COMMONWEALTH of VIRGINIA

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April 2, 2018

The Honorable Thomas K. Norment, Jr., Co-chair
The Honorable Emmett W. Hanger, Jr., Co-chair
Senate Finance Committee
14th Floor, Pocahontas Building,
900 East Main Street,
Richmond, VA 23219

Dear Senator Norment and Senator Hanger:

Item 313.V. of the 2017 *Appropriation Act*, required the Department of Behavioral Health and Developmental Services (DBHDS) to *"provide a progress report on the implementation of the Developmentally Disabled Waiver programs."*

Please find enclosed the report in accordance with Item 313.V. Staff at the department are available should you wish to discuss this request.

Sincerely,

Jack Barber, M.D.

Enc.

Cc: Hon. Daniel Carey., M.D.
Marvin Figueroa
Susan Massart
Mike Tweedy

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April 2, 2018

The Honorable S. Chris Jones, Chair
House Appropriations Committee
900 East Main Street
Pocahontas Building, 13th Floor
Richmond, Virginia 23219

Dear Delegate Jones:

Item 313.V. of the 2017 *Appropriation Act*, required the Department of Behavioral Health and Developmental Services (DBHDS) to *"provide a progress report on the implementation of the Developmentally Disabled Waiver programs."*

Please find enclosed the report in accordance with Item 313.V. Staff at the department are available should you wish to discuss this request.

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Susan Massart
Mike Tweedy

Developmental Disability Waiver Program Progress Report
(Item 313.V.)

April 1, 2018

DBHDS Vision: A Life of Possibilities for All Virginians

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Developmental Disability Waiver Progress Report

Preface

Item 313.V. of the 2017 Appropriation Act requires the Department of Behavioral Health and Developmental Services (DBHDS) to submit a progress report on the Developmental Disability Waiver program to the Chairmen of the House Appropriations and Senate Finance Committees.

> *V. The Department of Behavioral Health and Developmental Services shall provide a progress report on the implementation of the Developmentally Disabled Waiver programs to include information about the population served by the waivers, the level and reimbursement tier, and service utilization and expenses for (i) individuals who have used waiver services for less than one year and (ii) individuals who have used waiver services for 1-5 years. The department shall submit this report by October 15, 2017 to the Chairmen of the House Appropriations and Senate Finance Committees.*

Developmental Disability Waiver Progress Report

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Introduction

In 2013, the Department of Behavioral Health and Developmental Services (DBHDS) and the Department of Medical Assistance Services (DMAS) began an effort to redesign the systems of supports for Virginians with intellectual and other developmental disabilities (DD). The goals of this initiative, which came to be known as "My Life, My Community," include:

- Supporting the Commonwealth's efforts to comply with the terms of the settlement agreement with the U.S. Department of Justice to ensure that persons with DD receive services in the most integrated setting appropriate to their needs;
- Better aligning the supports that individuals receive with their needs;
- Encouraging the provision of services in small community homes, community-based day programs, and other more integrated services;
- Expanding the range of options available to support individuals in settings other than congregate residential programs, such as state training centers;
- Developing and implementing an electronic system for managing the statewide waiting list for waiver slots, slot assignment, and service authorization for all three waivers; and
- Increasing the capacity of the waivers to serve more individuals.

Years of work by DBHDS, DMAS, and system stakeholders on the My Life, My Community initiative culminated in federal approval of significant amendments to Virginia's three 1915(c) waiver programs for persons with DD, effective September 1, 2016. As of January 2018, there were 13,150 people enrolled among the waivers and 12,320 additional people on the waiting list to receive a DD waiver slot. The three amended waivers and the number of individuals enrolled in each as of January 2018 is shown below in Figure 1:

Figure 1: Virginia's Three DD Waivers and Current Enrollees (January 2018)

Building Independence (BI)	Family & Individual Supports (FIS)	Community Living (CL)
For adults (18+) able to live independently in the community	For individuals living with their families, friends, or in their own homes	24/7 services and supports for individuals with complex medical and/or behavioral support needs through licensed services
261 Individuals	**1,706** Individuals	**11,183** Individuals
Total Individuals Receiving Waiver Services = 13,150		

Thus far, many of the goals of the redesign have been achieved:

- The three redesigned waivers, with new services and revamped rate structures for most services, are in place.

- The electronic waiver management system (WaMS) has been operational since September 1, 2016. As with any information technology system, the implementation was not without its challenges. Yet, through January 1, 2018, 22,249 service authorizations have occurred via WaMS, additional functionality has gradually come on-line (such as the individual support plan), and future changes and additions are being discussed.
- A waiver amendment was approved by CMS effective June 1, 2017 to implement a customized rate process by which those few individuals whose needs exceed the existing tier reimbursement system can be fully met by their providers. To date, 82 individuals have been approved for a customized rate.
- CMS is currently considering waiver amendments for two of the three remaining new waiver services (for which state funding was delayed beyond that of the other new services): Community Guide/Peer Mentoring and Employment and Community Transportation. Further rate methodology development was required for the third service (Benefits Planning) and that is currently underway. These services are expected to increase community integration in activities and settings that will decrease or prevent an increase in the need for ongoing paid staff to support the individual.

This report focuses on changes in per member per month costs comparing individuals who began receiving waivers services in Fiscal Year (FY) 2017 and those enrolled between one and four-and-a-half years ago, as well as changes in total waiver expenses over the past five years.

Analysis of Changes in Per Member Per Month Costs for New Enrollees

Overview of Analysis Methodology

To provide information regarding the population served by the waivers, DBHDS and its contractor, Burns & Associates, Inc., compared the characteristics of individuals who began using waiver services within the past year to those who have been receiving services for between one and four-and-a-half years. In particular, this report compares individuals in terms of their residential placement, their assessed needs, and the types and amounts of services that they use.

The analysis of the population served by the waivers relies on paid claims records for FY 2013 through 2017. The analysis first identified those individuals who would be included in the comparison. Pursuant to the legislative requirement, two groups were established:

- The “study group” includes individuals who began receiving waiver services within the most recent year of the study period. That is, they had paid claims in FY 2017 (July 1, 2016 through June 30, 2017) and no paid claims in the four prior years.
- The “control group” is comprised of individuals who have received waiver services for between one and four-and-a-half years. More specifically, they did not receive services

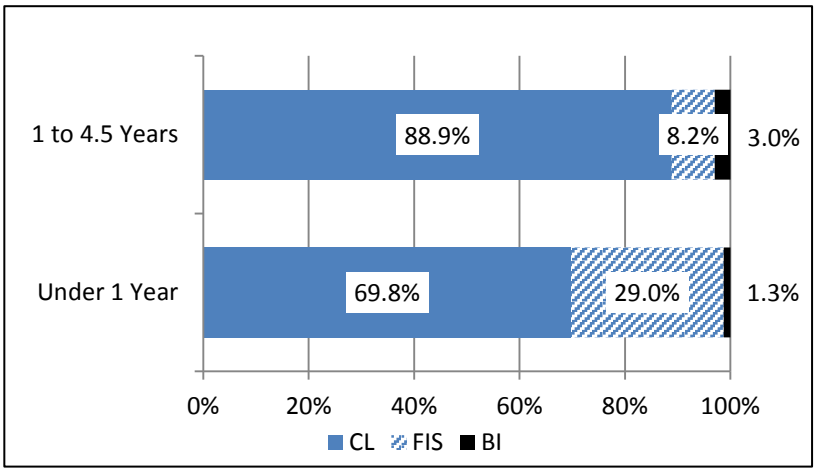
between July 1, 2012 and December 31, 2012, did receive services between January 1, 2013 and June 30, 2016, and continued to receive services in FY 2017.[1]

To compare utilization and costs, claims data was analyzed on a "member month" basis. That is, the analysis compares the average monthly utilization within each group, but considers only the months in which an individual received any service. This approach was necessitated by the fact that the study group received waiver services for less than one year. Comparing annual figures to those of the control group – most of whom did receive 12 months of services – would provide misleading results. A detailed description of the methodological approach for this report is included as Appendix A. Individuals were divided into cohorts based on the waiver in which they were enrolled, their residential placement, and their assessed level of need since these factors have the greatest impact on the amount of services that an individual accesses.

Waiver Enrollment

The redesign of the three waivers has impacted enrollment trends. In particular, increased enrollments in the Family and Individual Supports waiver were brought about by approval of more slots for that particular waiver and by changes that have enabled it to address the needs of more individuals. Figure 2, below, compares enrollment rates in the three waivers in FY 2017 for the groups being examined.

Figure 2: Enrollment Rates by Waiver, FY 2017



As the chart shows, the rate of enrollment in the Family and Individual Supports waiver more than tripled – from about eight percent to 29 percent – when comparing new enrollees to those enrolled between one and four-and-a-half years ago.

This shift in enrollment is significant due to substantial differences in the per member per month costs across the waivers, as illustrated in Figure 3, below. For individuals receiving waiver

[1] The legislation called for the control group to consist of those individuals who received waiver services for between one and five years. However, since only five years of claims data was available, it was unknown who had enrolled more than five years earlier. Thus, the analysis identified those individuals who did not receive services in the first six months of the claims period, but began receiving services prior to FY 2017. That is, they began receiving waiver services fewer than four-and-a-half years ago, but more than one year ago.

services for between one and four-and-a-half years, the average cost of Family and Individual Supports waiver services is 59 percent lower than the average cost of Community Living waiver services; for newer enrollees, the difference is 61 percent.

Figure 3: Average Per Member Per Month Cost by Waiver, FY 2017

	1 to 4.5 Years	Under 1 Year
Community Living	$5,295	$4,455
Family and Individual Supports	$2,177	$1,724
Building Independence	$1,588	$996

While the lower overall per-person costs for individuals receiving services for less than one year *across the waivers* is largely a result of a shift from the Community Living waiver to the Family and Individual Supports waiver, average spending on newer enrollees is substantially lower than on individuals in the control group *within each waiver*. Specifically, the average cost of new enrollees is 16 percent less for Community Living enrollees, 21 percent less for those receiving Family and Individual Supports waiver services, and 37 percent less for those enrolled in the Building Independence waiver. These decreases are driven by two factors: a higher proportion of enrollees living with family rather than in paid residential settings and lower service utilization.

Differences in service utilization can be illustrated by examining individuals receiving Community Living waiver services and residing in group homes, the costliest cohort served. Figure 4 details the components of the average per member per month cost for these individuals.

Figure 4: Comparison of Per Member Per Month Costs for Individuals in the Community Living Waiver Living in Group Homes, by Service, FY 2017

	Percent of Enrollees Using Services		Average Utilization per *User* per Month		Average Cost Per *Enrollee* Per Month	
	1 to 4.5 Years	Under 1 Year	1 to 4.5 Years	Under 1 Year	1 to 4.5 Years	Under 1 Year
Group Home	**100%**	**100%**	**28.2 Days**	**27.1 Days**	**$7,069**	**$6,622**
Day Activities			**Hours**		**$987**	**$518**
Group Day Support	66.6%	35.6%	114.4	98.8	$810	$364
Community Engagement	27.0%	17.2%	45.9	41.0	$140	$115
Community Coaching	13.1%	4.0%	24.5	12.4	$37	$39
Employment Services			**Hours**		**$72**	**$35**
Group Supp. Employ.	6.1%	1.1%	86.9	81.1	$60	$9
Individual Supp. Employ.	1.7%	2.9%	26.7	11.5	$12	$26
Workplace Assistance	0.0%	0.0%	0.0	0.0	$0	$0
In-Home/ Personal Care					**$9**	**$19**
Professional Services					**$430**	**$174**
Respite					**$2**	**$7**
Consumer Directed Supports					**$4**	**$0**
Other Services					**$26**	**$59**
TOTAL					**$8,597**	**$7,433**

As shown in the table above, the average monthly cost per person for group home residents enrolled in the Community Living waiver was significantly lower for those who began receiving waiver services within the past year – $7,433 compared to $8,597 for those enrolled for a longer period, a difference of 14 percent. The primary differences relate to:

- **Lower residential costs**. The difference is primarily because newer enrollees had, on average, one less billing day per month.
- **Reduced use of day activities**. Two-thirds of individuals who have received services for between one and four-and-a-half years used Group Day Support compared to about one-third of newer enrollees. Further, among those who do use the service, newer enrollees used fewer hours than those enrolled for more than one year.
- **Lower use of professional services**. In particular, the costs for the group with between one and four-and-a-half years of enrollment are driven by individuals in Levels 5 and 6 who are using a substantial amount of nursing services.

While the shift towards more Family and Individual Supports waiver enrollments is expected to produce a lasting reduction in per-person costs *across the waivers,* it is possible that cost differences *within a waiver* may narrow. For example, there is no obvious reason why individuals in the study group would be in their residences for fewer days than those in the control group. This difference, then, is not expected to persist. Less clear is whether the use of day services, nursing supports, and other waiver services will converge for the two groups. For example, it may be that newer enrollees have identified other supports to access the community without traditional day programs or, it may be that they have simply not yet identified a day program but will do so in the future.

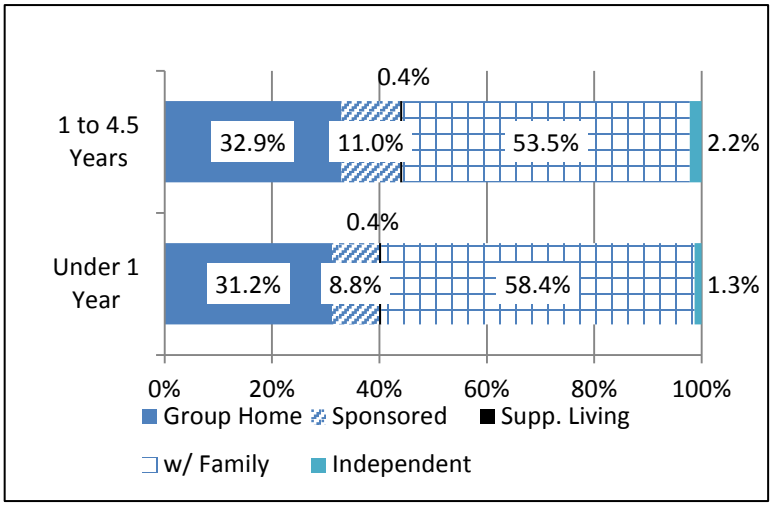
The analysis sought to offer some suggestion of potential future changes by exploring utilization changes over time for the control group. In particular, the analysis identified the first fiscal year of enrollment for individuals who began receiving services between one four-and-a-half years ago, determined their per member per month costs in that first fiscal year, and compared those figures to their per member per month cost in FY 2017. For this group, the analysis found little difference in the per member per month cost in their first year of services to the amount for FY 2017. Within the Family and Individual Supports waiver, the average per member per month cost of those living with family increased by about 12 percent. Within the larger Community Living waiver, however, the change was within about three percent for each residential placement. Although the analysis found little utilization growth within the control group, it is unknown whether this will also be true for the study group.

Place of Residence

The single most predictive factor of the total cost of providing waiver services to an individual is where they live. In general, it costs more to provide care to persons receiving 24-hour residential services than to serve them in their own home. Recent waiver enrollees have been more likely to receive services in their own home, which has contributed to the lower per-person cost of this group compared to those receiving waiver services for a longer period.

The Community Living waiver covers three types of full-time residential models: group home, sponsored placement, and supported living. Individuals may also receive services in their own home or in their family home. Figure 5 below displays the distribution of member months by residential environment.

Figure 5: Enrollment by Residential Type, CL Waiver, FY 2017 (Member Months)



As the table demonstrates, the proportion of individuals (as measured by member month) living in their family home is higher among newer enrollees. This increase was a result of slightly lower proportions of individuals living independently, in group homes, and in sponsored residential homes. Although the shifts are relatively modest, there is a significant impact on average per-person costs because of the difference in spending on those living with family compared to other environments, as shown below in Figure 6. For example, among those receiving waiver services for less than a year, the cost of serving an individual in his or her family home was $2,558 per month, substantially less than the $7,433 cost of a group home.

Figure 6: Average Per Member Per Month Cost by Residential Placement, Community Living Waiver, FY 2017

	1 to 4.5 Years	Under 1 Year
Group Home	$8,597	$7,433
Sponsored Placement	$6,322	$5,653
Supported Living	$5,822	$3,895
With Family	$3,030	$2,582
Independent	$3,537	$2,001

The table also demonstrates significant differences in costs based on when individuals began receiving services. Those who began receiving service in FY 2017 used substantially fewer services than those enrolled between one and four-and-a-half years ago, even after accounting for residential placement. As discussed in the previous section, it remains uncertain whether the utilization patterns of newer enrollees will eventually begin to converge with those who have received services for a longer period of time or if this represents a permanent change. DBHDS

intends to continue to evaluate these newer enrollees to determine whether their service utilization increases to amounts closer to longer-term enrollees.

The Family and Individual Supports and Building Independence waivers are primarily targeted to individuals living in their own home or family home and do not offer as many out-of-home residential services as the Community Living waiver. The recent waiver amendments did add some residential services in order to expand the opportunities available to individuals, including supported living in the Family and Individual Supports waiver and independent living supports in the Building Independence waiver, as well as shared living in both waivers. Given the recentness of these changes, however, few individuals were using these services in FY 2017.

Level of Need

DBHDS uses an assessment process that includes the Supports Intensity Scale® (SIS®) to determine the support needs of individuals receiving waiver services. Based on SIS® results, individuals are assigned to one of seven levels, with Level 1 including those with comparatively modest needs and Levels 5, 6, and 7 including those with the most significant needs.

An individual's support needs can impact costs in two ways: differences in rates and the amounts of services that individuals use. For certain shared services (primarily residential and day services), there are "tiered" rates, meaning that providers receive higher rates when serving individuals with greater needs to account for more intensive staffing. Additionally, individuals with greater needs often – but not always – use more services. In the future, support coordinators will be able to use defined supports packages that vary according to a person's living situation to work with the individual and his or her family to match the appropriate level and intensity of services to his or her needs. This will create a more formal system by which individuals with more needs receive access to greater amounts of services.

Figure 7 below compares the distribution of support needs levels in the study and comparison groups as well as the average per member per month cost within each level.

Figure 7: Distribution of Support Needs Levels and Average Per Member Per Month Cost, FY 2017

	1 to 4.5 Years	Under 1 Year	1 to 4.5 Years	Under 1 Year
Level 1	9.6%	9.4%	$2,939	$2,333
Level 2	60.0%	63.4%	$4,030	$3,267
Level 3	3.5%	3.8%	$6,235	$5,175
Level 4	16.5%	13.6%	$6,754	$5,105
Level 5	0.7%	1.1%	$8,009	$3,599
Level 6	5.4%	5.24%	$9,123	$5,536
Level 7	4.3%	3.5%	$7,555	$3,758

The table demonstrates that assessed supports are comparable across the two groups. In terms of per member per month costs, the table demonstrates that costs generally increase with level of need, but this is not always true. For example, within both groups the individuals assigned to Level 6 receive the most costly services, which is a result of their use of nursing services.

Comparing the newer group to the comparison group, the per member per month cost is less across each of the seven levels. As observed previously, this is because more recent enrollees are using fewer total services and are more likely to be living at home.

Analysis of Changes in Total Waiver Spending

In addition to analyzing the per member per month cost by waiver for the two different cohorts, DBHDS studied total enrollment and waiver costs in fiscal years 2013, 2016, and 2017. Figure 8 presents the results.

Figure 8: Comparison of Total Expenditures, Individuals, and Per Member Per Year Costs by Waiver, FY 2013 – 2017

Waiver	FY 2013	FY 2016	FY 2017				
	Total	Total	Total	1-Year Change		4-Year Change	
				Dollars	Perc.	Dollars	Perc.
Expenditures							
Community Living	$619,825,891	$727,519,707	$778,941,511	$51,421,804	7.1%	$159,115,620	25.7%
Family and Indiv. Supp.	$21,156,184	$29,840,187	$33,268,645	$3,428,458	11.5%	$12,112,461	57.3%
Building Independence	$4,640,103	$8,203,108	$9,232,925	$1,029,817	12.6%	$4,592,822	99.0%
Individuals							
Community Living	9,346	10,657	10,959	302	2.8%	1,613	17.3%
Family and Indiv. Supp.	785	958	1,213	255	2.7%	428	54.5%
Building Independence	280	330	339	9	2.7%	59	21.1%

The Commonwealth's investment in the waiver programs has increased significantly in recent years as a number of initiatives added funding for the waivers, including:

- $28.4 million total funds in FY 2017 and $63.6 million in FY 2018 to add 855 new waiver slots over the biennium required under the DOJ settlement agreement. The funding will support 180 new Community Living waiver slots for individuals transitioning from state training centers to the community, 625 new Community Living waiver slots for individuals residing in the community on the waiting list, and 50 new Family and Individuals Supports waiver slots for individuals residing in the community.
- $10.4 million in total funds in fiscal years 2017 and 2018 for a total of 355 Family and Individuals Supports waiver slots. Of these slots, 200 are provided for individuals at the top of the waiting list as of June 30, 2016; 40 emergency reserve slots, for individuals transferring between waivers and for individuals transitioning from an Intermediate Care Facility or state nursing facility to the community to ensure the health and safety of individuals in crisis; and an additional 115 slots.

- $23.6 million in total funds in FY 2017 and $44.4 million in FY 2018 to implement the redesign of the three waiver programs. This includes supporting rate changes to ensure an adequate number and type of community providers are available, ensuring individuals receive the appropriate level of care to meet needs, incentivizing the use of integrated living and day services, and adding new services that facilitate community integration.
- $14.2 million in total funds in FY 2017 and $16 million in FY 2018 to increase rates by two percent for consumer and agency directed personal, respite, and companion care.
- **Increase Private Duty Nursing Rates.** Adds $5.4 million in total funds in FY 2017 and $5.6 million in FY 2018 to increase rates for private duty nursing by 11.5 percent.

Waiver costs are expected to continue to increase. In addition to the investments in more slots, new services, and higher rates, there will be additional expense to ”annualize” the cost of new enrollments (for example, an individual who was ‘new’ in FY 2017 may have received only six months of service, but will receive 12 months of service in future years). Further, the average cost of supporting new enrollees is lower than the average cost of individuals who enrolled more than a year ago due largely to greater proportions of individuals living with family and enrolled in the Family and Individual Supports waiver. These changes largely do not affect existing individuals; that is, individuals are not switching from the Community Living waiver to the Family and Individual Supports waiver and are not moving from a congregate residential setting to their family’s home. Thus, the rate of expenditure growth is less than it otherwise would be, but costs will continue to increase.

Conclusion

The Commonwealth’s three DD waivers were redesigned effective September 1, 2016. Implementation of the planned changes began that month and has continued to evolve. Some of the most significant changes include the rollout of an electronic waiver management system, the addition of new services in each of the three waivers, the development and implementation of support needs levels for each individual and accompanying reimbursement tiers for certain services, and the creation of a customized rate for individuals whose needs cannot be met within the typical tiered rate structure.

The cost of providing waiver services to persons who began receiving services within the past year was significantly less than the cost of waiver services for those who enrolled between one and four-and-a-half years ago:

- The average monthly cost of providing waiver services to new enrollees was $3,464. This cost is almost 30 percent less than the $4,914 average cost for individuals receiving services for between one and four-and-a-half years. This cost reduction is driven in large measure by increasing enrollment in the Family and Individual Supports waiver rather than the more costly Community Living waiver, but costs are generally lower even after controlling for waiver, assessed level of need, and residential placement.
- Individuals who began receiving services within the past year were significantly more likely to enroll in the Family and Individual Supports waiver compared to those receiving

services for a longer period of time. More than 29 percent of new participants enrolled in the Family and Individual Supports waiver compared to fewer than nine percent of those receiving services for between one and four-and-a-half years. This waiver does not cover most residential services – the most costly supports to provide – so its average per-person cost is significantly less than the average for the Community Living waiver that serves a greater number of individuals.

- The distribution of support needs levels within the group of newer enrollees is comparable to the distribution within the group of those enrolled for a longer period.
- Newer enrollees used, on average, fewer services. This is generally true for the spectrum of services, including day services, employment, in-home, and professional services (nursing and therapeutic consultation). It is not yet clear whether this is a temporary phenomenon or a permanent shift in utilization patterns.

Decreased costs are partly driven by lower utilization of most services. That is, among newer enrollees, fewer individuals are accessing certain services – including day services, employment, in-home supports, and professional services – and when they do use a service, they are generally using fewer hours. It is not yet known whether this is a permanent change to utilization patterns or a temporary difference. Analysis of service utilization within the control group over the past five years found only modest differences between their initial months of service utilization and their utilization in FY 2017, but this pattern may not hold for new enrollees.

However, another part of the decrease in per person costs for newer enrollees is due to the intentional efforts of DBHDS to expand the number of individuals receiving supports in their family home. These efforts have increased utilization of the Family and Individual Supports waiver and should have a lasting impact on reducing the average cost of waiver services while increasing the number of individuals living in their natural family environment.

While the average cost of supporting new enrollees has declined due in part to the redesign of the waiver programs, total spending has increased by almost $176 million in total funds, about 27 percent. This increase has occurred as the General Assembly has allocated additional slots to reduce the lengthy waiting list, as new services have been added, and as rates have been increased.

Appendix A – Methodology

This report compares individuals who began receiving waiver services within the past year to those who received services for between one and four-and-a-half years in terms of their waiver of enrollment, assessed level of need, residential placement, and service utilization. To conduct the analysis, the Department of Behavioral Health and Developmental Services (DBHDS) used data from several sources, including:

- Paid claims received from the Department of Medical Assistance Services (DMAS) for waiver services delivered between July 1, 2012 and June 30, 2017 (fiscal years 2013 through 2017)
- A client demographic file that includes, among other information, waiver enrollment start and end dates, age, race, and county or city
- A listing of individuals' living situations (for example, living with family or in a group home) as of September 30, 2017
- A listing of the support needs level to which each individual was assigned through December 8, 2017
- A listing of approved customized rates as of January 4, 2018

Working from these sources, a consolidated dataset was constructed to produce the figures that underpin the analysis discussed within this report. Building the dataset followed five steps:

1. Identifying individuals who began receiving services within the past four-and-a-half years
2. Assigning waiver of enrollment
3. Assigning residential placements
4. Assigning levels of need
5. Analyzing claims data

Identifying Individuals Who Began Receiving Services within the Past Four-and-a-Half Years

With only five years of claims data, it was not immediately clear which individuals had enrolled *within* the past five years. As a result, the analysis considered whether someone began receiving services within the past four-and-a-half years. The two groups included in the analysis, then, are:

- The "study group," which includes individuals who began receiving waiver services within the most recent year of the study period. That is, they had paid claims in fiscal year 2017 (July 1, 2016 through June 30, 2017) and no paid claims in the four prior years. This group includes 737 individuals.
- The "control group," which is comprised of individuals who have received waiver services for between one and four-and-a-half years. That is, they did not receive services between July 1, 2012 and December 31, 2012, did receive services between January 1,

2013 and June 30, 2016, and continued to receive services in fiscal year 2017 (July 1, 2016 through June 30, 2017). This group includes 2,560 individuals.

The analysis does not include individuals who have received waiver services for more than four-and-half years (that is, they had a paid claim between July 1, 2012 and December 31, 2012) or those who did not receive any waiver services in fiscal year 2017.

Assigning Waiver of Enrollment

Since the three waivers for individuals with intellectual and developmental disabilities cover different services and, consequently, have different typical costs, the analysis separately compared utilization and costs within each waiver. Individuals were assigned to a waiver based on the waiver listed in the client demographic file.

Since the client demographic file represents a point-in-time, it is likely that a small number of claims were assigned to an incorrect waiver. Specifically, they may have changed waivers during fiscal year 2017 or between fiscal year 2017 and December 2017 when the client demographic file was extracted. Incorrect assignments were apparent when the services that an individual received were not covered by the waiver to which they were assigned. Such instances were limited and are not believed to have had a material impact on the analysis.

Assigning Residential Placement

An individual's living situation is the most predictive factor of the cost of providing waiver services. In particular, it is more costly to support an individual in a full-time congregate residential setting than to provide intermittent services in their own home or family home. An individual's living situation can also change over time. For example, someone living in his/her family home can decide that he/she wants to move out and may first try a group home and then opt to move into a sponsored residential home.

Although DBHDS provided a file of individuals' current living situation, this represents a specific point-in-time and would not identify instances in which an individual moved from one setting to another. As a result, the analysis relies primarily on claims data to determine place of residence. Further, since living situations may change during a fiscal year, this analysis separately considered each month in which an individual received services in fiscal year 2017.

Prior to the redesign of the waivers, full-time residential services (group home, supported living, and sponsored residential) were billed under the same procedure code (for congregate residential services) such that the various residential types were indistinguishable from a claims perspective. As part of the redesign's rate study, different rates and new procedure codes were established for the different types of residential services. Implementation of these new codes and rates began in September 2016 (January 2017 for sponsored residential). This change allows for the use of claims data to determine residential placement.

Each individual's claims in a given month were analyzed and the following decision rules were applied to determine his or her living situation in each month.

- If an individual received only one full-time residential service (group home, supported living, or sponsored placement) in a month and did not receive in-home residential services, all of the individual's claims for that month were assigned to that residential placement.
- If an individual received only one full-time residential service and received the generic congregate residential service in the immediately prior month(s), the prior months' claims were assigned to the full-time residential service to which he/she transitioned (that is, it was assumed that the individual did not change residential placements during the months in which the previous congregate residential service was billed).
- If an individual received more than one full-time residential service or a full-time residential service and in-home residential services, it was assumed that the individual changed placements during the month and that month was excluded from the analysis.
- If an individual did not receive any full-time residential service in a month, he/she was assumed to be living with family unless he/she received the independent living supports service or was listed as living independently in the living situation file.

Assigning Levels of Need

Individuals were assigned to the level of need listed in the roster file of support needs level. The analysis did not attempt to research and correct instances when an individual's assigned level may have changed during the analysis period (fiscal year 2017) or of paid claims for tiered services not reflecting the assigned level. Such instances were limited and are not believed to have had a material impact on the analysis.

Analyzing Claims Data

Information about service utilization and expenses was derived from paid claims for waiver services delivered in fiscal year 2017. In order to make meaningful comparisons between the study and control groups, several steps were taken.

First, in order to account for the ongoing cost of providing waiver services, claims paid under the old fee schedule were "repriced" as if the new fee schedule had been in place. As indicated earlier, the waiver redesign included a comprehensive rate study. Implementation of these new, mostly higher rates began in September 2016 (January 2017 for sponsored residential) so any claims paid prior to this transition were repriced at the rate they would have been paid if they were delivered after the transition. Part of the rate study included changes to billing units and dividing some services into multiple services, which necessitated a number of adjustments to account for these changes, including:

- Congregate residential supports – as noted above, this service was divided into three new services (group home, supported living, and sponsored residential). The analysis assigned the congregate residential claims to the new services following the process described above for assigning residential placements.

  Additionally, congregate residential services were billed on an hourly basis while the new services are reimbursed on a daily basis. The analysis therefore considered the billing

span for congregate residential claims to determine the number of days that would have been paid for the new service (up to a maximum of 344 days per year in accordance with a billing limit instituted as part of the rate study).

- In-home residential – this service could have been billed for either congregate residential services or for services delivered in an individual's own home or family home.

  If an individual received one of the three new residential services (group home, supported living, and sponsored residential) in the month after they received in-home residential services paid under the old fee schedule, those previous days were assumed to be in a full-time residential environment. The number of days of support was determined using the same approach described above for congregate residential supports.

  If the individual did not receive any of the new residential services in the month after they received in-home residential services, they were assumed to be living at home or independently.

- Day support and prevocational services – these services were divided into three new services: group day support, community engagement, and community coaching. For each individual, the analysis allocated paid claims for these services across the three new services based on the distribution between these two services in the months after the transition. For an individual who did not receive any of the new services, his/her day support and/or prevocational services were allocated across the three new services based on the system-wide distribution of the two new services.

  Additionally, day support and prevocational services were billed on a "block" (part-day) basis while the three new services are paid by the hour. Based on previous research, it was assumed that each block unit would translate to 2.75 hours.

- Group supported employment – this service was divided into three new billing codes based on group size. For each individual, the analysis allocated paid claims for these services across the three new codes based on the distribution between these three codes in the months after the transition. For an individual who did not receive any services under the new codes, his/her services were allocated across the new codes based on the system-wide distribution of the new codes.

  Additionally, this service was billed on a "block" (part-day) basis while the new codes are paid by the hour. Based on previous research, it was assumed that each block unit would translate to 2.75 hours.

- Therapeutic consultation – this service was divided into three new services based on the professional delivering the service. However, one of the new services retained the previous billing code. If an individual received only one new service after the transition, the initial claims were assumed to be the same as the new service and were reassigned accordingly. If the individual received services billed under the code that was retained (97139) and one of the new codes, the claims occurring before the transition were assigned to the retained code at the new rate.

Services provided before implementation of the new fee schedule were priced at the new rates. In instances in which services that were billed under the new fee schedule were paid a rate that varied from the published fee schedule (due to third party liability offsets, billing errors, or other

reasons), the claim was repriced at the published rate. If an individual had an approved customized rate for a service, the claim was not repriced.

Second, since by definition most individuals who began receiving services within the past year received fewer than twelve months of service, the comparisons included in the report are based on average monthly costs. For each individual in the study and control groups, the analysis determined the months in fiscal year 2017 in which he/she received a waiver service. Each month was separately "tagged" with the individual's living situation for that month using the process described above. For individuals enrolled within the past year, the first month in which he/she received a service was excluded from the analysis because spending in these initial months was significantly lower than in subsequent months (because he/she enrolled partway through the month and/or had not yet identified providers and programs), which would have provided a misleading perspective of the cost of service for these individuals.

The analysis "tagged" each member month based on region of the State (Northern Virginia or Rest of the State), waiver, residential placement, and support needs level. Paid claims were then aggregated for each member month with the resulting totals divided by the number of member months in order to calculate average costs.