test the effectiveness of interventions to delay or avoid institutional placement for elders with Alzheimer's disease. The program offers 11 services designed to allow participants to remain in the community and to support their caregivers.

The Alzheimer's disease waiver program does not delay nursing home entry more effectively than the state's other Medicaid waiver programs that serve elders with Alzheimer's disease and related dementias. In addition, it cost the state more, on average, for participants in the Alzheimer's disease waiver program than most other waiver programs. However, it cost the state less to serve this population through waiver programs than it did to serve similar persons through the traditional Medicaid program.

Scope

As required by Ch. 2008-044, *Laws of Florida*, OPPAGA evaluated Medicaid home and community-based services waiver programs. This is the first of two reports and assesses the Alzheimer's disease waiver program. The report addresses four questions.

- What are the characteristics of participants served by the Alzheimer's disease waiver program?
- How effective is the Alzheimer's disease waiver program at delaying nursing home entry compared to other waiver programs that also serve elders with Alzheimer's disease and related dementias?
- How do total state costs for participants in the Alzheimer's disease waiver program compare to costs for those enrolled in other waiver programs and the traditional Medicaid program for persons with similar characteristics?
- What options could the Legislature consider for the Alzheimer's disease waiver program?

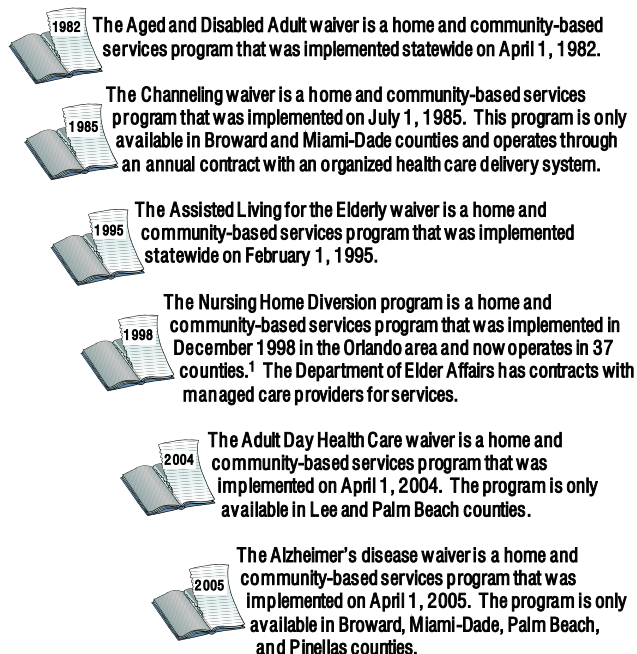
Background

Florida faces a growing demand for community-based alternatives to nursing homes. In 2008, Florida led the nation with 17.4% of its population (3.3 million individuals) aged 65 and older. By 2014, Florida's elder population is expected to reach nearly 3.8 million.

Florida has sought to provide alternatives to nursing home placement since 1982, with the goal of serving elders in the least restrictive settings. The state operates six Medicaid home and community-based services waiver programs that help frail elders remain in their homes and other

less restrictive settings for as long as possible, thereby enhancing their quality of life and avoiding costly nursing home placements (see Exhibit 1).¹

Exhibit 1 Six Medicaid Home and Community-Based Services Waiver Programs Serve Florida's Frail Elders



¹ Nursing Home Diversion is authorized to expand to the remaining 30 counties; however the program is not yet operational in these counties because providers have not yet contracted to provide services.

Source: OPPAGA analysis of Department of Elder Affairs and Agency for Health Care Administration information.

A common cause of nursing home entry is dementia. Alzheimer's disease is the most common form of dementia and is a progressive disease that gradually leads to confusion and impaired judgment, which may lead to unsafe wandering and socially inappropriate behavior. In advanced stages, individuals need help with daily activities including bathing, dressing, and eating, and they eventually lose their ability to communicate, fail to recognize loved ones, and become bed-bound. Alzheimer's disease affected approximately 5.1 million individuals age 65 or older in the United States in 2007. It is estimated that 490,184 Floridians had Alzheimer's disease in 2008, and the number is expected to continue to grow as the population ages.

While all of the state's Medicaid home and community-based services waiver programs serve frail elders with Alzheimer's disease, the Florida Legislature created the Alzheimer's disease waiver program in 2003 to test the effectiveness of specific interventions to delay or avoid institutional placement.² As shown in Exhibit 2, the waiver program offers 11 services. These services support both participants and caregivers, and can only be received with an approved plan of care.

The Alzheimer's disease waiver program is scheduled to sunset at the end of the 2010 regular legislative session unless reauthorized by the Legislature.³

¹ Premature or unnecessary nursing home placement wastes taxpayer dollars by providing expensive 24-hour institutional care when it is not needed. Medicaid nursing home care in Florida cost, on average, \$4,678 per month and \$56,137 annually in Fiscal Year 2008-09.

² Chapter 2003-57, *Laws of Florida*. The federal Centers for Medicare and Medicaid Services approved the waiver in March 2004. The waiver program began enrolling participants in April 2005.

³ Chapter 2008-44, *Laws of Florida*.

Exhibit 2**Alzheimer's Waiver Program Participants Can Receive 11 Support Services**

Services	Description
Adult Day Health Care	Furnishes comprehensive adult day care center services that encompass a broad range of health and social services needed to ensure participants' optimal functioning.
Behavioral Health Assessment and Intervention	Provides services to decrease maladaptive behaviors that interfere with a participant's ability to remain in the community. Includes an assessment of maladaptive behavior(s), development and implementation of a structured behavioral intervention plan, and training and supervision to caregivers and behavioral aides.
Caregiver Training	Provides training and counseling services for individuals who provide unpaid support, training, companionship, or supervision to participants.
Case Management	Helps participants gain access to needed services, regardless of the funding source for the services; includes monitoring to ensure participants receive services in their care plans.
Environmental Accessibility Adaptations	Makes physical adaptations to homes, such as widening doorways, modifying bathrooms, or installing ramps to allow participants to function more independently in their homes.
Incontinence Supplies	Provides items such as ostomy or colostomy supplies, irrigation solutions, bedpans, adult diapers, bed pads, and supplies necessary to maintain healthy skin.
Personal Care	Helps participants eat, bathe, dress, and maintain personal hygiene; can also include housekeeping chores such as dusting and vacuuming if essential to a participant's health.
Pharmacy Medication Review	Provides periodic reviews by a pharmacy consultant or pharmacist of a participant's medication regimen that involves interviewing and counseling the participant and caregiver and making recommendations to the prescribing practitioners, if appropriate.
Respite Care	Provides short-term relief to a participant's caregiver in the home or place of residence.
Wanderer Alarm Systems	Installs and maintains wanderer alarm systems. Electronic receivers are placed at exits in the home, and the participant wears a control device and should he/she pass one of the electronic receivers, it alerts the caregiver by sounding an alarm.
Wanderer Identification and Location Program	Assists with monitoring and tracking loved ones at risk of getting lost; participants are supplied with a bracelet or necklace with an identification number, clothing labels, and wallet cards that indicate memory impairment. In addition, if a participant wanders away, caregivers can call a toll-free number to report the situation, which alerts law enforcement agencies.

Source: Agency for Health Care Administration's approved waiver application and OPPAGA analysis.

The Alzheimer's disease waiver program is available in four counties: Broward, Miami-Dade, Palm Beach, and Pinellas. Participants must be 60 years of age or older, be eligible for Medicaid, have a diagnosis of Alzheimer's disease, meet a nursing home level of care, and live with a caregiver in a private residence.^{4, 5} During Fiscal Year 2008-09, the program served 415 persons at a cost of \$5,962,050.^{6, 7}

⁴ A diagnosis of Alzheimer's disease must be made or confirmed by a memory disorder clinic, a board certified neurologist, or a physician with experience in neurology.

⁵ To be eligible, participant's income from all sources cannot exceed \$24,264 annually in 2010 unless they have a Qualified Income Trust. Applicants who already receive Supplemental Security Income (SSI) do not have to go through the financial eligibility determination process.

⁶ Funding for this program for Fiscal Year 2009-10 is \$5,020,209 of which 68% comes from federal funds and 32% from state funds.

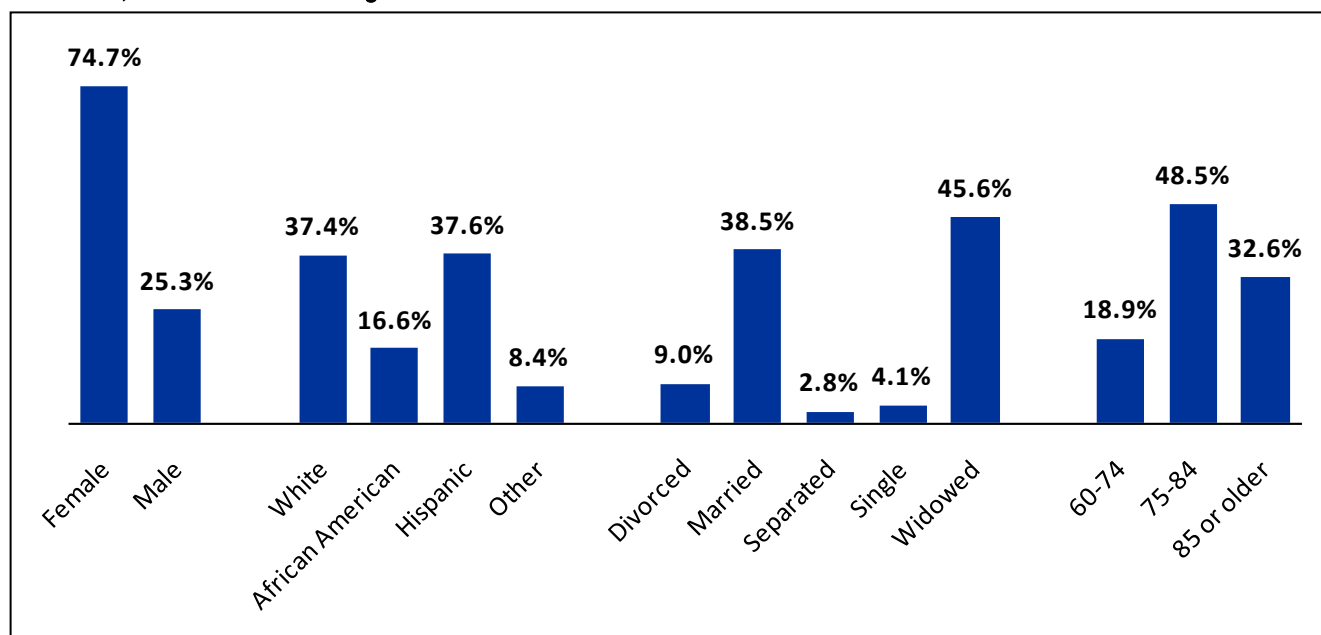
The Department of Elder Affairs manages the program and contracts with three case management agencies that develop and monitor each participant's care plan and authorize service delivery through community providers.⁸ The case management agencies are reimbursed at a monthly fixed rate per participant for each month the participant is enrolled in the program. The agencies must establish and maintain sub-contracts with community providers. The providers are paid a fee-for-service rate based on the services provided.

⁷ The December 2009 enrollment limit for the number of persons that could be served at any one time was 350 and 85 persons were on a wait list. In February 2009, the Department of Elder Affairs suspended all new enrollments into this program.

⁸ To consolidate management of all elder waiver programs, the Legislature transferred operational oversight to the Department of Elder Affairs from the Agency for Health Care Administration in October 2008.

Exhibit 3

Alzheimer's Disease Waiver Program Participants Were Mostly Female, Hispanic or Caucasian, Widowed, and Between the Ages of 75-85¹



¹ Demographic information is based on the most recent complete Comprehensive Assessment and Review for Long Term Care Services (CARES) assessment available for participants who enrolled between July 2005 and June 2008. CARES staff administer the state's standardized assessment tool used to determine frailty and which helps the state meet federal requirements to screen applicants for Medicaid long-term care services.

Source: OPPAGA analysis of Department of Elder Affairs CARES assessments.

Questions and Answers

What are the characteristics of participants served by the Alzheimer's disease waiver program?

The typical person who entered the Alzheimer's disease waiver program between July 2005 and June 2008 was a widowed, Hispanic or Caucasian female between 75 and 85 years old (see Exhibit 3). Most (75%) of the participants were women and most were Hispanic or Caucasian. Nearly half were between the ages of 75 and 84, while a third were age 85 and older. Slightly under half were widowed.

Most participants in the Alzheimer's disease waiver program were frail; half needed some or total assistance with all six activities of daily living and nearly all needed some or total

assistance with at least seven of the eight instrumental activities of daily living.⁹ However, the degree to which individual participants needed help varied. As shown in Exhibit 4, almost all needed assistance or supervision with housework, medication, money management, shopping, preparing meals, and transportation. Also, almost all needed some or total assistance or supervision with bathing and dressing. In contrast, fewer participants needed assistance with other activities of daily living such as walking and eating.

⁹ Activities of daily living are related to a person's ability to perform personal care activities such as bathing, dressing, and eating. Instrumental activities of daily living are related to a person's ability to live independently and include activities such as performing light or heavy housework, preparing meals, managing money, and shopping for groceries or personal items.

Exhibit 4

Alzheimer's Disease Waiver Program Participants Needed Assistance With Various Daily Activities

		Needed Total Assistance	Needed Some Assistance or Supervision	Did Not Need Help or Used Assistive Devices
Activities of Daily Living	Bathing	39.7%	53.4%	6.9%
	Dressing	34.2%	57.6%	8.3%
	Toileting	25.9%	50.0%	24.1%
	Transferring	18.6%	42.0%	39.4%
	Walking	17.9%	45.2%	36.9%
	Eating	13.8%	49.8%	36.4%
Instrumental Activities of Daily Living	Money	95.6%	4.1%	0.2%
	Heavy Housework	94.3%	5.7%	0.0%
	Meals	90.8%	8.7%	0.5%
	Shopping	89.2%	10.8%	0.0%
	Transportation	79.3%	20.2%	0.5%
	Light Housework	77.8%	20.4%	1.8%
	Telephone	55.3%	36.7%	8.0%
	Medication	55.0%	43.8%	1.2%

Source: OPPAGA analysis of CARES assessments.

In addition, slightly less than a third of the participants had problems with wandering, and almost all needed ongoing supervision. These behaviors are common characteristics of Alzheimer's disease and place a significant burden on caregivers. Further, over half of the participants were incontinent and most suffered from other chronic medical conditions in addition to dementia. The most common chronic conditions included arthritis, heart disease, and diabetes.

How effective is the Alzheimer's disease waiver program at delaying nursing home entry compared to other waiver programs that also serve elders with Alzheimer's disease and related dementias?

Our analyses found that the Alzheimer's disease waiver program does not delay nursing home entry more effectively than the state's other Medicaid waiver programs that serve similar elders. However, all of the waiver programs were more successful than the traditional Medicaid fee-for-service program at avoiding nursing home placements for these persons.

To assess how well the Alzheimer's disease waiver program delays nursing home entry, we compared participants who enrolled in the program between July 2005 and June 2008 to individuals with similar characteristics who were enrolled in four of Florida's other waiver programs for elders—the Aged and Disabled Adult, Assisted Living for the Elderly, Channeling, and Nursing Home Diversion waiver programs.¹⁰ We included individuals enrolled in waiver programs in Broward, Miami-Dade, Palm Beach, and Pinellas counties and compared the likelihood that these participants would have an extended nursing home stay over a three-year period (see Appendix A for details related to data sources, comparison group criteria, and descriptions of analyses).¹¹

The Alzheimer's disease waiver program's success in delaying nursing home entry was similar to that of two other Medicaid waiver programs. As shown in Exhibit 5, participants enrolled in the Alzheimer's disease waiver

¹⁰ We did not include the Adult Day Health Care waiver program in our analysis because the program served only 31 individuals in Fiscal Year 2008-09.

¹¹ The Channeling waiver program only serves individuals in Broward and Miami-Dade counties.

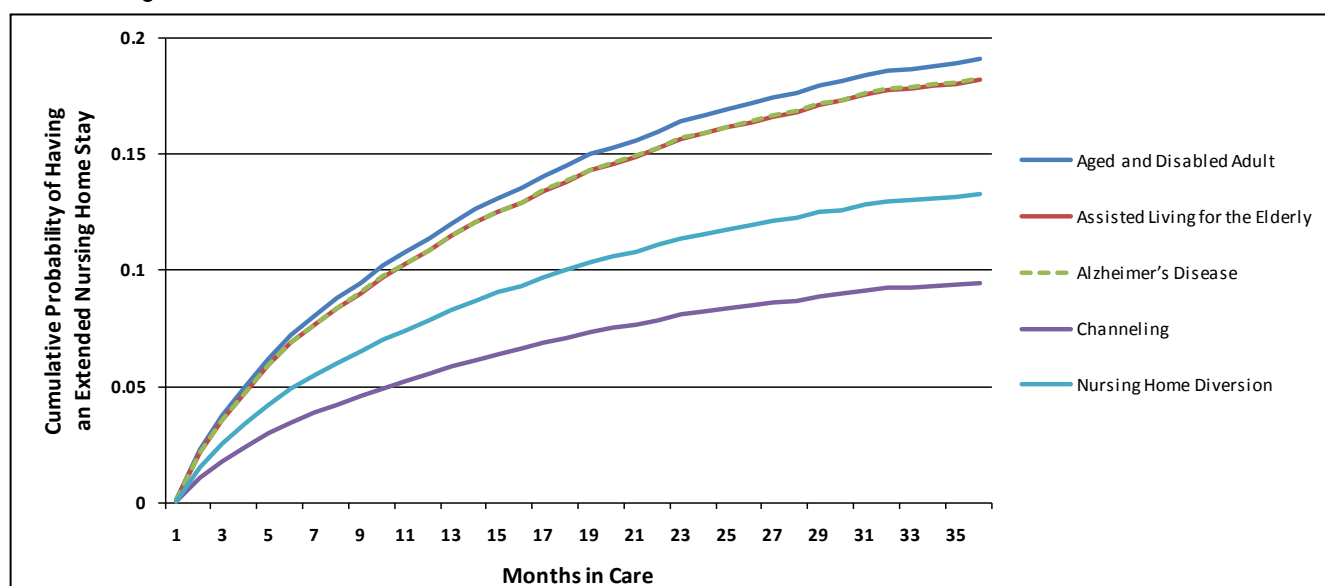
program had similar placement outcomes as those enrolled in the Aged and Disabled Adult and Assisted Living for the Elderly waiver programs and were more likely to enter a nursing home than similar participants in the Nursing Home Diversion and Channeling waiver programs.

At the end of 36 months, Alzheimer's disease waiver program participants had an 18% probability of having entered a nursing home for an extended stay. This was essentially the same success ratio as achieved by the Aged and

Disabled Adult and Assisted Living for the Elderly waiver programs, (19% and 18%, respectively). The Nursing Home Diversion and Channeling waiver programs had the best outcomes in avoiding nursing home placements; at the end of 36 months, individuals with Alzheimer's or related dementias who participated in these waiver programs had a 13% and 9% probability, respectively, of entering a nursing home for an extended stay, a statistically significant difference.

Exhibit 5

Alzheimer's Disease Waiver Program Was Not More Effective at Delaying Nursing Home Care Than Other Waiver Programs That Serve Similar Persons



Source: OPPAGA analysis.

Available data do not identify reasons for these differences in outcomes among the waiver programs. While the individuals in our study varied on some demographic and/or health-related characteristics, these differences were not large. In addition, many of the services provided by the Alzheimer's disease waiver program are similar to those provided by the Channeling and Nursing Home Diversion waiver programs.

All of the waiver programs were substantially more successful in delaying nursing home entries for elders with Alzheimer's disease and

related dementias than the Medicaid fee-for-service program. At the end of 36 months, elders with Alzheimer's disease or related dementia who were served by the traditional Medicaid program were much more likely to have entered a nursing home than similar elders served by any of the waiver programs. Such elders served by Medicaid had a 65% probability of nursing home entry, after 36 months, more than three times higher than that of any of the waiver programs. This difference in outcomes appears to be due to the waiver programs' providing support services such as case management, respite care, adult day

health care, and personal care that are not generally available under the traditional Medicaid program.

How do total state costs for participants in the Alzheimer's disease waiver program compare to costs for those enrolled in other waiver programs and the traditional Medicaid program for persons with similar characteristics?

Florida spent more on average to serve participants enrolled in the Alzheimer's disease waiver program than it spent to serve similar persons with Alzheimer's disease or related dementias through the other waiver programs. However, it cost the state less to serve this population through waiver programs than it did through the traditional Medicaid program.

We compared total state expenses for an 18-month period for Alzheimer's disease waiver program participants to the costs associated with participants with similar characteristics served by four waiver programs.¹² Our analysis included both Medicaid expenses and costs associated with local programs for elders funded exclusively from general revenue. Medicaid costs included waiver program services, acute medical care such as physicians' visits, inpatient hospital stays, outpatient hospital procedures, nursing home care, Medicaid-paid premiums for Medicare, and other services such as therapies and transportation (see Appendix A for details related to the data sources, comparison group criteria, and descriptions of analyses).¹³

On average, state costs for elders enrolled in the Alzheimer's disease waiver program were higher than costs to serve similar participants in three

other waiver programs. Over an 18-month period, the state paid, on average, \$1,728 per month to provide services to participants in the Alzheimer's disease waiver program. As shown in Exhibit 6, after adjusting for differences in enrollee characteristics, this was higher than the average monthly cost to serve similar individuals in three of the other waiver programs, which had average monthly costs that were 10% to 28% lower than the Alzheimer's disease waiver program. However, it cost the state, on average, \$248 (14%) more per month to serve this population in the Nursing Home Diversion waiver program than in the Alzheimer's disease waiver program^{14, 15}

Exhibit 6

Average Monthly Costs for the State Were Higher for Participants in the Alzheimer's Disease Waiver Program Than for Similar Participants in Three of the Four Other Waiver Programs

	Monthly Costs Compared to Alzheimer's Waiver Program ¹	Percentage Difference Compared to Alzheimer's Waiver Program
Aged and Disabled Adult	\$341 less	(-20%)
Assisted Living for the Elderly	\$166 less	(-10%)
Channeling	\$483 less	(-28%)
Nursing Home Diversion	\$248 more	14%

¹ Costs are adjusted for differences in the characteristics of the people enrolled in different programs.

Source: OPPAGA analysis of Medicaid claims data.

It was significantly less costly to serve participants with Alzheimer's disease and related dementias in any of the waiver programs than to serve similar persons in traditional Medicaid. The total state expenditures over 18 months for persons with Alzheimer's and related dementias enrolled in

¹² We compared participants in the Alzheimer's disease waiver program to similar participants served by the Aged and Disabled, Assisted Living for the Elderly, Channeling, and Nursing Home Diversion waiver programs who resided in Broward, Miami-Dade, Palm Beach, and Pinellas counties. We compared costs for an 18-month period.

¹³ Department of Elder Affairs' general revenue funded programs include the Community Care for the Elderly, Home Care for the Elderly, the Alzheimer's Disease Initiative, and other local community-based long-term care support programs. As of June 2008, the Department of Elder Affairs no longer allows waiver program participants also to receive general revenue-funded services.

¹⁴ Although the Nursing Home Diversion waiver program provides nursing home services, some elders leave the program to enter a nursing home outside the provider's service network and thus, incur Medicaid costs for nursing home and other care after they leave the waiver program.

¹⁵ The total costs for the Nursing Home Diversion and Channeling waiver programs may understate the actual cost of serving this population. Both of these programs receive capitated payments which reflect an average cost to serve each participant; participants with Alzheimer's disease may cost more than the average.

any of the home and community-based services waiver programs were lower than the cost to serve similar beneficiaries in the traditional fee-for-service Medicaid program. Exhibit 7 shows that the state paid, on average, from \$263 less to \$994 less per month to serve elders that participated in a waiver program than to serve similar elders who did not receive any waiver services.

Exhibit 7

Average Monthly Costs to Serve Elders With Alzheimer's in Waiver Programs Were Substantially Lower Than the Costs to Serve Similar Elders in Traditional Medicaid

Waiver Program	Monthly Costs Compared to Traditional Medicaid ¹
Alzheimer's Disease	\$511 less
Aged and Disabled Adult	\$852 less
Assisted Living for the Elderly	\$677 less
Channeling	\$994 less
Nursing Home Diversion	\$263 less

¹ Costs are adjusted for differences in the characteristics of the people enrolled in different programs.

Source: OPPAGA analysis of Medicaid claims data.

This cost difference reflects the outcome that waiver program participants were less likely to enter a nursing home and therefore, used less of this expensive care. For example, on average participants in waiver programs used from 13 to 27 days of nursing home care over 18 months compared to an average of 186 days for beneficiaries in traditional Medicaid.

What options could the Legislature consider for the Alzheimer's disease waiver program?

In accordance with Ch. 2008-44, *Laws of Florida*, the Alzheimer's disease waiver program will sunset at the end of the 2010 regular legislative session unless the Legislature takes further action prior to that time. Given this, the Legislature could consider three options for the program.

Option 1. Expand the program to other counties or statewide. Because the waiver program performs well in delaying nursing home entry for elders with Alzheimer's disease and is

less costly to the state to serve elders with Alzheimer's disease through this waiver than in the traditional Medicaid program, the Legislature may wish to expand the program to other counties or statewide. However, this option would not maximize potential savings, as our analysis also found that total state costs for serving elders in this program were higher than costs for serving similar persons in three of four other waiver programs. In addition, the state would likely incur start-up costs to expand the waiver program, as the Department of Elder Affairs would need to establish contracts with case management agencies (if available) and establish and maintain a system of community providers with the knowledge and expertise to serve these elders and their caretakers. Further, the Department of Elder Affairs staff report that the department and the Aging Resource Centers would likely need additional recurring funding to provide administrative support.

Option 2. Maintain the program. The Legislature may wish to maintain the waiver program in its current form and direct the Department of Elder Affairs to coordinate with the Agency for Health Care Administration and the Centers for Medicare and Medicaid Services to refine the services provided to test whether the program can match the other waiver programs' success in delaying nursing home entry while minimizing costs. This would allow the department to further assess which waiver services are most effective in delaying nursing home entry.

Option 3. Allow the program to sunset. Since the other waiver programs available in the four counties served by the Alzheimer's disease waiver program perform well in delaying nursing home entry and have lower costs, the Legislature may wish to allow the program to sunset and transfer existing participants to the other waiver programs. This may require some phase-in period to ensure that the other waiver programs have sufficient capacity to serve the elders currently served by the Alzheimer's disease waiver program (273 participants as of

December 2009) and would also require that the current Alzheimer's disease waiver program's fiscal allocation follow these participants. Based on total state costs incurred during our study period, this option may produce savings if the participants enroll in the Aged and Disabled

Adult, Assisted Living for the Elderly, or Channeling waiver programs. However, potential savings could be mitigated if participants choose to enroll in Nursing Home Diversion, which has higher average monthly total state costs.

OPPAGA supports the Florida Legislature by providing evaluative research and objective analyses to promote government accountability and the efficient and effective use of public resources. This project was conducted in accordance with applicable evaluation standards. Copies of this report in print or alternate accessible format may be obtained by telephone (850/488-0021 or 800/531-2477), by FAX (850/487-3804), in person, or by mail (OPPAGA Report Production, Claude Pepper Building, Room 312, 111 W. Madison St., Tallahassee, FL 32399-1475). Cover photo by Mark Foley.

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Appendix A

Data and Methodology for Comparing Alzheimer's Disease Waiver Program Outcomes and Costs to Other Waiver Programs

We evaluated the effectiveness of the Alzheimer's disease waiver program in delaying nursing home care and reducing state costs. To do so, we compared the likelihood that elders served by the waiver program would enter a nursing home and the state costs to serve these persons to the same outcomes for individuals with Alzheimer's disease or related dementias who were enrolled in four other Medicaid waiver programs—the Aged and Disabled Adult, Assisted Living for the Elderly, Channeling, and Nursing Home Diversion waiver programs. We also compared nursing home use and costs to a baseline group of similar persons who were enrolled in traditional fee-for-service Medicaid.

Data sources

To conduct these analyses, we examined Medicaid expenditures and diagnostic codes, Department of Elder Affairs' general revenue program expenditures, client demographics, and provider data on services provided within the Nursing Home Diversion program. We also examined long-term care assessments which contain medical, cognitive, and functional impairment levels of individuals seeking admission to Medicaid paid nursing home care and home and community-based services.

Dr. Glenn Mitchell, currently director of the Pepper Data Center at Florida State University's Claude Pepper Center, provided these data, valuable insight, and technical assistance. The team formerly at the Florida Policy Exchange Center on Aging at the University of South Florida compiled and provided all data, except the Nursing Home Diversion service information. The Agency for Health Care Administration's contracted actuary, Milliman, Inc., provided the Nursing Home Diversion service data.

Medicaid recipients selected for the study

Cohort selection rules for diversion and cost analyses. To establish comparison groups, our study cohorts included elders who met most of the Alzheimer's disease waiver program eligibility criteria, were newly enrolled into a waiver program or fee-for-service traditional Medicaid, were not already in a nursing home or hospice care, and had long-term care assessment information, which we used to adjust for remaining differences between groups.^{16, 17} Our cohorts included frail elders who were 60 years of age or older, eligible for Medicaid, had a diagnosis of Alzheimer's disease, required the level of care provided in a nursing home, and resided in the four counties served by the Alzheimer's disease waiver program.¹⁸ However, we did not limit our cohorts to elders who were living with a caregiver in a private residence, as required for the Alzheimer's disease waiver program, and instead used statistical techniques to adjust for this and other differences that could affect nursing home entry and costs.

We also only included elders who had a long-term care assessment, which provided needed information to ensure groups were comparable and allowed us to adjust for remaining differences

¹⁶ We considered non-waiver Medicaid recipients to be 'new enrollees' into non-waiver care during the first month in which they met the eligibility requirements for the Alzheimer's disease waiver program and had been in Medicaid for at least three prior months.

¹⁷ We did not include persons already in a nursing home or hospice because they typically do not enroll in waiver programs after admission.

¹⁸ This included Broward, Miami-Dade, Palm Beach, and Pinellas counties.

between groups. This limited the traditional Medicaid cohort to elders who, like waiver program participants, expressed an interest in receiving long-term care services but who did not enroll in these programs.¹⁹ Table A-1 shows that while the cohorts included in our analyses were relatively similar, there were some differences. The Alzheimer's disease waiver program participants were more likely to need supervision and/or wander and less likely to be incontinent compared to most participants in the other programs. Because these factors can affect the likelihood of entering nursing homes, we used statistical techniques to account for these differences.

Table A-1**Alzheimer's Disease Waiver Program Participants More Likely to Need Supervision and/or to Wander**

	Alzheimer's Disease	Aged and Disabled Adult	Assisted Living for the Elderly	Channeling	Nursing Home Diversion	Non-Waiver
Demographics						
Average age	81.6	82.2	80.6	83.7	83.8	81.2
Percentage female	74.2%	74.6%	73.1%	76.4%	74.9%	66.6%
Percentage Hispanic	37.8%	33.7%	26.3%	53.8%	33.6%	38.0%
Frailty and Caregiver Availability						
Average number of activities of daily living requiring total help (Maximum 6)	1.5	1.2	0.4	0.8	0.7	1.1
Average number of instrumental activities of daily living requiring total help (Maximum 8)	6.4	5.2	5.0	4.9	5.5	5.5
Average number of serious health conditions (Ranges from 0 to 9) ¹	2.3	2.8	2.6	2.7	2.7	2.6
Percentage needing supervision ²	96.5%	83.3%	91.9%	79.7%	84.4%	83.0%
Percentage with wandering ²	30.2%	17.2%	16.5%	18.6%	19.4%	14.9%
Percentage with incontinence	57.8%	66.2%	71.3%	67.1%	78.3%	65.9%
Percentage with available caregiver	100%	77.9%	2.3%	72.8%	18.3%	24.3%
Number (N)	431	861	480	301	3,863	889

¹ Serious health conditions include arthritis, bed sores, cancer, diabetes, emphysema, heart disease, incontinence, liver disease, and strokes.

² Only 80% of the participants in the non-waiver group had this information included in their long-term care assessment.

Source: OPPAGA analysis of long-term care assessments for elders in our study who entered Medicaid programs from July 2005-January 2007.

Data limitations. It should be noted that despite our efforts to select similar groups and adjust for remaining differences between groups, there may be meaningful differences for which we could not account because they are not reliably measured in the available data. For example, elders in the Alzheimer's disease waiver program must have a diagnosis of Alzheimer's disease made or confirmed by a memory disorder clinic, a board certified neurologist, or a physician with experience in neurology. To identify individuals with Alzheimer's disease for our comparison groups, we used information from long-term care assessments, Medicaid diagnostic codes, and participation in Alzheimer's disease programs. However, since available data does not necessarily include a definitive diagnosis by medical professionals, some individuals in our comparison groups could have other forms of dementia which may be transient or non-progressive.

Study period for analyzing the diversion effectiveness in delaying nursing home entry. To analyze the time to enter a nursing home, we selected our cohorts based on a cross-section of all recipients

¹⁹ As a result, the non-waiver Medicaid group primarily consists of elders seeking Older Americans Act registered services, nursing home care, or placement on a waiting list for long-term care services such as Medicaid waiver programs.

‘newly enrolling’ within a three-year period from July 2005 through June 2008 and examined their nursing home use through June 2008. Depending on when a person enrolled in this time period, we had between 1 and 36 months of data for each person.

Study period for analyzing total costs. For the cost analysis, we selected our cohorts based on all elders who ‘newly enrolled’ between July 2005 and January 2007. We examined the total costs for each person in the cohort over the next 18 months.²⁰

Analysis of nursing home entry

To evaluate the extent to which the Alzheimer’s disease waiver program delays nursing home entry we used Cox’s proportional hazard modeling, commonly referred to as survival analysis. This technique accounts for the time participants are in care, as well as differences in characteristics across groups to estimate the probability of entering a nursing home. We present ‘survival’ curves for each waiver program in Exhibit 5 of the report. These curves plot the probability of entering a nursing home against the number of months in care for participants in the various Medicaid waiver programs.

Our analysis assessed the probability of entering a nursing home for an extended stay over a 36-month period. We defined an extended stay as receiving nursing home care for at least 30 days within two months.²¹ Our analysis accounts for group differences in functional impairments (number of primary and instrumental activities of daily living requiring some or total assistance), health status (number of chronic health conditions and whether the person has bed sores or is incontinent), cognitive functioning (inability to perform a simple cognitive task), availability of a caregiver, recipients’ marital status, age, gender, race, and whether the person died during the study period or received nursing home care within the three years before the study period.

Analysis of program enrollees’ costs

We used ordinary least squares regression to assess the total state costs of providing care to participants in the Alzheimer’s disease waiver program, compared to serving similar persons in other Medicaid programs, over an 18-month period. Total state costs included Medicaid expenditures and costs associated with programs for elders funded exclusively with general revenue.²² Medicaid costs included waiver services, acute medical care such as physicians’ visits, inpatient hospital stays, outpatient hospital procedures, nursing home care, Medicaid-paid premiums for Medicare, and other services such as therapies, transportation, and hospice. By examining all costs, we accounted for differences in the services provided by waiver programs and for nursing home costs avoided through participation in waiver programs.²³ The regression analysis estimated the total costs per month for persons who enrolled in each type of care. Like the nursing home entry analysis, the cost analysis accounted for differences in client characteristics across the study groups.

²⁰ We limited our analysis to 18 months of costs because the Alzheimer’s disease waiver program is a relatively new program, data was only available through June 2008, and this allowed us to track total costs for each person for the same length of time.

²¹ Medicaid nursing home claims only include the month of entry, not the exact date an individual entered a nursing home, so the actual time until nursing home entry may vary by up to one month. In addition, the Nursing Home Diversion service data did not include any service information for 2.7% of program enrollees. As a result, the effectiveness of the Nursing Home Diversion program in delaying nursing home entry may be slightly overstated.

²² Other programs included in our analysis are managed by the Department of Elder Affairs and are funded with general revenue. These include the Community Care for the Elderly, Home Care for the Elderly, the Alzheimer’s Disease Initiative, and other local community-based long-term care support programs. The average monthly costs of these programs for individuals included in our study cohorts varied, ranging from \$2 per month for persons enrolled in the Assisted Living for the Elderly and Nursing Home Diversion waiver programs to \$73 for persons enrolled in the Aged and Disabled Adult waiver program. As of June 2008, the Department of Elder Affairs no longer allows waiver program participants also to receive general revenue-funded services.

²³ To accurately compare costs across waiver programs, we included all Medicaid and state program costs in our analysis, instead of limiting our analysis to only waiver program costs.