



Larry Hogan, Governor · Boyd K. Rutherford, Lt. Governor · Dennis R. Schrader, Secretary

July 21, 2021

The Honorable Guy Guzzone
Chair
Senate Budget and Taxation Committee
3 West Miller Senate Office Bldg.
Annapolis, MD 21401-1991

The Honorable Maggie McIntosh
Chair
House Appropriations Operations
121 House Office Bldg.
Annapolis, MD 21401-1991

Re: 2020 Joint Chairmen's Report (p. 112) – Report on Longitudinal Cost-Benefit Analysis of Expanding Home- and Community-Based Waivers

Dear Chairs Guzzone and McIntosh:

The Maryland Department of Health (MDH) respectfully submits a revised copy of the 2020 Joint Chairmen's Report (p. 112) Report on Longitudinal Cost-Benefit Analysis of Expanding Home- and Community-Based Waivers. Upon additional internal review, it was identified that some of the figures in the report, including an Appendix, were not carried over into the original final PDF version. The content of the report remains the same.

If you have questions or need more information, please contact Heather Shek, Director, Office of Governmental Affairs at 410-767-5282 or heather.shek@maryland.gov.

Sincerely,

Dennis R. Schrader
Secretary

cc: Heather Shek, Director, Office of Governmental Affairs
Sarah Albert, Department of Legislative Services, 5 copies



The Hilltop Institute

UMBC



Expanding Access to
Long-Term Services and
Supports through Home
and Community-Based
Services

report



December 2020



Suggested Citation: The Hilltop Institute. (2020, December23). *Expanding access to long-term services and supports through home and community-based services*. Baltimore, MD: UMBC.

Expanding Access to Long-Term Services and Supports through Home and Community-Based Services

Table of Contents

List of Abbreviations.....	i
Executive Summary	ii
Introduction	1
Analysis 1: Literature Review Examining the Costs and Benefits of Medicaid HCBS	3
Analysis 2: A Descriptive Analysis of Maryland’s CO Waiver Registry.....	12
Analysis 3: Maryland’s Experience with Rebalancing HCBS Relative to Institutional Care	21
Analysis 4: Estimating Annual Medicaid Costs for CO Waiver Participants and Individuals on the Registry	31
Analysis 5: Estimating the Cost to Maryland Medicaid of Increasing Enrollment in the CO Waiver	41
Summary of Findings	47
References	50
Appendix A. Community First Choice Enrollment.....	59
Appendix B. Procedure Codes for HCBS Spending.....	60

Expanding Access to Long-Term Services and Supports through Home and Community-Based Services

List of Tables and Figures

Tables

1. CO Waiver Capacity and Enrollment, FY 2017 – FY 2020.....	13
2. Demographic Characteristics of Individuals Active on the CO Waiver Registry as of September 30, 2020.....	16
3. Year Enlisted on the CO Waiver Registry for Individuals Active on September 30, 2020	17
4. Year Enlisted on the CO Waiver Registry for Individuals Active on September 30, 2020, by Race	17
5. Nursing Facility Utilization for Individuals Active on the CO Waiver Registry in CY 2019, by Age Group.....	18
6. CO Waiver Registry Population by Estimated NFLOC as of September 30, 2020	19
7. Demographic Characteristics of Waiver and Registry Population Samples	36
8. Total Medicaid Costs by Span	37
9. Total Medicaid Costs by Cost Center and Span.....	38
10. Annual Expected Net Cost per Waiver Spot, by Span and Cost Center	43
11. Estimates of Maryland’s State Share of Medicaid Costs from Adding CO Waiver Capacity.....	44
A1. Community First Choice Participants in Maryland, FY 2014 – FY 2019	59
B1. Procedure Codes Used to Identify HCBS Claims	60

Figures

1. Medicaid HCBS and Institutional LTSS Expenditures as a Percentage of Total Medicaid LTSS Expenditures, FY 1981 – FY 2016	5
2. Medicaid HCBS Expenditures as a Percentage of Total Medicaid LTSS, by State, FY 2016.....	6
3. Projected Take-Up Rate of CO Waiver Enrollment of Individuals Active on the Registry as of September 30, 2020	20
4. Number of Individuals on the Registry as of September 30, 2020, Expected to Meet NFLOC and Enroll in CO Waiver.....	20
5. LTSS Rebalancing Initiatives in Maryland, 2007 – 2020	23

6. LTSS Use and Expenditures in Maryland by Type of Service, FY 2013 – FY 2019.....	27
7. Licensed Nursing Facility Beds per 1,000 LTSS Users in Maryland, FY 2012 – FY 2019 ..	28
8. Nursing Facility Days (in Thousands) Paid by Medicaid per 1,000 LTSS Users in Maryland, FY 2012 – FY 2018	29
9. Diagram of Waiver-Registry Comparison Method.....	33

List of Abbreviations

ACA	Affordable Care Act
ADLs	activities of daily living
BHH	Behavioral Health Home Program
BIP	Balancing Incentive Program
CFC	Community First Choice
CMS	Centers for Medicare & Medicaid Services
CO	Home and Community-Based Options Waiver
CPAS	Community Personal Assistance Services
CY	calendar year
DDA	Developmental Disabilities Administration
D-SNP	dual-eligible special needs plan
FAI	Financial Alignment Initiative
FFS	fee-for-service
FMAP	Federal Medical Assistance Percentage
FY	fiscal year
HCBS	home and community-based services
IADLs	instrumental activities of daily living
ISAS	In-Home Supports Assurance System
LAH	Living at Home Waiver
LTSS	long-term services and supports
MAP	Maryland Access Point
MAPC	Medical Assistance Personal Care
MDC	Medical Day Care
MFP	Money Follows the Person
MMIS2	Medicaid Management Information System
NFLOC	Nursing Facility Level of Care
PACE	Program of All-Inclusive Care for the Elderly
PMPM	per member per month
REM	Rare and Expensive Case Management Program
RTCI	Return to the Community Initiative
RUG	resource utilization group
SSI	Supplemental Security Income
WOA	Waiver for Older Adults

Executive Summary

This report was prepared by The Hilltop Institute at the University of Maryland, Baltimore County (UMBC) as directed by the 2020 Joint Chairmen’s Report¹ from the Maryland General Assembly. The Joint Chairmen’s request follows:

... the Maryland Department of Health and The Hilltop Institute at the University of Maryland, Baltimore County, in consultation with other stakeholders, submit a report to the budget committees that provides a cost-benefit analysis of expanding access to long-term care services through home and community-based waivers. The analysis should include: (1) a comparison of all health care costs incurred by individuals by different levels of acuity who have moved into waiver services and those who remain on the waiting list for waiver services; (2) to the extent practical, comparison data for a five-year period; (3) how to capture savings from provision of waiver services through Medicaid that accrues to Medicare for the benefit of the Medicaid program; (4) the extent to which the provider community can accommodate additional individuals served through waiver and similar Medicaid services; and (5) any other information that is necessary to adequately capture the full extent of incurred cost and cost avoidance from more fully utilizing waiver services. (p. 112)

Hilltop, in consultation with the Maryland Department of Health (“the Department”), interpreted this directive to require an examination of Maryland’s Home and Community-Based Options Waiver (CO Waiver), established in 2014 through a merger of the Waiver for Older Adults and the Living at Home Waiver. Section 1915(c) of the Social Security Act gives states the option to waive Medicaid rules governing institutional care so that they can establish home and community-based services (HCBS) programs like the CO Waiver. This program enables Medicaid participants who would otherwise require care in a nursing facility or other institution to receive care in their home or community. Annual waiver capacity—which must be approved by the Centers for Medicare & Medicaid services (CMS)—is proposed by the state based on anticipated need, availability of providers, and the state’s budget outlook. Individuals interested in participating in the waiver are added to the CO Waiver Registry, a waiting list maintained by the state.

To address the Joint Chairmen’s request, Hilltop conducted a five-part study, summarized below.

Analysis 1: Literature Review Examining the Costs and Benefits of Medicaid HCBS

The literature review is intended to help state officials, legislators, and other stakeholders better understand findings from research on Medicaid HCBS programs and how this research might inform policy in Maryland. The review focused on the experience of states with rebalancing

¹ Chairmen of the Senate Budget and Taxation Committee and House Appropriations Committee. (2020, April). *Report on the fiscal 2021 state operating budget (SB 190) and the state capital budget (SB 191) and related recommendations (Joint Chairmen’s report, 2020 session)*. Retrieved from <http://mgaleg.maryland.gov/Pubs/BudgetFiscal/2020rs-budget-docs-jcr.pdf>

programs, including expenditures for community-based care relative to institutional care, cost savings from diverted nursing facility admissions, cost-effectiveness analyses that benchmark HCBS cost savings against outcomes such as participant gains in functional status or quality of life, and outcomes of initiatives to better integrate benefits for individuals who are dually eligible for Medicare and Medicaid. As Maryland considers next steps in expanding the availability of Medicaid HCBS, it might want to consider the following findings from the literature review:

- States that rebalance thoughtfully and gradually are less likely to incur unmanageable service utilization and costs when expanding HCBS.
- Findings from studies examining the extent to which states have realized cost savings from Medicaid HCBS programs are mixed.
- While studies of cost savings are mixed, HCBS participants report a higher quality of life, and community living is recognized as a basic right pursuant to the Olmstead decision.
- The literature offers little evidence on the extent to which Medicaid HCBS programs actually delay or avert nursing facility admission.
- Because savings from Medicaid HCBS programs for dual eligibles are most likely to accrue to Medicare, states should consider alternative payment models that require Medicare savings to be shared with Medicaid.

Analysis 2: A Descriptive Analysis of Maryland's CO Waiver Registry

To examine the potential effects of increasing CO Waiver capacity in Maryland, Hilltop described individuals on the CO Waiver registry and estimated the number of registrants expected to enroll if given the opportunity based on nursing facility level of care (NFLOC) and financial eligibility criteria. As of September 30, 2020, there are 19,804 individuals on the CO Waiver registry. Of those:

- 63 percent were female; 40 percent were over age 75; 39 percent were White; and 36 percent were Black.
- 46 percent were enrolled in Medicaid and 20 percent were full dual eligibles for Medicare and Medicaid.
- 16 percent received HCBS.
- 47 percent of registrants have been on the registry for three years or longer, while 9 percent have been on it since 2014. Time spent on the registry was similar across HCBS users and non-users, and across racial groups.
- 9 percent had a nursing facility stay in 2019, and 80 percent of those with a nursing facility stay were not enrolled in an HCBS program.

To estimate the number of registrants who would likely meet NFLOC and financial eligibility for the CO Waiver, Hilltop used available interRAI and Level 1 Screen data and historic enrollment rates. **Hilltop estimated that of the 19,804 registrants, 3,088 (16 percent) would meet NFLOC and financial eligibility criteria and enroll in the CO Waiver if invited to apply.**

Analysis 3: Maryland's Experience with Rebalancing HCBS Relative to Institutional Care

Rebalancing refers to transforming long-term services and supports (LTSS) by increasing the availability of and expenditures for HCBS relative to nursing facility care. This analysis describes systemic changes in LTSS in Maryland within the context of the rebalancing initiatives implemented in the state. The data demonstrate that Maryland has made steady progress in rebalancing. Key findings include the following:

- During the seven-year period of fiscal year (FY) 2013 to FY 2019, the number of Medicaid participants using LTSS—both HCBS and nursing facility care—increased by 12 percent, from 38,530 to 43,266. At the same time, total Medicaid expenditures for LTSS increased by 22 percent, from \$1.4 billion to \$1.8 billion.
- During this same period, the number of individuals using Medicaid HCBS grew by 39 percent, from 13,961 to 19,440. Expenditures for Medicaid HCBS grew by 74 percent, from \$279 million to \$485 million.
- From FY 2013 to FY 2019, expenditures for Medicaid nursing facility services grew by just 9 percent, from \$1.12 billion to \$1.2 billion, reflecting the 3 percent decline in Medicaid nursing facility residents from during this period (24,569 to 23,286).
- The number of licensed nursing facility beds in the state decreased by 13 percent from FY 2012 through FY 2019, consistent with a decrease in nursing facility residents over this time period.

Analysis 4: Estimating the Association between CO Waiver Participation and Health Care Utilization

The fourth analysis aimed to determine the individual-level net Medicaid costs of enrollment in the CO Waiver over three cost centers: nursing facility costs, HCBS costs, and all other Medicaid costs. This methodology includes Medicaid costs incurred by the roughly half of individuals on the registry who are Medicaid participants. Medicaid costs for registrants are included even after they leave the registry, thus accounting for potential cost avoidance due to nursing facility admission. **Hilltop found that individuals in the waiver incur approximately \$50,000 to \$60,000 in Medicaid expenditures per year, roughly \$40,000 more than individuals on the registry.** The cost differential is driven almost entirely by HCBS spending. Further, there is evidence of cost avoidance, as individuals on the registry tend to incur substantially more nursing facility costs than individuals in the waiver. While the differences may reflect multiple causal mechanisms resulting from CO Waiver participation—including differential Medicaid enrollment and additional HCBS utilization—Hilltop believes this demonstrates that, in aggregate, Medicaid costs for individuals in the waiver substantially exceed those for individuals on the registry.

Analysis 5: Estimating the Cost to Maryland Medicaid of Increasing Enrollment in the CO Waiver

In the fifth and final analysis, Hilltop estimated the net cost to Maryland Medicaid of increasing the capacity of the CO Waiver. This analysis uses the overall cost differentials estimated in Analysis 4 and applies two adjustment factors to account for waiver occupancy and the functional need of individuals on the registry. **Hilltop found that the state's share of the expected annual net costs to Maryland Medicaid of an additional waiver spot ranged from roughly \$10,000 to \$12,500 (\$20,000 - \$25,000 total funds).** It is important to note that these cost estimates are not solely a result of additional CO Waiver service utilization and may be driven by differential Medicaid enrollment and other HCBS utilization as a result CO Waiver participation. Regardless of the mechanism, however, these cost estimates represent Hilltop's best estimate of the state's share of the additional annual net costs that would accrue to Maryland Medicaid as a result of expanding the CO Waiver.

Summary of Findings and Policy Implications

1. The evidence is mixed on whether states realize cost savings from expanding Medicaid HCBS, but HCBS participants report a higher quality of life and reduced caregiver burden. Many believe that greater satisfaction among Medicaid HCBS participants and their caregivers is reason enough to expand HCBS programs.
2. Maryland has made steady progress in rebalancing community-based care relative to institutional care, but the state will need to proactively engage in new strategies to ensure that rebalancing continues. National data on state rebalancing show that Maryland's HCBS expenditures in FY 2016 accounted for 56 percent of total LTSS expenditures, up from 32 percent in FY 2005.² State data show evidence of a continued increase in Medicaid HCBS expenditures: from \$279.5 million in FY 2013 to \$485 million FY 2019. States that rebalance thoughtfully and gradually as Maryland has done are less likely to incur unmanageable service utilization and costs when expanding HCBS (Kaye et al., 2012).
3. As the state considers HCBS expansion, policies related to nursing facility bed capacity and reimbursement policy should also be examined. An analysis of nursing facility policy is beyond the scope of this study. However, it is important to note that while the number of licensed nursing facility beds per 1,000 Medicaid LTSS users and the number of Medicaid-paid nursing facility days both declined at a moderate but steady pace from FY 2013 to FY 2017, the rate of decline has since slowed considerably.

² Centers for Medicare & Medicaid Services. (n.d). *Improving the balance: The evolution of long-term services and supports, FY 1981-2014*. Retrieved from <https://www.medicaid.gov/medicaid/long-term-services-supports/reports-evaluations/index.html>

4. **Hilltop estimates that of the 19,804 individuals on the CO Waiver registry as of September 2020, only 3,088 (16 percent) will meet financial eligibility and NFLOC requirements.** Sixty-five percent of registrants have been on the registry for three years or longer. Twenty percent are full dual eligibles. Forty-six percent of registrants are enrolled in Medicaid, and one-third of Medicaid enrollees are receiving HCBS services.
5. **Nine percent of individuals on the registry had nursing facility stays in FY 2019 but were not fast-tracked into the CO Waiver.** This is despite Maryland's Money Follows the Individual Act.³ Improved discharge practices in nursing facilities could help ensure that eligible individuals are transitioned directly into the CO Waiver.
6. **CO Waiver participants average \$50,000-\$60,000 in total Medicaid expenditures each year, about \$40,000 more than individuals on the registry.** CO Waiver participants have substantially higher Medicaid costs than individuals on the registry, roughly half of whom are eligible for Medicaid. These estimates include the cost of nursing facility stays for both waiver participants and registrants, thus taking into account "cost avoidance" as requested by the Joint Chairmen. Costs for HCBS, acute care, and pharmacy are also included. The cost difference is largely driven by Medicaid-funded HCBS.
7. **Hilltop estimates that the cost to the state of providing CO Waiver services to the 3,088 individuals on the registry who would likely meet financial eligibility and NFLOC requirements would be about \$31-\$39 million annually.** The state cost for each additional CO Waiver enrollee is estimated to be about \$10,000-\$12,500 per year (\$20,000 - \$25,000 total funds). These estimates include nursing facility costs avoided. Estimates are for state costs only and do not include federal Medicaid matching funds.
8. **Cost savings from providing Medicaid-financed HCBS to dual eligibles may accrue mostly to Medicare, suggesting the need for alternative payment models that require Medicare and Medicaid to share any savings.** Many believe that when dual eligibles receive high-quality HCBS through Medicaid, the Medicare program benefits from avoided hospitalizations and emergency department visits. To date, evaluations of federal demonstrations such as the Financial Alignment Initiative have examined only Medicare savings, but smaller studies such as those cited in this report's literature review provide some evidence of greater Medicare savings from programs that integrate Medicare and Medicaid benefits. Maryland is considering initiatives to promote increased enrollment of dual eligibles in dual eligible special needs plans (D-SNPs) and the Program of All-Inclusive Care for the Elderly (PACE), but take-up of these programs is likely to be limited based on prior experience in Maryland and across the country. The state might consider leveraging the Total Cost of Care Model and particularly the Maryland Primary Care Program, a component of the model, to develop an innovative shared savings model.

³ MD. Code Ann., Health-Gen § 15-137.

Introduction

This report was prepared by The Hilltop Institute at the University of Maryland, Baltimore County (UMBC) as directed by the 2020 Joint Chairmen's Report⁴ from the Maryland General Assembly. The Joint Chairmen's request follows:

... the Maryland Department of Health and The Hilltop Institute at the University of Maryland, Baltimore County, in consultation with other stakeholders, submit a report to the budget committees that provides a cost-benefit analysis of expanding access to long-term care services through home and community-based waivers. The analysis should include: (1) a comparison of all health care costs incurred by individuals by different levels of acuity who have moved into waiver services and those who remain on the waiting list for waiver services; (2) to the extent practical, comparison data for a five-year period; (3) how to capture savings from provision of waiver services through Medicaid that accrues to Medicare for the benefit of the Medicaid program; (4) the extent to which the provider community can accommodate additional individuals served through waiver and similar Medicaid services; and (5) any other information that is necessary to adequately capture the full extent of incurred cost and cost avoidance from more fully utilizing waiver services. (p. 112)

In response, Hilltop, in consultation with the Maryland Department of Health ("the Department"), designed a five-part study, summarized as follows.

Analysis 1: Literature Review Examining the Costs and Benefits of Medicaid (HCBS)

The literature review is intended to help state officials, legislators, and other stakeholders better understand findings from research on Medicaid HCBS programs and how this research might inform policy in Maryland. The review focuses on the experience of states with rebalancing programs and expenditures for community-based care relative to institutional care, cost savings from Medicaid HCBS programs that help prevent nursing facility admissions, cost-effectiveness analyses that benchmark HCBS cost savings against outcomes such as participant gains in functional status or quality of life, and outcomes of initiatives to better integrate Medicare and Medicaid benefits for individuals who are eligible for both programs (dual eligibles).

Analysis 2: A Descriptive Analysis of Maryland's CO Waiver Registry

This analysis describes individuals on the CO Waiver registry. The CO Waiver—established in 2014 and replacing the former Waiver for Older Adults (WOA) and the Living at Home (LAH) Waiver—provides services and supports that enable older adults and individuals with physical disabilities to live in their own homes and communities. Waiver participants must meet financial eligibility requirements and be assessed to require a nursing facility level of care (NFLOC). Waiver

⁴ Chairmen of the Senate Budget and Taxation Committee and House Appropriations Committee. (2020, April). *Report on the fiscal 2021 state operating budget (SB 190) and the state capital budget (SB 191) and related recommendations (Joint Chairmen's report, 2020 session)*. Retrieved from <http://mgaleg.maryland.gov/Pubs/BudgetFiscal/2020rs-budget-docs-jcr.pdf>

participation is limited by federally approved waiver capacity and the state's fiscal outlook, so individuals seeking to enroll must request to be added to the registry. In this analysis, we examine CO Waiver capacity and enrollment, the demographics of individuals on the registry, years spent on the registry, the number of registrants with a recent nursing facility stay, and the number of registrants likely to meet eligibility requirements if invited to enroll in the waiver.

Analysis 3: Maryland's Experience with Rebalancing HCBS Relative to Institutional Care

This analysis describes systemic changes in the availability and utilization of long-term services and supports (LTSS) within the context of rebalancing initiatives implemented in Maryland. Rebalancing refers to shifting the balance of LTSS utilization and expenditures toward HCBS and away from institutional care. The analysis chronicles rebalancing initiatives in Maryland and examines trends in LTSS utilization and expenditures, the number of licensed nursing facility beds in the state and Medicaid-paid nursing facility days, and the number of days Medicaid participants with and without HCBS typically spend in the community prior to a nursing facility admission.

Analysis 4: Estimating the Association between CO Waiver Participation and Health Care Utilization

This analysis uses Maryland Medicaid claims data to compare, over time, Medicaid costs for individuals participating in the CO Waiver to Medicaid costs of individuals on the CO registry, including their post-registry experience. The analysis includes HCBS costs, nursing facility costs, and all other Medicaid costs. The analysis results in an estimate for annual Medicaid expenditures for individuals participating in the CO Waiver and compares this to an estimate of annual Medicaid costs for individuals on the registry.

Analysis 5: Estimating the Cost to Maryland Medicaid of Increasing Enrollment in the CO Waiver

This analysis uses Maryland Medicaid claims data to estimate annual costs to the Maryland Medicaid program of increasing the number of individuals participating in the CO Waiver. The analysis uses findings from Analysis 4 to calculate the average annual net cost of an occupied spot on the CO Waiver after adjusting for churn in enrollment, delays in refilling waiver spots, and registrants who may not meet a NFLOC. The analysis results in estimates for the state's share of the costs in adding CO Waiver capacity of varying amounts.

The following sections discuss methodologies and findings in depth. The report concludes with a summary of findings and commentary on implications for Maryland as the state explores strategies for further rebalancing to expand access to Medicaid-financed HCBS.

Analysis 1: Literature Review Examining the Costs and Benefits of Medicaid HCBS

Introduction

The goal of the literature review that follows is to help state officials, legislators, and other stakeholders better understand findings from research on Medicaid HCBS programs and how this research might inform policy in Maryland. The review focuses on the experience of states with rebalancing programs and expenditures for community-based care relative to institutional care, cost savings from Medicaid HCBS programs that help avert nursing facility admissions, cost-effectiveness analyses that benchmark HCBS cost savings against outcomes such as participant gains in functional status or quality of life, and outcomes of initiatives to better integrate Medicare and Medicaid benefits for dual eligibles. A comprehensive list of references at the end of this report includes the peer-reviewed journals and grey area literature that we examined. We confined our review to the most recent and relevant literature from leading researchers in the field as well as reports from states and the evaluators of their programs.

Background

Established in 1965 through amendments to the Social Security Act, Medicaid has long been criticized for its “institutional bias.” This is because federal law requires state Medicaid programs to cover nursing facility care for anyone who is medically and financially eligible. As such, Medicaid nursing facility care is an entitlement.

In 1981, Congress added §1915(c) to the Social Security Act, giving states the option to receive a waiver of Medicaid rules governing institutional care so that they could establish HCBS programs for Medicaid participants who would otherwise require care in a nursing facility or other institution. States receive federal matching support for HCBS waiver services, the programs operate under federally approved annual enrollment caps, and states must provide assurances that average per capita costs for HCBS will not exceed what institutional care would have cost.

HCBS are designed to allow individuals with cognitive, physical, mental health, and other chronic disabling conditions to remain in their home and home-like settings rather than in an institution (Chen & Berkowitz, 2012; Hsieh, 2017; Watts, Musumeci, & Chidambaram, 2020). HCBS includes adult day health care programs, home health services, personal care services, assistive technology, case management services, and more (Sowers, Claypool, & Musumeci, 2016). Program eligibility, services covered, delivery of services, claims reimbursement, and federal matching funds vary by state (Artiga, Hinton, Rudowitz, & Musumeci, 2017).

Pivotal to efforts to promote community living, the U.S. Supreme Court’s 1999 landmark Olmstead decision required that individual with disabilities receive services in the most integrated setting appropriate to their needs. Following this important decision, a number of federal initiatives have supported state efforts to “rebalance” their Medicaid LTSS systems toward a more equitable balance between the share of spending and the provision of services in

home and community settings relative to institutional settings (CMS, 2020). Initiatives in the 2010 Affordable Care Act (ACA) supported transitioning individuals in nursing facilities to the community and allowing individuals to age in place, further encouraging rebalancing by states (Borck, Peebles, Miller, & Schmitz, 2014).

Like Maryland, many states have far more Medicaid participants requesting HCBS waiver program services than waiver capacity and budgetary constraints allow. In 2017, 707,000 individuals were on HCBS waiting lists in 40 states, an increase of 8 percent from 2016 (Musumeci, Chidambaram, & Watts, 2019). About 40 percent of states adopting the ACA Medicaid expansion to cover individuals with income up to 138 percent of the federal poverty level (FPL) have experienced growth in their waiting lists for HCBS, suggesting unmet need among the expansion population (Musumeci et al., 2019).

Benefits of HCBS

Research has consistently shown that the use of HCBS decreases the risk of institutionalization for older adults and individuals with disabilities (Chen & Berkowitz, 2012; Hsieh, 2017; Muramatsu et al., 2007; Thomas & Applebaum, 2015). Further, an increase in a state's percentage of HCBS expenditures relative to institutional expenditures was found to be associated with more successful discharges from nursing facilities (Xu & Intrator, 2020).

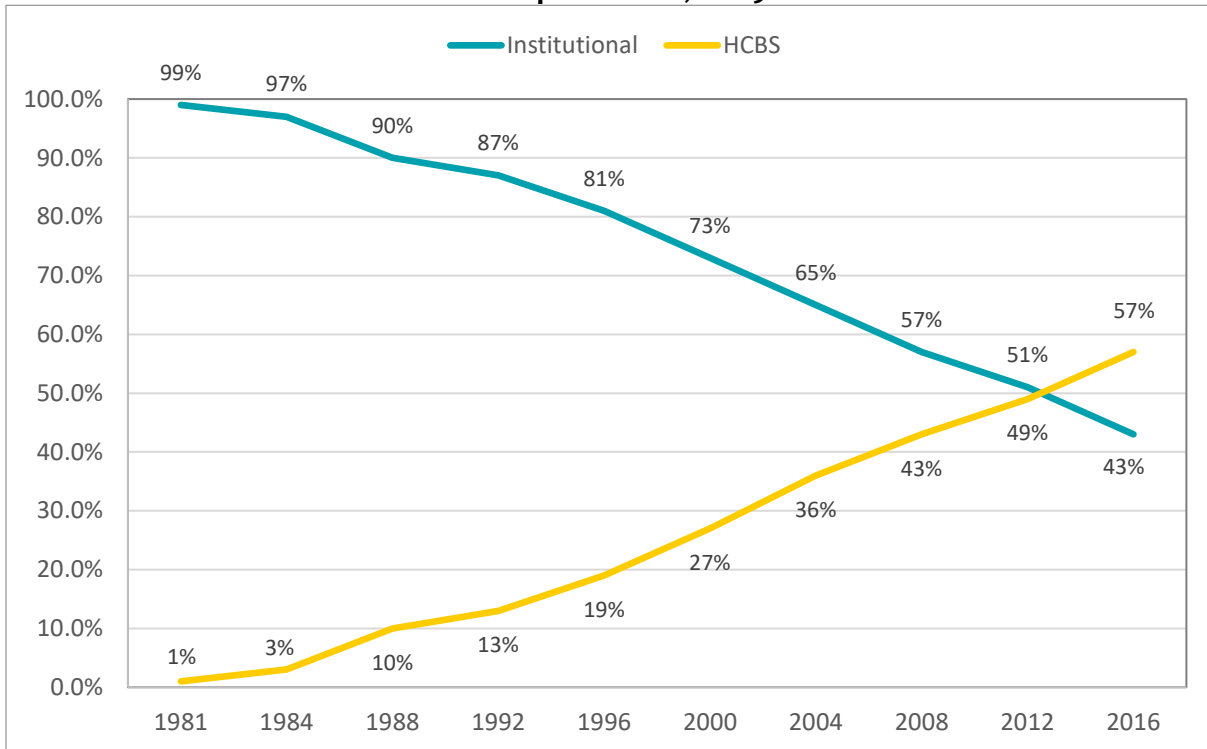
In addition to preventing institutionalization and facilitating nursing facility discharge, access to HCBS services can supplement the care provided by informal caregivers such as family and friends. Research has shown that access to HCBS is linked to reduced stress among caregivers (Hong & Casado, 2015; Kristof, Fortinsky, Kellett, Porter, & Robison, 2017). A study of the Connecticut Money Follows the Person (MFP) Rebalancing Demonstration found that caregivers of older adults who were recently discharged from a nursing facility and had access to HCBS reported less burden, fewer symptoms of depression and anxiety, and more positive views of caregiving (Kristof et al., 2017). Similarly, the generally positive effects of HCBS access on mental health (e.g., depression, life satisfaction) and physical function has also been widely observed among service beneficiaries (Kim, Park, Bishop-Saucier, & Amorim, 2017; Muramatsu, Yin, & Hedeker, 2010). A study by Pepin and colleagues (2017) finds higher rates of depression among HCBS beneficiaries but a greater use of mental health services compared to non-users, highlighting the importance of HCBS in detecting depression in—and delivering mental health interventions to—older adults. Participants in the Connecticut MFP demonstration reported a significant improvement in quality of life and life satisfaction after transition to the community (Robison, Porter, Shugrue, Kleppinger, & Lambert, 2015). The national evaluation of the MFP demonstration found significant improvements in quality of life for individuals who transitioned from nursing facilities to HCBS programs in the community (Mathematica, n.d.).

Rebalancing LTSS

Medicaid HCBS spending in the U.S. surpassed Medicaid spending for institutional care in 2013 and reached 57 percent of total LTSS expenditures in 2016 (Figure 1) (Eiken, Sredl, Burwell, &

Amos, 2018). In 2016, Medicaid programs spent \$94 billion on HCBS and \$72 billion on institutional services (Eiken et al., 2018).

Figure 1. Medicaid HCBS and Institutional LTSS Expenditures as a Percentage of Total Medicaid LTSS Expenditures, FY 1981 – FY 2016

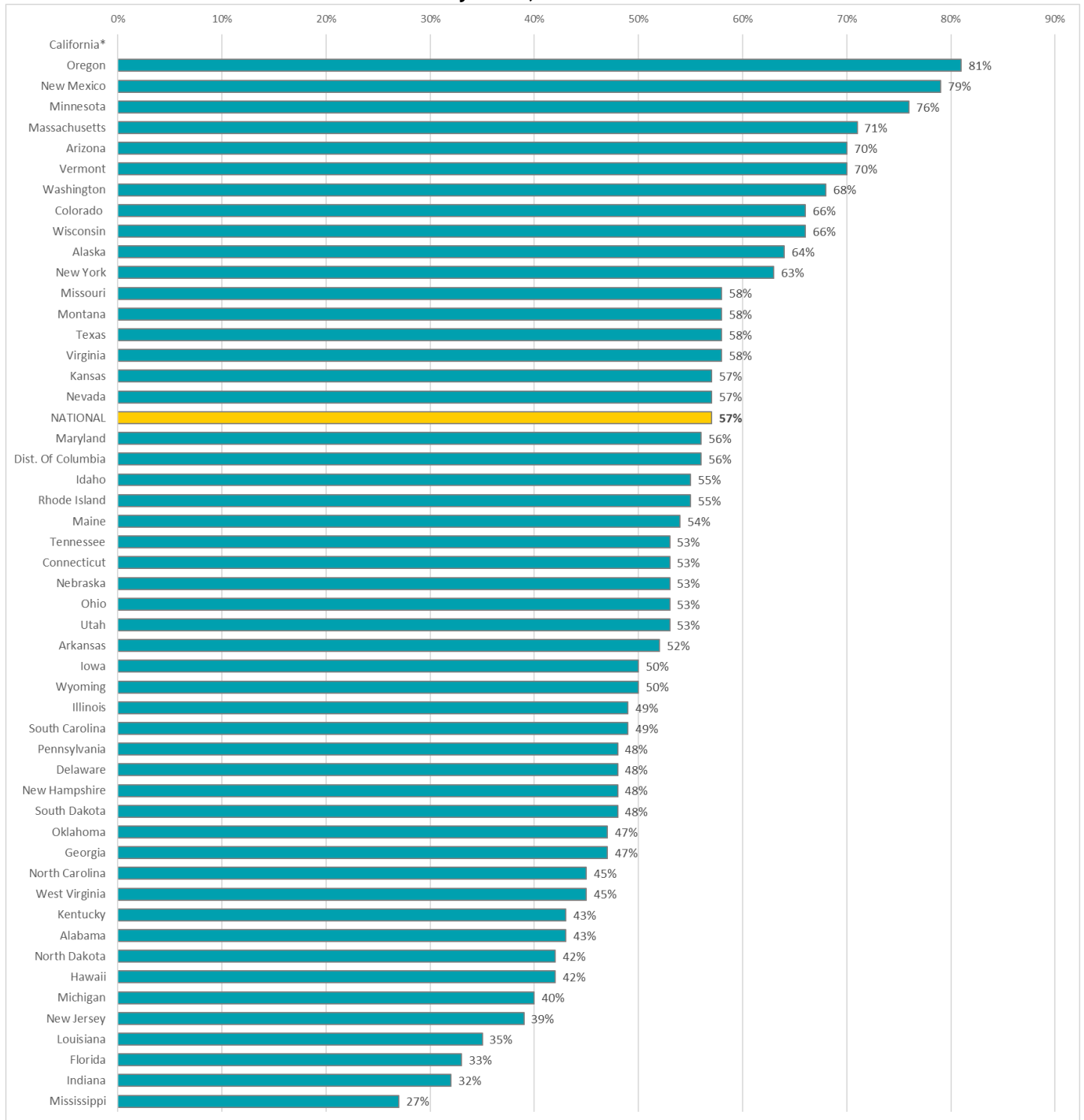


Source: Eiken, S., Sredl, K., Burwell, B. & Amos, A. (2018). *Medicaid expenditures for long-term services and supports in FY 2016*. IBM Watson Health. <https://www.medicaid.gov/sites/default/files/2019-12/ltss expenditures 2016.pdf>

Figure 2 shows HCBS spending as a percentage of total LTSS spending by state. Some states have been more proactive in rebalancing than others. In 2016, Maryland's HCBS expenditures accounted for 56 percent of total LTSS spending, roughly the national average.

Expanding Access to Long-Term Services and Supports
through Home and Community-Based Services

**Figure 2. Medicaid HCBS Expenditures as a Percentage of Total Medicaid LTSS,
by State, FY 2016**



Source: Eiken, S., Sredl, K., Burwell, B. & Amos, A. (2018). *Medicaid expenditures for long-term services and supports in FY 2016*. IBM Watson Health. <https://www.medicaid.gov/sites/default/files/2019-12/Itssexpenditures2016.pdf>.

* There were no data available for California.

A study of state spending on HCBS and institutional services from 1995 to 2005 concluded that an expansion of HCBS may result in a short-term increase in spending, but it is likely to be followed by a reduction in institutional spending and long-term cost savings. States with well-established noninstitutional programs reduced their overall inflation-adjusted LTSS spending, whereas states with minimal noninstitutional services experienced growing expenditures (Kaye, 2012). Rebalancing Rhode Island's Medicaid LTSS system to increase use of HCBS resulted in savings of \$35.7 million over three years (The Lewin Group, 2011). From 1995 to 2015, Ohio's rebalancing efforts increased the number of older adults receiving Medicaid HCBS from 12,000 to 41,000—an increase of 242 percent—with no change in utilization rates of older people with severe disability or a significant increase in inflation-adjusted overall expenditures. Ohio's experience suggests that states can make significant progress in rebalancing without increasing the long-term utilization rate (Berish, Nelson, Mehdizadeh, & Applebaum, 2018).

See Analysis 3 for an in-depth discussion of Maryland's experience with rebalancing.

Medicaid Cost Savings from HCBS

A 2006 review of the cost effectiveness of noninstitutional LTSS programs discusses the challenges in organizing and evaluating these programs (Grabowski, 2006). First, publicly financed HCBS services may substitute for informal services formerly provided by family caregivers. Further, even though states have developed applicant screening mechanisms, client assessment is an inexact science. Individuals assessed at a NFLOC and enrolled in HCBS may not have otherwise entered a nursing facility (often called the woodwork effect). If screening were more reliable, then HCBS would need to be only marginally less costly than institutional care to generate savings. However, because screening is imperfect, savings from reductions in institutional care are unlikely to offset the aggregate increased cost to provide HCBS for all those assessed to need a NFLOC. However, many argue that addressing unmet needs and enhancing beneficiary and caregiver quality of life are far more important.

The woodwork effect can also occur when states loosen eligibility requirements for existing HCBS programs or offer new HCBS programs with benefits that may not have been previously available. Individuals not currently participating in Medicaid may learn of these programs and choose to apply. This can result in unanticipated enrollment, service utilization, and costs for states.

In examining the cost of expanding HCBS, it is important to distinguish between a cost analysis and cost-effectiveness analysis. A cost analysis examines program costs only, whereas in a cost-effectiveness analysis, costs are benchmarked against differences in effectiveness (Grabowski, 2006). For example, a cost-effectiveness study might examine the cost of providing a new HCBS program in the context of the program's effects on participant functional status, health outcomes, and quality of life.

Below are descriptions of selected studies that examined cost savings as well as the cost effectiveness of HCBS programs. It is important to note that there are few studies in the literature that employ the "gold standard" of a randomized experimental design due to the

ethical issues related to withholding treatment or services from a comparison group of Medicaid participants. Some studies do, however, employ statistical techniques such as propensity score matching to simulate a comparison group and attempt to address selection bias across the treatment and comparison group. Some studies examine pilot programs with a limited number of participants, which could limit generalizability of findings across a larger, more diverse population. Studies that examine Medicaid expenditures only and do not include Medicare expenditures for dual eligibles in the study population do not capture Medicare savings from avoidable hospitalizations and emergency department visits.

Cost-Effectiveness Studies

Smith and Frick (2008) examined relative cost effectiveness of a high-dosage intervention (i.e., 1915(c) waiver) versus a low-dosage intervention (i.e., in-home aide service) for 467 Maryland residents aged 50 and older with disabilities. Study participants from each program were compared to individuals on the waiting list for that program. Study findings suggest that high-dosage HCBS was not a cost-effective alternative to low-dosage HCBS (Smith & Frick, 2008). In this exploratory research, the authors employed a cost utility analysis that used quality of life years as a measure of effectiveness. Additional research is needed to validate and generalize the study results.

Cost Savings Studies

Using a creative study design, Medicaid claims data, and the randomized populations from the Cash & Counseling demonstrations in Arizona, New Jersey, and Florida (Brown et al., 2007), Guo, Konetzka, and Manning (2015) estimated that a \$1,000 increase in Medicaid-financed home care expenditures avoided 2.75 days in nursing facilities and reduced annual nursing facility costs by \$351 per older adult. The study population was limited to individuals aged 65 and older and enrolled in Medicaid. However, many of the study participants were dual eligibles, and Medicare expenditures were not captured in the cost-effectiveness analysis. In addition, the results may not be generalizable as study participants were randomly drawn from volunteers of the three Cash & Counseling programs.

A study of utilization of nursing facility, hospital, and acute care services by participants of five Medicaid HCBS programs in Florida from 2000 to 2005 found that median cost savings for each of the programs ranged from a cost overage of \$277 per member per month (PMPM) to a cost savings of \$229 PMPM (Shapiro, Loh, & Mitchell, 2011). Cost savings for nursing facility utilization were most consistent across the five programs. HCBS participants were compared to individuals on the waiting lists for each program using propensity score matching. Among other limitations, the study did not examine Medicare expenditures for dual eligibles in the HCBS programs, so average cost savings are likely overestimated.

Preventing Spend-Down to Medicaid Eligibility for Nursing Facility Care

Minnesota's Return to Community Initiative (RTCI) was implemented to transition private-paying nursing facility residents to a community setting with the goal of preventing conversion or

“spend down” to Medicaid for payment of nursing facility expenses. Buttke and colleagues (2018) found that RTCI successfully transitioned over 1,200 residents and, after one year, three-quarters were alive and living in the community and only 8 percent had converted to Medicaid. Hass, Woodhouse, and Arling (2020) found that RTCI produced modest savings to Medicaid, estimated at \$4.1 million per year over a four-year period. The authors concluded that Medicaid savings were difficult to achieve because so few in the targeted population would have actually converted to Medicaid and, despite being offered RTCI assistance, many did not want to leave the nursing facility due to concerns about personal safety and access to health care.

Cost Savings from Integrating Care for Dual Eligibles

The 11 million dual eligibles in the U.S. have significant health care needs and are among the costliest beneficiaries, accounting for approximately \$312 billion in combined state and federal spending annually (MEDPAC & MACPAC, 2018). Conflicting financial incentives and a lack of coordination across the two programs results in system fragmentation (Grabowski, 2007; GAO, 2003; Zainulbhai, Goldberg, Ng, & Montgomery, 2014; Van Cleave et al., 2017). The high rates of avoidable hospital admissions for dual eligibles has been attributed to the lack of coordination of acute and long-term care, often described as Medicare and Medicaid payment “silos” (Konetzka, Karon, & Potter, 2012). Lack of service coordination also leads to increased LTSS costs and poor health outcomes (Graham, Liu, Hollister, Kaye & Harrington, 2018). Savings from Medicaid-financed HCBS are more likely to accrue to Medicare than to Medicaid (Grabowski, 2007).

Dual Eligible Special Needs Plans (D-SNPs): Approved by the federal government in 2006, D-SNPs seek to provide dual eligibles with coordinated Medicare and Medicaid benefits. As of 2018, D-SNPs were operating in 42 states and the District of Columbia with 2,157,682 enrollees, or about 20 percent of dual eligibles (Kaiser Family Foundation, n.d; MACPAC, n.d). Since 2013, D-SNPs have been required to have contracts with the applicable state Medicaid program that specifies how the D-SNP will coordinate Medicare- and Medicaid-financed care. However, administrative and operation challenges continue to thwart efforts by D-SNPs to overcome Medicare-Medicaid misalignment (Archibald, Soper, Smith, Kruse, & Wiener, 2019). More research is needed to better understand the effects of D-SNPs on Medicare and Medicaid spending (Zhang & Diana, 2018).

Financial Alignment Initiative (FAI): Authorized under §3021 of the ACA, the FAI is testing ways to improve care for dual eligibles and reduce costs by aligning financing and coordinating care across Medicare and Medicaid. The Centers for Medicare & Medicaid Services (CMS) approved applications from two states—Colorado and Washington—for managed fee-for-service (FFS) models; 10 states—California, Illinois, Massachusetts, Michigan, New York, Ohio, Rhode Island, South Carolina, Texas, and Washington—for capitated models; and Minnesota for an alternative model. At the outset of the demonstration, an estimated 1.3 million dual eligibles were qualified to participate, but participation levels have been low despite the use of passive enrollment (Grabowski, Joyce, McGuire, & Frank, 2017). Demonstrations are ongoing; to date, no evaluations that examine savings to Medicaid have been completed. Interim findings on Medicare savings are mixed. Washington’s managed FFS model has reported Medicare savings

of \$107.1 (Johnson, Becker, Tewarson, & Mosey, 2020). Colorado's managed FFS demonstration reported a PMPM increase in Medicare spending from 2014 to 2015 and a PMPM decrease in Medicare spending in 2016 (Sandler et al., 2019). Colorado ended its demonstration in 2017. For Ohio's capitated demonstration, statistically significant Medicare savings were observed in the first demonstration period, but there were no statistically significant savings or losses over the first two demonstration periods (Bayer et al, 2018).

Program of All-Inclusive Care for the Elderly (PACE): A managed care program, PACE is financed through capitated funding from both Medicare and Medicaid. PACE sites receive a combined Medicare/Medicaid funding stream to tailor services to the needs of participants. PACE provides a rich mix of medical, psychosocial, and long-term care services with adult day care at the core of the model. A study examining expenditures for individuals participating in 17 PACE programs compared to a group of individuals receiving HCBS through Medicaid waiver programs found that monthly Medicare expenditures were similar, but monthly Medicaid expenditures for the PACE group exceeded those for the comparison group by several hundred dollars PMPM (Foster, Schmitz, & Kemper, 2007). Since its designation as a permanent Medicare program in 1997, PACE's program expansion and enrollment has not met expectations. A number of barriers to expansion have been identified in the literature, including competition, characteristics of the PACE model, a poor understanding of the program among referral sources, and a lack of financing (Gross, Temkin, Kunitz, & Mukamel, 2004). In 2015, CMS began allowing PACE providers to be for-profit in an effort to boost expansion (U.S. Department of Health and Human Services, 2015). As of January 2020, 132 PACE organizations were operating in 31 states serving 48,581 participants (Kruse & Herman Soper, 2020).

Aging in Place: Marek, Adams, Stetzer, Popejoy, and Rantz (2010) examined Medicare and Medicaid cost savings from Missouri's Aging in Place pilot that provided 39 dual eligibles with the same nurse care manager to coordinate both Medicare home health benefits and Medicaid HCBS. Medicare and Medicaid costs for pilot participants were compared to costs of enrollees of Missouri Care Options, an HCBS Medicaid waiver program. For pilot participants, per-month Medicare costs averaged \$686 lower than the Missouri Care Options group, while per-month Medicaid costs were \$203 higher. The authors concluded that net cost savings could only be realized when Medicare and Medicaid costs are combined (Marek et al., 2010). A follow-up study by Marek and colleagues (2012) comparing the 39 Aging in Place participants to a similar group of dual eligibles residing in nursing facilities found that over a 12-month period, total Medicare and Medicaid costs were \$1,591.61 lower per month among Aging in Place participants compared to the nursing home group. The authors concluded that having the same nurse care manager coordinating both Medicare home health and Medicaid HCBS benefits has the potential to provide savings in the total cost of health care to the Medicaid program while not increasing costs to Medicare. Another study of this same population showed improved clinical outcomes on a number of measures, including depression, cognition, functional status, and incontinence (Marek et al., 2005). However, it is important to note that the study population was very small, outcomes were observed for only a 12-month period, and the study did not involve random assignment.

HCBS in Maryland

Between 2007 and 2019, Maryland's MFP demonstration helped more than 3,466 individuals transition from nursing facilities and other institutions into the community. An early unpublished review of the program found that individuals who entered MFP between fiscal year (FY) 2008 and FY 2010 reported improved quality of life after transition. In addition, average monthly Medicaid expenditures decreased after discharge from a nursing facility and transition to the community (Stockwell, 2012). Note that this was a descriptive analysis of Medicaid expenditures for a small number of individual participants, and findings cannot be extrapolated to conclude that there were systemic cost savings from MFP.

Maryland introduced Community First Choice (CFC) in 2014 as part of its rebalancing efforts. The implementation phase extended for three years concurrent with the consolidation of two Medicaid waiver programs, changes to the legacy state plan personal assistance services benefit, and transfer of all personal assistant services formerly provided under waivers to CFC as a state plan service. A review of Maryland's experience with CFC found that by the end of 2016, enrollment had reached 11,573. More than half (55 percent) of participants were over age 65, and 65 percent were dual eligibles. Between 2014 and 2016, CFC expenditures per person per year were stable at \$21,000. Mean hours of paid personal assistance per participant averaged 29 hours per week. Weekly mean hours of informal support declined slightly, and unpaid informal care continued at a high rate, even though Maryland permits payment for personal care from family members and other caregivers (Davis et al., 2018; Burgdorf et al., 2018).

Key Take-Aways from the Literature Review

As Maryland considers next steps in expanding the availability of Medicaid HCBS, it might want to consider the following findings from the literature review:

- States that rebalance thoughtfully and gradually are less likely to incur unmanageable service utilization and costs when expanding HCBS.
- Findings from studies examining the extent to which states have realized cost savings from Medicaid HCBS programs are mixed.
- While studies of cost savings are mixed, HCBS participants report a higher quality of life, and community living is recognized as a basic right pursuant to the Olmstead decision.
- The literature offers little evidence on the extent to which Medicaid HCBS programs actually delay or avert nursing facility admission.
- Because savings from Medicaid HCBS programs for dual eligibles are most likely to accrue to Medicare, states should consider alternative payment models that require Medicare savings to be shared with Medicaid.

Analysis 2: A Descriptive Analysis of Maryland’s CO Waiver Registry

Introduction

The second analysis focuses on identifying and describing individuals on the CO Waiver registry. The CO Waiver—established in 2014 and replacing the former WOA and LAH Waiver—provides services and supports that enable older adults and individuals with physical disabilities to live in their own homes and communities (Maryland Department of Aging, n.d.). CO Waiver services include medical day care, assisted living, and case management.

CO Waiver applicants must meet a NFLOC and financial eligibility requirements (Maryland Department of Health, n.d.). In Maryland, nursing facility services are provided to individuals who—because of their mental or physical condition—require skilled nursing care and related services, rehabilitation services, or, on a regular basis, health-related services above the level of room and board (Maryland Department of Health, 2008). Maryland’s methodology for determining NFLOC is based on both federal and state regulations. To assess NFLOC for CO Waiver applicants and participants, Maryland uses the interRAI Home Care (HC) assessment, a standardized functional assessment tool designed to guide comprehensive care and service planning in the community by assessing performance and capacity (interRAI, n.d.). To meet financial eligibility, an applicant’s monthly income must not exceed 300 percent of Supplemental Security Income (SSI) benefits,⁵ and their assets must be below \$2,000 or \$2,500, depending on eligibility category.

Every five years, the state must apply for CO Waiver approval with CMS. The application includes proposed maximum CO Waiver capacity for each of the five FYs covered by the application. Maximum waiver capacity is proposed based on anticipated need for waiver services, availability of providers, and the state’s budget outlook. Each waiver year, the state considers current fiscal conditions when determining how many individuals to enroll in the waiver.

Table 1 presents capacity (column 1), utilization (column 2), and occupancy (column 4) calculations, by fiscal year, for the CO Waiver. Waiver capacity displays no clear trend and contains significant year-over-year variation from FY 2017 to FY 2020. Waiver utilization is defined as the total number of unduplicated individuals that used waiver services in a given fiscal year. Table 1 (column 3) indicates that utilization is relatively high compared to the maximum approved capacity: from FY 2017 to FY 2020, the total number of individuals enrolled ranged from under 11 percent to over 4 percent of the maximum capacity approved by CMS, with a substantial increase between FY 2018 and FY 2019.

However, it is important to note that this person-level measure of utilization does not capture “churn,” the extent that individuals have short spans on the waiver and are replaced by new

⁵ Supplemental Security Income (SSI) is a Federal income supplement program designed to help aged, blind, and disabled individuals who have little or no income. SSI payment amounts are updated annually.

waiver participants within a fiscal year. Thus, it is instructive to consider *occupancy*, another facet of waiver utilization that incorporates the time that individuals spend on the waiver. CO Waiver occupancy is defined as the percentage of approved person-month CO Waiver spots that are occupied, presented in Column 4 of Table 1. From FY 2017 to FY 2020, the occupancy rate ranged from 70.36 percent to 80.34 percent. Note that this varies in tandem with the utilization measure: years with high utilization (column 3) relative to the approved maximum tend to have high occupancy rates (column 4).

Taken together, these results suggest that while the number of CO Waiver participants is close to the maximum approved level, there is some degree of unused person-month capacity. This is likely a consequence of the significant administrative complexity of the CO Waiver eligibility screening process and is further discussed in Analysis 5.

Table 1. CO Waiver Capacity and Enrollment, FY 2017 – FY 2020

Fiscal Year	Approved Maximum Capacity (1)	Unduplicated Annual Enrollment (2)	Percentage Over/Under (3)	Occupancy percentage (4)
2020	5,520	5,012	-9.0%	74.53%
2019	4,800	5,014	+4.0%	80.34%
2018	5,094	4,531	-11.0%	70.36%
2017	4,585	4,475	-2.0%	80.07%

Sources: Approved CO Waiver applications and MMIS2

The state established the CO Waiver registry in 2014 at the same time the waiver was implemented, merging the registries for the WOA and LAH Waiver. Individuals interested in participating in the CO Waiver are added to this registry. The registry is maintained in *LTSSMaryland*, the state's long-term services and supports information system.

Individuals may contact a local Maryland Access Point (MAP) site to request to be added to the CO Waiver registry. Options counselors at the MAP sites administer a Level 1 Screen, which is a subset of the questions from the more comprehensive interRAI tool and provides a preliminary assessment of functional health, risk of institutionalization, service needs, and likelihood of meeting a NFLOC. With the implementation of the Level 1 Screen in 2016, efforts were made to update contact information and complete screens for all registrants, while those who could not be contacted were deactivated from the registry.

In October 2019, the state of Maryland amended the process for filling waiver capacity in the CO Waiver as follows:

- **Nursing Facility Residents:** First priority continues to be given to Medicaid participants who can be discharged from a nursing facility with receipt of waiver services, in accordance with The Money Follows the Individual Act, now codified in Maryland statute.⁶

⁶ MD. Code Ann., Health-Gen § 15-137.

- **Individuals Residing in the Community:** Individuals in the community must be added to the CO Waiver registry. Previously, individuals on the registry were invited to participate in the waiver as capacity became available based on a first-come, first-served basis. Now, as capacity becomes available, 80 percent of invitations to individuals on the registry are based on risk of institutionalization and 20 percent are first come, first served. To determine risk of institutionalization, the state uses data from the Level 1 Screen administered by the MAP sites to generate individual risk scores using a proportional hazards regression model developed by The Hilltop Institute.⁷ The model is programmed into *LTSSMaryland* and applied nightly to continually update prioritization.

Methodology

For this analysis, Hilltop used data from *LTSSMaryland* to identify individuals active on the CO Waiver registry as of September 30, 2020, and awaiting an invitation to apply. Then, linking registry data from *LTSSMaryland* with data from the Maryland Medicaid Management Information System (MMIS2), the state's claims information system, Hilltop explored the demographic characteristics of these individuals (i.e., sex, age, race, Medicaid enrollment, dual-eligibility status), the year each individual enlisted on the registry, and enlistment by racial/ethnic group. Linking registry data from *LTSSMaryland* with nursing facility claims from MMIS2, Hilltop analyzed nursing facility utilization among individuals active on the registry in calendar year (CY) 2019. A qualifying nursing facility stay was defined as any nursing facility stay of one or more days paid by Medicaid that took place during CY 2019, including spans over prior or succeeding years that included at least one or more days in CY 2019. Finally, using the interRAI HC, the Level 1 Screen, and historic waiver enrollment data from *LTSSMaryland* for those on the registry who were invited to apply, Hilltop estimated the number of registrants likely to enroll in the CO Waiver should they be invited to do so.

The analyses distinguish between users of HCBS and non-HCBS users on the registry. HCBS users were defined as individuals on the registry as of September 30, 2020, who were enrolled in or received at least one service from one of more of the following programs during the period of September 1, 2020, through September 30, 2020: CFC, Behavioral Health Home (BHH), Rare and Expensive Case Management (REM), or a Medicaid 1915(c) waiver program (e.g., Community Pathways Waiver, Community Supports Waiver, Family Supports Waiver, Medical Day Care (MDC) Waiver, Waiver for Children with Autism Spectrum Disorder). Non-HCBS users are all other individuals on the registry who were active as of September 30, 2020.

⁷ For a description of the model, see <https://hilltopinstitute.org/wp-content/uploads/publications/TheHilltopPre-AH-ModelInBrief-January-2020.pdf>.

Findings

Demographic Characteristics

As of September 30, 2020, there were 19,804 individuals on the CO Waiver registry. Table 2 shows the demographic characteristics of the registry population. A majority of those on the registry were female (63 percent), and 40 percent were aged 75 or older. Thirty-nine percent were White, while 36 percent were African American or Black. Less than half of the registry population (46 percent) was Medicaid-eligible.

Twenty percent of the registry population was eligible for both Medicare and Medicaid (“full” dual eligibles). Fourteen percent received assistance with Medicare Part B premiums, co-payments, and deductibles but were not eligible to receive Medicaid services (“partial” dual eligibles).

Among all individuals on the registry, 3,213 (16 percent) were enrolled in or received at least one HCBS service during September of 2020. More than half of HCBS users (2,441, or 76 percent) received CFC services, and 614 (19 percent) were enrolled in the MDC Waiver. A program participant may be concurrently enrolled in several HCBS programs and receive services under each of these programs (for example a waiver, REM, and CFC) simultaneously. Of the 2,441 registrants who received CFC services, 695 (29 percent) were also enrolled in a second HCBS program and 691 (28 percent) were enrolled in two additional HCBS programs.

**Table 2. Demographic Characteristics of Individuals Active on the CO Waiver Registry
as of September 30, 2020**

Demographics	All Individuals on Registry (N = 19,804)		HCBS Users (N = 3,213)		Non-HCBS Users (N = 16,591)	
	#	%	#	%	#	%
Sex						
Female	12,538	63.3%	2,021	62.9%	10,517	63.4%
Male	6,422	32.4%	1,192	37.1%	5,230	31.5%
Not Specified	844	4.3%	0	0.0%	844	5.1%
Age Group (in Years)						
0-49	2,109	10.6%	1,200	37.3%	909	5.5%
50-64	3,746	18.9%	821	25.6%	2,925	17.6%
65-74	4,385	22.1%	439	13.7%	3,946	23.8%
75-84	4,738	23.9%	457	14.2%	4,281	25.8%
85 and older	3,235	16.3%	296	9.2%	2,939	17.7%
Not Specified	1,591	8.0%	0	0.0%	1,591	9.6%
Race						
White	7,704	38.9%	1,160	36.1%	6,544	39.4%
African American/Black	7,084	35.8%	1,304	40.6%	5,780	34.8%
Asian	1,044	5.3%	501	15.6%	543	3.3%
Other	3,972	20.1%	248	7.7%	3,724	22.4%
Medicaid-Eligible						
Yes	9,182	46.4%	3,213	100.0%	5,969	36.0%
No	10,622	53.6%	0	0.0%	10,622	64.0%
Dual-Eligibility						
Full Dual Eligible	4,013	20.3%	2,020	62.9%	1,993	12.0%
Partial Dual Eligible	2,842	14.4%	0	0.0%	2,842	17.1%
Non-Dual	12,949	65.4%	1,193	37.1%	11,756	70.9%

Notes: Percentages determined using column total as denominator. Other = American Indian/Alaska Native, Native Hawaiian/other Pacific Islander, more than one race, unknown. Medicaid-eligible count includes partial dual eligibles.

Sources: *LTSSMaryland* and MMIS2

Year Enlisted on the CO Waiver Registry

Table 3 shows the number of individuals active on the CO Waiver registry by the year in which they enlisted. When the CO Waiver was implemented in 2014, the registries from the WOA and LAH Waiver were combined to create the CO Waiver registry. The majority (10,380 or 51 percent) have been on the registry for less than three years, while 1,797 (or 9 percent) have been on the registry since 2014. Length of time on the registry is similar for HCBS users and non-users, with a majority (49 and 52 percent, respectively) being on the registry less than three years.

**Table 3. Year Enlisted on the CO Waiver Registry for Individuals Active
on September 30, 2020**

Calendar Year	All Individuals on Registry (N = 19,804)		HCBS Users (N = 3,213)		Non-HCBS Users (N = 16,591)	
	#	%	#	%	#	%
Year Added to the Registry						
2020	2,991	15.1%	240	7.5%	2,751	16.6%
2019	4,061	20.5%	711	22.1%	3,350	20.2%
2018	3,328	16.8%	643	20.0%	2,685	16.2%
2017	3,100	15.7%	530	16.5%	2,570	15.5%
2016	2,534	12.8%	443	13.8%	2,091	12.6%
2015	1,993	10.1%	364	11.3%	1,629	9.8%
2014	1,797	9.1%	282	8.8%	1,515	9.1%
Total	19,804	100%	3,213	100%	16,591	100%

Note: Percentages determined using column total as denominator.

Sources: *LTSSMaryland* and MMIS2

Table 4 shows the number of years individuals in different racial/ethnic groups have been active on the CO Waiver registry. The patterns across racial/ethnic groups are similar.

**Table 4. Year Enlisted on the CO Waiver Registry for Individuals Active
on September 30, 2020, by Race**

Calendar Year	White (N = 7,704)		African American/ Black (N = 7,084)		Asian (N = 1,044)		Other (N = 3,972)	
	#	%	#	%	#	%	#	%
Year Added to the Registry								
2020	1,045	13.6%	1,203	17.0%	141	13.5%	602	15.2%
2019	1,647	21.4%	1,494	21.1%	218	20.9%	703	17.7%
2018	1,395	18.1%	1,165	16.4%	183	17.5%	585	14.7%
2017	1,360	17.7%	1,073	15.1%	156	14.9%	511	12.9%
2016	1,106	14.4%	865	12.2%	155	14.8%	406	10.2%
2015	696	9.0%	695	9.8%	90	8.6%	513	12.9%
2014	455	5.9%	589	8.3%	101	9.7%	652	16.4%
Total	7,704	100%	7,084	100%	1,044	100%	3,972	100%

Notes: Percentages determined using column total as denominator. Other = American Indian/Alaska Native, Native Hawaiian/other Pacific Islander, more than one race, unknown.

Sources: *LTSSMaryland* and MMIS

Nursing Facility Utilization

As Table 5 shows, 1,761 (9 percent) of individuals on the registry had a nursing facility stay during CY 2019. Of those, 241 (14 percent) were also enrolled in or received at least one HCBS service during CY 2019. With the exception of the youngest age group (age 0-49), approximately one-fifth to one-quarter of HCBS users in each age group had a nursing facility stay in CY 2019. Among non-HCBS users, about one-third of individuals in the 75-84 and 85 and older age groups had nursing facility stays.

Table 5. Nursing Facility Utilization for Individuals Active on the CO Waiver Registry in CY 2019, by Age Group

Age Group	All Individuals on Registry (N = 1,761)		HCBS Users (N = 241)		Non-HCBS Users (N = 2,520)	
	#	%	#	%	#	%
0-49	45	2.6%	16	6.6%	29	1.9%
50-64	208	11.8%	59	24.5%	149	9.8%
65-74	396	22.5%	65	27.0%	331	21.8%
75-84	506	28.7%	48	19.9%	458	30.1%
85 and older	606	34.4%	53	22.0%	553	36.4%
Total	1,761	100%	241	100%	1,520	100%

Note: Percentages determined using column total as denominator.

Sources: LTSSMaryland and MMIS2

Estimate of Individuals on the Registry Likely to Enroll in CO Waiver

As discussed in the introduction to this analysis, eligibility for the CO Waiver requires a determination of NFLOC and financial eligibility. An individual on the CO Waiver registry is generally not assessed for waiver eligibility until the individual is provided an invitation to apply. The exceptions are HCBS users who were assessed for (and may be enrolled in) HCBS programs other than the CO Waiver, for example CFC. It is not known conclusively how many of the 19,804 people currently on the registry are actually eligible to participate in the CO Waiver. However, to estimate the number of registrants eligible for the CO Waiver, Hilltop used the methodology described below.

Determination of NFLOC

To estimate the number of individuals on the CO Waiver registry who would meet NFLOC, Hilltop used two data sources: 1) interRAI HC data for the 1,435 (7 percent of) registrants who had a

completed interRAI HC assessment in *LTSSMaryland* and 2) Level 1 Screen scores that were available for 18,221 (92 percent of) registrants.⁸

InterRAI HC assessment scores were available for community Medicaid participants who receive certain HCBS, including CFC, Community Personal Assistance Services (CPAS), and MDC Waiver; individuals who applied and were assessed for these programs, and individuals whose eligibility was assessed using interRAI for non-Medicaid programs.⁹ Other HCBS programs that do not require an interRAI HC assessment have different medical criteria to determine eligibility. For instance, criteria for the Model Waiver and Brain Injury Waiver include chronic hospital level of care or a NFLOC. Criteria for HCBS Medicaid waivers operated by the Maryland State Department of Education (i.e., Autism Waiver) and Developmental Disability Administration (DDA) waivers (i.e., Community Supports, Community Pathways, and Family Supports) include a level of care required to receive services in an intermediate care facility for individuals with intellectual disabilities. Enrollment in the REM program requires diagnosis of a rare and specified condition. Finally, the BHH program requires a diagnoses of severe and persistent mental illness, diagnosis of opioid substance use disorders (determined to be at risk for a second chronic condition), or children with a serious emotional disturbance.

For registrants with a Level 1 Screen, Hilltop cross-walked the questions on the screen with the Maryland NFLOC criteria to create a proxy NFLOC algorithm. Questions included information on ADLs, IADLs, cognition, and behavior.

Table 6 shows the number of registrants who met NFLOC through interRAI HC assessments and the number who met the proxy NFLOC derived from the Level 1 Screen. Overall, 40 percent of the 19,804 registrants were estimated to meet a NFLOC. Among HCBS users, 68 percent met NFLOC; among non-HCBS users, 35 percent met NFLOC.

Table 6. CO Waiver Registry Population by Estimated NFLOC as of September 30, 2020

	All Individuals on Registry (N = 19,804)		HCBS Users (N = 3,213)		HCBS Non-Users (N = 16,591)	
Met interRAI Screening NFLOC	1,415	7.1%	689	21.4%	726	4.4%
Without interRAI Screening and Met Proxy NFLOC	6,503	32.8%	1,501	46.7%	5,002	30.1%
Total Meeting NFLOC	7,918	40.0%	2,190	68.2%	5,728	34.5%

Note: Percentages determined using column total as denominator.

⁸ While the implementation of the Level 1 Screen became standard for those added to the registry beginning in 2016, some individuals may decline to complete the screen. These individuals are placed in the last priority group to be invited to apply to the CO Waiver.

⁹ Several non-Medicaid programs including Senior Care administered by the Maryland Department of Aging, congregate housing and in-home aide services administered by the Maryland Department of Human Services assess program eligibility using the interRAI.

Estimating Financial Eligibility

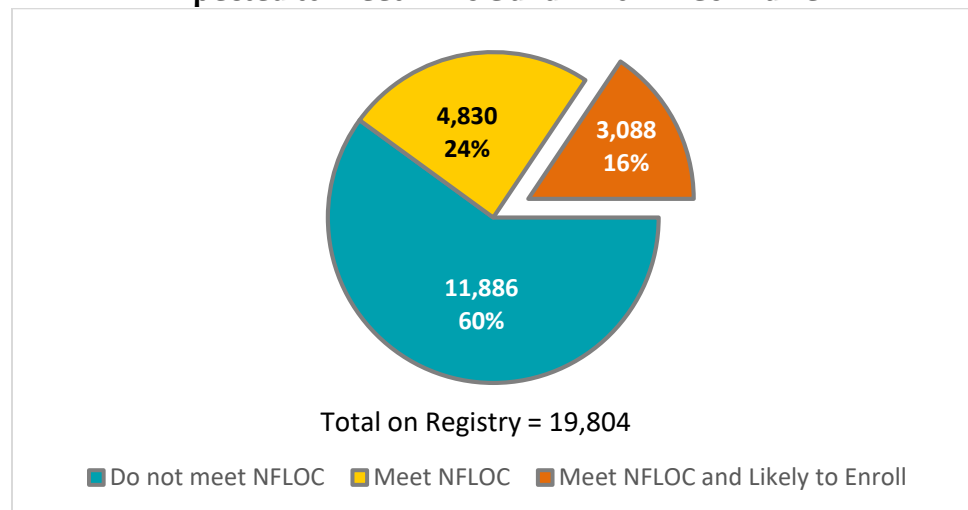
Estimating the number of registrants who would meet financial eligibility presented a challenge because neither the interRAI nor the Level 1 Screen provides adequate information on a registrant's financial status. Thus, Hilltop took a different approach and used the historic enrollment rate of individuals from the registry who were invited to apply for the waiver to estimate potential financial eligibility.

Figure 3 displays the logic used to estimate the number of individuals on the registry who would meet both NFLOC and financial eligibility requirements and would enroll in the CO Waiver if invited to apply. From the 19,804 individuals active on the CO Waiver registry as of September 30, 2020, 7,918 (40 percent) are estimated to meet NFLOC. To determine how many of these registrants would likely meet financial eligibility, Hilltop applied the historical enrollment rate of 39 percent for individuals on the registry who met NFLOC; were invited to apply; met all other technical, medical, and financial criteria; and enrolled in the CO Waiver. Hilltop projects that of the 19,804 individuals on the registry, 3,088 (16 percent) would qualify and enroll in the CO Waiver (Figure 4).

Figure 3. Projected Take-Up Rate of CO Waiver Enrollment of Individuals Active on the Registry as of September 30, 2020



Figure 4. Number of Individuals on the Registry as of September 30, 2020, Expected to Meet NFLOC and Enroll in CO Waiver



Key Take-Aways from the Registry Analysis

As of September 30, 2020, there were 19,804 individuals on the CO Waiver registry. Of those:

- 63 percent were female; 40 percent were over age 75; 39 percent were White; and 36 percent were Black.
- 46 percent were enrolled in Medicaid and 20 percent were full dual eligibles for Medicare and Medicaid.
- 16 percent received HCBS.
- 47 percent of registrants have been on the registry for three years or longer, while 9 percent have been on it since 2014. Time spent on the registry was similar across HCBS users and non-users, and across racial groups.
- 9 percent had a nursing facility stay in 2019, and 80 percent of those with a nursing facility stay were not enrolled in an HCBS program.

To estimate the number of registrants who would likely meet NFLOC and financial eligibility for the CO Waiver, Hilltop used available interRAI and Level 1 Screen data and historic enrollment rates. **Hilltop estimates that of the 19,804 registrants, 3,088 (16 percent) would meet NFLOC and financial eligibility criteria and enroll in the CO Waiver if invited to apply.**

Analysis 3: Maryland's Experience with Rebalancing HCBS Relative to Institutional Care

This third analysis describes systemic changes in the availability and utilization of LTSS within the context of rebalancing initiatives implemented in Maryland. Rebalancing generally refers to transforming LTSS by increasing HCBS, which help recipients receive services in their homes and communities (Borck et al., 2014). Rebalancing efforts are critical in ensuring that older adults and individuals with disabilities receive high-quality, cost-effective, person-centered care that meets their needs while promoting their access to services in home and community-based settings (CMS, n.d.b). CMS, the primary funder of LTSS nationally, has a long-standing priority to support states' flexibility to develop and implement a broad range of programs and tools that advance the community integration of older adults and persons with disabilities (CMS, n.d.b). State Medicaid agencies have been focused on rebalancing LTSS spending by shifting from institutional long-term care to HCBS. Nationally, Medicaid expenditures for non-institutional LTSS increased from 18 percent of all LTSS expenditures in 1995 to 57 percent in 2016 (Watts et al., 2020). Moreover, in FY 2020, 47 states employed one or more rebalancing strategies, primarily 1915(c) HCBS waivers and/or state plan options to expand access to LTSS in community settings (Gifford et al., 2019).

Recent rebalancing efforts in Maryland include—among other legislative and structural changes—the receipt of targeted funds in 2007 to expand HCBS through the MFP demonstration, participation in the Balancing Incentive Program (BIP), the implementation of the CFC program in 2014, and 2016 approval of Medicaid administrative funding for options counseling activities to facilitate statewide information and referral services for LTSS (NORC, 2014; Watts, Reaves, & Musumeci, 2014). Throughout the following analyses, CFC implementation and other notable rebalancing initiatives in Maryland are used as a backdrop against LTSS trends in the state. CFC provides services and supports that allow for a person-driven system of care that promotes autonomy and helps divert institutionalization. The program provides the state with a 6 percent increase in Federal Medical Assistance Percentage (FMAP) (in perpetuity) aimed at expanding HCBS to Medicaid-eligible individuals living in the community. Along with implementation of CFC in Maryland in 2014, there were other initiatives that supported the rebalancing of LTSS from institutional to community settings, including some that merged programs to optimize the services provided. Along with CFC, Maryland made other simultaneous system changes to maximize the available enhanced FMAP and take advantage of new flexibilities in federal authorities.

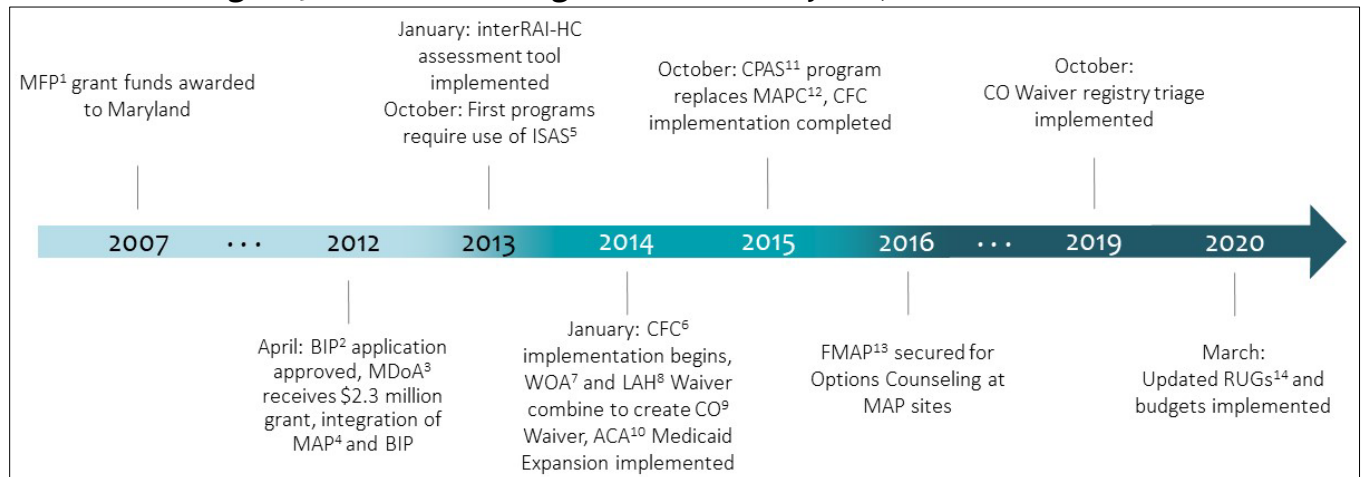
The analyses below show a timeline of LTSS rebalancing in Maryland between 2007 and 2020. The discussion on rebalancing is followed by an analysis of trends in the utilization, costs, and availability of LTSS in the state.

Timeline of LTSS Rebalancing Initiatives in Maryland between 2007 and 2020

Maryland is one of numerous states that has expanded HCBS through rebalancing efforts in recent years. The state's rebalancing efforts benefitted from the ACA, which established new

options to rebalance Medicaid LTSS through CFC and BIP (Watts et al., 2014). Figure 5 shows select rebalancing initiatives in the state from 2007 through 2020. Rebalancing initiatives include Medicaid HCBS waivers and state plan options (i.e., 1915(c), §1115, 1915(i), and 1915(k)), as well as special programs (e.g., BIP), the receipt of targeted grant funds for rebalancing efforts, and structural changes to LTSS management.

Figure 5. LTSS Rebalancing Initiatives in Maryland, 2007 – 2020



¹Money Follows the Person, ²Balancing Incentive Program, ³Maryland Department of Aging, ⁴Maryland Access Point, ⁵In-Home Supports and Assurance System, ⁶Community First Choice, ⁷Waiver for Older Adults, ⁸Living at Home, ⁹Home and Community-Based Options, ¹⁰Affordable Care Act, ¹¹Community Personal Assistance Services, ¹²Medical Assistance Personal Care, ¹³Federal Medical Assistance Percentage, ¹⁴Resource Utilization Groups

Money Follows the Person (MFP): Maryland was first awarded MFP demonstration funds in 2007 (Watts et al., 2014). Federal MFP funds helped expand Maryland’s Money Follows the Individual (MFI) Act of 2003, which allowed individuals who qualified for Medicaid institutional LTSS to apply for HCBS waivers regardless of budgetary caps on enrollment. From 2007 through 2019, over \$178.8 million were made available from the MFP demonstration to aid rebalancing efforts in the state (CMS, 2019). The MFP demonstration supported rebalancing in Maryland by providing outreach to institutional residents, transition of care peer support services, housing assistance, additional HCBS waiver benefits, and a web-based system to track individuals through their transition of care (Watts et al., 2014). From 2007 through 2019, Maryland transitioned 3,466 Medicaid beneficiaries from institutions to community settings using MFP funds (Liaos & Peebles, n.d.).

Balancing Incentive Program: CMS approved Maryland’s BIP application in 2012, securing approximately \$106 million for the state to increase access to non-institutional LTSS (CMS, n.d.a.). BIP provided Maryland an additional 2 percent FMAP for Medicaid non-institutional LTSS provided to beneficiaries through September 2015. CMS required this enhanced FMAP funding to be spent on new or expanded HCBS and related infrastructure. The funds received through the MFP demonstration helped finance some of the structural changes that BIP required of the state. By receiving the BIP financial incentives, Maryland was required to rebalance LTSS spending to achieve over 50 percent of LTSS spending for HCBS and implement three structural changes. Maryland was already above the 50 percent spending requirement at the time the BIP

application was approved. Moreover, the state's participation in BIP led to successfully creating a conflict-free case management system, enhancing its Single Entry Point/No Wrong Door system (Maryland Access Point, or MAP), and implementation of statewide standardized assessments for older adults, individuals with physical disabilities, and individuals in the behavioral health system (Watts et al., 2014).

Options Counseling: In 2012, the Maryland Department of Aging received a three-year \$2.3 million grant to enhance Options Counseling statewide, integrate the MAP initiative with the BIP Single Entry Point/No Wrong Door system structural requirement, and develop strategies for the sustainability of rebalancing in the state (Maryland Department of Health, 2016). Grant funding helped improve the assessment and referral process for community resources, helped implement the Level 1 Screen that provides a preliminary assessment of functional health and helps determine service needs, and assisted in establishing a 1-800 number for the MAP sites that facilitate the dissemination of information on resources available to Medicaid LTSS recipients.

interRAI HC Assessment: In January 2013, the Maryland Department of Health adopted the InterRAI HC assessment tool that is now being used statewide to assess individuals requesting HCBS through certain LTSS programs (Maryland Department of Health, 2013). The comprehensive assessment facilitated decision making and service planning in community-based settings.

In-Home Supports and Assurance System (ISAS): In October of 2013, the first programs began requiring the use of ISAS (Maryland Department of Health, 2018). This phone-based electronic system was used to coordinate in-home services by maintaining a record of participants' plan of services, services provided, and provider claims. The use of ISAS has had a significant impact on advancing structural and programmatic efforts toward the expansion and quality oversight of community-based LTSS in the state.

Community First Choice: In January 2014, Maryland began implementation of the CFC program. The program provides the state with a 6 percent increase in FMAP on all qualified CFC services. CFC applicants must meet medical, technical, and financial criteria to qualify for services. Those who apply for this program must currently reside in the community, require an institutional level of care (e.g., nursing facility, intermediate care facility for individuals with intellectual disabilities), and qualify for Medicaid in the community.¹⁰ CFC participants can receive services that include supports planning, personal assistance with ADLs and IADLs, nurse monitoring, environmental assessments and adaptations, and home-delivered meals. Since 2014, Maryland has transitioned different groups of participants from 1915(c) waiver programs, state plan HCBS, and the HCBS registry into CFC. As a result, the number of CFC participants in the state increased

¹⁰ To be eligible for community Medicaid in Maryland, an individual must meet the income and asset guidelines. [https://mmcp.health.maryland.gov/Documents/Medicaid%20Income%20Limits/2020%20MONTHLY_INCOME_AND_ASSET_GUIDELINES_4%20on%201.27.2020%20\(1\).pdf](https://mmcp.health.maryland.gov/Documents/Medicaid%20Income%20Limits/2020%20MONTHLY_INCOME_AND_ASSET_GUIDELINES_4%20on%201.27.2020%20(1).pdf)

from 4,582 in FY 2014 to 14,415 in FY 2019 (Appendix A). In 2016, personal assistance services accounted for the vast majority (87 percent) of CFC expenditures (Davis et al., 2018).

Waiver Program Consolidation: With the implementation of CFC, Maryland made other simultaneous system changes to maximize the enhanced FMAP for CFC services and take advantage of new flexibilities in federal authorities. The Home and Community-Based Options Final Rule allowed states to combine coverage for multiple target populations into the one waiver under §1915(c) (CMS, 2014). The WOA and LAH Waiver were combined into one 1915(c) waiver. All waiver services that were allowable under the 1915(K) authority¹¹ were pulled out of the waiver and offered through the new CFC program as state plan services. Waiver participants are eligible for both 1915(c) waiver services and 1915(k) state plan services. These changes significantly increased the accessibility of HCBS to older adults and persons with disabilities.

Medicaid Expansion: Under the ACA, states were permitted to expand Medicaid beginning on January 1, 2014. In December 2013, Medicaid enrollment was 1,070,575; by July 2020, Medicaid enrollment was 1,467,292, for an increase of 37 percent (Maryland Medicaid eHealth Statistics, n.d.). Expansion allowed for a greater number of Medicaid beneficiaries in the state to have immediate access to state plan HCBS programs.

Community Personal Assistance Services (CPAS): In October 2015, the CPAS program replaced the Medical Assistance Personal Care (MAPC) program (Maryland Department of Health, n.d.). The CPAS program transitioned the MAPC program services from a per diem rate to an FFS¹² structure that mimicked the CFC program to allow individuals to transition between the programs as level of care needs changed. CPAS provides supports planning, personal assistance services, and nurse monitoring to allow chronically ill, older adults, and those with disabilities who need hands-on assistance with at least one ADL but do not meet a NFLOC. The program aims to divert institutionalization by providing support to individuals in their homes and communities. With the implementation of CPAS and the transition of all individuals in the legacy MAPC program to either CPAS or CFC, implementation of CFC was completed (Maryland Department of Health, 2015).

Medicaid Administrative Funding: CMS allows for Medicaid administrative claiming on No Wrong Door system activities (CMS, 2020). In 2016, federal matching funds were secured as administrative funds for Options Counseling at MAP sites across the state. The availability of Medicaid administrative funds for Options Counseling at MAP sites expanded the state's ability to bill for Medicaid administrative costs for Options Counseling, increasing the state's sustainability plan for the rebalancing of LTSS (Maryland Department of Aging, n.d.).

CO Waiver Registry Triage: In October 2019, the method for filling CO waiver capacity was amended as approved in the 1915(c) waiver amendment application (CMS, n.d.c). First priority

¹¹ Section 1915(c) of the Social Security Act gives states the option to receive a waiver of Medicaid rules governing long-term care.

¹² Reimbursement for CPAS services is based on an FFS schedule published annually by The Maryland Department of Health. Services are reimbursed in 15-minute increments.

continues to be given to individuals who can be discharged from a nursing facility upon receipt of waiver services. Maryland implemented a new process for inviting individuals from the CO Waiver registry to apply as waiver capacity and budgetary limitations allow. Invitations to apply transitioned from a former first-come, first-served basis to a method that prioritizes enrollment based on risk for institutionalization. CO waiver capacity is now filled by inviting 20 percent of individuals from the registry on a first-come, first-served basis; the other 80 percent of invitations are prioritized based on risk of institutionalization. The Level 1 Screen administered by the MAP sites is used to determine individuals' relative risk of institutionalization compared to all individuals on the registry, and risk scores are then used to group individuals by priority groups that help prioritize invitations to apply for the waiver. Implementation of the waiver registry triage allows the state to target resources to individuals who are most at risk for institutionalization.

Updated Recommended Flexible Budgets for CFC and CPAS: In March 2020, the resource utilization groups (RUGs) generated by the interRAI HC and used for informing the person-centered planning process for the CFC and CPAS programs were re-aligned into new groupings, and updates to the recommended flexible budgets were implemented. Maryland uses RUGs to assign five flexible budget groups, adjusting for acuity so that higher budget suggestions are given to individuals with higher acuity. Individuals can request services at a level beyond the recommended budget by submitting an exceptions request. The realignment of RUGs and flexible budgets was based on an analysis of the previous groupings, recommended flexible budgets, exceptions requests, and average costs of approved service plans.

Descriptive Analyses of Rebalancing in Maryland

LTSS Users and Expenditures by Service Type

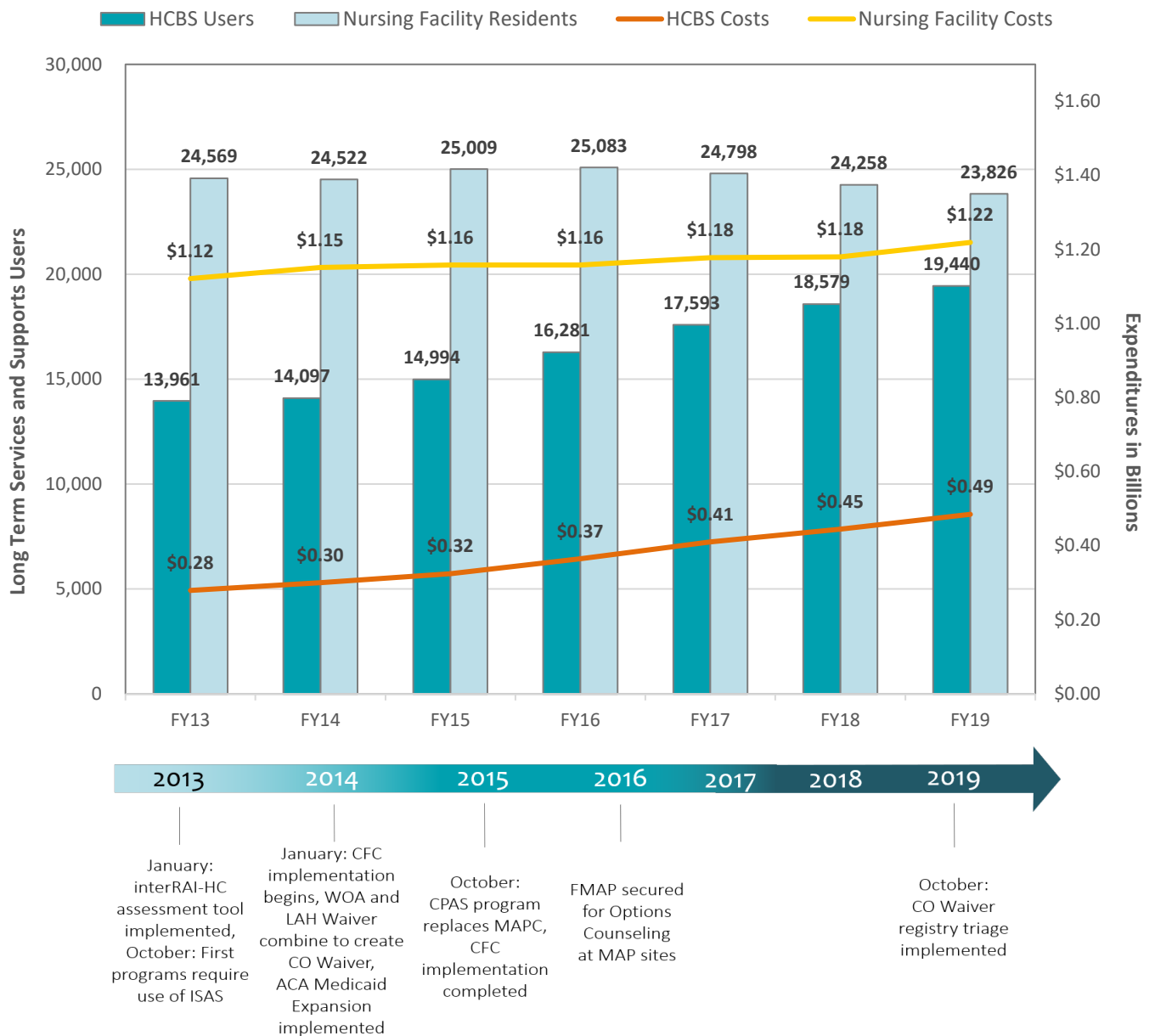
In order to explore the possible effects of Maryland's rebalancing efforts over the period of FY 2013 to FY 2019, Figure 6 presents data on use of and expenditures for Medicaid HCBS versus Medicaid nursing facility services. HCBS users include recipients of CFC, CPAS, CO Waiver, and MDC Waiver services. A nursing facility resident is defined as a Medicaid beneficiary with at least one Medicaid-paid day in a nursing facility, a bed hold payment, or Medicaid cost-sharing payments including premiums and copayments.

The number of Medicaid participants using LTSS—both HCBS and nursing facility care—increased by 12 percent over the seven-year period, from 38,530 in FY 2013 to 43,266 in FY 2019. Over this same period, total Medicaid expenditures for LTSS increased by 22 percent, from \$1.4 billion to \$1.8 billion. The increase in LTSS users was largely driven by HCBS users. The number of individuals using HCBS grew by 39 percent (from 13,961 to 19,440), while the number of nursing facility residents declined by 3 percent (from 24,569 to 23,826). The growth in annual expenditures for HCBS from \$279 million to \$485 million—a 74 percent increase—outpaced the percentage increase in the number of HCBS users (39 percent). Expenditures for nursing facility services grew by \$97 million—only a 9 percent increase—consistent with the decline of 3 percent in the number of nursing facility residents. It is notable that there was steady growth in the number of HCBS users throughout the seven-year period, suggesting that no one program or

*Expanding Access to Long-Term Services and Supports
through Home and Community-Based Services*

initiative altered the growth trajectory. Rather, the state's multiple initiatives promoting rebalancing (see Figure 5) contributed to more measured but steady growth in the number of Medicaid participants using community-based LTSS.

Figure 6. LTSS Use and Expenditures in Maryland by Type of Service, FY 2013 – FY 2019



Source: MMIS2

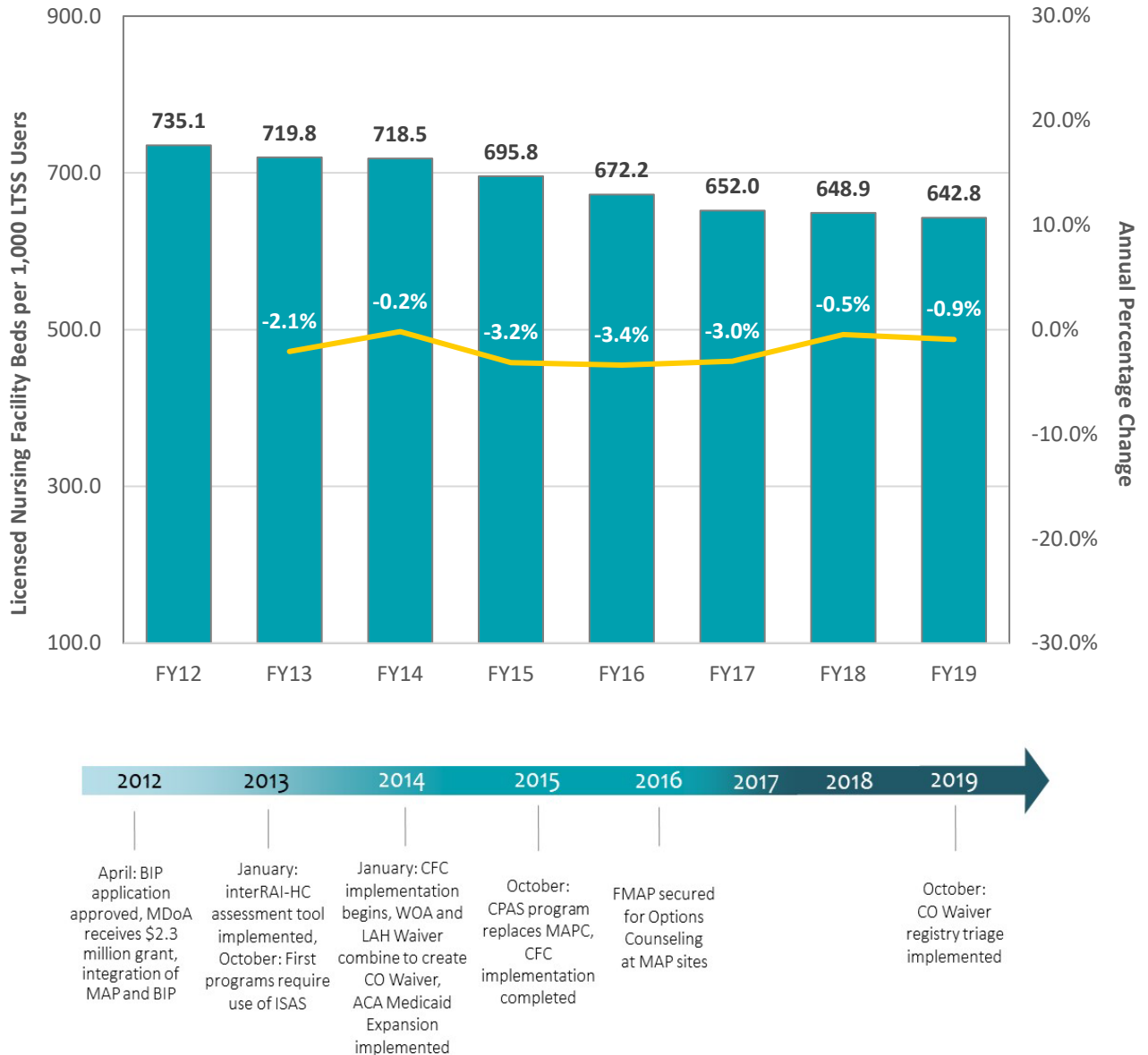
Licensed Nursing Facility Beds

Both the total number of licensed nursing facility beds in Maryland and the number of licensed nursing facility beds per 1,000 LTSS users have declined over the eight-year period of FY 2012 to FY 2019. The total number of licensed beds decreased by 1 percent, from 28,039 to 27,813. The number of licensed nursing facility beds per 1,000 LTSS users decreased by 13 percent, from 735

*Expanding Access to Long-Term Services and Supports
through Home and Community-Based Services*

per 1,000 in FY 2012 to 642 per 1,000 in FY 2019 (Figure 7). While licensed nursing facility beds have declined at a moderate but steady pace, the rate of decline tapered off during the most recent three years (FY 2017 to FY 2019).

Figure 7. Licensed Nursing Facility Beds per 1,000 LTSS Users in Maryland, FY 2012 – FY 2019



Sources: MMIS2 and MHCC

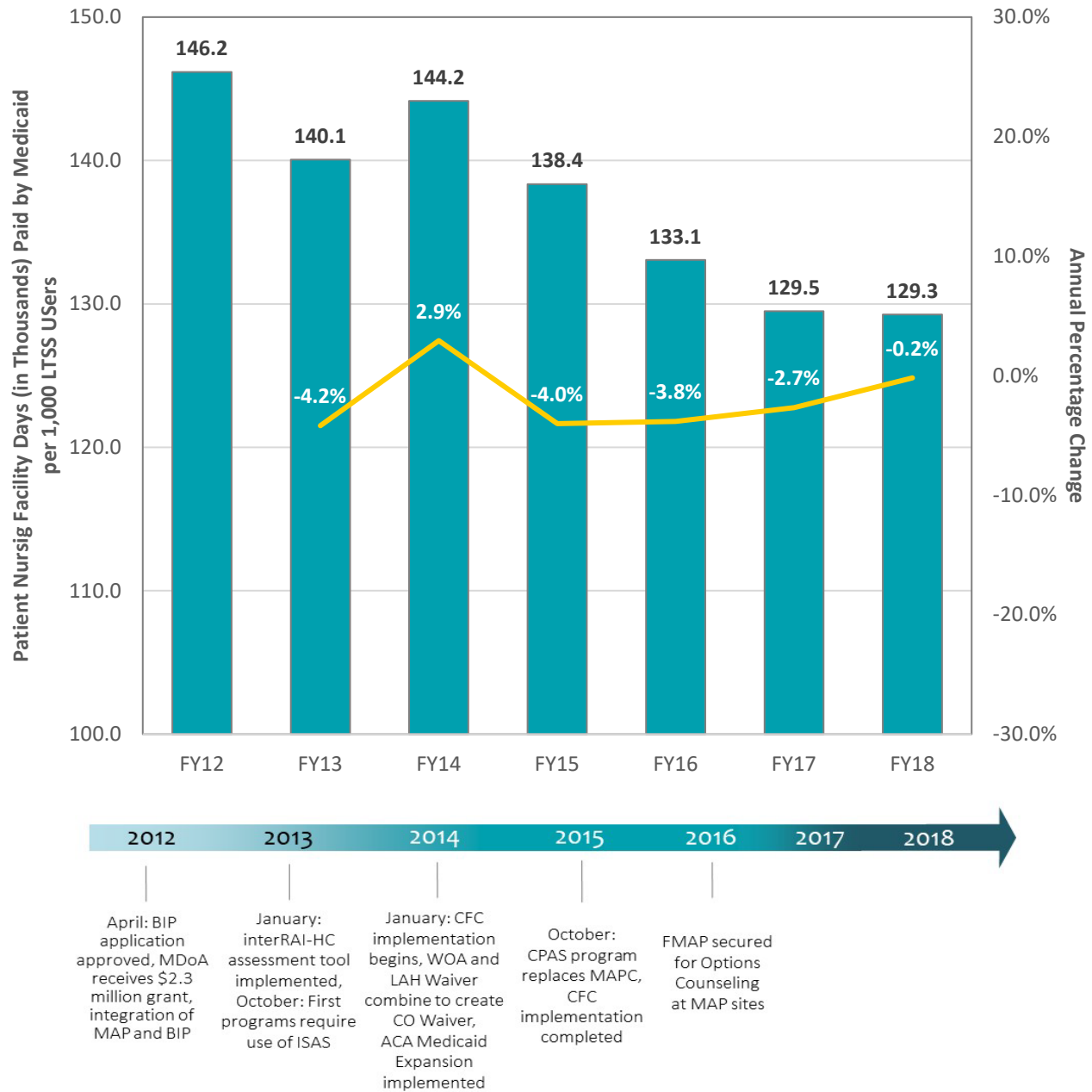
Nursing Facility Days Paid by Medicaid

The number of days of nursing facility services paid by Medicaid has declined considerably as Maryland has worked to rebalance HCBS and institutional care. During the seven-year period of FY 2012 to FY 2018, the annual number of nursing facility days per 1,000 LTSS users decreased by 12 percent, from 146,000 to 129,000 (Figure 8). The rate of decrease appeared to slow in FY

*Expanding Access to Long-Term Services and Supports
through Home and Community-Based Services*

2017 and FY 2018, similar to the trend in the number of licensed nursing facility beds in recent years (Figure 7).

**Figure 8. Nursing Facility Days (in Thousands) Paid by Medicaid
per 1,000 LTSS Users in Maryland, FY 2012 – FY 2018**



Sources: MMIS2 and MHCC

Key Take-Aways from the Rebalancing Analysis

As Figure 5 displays, Maryland has initiated a number of rebalancing initiatives in recent years, including the implementation of Medicaid HCBS waivers and state plan options, as well as special programs, the procurement of funds, and structural changes to LTSS management in the state. The preceding analysis describes systemic changes that have occurred in LTSS within the context of these rebalancing initiatives. The data demonstrate that Maryland has made steady progress in rebalancing. Key findings include the following:

- During the seven-year period of FY 2013 to FY 2019, the number of Medicaid participants using LTSS—both HCBS and nursing facility care—increased by 12 percent, from 38,530 to 43,266. At the same time, total Medicaid expenditures for LTSS increased by 22 percent, from \$1.4 billion to \$1.8 billion.
- During this same period, the number of individuals using Medicaid HCBS grew by 39 percent, from 13,961 to 19,440. Expenditures for Medicaid HCBS grew by 74 percent, from \$279 million to \$485 million.
- FY 2013 to FY 2019, expenditures for Medicaid nursing facility services grew by just 9 percent, from \$1.12 billion to \$1.2 billion, reflecting the 3 percent decline in Medicaid nursing facility residents from during this period (24,569 to 23,286).
- The number of licensed nursing facility beds in the state decreased by 13 percent from FY 2012 through FY 2019, consistent with the decrease in Medicaid nursing facility residents over this period.

Analysis 4: Estimating the Association between CO Waiver Participation and Health Care Utilization

Objective

The fourth analysis uses Maryland Medicaid claims from CY 2010 to CY 2019 to determine the individual-level net Medicaid costs of participating in the CO Waiver. While the previous analysis was a high-level discussion of statewide rebalancing initiatives over time, this analysis focuses on the CO Waiver in particular to estimate cost differences between individuals in the waiver versus those on the registry.

Methodology

Theoretical Issues

Identifying the Medicaid costs attributable to the CO Waiver depends on two factors: the direct costs incurred by individuals on the CO Waiver, and the costs that *would* have been incurred by those same individuals *had they not been in the waiver*. This latter concept is the *counterfactual*, and this is a necessary element for any program evaluation. Failure to consider counterfactual costs in this case would implicitly impose counterfactual costs of zero: it would assume that, had individuals in the waiver not been in the waiver, they would have incurred no Medicaid costs. This assumption is demonstrably false, since, per Analysis 2, 46 percent of individuals on the registry are enrolled in Medicaid and 35 percent of *these* individuals use Medicaid-funded HCBS.¹³ Ignoring these non-CO Waiver costs would tend to overstate the net costs of participating in the CO waiver.

In general, it is difficult to correctly account for counterfactual costs in a program evaluation. Randomized experiments, which randomly allocate individuals to “treatment” and “comparison” groups can, at best, create a counterfactual group that on average mimics what would have happened to the treated individuals in the absence of treatment, but this is rare in policy evaluations and was not feasible in this case. Failing randomization, researchers are forced to identify “comparison groups” against which to compare the experience of the treated group, in the hopes that the comparison group accurately captures the counterfactual experience. In any causal research design without randomization, the plausibility of how well the comparison group approximates the counterfactual is an open question.

Hilltop’s Approach

For this analysis, Hilltop was fortunate to have a natural comparison group: individuals on the CO Waiver registry. As discussed in detail in Analysis 2, the registry is an interest list for individuals who seek to enroll in the waiver. The act of seeking to enroll on the registry—and thus obtain

¹³ See Table 2 in Analysis 2. While the portion of Medicaid beneficiaries that are “partial duals” with Medicare do not have access to actual Medicaid services, these are the significant minority of Medicaid enrollees.

waiver services—suggests that registrants may have life circumstances and service needs similar to waiver enrollees, which argues for their utility as an approximation for the counterfactual.

However, while all waiver enrollees are, by definition, Medicaid enrollees, not all individuals on the registry are enrolled in Medicaid. In fact, anyone can join the registry, no matter their health needs, income levels, or insurance coverage.¹⁴ Accordingly, we have relatively little information about many of the individuals on the registry: we know some basic demographic information but not underlying health status and history of health care utilization. Thus, while the pool of individuals on the registry *should* be a reasonable comparison group for individuals in the waiver, there are insufficient data to perform further risk adjustment, such as individual-level propensity score matching or covariate adjustment (e.g., controlling for functional need or health status). See Analysis 5 for additional correction factors to better support a causal interpretation of the observed cost differences. The current analysis, however, focuses only on capturing the high-level cost differences between individuals in the waiver and individuals on the registry.

The administrative structure of the registry and waiver presents additional evaluation challenges. If waiver receipt delays entry into a nursing facility, then individuals on the registry are at elevated risk of entering a nursing facility due to a lack of waiver services. These individuals, once in the nursing facility, can apply for immediate receipt of waiver services, thus shortcutting the registry wait. This situation brings about “reverse causality”: receipt of exposure (in this case, waiver services) affects the probability of the outcome (entry into a nursing facility), but receiving the outcome also affects the chances of exposure. This implies that a comparison of outcomes before individuals participate in the waiver, and once individuals are in the waiver, will not solely pick up differences due to waiver participation.

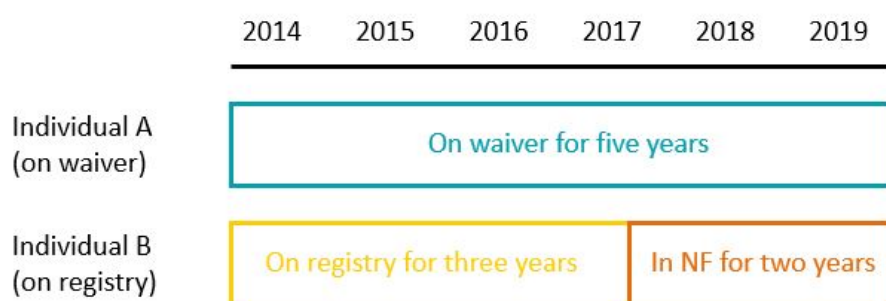
Accordingly, Hilltop did not use the registry-to-waiver *transition* in our analysis; instead, this analysis compares costs over time for individuals who are in the waiver and for individuals who are on the registry, and then attributes any differences to the impact of waiver participation. Crucially, this analysis also includes information on individuals *after they have left the registry*; that is, the counterfactual is not restricted to individuals actively on the registry; it also includes post-registry experience. Restricting attention to costs incurred for individuals who are actively on the registry may inadvertently use a relatively “healthy” registry population because the more acute individuals on the registry may drop off the registry and enter nursing facilities. If waiver enrollment prevents or delays entry into a nursing facility, then it is important to account for these nursing facility costs incurred by registry individuals that *would* have been prevented by waiver enrollment. These “avoided costs” should be credited against the direct costs of the waiver program, and failure to do so could overstate the costs of the waiver program.¹⁵

¹⁴ Waiver eligibility (that is, financial and medical eligibility) is only determined upon waiver *application*. Individuals on the registry are technically on the waitlist to *apply* for a waiver spot, not to receive a waiver spot.

¹⁵ An important assumption in this research design is that we did not consider post-waiver costs; that is, we do not allow for the possibility that waiver receipt may generate additional costs if, for example, waiver membership leads to earlier nursing facility admission than registry enrollment.

Figure 9 presents an example of the comparison methodology. Individual A is in the waiver for five years (from 2014 to 2019), and Individual B is on the registry for three years (from 2014 to 2017) and then in a nursing facility for two years (from 2018 to 2019). We assume that if Individual B *had* participated in the waiver, she would not have entered the nursing facility. The analysis estimates the total (inflation-adjusted) Medicaid costs for Individual A over this five-year period and compares them to the total Medicaid costs for Individual B over this five-year period. The resulting difference would be the five-year net cost impact of waiver participation. Note that ignoring the nursing facility costs for Individual B would underestimate the costs savings attributable to the waiver.

Figure 9. Diagram of Waiver-Registry Comparison Method



Estimating Costs

Hilltop created analytic data sets of individuals in the waiver and on the registry from 2010 to 2019 (described in greater detail below) and categorized their total Medicaid claims costs into the following three categories:

- Nursing facility costs, defined as long-term care claims with a provider type of “nursing facility”
- HCBS costs, which include services offered through the CO waiver, LAH waiver, WOA, CFC, and other 1915(c) waivers and state plan options¹⁶
- All other Medicaid costs, which include dental, inpatient, outpatient, physician, pharmacy, special programs, managed care organization capitation payments, and all other claims costs

All spending was inflation-adjusted to 2020 using the CPI Medical Care index.¹⁷ The claims costs were identified in MMIS2.

We then aggregated these claims to the person-year level so that each observation in the analytic data sets represents the Medicaid expenditure incurred by an individual in a calendar year. Using the analytic data sets of individuals in the waiver and on the registry from CY 2010 to

¹⁶ See Appendix 1 for a complete list of the procedure codes to define this HCBS cost center.

¹⁷ Source: <https://fred.stlouisfed.org/series/CPIMEDSL>

CY 2019, we compared costs by cost center and over ten spans: from 1 year to 10 years. These are operationalized separately for the waiver and registry populations, but we employed parallel logic.

For the registry population, Hilltop calculated spans based on who is actively on the registry in a given calendar year and calculated all costs going forward through 2019. For example, all individuals who were actively on the registry in 2016 are in the 4-year span, which is inclusive of costs that occurred in 2016, 2017, 2018, and 2019. Even if the individual left the registry, his or her costs are still included in this span. In contrast, for the waiver population, we restricted our attention to individuals who were actively in the waiver for the entire span. We calculated a span of duration α as the final α years that an individual continuously participates in the waiver. For example, the 4-year spans consists of individuals who participated in the CO Waiver for precisely four years each from 2010 to 2019, and the final four years of all longer spans.¹⁸ We then calculated average costs by cost center and span.

Cohort Construction

In order to estimate these cost differences across time spans, Hilltop created person-year analytic data sets for individuals with at least one full calendar year of waiver membership during the 10-year period of 2010 to 2019, and individuals with at least one full calendar year of registry membership during that same 10-year period. The data sets include the claim costs for each individual described above.

Hilltop selected the 10-year timeframe for the following two reasons.

1. It captures longer-term cost differences. While the CO Waiver has only been in operation since 2014, we leverage the fact that this waiver is the successor to two similar waivers—the LAH Waiver and the WOA—which offered substantively similar services to the CO Waiver and became operational in 2001 and 1993, respectively.¹⁹ Thus, we treat

¹⁸ This methodology does introduce some double-counting: for example, an individual with 10 continuous years of waiver enrollment has many potential “sub-spans” that can be compared against registry spans. For the registry dataset, we loop through years ranging from 2010-2019 and, each year, retain individuals who are actively in the registry in that year. We then sum these individuals’ costs for the current and future years, and attribute that to the span defined by the number of years between that year, and 2020. For example, in order to create the 3-year cost span, we retain individuals actively on the registry in 2017 and then sum their total costs for 2017, 2018, and 2019. Thus, for an individual who is actively on the registry for all 10 years (2010-2019), her final 9, 8, 7, ... 1 years of experience will contribute to the 9, 8, 7, ... 1 year spans. We employ similar logic to calculate spans for individuals in the waiver but use only individuals who are actively in the waiver. The results are substantively identical if we were to use only unique waiver spans and not the final h years of each individual’s active waiver span. In order to avoid over-weighting individuals with long spans (and who therefore appear multiple times in the final data set), we weight by the inverse of the number of times an individual shows up in the data so that we are comparing people, not spans. Finally, while spans across spans are not independent, spans within a given span are independent across waiver and registry.

¹⁹ LAH Waiver source: <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/81951>; WOA source: <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/81956>

participation in either of these two predecessor waivers as equivalent to participation in the CO Waiver.

2. The registry data draw from the administrative database of *LTSSMaryland*, and the WOA and LAH Waiver were migrated to this database in 2014. Thus, the registry database effectively “begins” with individuals who were active on the registry as of 2014 and includes all individuals who were subsequently added to, or removed from, the registry. Individuals who were active on the registry as of 2014 tended to join from 2009 onwards, with 2010 as the first full calendar year of registry coverage. 2020 enrollment and expenditure data were not complete at the time of writing and are excluded from this report.

The following filters were applied to the data:

- For the waiver analytic data set, individuals had to be continuously eligible for the WOA, LAH, or CO Waivers for at least one full calendar year during the period of 2010 to 2019.
- For the registry analytic data set:
 - Participants had to have at least one full calendar year of registry membership during this same period.
 - Participants who died before December 31, 2019, were removed from the analysis.
 - Individuals on the registry who ever joined the waiver were also excluded. In some cases, individuals who made the transition from the registry to the waiver can appear in both the registry data set (for example, from 2011-2017) and the waiver data set (for example, from 2018-2019). The intention of this restriction is to exclude waiver costs from spilling over into the registry data set. This restriction has relatively little impact on the analytic data set, removing less than 8 percent of the individuals from the registry data.²⁰

Our analytic data sets consist of 6,778 distinct individuals who had at least one full calendar year of waiver enrollment from 2010 to 2019 and 24,716 distinct individuals who had at least one full calendar year on the registry from 2010 to 2019. Of the 67,780 total person-years in our waiver analytic data set (before, during, and after waiver enrollment), we used the 28,054 person-years actively in the waiver. Of the 247,160 total person-years in our registry analytic data set (before, during, and after the registry), we used the 115,918 person-years for individuals actively on the registry or who were on the registry but left. Hilltop believes that these sample sizes are sufficient to describe spending patterns of individuals in the waiver and on the registry over

²⁰ It is important to note that the registry is only one of two potential pathways on to the waiver. It is possible to directly apply to the CO Waiver from a nursing facility and, in doing so, bypass the registry entirely. In fact, relatively few individuals on the CO Waiver joined from the registry: of all individuals who ever received an approved CO Waiver plan of service, only 31 percent ever appeared on the registry. Source: internal calculations using the *LTSSMaryland* database.

different time spans, by cost center.²¹ Finally, it is important to note that these person-year analytic data sets retain the zeros and include participants with no Medicaid spending in a given year.

Results

Table 7 compares the age and gender distributions of the registry and waiver analytic samples. This is intended to assess the validity of the assumption that the registry population is an adequate approximation for the CO Waiver population.

Table 7. Demographic Characteristics of Waiver and Registry Population Samples

	Waiver	Registry
Average Age (years)	70.7	70.3
% Female	64.5%	67.7%*

* 14.9 percent of individuals in the registry data are missing gender information.
This percentage applies to individuals that have gender present in the data.

Table 7 shows that the populations of individuals in the waiver and on the registry are similar in terms of average age and gender distribution. We are unable to reject the hypothesis that average age differs at the 5 percent significance level between the waiver and registry population.²² While this does not ensure comparability, it does suggest that the registry serves as a valid comparison group for individuals in the waiver.

Table 8 presents the total Medicaid costs differences, by time period, for individuals in the waiver and on the registry. We find that, on average, individuals in the waiver incur \$50,000 to \$60,000 of total Medicaid costs per year, with a relatively stable year-over-year trend. This is consistent with the cost neutrality calculations from the CO Waiver application, which estimates total Medicaid cost per waiver participant to be \$57,000 to \$67,000, depending in the waiver year.²³ In contrast, individuals on the registry incur approximately \$13,000 of Medicaid spending per year. This difference nets to roughly \$40,000 per year: for example, the 5-year costs are around \$285,000 for individuals in the waiver and \$82,000 for individuals on the registry. The difference—\$203,000—scales to about \$41,000 annually.

²¹ We performed a power calculation to investigate whether these sample sizes would be adequate to statistically differentiate span-level differences between the waiver and registry data sets. Using the ten-year span (which should have both smallest sample size and largest variance, and thus represent an upper bound for detectable effect sizes), we calculated that a difference of at least \$34,000 over a 10-year span (with an implied \$3,400 per year difference) should be statistically detectable with 80 percent power. Based on the magnitudes of the cost neutrality calculations in Appendix J of the 2019 CO Waiver application, we believed that this difference was reasonable.

²² The samples do statistically differ on gender distribution—with the registry population having a higher fraction of women than the waiver population—but we discount this result due to the preponderance of missing gender data in the registry data. Additionally, the comparison of average age excludes six observations from the registry with missing age, and six observations from the registry that are recorded as having negative age.

²³ Source: <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/81956>

Table 8. Total Medicaid Costs by Span

Span	Waiver	Registry	Difference
1 year	\$52,389	\$12,681	\$39,708
2 years	\$108,226	\$24,533	\$83,693
3 years	\$164,780	\$39,089	\$125,691
4 years	\$223,588	\$52,003	\$171,584
5 years	\$284,547	\$81,965	\$202,582
6 years	\$347,448	\$95,415	\$252,033
7 years	\$410,063	\$105,800	\$304,263
8 years	\$477,661	\$118,034	\$359,627
9 years	\$542,042	\$132,179	\$409,862
10 years	\$604,276	\$154,136	\$450,140

It is important to note two caveats. First, these results are *unadjusted*: they are not intended to estimate the price to Medicaid per additional waiver participant. In particular, there can be times in which waiver spots are empty while administrative processes occur to fill the spot, and it is not necessarily the case that everyone on the registry would necessarily meet the NFLOC requirements necessary for CO Waiver enrollment.²⁴ Instead, these estimates describe the observed individual-level cost differences over different spans for individuals who **are** actively in the waiver, as well as individuals who **are and were** actively on the registry. Additionally, these differences can reflect several different causal channels: it is not the case that spending differences are driven by the receipt of specific CO Waiver services, holding all else equal. In particular, for individuals who are not already enrolled in Medicaid, participation in the CO Waiver implies access to additional Medicaid HCBS programs such as CFC or CPAS, which can lead to HCBS costs in addition to those from CO Waiver-specific services.

Table 9, below, shows the results of this analysis by cost center across time span.

²⁴ We adjust for both of these in Analysis 5.

Table 9. Total Medicaid Costs by Cost Center and Span

Cost Center	Time Span in Number of Years									
	1	2	3	4	5	6	7	8	9	10
HCBS										
Waiver	\$41,651	\$88,028	\$136,840	\$188,130	\$240,404	\$293,458	\$348,801	\$405,936	\$464,286	\$518,445
Registry	\$5,079	\$9,828	\$15,788	\$16,953	\$15,818	\$18,882	\$21,464	\$25,320	\$32,139	\$36,980
Difference	\$36,572	\$78,201	\$121,052	\$171,176	\$224,586	\$274,576	\$327,337	\$380,617	\$432,146	\$481,465
Nursing Facility										
Waiver	\$327	\$588	\$830	\$867	\$1,333	\$1,681	\$2,001	\$2,279	\$992	\$652
Registry	\$3,096	\$6,348	\$11,241	\$20,686	\$50,686	\$57,182	\$61,742	\$66,980	\$68,687	\$76,874
Difference	\$2,769	\$5,760	\$10,411	\$19,957	\$49,354	\$55,501	\$59,741	\$64,701	\$67,969	\$76,222
All Other										
Waiver	\$10,411	\$19,610	\$27,110	\$34,591	\$42,810	\$52,309	\$59,262	\$69,446	\$76,764	\$85,178
Registry	\$4,506	\$8,358	\$12,060	\$14,226	\$15,460	\$19,351	\$22,594	\$25,735	\$31,353	\$40,282
Difference	\$5,905	\$11,252	\$15,050	\$20,365	\$27,350	\$32,958	\$36,667	\$43,711	\$45,411	\$44,897

Most of the total spending differences between individuals in the waiver and on the registry are driven by differences in HCBS expenditure. This accords with intuition, since enrollment in the CO Waiver implies that beneficiaries have access to HCBS that would not otherwise be covered (assisted living, for example). Furthermore, as noted above, it may also be the case that CO Waiver enrollment spurs utilization of other Medicaid-funded HCBS in addition to the services offered through the CO Waiver. It is also notable that there is non-trivial HCBS spending for individuals on the registry, which is a result of registry individuals who received other state-plan HCBS through Medicaid. This is consistent with the results in Table 2 from Analysis 2, which indicate that roughly one in six individuals on the registry also use HCBS.

Furthermore, individuals in the waiver incur negligible nursing facility costs. This accords with the institutional structure of the CO Waiver: while (short-term) residence in a nursing facility can expedite the application process, individuals who reside in nursing facilities are not eligible to *receive* CO Waiver services. Therefore, individuals who are continuously enrolled in the CO Waiver should have little to no nursing facility utilization. Individuals on the registry, however, incur significant Medicaid-funded nursing facility expenditures.²⁵ As expected, this is a source of potential cost avoidance: individuals on the registry may (eventually) incur Medicaid-funded nursing facility costs, which may be avoided by entry into the waiver. Finally, individuals in the

²⁵ There is a large increase in nursing facility expenditure for individuals with 5 years of experience on the registry (relative to individuals with 4 years of experience on the registry). We believe that this is partially due to an artifact of the database migration: when the *LTSSMaryland* system was established, it is almost certain that only the individuals who were *active on the registry as of 2014* were imported into the system. This implies that we are “missing” individuals in our registry analytic data set who were deactivated before 2015 who may have incurred Medicaid-funded nursing facility costs. Additionally, we believe that the introduction of the “Level 1 Screen” in 2016 resulted in a substantial culling of the registry database. We discuss the implications of these in the Limitations section, below.

waiver incur more “all other” Medicaid expenditure than individuals on the registry, but these amounts are small relative to the total costs.

Taken together, these results imply that Medicaid costs for individuals in the waiver are significantly higher than costs for individuals on the registry. This difference is driven largely by HCBS expenditures and, as expected, nursing facility costs are a source of potential cost avoidance. Analysis 5 discusses the issue of estimating the expected annual cost of an additional waiver spot should the state have the funding to increase waiver capacity.

Limitations

This analysis has the following three limitations.

1. Use of the registry as counterfactual. Attributing the difference between waiver cost spans and registry cost spans to waiver enrollment requires an assumption: that the cost estimates for a registry span (including post-registry experience) is a good approximation of what would have happened to a waiver enrollee with that same cost span had they not been in the waiver. While this assumption cannot be directly verified, confidence is bolstered by the similarity of the waiver and registry populations in terms of both age and gender. However, as will be discussed in Analysis 5, the average individual on the registry may not require NFLOC, implying a causal interpretation of the cost differences requires further adjustment. Moreover, we are unable to assess the extent to which individuals on the registry would have met the financial eligibility limits for the CO Waiver.

2. Cost avoidance assumptions. The structure of our analysis imposes an additional assumption regarding cost avoidance: we assume that all post-registry costs that are incurred are avoidable through waiver participation. While the literature does tend to find that participation in Medicaid-funded HCBS delays or prevents nursing facility admissions (Guo et al., 2015), our analytic structure explicitly assumes that **all** post-registry nursing facility costs would have been prevented by CO Waiver enrollment, which may overstate the effect of waiver participation on nursing facility diversion and thus lead to an over-estimate of post-registry expenditures for the comparison group.

3. Registry data incompleteness. Finally, there are several limitations of the registry data. Gender is missing for almost 15 percent of the individuals in our analytic data set (see the footnote to Table 7, above), and it is possible that other information (such as date of death) may also be measured with error. Additionally, due to the *LTSS Maryland* database migration in 2014, individuals who were on the registry and subsequently deactivated prior to 2014 are not included in the registry data. Finally, we may improperly assign individuals a status of “active” when they were, in fact, inactive based on a purge of inactive registry enrollees in 2016.

These data issues have two implications. First, the maximum amount of post-registry experience that is available is five years. The early deactivations in the data occur largely in 2015; thus, individuals who were on the registry from 2010-2012 but subsequently deactivated in 2013, for example, are not in the analytic data set. This suggests that the longer-span estimates (for

example, eight years) contain less post-registry experience than they should, and therefore potentially fewer post-registry nursing facility costs. This will tend to over-weight the long-span estimates toward individuals actively on the registry and under-weight the post-registry experience. Second, a purge of the registry in 2016 implies that there may be some misattribution of registry status in our analytic database. For example, individuals who may appear active as of 2015 may in fact have been inactive. Again, this will tend to introduce more “zeros” into the registry analytic data set and thus pull the estimates to zero.

The analysis is structured so that, for individuals on the registry, the one-year costs are those that occur in 2019; the two-year costs are those that occur in 2018 and 2019; and so on. Therefore, while the registry data may have its limitations prior to 2016, the registry cost estimates for the most recent four years (i.e., one-, two-, three-, and four-year time spans) accurately reflect true differentials between individuals in the waiver and on the registry.

Conclusion

This analysis attempted to determine the individual-level net Medicaid costs of enrollment in the CO Waiver. Leveraging the insight that individuals on the registry provide a useful approximation for the counterfactual—that is, what would have happened to individuals in the waiver, had they not been in the waiver—we estimated cost differences over ten different time spans for three cost centers. Notably, this methodology includes the costs incurred by individuals on the registry even after they leave the registry, thus accounting for potential cost avoidance due to nursing facility admission. We find that **individuals in the waiver incur roughly \$50,000 to \$60,000 in expenditure per year, about \$40,000 more than individuals on the registry**, roughly half of whom are eligible for Medicaid. This is driven by differences in HCBS spending, and there is evidence of cost avoidance: individuals on the registry tend to incur substantially more nursing facility costs than individuals in the waiver. While the differences may reflect multiple causal mechanisms resulting from CO Waiver receipt—including differential Medicaid enrollment and additional HCBS utilization—we believe that this demonstrates that, in aggregate, Medicaid costs for individuals in the waiver substantially exceed those for individuals on the registry.

It is important to note that these are not intended to be causal estimates of the cost to Medicaid of an additional waiver spot. Analysis 4 is intended to capture the high-level cost differences between individuals in the waiver and individuals on the registry (including post-registry costs). In Analysis 5, we transform these individual-level cost differences into the annual expected cost of an additional CO Waiver spot.

Analysis 5: Estimating the Costs to Maryland Medicaid of Increasing Enrollment in the CO Waiver

Objective

This section builds on Analysis 4 to estimate Maryland Medicaid's share of the expected annual costs of an additional CO Waiver spot, net of the counterfactual costs that would have accrued to Medicaid *had that spot not been added*.

Methodology

This analysis uses the cost difference estimates by span from Analysis 4 and applies two adjustments: occupancy rate and NFLOC multiplier.

Adjustment 1: Occupancy Rate

Waiver spots are not continuously occupied. There is a substantial amount of churn, and a vacated waiver spot is not instantaneously re-filled.²⁶ There are several potential causes for this time lag. The Department invites, by letter, individuals on the registry to apply for the CO Waiver, and potentially sends several letters in cases of nonresponse. The individual then has six months to submit an application or else lose her (potential) spot, entailing the following steps: connecting with a supports planner; receiving a full interRAI assessment; submitting all financial documentation; developing a plan of service with a supports planner; and receiving approval by the Department. Each of these steps can require additional correspondence or back-and-forth communication, implying even further time to enrollment.

Therefore, adding a spot to the CO Waiver does not equate to adding a *continuously occupied* waiver spot. This stands in contrast with a "registry spot" which is, by definition, continuously occupied: while the CO Waiver spot is being re-allocated (and therefore is empty), the future enrollee in that spot will be incurring costs on the registry. Thus, in order to simulate the budgetary impact of adding a waiver spot and avoid over-estimating the waiver costs by assuming no churn, the waiver costs from Analysis 4 are adjusted *downward* by the estimated occupancy rates.²⁷ Using the number of approved waiver spots from Appendix B, Table B-3-a of the most recent CO Waiver amendment application, we calculated the number of available waiver spot-months per fiscal year and then, using waiver enrollment spans from MMIS, estimated the number of occupied waiver spot-months per fiscal year.²⁸ Overall, we estimate

²⁶ We do not quantify the degree of churn in this analysis, but according to Hilltop's 2019 HCBS Chart Book, of the roughly 10,400 participants in the CO Waiver and Medical Day Care Waiver in FY 2016, 21 percent left the waivers for various reasons in that fiscal year. Source: <https://www.hilltopinstitute.org/wp-content/uploads/publications/MedicaidLTSSinMaryland-FY2012-FY2016-Vol5-HCBS-ChartBook-RevJuly2019.pdf>

²⁷ The results from Analysis 4 are from continuously occupied slots, which implies no churn.

²⁸ Additionally, this calculation is distinct from the utilization analysis from Analysis 2. That analysis is based on the number of unique individuals who receive CO Waiver services at any point in a fiscal year (regardless of their time in the waiver). This calculation uses fiscal year CO Waiver eligibility files to explicitly estimate the fraction of total approved CO Waiver person-months that are utilized in a given fiscal year. While the number of unique individuals

the occupancy rate to be **76.13 percent**. That is, an additional waiver spot can expect to be occupied roughly three-fourths of the time.²⁹

Adjustment 2: NFLOC Multiplier

By definition, all individuals in the waiver meet the NFLOC requirement. However, it is not the case that all individuals on the registry meet the NFLOC standard: anyone can join the registry, and NFLOC is only assessed at the time of waiver application. To the extent that the need for NFLOC is correlated with lower functional status, this implies that the *average* individual on the registry may be somewhat healthier than the average individual in the waiver.

While this is a feature of the registry (and therefore does not require correction in Analysis 4), it is crucial that the estimate of the “price” of a CO Waiver spot nets out the counterfactual costs for individuals that *would have been eligible for that spot*. In particular, it is important that we do not compare individuals with high acuity health care needs in the waiver to individuals with lower acuity care needs on the registry. Doing so would conflate differences in underlying health status with differences in service provision, thus biasing the cost estimates.

To correct for this, Medicaid costs for registry participants were adjusted upward so that they mimic the Medicaid costs for individuals on the registry expected to have a NFLOC. Hilltop calculated this by using the Level 1 Screen proxy developed for Analysis 2.³⁰ Hilltop calculated the ratio of total Medicaid spending for these individuals relative to all individuals on the registry in order to estimate the adjustment factor that would inflate average spending for individuals on the registry to match that of the individuals that have a NFLOC. This adjustment factor is estimated to be **1.412**.

Results

Hilltop applied these adjustment factors to the results from Analysis 4 (with the waiver expenditure scaled down by 0.7613, and the registry expenditure scaled up by 1.412) and presents the results in Table 10, below. Table 10 shows net results (that is, waiver costs minus registry costs) scaled to the span year. Column 1 represents the difference in person-level adjusted HCBS expenditures from Table 9. Columns 2, 3, and 4 are defined analogously for nursing facility spending, all other spending, and total spending.

served in the waiver in a given fiscal year can in principle exceed the number of approved waiver positions, the percentage of total approved person-months that are occupied cannot exceed 100.

Source: <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/81956>

²⁹ If the maximum capacity is not defined by the CMS application but, instead, depends on the state’s waiver budget in a given year, then this estimate can be interpreted as a lower bound on the true occupancy rate. To the extent that the true occupancy rate is higher than 76.13 percent, then the true CO Waiver costs are higher than those estimated here.

³⁰ This proxy measure is discussed in Analysis 2.

Table 10. Annual Expected Net Cost per Waiver Spot, by Span and Cost Center

Span	HCBS (1)	Nursing Facility (2)	Other (3)	Total (4)
1 year	\$24,537	(\$4,122)	\$1,563	\$21,978
2 years	\$26,570	(\$4,258)	\$1,564	\$23,876
3 years	\$27,295	(\$5,080)	\$1,203	\$23,418
4 years	\$29,821	(\$7,186)	\$1,562	\$24,197
5 years	\$32,137	(\$14,111)	\$2,152	\$20,178
6 years	\$32,791	(\$13,244)	\$2,083	\$21,631
7 years	\$33,605	(\$12,237)	\$1,888	\$23,256
8 years	\$34,161	(\$11,605)	\$2,066	\$24,622
9 years	\$34,231	(\$10,692)	\$1,574	\$25,113
10 years	\$34,248	(\$10,805)	\$797	\$24,239

Overall, adding an additional spot to the CO Waiver would result in \$20,178 to \$25,113 in additional cost per year to Medicaid. Using an approximate FMAP of 50 percent, these results imply that an additional CO Waiver spot would lead to an additional \$10,089 to \$12,557 of Maryland's share of Medicaid expenditures.³¹

Additionally, there is evidence of significant cost avoidance: depending on the span, 16 to 44 percent of additional HCBS spending is recouped through avoided nursing facility costs.³² This is in line with research that estimates that an additional \$1000 of Medicaid HCBS spending leads to \$351 of savings on Medicaid-funded nursing facility costs, implying that 35.1 percent of the HCBS costs are recouped through reduced nursing facility utilization (Guo et al., 2015). Moreover, the amount of cost avoidance tends to rise with a longer time span, consistent with a mechanism in which individuals on the registry will eventually incur nursing facility costs (which CO Waiver enrollment may prevent).

These expected annual per-spot cost estimates are driven by differences in HCBS expenditure. Given that CO Waiver enrollees have access to specialized HCBS that are unavailable to non-enrollees, this higher utilization is expected. However, HCBS spending tends to increase with the time span. This is likely due to 1) greater utilization of HCBS over time by CO Waiver enrollees (potentially reflecting greater health need over time), 2) reduced utilization of HCBS over time by individuals on the registry (possibly as they transition to nursing facilities), or 3) some combination of the two. Finally, it is important to note that these cost estimates are not solely a

³¹ This does not account for the additional 6 percentage point FMAP for CFC services, so Maryland's true share of these costs would likely be marginally lower than 50 percent.

³² We calculate this as $100 \times (\text{NF cost differential}) / (\text{HCBS cost differential})$. For example, in the one-year cost span, waiver participants incur \$24,537 more in HCBS expenditure relative to registry participants, but \$4,122 less in nursing facility expenditure, and $100 \times (-4,122 / 24,537) = -16.8$ percent.

result of additional CO Waiver service utilization and may be driven by differential Medicaid enrollment or other HCBS utilization as a result of CO Waiver membership. Individuals who enroll in the CO Waiver also have access to other Medicaid services: utilization of these “other” services is an element of the cost of an additional CO Waiver slot. For example, almost three-fourths of CO Waiver enrollees also receive CFC services, which would be captured in the HCBS cost center (The Hilltop Institute, 2019a).

Taking this analysis at face value, this implies that adding an additional 1,000 spots to the CO Waiver would result in an additional \$20 to \$25 million in annual Medicaid service costs, for which Maryland would be responsible for roughly \$10 to \$12.5 million. Per Analysis 2, as of September 30, 2020, 3,088 individuals on the registry would meet the NFLOC and financial eligibility requirements, if invited to apply. Table 11, below, presents the additional cost to Maryland Medicaid of 1, 1000, 2000, and 3088 additional CO Waiver spots. It is important to note that these numbers reflect only additional service costs and do not include the additional administrative cost that would result from the expansion of the CO Waiver population.

**Table 11. Estimates of Maryland’s State Share of Medicaid Costs
from Adding CO Waiver Capacity**

Additional CO Waiver Spots	Approximate Cost Range
1	\$10,000 - \$12,500
1,000	\$10 million - \$12.5 million
2,000	\$20 million - \$25 million
3,088	\$31 million - \$39 million

Limitations

In this analysis, we applied adjustment factors so that the person-level cost differences from analysis 4 apply to the marginal CO Waiver spot. After accounting for the fact that an additional spot will be occupied for about three-fourths of the year, and inflating Medicaid costs for individuals on the registry in order to represent an individual on the registry with NFLOC, we find that Maryland would be responsible for roughly \$10,000 to \$12,500 annually in direct service costs (not including administrative costs) for each additional waiver spot. Due to data limitations, this study does not identify whether individuals on the registry qualify for the CO Waiver’s financial eligibility criteria. Moreover, this analysis inherits the data limitations from Analysis 4, implying that the short-span estimates are potentially more reliable than the long-span estimates.

Despite these limitations, we have confidence in our estimates for three reasons. First, as shown in Analysis 4, the waiver sample and registry samples are similar based on age and gender distributions. Second, while it is possible that, due to data limitations, certain elements of the registry costs are under-estimated, we also assume that *all* post-registry costs would be prevented by CO Waiver enrollment, which may tend to over-estimate the relevant counterfactual costs. Thus, while we cannot assess the magnitude of the impact of these

assumptions, we do not consistently over- or under-estimate the counterfactual costs. Finally, it is worth considering the extent to which confounders would have to affect our analysis in order to lead to an erroneous conclusion: what would we have had to miss if the *true* cost of an additional CO Waiver spot was zero, or even negative? We believe that the cost estimates for individuals in the waiver are straightforward, so this would have entailed a significant underestimate of the costs for individuals on the registry.

Hilltop believes that this is not likely, for two reasons. First, a significant driver of the (relatively low) costs incurred by individuals on the registry stems from the fact that a substantial portion of these individuals are not enrolled in Medicaid, and therefore would represent “pure” cost increase to Medicaid by virtue of CO Waiver enrollment (without any avoided Medicaid costs). If, in fact, all individuals who enroll in the CO Waiver would have incurred significant Medicaid spending *even had they not enrolled*, then we would underestimate the counterfactual costs.

The data suggest that this is not the case: per Analysis 2, only 46.4 percent of individuals currently on the registry are enrolled in Medicaid. Additionally, while we cannot determine the Medicaid enrollment status for all individuals on the registry who would meet the NFLOC and financial requirements for the CO Waiver (since these latter factors are not observable), we can observe the pre-waiver Medicaid spending patterns for individuals who are in our waiver analytic dataset. This allows us to know if, for example, all individuals who eventually enrolled in the waiver were eligible for Medicaid even before they enrolled in the CO Waiver. We find that, for individuals with pre-waiver experience, 14 percent incurred no Medicaid spending in the pre-waiver years (implying that they were not enrolled in Medicaid).³³ This is especially salient given that almost 70 percent of CO Waiver enrollees originate from Medicaid-funded nursing facilities (as opposed to the registry) and were thus already enrolled in Medicaid (see footnote 20 from Analysis 4). This further implies that roughly half of individuals *who enroll in the waiver from the registry* are enrolled in Medicaid while on the registry.³⁴ Thus, we do not believe that we are significantly understating counterfactual Medicaid spending.

Second, of the individuals on the registry who are enrolled in Medicaid, the primary source of potential cost savings is nursing facility expenditure. If we underestimate the nursing facility utilization that *would* occur for an individual who fills an additional CO Waiver spot had they not occupied that spot, then our cost estimates may be overstated. Again, we do not believe that the data support this. Per Table 5 from Analysis 2, of the 19,804 individuals who were active on the registry as of September 30, 2020, fewer than 9 percent incurred a nursing facility stay in 2019.³⁵

³³ The pre-waiver period does not include the calendar year of waiver enrollment.

³⁴ Taking these numbers at face value, if 70 percent of CO Waiver participants enroll from Medicaid-funded nursing facilities, and are thus already enrolled in Medicaid, then that 14 percent of waiver participants with no pre-waiver Medicaid spending must be concentrated in the 30 percent of individuals that enroll from the registry. We interpret this to mean that roughly half (14/30) of the individuals on the registry that eventually enroll in the CO Waiver incur no Medicaid spending before enrollment and are thus not enrolled in Medicaid while on the registry.

³⁵ Moreover, while nursing facility stays are costly, the majority of nursing facility stays are relatively short: in FY 2016, 18 percent of nursing facility stays were under 1 month in duration, and 23 percent were from 1-4 months in duration. Source: The Hilltop Institute’s Nursing Facility Services Chart Book, 2019.

Since any additional CO Waiver enrollees would come from the registry, and nursing facility utilization is rare among individuals on the registry, we do not believe that we significantly underestimate the foregone nursing facility utilization.

Conclusion

Analysis 5 estimated the net cost to Medicaid of increasing the capacity of the CO Waiver. We find that **the state's share of the expected annual net costs to Maryland Medicaid of an additional waiver spot ranges from roughly \$10,000 to \$12,500 (\$20,000 - \$25,000 total funds)**. It is important to note that these cost estimates are not solely a result of additional CO Waiver service utilization and may be driven by differential Medicaid enrollment and other HCBS utilization as a result CO Waiver membership. Regardless of the mechanism, however, these cost estimates represent Hilltop's best estimate of the state's share of the additional annual net costs that would accrue to Maryland Medicaid as a result of adding a spot to the CO Waiver.

(<https://www.hilltopinstitute.org/wp-content/uploads/publications/MedicaidLTSSInMaryland-FY2012-FY2016-Vol6-NursingFacility-ChartBook-RevJuly2019.pdf>)

Summary of Findings

Study Purpose and Approach

The Hilltop Institute, in consultation with the Maryland Department of Health, carried out a five-part research study to examine the benefits and costs of expanding access to Medicaid HCBS. Hilltop's research design incorporated—to the extent possible—investigations consistent with the request in the 2020 Joint Chairmen's report. The Joint Chairmen requested Medicaid costs for HCBS waiver participants compared to individuals on the CO Waiver registry over a five-year period, adjusted for acuity; guidance on capturing savings accruing to Medicare from the provision of Medicaid-financed HCBS in Maryland; an assessment of the extent to which Maryland HCBS providers can accommodate expanded HCBS enrollment; and other information relevant to quantifying anticipated costs and cost avoidance from expanding access to Medicaid-financed HCBS waiver services.

Hilltop's study consisted of 1) a literature review examining the costs and benefits of Medicaid HCBS; 2) a descriptive analysis of individuals on the CO Waiver registry; 3) a review of Maryland's experience with rebalancing HCBS relative to institutional care; 4) an analysis of Medicaid costs incurred by CO Waiver participants compared to individuals on the CO Waiver registry; and 5) an estimate of the costs to Maryland Medicaid of increasing enrollment in the CO Waiver.

Limitations

Hilltop encountered a number of limitations in designing an approach to address the research questions posed by the Joint Chairmen. A major limitation was the availability of data. More than half of individuals on the CO Waiver registry are not enrolled in Medicaid, so we did not have data on their service utilization and costs. Additionally, our access to Medicare claims data for dual eligibles was limited. Assessing acuity of Medicaid participants on the registry posed challenges because Level 1 screen data are only available for a portion of our study period. Similarly, Medicaid financial eligibility was not available for registrants, necessitating estimation based on prior waiver enrollment patterns. Time spans for examining individual experiences with service receipt and costs were limited by data inconsistencies across time periods. Finally, we interpreted the Joint Chairmen's directive to examine "HCBS waivers" to mean an assessment of the CO Waiver and its predecessor waivers that serve older adults and individuals with disabilities; we did not extend our analysis to include other HCBS waivers operated by the Department that serve other populations. Similarly, we interpreted "registry" to mean the CO Waiver registry maintained by the Department.

We were not able to address the question posed about the extent to which HCBS providers in Maryland could accommodate expanded waiver enrollment. There is scant research in the professional literature on this topic, so we were unable to report any findings from relevant studies from other states. Addressing this question would require resources beyond those available for Hilltop's report to the Joint Chairmen. An extensive mixed-methods study would likely be required, consisting of an assessment of the labor market in the state, a survey

administered to a representative sample of Maryland HCBS providers, and a modeling exercise to estimate future provider capacity.

Findings and Policy Implications

1. **The evidence is mixed on whether states realize cost savings from expanding Medicaid HCBS, but HCBS participants report a higher quality of life and reduced caregiver burden.** Many believe that greater satisfaction among Medicaid HCBS participants and their caregivers is reason enough to expand HCBS programs.
2. **Maryland has made steady progress in rebalancing community-based care relative to institutional care, but the state will need to proactively engage in new strategies to ensure that rebalancing continues.** National data on state rebalancing show that Maryland's HCBS expenditures in FY 2016 accounted for 56 percent of total LTSS expenditures, up from 32 percent in FY 2005.³⁶ State data show evidence of a continued increase in Medicaid HCBS expenditures: from \$279.5 million in FY 2013 to \$485 million FY 2019. States that rebalance thoughtfully and gradually as Maryland has done are less likely to incur unmanageable service utilization and costs when expanding HCBS (Kaye et al., 2012).
3. **As the state considers HCBS expansion, policies related to nursing facility bed capacity and reimbursement policy should also be examined.** An analysis of nursing facility policy is beyond the scope of this study. However, it is important to note that while the number of licensed nursing facility beds per 1,000 Medicaid LTSS users and the number of Medicaid-paid nursing facility days both declined at a moderate but steady pace from FY 2013 to FY 2017, the rate of decline has since slowed considerably.
4. **Hilltop estimates that of the 19,804 individuals on the CO Waiver registry as of September 2020, only 3,088 (16 percent) will meet financial eligibility and NFLOC requirements.** Sixty-five percent of registrants have been on the registry for three years or longer. Twenty percent are full dual eligibles. Forty-six percent of registrants are enrolled in Medicaid, and one-third of Medicaid enrollees are receiving HCBS services.
5. **Nine percent of individuals on the registry had nursing facility stays in FY 2019 but were not fast-tracked into the CO Waiver.** This is despite Maryland's Money Follows the Individual Act.³⁷ Improved discharge practices in nursing facilities could help ensure that eligible individuals are transitioned directly into the CO Waiver.
6. **CO Waiver participants average \$50,000-\$60,000 in total Medicaid expenditures each year, about \$40,000 more than individuals on the registry.** CO Waiver participants have

³⁶ Centers for Medicare & Medicaid Services. (n.d). *Improving the balance: The evolution of long-term services and supports, FY 1981-2014*. Retrieved from <https://www.medicaid.gov/medicaid/long-term-services-supports/reports-evaluations/index.html>

³⁷ MD. Code Ann., Health-Gen § 15-137.

substantially higher Medicaid costs than individuals on the registry, roughly half of whom are eligible for Medicaid. These estimates include the cost of nursing facility stays for both waiver participants and registrants, thus taking into account “cost avoidance” as requested by the Joint Chairmen. Costs for HCBS, acute care, and pharmacy are also included. The cost difference is largely driven by Medicaid-funded HCBS.

7. **Hilltop estimates that the cost to the state of providing CO Waiver services to the 3,088 individuals on the registry who would likely meet financial eligibility and NFLOC requirements would be about \$31-\$39 million annually.** The state cost for each additional CO Waiver enrollee is estimated to be about \$10,000-\$12,500 per year. Combined federal and state Medicaid costs per enrollee are estimated to range from \$20 to \$25 million annually. These estimates include nursing facility costs avoided. Estimates are for state costs only and do not include federal Medicaid matching funds.
8. **Cost savings from providing Medicaid-financed HCBS to dual eligibles may accrue mostly to Medicare, suggesting the need for alternative payment models that require Medicare and Medicaid to share any savings.** Many believe that when dual eligibles receive high-quality HCBS through Medicaid, the Medicare program benefits from avoided hospitalizations and emergency department visits. To date, evaluations of federal demonstrations such as the Financial Alignment Initiative have examined only Medicare savings, but smaller studies such as those cited in this report’s literature review provide some evidence of greater Medicare savings from programs that integrate Medicare and Medicaid benefits. Maryland is considering initiatives to promote increased enrollment of dual eligibles in dual eligible special needs plans (D-SNPs) and the Program of All-Inclusive Care for the Elderly (PACE), but take-up of these programs is likely to be limited based on prior experience in Maryland and across the country. The state might consider leveraging the Total Cost of Care Model and particularly the Maryland Primary Care Program, a component of the model, to develop an innovative shared savings model.

References

Analysis 1: Literature Review Examining the Costs and Benefits of Medicaid HCBS

- Archibald, A., Soper, M., Smith, L., & Kruse, A., & Wiener, J. (2019). *Integrating care through dual eligible special needs plans (D-SNPs): Opportunities and challenges*. Office of The Assistant Secretary for Planning and Evaluation. Retrieved from <https://aspe.hhs.gov/basic-report/integrating-care-through-dual-eligible-special-needs-plans-d-snps-opportunities-and-challenges>
- Artiga, S., Hinton, E., Rudowitz, R., & Musumeci, M. (2017). *Current flexibility in Medicaid: An overview of federal standards and state operations*. Washington, DC: Kaiser Family Foundation. Retrieved from <http://kff.org/medicaid/issue-brief/current-flexibility-in-medicaid-an-overview-of-federal-standards-and-state-options>
- Bayer, E., Holladay, S., Justice, D., Tranfaglia, J., Liu, Y., Lyda-McDonald, B., et al. (2018). Financial alignment initiative MyCare Ohio: First evaluation report. Retrieved from <https://innovation.cms.gov/Files/reports/fai-oh-firstevalrpt.pdf>
- Berish, D., Nelson, I., Mehdizadeh, S., & Applebaum, R. (2018). Is there a woodwork effect? Addressing a 200-year debate on the impacts of expanding community-based services. *Journal of Aging & Social Policy*, 31(1), 85–98. Retrieved from <https://doi-org.proxy-bc.researchport.umd.edu/10.1080/08959420.2018.1528115>
- Borck, R., Peebles, V., Miller, D., & Schmitz, R. (2014). *Interstate variation and progress toward balance in use of and expenditure for long-term services and supports in 2009*. U.S. Department of Health and Human Services. Retrieved from <https://aspe.hhs.gov/system/files/pdf/77181/ProgBal.pdf>
- Brown, R., Carlson, B., Dale, S., Foster, L. et al. (2007). *Cash and counseling: Improving the lives of Medicaid beneficiaries who need personal care or home- and community-based services* (No. 5583). Mathematica Policy Research Inc. Report.
- Burgdorf, J., Wolff, J., Willink, A., Woodcock, C., Davis, K., & Stockwell, I. (2018). Expanding Medicaid coverage for community-based long-term services and supports: Lessons from Maryland's Community First Choice program. *Journal of Applied Gerontology*, 39(7), 1-12. doi:10.1177/0733464818779942
- Buttke, D., Cooke, V., Abrahamson, K., Shippee, T., Davila, H., Kane, R., & Arling, G. (2018). A statewide model for assisting nursing home residents to transition successfully to the community. *Geriatrics (Basel, Switzerland)*, 3(2), 18. <https://doi.org/10.3390/geriatrics3020018>
- Centers for Medicare & Medicaid Services. (2020, November). *Long term services and supports rebalancing toolkit*. Retrieved from <https://www.medicaid.gov/medicaid/long-term-services-supports/downloads/ltss-rebalancing-toolkit.pdf>

- Chen, Y. M., & Berkowitz, B. (2012). Older adults' home- and community-based care service use and residential transitions: A longitudinal study. *BMC Geriatrics* 12, 44. <https://doi.org/10.1186/1471-2318-12-44>
- Davis, A., Willink, A., Stockwell, I., Whiton, K., Burgdorf, J., & Woodcock, C. (2018). *Lessons from Maryland's Community First Choice program*. The Commonwealth Fund. Retrieved from <https://www.commonwealthfund.org/publications/issue-briefs/2018/jun/designing-medicare-help-home-benefit-lessons-marylands-community>
- Eiken, S., Sredl, K., Burwell, B. & Amos, A. (2018). *Medicaid expenditures for long-term services and supports in FY 2016*. IBM Watson Health. <https://www.medicaid.gov/sites/default/files/2019-12/ltssexpenditures2016.pdf>
- Foster, L., Schmitz, R., & Kemper, P. (2007). *The effects of PACE on Medicare and Medicaid expenditures*. Mathematica Policy Research Inc. Retrieved from https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Reports/downloads/Foster_PACE_2009.pdf
- Government Accountability Office. (2003). *Long-term care: Federal oversight of growing Medicaid home and community-based waivers should be strengthened*. Report to Congressional Requesters. GAO-03-576. Retrieved from <https://www.gao.gov/new.items/d03576.pdf>
- Grabowski, D. C. (2006). The cost-effectiveness of noninstitutional long-term care services: Review and synthesis of the most recent evidence. *Medical Care Research and Review*, 63(3), 3-28.
- Grabowski, D. C. (2007). Medicare and Medicaid: Conflicting incentives for long-term care. *Milbank Quarterly*, 85(4), 579-610.
- Grabowski, D. C., Joyce, N. R., McGuire, T. G., & Frank, R. G. (2017). Passive enrollment of dual-eligible beneficiaries into Medicare and Medicaid managed care has not met expectations. *Health Affairs*, 36(5), 846-854. doi: 10.1377/hlthaff.2016.1082.
- Graham, C. L., Liu, P.-J., Hollister, B. A., Kaye, H. S., & Harrington, C. (2018). Beneficiaries respond to California's program to integrate Medicare, Medicaid, and long-term services. *Health Affairs*, 9, 1432-1441.
- Gross, D. L., Temkin, G. H., Kunitz, S., & Mukamel, D. B. (2004). The growing pains of integrated health care for the elderly: Lessons from the expansion of PACE. *Milbank Quarterly*, 82(2), 257-282. <https://doi-org.proxy-bc.researchport.umd.edu/10.1111/j.0887-78X.2004.00310.x>
- Guo, J., Konetzka, R. T., & Manning, W. G. (2015). The causal effects of home care use on institutional long-term care utilization and expenditures. *Health Economics*, 24(Suppl 1), 4-17. <https://doi.org/10.1002/hec.3155>
- Hass, Z., Woodhouse, M., & Arling, G. (2020). Using a Semi-Markov model to estimate Medicaid cost savings due to Minnesota's Return to Community initiative. *Journal of the American Medical Directors Association*.

- Hsieh, C. M. (2017). Health, quality of homecare services and quality of life: A case of frail older immigrant adults. *Social Indicators Research*, 134(2), 711–723. doi:10.1007/s11205-016-1442-y
- Hong, M., & Casado, B. L. (2015). Caregiver stress: Does states' expenditure on home- and community-based services matter? *Home Health Care Services Quarterly*, 34(2), 85–100. <https://doi-org.proxy-bc.researchport.umd.edu/10.1080/01621424.2015.1029186>
- Johnson, K., Becker, M., Tewarson, H., & Mosey, A. (2020). *Improving care and managing costs for dual eligibles: Highlights from an NGA roundtable*. Washington, DC: National Governors Association Center for Best Practices. Retrieved from <https://www.nga.org/wp-content/uploads/2020/02/Improving-Care-and-Managing-Costs-for-Dual-Eligibles.pdf>
- Kaye, H. S. (2012). Gradual rebalancing of Medicaid long-term services and supports saves money and serves more people, statistical model shows. *Health Affairs*, 31(6), 1195-1203.
- Kaiser Family Foundation. (n.d.) Medicare Advantage: Special needs plans (SNP) enrollment, by SNP type. Retrieved from <https://www.kff.org/medicare/state-indicator/snp-enrollment-by-snp-type/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>
- Kim, B., Park, S., Bishop-Saucier, J., & Amorim, C. (2017). Community-based services and depression from person-environment fit perspective: Focusing on functional impairments and living alone. *Journal of Gerontological Social Work*, 60(4), 270–285. doi:10.1080/01634372.2017.1310166
- Konetzka, R. T., Karon, S. L., & Potter, D. E. B. (2012). Users of Medicaid home and community-based services are especially vulnerable to costly avoidable hospital admissions. *Health Affairs (Project Hope)*, 31(6), 1167–1175. <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2011.0902>
- Kristof, L., Fortinsky, R. H., Kellett, K., Porter, M., & Robison, J. (2017). Experiences of informal caregivers of older adults transitioned from nursing homes to the community through the Money Follows the Person demonstration. *Journal of Aging & Social Policy*, 29(1), 20–34. <https://doi-org.proxy-bc.researchport.umd.edu/10.1080/08959420.2016.1187034>
- Kruse, A. & Herman Soper, M. (2020). *State efforts to integrate care for dually eligible beneficiaries: 2020 update*. Center for Health Care Strategies. Retrieved from https://www.chcs.org/media/State-Efforts-to-Integrate-Care-for-Dually-Eligible-Beneficiaries_022720.pdf
- The Lewin Group. (2011). *An independent evaluation of Rhode Island's Global Waiver*. Retrieved from http://www.ohhs.ri.gov/documents/documents11/Lewin_report_12_6_11.pdf
- MACPAC. (n.d.). *Medicare Advantage dual eligible special needs plans aligned with Medicaid managed long-term services and supports*. Retrieved from <https://www.macpac.gov/subtopic/medicare-advantage-dual-eligible-special-needs-plans-aligned-with-medicaid-managed-long-term-services-and-supports>

- Marek, K.D., Popejoy, L., Petroski, G., Mehr, D., Rantz, M., & Lin, W.C. (2005). Clinical outcomes of aging in place. *Nursing Research*, 54, 202-211.
<https://pubmed.ncbi.nlm.nih.gov/15897796/>
- Marek, K. D., Adams, S. J., Stetzer, F., Popejoy, L., & Rantz, M. (2010). The relationship of community-based nurse care coordination to costs in the Medicare and Medicaid programs. *Research in Nursing & Health*, 33(3), 235–242.
<https://onlinelibrary.wiley.com/doi/epdf/10.1002/nur.2037>
- Marek, K., Stetzer, F., Adams, S., Popejoy, L., Rantz, M. (2012). Aging in place versus nursing home care: Comparison of costs to Medicare and Medicaid. *Research in Gerontological Nursing*, 5(2), 123-129.
- Mathematica. (n.d.). Research and evaluation of the Money Follows the Person (MFP) rebalancing demonstration grants. Retrieved from <https://www.mathematica.org/our-publications-and-findings/projects/research-and-evaluation-of-the-money-follows-the-person-mfp-demonstration-grants>
- MEDPAC & MACPAC. (2018). *Beneficiaries dually eligible for Medicare and Medicaid: A data book jointly produced by the Medicare Payment Advisory Commission and the Medicaid and CHIP Payment and Access Commission*. Retrieved from http://www.medpac.gov/docs/default-source/data-book/jan18_medpac_macpac_dualsdatabook_sec.pdf?sfvrsn=0
- Muramatsu, N., Yin, H., Campbell, R. T., Hoyem, R. L., Jacob, M. A., & Ross, C. O. (2007). Risk of nursing home admission among older Americans: Does states' spending on home- and community-based services matter? *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 62(3), S169–S178. <https://pubmed.ncbi.nlm.nih.gov/17507592/>
- Muramatsu, N., Yin, H., & Hedeker, D. (2010). Functional declines, social support, and mental health in the elderly: Does living in a state supportive of home and community-based services make a difference? *Social Science & Medicine* (1982), 70(7), 1050–1058.
<https://doi.org/10.1016/j.socscimed.2009.12.005>
- Musumeci, M., Chidambaram, P. & Watts, M. O. (2019). Key questions about Medicaid home and community-based services waiver waiting lists. Retrieved from <https://www.kff.org/medicaid/issue-brief/key-questions-about-medicaid-home-and-community-based-services-waiver-waiting-lists>
- Pepin, R., Leggett, A., Sonnega, A., & Assari, S. (2017). Depressive symptoms in recipients of home- and community-based services in the United States: Are older adults receiving the care they need? *The American Journal of Geriatric Psychiatry: Official Journal of the American Association for Geriatric Psychiatry*, 25(12), 1351–1360.
<https://doi.org/10.1016/j.jagp.2017.05.021>
- Robison, J., Porter, M., Shugrue, N., Kleppinger, A., & Lambert, D. (2015). Connecticut's "Money Follows the Person" yields positive results for transitioning people out of institutions. *Health Affairs*, 34(10), 1628-1636.
- Sandler, M., Zhao, L. Trapnell, T., Simms, A., Nussbaum, A., Morley, M., & Chiri, G. (2019). Preliminary savings report for Colorado managed fee-for-service (MFFS) demonstration

- period 2: Medicare-Medicaid Financial Alignment Initiative. Retrieved from <https://innovation.cms.gov/files/reports/fai-co-prelimyr2savings.pdf>
- Shapiro, A., Loh, C-P., & Mitchell, G. (2011). Medicaid cost-savings of home- and community-based service programs for older persons in Florida. *Journal of Applied Gerontology*, 30(1):3-21. doi:10.1177/0733464809348499
- Smith, C. A., & Frick, K. D. (2008). Cost-utility analysis of high- vs. low-intensity home- and community-based service interventions. *Social Work in Public Health*, 23(6), 75–98. <https://doi-org.proxy-bc.researchport.umd.edu/10.1080/19371910802059635>
- Sowers, M., Claypool, H., & Musumeci, M. (2016). Issue brief: Streamlining Medicaid home and community-based services: Key policy questions. *Kaiser Family Foundation*, 1-16. Retrieved from <https://clpc.ucsf.edu/sites/clpc.ucsf.edu/files/reports/KFF%20issue-brief-streamlining%20HCBS%20March%202016.pdf>
- Stockwell, I. (2012). *Medicaid long-term services and supports in Maryland: Money Follows the Person metrics*. Presentation to the Gerontological Society of America's 65th Annual Scientific Meeting. Retrieved from <https://www.hilltopinstitute.org/wpcontent/uploads/publications/MedicaidLTSSInMaryland-MoneyFollowsThePersonMFPMetrics-Nov2012.pdf>
- Thomas, K. S., & Applebaum, R. (2015). Long-term services and supports (LTSS): A growing challenge for an aging America. *Public Policy & Aging Report*, 25(2), 56–62. <https://doi.org/10.1093/ppar/prv003>
- U.S. Department of Health and Human Services. (2015). *Report to Congress: The Centers for Medicare & Medicaid Services' evaluation of for-profit PACE programs under section 4804(b) of the Balanced Budget Act of 1997*. Retrieved from https://innovation.cms.gov/files/reports/rtc_for-profit_pace_report_to_congress_051915_clean.pdf
- Van Cleave, J. H., Egleston, B. L., Brosch, S., Wirth, E., Lawson, M., Sullivan-Marx, E. M., & Naylor, M. D. (2017). Policy research challenges in comparing care models for dual-eligible beneficiaries. *Policy, Politics & Nursing Practice*, 18(2), 72–83. <https://doi.org/10.1177/1527154417721909>
- Watts, M. O., Musumeci, M., & Chidambaram, P. (2020). *Medicaid home and community-based services enrollment and spending*. Issue Brief, 1-23. Retrieved from <http://files.kff.org/attachment/Issue-Brief-Medicaid-Home-and-Community-Based-Services-Enrollment-and-Spending>
- Xu, H., & Intrator, O. (2020). Medicaid long-term care policies and rates of nursing home successful discharge to community. *Journal of the American Medical Directors Association*, 21(2), 248–253. <https://doi-org.proxy-bc.researchport.umd.edu/10.1016/j.jamda.2019.01.153>
- Zainulbhai, S., Goldberg, L., Ng, W., & Montgomery, A. H. (2014). Assessing care integration for dual-eligible beneficiaries: A review of quality measures chosen by states in the financial

alignment initiative. *New York: The Commonwealth Fund*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2417416

Zhang, Y., & Diana, M. L. (2018). Effects of early dual-eligible special needs plans on health expenditure. *Health Services Research*, 53(4), 2165-2184. doi: 10.1111/1475-6773.12778

Analysis 2: A Descriptive Analysis of Maryland's CO Waiver Registry

Centers for Medicare & Medicaid Services. (n.d.c). *MD older adults* (0265.R05.00). Retrieved from <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/81956>

InterRAI. (n.d.). InterRAI Home Care (HC). Retrieved from <https://www.interrai.org/home-care.html>

Maryland Department of Aging. (n.d.). *Community Options Waiver*. Retrieved from <https://aging.maryland.gov/accesspoint/Pages/Community-Options-Waiver.aspx>

Maryland Department of Health. (n.d.). *Home and Community-Based Options Waiver*. Retrieved from <https://mmcp.health.maryland.gov/longtermcare/SiteAssets/SitePages/Community%20First%20Choice/HCBOW%20Fact%20Sheet%2011.17.15.pdf>

Maryland Department of Health. (2008, July 1). *Nursing Home Transmittal No. 213*. Retrieved from <https://mmcp.health.maryland.gov/longtermcare/SiteAssets/SitePages/Nursing%20Home%20Services/Nursing%20Facility%20LOC%20Transmittal%20213.pdf>

Analysis 3: Maryland's Experience with Rebalancing HCBS Relative to Institutional Care

Borck, R., Peebles, V., Miller, D. & Schmitz, R. (2014). *Interstate variation and progress toward balance in use of and expenditure for long-term services and supports in 2009*. U.S. Department of Health and Human Services. Retrieved from <https://aspe.hhs.gov/system/files/pdf/77181/ProgBal.pdf>

Centers for Medicare & Medicaid Services. (n.d.a). *Balancing Incentive Program*. Retrieved from <https://www.medicaid.gov/medicaid/long-term-services-supports/balancing-incentive-program/balancing-incentive-program/index.html>

Centers for Medicare & Medicaid Services. (n.d.b). *Balancing long term services & supports*. Retrieved from <https://www.medicaid.gov/medicaid/long-term-services-supports/balancing-long-term-services-supports/index.html>

Centers for Medicare & Medicaid Services. (n.d.c). *MD older adults* (0265.R05.00). Retrieved from <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/81956>

*Expanding Access to Long-Term Services and Supports
through Home and Community-Based Services*

- Centers for Medicare & Medicaid Services. (n.d.d). *No Wrong Door system and Medicaid administrative claiming reimbursement guidance*. Retrieved from <https://www.medicaid.gov/medicaid/financial-management/medicaid-administrative-claiming/no-wrong-door-system-and-medicaid-administrative-claiming-reimbursement-guidance/index.html>
- Centers for Medicare & Medicaid Services. (2014, January 10). *Home and community based services*. Fact Sheet. Retrieved from <https://www.cms.gov/newsroom/fact-sheets/home-and-community-based-services>
- Centers for Medicare & Medicaid Services. (2019, December 16). *Total MFP grant awards and initial award dates*. Retrieved from <https://www.medicaid.gov/sites/default/files/2020-01/mfp-grant-awards-12162019.pdf>
- Centers for Medicare & Medicaid Services. (2020). *Long-term services and supports (LTSS) rebalancing toolkit fact sheet*. Retrieved from <https://www.cms.gov/newsroom/fact-sheets/long-term-services-and-supports-ltss-rebalancing-toolkit-fact-sheet>
- Davis, A., Willink, A., Stockwell, I., Whiton, K., Burgdorf, J., & Woodcock, C. (2018). *Lessons from Maryland's Community First Choice program*. The Commonwealth Fund. Retrieved from <https://www.commonwealthfund.org/publications/issue-briefs/2018/jun/designing-medicare-help-home-benefit-lessons-marylands-community>
- Gifford, K., Ellis, E., Lashbrook, A., Nardone, M., Hinton, E., Rudowitz, R., . . . Tian, M. (2019, October 18). *A view from the states: Key Medicaid policy changes: Results from a 50-state Medicaid budget survey for state fiscal years 2019 and 2020*. Retrieved from <https://www.kff.org/report-section/a-view-from-the-states-key-medicaid-policy-changes-long-term-services-and-supports/>
- Liaos, K., & Peebles, V. (n.d.). *Money Follows the Person: State transitions as of December 31, 2019*. Retrieved from <https://www.medicaid.gov/medicaid/long-term-services-supports/downloads/mfp-2019-transitions-brief.pdf>
- Maryland Department of Aging. (n.d.). *Community Options Waiver*. Retrieved from <https://aging.maryland.gov/accesspoint/Pages/Community-Options-Waiver.aspx>
- Maryland Department of Aging. (n.d.). *MAP information and assistance (MAP)*. Retrieved from <https://aging.maryland.gov/Pages/maryland-access-point.aspx>
- Maryland Department of Health. (n.d.). *Home and Community-Based Services (HCBS)*. Retrieved from <https://mmcp.health.maryland.gov/waiverprograms/pages/home.aspx>
- Maryland Department of Health. (2013, January 14). *Personal Care Services Transmittal N. 50*. Retrieved from <https://mmcp.health.maryland.gov/MCOupdates/SiteAssets/SitePages/FY-2013-Transmittals/PT%2015-13%20PC%20No.%2050%20and%20STEPS%20No.%2010.pdf>
- Maryland Department of Health. (2016, January 28). *Report on home- and community-based long-term care services*. Retrieved from [http://dlslibrary.state.md.us/publications/Exec/DHMH/HG15-135\(g\)_2015.pdf](http://dlslibrary.state.md.us/publications/Exec/DHMH/HG15-135(g)_2015.pdf)

- Maryland Department of Health. (2018). *In-Home Supports Assurance System: Provider portal user guide*. Retrieved from <https://mmcp.health.maryland.gov/longtermcare/Resource%20Guide/05.%20ISAS/ISAS%20Policy%20and%20Reference%20Guides/Provider%20Portal%20Reference%20Guide%20121417.pdf>
- Maryland Department of Health. (2015, September 10). Maryland Medical Assistance Program. Retrieved from <https://mmcp.health.maryland.gov/longtermcare/Resource%20Guide/13.%20Letters,%20Memos%20and%20Transmittals/Independent%20to%20Agency%20Personal%20Assistance%20Provider%20-%20Transition%20Letters/MAPC%20Independent%20Provider%20Letter%209.10.15.pdf>
- Maryland Health Care Commission. (2020, July 6). *Routine reports: All tables*. Retrieved from https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_ltc/documents/Routine%20Reports%20All%20Tables%207_6_2020.pdf
- Welcome to Maryland Medicaid eHealth Statistics. (n.d.). Retrieved from <https://md-medicaid.org/>
- NORC at the University of Chicago. (2014, October 24). *ACA Section 2401, Community First Choice Option (Section 1915(k) of the Social Security Act); Maryland State Plan Amendment summary*. Retrieved from <https://www.medicaid.gov/sites/default/files/2019-12/md-cfc-spa-matrix.pdf>
- Watts, M. O, Musumeci, M. & Chidambaram, P. (2020). *Medicaid home and community-based services enrollment and spending*. Kaiser Family Foundation Issue Brief, 1-23. Retrieved from <http://files.kff.org/attachment/Issue-Brief-Medicaid-Home-and-Community-Based-Services-Enrollment-and-Spending>
- Watts, M. O., Reaves, E., & Musumeci, M. (2014, May 16). *Maryland's Money Follows the Person demonstration: Support transitions through enhanced services and technology*. Kaiser Family Foundation. Retrieved from <https://www.kff.org/medicaid/issue-brief/marylands-money-follows-the-person-demonstration-support-transitions-through-enhanced-services-and-technology/>

Analysis 4: Estimating the Association between CO Waiver Participation and Health Care Utilization

- Centers for Medicare & Medicaid Services. (n.d.e). *MD Living at Home* (0353.R02.00). Retrieved from <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/81951>
- Guo, J., Konetzka, R. T., & Manning, W. G. (2015). The causal effects of home care use on institutional long-term care utilization and expenditures. *Health Economics*, 24, 4-17.

Analysis 5: Estimating the Cost to Maryland Medicaid of Increasing Enrollment in the CO Waiver

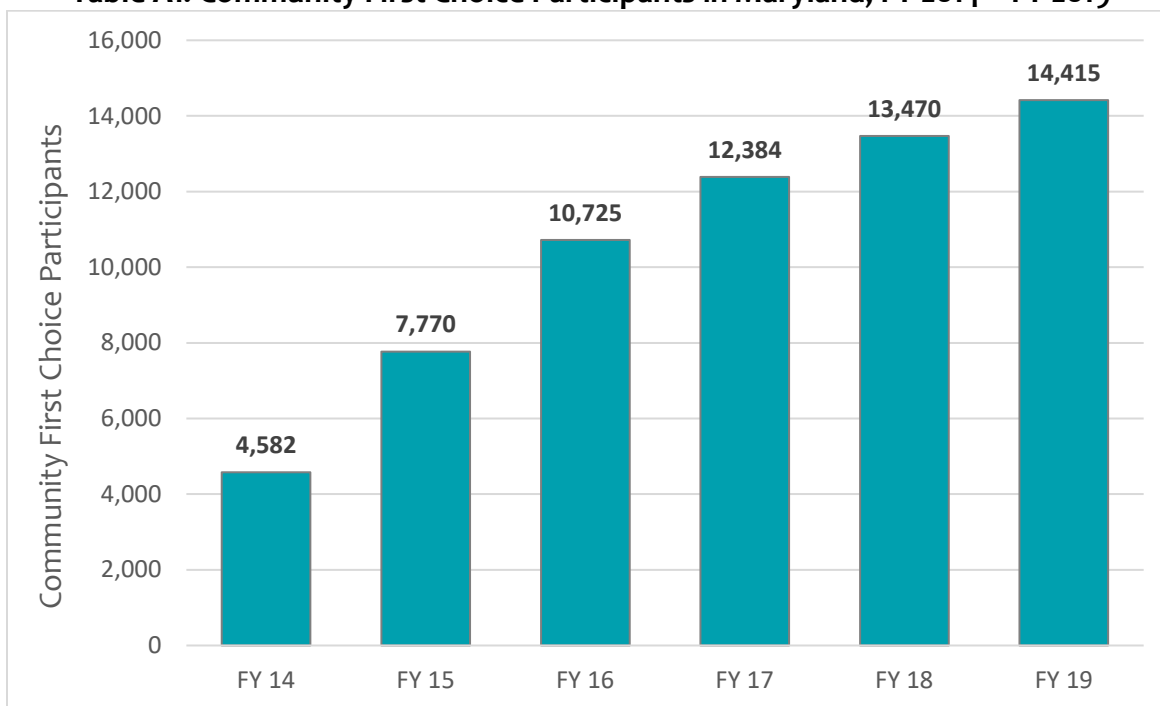
Guo, J., Konetzka, R. T., & Manning, W. G. (2015). The causal effects of home care use on institutional long-term care utilization and expenditures. *Health Economics*, 24, 4-17.

The Hilltop Institute (2019a). *Medicaid long-term services and supports in Maryland: FY 2012 – FY 2016, volume 5. Home and community-based services: A chart book*. Retrieved from <https://www.hilltopinstitute.org/wp-content/uploads/publications/MedicaidLTSSInMaryland-FY2012-FY2016-Vol5-HCBS-ChartBook-RevJuly2019.pdf>

The Hilltop Institute (2019b). *Medicaid long-term services and supports in Maryland: FY 2012 – FY 2016, volume 6. Nursing facility services: A chart book*. Retrieved from <https://www.hilltopinstitute.org/wp-content/uploads/publications/MedicaidLTSSInMaryland-FY2012-FY2016-Vol6-NursingFacility-ChartBook-RevJuly2019.pdf>

Appendix A. Community First Choice Enrollment

Table A1. Community First Choice Participants in Maryland, FY 2014 – FY 2019



Appendix B. Procedure Codes for HCBS Spending

Procedure codes comprise CFC, CPAS, the Home and Community-Based Options Waiver, ICS, the MDC Waiver, the Autism Waiver, the Traumatic Brain Injury Waiver, the Model Waiver, the WOA, and the LAH Waiver.

Table B1. Procedure Codes Used to Identify HCBS Claims

Code List
S0221, S5102, T1001, T1002, T1003, T1004, T2038, W0037, W0038, W0039, W0054, W0055, W0056, W0057, W0058, W0059, W0060, W0198, W0199, W0200, W0201, W0202, W0203, W0204, W0205, W0206, W0207, W0208, W0209, W0210, W0211, W0212, W0213, W0214, W0220, W0221, W0222, W0223, W0224, W0225, W0226, W0227, W0228, W0229, W0235, W0236, W1614, W1616, W1618, W1723, W1724, W1725, W4000, W4001, W4002, W4003, W4004, W4006, W4008, W4010, W4011, W4012, W4013, W4015, W4016, W4017, W4018, W5503, W5504, W5510, W5511, W5512, W5513, W5514, W5515, W5516, W5517, W5518, W5519, W5520, W5521, W5522, W5523, W5524, W5525, W5526, W5527, W5528, W5529, W9304, W9305, W9306, W9307, W9308, W9311, W9314, W9315, W9320, Z0062, Z0063, Z0072, Z0073, Z0082, Z0083, Z0092, Z0093, Z0100, Z0101, Z0102, Z0105, Z9300, Z9301



The Hilltop Institute

UMBC

Sondheim Hall, 3rd Floor

1000 Hilltop Circle

Baltimore, MD 21250

410-455-6854

www.hilltopinstitute.org