



The Nursing Home Diversion Program Has Successfully Delayed Nursing Home Entry

at a glance

The Nursing Home Diversion program has successfully delayed participants' entry into nursing homes. Frail elders participating in the Nursing Home Diversion program were more likely to delay entry into a nursing home than similar frail elders who were not enrolled in any Medicaid community-based waiver programs. Program participants also experienced shorter nursing home stays and were more likely to return to their homes to continue program services.

Although Nursing Home Diversion costs have exceeded the Medicaid Program's costs for other frail elders, these cost differences have narrowed due to recent rate reductions. When compared to other waiver programs, the Nursing Home Diversion program has higher costs but is more successful in delaying nursing home placements. Although the state could potentially serve Nursing Home Diversion participants in other programs, doing so could compromise their quality of life and strain the capacity of these other programs.

Scope

As required by Ch. 2005-133, *Laws of Florida*, OPPAGA reviewed the Long-Term Care Community Diversion pilot project, commonly referred to as the Nursing Home Diversion program. This report addresses three questions.

- How effective is the program in delaying nursing home entry of frail elders?
- Is the program an expansion of the Medicaid Program and is it cost-effective?
- Could the state serve program participants in other waiver programs at less cost?

A prior report described participant characteristics, the services they most frequently used, and differences in service use based on living situation or client characteristics.¹

Background

Florida faces a growing demand for community-based long-term care alternatives to nursing homes as its elderly population increases. In 2004, Florida led the nation with 16.8% of its population (2.9 million individuals) age 65 and older. By 2010, Florida's elder population is expected to reach nearly 3.5 million. The largest increase will be seniors age 85 and older.

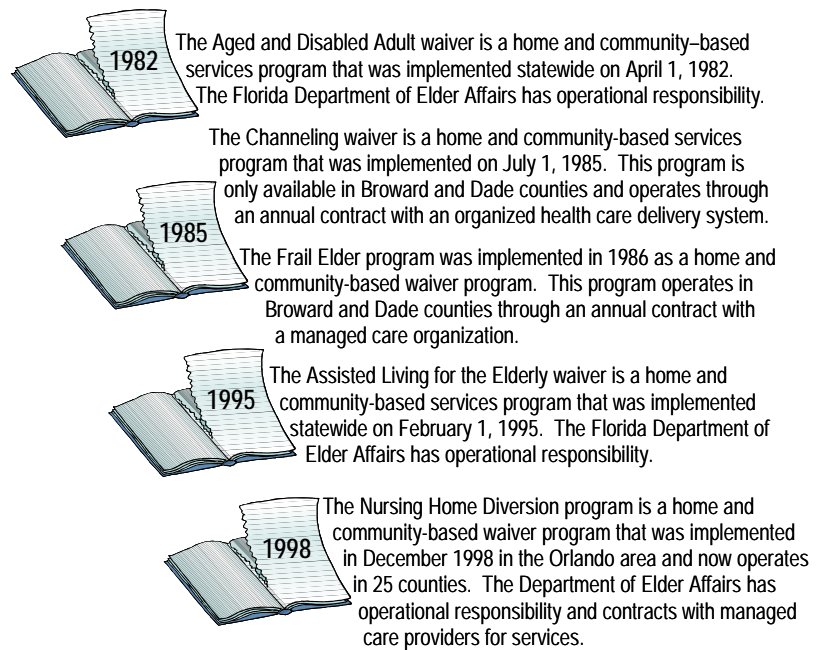
¹ *Service Use for Nursing Home Diversion Waiver Clients Depends on Living Situation*, OPPAGA [Report No. 06-10](#), February 2006.

Providing alternatives to nursing home placement helps the state meet its goal of serving clients in the least restrictive settings. Florida has provided community-based long-term care alternatives to nursing homes since 1982. The state now operates five Medicaid home and community-based programs that help frail elders remain in their own homes or other less restrictive settings for as long as possible, thereby avoiding or delaying unnecessary and costly nursing home placement and enhancing quality of life.^{2,3} (See Exhibit 1.) These waiver programs differ in the breadth of services covered, criteria for enrollment, and forms of reimbursement. (Appendix A provides information about Florida's Medicaid home and community-based waiver programs that serve elders.)

Although state expenditures for community-based care have grown over time, state expenditures for nursing home and other institutional care consume two-thirds of the Medicaid Program's long-term care budget. Exhibit 2 shows the growth in the state's expenditures for community-based care since the early 1980s. In Fiscal Year 2004-05, home and community-based services expenditures totaled approximately \$1.48 billion, while nursing home care expenditures were approximately \$2.28 billion.

Exhibit 1

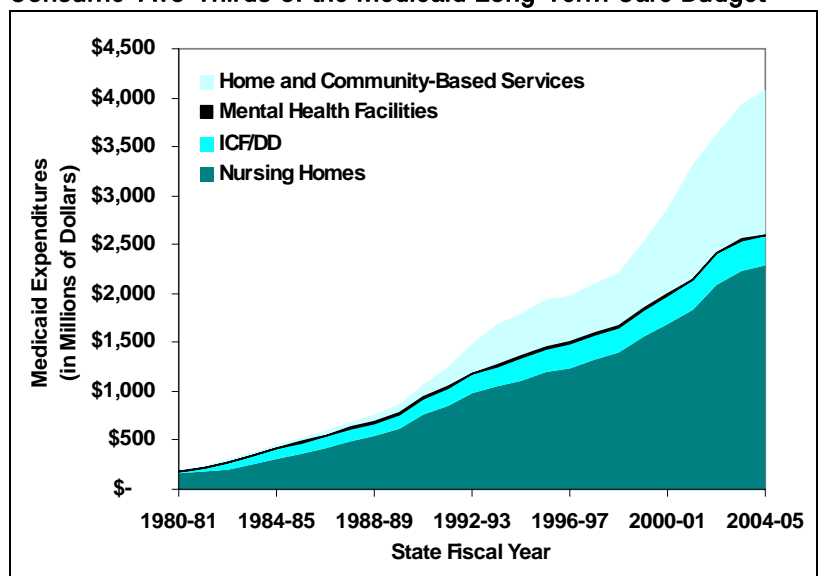
Five Medicaid Home and Community-Based Waiver Programs Serve Florida's Elderly and Disabled Population



Source: Agency for Health Care Administration and the Medicaid Summary of Services.

Exhibit 2

Home and Community-Based Services Expenditures Have Increased Over Time, But Nursing Homes and Other Facilities Consume Two-Thirds of the Medicaid Long-Term Care Budget¹



¹ The home and community-based services portion of the budget includes Medicaid home health and personal care as well as all Medicaid waiver programs. Intermediate Care Facilities for the Developmentally Disabled (ICF/DD) funding goes to facilities that serve people with developmental disabilities.

Source: Agency for Health Care Administration.

² There are several additional Medicaid home and community-based programs. Some, for example, serve elders with developmental disabilities, traumatic brain injuries, Alzheimer's disease, and acquired immune deficiency syndrome.

³ 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 now averages \$3,822 per month and more than \$45,000 annually.

The Legislature created the Long-Term Care Community Diversion pilot project (commonly referred to as the Nursing Home Diversion program) in 1997. The program began operations in 1998 after receiving federal approval and now operates in 25 counties.⁴ The federal government has approved expanding services to an additional 24 counties. Participants must be 65 years of age or older, be eligible to receive both Medicare and Medicaid benefits, require daily nursing services, or require assistance with activities of daily living. (For more information, see Appendix A.) In Fiscal Year 2004-05, the program served nearly 7,400 frail elders age 65 and older. This represented approximately 28% of the persons age 65 or older served by Florida's five Medicaid waiver programs for elders.

The Nursing Home Diversion program, administered by the Department of Elder Affairs, differs from Florida's other community-based care waiver programs in that it covers both medical and long-term care services. The program provides acute medical care, such as physician services and prescribed drugs, as well as long-term and ongoing services, such as personal care assistance, assisted living services, or nursing home care. Program providers are paid a capitated rate to cover all needed services, including Medicare co-payments, premiums, and deductibles. Since it is far more costly to pay for nursing home care than to pay for services needed to keep participants in the community, providers have a financial incentive to ensure that participants receive the services they need to avoid expensive nursing home placement for as long as possible.⁵

⁴ Chapter 97-87, *Laws of Florida*. The federal Health Care Financing Administration (now the Centers for Medicare and Medicaid Services) approved the waiver for this program in 1998.

⁵ The Frail Elder program also obligates providers to cover nursing home care, but the obligation is for a limited time period. Frail Elder providers must pay for nursing home care until the end of the contract year during which a client entered a nursing home.

Questions and Answers —

How effective is the Nursing Home Diversion program in delaying nursing home entry of frail elders?

The Nursing Home Diversion program has successfully delayed participants from entering nursing homes. Frail elders participating in the program were more likely to delay entry into nursing homes than similar frail elders who were not enrolled in any Medicaid waiver programs. In addition, Nursing Home Diversion participants who entered a nursing home for an extended stay had shorter stays, on average, than similar non-waiver clients and were more likely to leave the nursing homes and return to their homes or residential settings to continue receiving community-based care.

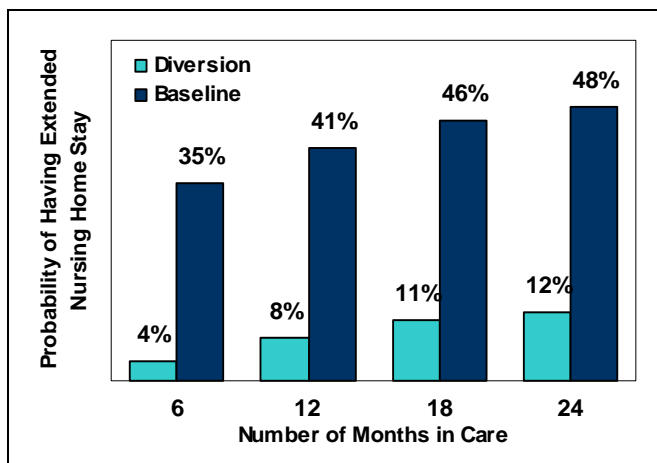
To examine how well the Nursing Home Diversion waiver program delays nursing home stays, we compared participants who enrolled in the program from January 2003 through December 2004 to a baseline group of Medicaid clients who met the criteria for the Nursing Home Diversion program but were not enrolled in any of the community-based care Medicaid waiver programs.^{6,7} We compared the likelihood that elders in these two groups would have an extended nursing home stay over a two-year period. We also compared the likelihood that these elders would leave a nursing home after an extended stay and return to the community to resume long-term care services. (See Appendix B for details related to the data sources we used for this study, criteria for selecting comparison groups, and descriptions of the analyses conducted.)

⁶ The baseline group included elders who were age 65 or older, eligible for both Medicaid and Medicare, and met the frailty criteria for the program. Furthermore, the baseline group was not enrolled in any of Florida's waiver programs during the two-year comparison period. (See Appendix B.)

⁷ Our analyses were restricted to this timeframe because encounter data on nursing home use for program enrollees was limited and only sufficient to support analyses from January 2003 through December 2004.

Nursing Home Diversion participants were less likely to enter a nursing home for an extended stay than similar frail elders who were not enrolled in any Medicaid waiver programs. As shown in Exhibit 3, Nursing Home Diversion participants were less likely to enter a nursing home for an extended stay within 24 months after enrolling in the program than were clients in the baseline group. For example, after 6 months, program clients had a 4% probability of having entered a nursing home compared to a 35% probability for clients in the baseline group. By the end of 24 months, the probability of a Nursing Home Diversion client having entered a nursing home for an extended stay was 12% compared to 48% for the baseline group.

Exhibit 3 Elders Served by Nursing Home Diversion Were Less Likely to Have an Extended Nursing Home Stay



Note: Based on Medicaid claims and program encounter data, January 2003 – December 2004. An extended nursing home stay is defined as having at least 30 nursing home days within two months.

Source: OPPAGA analysis.

To further examine these outcomes, we conducted a regression analysis that controlled for demographic and health-related differences that could affect an individual's risk of entering a nursing home—frailty levels, chronic or serious health conditions, the presence of a caregiver, age, gender, race, region of the state, and whether or not the client died during the two years.⁸ This analysis showed that new enrollees in the Nursing Home Diversion program were nine

times less likely to enter a nursing home within 24 months for an extended stay than the baseline group.

Nursing Home Diversion participants were more likely than the baseline group to leave nursing homes to return for care in the community. Because elders typically prefer living in residential settings that afford them more independence, a successful diversion program should help participants return to their residences after initial nursing home placements and provide necessary services to assist them to remain in their communities. Our analysis showed that Nursing Home Diversion clients were four times more likely than the baseline group to leave nursing home placements and return to their homes or other less restrictive settings. In addition, program participants' nursing home stays were shorter, a median of 43 days, than the baseline group which stayed in nursing homes a median of 132 days.

Is the Nursing Home Diversion program an expansion of the Medicaid Program and is it cost-effective?

The Nursing Home Diversion program is an expansion of the Medicaid Program in the sense that its services may attract elders who are averse to going into a nursing home but will accept services to help them remain in their own homes. Over a three-year period, it cost the Medicaid Program more to serve Nursing Home Diversion program participants than it did to serve non-waiver clients. However, this cost difference has narrowed and may no longer exist due to recent rate reductions.

The Nursing Home Diversion program, like other similar long-term care alternatives, is an expansion of Medicaid but supports the state's goal to provide long-term care in the least restrictive settings. By keeping frail elders in the community, the Nursing Home Diversion program meets the Legislature's goal to maximize the placement of participants in the least restrictive appropriate settings.⁹ However, research on home and community-based services acknowledges that diversion programs are limited in their ability to constrain overall long-term care costs because of

⁸ Cox Regression analysis was used to account for these differences. (See Appendix B.)

⁹ Section 430.705, F.S.

the “woodwork effect.” This effect occurs when individuals in the community who have been getting along with limited assistance may take advantage of expanded home and community-based services.¹⁰ When this occurs, demand for Medicaid increases and reduced nursing home spending is offset by spending for home and community-based care for people who would not have entered nursing homes.¹¹

Although it cost the state more to serve Nursing Home Diversion participants than it did to serve similar frail elders in a baseline group, this cost difference has narrowed and may no longer exist due to recent rate reductions. Because of data limitations, we could not directly measure cost-effectiveness as a ratio of nursing home days diverted to dollars spent.¹² As an alternative, we compared the costs of serving frail elders in the Nursing Home Diversion program to similarly frail elders living in the community who met program criteria but were not enrolled in any Medicaid community-based waiver programs.

To examine these costs, we compared the three-year Medicaid expenses of Nursing Home Diversion participants who enrolled during the January 2001 to June 2002 period to the Medicaid costs of a baseline group of Medicaid clients who met the criteria for the Nursing Home Diversion program but were not enrolled in any of the state’s waiver programs.¹³ For the non-waiver baseline group, we counted all Medicaid expenses which included the costs of acute medical care such as physicians’ visits, prescribed drugs, inpatient hospital stays and outpatient hospital procedures as well as the nursing home costs incurred by this group. We compared these costs to those incurred for the Nursing Home Diversion

group, including the per-member per-month payments made to providers plus any other miscellaneous Medicaid costs.¹⁴ We used regression analysis to account for demographic and health-related indicators that could influence costs.¹⁵

After adjusting for these influences, the state paid, on average, \$99 more per month to provide Nursing Home Diversion services per elder than it paid for services to elders in the baseline group comprising similar Medicaid clients who were not enrolled in any Medicaid home and community-based waiver programs. (See Exhibit 4.) However, this difference in cost has narrowed and may no longer exist due to reductions in the per-member per-month rates paid to program providers. The average monthly rate during the time captured by our analysis was \$2,295. But, in July 2005, the Department of Elder Affairs reduced monthly rates and by December 2005 the average rate was \$1,961, which is below the average unadjusted monthly cost of \$2,045 for elders in the baseline group.¹⁶

Although more costly, program participants may have a higher quality of life. As discussed earlier, frail elders in the Nursing Home Diversion program were nine times less likely to enter nursing homes for an extended stay. The services provided by the program help elders maintain their independence and relationships with family and friends, thereby enriching their quality of life. Entering a nursing home for what could be an extended period of time is often disruptive to elders and is considered a catastrophic event. By preventing or delaying this event, elders are typically happier and enjoy a better quality of life during their later years.

¹⁰ In other words, policymakers perceive that these individuals “come out of the woodwork” to sign up for these services once they become available.

¹¹ Doty, Pamela. 2000. *Cost-Effectiveness of Home and Community-Based Long-Term Care Services*. USHHS/ASPE Office of Disability, Aging and Long-Term Care Policy.

¹² Nursing Home Diversion program data did not permit developing effectiveness/cost ratios and comparing these between the two groups.

¹³ Thus, we tracked the total Medicaid costs for all clients for a full 36 months (or until they left the Medicaid program) regardless of when they enrolled between January 2001 and June 2002.

¹⁴ For example, if a Nursing Home Diversion participant disenrolled from the waiver and then received Medicaid hospice care, these costs would be included here.

¹⁵ We used an Ordinary Least Squares technique to control for differences in frailty levels, chronic or serious health conditions, the presence of a caregiver, age, gender, race, region of the state, and death.

¹⁶ The Department of Elder Affairs further reduced rates in January 2006 to reflect reduced prescription drug costs due to the implementation of Medicare Part D prescription drug coverage. Rates currently range between \$1,374 in Palm Beach County and \$1,837 in Miami-Dade. All Medicaid programs that serve elders will be affected by the implementation of Medicare Part D. However, the extent to which Medicare Part D will affect the costs of the Nursing Home Diversion program compared to other waiver programs is unknown at this time.

Exhibit 4

Average State Monthly Costs for Nursing Home Diversion Participants Were Higher Than Those for Elders Not Enrolled in Any Medicaid Community-Based Waiver Programs

	Average Monthly Costs	Difference in Monthly Costs	Adjusted Difference in Monthly Costs ¹	Average Months on Medicaid	Average Difference in Months
Nursing Home Diversion	\$2,268			26.2	
Baseline Elders	2,045	\$223	\$99	19.5	6.7

¹ Analysis adjusts for differences in demographic and health-related indicators of the two groups. See Appendix B.

Source: OPPAGA analysis.

Elders enrolled in the Nursing Home Diversion program also benefit from the breadth of services available and continuous care management. Thus, program participants can easily move to assisted living if their need for care increases. In contrast, elders in the community without these services may be faced with either attempting to access the care they need on their own or going without needed assistance if service providers are difficult to find.

Quality of life differences for clients in the two groups also may be reflected by differences in months of care received. As shown in Exhibit 4, frail elders from the non-waiver baseline group averaged fewer months on Medicaid than did Nursing Home Diversion participants, reflecting the fact that a higher proportion of these elders died within a year after choosing not to enroll in the Nursing Home Diversion program or other community-based waiver programs. While 18.5% of program clients died within one year of enrolling in the program, 36.5% of baseline clients died within the same time.¹⁷ Elders in the baseline group also experienced shorter periods of Medicaid eligibility.¹⁸ When Nursing Home Diversion clients lose eligibility, case managers will work with clients to quickly resolve and re-establish Medicaid eligibility.¹⁹ In the absence of

this type of assistance, clients in our baseline group may not have re-established eligibility or may have taken longer to do so.

Could the state serve Nursing Home Diversion participants in other waiver programs at less cost?

It cost the state more on average to serve elders in the Nursing Home Diversion program than to serve similar elders in the Assisted Living for the Elderly (ALE) and Aged and Disabled Adult (ADA) waiver programs.²⁰ After adjusting for demographic and health-related indicators that could influence costs, it cost the state, on average, \$212 per month less and \$538 per month less, respectively, to serve elders on the ADA and ALE waivers than it cost to serve elders in the Nursing Home Diversion program.^{21, 22}

Although the state might be able to serve Nursing Home Diversion clients less expensively in either the ADA or ALE waiver programs, there would be potential challenges and lost benefits of doing so, including increased risk of entering a nursing home and breaks in the continuity of care. In addition, savings would likely be less than expected if Nursing Home Diversion clients were shifted to these other waiver programs.

¹⁷ Similar results were reported in a Connecticut study that showed that a higher proportion of clients who chose not to enroll in their state's Medicaid community-based waiver program died within the first six months. For more information see Sharon K. Long, et al. "Getting by in the Community: Lessons from Frail Elders" 2005 Journal of Aging and Social Policy, Vol. 17(1).

¹⁸ Of the elders who were alive for the full 36 months in our study, Nursing Home Diversion program participants had, on average, 3 more months of Medicaid eligibility than elders who were in the non-waiver baseline group.

¹⁹ Elders can lose Medicaid eligibility for a number of reasons such as changes in assets or income as well as failing to provide updated eligibility information.

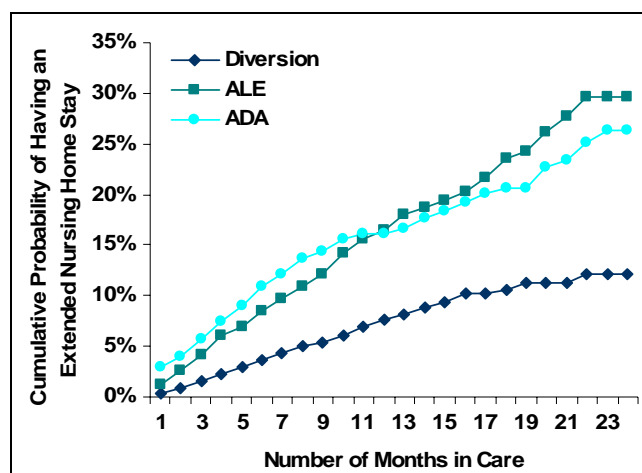
²⁰ We did not include the Channeling or Frail Elder programs in this comparison because they are only available to elders in Dade and Broward counties.

²¹ This conclusion is based on the same statistical technique that we used in the prior section which controlled for differences in frailty levels, chronic or serious health conditions, the presence of a caregiver, age, gender, race, region of the state, and client death.

²² Total Medicaid costs to serve each client are included in the analysis—all acute medical costs, community-based care, and nursing home costs.

ADA and ALE participants were more likely to enter a nursing home for an extended stay. Exhibit 5 shows that throughout the 24 months of our study, ADA and ALE clients were more likely to enter a nursing home than were clients who participated in the Nursing Home Diversion program. At the end of 24 months, Nursing Home Diversion participants had a 12% probability of having entered a nursing home for an extended stay compared to 30% and 26%, respectively, for ALE and ADA clients.

Exhibit 5
Nursing Home Diversion Participants Were Less Likely to Have an Extended Nursing Home Stay Than Were ADA and ALE Participants



Note: Based on Medicaid claims and program encounter data, January 2003 – December 2004. An extended nursing home stay is defined as having 30 nursing home days within two months.

Source: OPPAGA analysis.

Although several factors could contribute to this difference, a major difference is that unlike Nursing Home Diversion providers, ADA and ALE providers are not liable for nursing home care. When ADA or ALE participants need nursing home care, they are disenrolled from their waiver program and the Medicaid Program assumes the nursing home costs. Thus, ADA and ALE providers do not have a financial incentive to keep frailer and more medically complex clients out of nursing homes.

Breaks in coordination and continuity of care could affect clients' well-being. While both the ADA and ALE waivers provide care coordination, the care coordination provided to Nursing Home Diversion participants is more extensive and continuous. Both the ADA and ALE waiver

programs provide fewer services than the Nursing Home Diversion program and neither provides acute medical care or nursing home care. In comparison, care coordination for Nursing Home Diversion clients includes providing and coordinating all care, including acute medical care and community-based long-term care. As such, Nursing Home Diversion clients do not need to disenroll to receive care in a nursing home as is the case for ADA and ALE clients. This type of continuous care coordination is important as it can affect the ease with which elders move between settings such as moving from home to a hospital or rehabilitation center and back home or to an assisted living facility or nursing home.

Shifting Nursing Home Diversion participants to the ADA and ALE waivers could diminish potential savings. Savings could be less than expected if frail elders in the Nursing Home Diversion program were shifted to ADA and ALE. Increasing the proportion of frail elders in these other waiver programs could affect overall Medicaid costs and/or access to needed services. For example, adding more frail elders to the ALE waiver could mean that assisted living daily rates might increase to accommodate a higher percentage of waiver clients needing more personal care, therapy, or other services to help them stay in assisted living facilities.

Shifting Nursing Home Diversion clients to other waiver programs could also hinder access to services needed to delay nursing home entry by straining the capacity of current providers. A recent report from the Agency for Health Care Administration identified several barriers that hinder individuals from receiving the community-based services they need to stay in the community. These barriers included waiting lists for services and a lack of residential alternatives to nursing homes, such as assisted living facilities, to meet current demands.

 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. **Florida Monitor:** www.oppaga.state.fl.us

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Appendix A

Five Waiver Programs Serve Frail Elders in Florida

Table A-1

Waiver Programs Vary by Services Provided, Eligibility Criteria, and Reimbursement Mechanisms

Services	Eligibility	Reimbursement
Aged/Disabled Adult		
<p>Implemented in 1982, this waiver program provides services to individuals who live in their own homes or with a caregiver. Services provided include companion services, adult day health care, attendant care, case aide, case management, chore services, consumable medical supplies, counseling, environmental accessibility adaptation, escort services, family training, financial risk reduction, health support, home-delivered meals, homemaker and personal care services, nutrition, personal emergency response systems, pest control, physical risk reduction, physical therapy, respite care, skilled nursing, specialized medical equipment and supplies, and speech therapy. The waiver program does not provide acute medical services or nursing home services.</p> <p>In Fiscal Year 2004-05, the program served 12,186 people for a cost of \$82,777,286 for an average per client cost of \$6,793.</p>	<p>To participate in this waiver program, clients must</p> <ol style="list-style-type: none"> 1. be 65 years old or older or age 18 to 64 and determined disabled according to Social Security standards; 2. meet Supplemental Security Income, Medicaid for the Aged and Disabled, or Medicaid waiver assistance income and asset requirements; and 3. meet nursing facility level-of-care criteria as determined by Comprehensive Assessment Review and Evaluation Services (CARES). 	<p>Medicaid reimburses providers for those waiver services provided on a fee-for-service basis at the Medicaid fee or the provider's customary fee, whichever is lower.</p>
Assisted Living for the Elderly		
<p>Implemented in 1995, this waiver program provides services to people who reside in assisted living facilities. Services provided include case management, incontinence supplies and assisted living facility services, which include attendant call system and attendant care, behavior management, chore services, companion services, homemaker services, intermittent nursing services, medication administration, occupational therapy, personal care, physical therapy, specialized medical equipment and supplies, speech therapy, and therapeutic social and recreational services. The waiver program does not provide acute medical services or nursing home services.</p> <p>In Fiscal Year 2004-05, the program served 4,372 people for a cost of \$25,886,807 for an average per client cost of \$5,921.</p>	<p>To participate in this waiver program, clients must</p> <ol style="list-style-type: none"> 1. be 65 years old or older or age 60 to 64 and be determined disabled according to Social Security standards; 2. meet nursing facility level-of-care criteria as determined by CARES; 3. meet Supplemental Security Income, Medicaid for the Aged and Disabled, or Medicaid waiver assistance income and asset requirements; and 4. meet one or more of the following: <ol style="list-style-type: none"> a) require assistance with four or more activities of daily living (ADLs); b) require assistance with three ADLs plus supervision or administration of medication; c) require total help with one or more ADLs; d) have a diagnosis of Alzheimer's disease or another type of dementia and require assistance with two or more ADLs; e) have a diagnosed degenerative or chronic medical condition requiring nursing services that cannot be provided in a standard ALF, but are available in an ALF licensed for limited nursing or extended congregate care; or f) be a Medicaid-eligible recipient who meets ALF criteria; be awaiting discharge from a nursing facility placement; and be unable to return to private residence because of a need for supervision, personal care, periodic nursing services, or a combination of the three. 	<p>Medicaid reimburses providers for assisted living services at a daily rate and case management services at a monthly rate. Incontinence supplies are reimbursed separately on a monthly basis.</p>

Services	Eligibility	Reimbursement
<p>Nursing Home Diversion</p> <p>Implemented in 1998, this waiver program provides services to elders who live in their own homes, with a caregiver, or in an assisted living facility. The program includes both acute and long-term care community services. Acute medical services include community mental health services, dental, hearing and visual services, independent laboratory and x-ray, inpatient hospital and outpatient hospital/emergency, physicians, prescribed drugs and transportation (optional) services. Community-based services include adult companion, adult day health care, assisted living, case management, chore services, consumable medical supplies, environmental accessibility and adaptation, escort services, family training, financial assessment and risk reduction, home delivered meals, homemaker services, nutritional assessment and risk reduction, personal care, personal emergency response systems, respite care, occupational, physical and speech therapies, home health and nursing facility services. The waiver also provides long-term nursing home care.</p> <p>In Fiscal Year 2004-05, the program served 7,373 people for a cost of \$130,189,289 for an average per client cost of \$17,658.</p>	<p>To participate in this waiver program, clients must</p> <ol style="list-style-type: none"> 1. be 65 years of age or older; 2. Medicare Parts A & B & Medicaid eligible; 3. meet nursing facility level-of-care criteria as determined by CARES; and at risk of nursing home placement and meet one or more of the following clinical criteria; <ol style="list-style-type: none"> a) require assistance with five or more activities of daily living (ADLs); b) require assistance with four ADLs as well as require supervision or administration of medication; c) require total help with two or more ADLs; d) diagnosed with Alzheimer's disease or another type of dementia and require help with three or more ADLs; or e) diagnosed with a degenerative or chronic condition that requires daily nursing services; and 4. who can be safely served with home and community-based services. 	<p>Medicaid reimburses providers a per-person per-month capitated payment.</p>
<p>Channeling</p> <p>Implemented in 1985 this waiver program provides services to elders who live in their own homes or with a caregiver. Services provided include adult day health care, case management, chore services, companion services, counseling, environmental accessibility adaptation, family training, financial education and protection services, home health aide services, occupational therapy, personal care services, personal emergency response systems, physical therapy, respite care, skilled nursing, special home delivered meals, special drug and nutritional assessments, special medical supplies, and speech therapy. The waiver does not provide acute medical services or nursing home care.</p> <p>In Fiscal Year 2004-05, the program served 1,647 people for a cost of \$12,772,919 for an average per client cost of \$7,755.</p>	<p>To participate in this waiver program, clients must</p> <ol style="list-style-type: none"> 1. be age 65 or older; 2. meet the nursing facility level of care criteria as determined by CARES; 3. meet Supplemental Security Income, Medicaid for the Aged and Disabled, or Medicaid waiver assistance income and asset requirements; 4. have two or more unmet long-term care service needs; and 5. reside in Broward or Dade counties. 	<p>Medicaid reimburses providers a negotiated per diem rate. The cost of care may not exceed 85% of the average Medicaid nursing facility rates in Broward and Dade counties.</p>
<p>Frail Elder</p> <p>Implemented in 1987 as a waiver, this program provides both mandatory and extended services to elders who live in their own homes or with a caregiver. Mandatory services include acute medical care services, care coordination, adaptive equipment, adult day health care, homemaker services, personal care, home health services, and supplies. Expanded services are provided as needed and include caregiver training, emergency response, financial education, identity bracelets, pharmacy management, respite care, and expanded home health (includes nutrition, occupational, physical, and speech therapies). The waiver pays for long-term nursing home care through the end of the Fiscal Year in which a client entered a nursing home.</p> <p>In Fiscal Year 2004-05, the program served 3,803 people for a cost of \$50,936,140 for an average per client cost of \$13,394.</p>	<p>To participate in this program, clients must</p> <ol style="list-style-type: none"> 1. be age 21 and older (most are 65 and older); 2. receive Supplemental Security Income; 3. meet the nursing facility level of care criteria as determined by CARES; and 4. live in Broward or Dade counties. 	<p>The Frail Elder program is an optional benefit under the state's Medicaid HMO contracts in Broward and Dade counties. As such, providers receive a per-person per-month capitated payment.</p>

Appendix B

Data and Methodology

To evaluate the Nursing Home Diversion program's effectiveness in diverting clients from nursing home care and to analyze the program's costs, we compared program participants to similarly frail elders who were not enrolled in a Medicaid home and community-based waiver program. The experience of clients who were not enrolled in any Medicaid community-based waiver program allowed us to project what the state's costs might have been if program participants had not enrolled in the program.

In addition, part of our legislative charge was to determine whether program clients could be more cost-effectively served on other waiver programs, such as the Aged and Disabled Adult waiver or the Assisted Living for the Elderly waiver. Comparing Nursing Home Diversion program costs to these other waivers requires adjustments to account for the programs' different eligibility criteria, services, and provider risk for nursing home costs. To account for these differences, we selected a cohort of frail elders from these other two waivers who met program criteria and included all Medicaid acute care and long-term costs for these clients, including nursing home expenses.

This technical appendix is divided into the following four sections.

- Data sources
- Medicaid recipients selected for study
- Diversion of clients from nursing home care
- Analysis of Nursing Home Diversion costs

Data sources

To assess whether the Nursing Home Diversion program successfully delays Medicaid recipients from entering nursing homes and is cost-effective, we used three databases.

- Medicaid Long-Term Care Analysis File. This file combines Medicaid eligibility and claims information provided by the Agency for Health Care Administration with death certificate information from the Department of Health. The file also contains client demographic characteristics such as age, gender, and race.
- Nursing Home Diversion Encounter File. This file contains information reported by providers on the services individuals received through the Nursing Home Diversion program.
- Comprehensive Assessment Review and Evaluation Services (CARES) File and Client Information and Referral Tracking System (CIRTS) File. These files contain information on medical, psychological, and functional impairment levels of individuals seeking admission to Medicaid-covered nursing home care and community-based services.

Staff of the Florida Policy Exchange Center on Aging at the University of South Florida obtained, compiled, and provided the data to OPPAGA. The center's director, Dr. Glenn Mitchell, provided valuable insight and technical assistance.

Data limitations. Because of differences in enrollment dates between the Nursing Home Diversion encounter file and the Medicaid claims information, our estimate of the time it takes new enrollees to have a long-term nursing home stay may be off by plus or minus one month. Approximately 90% of the program enrollees were identified in both the Medicaid

claims information and the program's encounter file. The initial enrollment month in the encounter file was within plus or minus one month of the initial enrollment month in the Medicaid data for the large majority of enrollees. For our analysis, we used the enrollment dates in the Medicaid claims information.

In addition, problems with provider encounter data have been reported by consultants and actuaries working with the Department of Elder Affairs including inconsistencies in how providers report service data, incomplete data received from some providers and no data received from other providers. These data limitations precluded us from directly measuring cost-effectiveness as a ratio of nursing home days diverted to costs.

Medicaid recipients selected for the study

Selection rules for diversion and cost analyses. We selected frail elders who met the Nursing Home Diversion program eligibility requirements for which we had information (see Appendix A, Table A-1) and were new enrollees in one of the following four types of care: ²³

- the Nursing Home Diversion waiver,
- the Aged and Disabled Adult (ADA) waiver,
- the Assisted Living for the Elderly (ALE) waiver, and
- non-waiver Medicaid-paid care (baseline group).

We considered Nursing Home Diversion, ADA, and ALE waiver program participants as "new enrollees" if they had not been enrolled in the same waiver program within the prior three months. We used this rule to minimize the likelihood that a brief transitional change in one's type of care was treated as a new enrollment. We considered non-waiver Medicaid recipients as "new enrollees" into non-waiver care during the month in which they first met eligibility requirements for the Nursing Home Diversion program if they had not received Medicaid-paid nursing home care in the prior three months, and received Medicaid services during the study period. We used this selection rule as a proxy for one of the Nursing Home Diversion eligibility requirements (whether clients could be "safely treated in the community"). We did this because the CARES and CIRT assessment data does not include information directly related to whether non-waiver clients met this requirement.

Diversion analysis population and time period. For the diversion analysis we selected a cross-section of all recipients "newly enrolling" within a two-year period from January 2003 through December 2004, and examined their nursing home use through December 2004. Depending on when a person enrolled in this time period, we had between 1 and 24 months of data for each person. The available data in the Nursing Home Diversion encounter file, which provides information about nursing home use for Nursing Home Diversion clients, limited the time period we could analyze. Our statistical techniques adjust for the different number of months of data we have for individuals.

Cost analysis population and time period. For the cost analysis we selected a cohort of all recipients "newly enrolling" between January 2001 and June 2002. We then examined the total three-year Medicaid costs for each person in the cohort. Following individuals for three years allowed our analysis to reflect longer-term changes in services received and the associated Medicaid costs.

²³ The available data did not indicate whether individuals were diagnosed with degenerative or chronic conditions that require daily nursing services nor whether individuals could be safely served with home and community-based services. Our selection rules for the baseline group receiving non-waiver Medicaid-paid care were intended as a proxy for an indication that the elders could be safely served with home and community-based services.

Comparison of Nursing Home Diversion eligible groups in the analysis. Table B-1 indicates that, while the groups included in our analyses were relatively similar, there were some differences across care types in the Medicaid recipients' characteristics. For example, elders included in the analysis receiving services on the Assisted Living for the Elderly waiver had a higher rate of dementia and a lower rate of having an available caregiver. Having dementia and not having a caregiver are two factors that can increase the likelihood of entering a nursing home and increase Medicaid costs. We used statistical techniques to account for these remaining differences across care types.

Table B-1
Medicaid Recipients Included in the Study Were Similar in Demographic and Health-Related Characteristics

	Nursing Home Diversion	Assisted Living for the Elderly	Aged and Disabled Adult	Non-Waiver
Demographics				
Average age	82.4	83.2	81.1	81.9
Percentage female	76%	79%	76%	69%
Percentage white	62%	72%	46%	65%
Frailty and Caregiver Availability				
Average number of activities of daily living requiring some or total help (Maximum = 6)	3.4	3.2	4.4	4.4
Average number of instrumental activities of daily living requiring some or total help (Maximum = 8)	7.1	7.5	7.3	7.4
Average number of serious health conditions ¹ (Ranges from 0 to 11)	3.5	3.5	4.0	3.5
Percentage with dementia	53%	71%	55%	53%
Percentage with incontinence	62%	67%	71%	63%
Percentage with available caregiver	28%	2%	77%	18%
(N)	5,758	818	995	13,208

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

Source: OPPAGA analysis of Medicaid claims and CARES/CIRTS assessments, January 2003 – December 2004.

Comparison of Medicaid recipients in the analysis to the population of ADA, ALE, and non-waiver Medicaid recipients. The recipients we selected for our analyses are not representative of all ADA enrollees, ALE enrollees, or persons in non-waiver Medicaid care. For example, 57% of ALE enrollees and less than 40% of ADA enrollees and non-waiver Medicaid recipients with long-term care assessments met the Nursing Home Diversion age, Medicare enrollment, and frailty criteria. We selected the most frail elders served in each care type by ensuring that they met Nursing Home Diversion waiver criteria and had been assessed for long-term care services.²⁴ Table B-2 shows the percentage of Medicaid recipients in these care types with complete CARES assessments who met the Nursing Home Diversion program eligibility requirements for which we have information.

²⁴ At least 94% of the waiver program populations had an identified complete CARES or CIRTS long-term care assessment, compared to only 14% of non-waiver Medicaid recipient seniors. Individuals included in our analyses all had an assessment, an indicator of potential interest in receiving long-term care services.

Table B-2
Percentage of Medicaid Recipients With CARES Assessments
Who Met Nursing Home Diversion Eligibility Criteria
But Did Not Participate in the Program

Type of Care	Percentage Meeting Program Eligibility Criteria ¹
Assisted Living for the Elderly	57%
Aged and Disabled Adult	36%
Non-Waiver Medicaid Care	39%

¹The available data did not indicate whether individuals were diagnosed with degenerative or chronic conditions that require daily nursing services.

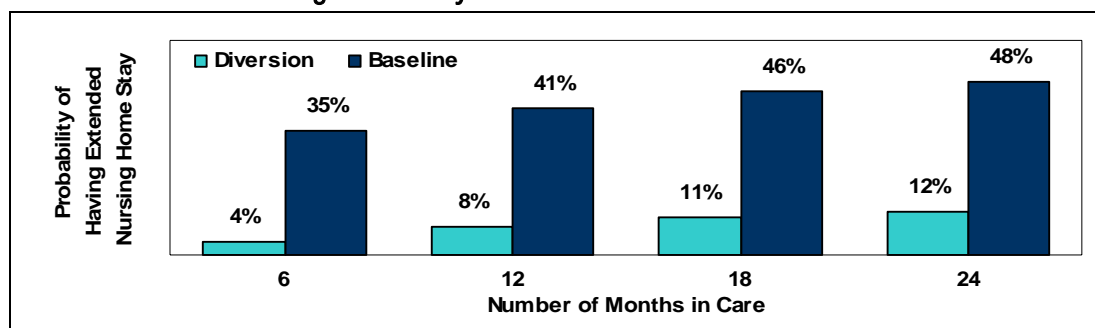
Source: OPPAGA analysis of Medicaid claims and CARES/CIRTS assessments, January 2003 – December 2004.

Self-selection issues. A variety of self-selection issues could affect the groups in our study. For example, elders have different attitudes about nursing home care. These different attitudes, which we could not measure, could cause them to choose different types of care and might contribute to different outcomes. For example, individuals with unfavorable opinions of nursing home care may be less likely to enter nursing homes regardless of their care alternatives and may be more likely to enter a home and community-based waiver. While our analysis indicates that reduced nursing home use among waiver enrollees is due to their waiver participation, reduced use may be due in part to the enrollees' opinions of nursing home care. To lessen the affect of these attitudinal differences, we included only those people in our study who had a CARES or CIRTS long-term care assessment, a potential indicator of their interest in receiving long-term care services.

Diversion of clients from nursing home care

To evaluate the extent to which program clients delay nursing home entry we used two statistical techniques, the Kaplan-Meier product-limit estimator and Cox's proportional hazard modeling, commonly referred to as survival/failure time analysis. Table B-3 below presents the *probability* of a "failure," i.e., entering a nursing home for an extended stay, given how long a new enrollee has been in care. Kaplan-Meier (1958) developed the method to estimate these probabilities, commonly referred to as the survival function. The Kaplan-Meier method is limited in its ability to consider differences in recipient characteristics across groups when estimating the survival function.

Table B-3
Elders Served by Nursing Home Diversion Were Less Likely to
Have an Extended Nursing Home Stay



Note: Based on Medicaid claims and Nursing Home Diversion program encounter data, January 2003 – December 2004. An extended nursing home stay is defined as having at least 30 nursing home days within two months.

Source: OPPAGA analysis.

Because survival analysis cannot account for differences in client characteristics, we used Cox's proportional hazard modeling to calculate the *relative risk* of Nursing Home Diversion clients having a "failure", i.e., entering a nursing home for an extended stay, compared to that of similar clients in non-waiver care. This technique accounts for the time a person is in care, as well as differences in recipient characteristics across groups. We found that elders not enrolled in any waiver program were nine times more likely to enter a nursing home for an extended stay compared to similar clients served by the Nursing Home Diversion program. Our analysis accounts for differences among the two groups in functional impairments, mental health status, availability of a caregiver, availability of the diversion waiver, and recipients' age, gender, and race. Table B-4 describes how we defined an extended nursing home stay and the other factors included in our analyses.

The Legislature's charge to OPPAGA also included a question about whether program clients could be served on other waivers. As noted earlier, there are some limitations in making such a comparison because waiver programs provide different services, have different eligibility criteria and may attract different clients. However, the group of ALE and ADA clients we used for this analysis all met the Nursing Home Diversion program eligibility criteria. We used the Kaplan-Meier and Cox's proportional hazard techniques described above to compare program clients with clients served on the ALE and ADA waivers.

Analysis of Nursing Home Diversion costs

We used ordinary least squares regression to assess the costs of the Nursing Home Diversion program. For each person in our analysis cohort, we calculated total three-year Medicaid costs and the length of time spent in each of the four types of care. The regression analysis estimated the costs per month in each type of care. As with Cox's proportional hazard modeling, we used ordinary least squares regression to account for differences in client characteristics across the study groups (see Table B-4).

All clients, even those who are initially diverted from nursing homes, may eventually require the level of care that can only be provided in an institution. We assigned the costs of Medicaid-paid nursing home months of care that individuals received to the waiver they had been enrolled in prior to the nursing home entry. However, if a person was in more than one type of care, we assigned costs for months with nursing home care in proportion to the length of time the person spent in each type of prior care. For example, if a person had two months of ALE care and three months of ADA care before entering a nursing home, we apportioned two-fifths (40%) of the costs to ALE and three-fifths (60%) to ADA. In effect, this approach holds the other waivers responsible for the cost of nursing home entry, in a manner comparable to the risk faced by Nursing Home Diversion providers.

Adjusting for client differences across groups, monthly costs for Nursing Home Diversion care were the most expensive, costing \$99 more than non-waiver care, \$212 more than ADA waiver care, and \$538 more than ALE waiver care.

Table B-4
Variables Used in Statistical Models

Variable	Description	Included in Analysis
Dependent Variables		
Months until extended nursing home stay	The number of months from newly enrolling to the beginning of the first month in which the recipient was in a nursing home for at least 30 days within two months.	Nursing home entry
Three-year total Medicaid costs	Total Medicaid expenditures for a three-year period beginning on the date of new enrollment in a waiver or newly becoming a non-waiver Medicaid recipient.	Cost analysis
Independent Variables: Type of Care		
Type of care of most recent enrollment	Yes or No: <ul style="list-style-type: none"> Enrolled in the Nursing Home Diversion program Enrolled in the Aged and Disabled Adult waiver Enrolled in the Assisted Living for the Elderly waiver Enrolled in non-waiver Medicaid care 	Nursing home entry
Months in type of care	The number of months spent in: <ul style="list-style-type: none"> Nursing Home Diversion waiver Aged and Disabled Adult waiver Assisted Living for the Elderly waiver Medicaid paid non-waiver care 	Cost analysis
Independent Variables: Impairments and Health		
Activities of daily living	The number of activities of daily living for which the recipient requires some or total help to perform. Activities of daily living include bathing, dressing, eating, toileting, transferring (e.g., from a wheelchair to a bed), and walking.	Nursing home entry and cost analysis
Instrumental activities of daily living	The number of instrumental activities of daily living for which the recipient requires some or total help to perform. Instrumental activities of daily living include light and heavy housework, preparing meals, taking medication, managing money, shopping, using the telephone, and driving.	Nursing home entry and cost analysis
Number of serious health conditions	The number of serious health conditions the recipient is experiencing. Serious health conditions include arthritis, bed sores, cancer, diabetes, emphysema, heart disease, incontinence, liver disease, pneumonia, and strokes.	Nursing home entry and cost analysis
Dementia	Indicates recipient has a diagnosis of Alzheimer's or other dementia.	Nursing home entry and cost analysis
Died	Indicates recipient died during the study period.	Nursing home entry and cost analysis
Independent Variables: Demographics		
Age	Indicates recipient's age.	Nursing home entry and cost analysis
Gender	Indicates if recipient is female.	Nursing home entry and cost analysis
Race	Indicates if recipient is white.	Nursing home entry and cost analysis
Other Independent Variables		
Caregiver	Indicates recipient has an available caregiver.	Nursing home entry and cost analysis
Planning and Service Area	Indicates the Department of Elder Affairs Planning and Service Area in which the recipient lives.	Nursing home entry and cost analysis
Did not meet diversion frailty criteria	Indicates whether a Nursing Home Diversion enrollee met the eligibility criteria by having a degenerative or chronic condition requiring daily nursing services, but did not meet the frailty criteria.	Nursing home entry and cost analysis
Nursing Home use in prior six months	Indicates whether the recipient was ever in Medicaid paid nursing home care in the six months prior to their enrollment.	Nursing home entry
Medicaid expenditures in prior six months	Indicates the average monthly Medicaid expenditures for the months in which recipients were in Medicaid in the six months prior to their enrollment.	Cost analysis

Statistical Model Performance. The regression model explained 49% of the variation in three-year total Medicaid costs. The explanatory power of the model is acceptable given the limits of social science research.

Nursing Home Diversion rate changes. Current rates for the program are lower than the rates included in our study. Because we followed enrollees for three years based on an enrollment window from January 2001 through June 2002, a large share of the cost for enrollees was paid under the old rates of \$2,342 per month per enrollee.²⁵ In December 2005, just prior to the most recent rate reduction, the per-month cost averaged \$1,961. The decrease in the program's monthly costs should result in smaller differences in cost among waiver programs.

Program rates were further reduced in January 2006 to reflect reduced prescription drug costs due to the implementation of Medicare Part D prescription drug coverage. Program rates currently range from \$1,374 in Palm Beach County to \$1,837 in Miami-Dade. All Medicaid programs that serve elders will be affected by the implementation of Medicare Part D. However, the extent to which Medicare Part D will affect the costs of the Nursing Home Diversion program compared to others is unknown at this time.

²⁵ The average program capitated rate during the time of our analysis was \$2,295.