



# The Hilltop Institute

*analysis to advance the health of vulnerable populations*

## Medicaid Long-Term Services and Supports in Maryland:

FY 2011 to FY 2014  
Volume 2

### The Brain Injury Waiver A Chart Book

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Prepared for  
*Maryland Department of Health and Mental Hygiene*



**UMBC**  
AN HONORS UNIVERSITY IN MARYLAND

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# **Chapter 1. Maryland Medicaid Brain Injury Waiver Overview**

## Chapter 1. Maryland Medicaid Brain Injury Waiver Overview

The *Medicaid Long-Term Services and Supports in Maryland Chart Book, Volume 2, The Brain Injury Waiver*, is the second in a series of three that explores service utilization and expenditures for Medicaid-funded long-term services and supports in Maryland. Volume 1 explores service utilization and expenditures for Maryland Medicaid's Autism Waiver. Volume 3 provides information on the states' Medicaid Model Waiver.

This chart book provides information about Maryland Medicaid participants who received services through the Brain Injury Waiver in fiscal years (FYs) 2011 through 2014. The Brain Injury Waiver, which became effective on July 1, 2003, provides services to individuals aged 22 through 64 years with a brain injury diagnosis who require a specialty hospital or nursing facility level of care. Individuals must have experienced the brain injury after the age of 17 years and reside in an approved inpatient setting (e.g., state-owned and -operated nursing facility or chronic hospital, or specialty hospital). Funded waiver slots are requested on an annual basis, and there is no enrollment cap for eligible individuals who meet the Money Follows the Person program criteria.

The Brain Injury Waiver is authorized under §1915(c) of the Social Security Act and approved by the federal Centers for Medicare and Medicaid Services. It is operated by the

Maryland Behavioral Health Administration with oversight by Maryland's Office of Health Services, Division of Evaluation and Quality Review (OHS/DEQR).

Services covered under the Brain Injury Waiver include residential habilitation and day habilitation, supported employment, individual support services, case management, and medical day care. Waiver participants receive full Medicaid benefits and are entitled to receive other services under the Maryland Medicaid State Plan.

# Chapter 1. Maryland Medicaid Brain Injury Waiver Overview *continued*

## Chart Book Organization

The data in this chart book are presented in two sections.

- **Waiver Participants:** This section includes data on the number of Brain Injury Waiver participants with breakdowns by age, race, gender, county of residence, average length of stay, and dual eligibility status.
- **Medicaid Expenditures and Service Utilization:** This section provides data on expenditures for waiver and non-waiver services used by participants in the Brain Injury Waiver program.

## Data Sources

The information in this chart book was derived from the following data sources:

- **Maryland Department of Health and Mental Hygiene (DHMH) Medicaid Management Information System (MMIS2):** This system contains data for all individuals enrolled in Maryland Medicaid during the relevant fiscal year, including Medicaid eligibility category and fee-for-service claims. All MMIS2 data are warehoused and processed monthly by The Hilltop Institute.
- **DHMH Decision Support System (DSS):** This system provides summary reports based on MMIS2 files and functions as a data resource for figures in this chart book derived from the DSS.

## Chapter 1. Maryland Medicaid Brain Injury Waiver Overview *continued*

### Key Findings

#### **More Marylanders were served by the Brain Injury Waiver.**

The number of Marylanders enrolled in the Brain Injury Waiver increased 34% from FY 2011 (56) to FY 2014 (75) and 10% from FY 2013 to FY 2014. Demographics of the waiver population have remained the same over the past several years—likely due to the small turnover rate among waiver participants. In FY 2014, the majority of the waiver participants were male (79%), White (61%), and 50 years of age or younger (56%). Over two-thirds of Brain Injury Waiver participants were concentrated in three counties: Anne Arundel, Prince George’s, and Wicomico. Once enrolled, Brain Injury Waiver participants tend to remain in the waiver; the average length of stay was two years and four months in FY 2014.

Nearly three-fourths (73%) of the FY 2014 participants were “dual-eligible beneficiaries” who are eligible to receive both Medicare and Medicaid services.

#### **Total Medicaid expenditures for Brain Injury Waiver participants continue to increase.**

Total Medicaid expenditures, excluding administrative costs, increased 12% from \$7.2 million in FY 2013 to \$8.0 million in FY 2014. Nearly \$7.3 million (or 91%) of FY 2014 expenditures were for the provision of waiver services; the remaining costs were for state plan services. The average annual total Medicaid

expenditures for Brain Injury Waiver participants exceeded \$100,000 per person in each of the four reporting periods.

The number of waiver service providers remained at five. As in FY 2013, Mary T. Maryland served the largest number of participants (34) in FY 2014, at a total cost of \$3.4 million and an average annual per-person cost of \$101,417. Head Injury Rehabilitation and Dove Pointe recorded the highest average costs per person, at \$114,867 and \$106,407, respectively.

#### **Day habilitation level 2 and residential habilitation level 2 were the most widely used of the waiver services.**

Used by 76% of participants and totaling \$4.5 million in FY 2014, residential habilitation level 2 services accounted for 61% of the waiver service expenditures. Residential habilitation level 1 and supported employment level 2 services were unused in FY 2014.

#### **Non-waiver expenditures remained stable.**

Each reporting period, non-waiver expenditures were consistently less than 10% of all Brain Injury Waiver Medicaid expenditures. At \$754,632, these services accounted for 9% of the total FY 2014 Brain Injury Waiver expenditures. Managed care organization (MCO) capitation payments accounted for the largest proportion (34%) of these costs, followed by inpatient services (22%) and Medicare Crossover payments (15%).

# Chapter 2.

## Brain Injury Waiver Participants

## Chapter 2. Brain Injury Waiver Participants

### Maryland Long-Term Services and Supports Users

The number of Marylanders enrolled in the Brain Injury Waiver has increased in each of the last four reporting periods. Participant numbers increased 34% from FY 2011 (56) to FY 2014 (75) and 10% from FY 2013 to FY 2014 (Figure 1).

Brain Injury Waiver participant demographic trends remained stable—likely due to small participant turnover. Participants tend to be under the age of 50, male, and White. In FY 2014, over half (56%) of the Brain Injury Waiver participants were aged 50 or younger (Figure 2). Males consistently accounted for the largest percentage of waiver participants; however, the percentage of female participants increased 6% from FY 2013 to FY 2014 (Figure 3). Also, the largest percentage (61%) of Brain Injury Waiver participants were White (Figure 4).

### Demographic Distribution of Brain Injury Waiver Participants

In FY 2014, over two-thirds of Brain Injury Waiver participants were concentrated in three counties: Anne Arundel, Prince George's, and Wicomico. This distribution correlates to the location of waiver service providers. At 19, Anne Arundel County had the largest number of waiver participants, followed by Prince George's County (18) and Wicomico County (14) (Figure 5).

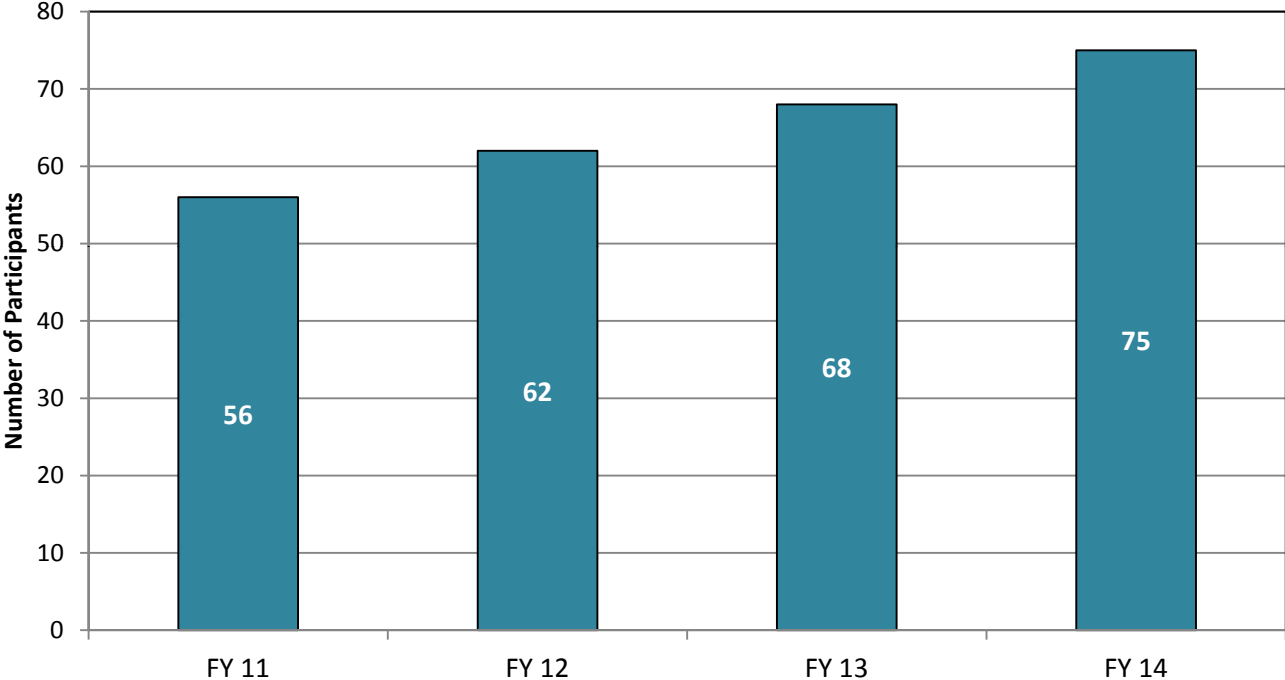
### Brain Injury Waiver Participant Dual Eligible Status and Lengths of Stay

The number of Brain Injury Waiver participants who were eligible for both Medicare and Medicaid services increased each year. In FY 2011, 63% of participants were dually eligible. By FY 2014, the number of dual-eligible participants had increased to 73%. (Figure 6).

At two years and four months (28 months) in FY 2014, the average length of stay for persons enrolled in the Brain Injury Waiver was essentially the same as in FY 2013 (Figure 7).

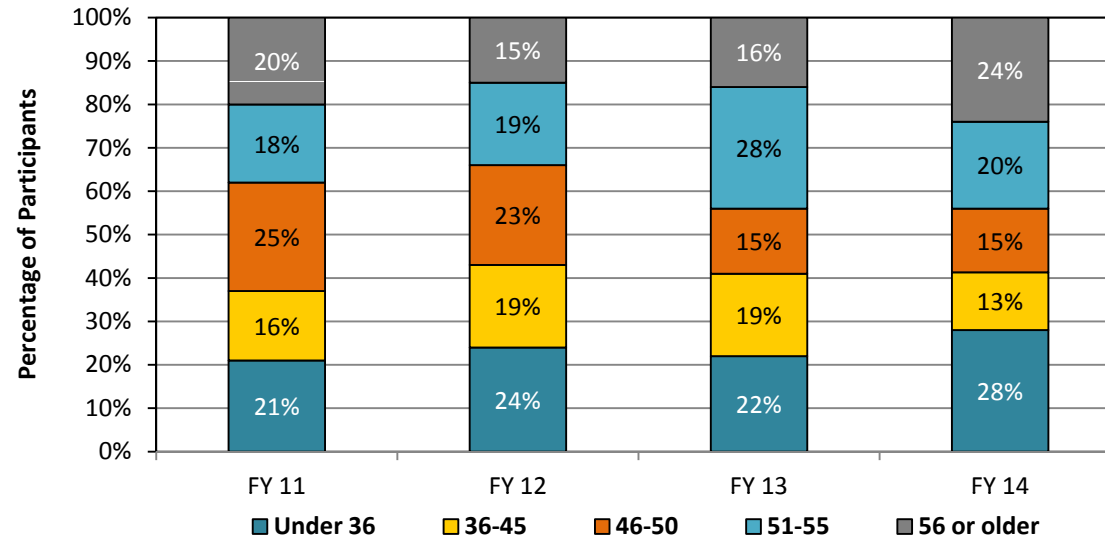


Figure 1. Unduplicated Number of Brain Injury Waiver Participants, FY 2011 – FY 2014

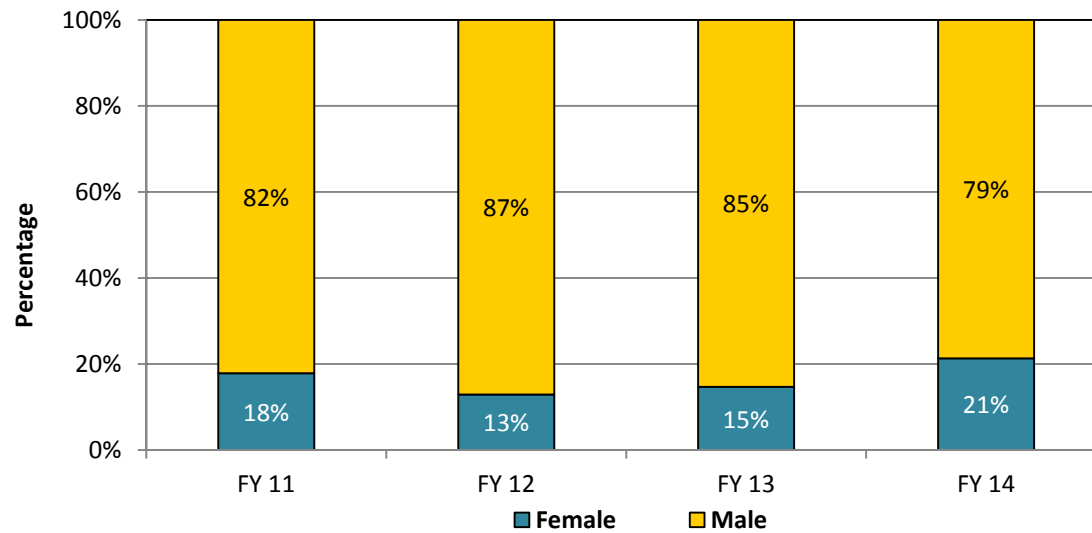


Source: DSS

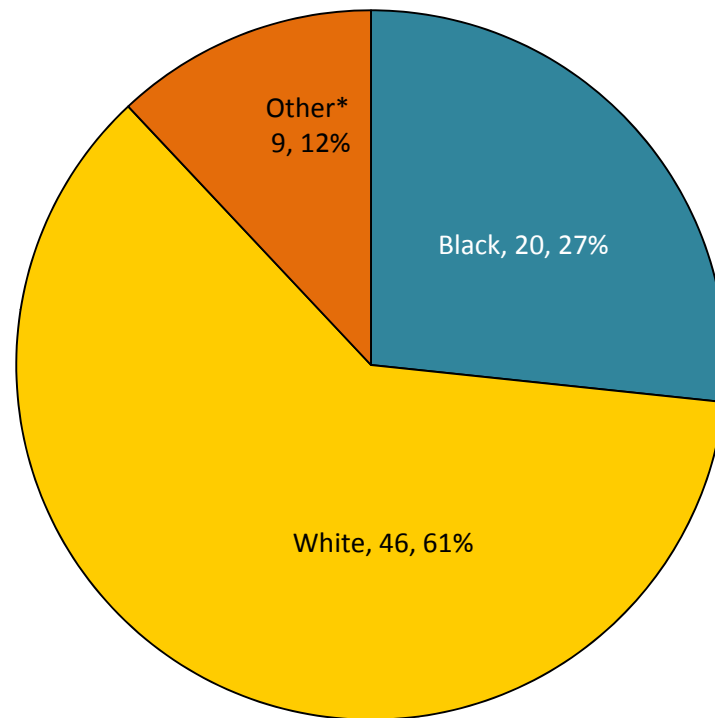
**Figure 2. Brain Injury Waiver Participants, by Age Group, FY 2011 – FY 2014**



**Figure 3. Brain Injury Waiver Participants, by Gender, FY 2011 – FY 2014**



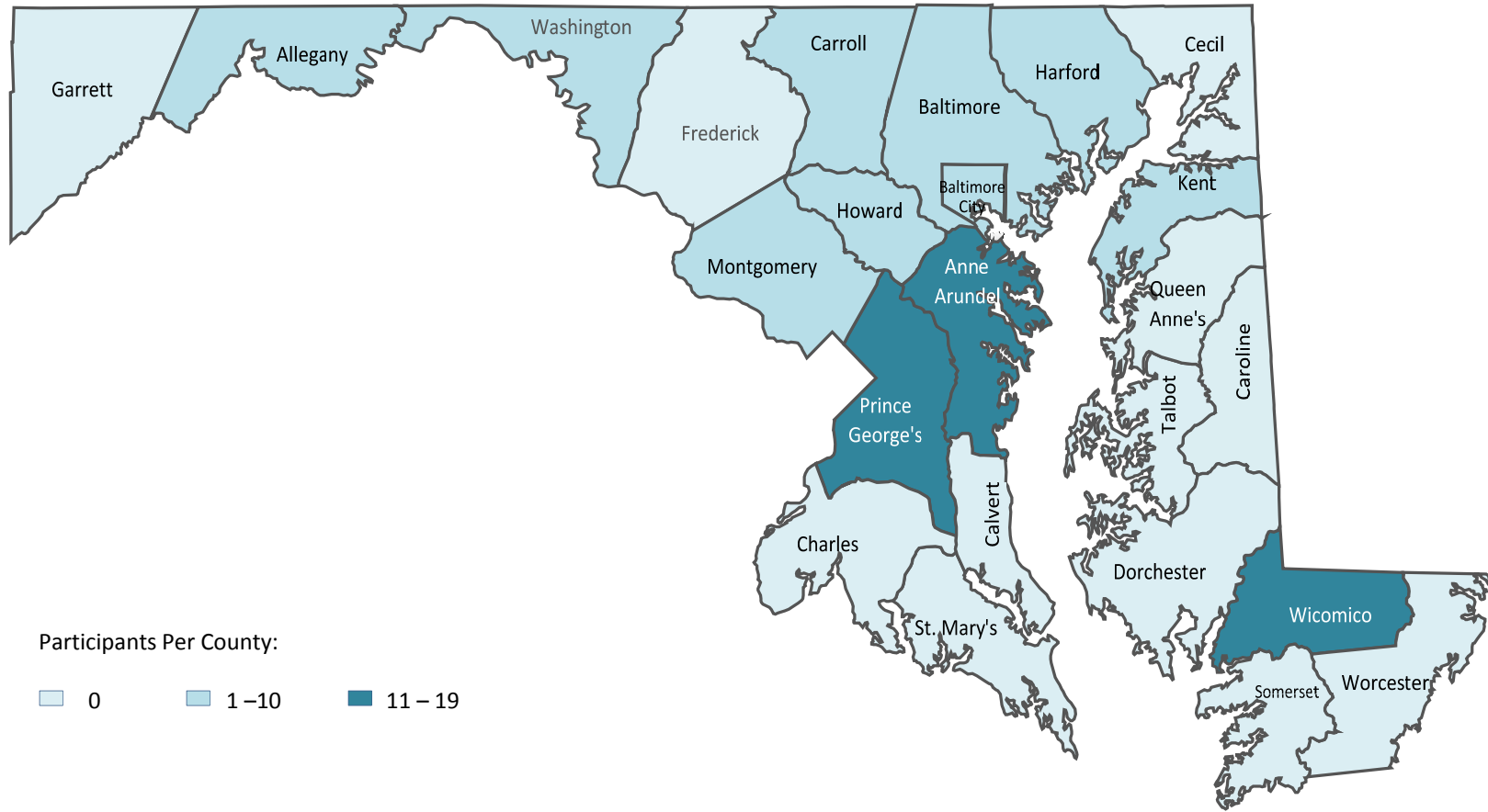
**Figure 4. Brain Injury Waiver Participants, by Race, FY 2014**



\* Other includes “unknown” and “Hispanic.” Combined due to small cell sizes.

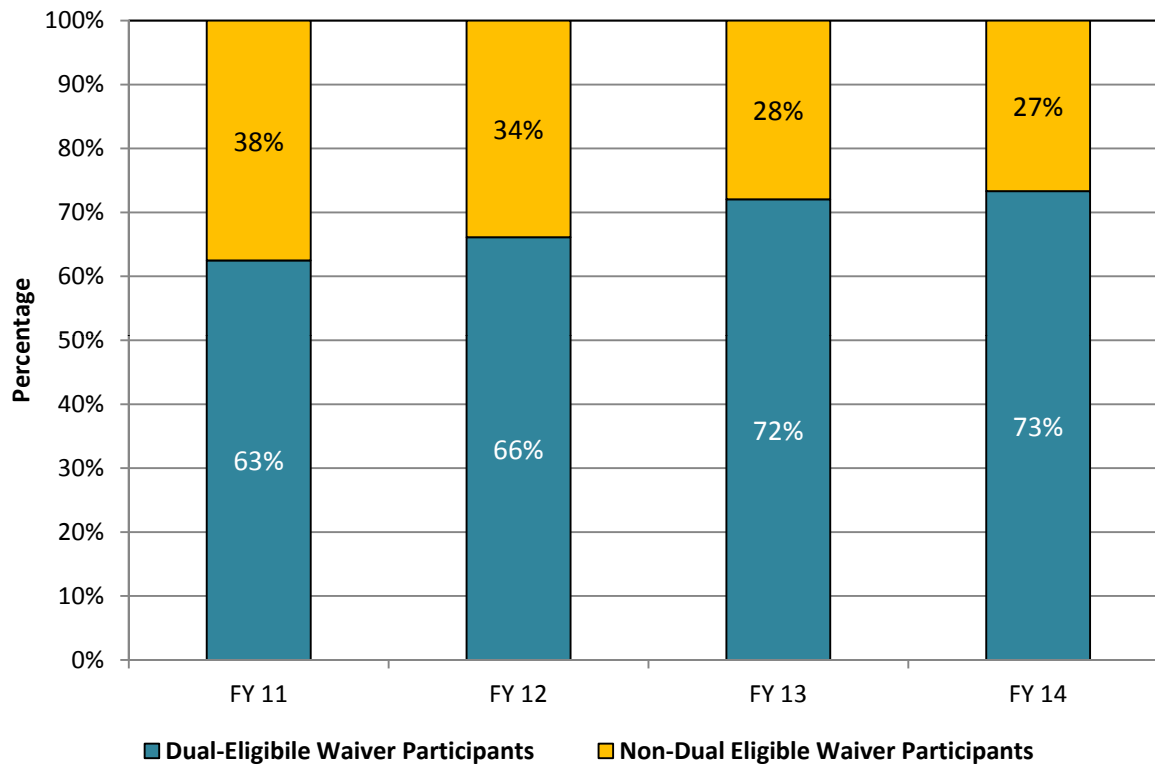
Source: DSS

Figure 5. Number of Brain Injury Waiver Participants, by County, FY 2014



Source: DSS

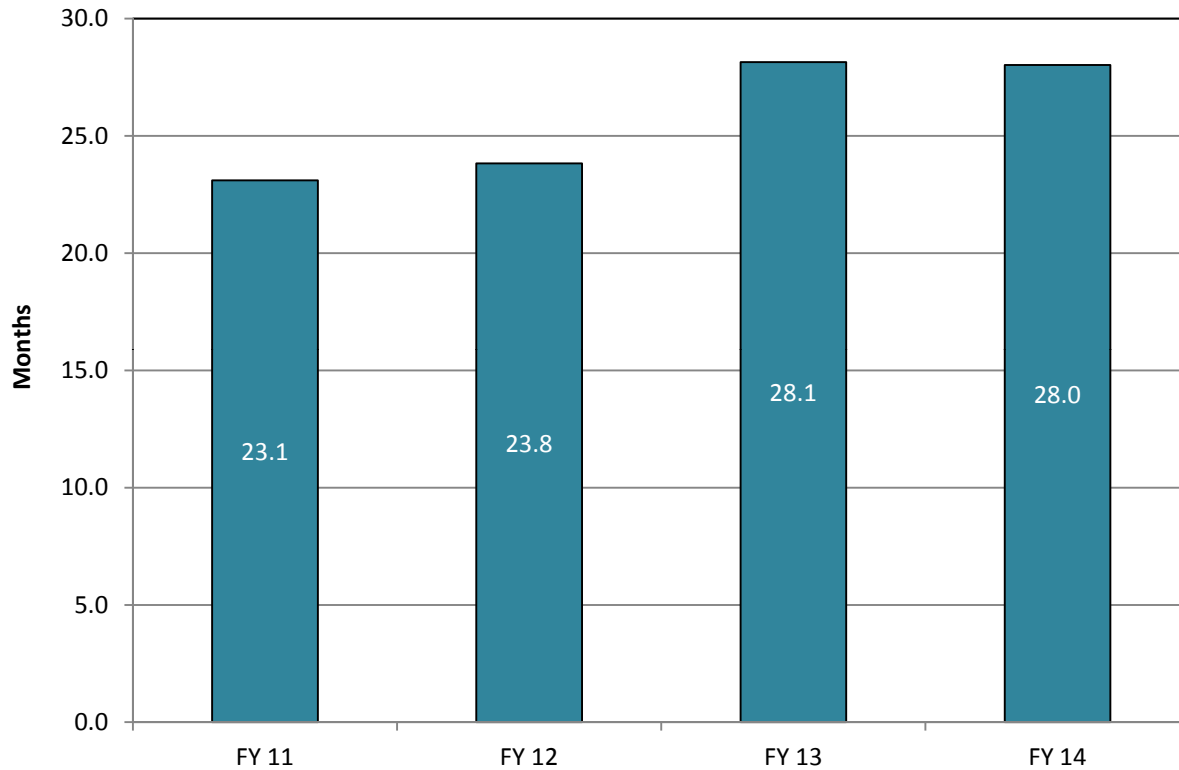
Figure 6. Percentage of Brain Injury Waiver Participants, by Dual Eligible Status, FY 2011 – FY 2014



**Note:** Dual-eligible Brain Injury Waiver participants are entitled to receive both Medicare and Medicaid services.

**Source:** DSS

**Figure 7. Average Length of Stay in the Brain Injury Waiver, in Months, for Current Waiver Participants, FY 2011 – FY 2014**



**Note:** Participants enrolled in the Brain Injury Waiver in each fiscal year were identified using each participant’s last Medicaid Brain Injury Waiver eligibility span. Individual participant lengths of stay were calculated from the beginning date of the participant’s last Brain Injury Waiver eligibility span to the last day of each fiscal year (June 30). The lengths of stay for persons still in the waiver on June 30 in a given year were totaled and averaged to obtain the average length of stay for all participants in the waiver on June 30 of that fiscal year.

**Source:** MMIS2

# **Chapter 3. Brain Injury Waiver Medicaid Expenditures and Service Utilization**

## Chapter 3. Medicaid Expenditures and Service Utilization

### Distribution of Brain Injury Waiver Total Medicaid Expenditures

Total Medicaid expenditures for Brain Injury Waiver participants continue to increase annually. FY 2014 Medicaid expenditures totaled \$8.0 million, up 12% from \$7.2 million in FY 2013. Waiver expenditures were consistently more than 90% of the total Medicaid expenditures; in FY 2014, these expenditures were 91% (\$7.3 million) of the total (Figure 8).

In FY 2014, Medicaid expenditures for the waiver's 55 dual-eligible participants totaled \$5.4 million, or 67% of the waiver's total Medicaid expenditures. FY 2014 average annual Medicaid expenditures for dual-eligible participants—who tend to be less healthy and more costly—were \$98,219 (Medicare expenditures are not included) (Figure 9).

Together at \$5.9 million in FY 2014, residential habilitation level 2 and level 3 accounted for 81% of the waiver expenditures (Figure 10). At \$121,896 combined, supported employment and support services accounted for less than 2% of waiver expenditures (Figure 14).

### Per Member Per Month Expenditures

Per member per month (PMPM) expenditures refer to the ratio of the total Medicaid expenditures for Brain Injury Waiver participants divided by the total number of monthly waiver participants. Per member per month total Medicaid expenditures increased, on average, \$269 since FY 2011.

In FY 2014, total Medicaid PMPM expenditures were \$10,353, of which 91% (\$9,381) were for waiver services. (Figure 11).

Overall, newly enrolled Brain Injury Waiver participants had fewer Medicaid expenditures costs after enrolling in the waiver. In each of the reporting periods, pre-waiver PMPM expenditures were much higher than their corresponding post-waiver PMPM expenditures. (Figure 12). This is likely due to the high cost of inpatient services utilized in the months prior to enrollment.

### Brain Injury Waiver Service Utilization

FY 2014 Brain Injury Waiver participants received waiver services from five providers. The number of participants served, and the average annual per-person cost of the services rendered, varied greatly by provider. Mary T. Maryland served the largest number of participants (34) at a cost of \$101,417 per person per year. Head Injury Rehabilitation, which served fewer than ten participants, had the highest average annual per-person cost in FY 2014, at \$114,867 per year (Figure 13).



## Chapter 3. Medicaid Expenditures and Service Utilization continued

### Waiver Service Utilization

Residential habilitation level 2 and day habilitation level 2 services were the most widely used waiver services in FY 2014. Users of residential habilitation level 2 and level 3 received, on average, 306 and 210 service days per person, respectively—slightly less than FY 2013 levels. Also widely used, day habilitation level 2 services were received by 54 participants for an average of 183 days—also slightly less than in FY 2013. A small number of participants received an average of 797 hours of individual support services per person (Figure 14).

### Non-Waiver Service Utilization

Medicaid non-waiver expenditures for Brain Injury Waiver participants totaled \$754,632 in FY 2014, a 16% increase from FY 2013. MCO capitation payments accounted for more than one-quarter (34%) of all non-waiver expenditures. While the percentage of most non-waiver categories remained stable from FY 2013 to FY 2014, inpatient services increased from 13% in FY 2013 to 22% in FY 2014 (Figure 15).

**Figure 8. Medicaid Expenditures\* for Brain Injury Waiver Participants, by Expenditure Category, FY 2011 – FY 2014**

Expenditure Category	FY 11	FY 12	FY 13	FY 14
<b>Waiver Expenditures</b>	\$5,115,360	\$6,268,438	\$6,546,090	\$7,279,656
<b>Non-Waiver Expenditures</b>	\$593,534	\$624,456	\$647,166	\$754,632
<b>Total Expenditures</b>	<b>\$5,708,893</b>	<b>\$6,892,894</b>	<b>\$7,193,256.04</b>	<b>\$8,034,288</b>

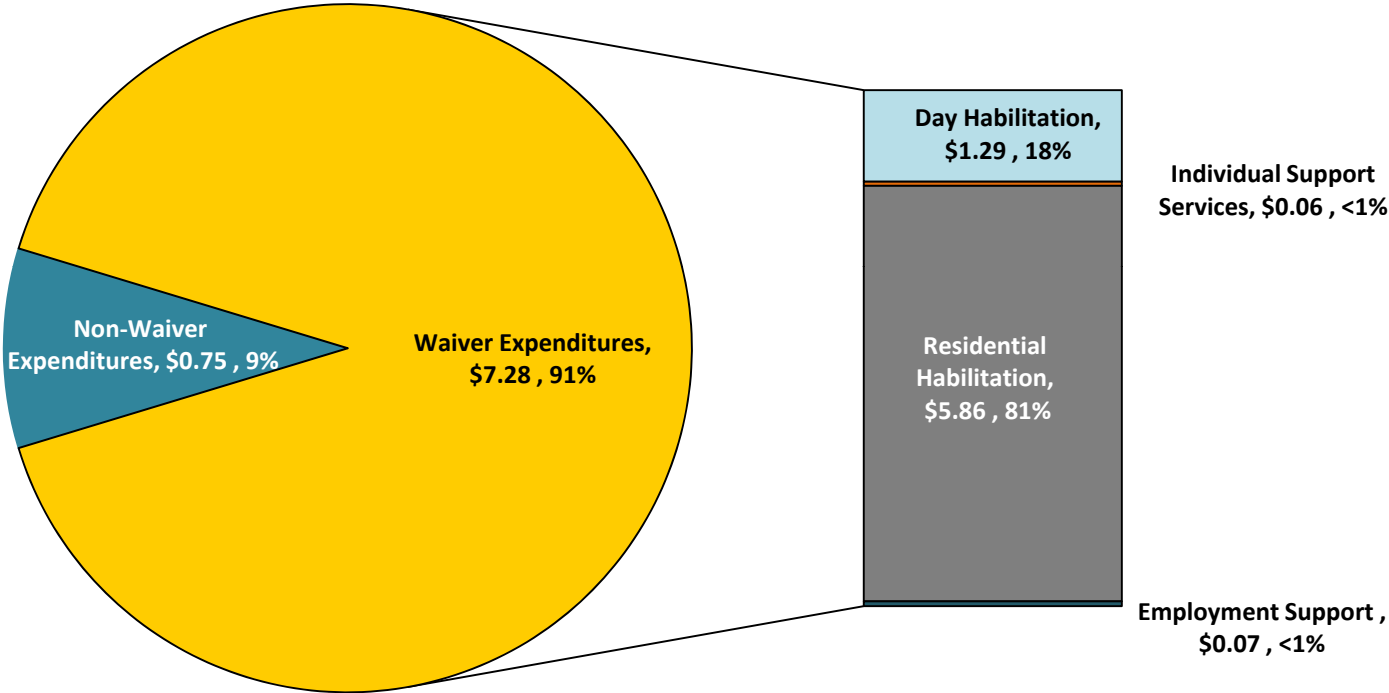
**Figure 9. Distribution of Brain Injury Waiver Total Medicaid Expenditures, by Dual Eligible Status, FY 2011 – FY 2014**

Participant Status	FY 11	FY 12	FY 13	FY 14
<b>Dual Eligibles</b>	35	41	49	55
Total Medicaid Expenditures	\$3,506,741	\$4,274,686	\$4,998,769	\$5,402,062
Average Per-Person Medicaid Expenditures	\$100,193	\$104,261	\$102,016	\$98,219
<b>Non-Dual Eligibles</b>	21	21	19	20
Total Medicaid Expenditures	\$2,202,153	\$2,618,207	\$2,194,487	\$2,632,226
Average Per-Person Medicaid Expenditures	\$104,864	\$124,677	\$115,499	\$131,611
<b>All</b>	56	62	68	75
Total Medicaid Expenditures	\$5,708,893	\$6,892,894	\$7,193,256	\$8,034,288
Average Per-Person Medicaid Expenditures	\$101,945	\$111,176	\$105,783	\$107,124

\* Expenditures for dual eligibles do not include Medicare expenditures.

Source: DSS

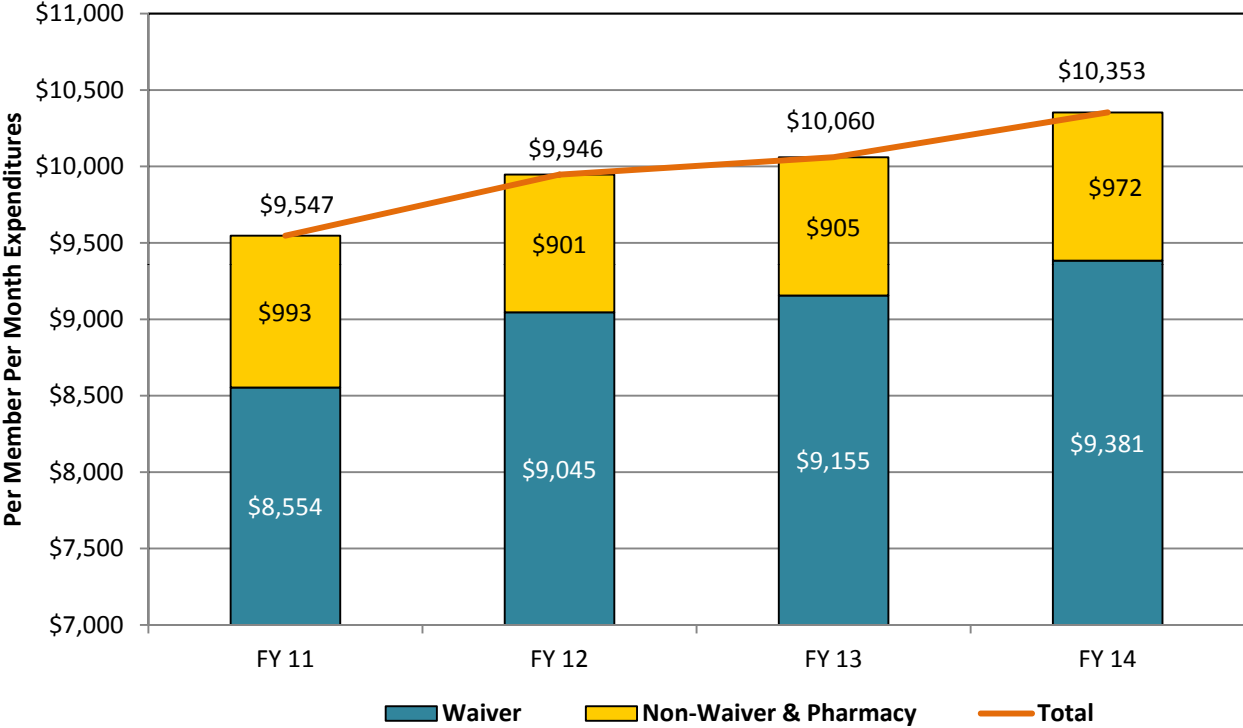
**Figure 10. Distribution of Total Medicaid Expenditures\* (in millions) for Brain Injury Waiver Participants, by Service Category, FY 2014**



\* Does not include administrative costs.

Source: DSS

**Figure 11. Total Medicaid Expenditures PMPM for Brain Injury Waiver Participants, FY 2011 – FY 2014**



**Note:** Does not include administrative costs.

**Source:** DSS

**Figure 12. Pre- and Post-Medicaid PMPM Expenditures for Newly Enrolled Brain Injury Waiver Participants, FY 2011 – FY 2014**

	Total Pre-Waiver Costs	Pre-Waiver PMPM	Total Post-Waiver Costs	Post-Waiver PMPM
<b>FY 11</b>	\$1,477,511	\$19,188	\$864,975	\$9,719
<b>FY 12</b>	\$695,062	\$15,110	\$819,030	\$9,524
<b>FY 13</b>	\$739,520	\$18,488	\$451,341	\$11,877
<b>FY 14</b>	\$1,029,109	\$16,080	\$1,029,095	\$12,864

**Note:** “Pre-waiver” refers to the six-month period prior to enrollment in the Brain Injury Waiver. “Post-waiver” refers to the six-month period following enrollment in the waiver.

**Source:** DSS

**Figure 13. Total Medicaid Waiver Expenditures for Brain Injury Waiver Participants, by Service Provider, FY 2013 – FY 2014**

Provider	FY 2013		FY 2014	
	Users	Average Annual Per-Person Expenditures	Users	Average Annual Per-Person Expenditures
Dove Pointe	13	\$106,380	14	\$106,407
Head Injury Rehabilitation	*	\$93,243	*	\$114,867
Humanim	*	\$91,730	*	\$90,893
Mary T. Maryland	29	\$100,394	34	\$101,417
Neuro Restorative Maryland	12	\$101,119	16	\$87,805
<b>Total</b>	<b>65</b>	<b>\$100,398</b>	<b>73</b>	<b>\$99,735.29</b>

**Note:** Four FY 2013 waiver participants received services from more than one service provider. In FY 2014, two waiver participants received no waiver services and five waiver participants received services from more than one service provider.

\* Below HIPAA-recommended cell size.

Source: MMIS

Figure 14. Brain Injury Waiver Service Utilization, by Service, FY 2014

Service	Participants	Expenditures	Average Units Per Person**
Day Habilitation Level 1	*	\$11,047	222
Day Habilitation Level 2	54	\$858,898	183
Day Habilitation Level 3	23	\$420,674	151
Individual Support Services**	*	\$53,253	797
Residential Habilitation Level 1	*	*	*
Residential Habilitation Level 2	57	\$4,454,448	306
Residential Habilitation Level 3	19	\$1,408,203	210
Supported Employment Level 2	*	*	*
Supported Employment Level 3	*	\$68,643	80
<b>Total</b>		<b>\$7,275,165</b>	

\* Below HIPAA-recommended cell size.

\*\* Individual Support Services units are billed per hour. Remaining services are billed per day.

Source: DSS

**Figure 15. Medicaid Non-Waiver Expenditures for Brain Injury Waiver Participants, FY 2011 – FY 2014**

Expenditure Category	FY 11	Percentage	FY 12	Percentage	FY 13	Percentage	FY 14	Percentage
Medicare Crossover	\$81,813	14%	\$64,037	10%	\$87,502	14%	\$109,606	15%
Durable Medical Equipment/Supplies	\$13,782	2%	\$17,930	3%	\$28,943	4%	\$36,247	5%
Emergency Room	\$1,768	.3%	\$1,189	.2%	\$2,099	.3%	\$2,596	.3%
Evaluation and Management*	\$8,560	1%	\$5,844	1%	\$6,810	1%	\$13,253	2%
Inpatient	\$89,559	15%	\$70,181	11%	\$81,514	13%	\$163,603	22%
Medicine**	\$12,345	2%	\$15,397	2%	\$13,492	2%	\$26,360	4%
MCO Capitation Payments***	\$217,947	37%	\$321,527	51%	\$290,434	45%	\$253,806	34%
Nursing Facility Services	\$8,234	1%	\$0	0%	\$15,241	2%	\$17,614	2%
Outpatient	\$34,551	6%	\$28,940	5%	\$43,122	7%	\$41,467	6%
Other****	\$46,149	8%	\$7,757	1%	\$6,139	1%	\$8,348	1%
Pharmacy	\$78,827	13%	\$91,656	15%	\$71,870	11%	\$81,732	11%
<b>Total</b>	<b>\$593,534</b>	<b>100%</b>	<b>\$624,456</b>	<b>100%</b>	<b>\$647,166</b>	<b>100%</b>	<b>\$754,632</b>	<b>100%</b>

\* Evaluation and Management refers to the billing codes used by providers to document patient office visits, the complexity of the visit, and the plan for treatment, as required.

\*\* Medications received from a source other than a pharmacy (i.e., inpatient hospitalization, clinic).

\*\*\* “MCO (managed care organization) capitation payments” are fixed monthly amounts paid to MCOs to provide services to enrolled Medicaid participants. Capitation payments are based on actuarial projections of medical utilization. MCOs are required to provide all covered, medically necessary Medicaid services within that capitated amount.

\*\*\*\* “Other” includes Medicaid non-waiver services other than those listed above and those provided under the waiver that are paid by Medicaid on behalf of Medicaid waiver participants.

Source: DSS



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