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# MRT Supportive Housing Evaluation: Cost Report 2, Volume 1: Pre-Post Analyses

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Gullick, Margaret; Mahmud, Mir Nahid; Polvere, Lauren; and McGinnis, Sandra, "MRT Supportive Housing Evaluation: Cost Report 2, Volume 1: Pre-Post Analyses" (2019). *Health and Healthcare Services Reports and Research Briefs*. 7.

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NOVEMBER 2019

Medicaid Redesign Team  
Supportive Housing Evaluation  
Cost Report 2  
Volume 1: Pre-Post Analyses

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# Executive Summary.

## INTRODUCTION

This report details Medicaid spending changes associated with enrollment in programs sponsored by the New York State Medicaid Redesign Team’s Supportive Housing initiative (MRT-SH), including a summary of these projects and the Medicaid cost characteristics of the people enrolled. MRT-SH initiatives to date include 54 capital projects, 49 of which have opened; 18 rental subsidy and supportive services programs and pilots; and one accessibility modification program.

For each included MRT-SH program, Medicaid cost data are presented from one year before participants’ enrollment through the first or second year post-enrollment. The goal of the analysis is to include an updated description of the costs before and after program enrollment.

## INCLUSION CRITERIA AND METHODOLOGY.

All analyses presented below are for the 23 programs, pilots, and capital projects that began enrolling participants prior to October 2016. Participants were included for analysis provided that they were enrolled prior to October 2016, and provided that, for the period spanning from one year prior to program enrollment to one year after enrollment, they had full, continuous Medicaid coverage.<sup>1</sup> Of the 5,088 clients enrolled by October 2016, 3,649 met these criteria for full, continuous Medicaid coverage.

Medicaid spending for clients meeting these criteria was then analyzed over the twelve months prior to and twelve months after program enrollment. A second post-enrollment year was also analyzed for programs where a sufficient number of clients also met full coverage criteria for the additional year. Participants were included in the analysis according to an intent-to-treat methodology, such that participants were kept for pre-post cost analysis whether or not they remained enrolled in supportive housing for the post-period. For programs that began enrolling participants prior to October 2016 but did not have at least 25 eligible participants, descriptive statistics are presented, but inferential statistics (i.e., significance tests) were not performed.

## KEY FINDINGS.

- Across all included MRT-SH programs, there were statistically significant overall Medicaid cost savings, for the pre-period versus the first and second years post enrollment. The mean cost savings were about \$5,500 per person from the pre-period to the first post-period year, and about \$5,600 to the second post-period year.

*Summary Pre versus 1 Year Post Cost Table for MRT-SH Programs.*

All Programs	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test
Pre vs. 1 Year Post (all)	3,649	\$136,109,947	\$115,954,670	-\$20,155,277	-\$5,524	-\$1,569	p<0.001

- These comparisons were also significant for about half of the individual programs.
  - » The AIDS Institute: Services Only program, East 99th Street, Norwood Terrace, HHAP Capital projects, OMH Rental Subsidies of Brooklyn and Rental Subsidies Statewide, OASAS Rental Subsidies and Supports, OPWDD Expansion of Existing Rental Services, and OHIP Health Homes Supportive Housing Pilot and the Nursing Home to Independent Living (transitions clients) programs all showed significant cost decreases from pre-period to post-period. Median cost decreases ranged from about \$4,300 to \$50,300.

<sup>1</sup> Full, continuous Medicaid coverage was defined as meeting both the following criteria: (1) no coverage under a Medicaid coverage type considered less than full coverage; and (2) no period of 60 days or longer without full Medicaid coverage. See Table A.2 for Medicaid coverage types considered full.

- » Only the AIDS: Institute Subsidies & Services program demonstrated notable mean cost increases (approximately \$5,600 per person), likely due to increasing pharmacy costs.
- » The Eviction Prevention for Vulnerable Adults program and Senior Supportive Housing Program were both focused on preventive actions and were not expected to demonstrate significant spending changes. No major spending changes were seen, meaning that these programs may have effectively prevented higher Medicaid spending in the time after client enrollment.
- » The remaining programs (Third Avenue mean increase \$695, Boston Road mean cost increase \$3,674, HSDPP mean increase \$3,014) showed nonsignificant cost increases.
- Additionally, many of these same programs showed significant decreases in the second post-enrollment year. Medicaid spending may thus continue to decrease after the first post-enrollment year, or at least maintain the decreased level of spending. The availability of supportive housing may thus stabilize health care expenditures.
- When Medicaid spending changes are examined by category of service, there are statistically significant overall Medicaid cost savings across programs for almost all categories from the pre- to the post-periods examined.
  - » Hospital inpatient (mean cost savings of \$2,143), nursing home (\$1,575), physician service (\$532), clinic (\$335), hospital outpatient (\$277), emergency department (\$157), lab (\$59), Durable Medical Equipment (DME; \$20), and other costs (\$2,297) all decreased over this interval. Many then showed additional decreases in the second post-enrollment year, indicating continued spending decreases in the longer term.
  - » Health Home/Care Management spending showed a significant increase (mean increase of \$415). Health Homes enrollment also increased by 5% across all eligible clients in this period. This increase may thus reflect an increased number of clients using these services, or simply changes in programmatic billing over the analysis period.
  - » Non-institutional long-term care costs showed a significant increase of about \$500 per person. The programs showing increases in this category tended to focus on serving elderly or disabled clients, or had an especially high rate of clients with other chronic conditions. This change may reflect that while institutional care decreased, long-term care was still needed.
  - » Pharmacy costs significantly increased by about \$800 per person. These changes may demonstrate increased medication adherence, pharmaceutical price increases, changes in disease stage, or additional prescriptions per individual after MRT-SH enrollment across programs. Program-level analyses demonstrate that this shift may be driven by increased pharmacy costs for the AIDS Institute programs.

## CONCLUSIONS.

Overall, participants in MRT-SH supportive housing programs are demonstrating significant Medicaid savings, with several programs (such as HHAP Capital Projects; OMH Rental Subsidies Brooklyn; OASAS Rental Subsidies & Supports; OPWDD Rental Subsidies & Supports; and OHIP Nursing Home to Independent Living (transition clients)) showing especially pronounced savings. Savings were also seen by specific categories of service, most prominently emergency department, hospital inpatient and outpatient, and nursing home costs, as well as expensive program-specific waivers and rehabilitative services, indicating less need for high-cost, high-demand medical services. As such, participation in a supportive environment, combined with enrollment in Health Homes or Medicaid managed care, may lead to a more efficient use of health care resources.



# Introduction.

This report details Medicaid cost changes associated with enrollment in programs sponsored by the New York State Medicaid Redesign Team's Supportive Housing initiative (MRT-SH), including a summary of these projects and the Medicaid cost characteristics of the people enrolled. For each MRT-SH program, Medicaid cost data are presented from one year before participant enrollment through the first or second year post-enrollment. The goal of the analysis is to include an updated description of the costs before and after program enrollment.<sup>2</sup>

Additionally, this report is based on the clients who had enrolled at these programs through October 2016. Medicaid beneficiaries move in and out of eligibility regularly. Therefore, this analysis is accurate for the participants in the sample; changes in program targeting may shift the outcomes seen. These descriptive analyses are based on a small panel of enrollees, and future estimates will depend in part on the clinical characteristics of new enrollees in these programs.

## GOALS OF THE MEDICAID REDESIGN TEAM SUPPORTIVE HOUSING (MRT-SH) INITIATIVE.

To address unprecedented health care cost growth and improve health care quality in New York's Medicaid program, Governor Andrew M. Cuomo created the Medicaid Redesign Team to develop a multi-year reform plan. Medicaid Redesign is premised on the idea that the only way to successfully control costs is to improve the health of program participants.

Studies have shown the powerful effects of social determinants of health, such as safe housing, nutrition, and education. However, the public spending dedicated to these social determinants is small relative to national health care spending overall.<sup>3</sup> Research also indicates that 5% of consumers are responsible for 50% of health care costs.<sup>4</sup> In particular, the population targeted for the supportive housing program has high rates of emergency department utilization and inpatient hospitalizations, due in part to their greater likelihood of suffering from multiple chronic medical problems, behavioral health problems, and environmental risk factors associated with a lack of stable housing.

New York has recognized housing as a critical health intervention, with supportive housing identified as a promising model. Supportive housing is affordable housing paired with supportive services, such as on-site case management and referrals to community-based services<sup>5</sup>. As a result, New York has allocated substantial funding from the State's Medicaid Redesign dollars to provide supportive housing to homeless, unstably housed, and/or other individuals with complex needs, who are high-cost, high-need Medicaid users. It is anticipated that MRT-SH will reduce the more expensive forms of health care utilization (emergency department visits, inpatient hospitalizations, and nursing home stays), potentially reduce overall health care costs, and improve quality of life and health outcomes.

## THE PROJECTS.

MRT-SH initiatives to date<sup>6</sup> include 54 capital projects, 49 of which have opened; 18 rental subsidy and supportive services programs and pilots; and one accessibility modification project. Table 1 below shows the programs that are included in the cost study in the body of this report, and Table 2 shows those programs that were excluded from the report, primarily because they were too new to have accumulated sufficient data. Supportive housing enrollment data for each MRT supportive housing participant included in this analysis is based on program records.<sup>7</sup> Medicaid spending is based on

2 Note that for participants who are dually eligible for Medicaid and Medicare, Medicare costs are not included in the analysis.

3 Bradley EH, Elkins BR, Herrin J, Elbel B. Health and social services expenditures: associations with health outcomes. *BMJ Quality & Safety*. 2011;20(10):826-831.

4 Stanton MW, Rutherford MK. The high concentration of U.S. health care expenditures. Rockville (MD): *Agency for Healthcare Research and Quality*; 2005. Research in Action Issue 19. AHRQ Pub. No. 06-0060.

5 Doran KM, Misa EJ, Shah NR. Housing as Health Care – New York's Boundary-Crossing Experiment. *New England Journal of Medicine*. 2013;369:2374-2377.

6 As of 10/25/19

7 Program record verification dates: HHAP capital projects for participants enrolled through 5/2017, AIDS Institute programs and Health Homes Supportive Housing Pilot through 7/2017, OASAS-RSS and OPWDD-RSS through 8/2017, East 99th Street through 9/2017, HCR Capital projects, OMH RSS and RSB, NHIL, and Senior Supportive Housing Pilot through 10/2017, Access to Home Expansion program through 11/2017.

Medicaid Data Warehouse (MDW) information for dates of service through 9/27/2017.<sup>8</sup>

**ANALYSIS INCLUSION CRITERIA.**

All analyses presented below are for those programs that began enrolling participants prior to October 2016 and had a sufficient number of eligible participants (25 or more). Participants were included for analysis provided that they were enrolled prior to October 2016, and provided that, for the period spanning from one year prior to program enrollment to one year after enrollment, they met both of the following full Medicaid coverage criteria:

1. No coverage under a Medicaid coverage type that was considered less than full coverage; and
2. No period of 60 days or longer without full Medicaid coverage.

Of the 5,088 clients enrolled by October 2016, 3,649 met these criteria for full continuous Medicaid coverage.

Medicaid spending for clients meeting these criteria was then analyzed over the twelve months prior to and twelve months after program enrollment. A second post-enrollment year was also analyzed for programs where a sufficient number of clients (10 or more) also met full coverage criteria for the period 13 months to 24 months after enrollment. Participants were included in the analysis according to an intent-to-treat methodology, such that participants were kept for pre-post cost analysis whether or not they remained enrolled in supportive housing for the post-period.

For programs that began enrolling participants prior to October 2016 but did not have at least 25 eligible participants, descriptive statistics are presented, but inferential statistics (i.e., significance tests) are not performed.

**Table 1. Summary Characteristics of MRT Supportive Housing Projects Included in Cost Analyses, with Enrollees to Date.**

Program	Earliest Enrollment Date	Number of Projects	Number of People Served, to date	Number of People included in Pre / Post Year 1 Post Analysis <sup>9</sup>	Number of People included in Pre / Post Year 2 Analysis <sup>10</sup>	# with 1 or more month in Medicaid Managed Care in Pre / Post Year 1 Period	# with 1 more month in Health Home in Pre / Post Year 1 Period
All Programs <sup>11</sup>		144	6,187	3,649	2,478	2,573/2,673	2,015/2,209
Department Of Health – AIDS Institute							
AIDS Institute Services Only*	July 2012	11	881	624	529	597/632	576/604
AIDS Institute Services & Subsidies	October 2012	13	439	149	84	300/267	282/197
AIDS Institute Pilot*	December 2014	1	35	17	11	30/35	35/34
Homes and Community Renewal (HCR): Capital							
East 99th Street	November 2014	1	192	150	130	105/128	47/53
3361 Third Ave	September 2015	1	38	34	5	32/30	28/27

8 Data was extracted on 3/27/2018, Medicaid claim cycle 2123.

9 Full cohort, pre-enrollment year versus first year post-enrollment

10 Subgroup, pre-enrollment year versus second year post-enrollment, for those participants a second year of post-enrollment data available

11 \* = Program has ended

Boston Road	January 2016	1	97	76	0	83/83	37/45
Norwood Terrace	August 2016	1	59	29	0	43/46	38/33
VOA Creston Ave	December 2014	1	22	19	18	22/22	6/4
Access to Home Program	February 2016	10	94	21	0	44/33	7/1
Office of Temporary and Disability Assistance: Homeless Housing and Assistance Program Capital							
All HHAP Capital Projs	December 2013 – August 2016	5	145	86	49	101/112	51/51
Office of Temporary and Disability Assistance: Other							
Eviction Prevention for Vulnerable Adults	August 2013	1	283	213	188	197/193	42/37
Homeless Senior and Disabled Placement Program	May 2014	1	234	199	65	157/161	150/100
Office of Mental Health							
Rental Subsidies – Brooklyn	February 2013	8	472	336	292	318/315	297/352
Rental Subsidies – Statewide	January 2013	38	768	467	362	492/497	479/507
Office of Alcoholism and Substance Abuse Services							
OASAS Rental Subsidies Statewide	April 2013	18	690	441	313	561/585	294/375
Office for People With Developmental Disabilities							
OPWDD Rental Subsidies Statewide	May 2013	11	72	59	49	0/4	0/0
Department Of Health – Office of Health Insurance Programs							
Health Homes Supportive Housing Program	December 2014	11	566	319	149	424/437	402/379
Nursing Home to Independent Living (Transitions)	January 2015	2	347	33	4	19/30	6/4
Senior Supportive Housing Services*	December 2014	9	634	377	230	178/240	44/51



**Table 2. Summary Characteristics of MRT-SH Projects not Included in Cost Analysis, with Enrollees to Date.<sup>12</sup>**

Program <sup>13</sup>	Earliest Enrollment Date	Number of Projects	Number of People Served, to date
<b>All Programs</b>		<b>131</b>	<b>6,877</b>
<b>HCR: Capital &amp; HHAP Capital</b>			
38 Additional Buildings	November 2016	38	227
<b>OTDA (Other)</b>			
New York State Supportive Housing Program (NYSSHP)	January 2013	28	4,112
<b>OMH</b>			
Step-Down/Crisis Residence Capital Conversion Project	March 2015	9	502
OMH Supported Housing Services Supplement Program*	December 2013	68	903
<b>DOH – OHIP</b>			
Nursing Home to Independent Living: Transitions and Diversions	January 2009	9	894
Olmstead Housing Subsidy Program	December 2016	1	110
Special Needs Assisted Living Program A/B	March 2018	11	129

**CLIENT CHARACTERISTICS.**

**Comorbidities.**

The population served by the MRT-SH programs is a seriously ill population with high rates of comorbidities. Across all programs, almost two-thirds of clients had a serious mental illness. This high incidence is not surprising as several programs specifically targeted individuals with serious mental illness. Almost half had a substance use disorder, one-third had an “other” chronic condition, and almost one-quarter were HIV positive. About a quarter of clients had three or more conditions, though only 3% had claims within all four categories over the pre-period year. These rates were very similar for the subgroup of clients with two full years of post-period data; as such, any differences in analyses for this subgroup should not be attributable to differences in diagnoses.

Diagnoses were taken from the primary diagnosis of claims in the pre-period. As such, these rates likely underrepresent incidence, as clients with a chronic illness may not have had any claims for which their condition was the primary diagnosis in their pre-period year, but this gap was assumed to be small as most of these conditions result in regular claims. The “other chronic condition” category was comprised of the twelve most common chronic conditions other than serious mental illness, substance use disorder, and HIV, and included hypertension, asthma, diabetes, osteoarthritis, coronary heart disease, chronic kidney disease, chronic obstructive pulmonary disease, cerebrovascular disease, congestive heart failure, cancer, angina, and acute myocardial infarction.

**Table 3A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	2,274	62%	1,599	64.5%
Substance Use Disorder	1,487	41%	1,000	40%
Other Chronic Condition	1,225	33.5%	661	27%
HIV	861	23.5%	656	26%
3 or more of the above	892	24%	619	25%
All 4 of the above	127	3%	100	4%

<sup>12</sup> As of 3/25/18

<sup>13</sup> \* = Program has ended

**Enrollment Duration.**

Across all programs, about one-third of clients were enrolled for a maximum of 1 year, about one-third were enrolled for one to two years, and one-third for more than 2 years. These rates were similar for clients with two full years of post-period data, though not surprisingly a greater proportion had been enrolled for more than 2 years.

**Table 3B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	472	13%	314	13%
Between 6 and 12 months	688	19%	376	15%
Between 13 and 18 months	707	19%	280	11%
Between 19 and 24 months	555	15%	344	14%
More than 24 months	1,217	33%	1,160	47%
All 4 of the above	127	3%	100	4%

**Care Coordination.**

Enrollment in Medicaid Managed Care and Health Homes was consistent between the pre-period and post-periods examined. Almost three-quarters of clients were enrolled in Medicaid Managed Care, and just over half in Health Homes. Similarly, almost one-quarter of clients were dual-eligible in all windows examined.

**Table 3C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	70.5%	73%	72.5%
Health Homes Enrollment <sup>14</sup>	55%	60.5%	59%
Dual Eligibility	23%	23%	23%

# Methodology.

MDW fee-for-service claims (excluding capitation payments) and managed care plan reported (encounter) data, pulled on 3/27/2018 (thus valid through 9/27/2017)<sup>15</sup>, were used to calculate pre- and post-period costs. For program participants who are dually eligible for Medicare and Medicaid, only Medicaid costs are included in the analysis. Additionally, the cost of the intervention is not included in any of the analyses that follow.

As analyses followed an intent-to-treat methodology, not all recipients in the study were retained in MRT-SH for a full year.

Due to the cost data being heavy tailed, the Wilcoxon Signed Rank Test was used to test whether the cost distributions in the pre- and post-periods were identical without assuming these costs to be normally distributed.

In the each of the cost tables, costs for the whole eligible population (those with at least one available post-period year) are first compared for the pre-period versus the first post-enrollment year for programs with at least 25 participants. For smaller programs, total and mean yearly spending is displayed, but given the small number of clients, statistical

<sup>14</sup> Health Homes Enrollment was determined based on presence of Health Homes outreach or enrollment claims.

<sup>15</sup> Client claims were assumed to be complete within six months. As such, a six-month claims lag was instituted, wherein data pulled on 3/27/2018 was assumed to be complete for services provided through 9/27/2017.

comparisons were not performed.

Costs for the pre-period versus the first, and then pre-period versus the second, post-enrollment years are then compared for the subgroup of clients who had full Medicaid coverage for a second post-period year, for programs with at least 10 participants with two years post-enrollment data available. Costs for the first and second post-period years are then compared for this subgroup of participants to determine if there were any further cost changes or if post-enrollment spending remained steady.

## CATEGORIES OF SERVICE.

Pre- and post-period costs within service categories were also compared to determine the drivers of cost changes. Analyzed categories of service include:

- Clinic;
- Durable Medical Equipment (DME);
- Emergency Department;
- Health Home/Care Management;
- Hospital Inpatient;
- Hospital Outpatient;
- Lab;
- Non-Institutional Long-Term Care (e.g., home health agency professional services, health home medical supply, vendor personal care services, personal emergency response services, assisted living programs, home care programs, long term home health care);
- Nursing Home (e.g., skilled nursing facilities, day cares);
- Other;
- Pharmacy;
- Physician Services;
- Transportation Services (e.g., ambulances, taxis, livery services, day treatment transportation).

The “Other” category includes all other costs not otherwise excluded. The most prominent “other” costs included rehabilitation services for OMH programs and waiver services in OPWDD, though many other types of costs were also included (e.g., chiropractic services, dental services, eyeglasses, social worker or physical therapist services, and any Graduate Medical Education (GME)-associated costs in any other category).

### ***Service Category Cost versus Frequency.***

The relationship between service category cost-per-visit and visit frequency was investigated to allow for better characterization of spending in these categories. Total category cost is comprised of both factors; however, some categories may be rare but quite costly per visit, while others are frequent but relatively inexpensive at each incidence.

Clients’ pre-period activity was used to establish these characteristics. Within a client, claims in the same category of service on the same service date were taken to reflect services rendered within the same visit. “Other” claims (of which there were 35,784) were not included in this analysis, given the variability in types of services included; Health Home/Care Management claims (N=18,087) were also excluded, as these claims reflect ongoing care management and not specific medical services. These procedures resulted in 374,487 visits (from 607,278 claims) across all clients in the pre-period year.

Several service categories showed high mean costs per visit/day, reflecting venues where an individual visit tended to be especially costly. Specifically, hospital inpatient, nursing home, and pharmacy visits had the highest average cost-per-visit, with costs of at least \$350 per visit. Separately, several service categories showed high visit frequency, or venues where clients tend to have many unique visits and many claims. Specifically, the clinic, hospital outpatient, pharmacy, and physician service categories were the most frequent service venues, with each accounting for more than 10% of all visits.

**Table 4. Pre-period percent of visits, and mean cost per visit, for each service category.**

Service Classification	% of all visits	Mean cost per visit
Clinic	22%	\$105
DME	1%	\$229
Emergency Department	2%	\$212
Hospital Inpatient	1%	\$6,082
Hospital Outpatient	15%	\$153
Lab	3%	\$76
Non-Institutional LTC	10%	\$187
Nursing Home	2%	\$1,330
Pharmacy	20%	\$373
Physician Services	14%	\$136
Transportation Services	9%	\$82

As such, pharmacy “visits” can be said to be both costly and frequent. Hospital inpatient visits and nursing home stays are infrequent, but costly when they do occur. Clinic, hospital outpatient, and physician service visits are relatively inexpensive but are frequent. The DME, emergency department, non-institutional long-term care, laboratory, and transportation categories are all relatively inexpensive per visit and relatively infrequent.

**Table 5. Pre-period cost per visit versus visit frequency, for each service category.**

Service Classification	Higher cost	Lower cost
Higher frequency	Pharmacy	Clinic, Hospital Outpatient, Physician Services
Lower frequency	Hospital Inpatient, Nursing Home	DME, Emergency Department, Non-Institutional LTC, Laboratory, Transportation

**Expected Outcomes by Service Category.**

Expected outcomes varied by service category. Across participants, hospital inpatient, emergency department, and nursing home spending was expected to decrease from the pre- to the post-period, as many programs aimed to reduce the need for costly acute or intensive client care through the interventions provided. In contrast, primary care service costs (particularly clinic, hospital outpatient, or physician services) were expected to increase, as clients were expected to receive more preventive care. Additionally, non-institutional long-term care spending was expected to increase as more clients moved into independent living situations but still needed medical support. Health homes/care management claims were somewhat expected to increase as more clients enrolled in health homes; however, billing rates for these services have changed on a programmatic level multiple times over the analysis period, with the same service sometimes billed for more or less money, making it difficult to draw conclusions as to the expected direction of spending.

There was not a strong hypothesis surrounding changes in pharmacy spending. Decreased spending could reflect improved health and a decreased need for medications, which would be a positive outcome. However, increased spending could reflect improved access to needed medications or improved care management, which would also be a positive outcome.

# Summary Cost Tables.

The descriptive cost table (Table 6A) shows that there are statistically significant overall Medicaid cost savings for the MRT-SH programs considered as a whole, for the pre-period versus the first and second years post enrollment. These comparisons were also significant for several individual programs.

**Table 6A: Summary Pre-Post Cost Table for MRT-SH Programs.<sup>16</sup>**

Program/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>17</sup>
<b>All Programs</b>							
Pre vs. 1 Year Post (all)	3,649	\$136,109,947	\$115,954,670	-\$20,155,277	-\$5,524	-\$1,569	***
Pre vs. 1 Year Post	2,478	\$94,974,184	\$80,037,817	-\$14,936,367	-\$6,028	-\$1,574	***
Pre vs. 2 Years Post			\$80,932,321	-\$14,041,863	-\$5,667	-\$2,590	***
1 vs. 2 Years Post				\$894,504	\$361	-\$809	***
<b>DOH – AIDS Institute</b>							
AIDS Institute Services Only							
Pre vs. 1 Year Post (all)	624	\$40,721,654	\$37,997,388	-\$2,724,267	-\$4,366	-\$1,472	*
Pre vs. 1 Year Post	529	\$33,914,635	\$31,897,410	-\$2,017,224	-\$3,813	-\$1,228	n.s.
Pre vs. 2 Years Post			\$32,498,033	-\$1,416,601	-\$2,678	-\$1,386	n.s.
1 vs. 2 Years Post				\$600,623	\$1,135	-\$749	n.s.
AIDS Institute: Subsidies & Services							
Pre vs. 1 Year Post (all)	148	\$5,709,066	\$6,554,134	\$845,068	\$5,672	\$119	n.s.
Pre vs. 1 Year Post	84	\$2,876,936	\$3,401,286	\$524,351	\$6,242	\$419	n.s.
Pre vs. 2 Years Post			\$3,714,066	\$837,130	\$9,966	\$3,591	†
1 vs. 2 Years Post				\$312,779	\$3,724	-\$18	n.s.
<b>HCR: Capital</b>							
East 99th Street							
Pre vs. 1 Year Post (all)	150	\$5,510,430	\$3,799,558	-\$1,710,871	-\$11,406	-\$2,073	***
Pre vs. 1 Year Post	130	\$5,032,279	\$3,319,267	-\$1,713,012	-\$13,177	-\$3,339	***
Pre vs. 2 Years Post			\$3,270,942	-\$1,761,337	-\$13,549	-\$6,163	***
1 vs. 2 Years Post				-\$48,324	-\$372	-\$649	n.s.
3361 Third Ave							
Pre vs. 1 Year Post (all)	34	\$600,981	\$624,622	\$23,640	\$695	-\$715	n.s.
Boston Road							
Pre vs. 1 Year Post (all)	76	\$1,409,614	\$1,688,814	\$279,200	\$3,674	\$183	n.s.
Norwood Terrace							
Pre vs. 1 Year Post (all)	29	\$1,097,676	\$736,016	-\$361,660	-\$12,471	-\$4,640	*

<sup>16</sup> The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

<sup>17</sup> Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "†" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

<b>OTDA: HHAP Capital</b>							
All HHAP Capital Projects.							
Pre vs. 1 Year Post (all)	86	\$2,050,050	\$1,601,861	-\$448,189	-\$5,211	-\$3,120	***
Pre vs. 1 Year Post	49	\$851,527	\$645,451	-\$206,076	-\$4,206	-\$3,080	*
Pre vs. 2 Years Post			\$678,765	-\$172,762	-\$3,526	-\$2,303	*
1 vs. 2 Years Post				\$33,314	\$680	-\$627	n.s.
<b>OTDA: Other</b>							
Eviction Prevention for Vulnerable Adults							
Pre vs. 1 Year Post (all)	213	\$3,582,283	\$3,478,004	-\$104,278	-\$490	-\$26	n.s.
Pre vs. 1 Year Post	188	\$2,745,298	\$2,653,543	-\$91,756	-\$488	-\$30	n.s.
Pre vs. 2 Years Post			\$2,949,916	\$204,618	\$1,088	-\$251	n.s.
1 vs. 2 Years Post				\$296,373	\$1,576	-\$276	n.s.
Homeless Senior and Disabled Placement Pilot							
Pre vs. 1 Year Post (all)	199	\$4,182,387	\$4,782,142	\$599,755	\$3,014	-\$223	n.s.
Pre vs. 1 Year Post	65	\$1,323,704	\$1,272,578	-\$51,126	-\$787	-\$700	n.s.
Pre vs. 2 Years Post			\$1,471,761	\$148,057	\$2,278	-\$653	n.s.
1 vs. 2 Years Post				\$199,184	\$3,064	-\$96	n.s.
<b>OMH</b>							
OMH Rental Subsidies – Brooklyn							
Pre vs. 1 Year Post (all)	336	\$10,622,679	\$7,428,911	-\$3,193,767	-\$9,505	-\$4,720	***
Pre vs. 1 Year Post	292	\$9,132,517	\$6,495,284	-\$2,637,233	-\$9,032	-\$4,090	***
Pre vs. 2 Years Post			\$6,335,678	-\$2,796,839	-\$9,578	-\$4,781	***
1 vs. 2 Years Post				-\$159,606	-\$547	-\$1,522	**
OMH Rental Subsidies – Statewide							
Pre vs. 1 Year Post (all)	467	\$13,654,551	\$11,076,299	-\$2,578,252	-\$5,521	-\$1,274	***
Pre vs. 1 Year Post	362	\$11,212,225	\$8,895,096	-\$2,317,128	-\$6,401	-\$1,213	***
Pre vs. 2 Years Post			\$8,701,980	-\$2,510,245	-\$6,934	-\$3,078	***
1 vs. 2 Years Post				-\$193,117	-\$533	-\$1,087	†
<b>OASAS</b>							
OASAS Rental Subsidies & Supports							
Pre vs. 1 Year Post (all)	442	\$17,732,979	\$12,566,136	-\$5,166,843	-\$11,716	-\$8,197	***
Pre vs. 1 Year Post	313	\$12,279,775	\$9,515,807	-\$2,763,967	-\$8,831	-\$6,099	***
Pre vs. 2 Years Post			\$8,825,992	-\$3,453,783	-\$11,034	-\$9,003	***
1 vs. 2 Years Post				-\$689,816	-\$2,204	-\$1,844	**
<b>OPWDD</b>							
OPWDD Rental Subsidies & Supports							
Pre vs. 1 Year Post (all)	59	\$6,038,216	\$3,069,013	-\$2,969,203	-\$50,325	-\$55,062	***
Pre vs. 1 Year Post	49	\$4,882,172	\$2,645,772	-\$2,236,400	-\$45,641	-\$50,641	***
Pre vs. 2 Years Post			\$2,511,119	-\$2,371,053	-\$48,389	-\$59,292	***
1 vs. 2 Years Post				-\$134,653	-\$2,748	-\$3,299	*
<b>DOH – OHIP</b>							
Health Homes Supportive Housing Pilot							
Pre vs. 1 Year Post (all)	319	\$11,188,943	\$9,438,071	-\$1,750,872	-\$5,489	-\$2,473	***
Pre vs. 1 Year Post	149	\$5,089,186	\$3,780,320	-\$1,308,866	-\$8,784	-\$3,079	***
Pre vs. 2 Years Post			\$4,142,127	-\$947,059	-\$6,356	-\$4,573	***
1 vs. 2 Years Post				\$361,807	\$2,428	-\$396	n.s.

Nursing Home to Independent Living (Transitions)							
Pre vs. 1 Year Post (all)	33	\$2,820,958	\$1,828,394	-\$992,565	-\$30,078	-\$38,163	**
Senior Supportive Housing Pilot							
Pre vs. 1 Year Post (all)	377	\$7,240,355	\$7,567,917	\$327,562	\$869	-\$26	n.s.
Pre vs. 1 Year Post	230	\$4,182,984	\$4,151,026	-\$31,958	-\$139	\$0	n.s.
Pre vs. 2 Years Post			\$4,408,627	\$225,643	\$981	-\$169	n.s.
1 vs. 2 Years Post				\$257,601	\$1,120	-\$261	n.s.

Notably, the AIDS Institute – Services Only program, East 99th Street, Norwood Terrace, HHAP Capital projects, OMH Rental Subsidies of Brooklyn and Rental Subsidies Statewide, OASAS Rental Subsidies and Supports, OPWDD Expansion of Existing Rental Services, and OHIP Health Homes Supportive Housing Pilot and the Nursing Home to Independent Living (transitions clients) programs all showed significant cost decreases from the pre-period to the first post-period year. Further, these results are typically consistent when only the subgroup of clients with two years post-period data is examined: where overall spending showed a significant decrease for the full group in the first post-period year, it also generally decreased for the subgroup (where available). These results demonstrate reductions in Medicaid spending after MRT-SH enrollment.

Additionally, many of these same programs showed significant decreases from the pre-period to the second post-enrollment year, and from the first to the second post-enrollment year. This pattern indicates that post-enrollment Medicaid spending may continue to decrease after the first post-enrollment year (Rental Subsidies of Brooklyn, Rental Subsidies Statewide ( $p=0.052$ ), OASAS, OPWDD), or at least maintain the decreased level of spending seen in the first post-enrollment year (East 99th Street, HHAP Capital Projects, HHSHP). Alternately, continued full coverage Medicaid and/or the availability of supportive housing may stabilize health care expenditures and promote use of preventive services rather than acute or urgent care.

Only the AIDS Institute Subsidies & Services program demonstrated mean cost increases that were close to significant ( $p=0.057$ ), and only for the second post-period year. As with the AIDS Institute: Services Only program, pharmacy costs showed the greatest increase among service categories; unlike the Services Only program, though, nursing home costs were minimal or nil in the pre- and post-periods, and thus unable to show the significant decrease seen for the Services Only clients. There were several other categories of difference, but these two largest are the most likely to explain the resultant cost increase versus decrease seen.

Two additional programs focused on preventive actions, and thus were not expected to demonstrate significant spending changes from the pre- to the post-periods. Indeed, EPVA showed a nonsignificant mean cost decrease, while SSHP demonstrated a nonsignificant mean cost increase. As no major spending changes were seen, these programs may have effectively prevented higher Medicaid spending in the time after client enrollment.

The remaining programs (Third Avenue, Boston Road, Homeless Senior & Disabled Placement Pilot) showed nonsignificant cost increases. Supportive housing may have a more neutral impact on costs for these programs.

The AIDS Institute: Pilot, VOA Creston Avenue, and Access to Home programs each had fewer than 25 eligible participants available; as such, overall spending and changes are presented, but significance testing is not performed.

**Table 6B: Summary Pre-Post Cost Table for MRT-SH Programs with fewer than 25 Participants.**

Program/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference
<b>DOH – AIDS Institute</b>						
AIDS Institute: Pilot						
Pre vs. 1 Year Post (all)	17	\$629,003	\$653,182	\$24,178	\$1,422	\$4,765
Pre vs. 1 Year Post	11	\$407,147	\$456,632	\$49,485	\$4,499	\$6,290
Pre vs. 2 Years Post			\$509,619	\$102,471	\$9,316	\$8,817
1 vs. 2 Years Post				\$52,987	\$4,817	\$3,254
<b>HCR: Capital</b>						
VOA Creston Ave						
Pre vs. 1 Year Post (all)	19	\$433,307	\$278,464	-\$154,843	-\$8,150	-\$2,141
Pre vs. 1 Year Post	18	\$419,513	\$246,003	-\$173,510	-\$9,639	-\$2,943
Pre vs. 2 Years Post			\$398,342	-\$21,171	-\$1,176	-\$6,215
1 vs. 2 Years Post				\$152,339	\$8,463	-\$2,915
<b>HCR: Other</b>						
Access to Home Program						
Pre vs. 1 Year Post (all)	21	\$882,973	\$785,744	-\$97,229	-\$4,630	\$442

Changes in spending for pre-period high spenders were examined for sufficiently large programs (e.g., programs with at least 100 clients with data for at least one post-period year available). Table 7A shows that for those participants who were in the top 10 percent of spenders pre-intervention, statistically significant decreases in costs occurred following enrollment in supportive housing in almost all programs. Specifically, on average, major cost decreases were seen for high-end participants in the AIDS Institute: Services Only, East 99th Street, NHIL (transition only), OASAS, Health Homes Supportive Housing Pilot, Senior Supportive Housing Pilot, Rental Subsidies: Brooklyn, Rental Subsidies: Statewide, and Eviction Prevention for Vulnerable Adults programs. The AIDS Institute: Services and Subsidies program showed a marginally significant cost decrease ( $p=0.053$ ). In fact, the only program of sufficient size that did not show a significant cost change from the pre-period to the first post-period year was the Homeless Senior and Disabled Placement Pilot project. This program may be more cost-neutral: there are some shifts in service category costs, though not a significant overall cost change.





**Table 7A. Mean and Median Savings in Post-Enrollment Year 1 among the Top 10% Pre-Period Spenders, by Program.**

Program	N	Y0-Y1 mean difference	Y0-Y1 median difference	Sign Test <sup>18</sup>
AIDS Institute: Subsidies & Services	15	-\$30,931	-\$27,978	†
AIDS Institute: Services Only	62	-\$63,659	-\$67,877	***
East 99th Street	15	-\$66,223	-\$71,245	***
Eviction Prevention for Vulnerable Adults	21	-\$29,980	-\$23,626	*
Homeless Senior and Disabled Placement Pilot	19	-\$13,320	-\$3,063	n.s.
Rental Subsidies: Brooklyn	33	-\$44,748	-\$41,037	***
Rental Subsidies: Statewide	46	-\$41,070	-\$44,732	***
OASAS Rental Subsidies & Supports	44	-\$73,105	-\$69,316	***
Health Homes Supportive Housing Pilot	31	-\$62,107	-\$51,049	**
Senior Supportive Housing Pilot	37	-\$18,190	-\$18,197	**

Similarly, post-period year 2 changes in spending for pre-period high spenders was examined for programs with at least 100 clients who had data for at least two post-period years available. Table 7B shows that for those participants who were in the top 10 percent of spenders pre-intervention, statistically significant decreases in costs occur following enrollment in supportive housing in almost all programs. Specifically, on average, major cost decreases are seen for high-end participants in the AIDS Institute: Services Only, East 99th Street, Eviction Prevention for Vulnerable Adults, Rental Subsidies: Brooklyn, Rental Subsidies: Statewide, OASAS, Health Homes Supportive Housing Pilot, and Senior Supportive Housing Pilot programs. Only the AIDS Institute: Subsidies & Services and Homeless Senior and Disabled Placement Pilot did not show significant cost decreases, though the AIDS Institute program trended towards one.

**Table 7B. Mean and Median Savings in Post-Enrollment Year 2 among the Top 10% Pre-Period Spenders, by Program.**

Program	N	Y0-Y2 mean difference	Y0-Y2 median difference	Sign Test <sup>19</sup>
AIDS Institute: Subsidies & Services	15	-\$30,931	-\$27,978	†
AIDS Institute: Services Only	62	-\$63,659	-\$67,877	***
East 99th Street	15	-\$66,223	-\$71,245	***
Eviction Prevention for Vulnerable Adults	21	-\$29,980	-\$23,626	*
Homeless Senior and Disabled Placement Pilot	19	-\$13,320	-\$3,063	n.s.
Rental Subsidies: Brooklyn	33	-\$44,748	-\$41,037	***
Rental Subsidies: Statewide	46	-\$41,070	-\$44,732	***
OASAS Rental Subsidies & Supports	44	-\$73,105	-\$69,316	***
Health Homes Supportive Housing Pilot	31	-\$62,107	-\$51,049	**
Senior Supportive Housing Pilot	37	-\$18,190	-\$18,197	**

The service classification cost table (Table 8) shows that there are statistically significant overall Medicaid cost savings across programs for almost all categories of service for the pre-period versus the first and second years post enrollment,

18 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "†" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

19 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "†" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

and for the first versus the second post-enrollment year. Clinic, DME, emergency department, hospital inpatient, hospital outpatient, lab, nursing home, other, and physician service costs all decreased from the pre-period to the first and second post-period years. Many categories then showed additional decreases from the first to the second post-period year, indicating continued spending decreases in the longer term.

**Table 8. Summary Pre-Post Cost Table for Service Classifications.**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>20</sup>
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	3,649	\$8,844,175	\$7,619,636	-\$1,224,539	-\$335	\$0	***
Pre vs. 1 Year Post	2,478	\$6,246,061	\$5,428,772	-\$817,290	-\$330	\$0	***
Pre vs. 2 Years Post			\$5,158,443	-\$1,087,618	-\$439	\$0	***
1 vs. 2 Years Post				-\$270,328	-\$109	\$0	***
<b>DME</b>							
Pre vs. 1 Year Post (all)	3,649	\$564,656	\$491,931	-\$72,726	-\$20	\$0	***
Pre vs. 1 Year Post	2,478	\$416,253	\$413,538	-\$2,715	-\$1	\$0	**
Pre vs. 2 Years Post			\$172,828	-\$243,425	-\$98	\$0	***
1 vs. 2 Years Post				-\$240,710	-\$97	\$0	***
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	3,649	\$1,889,768	\$1,316,378	-\$573,390	-\$157	\$0	***
Pre vs. 1 Year Post	2,478	\$1,315,687	\$948,659	-\$367,028	-\$148	\$0	***
Pre vs. 2 Years Post			\$829,570	-\$486,117	-\$196	\$0	***
1 vs. 2 Years Post				-\$119,089	-\$48	\$0	***
<b>Health Home/Care Management</b>							
Pre vs. 1 Year Post (all)	3,649	\$6,741,210	\$8,254,910	\$1,513,699	\$415	\$0	***
Pre vs. 1 Year Post	2,478	\$4,862,578	\$6,172,491	\$1,309,913	\$529	\$46	***
Pre vs. 2 Years Post			\$5,762,867	\$900,289	\$363	\$26	***
1 vs. 2 Years Post				-\$409,624	-\$165	\$0	***
<b>Hospital Inpatient</b>							
Pre vs. 1 Year Post (all)	3,649	\$33,842,754	\$26,021,801	-\$7,820,952	-\$2,143	\$0	***
Pre vs. 1 Year Post	2,478	\$22,423,547	\$16,910,626	-\$5,512,921	-\$2,225	\$0	***
Pre vs. 2 Years Post			\$17,730,892	-\$4,692,655	-\$1,894	\$0	***
1 vs. 2 Years Post				\$820,266	\$331	\$0	n.s.
<b>Hospital Outpatient</b>							
Pre vs. 1 Year Post (all)	3,649	\$9,155,675	\$8,145,732	-\$1,009,943	-\$277	\$0	***
Pre vs. 1 Year Post	2,478	\$6,541,853	\$5,780,717	-\$761,136	-\$307	\$0	***
Pre vs. 2 Years Post			\$5,259,607	-\$1,282,246	-\$517	\$0	***
1 vs. 2 Years Post				-\$521,110	-\$210	\$0	***
<b>Lab</b>							
Pre vs. 1 Year Post (all)	3,649	\$954,481	\$740,492	-\$213,990	-\$59	\$0	***
Pre vs. 1 Year Post	2,478	\$794,030	\$610,410	-\$183,621	-\$74	\$0	***
Pre vs. 2 Years Post			\$297,440	-\$496,591	-\$200	\$0	***
1 vs. 2 Years Post				-\$312,970	-\$126	\$0	***

20 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "t" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Non-Institutional LTC							
Pre vs. 1 Year Post (all)	3,649	\$6,976,606	\$8,842,894	\$1,866,289	\$511	\$0	***
Pre vs. 1 Year Post	2,478	\$3,377,636	\$4,513,518	\$1,135,883	\$458	\$0	***
Pre vs. 2 Years Post			\$5,536,531	\$2,158,895	\$871	\$0	***
1 vs. 2 Years Post				\$1,023,012	\$413	\$0	*
Nursing Home							
Pre vs. 1 Year Post (all)	3,649	\$10,618,418	\$4,870,117	-\$5,748,301	-\$1,575	\$0	***
Pre vs. 1 Year Post	2,478	\$7,576,797	\$2,947,315	-\$4,629,482	-\$1,868	\$0	***
Pre vs. 2 Years Post			\$2,694,751	-\$4,882,046	-\$1,970	\$0	***
1 vs. 2 Years Post				-\$252,564	-\$102	\$0	**
Other							
Pre vs. 1 Year Post (all)	3,649	\$17,794,615	\$9,413,422	-\$8,381,194	-\$2,297	-\$4	***
Pre vs. 1 Year Post	2,478	\$13,486,913	\$6,715,009	-\$6,771,904	-\$2,733	-\$26	***
Pre vs. 2 Years Post			\$7,228,226	-\$6,258,687	-\$2,526	-\$76	***
1 vs. 2 Years Post				\$513,217	\$207	\$0	***
Pharmacy							
Pre vs. 1 Year Post (all)	3,649	\$28,697,100	\$31,760,281	\$3,063,181	\$839	\$0	**
Pre vs. 1 Year Post	2,478	\$20,834,244	\$23,336,787	\$2,502,543	\$1,010	\$0	**
Pre vs. 2 Years Post			\$25,432,133	\$4,597,889	\$1,855	\$0	***
1 vs. 2 Years Post				\$2,095,346	\$846	\$0	n.s.
Physician Services							
Pre vs. 1 Year Post (all)	3,649	\$7,037,080	\$5,094,326	-\$1,942,755	-\$532	-\$85	***
Pre vs. 1 Year Post	2,478	\$5,282,395	\$4,173,052	-\$1,109,343	-\$447	-\$85	***
Pre vs. 2 Years Post			\$2,549,370	-\$2,733,025	-\$1,103	-\$321	***
1 vs. 2 Years Post				-\$1,623,682	-\$655	-\$105	***
Transportation Services							
Pre vs. 1 Year Post (all)	3,649	\$2,993,408	\$3,382,751	\$389,343	\$107	\$0	n.s.
Pre vs. 1 Year Post	2,478	\$1,816,189	\$2,086,923	\$270,734	\$109	\$0	n.s.
Pre vs. 2 Years Post			\$2,279,663	\$463,473	\$187	\$0	*
1 vs. 2 Years Post				\$192,740	\$78	\$0	*

Health Home/Care Management, Non-Institutional Long-Term Care (NILTC), Pharmacy, and Transportation services were the only categories to show significant spending increases from the pre-period to the post-periods. Health Home/Care Management spending showed a significant increase from the pre-period to the first and second years post-enrollment, and indeed, program-level analyses demonstrate significant cost increases in nine of the 16 programs analyzed (with significant savings in only HSDPP). Health Homes enrollment also increased by 5% across all eligible clients in this period. As such, this increase may reflect an increased number of clients using these services, or simply changes in programmatic billing over the analysis period.

Non-institutional long-term care costs showed a significant increase in the post-period; program-level analyses found a significant NILTC increase for eight programs. This change may reflect that while institutional care decreased, non-institutional long-term care was still needed, particularly as these programs tended to focus on serving elderly or disabled clients (East 99th Street, Eviction Prevention for Vulnerable Adults, Homeless Senior & Disabled Placement Pilot, Senior Supportive Housing Program, Homeless Senior & Disabled Placement Pilot, OPWDD), or had an especially high rate of clients with other chronic conditions (Boston Road, OASAS, Health Homes Supportive Housing Program). And while the Nursing Home to Independent Living (transition clients) Program did not show a significant increase in NILTC spending, it did show a non-significant increase for only 33 clients.

Pharmacy costs significantly increased from the pre-period, demonstrating possible increased medication adherence, pharmaceutical price increases, or additional prescriptions per individual after MRT-SH enrollment across programs. Program-level analyses demonstrate that this shift may be driven by the AIDS Institute programs, which show significant pharmacy cost increases.

Finally, transportation service costs increased in the second post-period year, indicating a delayed rise after enrollment. Two programs (OASAS, OPWDD) demonstrated significant transportation cost savings, and three (AIDS Institute: Services & Subsidies, Norwood Terrace, EPVA) significant cost increases, in the first post-enrollment year.



# AIDS Institute: Supportive Services.

- **Program Description:** This program provides housing retention services to individuals living with HIV/AIDS in New York City; the majority of these participants were receiving a rental subsidy via other funding sources.
- **Population Served:** HIV-positive adults.
- **Program Start Date:** July 2012
- **Enrollment:** 624 included in analysis; 529 had data from two years post-enrollment available.
- **Comorbidities:** In addition to HIV-positive diagnoses, large percentages of enrollees have a serious mental illness (SMI), substance use disorder (SUD), or another major chronic condition; almost half of enrollees have 3 or more chronic illnesses (Table 9A).
- **Duration in MRT-SH:** Almost one-third of the participants were enrolled for less than six months, and one-third between six and twelve months. A small group of participants had been enrolled more than 24 months (Table 9B).
- **Care Coordination:** The distribution of types of care coordination remained essentially the same for the pre- and post-periods. There was some decrease in Health Homes enrollment in the second post-enrollment period for the clients who have two years of post-enrollment data available (Table 9C).

**SUMMARY.** The AIDS Institute “Services Only” program showed a significant decrease in annual costs in the first post-enrollment year. Specifically, several service categories showed significant decreases: emergency department, hospital inpatient, hospital outpatient, laboratory, and physician service costs all decreased in the first and second post-period years, as compared to the pre-period. Additionally, within “other” costs, inpatient GME costs showed the greatest decrease (likely related to the overall inpatient cost decrease). Pharmacy costs, though, rose in the post-period; DME costs showed a small rise in the second post-period year. A graphical depiction of the cost categories follows. Overall, this program appears to be guiding consumers away from costlier venues of care and improving medication and medical equipment usage.

*Table 9A. Comorbidity Distribution for Enrollees Analyzed.*

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	302	48%	254	48%
Substance Use Disorder	316	51%	267	50%
Other Chronic Condition	286	46%	242	46%
HIV	624	100%	529	100%
3 or more of the above	301	48%	253	48%
All 4 of the above	92	15%	79	15%



**Table 9B. Enrollment Duration for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	183	29%	147	28%
Between 6 and 12 months	197	32%	155	29%
Between 13 and 18 months	99	16%	87	16%
Between 19 and 24 months	54	9%	50	9%
More than 24 months	91	15%	90	17%
All 4 of the above	92	15%	79	15%

**Table 9C. Care Coordination for Enrollees Analyzed.**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	77%	80%	81%
Health Homes Enrollment	76%	77%	68%
Dual Eligibility	19%	17%	15%

**Table 9D. Pre-Post Medicaid Costs for Residents of AIDS Institute: Services Only, by Category of Service.<sup>21</sup>**

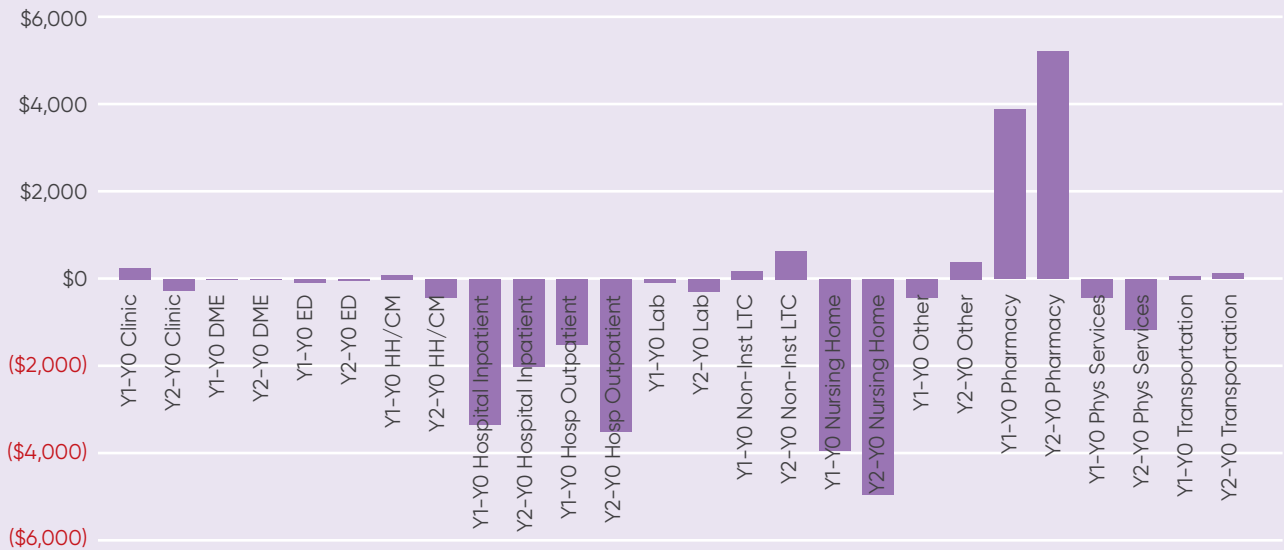
Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>22</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	624	\$40,721,654	\$37,997,388	-\$2,724,267	-\$4,366	-\$1,472	*
Pre vs. 1 Year Post	529	\$33,914,635	\$31,897,410	-\$2,017,224	-\$3,813	-\$1,228	n.s.
Pre vs. 2 Years Post			\$32,498,033	-\$1,416,601	-\$2,678	-\$1,386	n.s.
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	624	\$2,457,868	\$2,545,214	\$87,346	\$140	\$0	n.s.
Pre vs. 1 Year Post	529	\$2,039,590	\$2,173,837	\$134,247	\$254	\$0	n.s.
Pre vs. 2 Years Post			\$1,907,478	-\$132,112	-\$250	\$0	n.s.
<b>DME</b>							
Pre vs. 1 Year Post (all)	624	\$59,592	\$53,621	-\$5,971	-\$10	\$0	n.s.
Pre vs. 1 Year Post	529	\$54,479	\$50,236	-\$4,243	-\$8	\$0	n.s.
Pre vs. 2 Years Post			\$56,874	\$2,395	\$5	\$0	*
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	624	\$235,998	\$185,400	-\$50,597	-\$81	\$0	***
Pre vs. 1 Year Post	529	\$208,433	\$163,296	-\$45,137	-\$85	\$0	***
Pre vs. 2 Years Post			\$185,780	-\$22,653	-\$43	\$0	***
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	624	\$2,101,720	\$2,150,373	\$48,653	\$78	\$0	n.s.
Pre vs. 1 Year Post	529	\$1,850,113	\$1,902,910	\$52,797	\$100	\$0	n.s.
Pre vs. 2 Years Post			\$1,631,290	-\$218,823	-\$414	\$0	***

21 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

22 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Hospital Inpatient							
Pre vs. 1 Year Post (all)	624	\$7,978,785	\$5,917,404	-\$2,061,382	-\$3,303	\$0	**
Pre vs. 1 Year Post	529	\$6,582,202	\$4,857,089	-\$1,725,114	-\$3,261	\$0	**
Pre vs. 2 Years Post			\$5,545,464	-\$1,036,738	-\$1,960	\$0	**
Hospital Outpatient							
Pre vs. 1 Year Post (all)	624	\$1,602,887	\$1,581,401	-\$21,486	-\$34	-\$5	*
Pre vs. 1 Year Post	529	\$1,447,114	\$1,369,529	-\$77,584	-\$147	-\$15	*
Pre vs. 2 Years Post			\$1,428,694	-\$18,420	-\$35	-\$46	**
Lab							
Pre vs. 1 Year Post (all)	624	\$389,614	\$329,366	-\$60,248	-\$97	\$0	**
Pre vs. 1 Year Post	529	\$344,350	\$301,279	-\$43,072	-\$81	\$0	*
Pre vs. 2 Years Post			\$191,522	-\$152,829	-\$289	\$0	***
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	624	\$1,066,118	\$1,041,497	-\$24,621	-\$39	\$0	n.s.
Pre vs. 1 Year Post	529	\$834,661	\$936,407	\$101,746	\$192	\$0	n.s.
Pre vs. 2 Years Post			\$1,171,539	\$336,878	\$637	\$0	n.s.
Nursing Home							
Pre vs. 1 Year Post (all)	624	\$5,408,828	\$3,389,361	-\$2,019,467	-\$3,236	\$0	***
Pre vs. 1 Year Post	529	\$4,248,810	\$2,215,375	-\$2,033,435	-\$3,844	\$0	***
Pre vs. 2 Years Post			\$1,686,440	-\$2,562,371	-\$4,844	\$0	***
Other							
Pre vs. 1 Year Post (all)	624	\$1,946,818	\$1,654,564	-\$292,254	-\$468	\$0	**
Pre vs. 1 Year Post	529	\$1,606,633	\$1,392,066	-\$214,567	-\$406	\$0	**
Pre vs. 2 Years Post			\$1,812,765	\$206,132	\$390	-\$29	*
Pharmacy							
Pre vs. 1 Year Post (all)	624	\$15,551,842	\$17,416,489	\$1,864,646	\$2,988	\$116	***
Pre vs. 1 Year Post	529	\$13,062,349	\$15,078,557	\$2,016,207	\$3,811	\$445	***
Pre vs. 2 Years Post			\$15,771,744	\$2,709,394	\$5,122	\$1,294	***
Physician Services							
Pre vs. 1 Year Post (all)	624	\$1,586,833	\$1,328,413	-\$258,421	-\$414	-\$95	***
Pre vs. 1 Year Post	529	\$1,353,968	\$1,135,820	-\$218,149	-\$412	-\$86	**
Pre vs. 2 Years Post			\$759,041	-\$594,927	-\$1,125	-\$295	***
Transportation Services							
Pre vs. 1 Year Post (all)	624	\$334,346	\$404,285	\$69,939	\$112	\$0	n.s.
Pre vs. 1 Year Post	529	\$281,526	\$321,010	\$39,484	\$75	\$0	n.s.
Pre vs. 2 Years Post			\$349,404	\$67,877	\$128	\$0	n.s.

**Figure 1. Mean Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 9E. Percentile Breakdowns of Cost Savings (Post-period minus pre-period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=624)	Post-Period Year 2 minus Pre-Period (N=529)
5th Percentile	-\$84,925	-\$93,400
10th Percentile	-\$43,982	-\$49,394
25th Percentile	-\$15,537	-\$15,727
50th Percentile	-\$1,472	-\$1,386
75th Percentile	\$11,094	\$13,549
90th Percentile	\$32,830	\$35,066
95th Percentile	\$57,507	\$76,313

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$1,472. The median cost savings in the second post-enrollment year for clients who have two years of post-enrollment data available in this program is \$1,386.

**CONCLUSIONS.** Overall, the AIDS Institute: Services Only program appears to be reducing costs and is successfully steering participants away from costly and frequently used venues – in particular, hospital (both inpatient and outpatient), emergency department, and nursing home settings. While the overall program savings were only significant for the full group, the subgroup of clients with two post-period years demonstrated significant savings in the same categories as the main cohort. Health Homes/Care Management claims also decreased in the second post-enrollment year, for clients with such data available; this decrease may reflect the decrease in Health Homes enrollment in this period. Pharmacy costs showed a significant increase in the post-period; future reports may examine whether this rise is due to improved medication adherence, or changes in medications, drug costs, or stages of disease.



# AIDS Institute: Rental Subsidies and Service Supports.

- **Program Description:** This program provides rental subsidies and housing retention services to individuals living with HIV/AIDS outside of New York City.
- **Population Served:** HIV-positive adults, often referred to by Health Homes
- **Program Start Date:** October 2012
- **Enrollment:** 149 included in analysis; 84 had data from two years post-enrollment available.
- **Comorbidities:** In addition to HIV-positive diagnoses, large percentages of enrollees have a serious mental illness (SMI), substance use disorder (SUD), or another chronic condition; almost half of enrollees have 3 or more chronic illnesses (Table 10A).
- **Duration in MRT-SH:** Most enrollees have been in the programs for 12 or more months (Table 10B).
- **Care Coordination:** Care coordination enrollment remained consistent between the pre- and post-periods for all categories, with Medicaid Managed Care and Health Homes enrollment remaining high (Table 10C).

**SUMMARY.** The AIDS Institute: Services and Subsidies program showed a marginal increase ( $p=0.057$ ) in annual costs in the second post-enrollment year, as compared to the pre-period. Pharmacy and transportation costs both showed significant increases in the post period years examined. In contrast, lab costs ( $p=0.059$ ) decreased in both post-period years, and physician service costs decreased in the second post-period year. Most of these changes are, on average, relatively small when considered per person; however, pharmacy spending increased by about \$6,000 per client in the second post-period year, indicating a larger change in medication usage or pricing. As such, pharmacy costs drive the cost increase seen in the second post-period year.

**Table 10A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	81	54%	45	54%
Substance Use Disorder	57	38%	35	42%
Other Chronic Condition	75	50%	39	46%
HIV	149	100%	84	100%
3 or more of the above	70	47%	38	45%
All 4 of the above	18	12%	13	15%

**Table 10B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	26	17%	16	19%
Between 6 and 12 months	24	16%	13	15%
Between 13 and 18 months	44	30%	8	10%
Between 19 and 24 months	9	6%	6	7%
More than 24 months	46	31%	41	49%

**Table 10C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	80%	78%	73%
Health Homes Enrollment	86%	87%	88%
Dual Eligibility	21%	23%	25%

**Table 10D. Pre-Post Medicaid Costs for Residents of AIDS Institute: Subsidies and Services, by Category of Service.<sup>23</sup>**

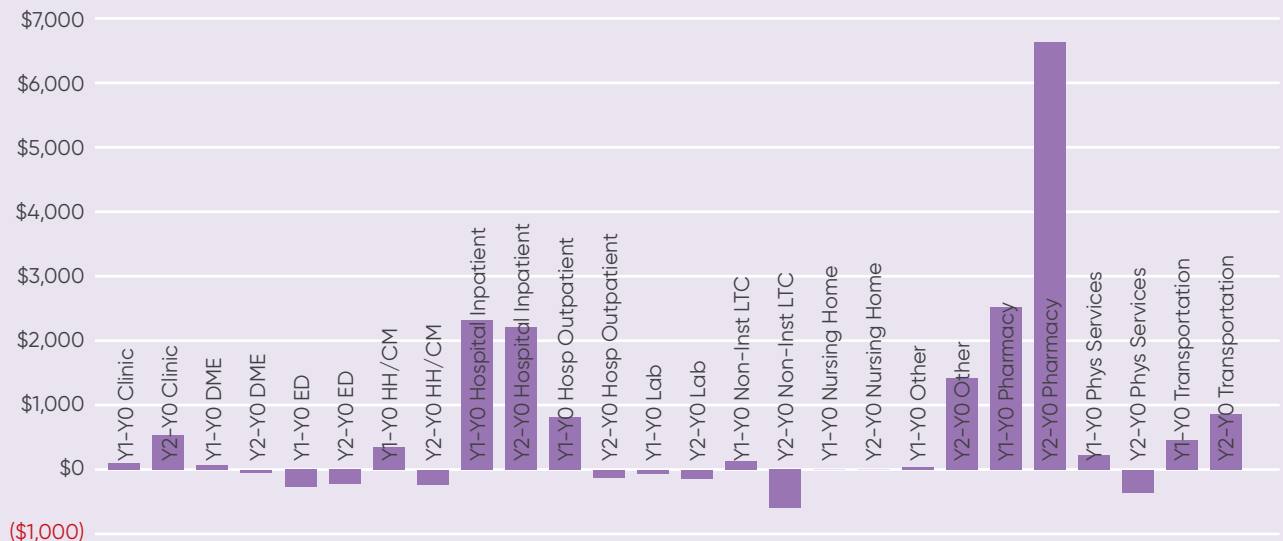
Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>24</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	149	\$5,709,066	\$6,554,134	\$845,068	\$5,672	\$119	n.s.
Pre vs. 1 Year Post	84	\$2,876,936	\$3,401,286	\$524,351	\$6,242	\$419	n.s.
Pre vs. 2 Years Post			\$3,714,066	\$837,130	\$9,966	\$3,591	†
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	149	\$157,498	\$190,210	\$32,712	\$220	\$0	n.s.
Pre vs. 1 Year Post	84	\$77,753	\$86,686	\$8,934	\$106	\$0	n.s.
Pre vs. 2 Years Post			\$122,604	\$44,851	\$534	\$0	n.s.
<b>DME</b>							
Pre vs. 1 Year Post (all)	149	\$19,079	\$28,777	\$9,698	\$65	\$0	n.s.
Pre vs. 1 Year Post	84	\$4,582	\$10,917	\$6,335	\$75	\$0	n.s.
Pre vs. 2 Years Post			\$1,313	-\$3,269	-\$39	\$0	n.s.
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	149	\$91,912	\$65,783	-\$26,129	-\$175	\$0	n.s.
Pre vs. 1 Year Post	84	\$56,854	\$34,548	-\$22,306	-\$266	\$0	n.s.
Pre vs. 2 Years Post			\$38,247	-\$18,607	-\$222	\$0	n.s.
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	149	\$524,705	\$531,486	\$6,781	\$46	\$0	n.s.
Pre vs. 1 Year Post	84	\$309,475	\$338,640	\$29,165	\$347	\$0	†
Pre vs. 2 Years Post			\$290,195	-\$19,280	-\$230	\$0	n.s.
<b>Hospital Inpatient</b>							
Pre vs. 1 Year Post (all)	149	\$1,055,870	\$1,468,385	\$412,515	\$2,769	\$0	n.s.
Pre vs. 1 Year Post	84	\$428,204	\$623,497	\$195,292	\$2,325	\$0	n.s.
Pre vs. 2 Years Post			\$613,590	\$185,386	\$2,207	\$0	n.s.
<b>Hospital Outpatient</b>							
Pre vs. 1 Year Post (all)	149	\$359,423	\$434,589	\$75,167	\$504	\$0	n.s.
Pre vs. 1 Year Post	84	\$203,236	\$272,289	\$69,053	\$822	\$34	n.s.
Pre vs. 2 Years Post			\$192,808	-\$10,428	-\$124	\$72	n.s.

23 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

24 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "†" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Lab							
Pre vs. 1 Year Post (all)	149	\$20,933	\$13,996	-\$6,937	-\$47	\$0	†
Pre vs. 1 Year Post	84	\$15,965	\$10,908	-\$5,056	-\$60	\$0	†
Pre vs. 2 Years Post			\$4,467	-\$11,498	-\$137	\$0	***
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	149	\$81,807	\$100,645	\$18,838	\$126	\$0	n.s.
Pre vs. 1 Year Post	84	\$81,807	\$100,645	\$18,838	\$126	\$0	n.s.
Pre vs. 2 Years Post			\$8,062	-\$49,582	-\$590	\$0	n.s.
Nursing Home							
Pre vs. 1 Year Post (all)	149	\$0	\$7,074	\$7,074	\$47	\$0	n.s.
Pre vs. 1 Year Post	84	\$0	\$0	\$0	\$0	\$0	n.s.
Pre vs. 2 Years Post			\$0	\$0	\$0	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	149	\$169,834	\$296,692	\$126,858	\$851	\$0	n.s.
Pre vs. 1 Year Post	84	\$97,350	\$101,228	\$3,878	\$46	\$0	n.s.
Pre vs. 2 Years Post			\$216,080	\$118,729	\$1,413	-\$35	n.s.
Pharmacy							
Pre vs. 1 Year Post (all)	149	\$2,922,734	\$3,012,255	\$89,522	\$601	\$0	n.s.
Pre vs. 1 Year Post	84	\$1,457,101	\$1,668,699	\$211,598	\$2,519	\$7	†
Pre vs. 2 Years Post			\$2,014,638	\$557,537	\$6,637	\$1,100	*
Physician Services							
Pre vs. 1 Year Post (all)	149	\$172,143	\$191,783	\$19,640	\$132	-\$10	n.s.
Pre vs. 1 Year Post	84	\$110,191	\$128,612	\$18,420	\$219	-\$105	n.s.
Pre vs. 2 Years Post			\$80,536	-\$29,655	-\$353	-\$262	*
Transportation Services							
Pre vs. 1 Year Post (all)	149	\$133,129	\$212,458	\$79,328	\$532	\$102	***
Pre vs. 1 Year Post	84	\$58,582	\$96,819	\$38,237	\$455	\$58	**
Pre vs. 2 Years Post		\$58,582	\$131,527	\$72,945	\$868	\$76	**

Figure 2. Mean Savings by Category of Service, First and Second Post-Periods minus Pre-Period.



**Table 10E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=149)	Post-Period Year 2 minus Pre-Period (N=84)
5th Percentile	-\$33,385	-\$40,106
10th Percentile	-\$20,856	-\$33,408
25th Percentile	-\$8,483	-\$8,421
50th Percentile	\$119	\$3,591
75th Percentile	\$12,424	\$17,630
90th Percentile	\$41,852	\$61,593
95th Percentile	\$83,430	\$96,502

The pre-post change is highly variable between participants. The median cost increase in the first post-enrollment year for the enrollees in this program is \$119. The median cost increase in the second post-enrollment year for clients who have two years of post-enrollment data available in this program is \$3,591. Spending for those in the 95th percentile outweighs savings for those in the 5th percentile.

**CONCLUSIONS.** The AIDS Institute: Services and Subsidies programs did not demonstrate significant overall cost reductions; in fact, the cohort of clients with two post-period years demonstrated a marginally significant rise in spending in the second post-enrollment year. These later cost increases may be primarily driven by increased pharmacy spending; future reports may examine whether this rise is due to improved medication adherence, or changes in medications, drug prices, or stages of disease.



# AIDS Institute: Pilot program.

- Program Description:** The pilot offered rental assistance to homeless and unstably housed Health Home-eligible individuals in New York City who were diagnosed with HIV but medically ineligible for the existing HIV-specific enhanced rental assistance program for New Yorkers with AIDS or advanced HIV illness. The pilot was phased out after the 2016 expansion of New York City’s enhanced rental assistance program to all individuals with HIV infection.
- Population Served:** HIV-positive adults.
- Program Start Date:** December 2014
- Enrollment:** 17 included in analysis; 11 had data from two years post-enrollment available. Given this small group, inferential statistics were not performed.
- Comorbidities:** In addition to HIV-positive diagnoses, large percentages of enrollees have a serious mental illness (SMI), substance use disorder (SUD), or another chronic condition; almost half of enrollees have 3 or more chronic illnesses (Table 11A).
- Duration in MRT-SH:** About one-quarter of participants had been enrolled for less than six months, and one-quarter between six and twelve months. About half of the participants had been enrolled between 13 and 18 months (Table 11B).
- Care Coordination:** Almost all clients were enrolled in Medicaid Managed Care and Health Homes in both the pre- and post-periods. No clients had dual eligibility (Table 11C).

**SUMMARY.** The AIDS Institute Pilot program costs appear to increase slightly from the pre- to the post-periods examined, though the population is too small to perform significance testing. A few categories showed especially large increases, such as pharmacy costs. However, clinic, lab, other, physician service, and transportation costs appear to decrease in the post periods. Most of these changes are, on average, relatively small when considered per person; however, pharmacy spending increased by about \$10,000 per client in the second post-period year, indicating a sudden price increase or change in medication usage, though further input from the program is needed to determine the cause of this increase. This difference is similar to the overall cost increase across the whole program. As such, increased medication spending drives the cost increase seen in the second post-period year.

**Table 11A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	9	53%	8	73%
Substance Use Disorder	7	41%	5	45%
Other Chronic Condition	7	41%	6	55%
HIV	17	100%	11	100%
3 or more of the above	7	41%	6	55%
All 4 of the above	2	12%	2	18%

**Table 11B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	4	24%	1	9%
Between 6 and 12 months	4	24%	1	9%
Between 13 and 18 months	9	53%	9	82%
Between 19 and 24 months	0	0%	0	0%
More than 24 months	0	0%	0	0%

**Table 11C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	89%	100%	100%
Health Homes Enrollment	100%	95%	100%
Dual Eligibility	0%	0%	0%

**Table 11D. Pre-Post Medicaid Costs for AIDS Institute: Pilot project, by Category of Service.<sup>25</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference
<b>Overall</b>						
Pre vs. 1 Year Post (all)	17	\$629,003	\$653,182	\$24,178	\$1,422	\$4,765
Pre vs. 1 Year Post	11	\$407,147	\$456,632	\$49,485	\$4,499	\$6,290
Pre vs. 2 Years Post			\$509,619	\$102,471	\$9,316	\$8,817
<b>Clinic</b>						
Pre vs. 1 Year Post (all)	17	\$37,400	\$31,368	-\$6,032	-\$355	-\$336
Pre vs. 1 Year Post	11	\$25,460	\$24,968	-\$492	-\$45	-\$404
Pre vs. 2 Years Post			\$31,474	\$6,015	\$547	\$0
<b>DME</b>						
Pre vs. 1 Year Post (all)	17	\$100	\$210	\$110	\$6	\$0
Pre vs. 1 Year Post	11	\$100	\$210	\$110	\$10	\$0
Pre vs. 2 Years Post			\$0	-\$100	-\$9	\$0
<b>Emergency Department</b>						
Pre vs. 1 Year Post (all)	17	\$5,608	\$8,202	\$2,594	\$153	\$0
Pre vs. 1 Year Post	11	\$5,608	\$7,902	\$2,295	\$209	\$0
Pre vs. 2 Years Post			\$4,879	-\$729	-\$66	\$0
<b>Health Home/Care Mgmt</b>						
Pre vs. 1 Year Post (all)	17	\$53,596	\$72,772	\$19,176	\$1,128	\$1,143
Pre vs. 1 Year Post	11	\$28,196	\$53,088	\$24,892	\$2,263	\$2,260
Pre vs. 2 Years Post			\$40,331	\$12,135	\$1,103	\$952
<b>Hospital Inpatient</b>						
Pre vs. 1 Year Post (all)	17	\$35,273	\$17,705	-\$17,568	-\$1,033	\$0
Pre vs. 1 Year Post	11	\$10,866	\$17,705	\$6,839	\$622	\$0
Pre vs. 2 Years Post			\$33,322	\$22,456	\$2,041	\$0
<b>Hospital Outpatient</b>						
Pre vs. 1 Year Post (all)	17	\$31,290	\$21,812	-\$9,479	-\$558	-\$37
Pre vs. 1 Year Post	11	\$26,105	\$14,293	-\$11,813	-\$1,074	-\$37
Pre vs. 2 Years Post			\$19,598	-\$6,507	-\$592	-\$515
<b>Lab</b>						
Pre vs. 1 Year Post (all)	17	\$19,472	\$3,594	-\$15,878	-\$934	\$0
Pre vs. 1 Year Post	11	\$17,820	\$2,983	-\$14,837	-\$1,349	\$0
Pre vs. 2 Years Post			\$171	-\$17,649	-\$1,604	-\$150

<sup>25</sup> The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

Non-Institutional LTC						
Pre vs. 1 Year Post (all)	17	\$397	\$371	-\$26	-\$2	\$0
Pre vs. 1 Year Post	11	\$397	\$371	-\$26	-\$2	\$0
Pre vs. 2 Years Post			\$0	-\$397	-\$36	\$0
Nursing Home						
Pre vs. 1 Year Post (all)	17	\$0	\$0	\$0	\$0	\$0
Pre vs. 1 Year Post	11	\$0	\$0	\$0	\$0	\$0
Pre vs. 2 Years Post		\$0	\$0	\$0	\$0	\$0
Other						
Pre vs. 1 Year Post (all)	17	\$35,369	\$31,011	-\$4,357	-\$256	-\$117
Pre vs. 1 Year Post	11	\$22,146	\$31,011	\$8,865	\$806	-\$117
Pre vs. 2 Years Post			\$4,704	-\$17,442	-\$1,586	-\$185
Pharmacy						
Pre vs. 1 Year Post (all)	17	\$385,837	\$451,544	\$65,707	\$3,865	\$3,609
Pre vs. 1 Year Post	11	\$253,244	\$290,222	\$36,978	\$3,362	\$2,826
Pre vs. 2 Years Post			\$369,453	\$116,209	\$10,564	\$9,490
Physician Services						
Pre vs. 1 Year Post (all)	17	\$19,721	\$12,574	-\$7,147	-\$420	-\$84
Pre vs. 1 Year Post	11	\$13,485	\$12,574	-\$911	-\$83	-\$164
Pre vs. 2 Years Post			\$2,715	-\$10,771	-\$979	-\$1,054
Transportation Services						
Pre vs. 1 Year Post (all)	17	\$4,940	\$2,018	-\$2,922	-\$172	\$0
Pre vs. 1 Year Post	11	\$3,720	\$1,304	-\$2,416	-\$220	-\$200
Pre vs. 2 Years Post			\$2,972	-\$748	-\$68	\$0

**Figure 3. Mean Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 11E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=17)	Post-Period Year 2 minus Pre-Period (N=11)
5th Percentile	-\$43,155	-\$17,748
10th Percentile	-\$25,433	-\$15,177
25th Percentile	-\$5,752	-\$4,281
50th Percentile	\$4,765	\$8,817
75th Percentile	\$12,767	\$15,764
90th Percentile	\$24,347	\$35,064

The pre-post change is less variable than seen in other programs. Median costs increased in the first post-enrollment year for the enrollees in this program by \$4,765. Similarly, median costs increased in the second post-enrollment year for clients who have two years of post-enrollment data available in this program by \$8,817. However, these results should be approached carefully, given the small program size.

**CONCLUSIONS.** On descriptive examination, the AIDS Institute Pilot does not demonstrate overall cost reductions: in fact, it shows an overall cost increase. These cost increases are primarily driven by statistically significant increases in pharmacy spending. Future reports may examine whether the large increase in pharmacy spending is due to improved medication adherence, price increases, or changes in medications.





# HCR Capital Projects: East 99th Street.

- **Program Description:** East 99th Street includes 175 MRT units in Manhattan built during the 2013 decommissioning of the Goldwater Hospital on Roosevelt Island as a housing option for physically disabled adults who did not qualify for existing New York City SH programs.
- **Population Served:** This program serves elderly or disabled adults referred from the former Coler-Goldwater facility and other nursing homes and hospitals owned by New York City Health + Hospitals.
- **Earliest MRT-SH Enrollment Date:** November 2014
- **Enrollment:** 150 included in analysis; 130 had data from two years post enrollment available.
- **Comorbidities:** Enrollees are most likely to have a serious mental illness (SMI) or another chronic condition (Table 12A).
- **Duration in MRT-SH:** Almost all enrollees have been in the programs for 24 months or more (Table 12B).
- **Care Coordination:** While the distribution of dually eligible enrollees stayed the same between periods, there was a significant increase in Medicaid Managed Care enrollment in the post-period for those enrollees analyzed (Table 12C).

**SUMMARY.** For the East 99th Street program, there is a statistically significant decrease in total and average costs for the program overall in the post-period, for both one year and two years after enrollment. Nursing home costs showed a significant decrease between the pre-period and the first post-period year, as well as between the pre-period and the second post-period year, indicating that these costs decreased and stayed low in the post-periods tested; indeed, they appear to continue to have dropped between the first and second post-period years. Other service categories showed significant spending decreases between the pre-period and the second post-period year, including DME, emergency department, laboratory, physician services, and transportation. In these cases, spending did not necessarily change significantly between the pre-period and first post-period year, but decreased in the second post-period year. Non-institutional long-term care costs, though, showed significant increases in the post-period years, potentially reflecting the continued care needed outside of the nursing home setting. The remaining categories do not show statistically significant changes. A graphical depiction of the cost categories follows. These results indicate that MRT-SH may be successful in controlling costs in some of the more expensive areas of service.

**Table 12A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	63	42%	57	44%
Substance Use Disorder	9	6%	7	5%
Other Chronic Condition	78	52%	70	54%
HIV	4	3%	4	3%
3 or more of the above	4	3%	4	3%
All 4 of the above	0	0%	0	0%



**Table 12B. Enrollment Duration for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	0	0%	0	0%
Between 6 and 12 months	1	1%	1	1%
Between 13 and 18 months	9	6%	1	1%
Between 19 and 24 months	6	4%	0	0%
More than 24 months	134	89%	128	98%

**Table 12C. Care Coordination for Enrollees Analyzed.**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	59%	73%	78%
Health Homes Enrollment	25%	31%	24%
Dual Eligibility	21%	20%	25%

**Table 12D. Pre-Post Medicaid Costs for Residents of HCR: East 99th Street, by Category of Service.<sup>26</sup>**

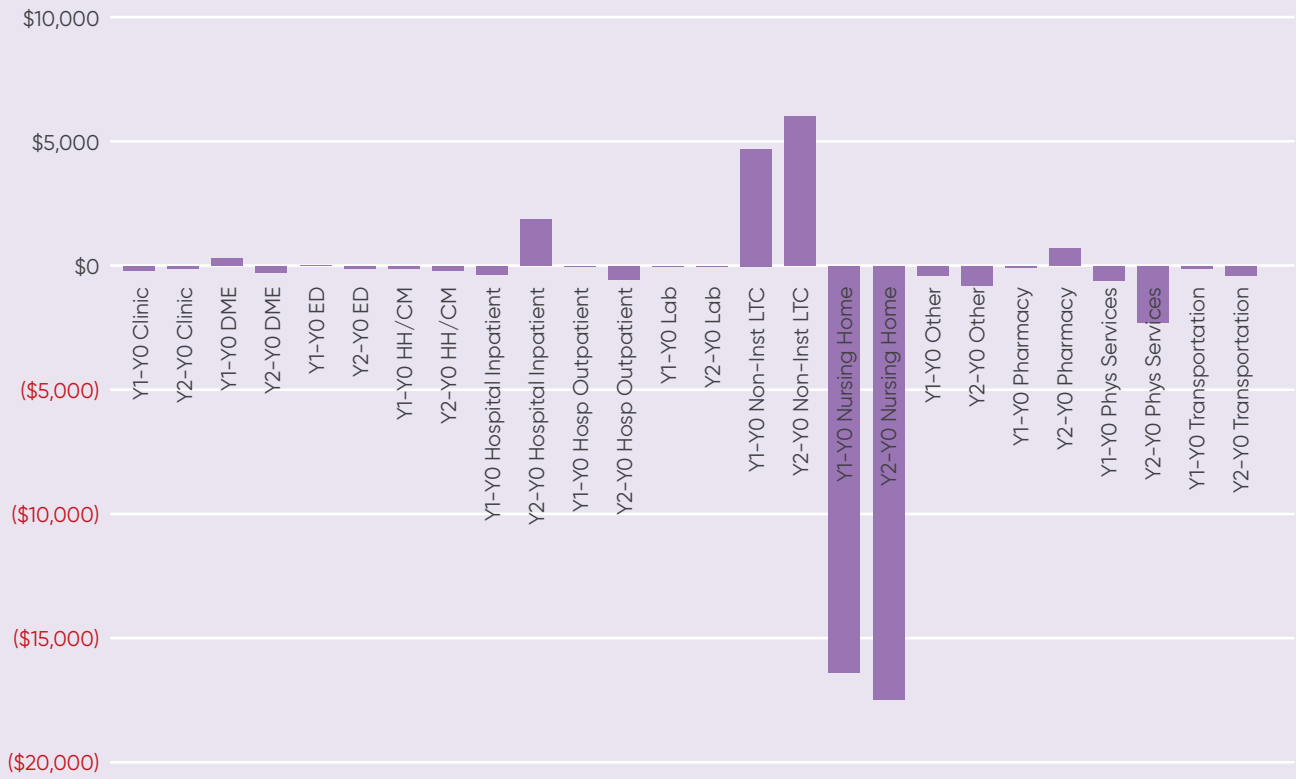
Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>27</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	150	\$5,510,430	\$3,799,558	-\$1,710,871	-\$11,406	-\$2,073	***
Pre vs. 1 Year Post	130	\$5,032,279	\$3,319,267	-\$1,713,012	-\$13,177	-\$3,339	***
Pre vs. 2 Years Post			\$3,270,942	-\$1,761,337	-\$13,549	-\$6,163	***
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	150	\$192,034	\$160,794	-\$31,241	-\$208	\$0	†
Pre vs. 1 Year Post	130	\$163,453	\$138,980	-\$24,473	-\$188	\$0	n.s.
Pre vs. 2 Years Post			\$148,832	-\$14,621	-\$112	\$0	n.s.
<b>DME</b>							
Pre vs. 1 Year Post (all)	150	\$34,276	\$76,226	\$41,949	\$280	\$0	n.s.
Pre vs. 1 Year Post	130	\$33,112	\$74,840	\$41,728	\$321	\$0	n.s.
Pre vs. 2 Years Post			\$1,176	-\$31,935	-\$246	\$0	***
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	150	\$27,853	\$29,752	\$1,899	\$13	\$0	n.s.
Pre vs. 1 Year Post	130	\$24,981	\$26,644	\$1,663	\$13	\$0	n.s.
Pre vs. 2 Years Post			\$14,014	-\$10,967	-\$84	\$0	***
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	150	\$142,256	\$130,470	-\$11,786	-\$79	\$0	*
Pre vs. 1 Year Post	130	\$134,809	\$120,963	-\$13,846	-\$107	\$0	**
Pre vs. 2 Years Post			\$108,981	-\$25,829	-\$199	\$0	**

26 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

27 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Hospital Inpatient							
Pre vs. 1 Year Post (all)	150	\$651,696	\$693,178	\$41,482	\$277	\$0	n.s.
Pre vs. 1 Year Post	130	\$622,437	\$579,714	-\$42,713	-\$329	\$0	n.s.
Pre vs. 2 Years Post			\$867,374	\$244,948	\$1,884	\$0	n.s.
Hospital Outpatient							
Pre vs. 1 Year Post (all)	150	\$318,646	\$330,256	\$11,610	\$77	\$0	n.s.
Pre vs. 1 Year Post	130	\$277,394	\$273,308	-\$4,087	-\$31	\$0	n.s.
Pre vs. 2 Years Post			\$207,088	-\$70,306	-\$541	\$0	n.s.
Lab							
Pre vs. 1 Year Post (all)	150	\$5,402	\$4,111	-\$1,290	-\$9	\$0	n.s.
Pre vs. 1 Year Post	130	\$5,366	\$4,111	-\$1,254	-\$10	\$0	n.s.
Pre vs. 2 Years Post			\$883	-\$4,483	-\$34	\$0	**
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	150	\$238,429	\$909,517	\$671,088	\$4,474	\$0	***
Pre vs. 1 Year Post	130	\$166,655	\$782,453	\$615,798	\$4,737	\$0	***
Pre vs. 2 Years Post			\$954,804	\$788,149	\$6,063	\$0	***
Nursing Home							
Pre vs. 1 Year Post (all)	150	\$2,554,579	\$218,489	-\$2,336,090	-\$15,574	\$0	***
Pre vs. 1 Year Post	130	\$2,357,722	\$218,489	-\$2,139,233	-\$16,456	\$0	***
Pre vs. 2 Years Post			\$77,965	-\$2,279,757	-\$17,537	\$0	***
Other							
Pre vs. 1 Year Post (all)	150	\$265,930	\$217,985	-\$47,945	-\$320	\$0	n.s.
Pre vs. 1 Year Post	130	\$244,174	\$193,986	-\$50,187	-\$386	\$0	n.s.
Pre vs. 2 Years Post			\$141,369	-\$102,804	-\$791	\$0	***
Pharmacy							
Pre vs. 1 Year Post (all)	150	\$588,818	\$646,925	\$58,108	\$387	\$0	n.s.
Pre vs. 1 Year Post	130	\$551,453	\$541,800	-\$9,653	-\$74	\$0	n.s.
Pre vs. 2 Years Post			\$643,684	\$92,231	\$709	\$0	n.s.
Physician Services							
Pre vs. 1 Year Post (all)	150	\$369,593	\$270,713	-\$98,880	-\$659	\$0	†
Pre vs. 1 Year Post	130	\$338,716	\$264,722	-\$73,995	-\$569	\$0	n.s.
Pre vs. 2 Years Post			\$43,931	-\$294,786	-\$2,268	-\$108	***
Transportation Services							
Pre vs. 1 Year Post (all)	150	\$120,918	\$111,143	-\$9,775	-\$65	\$0	n.s.
Pre vs. 1 Year Post	130	\$112,018	\$99,256	-\$12,762	-\$98	\$0	n.s.
Pre vs. 2 Years Post			\$60,842	-\$51,176	-\$394	\$0	**

**Figure 4. Mean Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 12E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=150)	Post-Period Year 2 minus Pre-Period (N= 130)
5th Percentile	-\$81,670	-\$85,409
10th Percentile	-\$63,300	-\$64,485
25th Percentile	-\$14,561	-\$24,170
50th Percentile	-\$2,073	-\$6,163
75th Percentile	\$1,841	\$1,182
90th Percentile	\$15,624	\$13,467
95th Percentile	\$27,662	\$29,636

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$2,073. The median cost savings in the second post-enrollment year for clients who have two years of post-enrollment data available in this program is \$6,163. Savings for those in the 5th percentile outweigh spending increases for those in the 95th percentile.

**CONCLUSIONS.** Overall, this program appears to be reducing costs: major savings are seen in the first post-period year as participants are steered away from costly nursing home settings. Further savings are seen the second post-period year, where several other service categories show new significant savings, possibly due to continued beneficial effects of longer-term SH enrollment.

# HCR Capital Projects: 3361 Third Avenue.

- **Program Description:** This is an HCR project supporting 38 units of permanent supportive housing in the Bronx, NY.
- **Population Served:** This program serves chronically homeless single adults who suffer from a serious and persistent mental illness or who are diagnosed as mentally ill and chemically addicted.
- **Earliest MRT-SH Enrollment Date:** September 2015
- **Enrollment:** 34 included in analysis; only 5 clients had data from two years post enrollment available, and so these analyses were not performed.
- **Comorbidities:** Enrollees are most likely to have a serious mental illness (SMI) or another chronic condition (Table 13A).
- **Duration in MRT-SH:** All participants had been enrolled between 19 and 24 months (Table 13B).
- **Care Coordination:** The distribution of types of care coordination was similar in the pre-period and first post-period year (Table 13C).

**SUMMARY.** The Third Avenue program did not show a significant difference in costs from the pre-period to the first post-period year overall. However, several individual service categories did show significant changes. Emergency department, lab, and physician service costs all showed significant decreases in the post-period. The remaining categories do not show statistically significant changes and are mixed in terms of the cost behavior in the pre- and post-periods. A graphical depiction of the cost categories follows.

**Table 13A. Comorbidity Distribution for Enrollees Analyzed.**

	Post Year 1 Only	Percent of Total Group
Serious Mental Illness	23	68%
Substance Use Disorder	18	53%
Other Chronic Condition	20	59%
HIV	0	0%
3 or more of the above	11	32%
All 4 of the above	0	0%

**Table 13B. Enrollment Duration for Enrollees Analyzed.**

	Post Year 1 Only	Percent of Total Group
Less than 6 months	0	0%
Between 6 and 12 months	0	0%
Between 13 and 18 months	0	0%
Between 19 and 24 months	34	100%
More than 24 months	0	0%

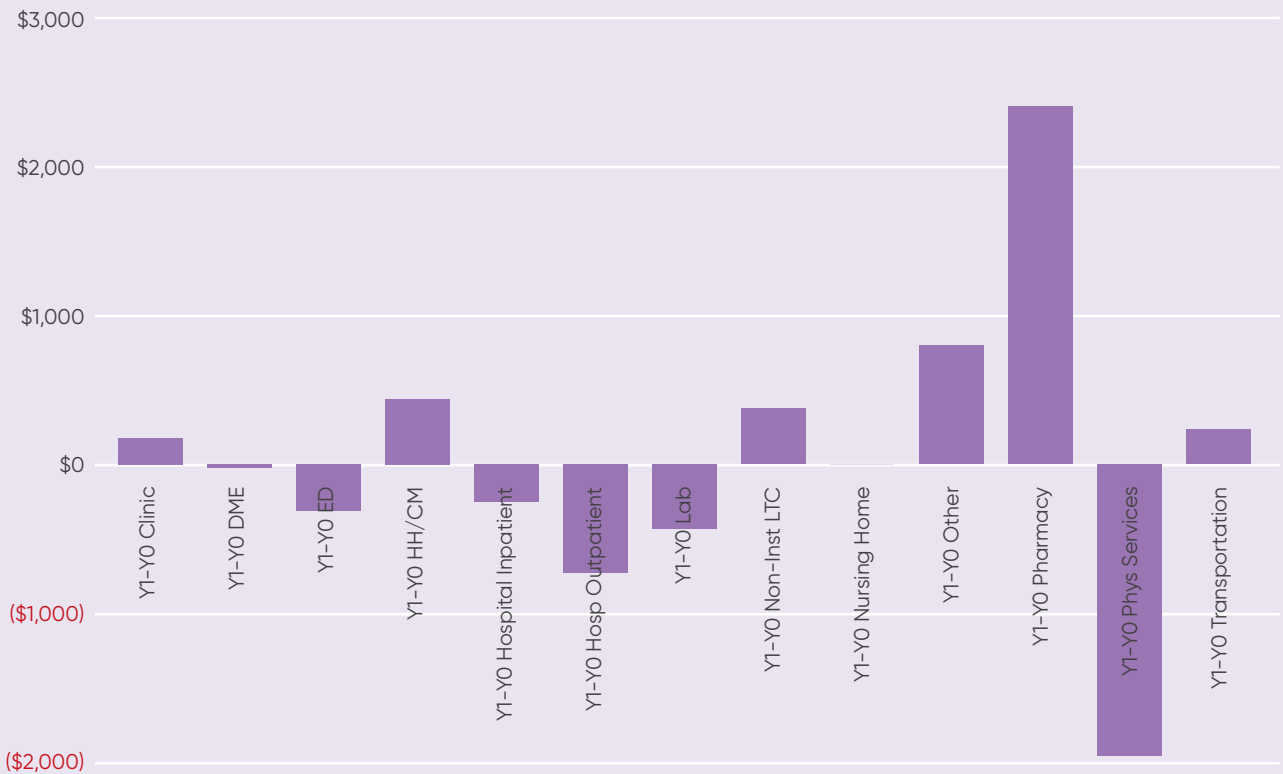
**Table 13C. Care Coordination for Enrollees Analyzed.**

	Pre-Period Prevalence	Post Year 1 Prevalence
Medicaid Managed Care Enrollment	82%	82%
Health Homes Enrollment	76%	76%
Dual Eligibility	12%	15%

**Table 13D. Pre-Post Medicaid Costs for HCR: 3361 Third Avenue, by Category of Service.<sup>28</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>29</sup>
Overall	34	\$600,981	\$624,622	\$23,640	\$695	-\$715	n.s.
Clinic		\$77,414	\$83,257	\$5,844	\$172	-\$58	n.s.
DME		\$784	\$0	-\$784	-\$23	\$0	n.s.
Emergency Department		\$14,522	\$4,038	-\$10,484	-\$308	-\$208	**
Health Home/Care Mgmt		\$42,740	\$57,352	\$14,612	\$430	\$267	†
Hospital Inpatient		\$199,606	\$191,176	-\$8,430	-\$248	\$0	n.s.
Hospital Outpatient		\$55,848	\$31,484	-\$24,363	-\$717	\$0	n.s.
Lab		\$15,082	\$600	-\$14,482	-\$426	\$0	**
Non-Institutional LTC		\$0	\$12,497	\$12,497	\$368	\$0	n.s.
Nursing Home		\$0	\$0	\$0	\$0	\$0	n.s.
Other		\$54,060	\$80,736	\$26,676	\$785	\$0	n.s.
Pharmacy		\$64,243	\$144,609	\$80,366	\$2,364	-\$5	n.s.
Physician Services		\$67,428	\$1,880	-\$65,548	-\$1,928	-\$1,233	***
Transportation Services		\$9,255	\$16,992	\$7,737	\$228	\$0	n.s.

**Figure 5. Mean Savings by Category of Service, Post-Period minus Pre-Period.**



28 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the “Duration in MRT-SH” bullet immediately preceding table for details.

29 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: “†” – p<.1; “\*” – p<.05, “\*\*\*” – p<.01, “\*\*\*\*\*” – p<.001, “n.s.” – not significant.

**Table 13E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

Pre-Period minus Post-Period Year 1 (N=34)	
5th Percentile	-\$54,559
10th Percentile	-\$16,151
25th Percentile	-\$9,739
50th Percentile	-\$715
75th Percentile	\$2,958
90th Percentile	\$22,110
95th Percentile	\$98,060

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$715. However, increased spending for those in the 95th percentile outweighs cost savings for those in the 5th.

**CONCLUSIONS.** Overall, this program does not show a statistically significant decrease in total costs. Significant decreases were seen for several individual categories of service, particularly from frequently utilized settings such as physician services and the emergency department.



# HCR Capital Projects: Boston Road.

- **Program Description:** This is a HCR project supporting 94 units of permanent supportive housing in the Bronx, NY.
- **Population Served:** This program serves chronically homeless single adults who suffer from a serious and persistent mental illness or who are diagnosed as mentally ill and chemically addicted.
- **Earliest MRT-SH Enrollment Date:** January 2016
- **Enrollment:** 77 included in analysis; none had data from two years post enrollment available.
- **Comorbidities:** Enrollees are most likely to have a serious mental illness (SMI), substance use disorder (SUD), or another chronic condition (Table 14A).
- **Duration in MRT-SH:** Almost all participants had been enrolled for at least one year (Table 14B).
- **Care Coordination:** Almost all participants were enrolled in Medicaid Managed Care in the pre- and post-periods. Health Homes enrollment increased in the post-period (Table 14C).

**SUMMARY.** The Boston Road program did not show a significant difference in costs from the pre-period to the first post-period year overall. However, several individual service categories did show significant changes. Emergency department, health home/care management, and non-institutional long-term care costs showed significant increases from the pre- to post-period, and other costs showed a marginal increase (largely driven by increases in GME costs); lab and physician service costs showed significant decreases. The remaining categories did not show statistically significant changes. A graphical depiction of the cost categories follows.

**Table 14A. Comorbidity Distribution for Enrollees Analyzed.**

	Post Year 1 Only	Percent of Total Group
Serious Mental Illness	43	57%
Substance Use Disorder	48	63%
Other Chronic Condition	39	51%
HIV	1	1%
3 or more of the above	19	25%
All 4 of the above	1	1%

**Table 14B. Enrollment Duration for Enrollees Analyzed**

	Post Year 1 Only	Percent of Total Group
Less than 6 months	1	1%
Between 6 and 12 months	0	0%
Between 13 and 18 months	49	65%
Between 19 and 24 months	26	34%
More than 24 months	0	0%



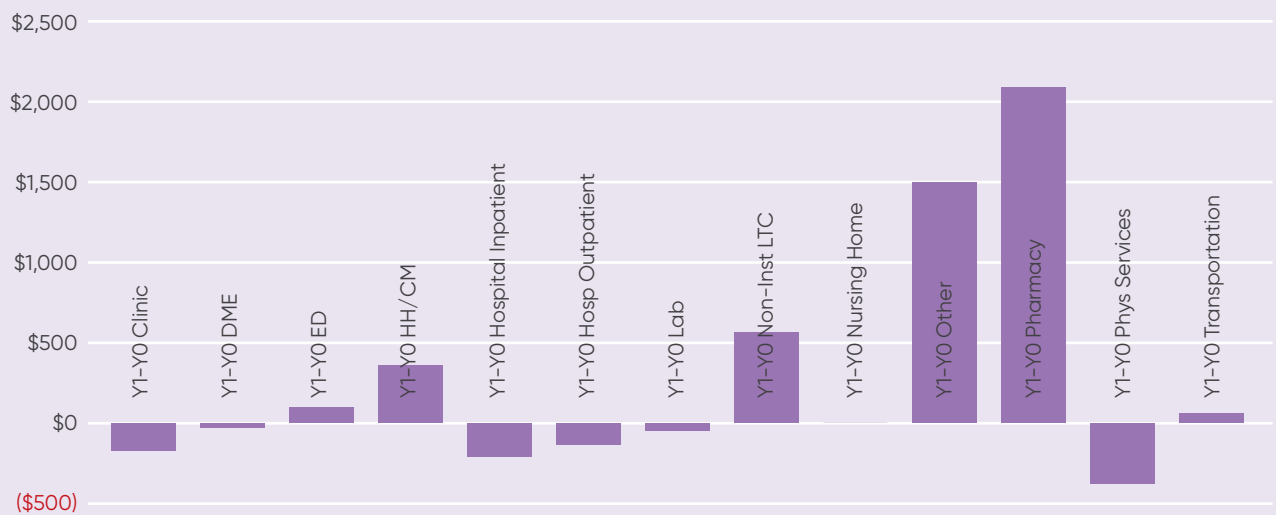
**Table 14C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence
Medicaid Managed Care Enrollment	92%	93%
Health Homes Enrollment	37%	46%
Dual Eligibility	7%	4%

**Table 14D. Pre-Post Medicaid Costs for HCR: Boston Road, by Category of Service.<sup>30</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>31</sup>
Overall	76	\$1,409,614	\$1,688,814	\$279,200	\$3,674	\$183	n.s.
Clinic		\$144,489	\$131,434	-\$13,055	-\$172	\$0	n.s.
DME		\$1,946	\$0	-\$1,946	-\$26	\$0	n.s.
Emergency Department		\$35,798	\$43,045	\$7,247	\$95	\$0	*
Health Home/Care Mgmt		\$106,632	\$133,786	\$27,153	\$357	\$254	**
Hospital Inpatient		\$426,264	\$410,516	-\$15,748	-\$207	\$0	n.s.
Hospital Outpatient		\$174,869	\$164,793	-\$10,076	-\$133	\$0	n.s.
Lab		\$3,461	\$55	-\$3,405	-\$45	\$0	***
Non-Institutional LTC		\$1,014	\$43,629	\$42,615	\$561	\$0	*
Nursing Home		\$0	\$0	\$0	\$0	\$0	--
Other		\$117,626	\$230,720	\$113,095	\$1,488	\$0	†
Pharmacy		\$343,191	\$500,554	\$157,363	\$2,071	\$13	n.s.
Physician Services		\$30,342	\$1,952	-\$28,390	-\$374	-\$47	***
Transportation Services		\$23,983	\$28,330	\$4,347	\$57	\$0	n.s.

**Figure 6. Mean Savings by Category of Service, Post-Period minus Pre-Period.**



30 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

31 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "†" – p<.1; "\*" – p<.05, "\*\*" – p<.01, "\*\*\*" – p<.001, "n.s." – not significant.

**Table 14E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

Pre-Period minus Post-Period Year 1 (N=77)	
5th Percentile	-\$83,802
10th Percentile	-\$17,751
25th Percentile	-\$2,512
50th Percentile	\$183
75th Percentile	\$6,586
90th Percentile	\$33,679
95th Percentile	\$65,697

The pre-post change is highly variable between participants. Median costs increased in the first post-enrollment year for enrollees by \$183.

**CONCLUSIONS.** Overall, this program does not show a statistically significant change in total costs. The small spending decreases seen in a few categories were overshadowed by the larger spending increases seen in health home/care management, non-institutional long-term care, pharmacy, and other costs.



# HCR Capital Projects: Norwood Terrace.

- **Program Description:** This is a HCR project supporting 58 units of permanent supportive housing in the Bronx, NY.
- **Population Served:** This program serves chronically homeless single adults who suffer from a serious and persistent mental illness or who are diagnosed as mentally ill and chemically addicted.
- **Earliest MRT-SH Enrollment Date:** August 2016
- **Enrollment:** 29 included in analysis; none had data from two years post enrollment available.
- **Comorbidities:** Enrollees are most likely to have a serious mental illness (SMI), substance use disorder (SUD), or another chronic condition. Almost half of enrollees had claims from the past year with primary diagnoses of at least three of the four conditions, and 14% had all four (Table 15A).
- **Duration in MRT-SH:** All participants had been enrolled between six and eighteen months (Table 15B).
- **Care Coordination:** Enrollment in Medicaid Managed Care enrollment increased so that almost all participants were enrolled in the post-period. Health Home enrollment stayed relatively high in both periods (Table 15C).

**SUMMARY.** The Norwood Terrace program showed a significant decrease in cost from the pre-period to the first post-period year. Hospital inpatient and outpatient costs both showed significant decreases; transportation service costs showed a significant increase in the period, though the median cost difference was negative. The remaining categories do not show statistically significant changes. A graphical depiction of the cost categories follows. These results indicate that MRT-SH may be successful in controlling costs in some of the more expensive and/or frequently utilized areas of service.

*Table 15A. Comorbidity Distribution for Enrollees Analyzed.*

	Post Year 1 Only	Percent of Total Group
Serious Mental Illness	25	86%
Substance Use Disorder	21	72%
Other Chronic Condition	20	69%
HIV	4	14%
3 or more of the above	14	48%
All 4 of the above	4	14%

*Table 15B. Enrollment Duration for Enrollees Analyzed.*

	Post Year 1 Only	Percent of Total Group
Less than 6 months	0	0%
Between 6 and 12 months	20	69%
Between 13 and 18 months	9	31%
Between 19 and 24 months	0	0%
More than 24 months	0	0%

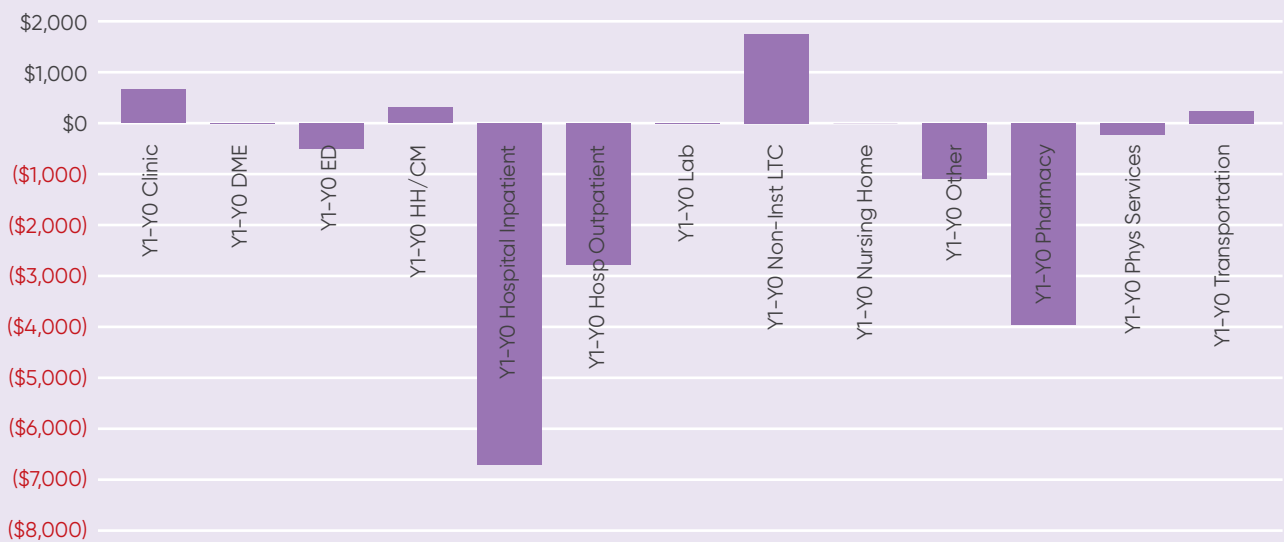
**Table 15C. Care Coordination for Enrollees Analyzed.**

	Pre-Period Prevalence	Post Year 1 Prevalence
Medicaid Managed Care Enrollment	79%	90%
Health Homes Enrollment	69%	72%
Dual Eligibility	24%	21%

**Table 15D. Pre-Post Medicaid Costs for HCR: Norwood Terrace, by Category of Service.<sup>32</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>33</sup>
Overall	29	\$1,097,676	\$736,016	-\$361,660	-\$12,471	-\$4,640	*
Clinic		\$66,751	\$86,029	\$19,278	\$665	\$0	n.s.
DME		\$152	\$0	-\$152	-\$5	\$0	n.s.
Emergency Department		\$25,206	\$10,236	-\$14,971	-\$516	-\$10	n.s.
Health Home/Care Mgmt		\$70,647	\$79,502	\$8,854	\$305	\$414	n.s.
Hospital Inpatient		\$354,917	\$158,329	-\$196,589	-\$6,779	\$0	*
Hospital Outpatient		\$135,101	\$53,316	-\$81,785	-\$2,820	-\$649	**
Lab		\$333	\$193	-\$140	-\$5	\$0	n.s.
Non-Institutional LTC		\$0	\$51,333	\$51,333	\$1,770	\$0	n.s.
Nursing Home		\$0	\$0	\$0	\$0	\$0	--
Other		\$91,462	\$59,706	-\$31,755	-\$1,095	\$0	n.s.
Pharmacy		\$266,610	\$150,371	-\$116,239	-\$4,008	-\$37	n.s.
Physician Services		\$11,963	\$5,415	-\$6,548	-\$226	\$0	n.s.
Transportation Services		\$74,533	\$81,587	\$7,054	\$243	-\$120	*

**Figure 7. Mean Savings by Category of Service, Post-Period minus Pre-Period.**



32 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

33 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

**Table 15E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

Pre-Period minus Post-Period Year 1 (N=29)	
5th Percentile	-\$76,157
10th Percentile	-\$56,311
25th Percentile	-\$28,075
50th Percentile	-\$4,640
75th Percentile	\$3,432
90th Percentile	\$16,761
95th Percentile	\$32,430

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$4,640.

**CONCLUSIONS.** Overall, this program shows a statistically significant decrease in total costs. Further, significant decreases in costs are seen for costly or frequently utilized venues, particularly inpatient and outpatient hospital services.



# HCR Capital Projects: VOA Creston Avenue.

- **Program Description:** This is an HCR project supporting 21 units of permanent supportive housing in the Bronx, NY.
- **Population Served:** This program serves chronically homeless single adults who suffer from a serious and persistent mental illness or who are diagnosed as mentally ill and chemically addicted.
- **Earliest MRT-SH Enrollment Date:** December 2014
- **Enrollment:** 19 included in analysis; 18 had data from two years post enrollment available. Given this small group, inferential statistics were not performed.
- **Comorbidities:** Enrollees are most likely to have a serious mental illness (SMI), substance use disorder (SUD), or another chronic condition (Table 16A).
- **Duration in MRT-SH:** Almost all participants have been enrolled for at least two years (Table 16B).
- **Care Coordination:** Enrollment rates were similar in the pre- and post-periods. Almost all clients were enrolled in Medicaid Managed Care in all timeframes examined (Table 16C).

**SUMMARY.** The VOA Creston Avenue program showed an overall decrease in costs from the pre-period to the post-period. Several service categories showed consistent cost decreases in the first and second post-period year (emergency department, lab), and others showed continued decreases through the post-period (clinic, hospital outpatient, physician services). Hospital inpatient costs increased in the first post-period year, but decreased in the second; pharmacy costs showed the reverse pattern. A graphical depiction of the cost categories follows. These results indicate that MRT-SH may be successful in controlling some costs, though the population is too small to perform significance testing.

**Table 16A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	17	89%	16	89%
Substance Use Disorder	10	53%	9	50%
Other Chronic Condition	7	37%	6	33%
HIV	0	0%	0	0%
3 or more of the above	3	16%	2	11%
All 4 of the above	0	0%	0	0%

**Table 16B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	0	0%	0	0%
Between 6 and 12 months	1	5%	1	6%
Between 13 and 18 months	0	0%	0	0%
Between 19 and 24 months	1	5%	1	6%
More than 24 months	17	89%	16	89%

**Table 16C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	100%	100%	94%
Health Homes Enrollment	32%	21%	33%
Dual Eligibility	0%	0%	6%

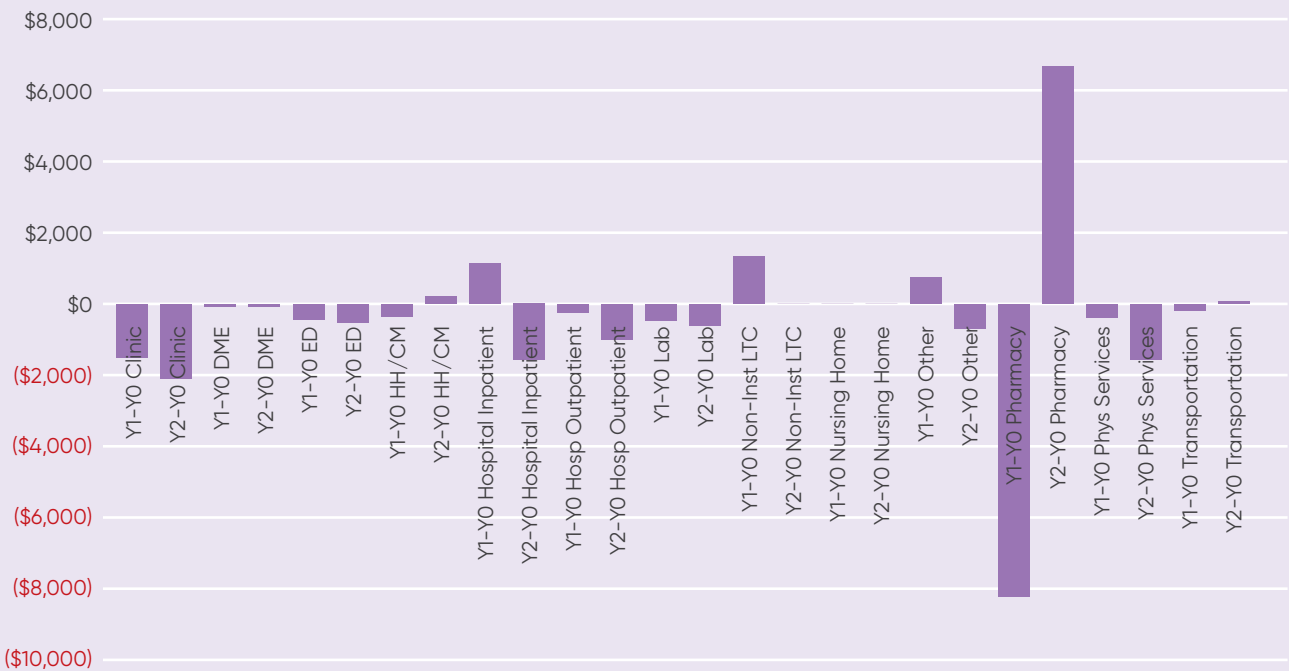
**Table 16D. Pre-Post Medicaid Costs for HCR: VOA Creston Avenue, by Category of Service.<sup>34</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference
<b>Overall</b>						
Pre vs. 1 Year Post (all)	19	\$433,307	\$278,464	-\$154,843	-\$8,150	-\$2,141
Pre vs. 1 Year Post	18	\$419,513	\$246,003	-\$173,510	-\$9,639	-\$2,943
Pre vs. 2 Years Post			\$398,342	-\$21,171	-\$1,176	-\$6,215
<b>Clinic</b>						
Pre vs. 1 Year Post (all)	19	\$73,328	\$52,717	-\$20,611	-\$1,085	-\$297
Pre vs. 1 Year Post	18	\$73,223	\$46,765	-\$26,458	-\$1,470	-\$458
Pre vs. 2 Years Post			\$36,223	-\$37,000	-\$2,056	-\$223
<b>DME</b>						
Pre vs. 1 Year Post (all)	19	\$1,262	\$42	-\$1,220	-\$64	\$0
Pre vs. 1 Year Post	18	\$1,262	\$42	-\$1,220	-\$68	\$0
Pre vs. 2 Years Post			\$0	-\$1,262	-\$70	\$0
<b>Emergency Department</b>						
Pre vs. 1 Year Post (all)	19	\$11,282	\$3,519	-\$7,763	-\$409	-\$67
Pre vs. 1 Year Post	18	\$11,282	\$3,519	-\$7,763	-\$431	-\$219
Pre vs. 2 Years Post			\$2,165	-\$9,117	-\$506	-\$458
<b>Health Home/Care Mgmt</b>						
Pre vs. 1 Year Post (all)	19	\$12,505	\$7,965	-\$4,540	-\$239	\$0
Pre vs. 1 Year Post	18	\$10,898	\$4,522	-\$6,376	-\$354	\$0
Pre vs. 2 Years Post			\$14,468	\$3,570	\$198	\$249
<b>Hospital Inpatient</b>						
Pre vs. 1 Year Post (all)	19	\$40,118	\$74,372	\$34,254	\$1,803	\$0
Pre vs. 1 Year Post	18	\$40,118	\$60,372	\$20,254	\$1,125	\$0
Pre vs. 2 Years Post			\$12,305	-\$27,813	-\$1,545	\$0
<b>Hospital Outpatient</b>						
Pre vs. 1 Year Post (all)	19	\$50,390	\$47,972	-\$2,417	-\$127	\$0
Pre vs. 1 Year Post	18	\$44,895	\$40,617	-\$4,278	-\$238	-\$119
Pre vs. 2 Years Post			\$27,192	-\$17,703	-\$983	-\$179
<b>Lab</b>						
Pre vs. 1 Year Post (all)	19	\$10,845	\$2,969	-\$7,875	-\$414	-\$88
Pre vs. 1 Year Post	18	\$10,581	\$2,573	-\$8,007	-\$445	-\$106
Pre vs. 2 Years Post			\$0	-\$10,581	-\$588	-\$201

<sup>34</sup> The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

Non-Institutional LTC						
Pre vs. 1 Year Post (all)	19	\$0	\$2340	\$2340	\$123	\$0
Pre vs. 1 Year Post	18	\$0	\$2340	\$2340	\$130	\$0
Pre vs. 2 Years Post			\$0	\$0	\$0	\$0
Nursing Home						
Pre vs. 1 Year Post (all)	19	\$0	\$0	\$0	\$0	\$0
Pre vs. 1 Year Post	18	\$0	\$0	\$0	\$0	\$0
Pre vs. 2 Years Post		\$0	\$0	\$0	\$0	\$0
Other						
Pre vs. 1 Year Post (all)	19	\$12,793	\$25,299	\$12,506	\$658	-\$96
Pre vs. 1 Year Post	18	\$12,214	\$25,299	\$13,085	\$727	-\$76
Pre vs. 2 Years Post			0	-\$12,214	\$-679	-\$185
Pharmacy						
Pre vs. 1 Year Post (all)	19	\$182,183	\$36,202	-\$145,981	-\$7,683	-\$55
Pre vs. 1 Year Post	18	\$180,118	\$34,887	-\$145,232	-\$8,068	-\$50
Pre vs. 2 Years Post			\$297,744	\$117,626	\$6,535	-\$16
Physician Services						
Pre vs. 1 Year Post (all)	19	\$31,434	\$20,995	-\$10,439	-\$549	-\$59
Pre vs. 1 Year Post	18	\$27,754	\$20,995	-\$6,758	-\$375	-\$34
Pre vs. 2 Years Post			\$0	-\$27,754	-\$1,542	-\$779
Transportation Services						
Pre vs. 1 Year Post (all)	19	\$7,169	\$4,071	-\$3,098	-\$163	\$0
Pre vs. 1 Year Post	18	\$7,169	\$4,071	-\$3,098	-\$172	\$0
Pre vs. 2 Years Post			\$8,245	\$1,076	\$60	\$0

**Figure 8. Mean Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**





**Table 16E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Pre-Period minus Post-Period Year 1 (N=19)	Pre-Period minus Post-Period Year 2 (N= 18)
5th Percentile	-\$150,262	-\$148,799
10th Percentile	-\$27,225	-\$40,072
25th Percentile	-\$12,107	-\$16,311
50th Percentile	-\$2,141	-\$6,215
75th Percentile	\$11,538	-\$1,392
90th Percentile	\$18,667	\$31,362

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$2,141. The median cost savings in the second post-enrollment year for clients who have two years of post-enrollment data available in this program is \$6,215. Savings for those in the fifth percentile greatly outweigh spending increases for those in the 90th percentile.

**CONCLUSIONS.** While mean savings were larger in Post Year 1, median cost savings appear to dramatically increase in the second post-enrollment year for the subgroup of clients with two post-period years, though the full group also demonstrated savings in several of these same service categories.. These results show that for most clients, cost savings may only occur later, possibly due to continued beneficial effects of the longer-term SH enrollment particularly seen in this program.



# HCR Other Projects: Access to Home Program.

- **Program Description:** The Access to Home program provides grants to eligible applicants to make accessibility modifications to existing owner-occupied or rental dwelling units occupied by persons with disabilities that also receive Medicaid assistance.
- **Population Served:** This program serves persons who are on Medicaid and are physically disabled or have substantial difficulty with activities of daily living (ADLs).
- **Earliest MRT-SH Enrollment Date:** February 2016
- **Enrollment:** 21 included in analysis; none had data from two years post enrollment available. Given this small group, inferential statistics were not performed.
- **Comorbidities:** Enrollees were most likely to have another chronic condition (Table 17A).
- **Care Coordination:** Almost half of participants were enrolled in Medicaid Managed Care; no participants were enrolled in Health Homes in the pre- or post-periods (Table 17C).

**SUMMARY.** The Expand the Access to Home program did not appear to show large changes in overall costs in the period examined. DME costs did show some decrease in this interval, but the remaining categories do not show such changes and are mixed in terms of the cost behavior in the pre- and post-periods. A graphical depiction of the cost categories follows.

*Table 17A. Comorbidity Distribution for Enrollees Analyzed.*

	Post Year 1 Only	Percent of Total Group
Serious Mental Illness	2	10%
Substance Use Disorder	0	0%
Other Chronic Condition	12	57%
HIV	0	0%
3 or more of the above	0	0%
All 4 of the above	0	0%

*Table 17C. Care Coordination for Enrollees Analyzed.*

	Pre-Period Prevalence	Post Year 1 Prevalence
Medicaid Managed Care Enrollment	43%	48%
Health Homes Enrollment	0%	0%
Dual Eligibility	33%	29%
Between 19 and 24 months	0	0%
More than 24 months	0	0%

**Table 17D. Pre-Post Medicaid Costs for HCR: Access to Homes program, by Category of Service<sup>35</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference
Overall	21	\$882,973	\$785,744	-\$97,229	-\$4,630	\$442
Clinic		\$4,782	\$7,689	\$2,907	\$138	\$0
DME		\$10,559	\$5,076	-\$5,483	-\$261	\$0
Emergency Department		\$340	\$3,505	\$3,165	\$151	\$0
Health Home/Care Mgmt		\$8,366	\$8,751	\$386	\$18	\$0
Hospital Inpatient		\$42,362	\$68,584	\$26,223	\$1,249	\$0
Hospital Outpatient		\$18,784	\$13,585	-\$5,199	-\$248	\$0
Lab		\$768	\$394	-\$374	-\$18	\$0
Non-Institutional LTC		\$505,796	\$574,409	\$68,614	\$3,267	\$0
Nursing Home		\$60,161	\$1,948	-\$58,213	-\$2,772	\$0
Other		\$52,352	\$38,628	-\$13,724	-\$654	\$0
Pharmacy		\$104,006	\$39,216	-\$64,790	-\$3,085	\$0
Physician Services		\$57,630	\$10,468	-\$47,162	-\$2,246	\$0
Transportation Services		\$17,066	\$13,488	-\$3,578	-\$170	\$0

**Figure 9. Mean Savings by Category of Service, Post-Period minus Pre-Period.**



<sup>35</sup> The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

**Table 17E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

Pre-Period minus Post-Period Year 1 (N=21)	
5th Percentile	-\$92,902
10th Percentile	-\$57,085
25th Percentile	-\$11,486
50th Percentile	\$442
75th Percentile	\$8,448
90th Percentile	\$30,967
95th Percentile	\$33,619

The pre-post change is highly variable between participants. The median cost increase in the first post-enrollment year for the enrollees in this program is \$442. Savings for those in the fifth percentile outweigh spending increases for those in the 95th percentile.

**CONCLUSIONS.** Overall, this program does not show much change in total costs, though the population is too small to perform significance testing.



# Homeless Housing and Assistance Program (HHAP) Capital Projects.

## Program Descriptions:

- Opportunities for Broome's 86 Carroll St. is a capital project supporting 22 units of permanent SH in Binghamton, NY.
- Providence Housing Development's Son House is a capital project supporting 21 units of permanent SH in Rochester, NY.
- Finger Lakes United Cerebral Palsy's Happiness House is a capital project supporting a 20-unit building in Geneva, NY (Ontario County) which includes 7 MRT units.
- The Polish Community Center's Hope Gardens is a capital project supporting 20 units of permanent SH in Buffalo, NY.
- Evergreen Loft Apartments is a capital project supporting 28 units of permanent SH in Buffalo, NY.

## Populations Served:

- Opportunities for Broome serves chronically homeless single adults who are recovering from drug and/or alcohol abuse or have a mental illness or other disability.
- Providence Housing Development's Son House serves chronically homeless single adults who have a documented disability.
- Finger Lakes United Cerebral Palsy's Happiness House serves single individuals with developmental disabilities, physical disabilities, or traumatic brain injury who would otherwise be homeless or placed in a nursing home.
- The Polish Community Center's Hope Gardens serves chronically homeless single women with special needs such as mental illness, drug and alcohol abuse, or a history of domestic violence or physical or sexual assault.
- Evergreen Loft Apartments serves homeless adults who are living with HIV/AIDS, have a disabling health condition, and/or are physically disabled.

## Earliest MRT-SH Enrollment Dates:

- Opportunities for Broome's 86 Carroll St. – December 2014
- Providence Housing Development's Son House – December 2013
- Finger Lakes United Cerebral Palsy's Happiness House – September 2014
- The Polish Community Center's Hope Gardens – December 2015
- Evergreen Loft Apartments – August 2016
- **Enrollment:** 86 included in analysis; 49 had data from two years post enrollment available.
- **Comorbidities:** Enrollees are most likely to have a serious mental illness (SMI), substance use disorder (SUD), or another chronic condition. About one-quarter of enrollees had claims from the past year with primary diagnoses of at least three of the four conditions (Table 18A).
- **Duration in MRT-SH:** Most participants had been enrolled for at least one year; only a small group had been enrolled for twelve or fewer months (Table 18B).
- **Care Coordination:** The distribution of enrollees in Medicaid Managed Care enrollment stayed the same between periods. For the clients who have two years of post-enrollment data available, there was a large decrease in Health Home enrollment in the second post-enrollment period (Table 18C).

**SUMMARY.** The HHAP Capital projects showed a significant decrease in overall costs in the post period, for both one year and two years after enrollment. Clinic, emergency department, hospital inpatient, hospital outpatient, lab, other, and physician service costs all showed significant decreases from the pre-period to the first post-period year, with most maintaining such decreases in the second post-period year. The decrease in "other" costs may be due to decreases in

GME costs. This pattern indicates that such costs decreased and stayed low in the post-periods tested; indeed, several appear to continue to have dropped between the first and second post-period years. The remaining categories do not show statistically significant changes. A graphical depiction of the cost categories follows. These results indicate that MRT-SH may be successful in controlling costs in some of the more expensive areas of service.

**Table 18A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	47	55%	31	63%
Substance Use Disorder	42	49%	26	53%
Other Chronic Condition	35	41%	24	49%
HIV	20	23%	1	2%
3 or more of the above	21	24%	14	29%
All 4 of the above	2	2%	1	2%

**Table 18B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	4	5%	3	6%
Between 6 and 12 months	7	8%	4	8%
Between 13 and 18 months	30	35%	3	6%
Between 19 and 24 months	13	15%	9	18%
More than 24 months	32	37%	30	61%

**Table 18C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	83%	84%	86%
Health Homes Enrollment	42%	45%	24%
Dual Eligibility	13%	14%	12%

**Table 18D. Pre-Post Medicaid Costs for HHAP Capital Projects, by Category of Service.<sup>36</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>37</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	86	\$2,050,050	\$1,601,861	-\$448,189	-\$5,211	-\$3,120	***
Pre vs. 1 Year Post	49	\$851,527	\$645,451	-\$206,076	-\$4,206	-\$3,080	*
Pre vs. 2 Years Post			\$678,765	-\$172,762	-\$3,526	-\$2,303	*
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	86	\$93,151	\$42,870	-\$50,281	-\$585	\$0	*
Pre vs. 1 Year Post	49	\$44,136	\$21,482	-\$22,654	-\$462	\$0	n.s.
Pre vs. 2 Years Post			\$20,348	-\$23,787	-\$485	\$0	n.s.

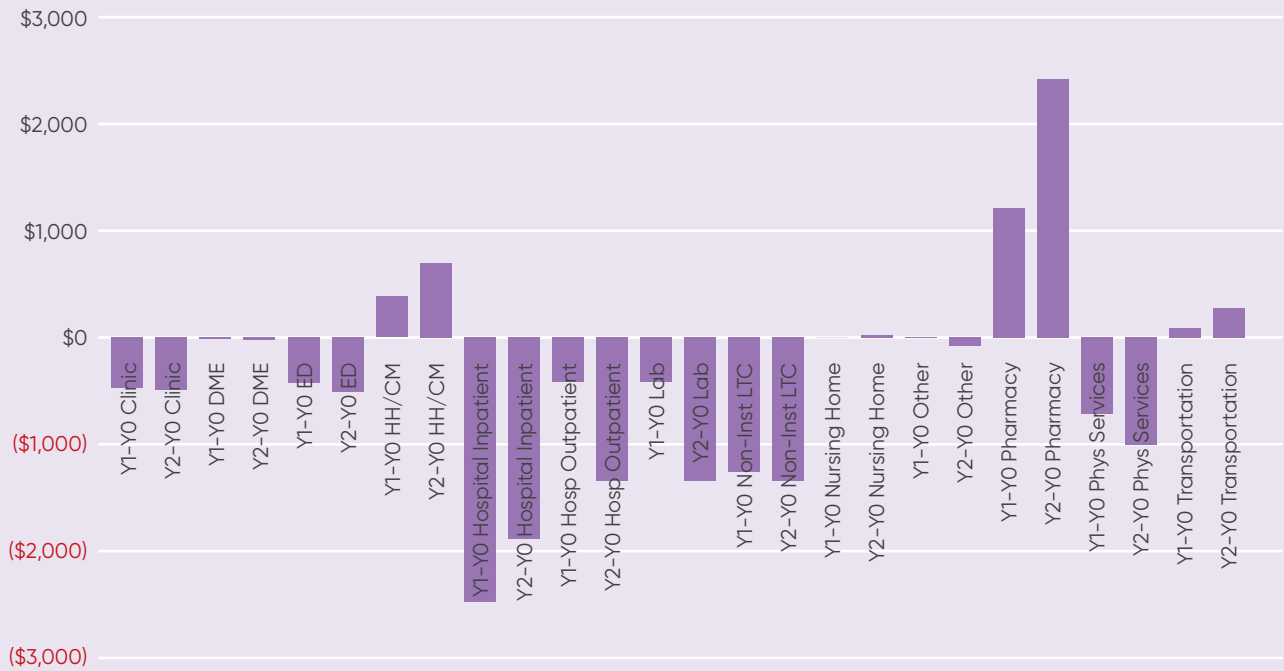
<sup>36</sup> The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

<sup>37</sup> Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

DME							
Pre vs. 1 Year Post (all)	86	\$3,789	\$3,734	-\$55	-\$1	\$0	n.s.
Pre vs. 1 Year Post	49	\$2,471	\$1,590	-\$881	-\$18	\$0	n.s.
Pre vs. 2 Years Post			\$1,287	-\$1,184	-\$24	\$0	n.s.
Emergency Department							
Pre vs. 1 Year Post (all)	86	\$50,747	\$23,168	-\$27,579	-\$321	\$0	**
Pre vs. 1 Year Post	49	\$40,804	\$20,444	-\$20,360	-\$416	\$0	*
Pre vs. 2 Years Post			\$16,192	-\$24,612	-\$502	-\$79	**
Health Home/Care Mgmt							
Pre vs. 1 Year Post (all)	86	\$148,305	\$154,926	\$6,621	\$77	\$0	n.s.
Pre vs. 1 Year Post	49	\$42,552	\$60,980	\$18,428	\$376	\$0	**
Pre vs. 2 Years Post			\$75,964	\$33,412	\$682	\$272	**
Hospital Inpatient							
Pre vs. 1 Year Post (all)	86	\$349,480	\$133,851	-\$215,629	-\$2,507	\$0	**
Pre vs. 1 Year Post	49	\$202,651	\$83,217	-\$119,434	-\$2,437	\$0	*
Pre vs. 2 Years Post			\$112,000	-\$90,651	-\$1,850	\$0	n.s.
Hospital Outpatient							
Pre vs. 1 Year Post (all)	86	\$214,487	\$170,355	-\$44,132	-\$513	-\$147	*
Pre vs. 1 Year Post	49	\$151,351	\$131,326	-\$20,025	-\$409	-\$74	n.s.
Pre vs. 2 Years Post			\$86,489	-\$64,863	-\$1,324	-\$150	*
Lab							
Pre vs. 1 Year Post (all)	86	\$21,238	\$9,026	-\$12,212	-\$142	\$0	***
Pre vs. 1 Year Post	49	\$16,420	\$8,349	-\$8,071	-\$165	\$0	**
Pre vs. 2 Years Post			\$1,694	-\$14,725	-\$301	-\$9	***
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	86	\$211,357	\$123,884	-\$87,473	-\$1,017	\$0	n.s.
Pre vs. 1 Year Post	49	\$145,048	\$84,244	-\$60,804	-\$1,241	\$0	n.s.
Pre vs. 2 Years Post			\$80,367	-\$64,680	-\$1,320	\$0	n.s.
Nursing Home							
Pre vs. 1 Year Post (all)	86	\$0	\$0	\$0	\$0	\$0	n.s.
Pre vs. 1 Year Post	49	\$0	\$0	\$0	\$0	\$0	n.s.
Pre vs. 2 Years Post			\$1,127	\$1,127	\$23	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	86	\$74,169	\$45,268	-\$28,901	-\$336	\$0	**
Pre vs. 1 Year Post	49	\$32,229	\$32,017	-\$212	\$4	\$0	n.s.
Pre vs. 2 Years Post			\$28,380	-\$3,849	-\$79	\$0	n.s.
Pharmacy							
Pre vs. 1 Year Post (all)	86	\$752,266	\$762,118	\$9,853	\$115	\$0	n.s.
Pre vs. 1 Year Post	49	\$87,021	\$145,211	\$58,190	\$1,188	\$0	n.s.
Pre vs. 2 Years Post			\$203,412	\$116,390	\$2,375	-\$2	n.s.
Physician Services							
Pre vs. 1 Year Post (all)	86	\$70,708	\$29,071	-\$41,637	-\$484	-\$71	***
Pre vs. 1 Year Post	49	\$58,784	\$24,116	-\$34,668	-\$708	-\$243	**
Pre vs. 2 Years Post			\$10,270	-\$48,514	-\$990	-\$280	***

Transportation Services							
Pre vs. 1 Year Post (all)	86	\$60,353	\$103,590	\$43,237	\$503	\$0	n.s.
Pre vs. 1 Year Post	49	\$28,059	\$32,475	\$4,415	\$90	\$0	n.s.
Pre vs. 2 Years Post			\$41,234	\$13,175	\$269	\$0	n.s.

**Figure 8. Mean Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 18E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Pre-Period minus Post-Period Year 1 (N=86)	Pre-Period minus Post-Period Year 2 (N= 49)
5th Percentile	-\$40,306	-\$36,986
10th Percentile	-\$14,521	-\$16,693
25th Percentile	-\$9,019	-\$8,998
50th Percentile	-\$3,120	-\$2,303
75th Percentile	\$630	\$2,009
90th Percentile	\$6,613	\$10,473
95th Percentile	\$14,782	\$23,606

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$3,120. The median cost savings in the second post-enrollment year is \$2,303 for clients with two years of post-enrollment data available.

**CONCLUSIONS.** Overall, this program appears to be working to reduce costs and is successfully steering participants away from costly venues: in particular, hospital (both inpatient and outpatient) and emergency department settings. Further decreases in costs are seen for laboratory and physician services.



# Office of Temporary and Disability Assistance – NYC Disability Housing Subsidy Program/Eviction Prevention for Vulnerable Adults (EPVA).

- **Program Description:** The program provides rental subsidies for elderly or disabled individuals who are homeless or at risk of eviction. It was created to maintain the housing of formerly homeless recipients of New York City’s Advantage Rental Subsidy program when the Advantage program ended. Many recipients were already housed during the pre-period; the program’s goal was to prevent a return to homelessness.
- **Population Served:** Recipients of SSI or Social Security retirement or disability benefits who are part of a household with no other employable adults, and are homeless or at risk of homelessness.
- **Earliest MRT-SH Enrollment Date:** August 2013
- **Enrollment:** 213 included in analysis; 188 had data from two years post enrollment available.
- **Comorbidities:** Enrollees are most likely to have a serious mental illness (SMI) or another chronic condition (Table 19A).
- **Duration in MRT-SH:** About three-quarters of participants had been in the program for more than 24 months; only a small group of participants had short enrollment periods (Table 19B).
- **Care Coordination:** The rates of care coordination enrollment remained essentially the same for enrollees in the pre- and post-periods, with a very slight increase in Health Home enrollment in the second post-enrollment period for clients with two years of post-enrollment data available (Table 19C).

**SUMMARY.** The Eviction Prevention for Vulnerable Adults program did not show a significant change in overall costs from the pre- to the post-periods examined, but as this program was particularly focused on spending *prevention* for its participants and not on spending *reduction*, this consistency is not unexpected. However, several individual categories of service showed significant changes. First, pharmacy costs showed significant decreases through the post periods. Further, several categories showed a significant decrease in only the second post-period year, including emergency department, lab, and physician service costs, indicating delayed savings in these areas. In contrast, non-institutional long-term care costs increased in the first post-period year (and showed a nearly-significant increase in the first year for the subgroup of clients with two post-period years,  $p=0.051$ ), and transportation service costs increased in the first post-period year ( $p=0.052$ ). The remaining categories do not show statistically significant changes. A graphical depiction of the cost categories follows. As such, spending remained relatively stable between the pre- and post-periods, though whether the program successfully prevented spending increases is more difficult to establish without a comparison group.

**Table 19A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	90	42%	84	45%
Substance Use Disorder	34	16%	30	16%
Other Chronic Condition	97	46%	81	43%
HIV	1	0%	1	1%
3 or more of the above	11	5%	11	6%
All 4 of the above	0	0%	0	0%

**Table 19B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	3	1%	1	1%
Between 6 and 12 months	9	4%	7	4%
Between 13 and 18 months	10	5%	9	5%
Between 19 and 24 months	23	11%	11	6%
More than 24 months	168	79%	160	85%

**Table 19C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	72%	71%	70%
Health Homes Enrollment	16%	16%	21%
Dual Eligibility	16%	19%	14%

**Table 19D. Pre-Post Medicaid Costs for Residents of OTDA: Eviction Prevention for Vulnerable Adults, by Category of Service.<sup>38</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>39</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	213	\$3,582,283	\$3,478,004	-\$104,278	-\$490	-\$26	n.s.
Pre vs. 1 Year Post	188	\$2,745,298	\$2,653,543	-\$91,756	-\$488	-\$30	n.s.
Pre vs. 2 Years Post			\$2,949,916	\$204,618	\$1,088	-\$251	n.s.
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	213	\$242,709	\$227,572	-\$15,136	-\$71	\$0	n.s.
Pre vs. 1 Year Post	188	\$226,589	\$204,446	-\$22,143	-\$118	\$0	n.s.
Pre vs. 2 Years Post			\$259,535	\$32,946	\$175	\$0	n.s.
<b>DME</b>							
Pre vs. 1 Year Post (all)	213	\$44,489	\$40,461	-\$4,028	-\$19	\$0	n.s.
Pre vs. 1 Year Post	188	\$41,960	\$38,690	-\$3,270	-\$17	\$0	n.s.
Pre vs. 2 Years Post			\$21,290	-\$20,670	-\$110	\$0	n.s.
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	213	\$62,324	\$55,031	-\$7,293	-\$34	\$0	n.s.
Pre vs. 1 Year Post	188	\$46,074	\$47,252	\$1,179	\$6	\$0	n.s.
Pre vs. 2 Years Post			\$35,406	-\$10,668	-\$57	\$0	**
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	213	\$117,463	\$118,880	\$1,416	\$7	\$0	n.s.
Pre vs. 1 Year Post	188	\$98,245	\$100,765	\$2,521	\$13	\$0	n.s.
Pre vs. 2 Years Post			\$118,258	\$20,013	\$106	\$0	**

38 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

39 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Hospital Inpatient							
Pre vs. 1 Year Post (all)	213	\$1,152,045	\$1,209,354	\$57,309	\$269	\$0	n.s.
Pre vs. 1 Year Post	188	\$707,032	\$730,218	\$23,187	\$123	\$0	n.s.
Pre vs. 2 Years Post			\$721,898	\$14,867	\$79	\$0	n.s.
Hospital Outpatient							
Pre vs. 1 Year Post (all)	213	\$312,503	\$254,371	-\$58,133	-\$273	\$0	n.s.
Pre vs. 1 Year Post	188	\$253,859	\$202,702	-\$51,157	-\$272	\$0	n.s.
Pre vs. 2 Years Post			\$279,179	\$25,319	\$135	\$0	n.s.
Lab							
Pre vs. 1 Year Post (all)	213	\$18,860	\$25,860	\$7,000	\$33	\$0	n.s.
Pre vs. 1 Year Post	188	\$17,469	\$25,420	\$7,951	\$42	\$0	n.s.
Pre vs. 2 Years Post			\$8,069	-\$9,400	-\$50	\$0	***
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	213	\$321,230	\$357,029	\$35,799	\$168	\$0	*
Pre vs. 1 Year Post	188	\$309,580	\$331,611	\$22,031	\$117	\$0	†
Pre vs. 2 Years Post			\$420,865	\$111,285	\$592	\$0	n.s.
Nursing Home							
Pre vs. 1 Year Post (all)	213	\$81,683	\$25,720	-\$55,964	-\$263	\$0	n.s.
Pre vs. 1 Year Post	188	\$81,683	\$25,720	-\$55,964	-\$298	\$0	n.s.
Pre vs. 2 Years Post			\$188,964	\$107,281	\$571	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	213	\$356,629	\$295,349	-\$61,280	-\$288	\$0	n.s.
Pre vs. 1 Year Post	188	\$211,226	\$203,047	-\$8,179	-\$44	\$0	n.s.
Pre vs. 2 Years Post			\$159,282	-\$51,943	-\$276	\$0	n.s.
Pharmacy							
Pre vs. 1 Year Post (all)	213	\$466,551	\$323,164	-\$143,388	-\$673	-\$4	*
Pre vs. 1 Year Post	188	\$410,912	\$268,017	-\$142,895	-\$760	-\$2	*
Pre vs. 2 Years Post			\$402,138	-\$8,774	-\$47	-\$12	*
Physician Services							
Pre vs. 1 Year Post (all)	213	\$339,868	\$440,016	\$100,148	\$470	\$0	n.s.
Pre vs. 1 Year Post	188	\$290,749	\$380,196	\$89,447	\$476	\$0	n.s.
Pre vs. 2 Years Post			\$239,814	-\$50,935	-\$271	-\$47	***
Transportation Services							
Pre vs. 1 Year Post (all)	213	\$65,926	\$105,198	\$39,272	\$184	\$0	†
Pre vs. 1 Year Post	188	\$49,921	\$95,458	\$45,537	\$242	\$0	*
Pre vs. 2 Years Post			\$95,219	\$45,298	\$241	\$0	n.s.

**Figure 11. Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 19E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=213)	Post-Period Year 2 minus Pre-Period (N=188)
5th Percentile	-\$27,892	-\$33,740
10th Percentile	-\$12,556	-\$14,253
25th Percentile	-\$3,416	-\$4,678
50th Percentile	-\$26	-\$251
75th Percentile	\$2,466	\$3,004
90th Percentile	\$10,803	\$14,775
95th Percentile	\$24,899	\$39,894

Cost savings are relatively modest for this program. The median cost savings in the first post-enrollment year for the enrollees in this program is \$26. The median cost savings in the second post-enrollment year for clients who have two years of post-enrollment data available in this program is \$251.

**CONCLUSIONS.** Overall, this program does not show a statistically significant decrease in total costs, but also does not show a significant rise, potentially indicating successful cost prevention. Participants in this program do demonstrate statistically significant reductions in pharmacy costs, though also increases in NILTC spending. Interestingly, the subgroup of clients with a two-year post-period demonstrates reduction in costs for laboratory and physician services in the second post-enrollment year, indicating a delayed spending decrease.

# Office of Temporary and Disability Assistance – Homeless Senior and Disabled Placement Pilot (HSDPP).

- **Program Description:** The Homeless Senior and Disabled Placement Pilot provides rental subsidies for Health Home-eligible SSI recipients living in New York City homeless shelters.
- **Population Served:** Participants are Health Home-eligible SSI recipients living in New York City homeless shelters.
- **Earliest MRT-SH Enrollment Date:** May 2014
- **Enrollment:** 199 included in analysis; 65 had data available from two years post enrollment.
- **Comorbidities:** Enrollees are most likely to have at least one “other” major chronic condition (Table 20A).
- **Duration in MRT-SH:** Almost all participants have been in the program for at least one year (Table 20B).
- **Care Coordination:** The distribution of types of care coordination remained essentially the same for enrollees in Medicaid Managed Care and with dual eligibility in the pre- and post-periods, but Health Homes enrollment decreased in the post-period (Table 20C).

**SUMMARY.** The Homeless Senior and Disabled Placement Pilot program did not show a significant change in overall costs from the pre- to the post-periods examined. Several individual categories of service showed significant cost changes: DME, health home/care management, lab, and physician service costs showed significant decreases from the pre-period through the post periods examined. Clinic and hospital outpatient costs decreased in the first post-period year, and typically remained low in the second (though not significantly different); emergency department costs decreased in the second post-period year, indicating a delay in savings. In contrast, hospital inpatient and other costs increased in the first post-period year (for the full group of clients, likely driven by increases in GME costs). Non-institutional long-term care spending showed a significant increase in the first post-period year, and transportation service costs ( $p=0.052$ ) increased in the second post-period year. The remaining categories do not show statistically significant changes. A graphical depiction of the cost categories follows. These results indicate that cost savings are occurring in several areas, and may be increasing with additional post-period time.

**Table 20A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	63	32%	20	31%
Substance Use Disorder	40	20%	15	23%
Other Chronic Condition	133	67%	36	55%
HIV	1	1%	0	0%
3 or more of the above	18	9%	8	12%
All 4 of the above	0	0%	0	0%

**Table 20B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	0	0%	0	0%
Between 6 and 12 months	35	18%	22	34%
Between 13 and 18 months	87	44%	0	0%
Between 19 and 24 months	72	36%	38	58%
More than 24 months	5	3%	5	8%

**Table 20C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	72%	73%	69%
Health Homes Enrollment	64%	46%	33%
Dual Eligibility	19%	19%	11%

**Table 20D. Pre-Post Medicaid Costs for Residents of OTDA: Homeless Senior and Disabled Placement Pilot, by Category of Service.<sup>40</sup>**

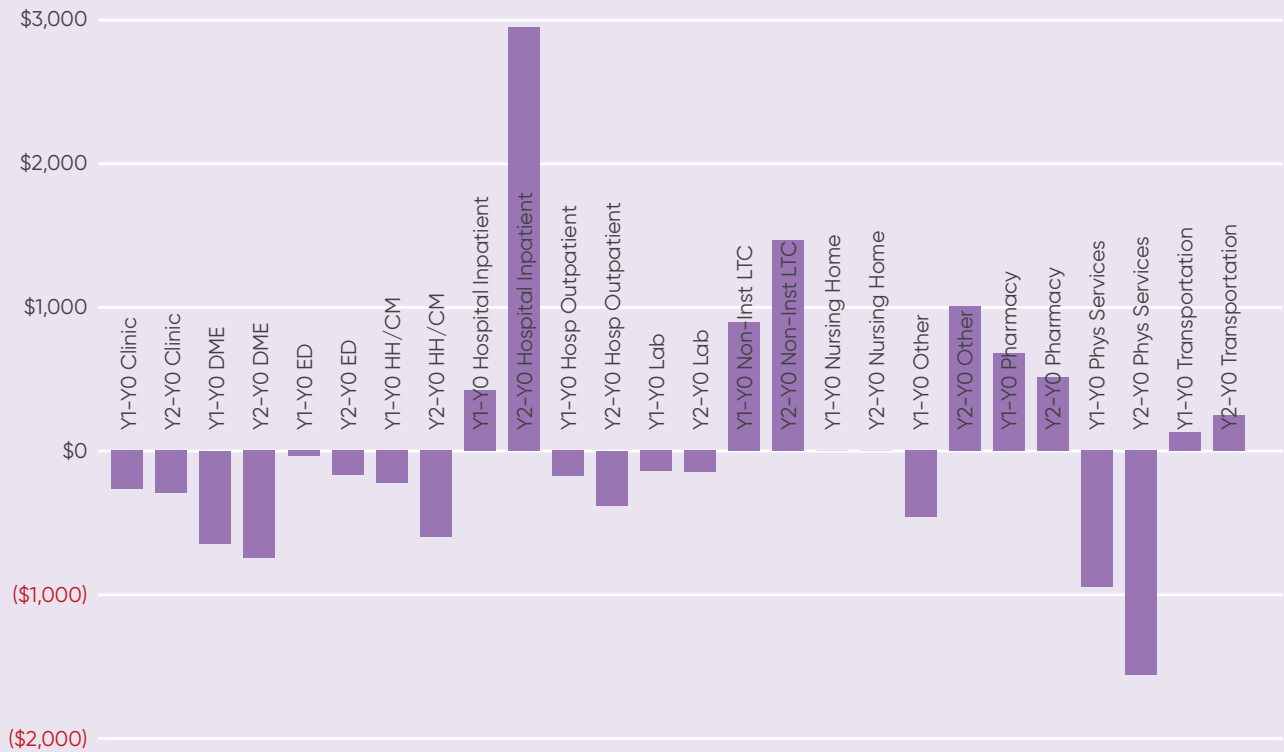
Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>41</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	199	\$4,182,387	\$4,782,142	\$599,755	\$3,014	-\$223	n.s.
Pre vs. 1 Year Post	65	\$1,323,704	\$1,272,578	-\$51,126	-\$787	-\$700	n.s.
Pre vs. 2 Years Post			\$1,471,761	\$148,057	\$2,278	-\$653	n.s.
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	199	\$348,286	\$330,233	-\$18,053	-\$91	\$0	**
Pre vs. 1 Year Post	65	\$95,011	\$77,540	-\$17,471	-\$269	\$0	*
Pre vs. 2 Years Post			\$75,803	-\$19,208	-\$296	\$0	n.s.
<b>DME</b>							
Pre vs. 1 Year Post (all)	199	\$78,978	\$31,200	-\$47,779	-\$240	\$0	***
Pre vs. 1 Year Post	65	\$48,743	\$6,574	-\$42,170	-\$649	\$0	***
Pre vs. 2 Years Post			\$0	-\$48,743	-\$750	\$0	***
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	199	\$36,856	\$35,679	-\$1,177	-\$6	\$0	n.s.
Pre vs. 1 Year Post	65	\$15,288	\$12,687	-\$2,602	-\$40	\$0	n.s.
Pre vs. 2 Years Post			\$4,283	-\$11,005	-\$169	\$0	**
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	199	\$301,226	\$252,405	-\$48,821	-\$245	\$0	*
Pre vs. 1 Year Post	65	\$114,166	\$99,552	-\$14,615	-\$225	-\$79	*
Pre vs. 2 Years Post			\$75,058	-\$39,108	-\$602	-\$422	**

40 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

41 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Hospital Inpatient							
Pre vs. 1 Year Post (all)	199	\$681,293	\$1,135,259	\$453,966	\$2,281	\$0	*
Pre vs. 1 Year Post	65	\$309,759	\$337,328	\$27,569	\$424	\$0	n.s.
Pre vs. 2 Years Post			\$502,109	\$192,350	\$2,959	\$0	n.s.
Hospital Outpatient							
Pre vs. 1 Year Post (all)	199	\$372,901	\$301,577	-\$71,324	-\$358	\$0	†
Pre vs. 1 Year Post	65	\$141,640	\$130,113	-\$11,527	-\$177	\$0	n.s.
Pre vs. 2 Years Post			\$116,775	-\$24,864	-\$383	\$0	n.s.
Lab							
Pre vs. 1 Year Post (all)	199	\$16,183	\$3,499	-\$12,683	-\$64	\$0	***
Pre vs. 1 Year Post	65	\$10,265	\$1,180	-\$9,085	-\$140	\$0	***
Pre vs. 2 Years Post			\$561	-\$9,704	-\$149	\$0	***
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	199	\$1,183,144	\$1,429,623	\$246,479	\$1,239	\$0	**
Pre vs. 1 Year Post	65	\$89,701	\$148,151	\$58,450	\$899	\$0	n.s.
Pre vs. 2 Years Post			\$185,189	\$95,488	\$1,469	\$0	n.s.
Nursing Home							
Pre vs. 1 Year Post (all)	199	\$40,045	\$15,470	-\$24,575	-\$123	\$0	n.s.
Pre vs. 1 Year Post	65	\$0	\$0	\$0	\$0	\$0	n.s.
Pre vs. 2 Years Post	65		\$0	\$0	\$0	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	199	\$207,940	\$235,078	\$27,138	\$136	\$0	*
Pre vs. 1 Year Post	65	\$115,901	\$85,593	-\$30,308	-\$466	\$0	n.s.
Pre vs. 2 Years Post	65		\$181,337	\$65,436	\$1,007	\$0	n.s.
Pharmacy							
Pre vs. 1 Year Post (all)	199	\$499,589	\$696,326	\$196,738	\$989	\$0	n.s.
Pre vs. 1 Year Post	65	\$225,512	\$270,024	\$44,512	\$685	\$3	n.s.
Pre vs. 2 Years Post			\$258,954	\$33,442	\$514	\$0	n.s.
Physician Services							
Pre vs. 1 Year Post (all)	199	\$253,002	\$132,740	-\$120,262	-\$604	-\$41	***
Pre vs. 1 Year Post	65	\$115,338	\$53,295	-\$62,043	-\$955	-\$180	***
Pre vs. 2 Years Post	65		\$13,367	-\$101,970	-\$1,569	-\$352	***
Transportation Services							
Pre vs. 1 Year Post (all)	199	\$162,945	\$183,053	\$20,108	\$101	\$0	n.s.
Pre vs. 1 Year Post	65	\$42,381	\$50,543	\$8,162	\$126	\$0	n.s.
Pre vs. 2 Years Post			\$58,325	\$15,944	\$245	\$0	†

**Figure 12. Mean Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 20E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=199)	Post-Period Year 2 minus Pre-Period (N=65)
5th Percentile	-\$20,968	-\$38,920
10th Percentile	-\$14,707	-\$31,925
25th Percentile	-\$3,719	-\$7,767
50th Percentile	-\$223	-\$653
75th Percentile	\$4,931	\$4,827
90th Percentile	\$25,299	\$43,735
95th Percentile	\$42,363	\$71,776

Median cost savings are relatively modest for this program. The median cost savings in the first post-enrollment year for the enrollees in this program is \$223. The median cost savings in the second post-enrollment year is \$653 for clients with two years of post-enrollment data available is \$653.

**CONCLUSIONS.** Overall, this program does not show a statistically significant decrease in total costs. However, significant cost reductions are seen in several service categories, though most decreases were on a relatively small scale. Notably, Health Home/Care Management claim costs actually decreased for this program over the post-period, which may reflect the sharp decrease in Health Home enrollment for this population. Inpatient and “Other” costs showed a significant rise in the post-period.



# Office of Mental Health – Rental Subsidies: Brooklyn (RSB).

- **Program Description:** The program funds rental subsidies and housing case management in scattered-site SH for Brooklyn residents diagnosed with a serious mental illness.
- **Population Served:** Single, Health Home eligible adults with a serious mental illness who either live in Brooklyn, are referred by a Brooklyn-based Health Home, reside in the New York State Kingsborough Psychiatric Center or an OMH-operated residential program, or are discharged from a Brooklyn Article 28 or Article 31 hospital. Individuals must also be unstably housed or be individuals for whom housing would assist in a hospital diversion.
- **Program Start Date:** February 2013
- **Enrollment:** 366 included in analysis; 292 had data available for two years post enrollment.
- **Comorbidities:** In addition to having an SMI, many enrollees analyzed have an “other” chronic condition (Table 21A).
- **Duration in MRT-SH:** Three-quarters of participants have been in the program for at least two years (Table 21B).
- **Care Coordination:** While Medicaid Managed Care enrollment and dual eligibility stayed the same between periods, Health Home enrollment rose in the post-period (Table 21C).

**SUMMARY.** The Rental Subsidies: Brooklyn program showed significant savings in overall costs in the post period, for both one year and two years after enrollment. Clinic, emergency department, hospital outpatient, lab, other (particularly OMH rehabilitative services<sup>42</sup>), and physician service costs ( $p=0.052$  for full group) all showed significant decreases in the first and second post-periods, as compared to the pre-period; DME costs decreased in the second post-period year. Pharmacy costs increased in the second post-period year. A graphical depiction of the cost categories follows. These results indicate that MRT-SH may be successful in controlling costs in some of the more expensive areas of service.

**Table 21A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	305	83%	264	90%
Substance Use Disorder	112	31%	96	33%
Other Chronic Condition	166	45%	144	49%
HIV	7	2%	7	2%
3 or more of the above	73	20%	61	21%
All 4 of the above	1	0%	1	0%

**Table 21B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	13	4%	11	4%
Between 6 and 12 months	19	5%	10	3%
Between 13 and 18 months	27	7%	12	4%
Between 19 and 24 months	23	6%	14	5%
More than 24 months	254	69%	245	84%

42 OMH rehabilitative services, rate code=268.

**Table 21C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	72%	70%	70%
Health Homes Enrollment	68%	84%	83%
Dual Eligibility	25%	24%	25%

**Table 21D. Pre-Post Medicaid Costs for Residents of OMH: Rental Subsidies: Brooklyn, by Category of Service.<sup>43</sup>**

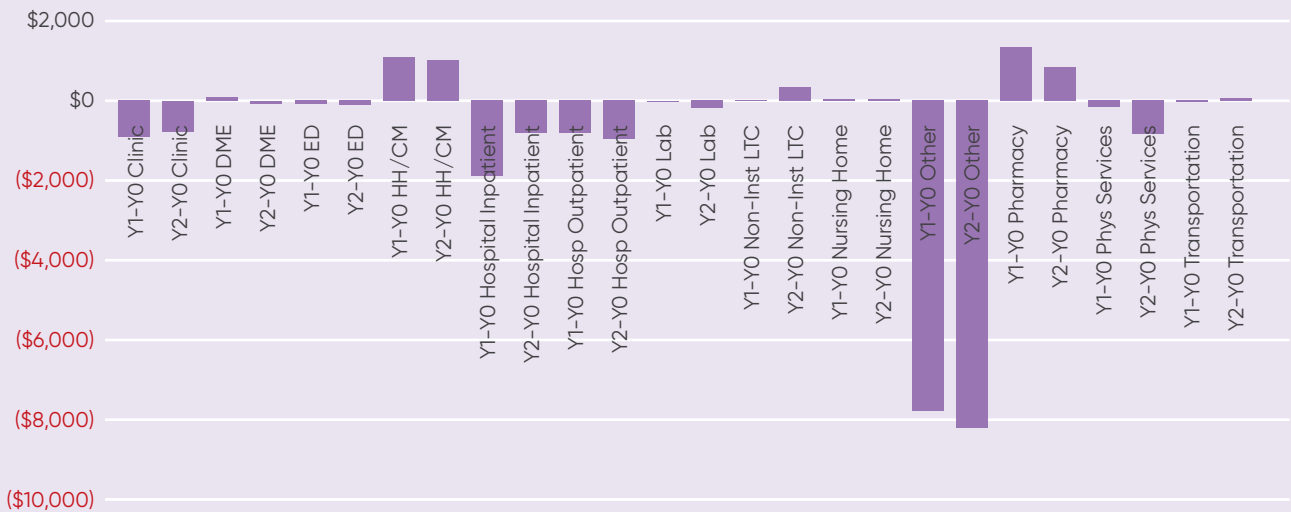
Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>44</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	336	\$10,622,679	\$7,428,911	-\$3,193,767	-\$9,505	-\$4,720	***
Pre vs. 1 Year Post	292	\$9,132,517	\$6,495,284	-\$2,637,233	-\$9,032	-\$4,090	***
Pre vs. 2 Years Post			\$6,335,678	-\$2,796,839	-\$9,578	-\$4,781	***
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	336	\$945,536	\$623,344	-\$322,193	-\$959	-\$92	***
Pre vs. 1 Year Post	292	\$785,657	\$523,944	-\$261,712	-\$896	-\$132	***
Pre vs. 2 Years Post			\$562,561	-\$223,095	-\$764	-\$115	***
<b>DME</b>							
Pre vs. 1 Year Post (all)	336	\$34,744	\$61,648	\$26,904	\$80	\$0	n.s.
Pre vs. 1 Year Post	292	\$32,574	\$60,511	\$27,937	\$96	\$0	n.s.
Pre vs. 2 Years Post			\$11,261	-\$21,313	-\$73	\$0	**
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	336	\$109,911	\$84,212	-\$25,699	-\$76	\$0	*
Pre vs. 1 Year Post	292	\$100,297	\$75,982	-\$24,315	-\$83	\$0	*
Pre vs. 2 Years Post			\$68,121	-\$32,176	-\$110	\$0	***
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	336	\$638,619	\$967,624	\$329,005	\$979	\$982	***
Pre vs. 1 Year Post	292	\$551,425	\$868,811	\$317,386	\$1,087	\$1,091	***
Pre vs. 2 Years Post			\$842,803	\$291,378	\$998	\$983	***
<b>Hospital Inpatient</b>							
Pre vs. 1 Year Post (all)	336	\$2,343,534	\$1,748,794	-\$594,740	-\$1,770	\$0	n.s.
Pre vs. 1 Year Post	292	\$2,025,404	\$1,478,997	-\$546,407	-\$1,871	\$0	n.s.
Pre vs. 2 Years Post			\$1,792,428	-\$232,976	-\$798	\$0	n.s.
<b>Hospital Outpatient</b>							
Pre vs. 1 Year Post (all)	336	\$997,869	\$740,069	-\$257,800	-\$767	-\$56	***
Pre vs. 1 Year Post	292	\$900,324	\$664,530	-\$235,794	-\$808	-\$62	***
Pre vs. 2 Years Post			\$619,971	-\$280,353	-\$960	-\$144	***

<sup>43</sup> The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

<sup>44</sup> Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Lab							
Pre vs. 1 Year Post (all)	336	\$88,889	\$79,943	-\$8,946	-\$27	\$0	***
Pre vs. 1 Year Post	292	\$85,761	\$79,175	-\$6,586	-\$23	\$0	**
Pre vs. 2 Years Post			\$30,040	-\$55,721	-\$191	\$0	***
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	336	\$79,121	\$75,186	-\$3,935	-\$12	\$0	n.s.
Pre vs. 1 Year Post	292	\$75,400	\$72,264	-\$3,135	-\$11	\$0	*
Pre vs. 2 Years Post			\$174,247	\$98,848	\$339	\$0	***
Nursing Home							
Pre vs. 1 Year Post (all)	336	\$391	\$15,417	\$15,026	\$45	\$0	n.s.
Pre vs. 1 Year Post	292	\$391	\$7,723	\$7,332	\$25	\$0	n.s.
Pre vs. 2 Years Post			\$10,199	\$9,808	\$34	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	336	\$3,466,203	\$804,622	-\$2,661,581	-\$7,921	-\$384	***
Pre vs. 1 Year Post	292	\$2,917,499	\$668,568	-\$2,248,931	-\$7,702	-\$378	***
Pre vs. 2 Years Post			\$546,657	-\$2,370,842	-\$8,119	-\$373	***
Pharmacy							
Pre vs. 1 Year Post (all)	336	\$1,219,233	\$1,598,016	\$378,782	\$1,127	-\$5	n.s.
Pre vs. 1 Year Post	192	\$1,021,580	\$1,412,101	\$390,521	\$1,337	-\$4	n.s.
Pre vs. 2 Years Post			\$1,265,514	\$243,934	\$835	-\$23	*
Physician Services							
Pre vs. 1 Year Post (all)	336	\$563,624	\$502,476	-\$61,148	-\$182	\$0	†
Pre vs. 1 Year Post	292	\$527,550	\$483,212	-\$44,338	-\$152	\$0	n.s.
Pre vs. 2 Years Post			\$282,903	-\$244,647	-\$838	-\$306	***
Transportation Services							
Pre vs. 1 Year Post (all)	336	\$135,003	\$127,560	-\$7,443	-\$22	\$0	n.s.
Pre vs. 1 Year Post	292	\$108,656	\$99,465	-\$9,191	-\$31	\$0	n.s.
Pre vs. 2 Years Post			\$128,972	\$20,317	\$70	\$0	n.s.

**Figure 13. Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 21E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=336)	Post-Period Year 2 minus Pre-Period (N=292)
5th Percentile	-\$47,208	-\$52,485
10th Percentile	-\$40,741	-\$44,206
25th Percentile	-\$28,625	-\$26,185
50th Percentile	-\$4,720	-\$4,781
75th Percentile	\$1,888	\$3,377
90th Percentile	\$14,305	\$16,015
95th Percentile	\$26,625	\$33,642

The median cost savings in the first post-enrollment year for the enrollees in this program is \$4,720. The median cost savings in the second post-enrollment year is \$4,781 for clients who have two years of post-enrollment data available.

**CONCLUSIONS.** Overall, this program appears to be reducing Medicaid costs and is successfully steering participants away from frequently utilized venues, including hospital outpatient, clinic, and emergency department settings. “Other” costs, particularly rehabilitative services, also significantly declined in the post-periods examined. However, significant cost increases are seen for Health Homes/Care Management claims, potentially due to the increased enrollment in care management over the period.



# Office of Mental Health – Rental Subsidies: Statewide (RSS).

- **Program Description:** The program funds rental subsidies and housing case management in scattered-site SH for individuals diagnosed with serious mental illness.
- **Population Served:** Single, Health Home-eligible adults with a serious mental illness who are either referred by a Health Home, are a resident in a NYS OMH Psychiatric Center or OMH-operated residential program, or are discharged from an Article 28 or Article 31 hospital. Individuals must also be unstably housed or be individuals for whom housing would assist in a hospital diversion.
- **Program Start Date:** January 2013
- **Enrollment:** 467 included in analysis; 362 had data from two years post enrollment available.
- **Comorbidities:** In addition to SMI, a large proportion of those enrollees analyzed have a substance use disorder (SUD) or an other chronic medical condition (Table 22A).
- **Duration in MRT-SH:** A majority of enrollees analyzed have been in the program for 12 months or more, with a substantial group enrolled for at least two years (Table 22B).
- **Care Coordination:** While Medicaid Managed Care enrollment and dual eligibility stayed the same between periods, Health Home enrollment rose in the post-period (Table 22C).

**SUMMARY.** The Rental Subsidies: Statewide program showed significant savings in overall costs in the post period, for both one year and two years after enrollment. Clinic, emergency department, hospital inpatient, lab, other (particularly OMH rehabilitative services<sup>45</sup>), and physician service costs all showed significant decreases in the first and second post-periods, as compared to the pre-period. Additionally, hospital outpatient costs decreased in the second post-period year. Only Health Home/Care Management costs increased in the post-period. A graphical depiction of the cost categories follows. These results indicate that MRT-SH may be successful in controlling costs in some of the more expensive areas of service.

**Table 22A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	419	90%	331	91%
Substance Use Disorder	182	39%	135	37%
Other Chronic Condition	201	43%	169	47%
HIV	9	2%	8	2%
3 or more of the above	78	17%	65	18%
All 4 of the above	2	0%	2	1%

**Table 22B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	87	19%	63	17%
Between 6 and 12 months	70	15%	47	13%
Between 13 and 18 months	57	12%	27	7%
Between 19 and 24 months	57	12%	36	10%
More than 24 months	196	42%	189	52%

**Table 22C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	67%	67%	65%
Health Home Enrollment	71%	81%	71%
Dual Eligibility	29%	29%	31%

**Table 22D. Pre-Post Medicaid Costs for Residents of OMH: Rental Subsidies: Statewide, by Category of Service<sup>46</sup>**

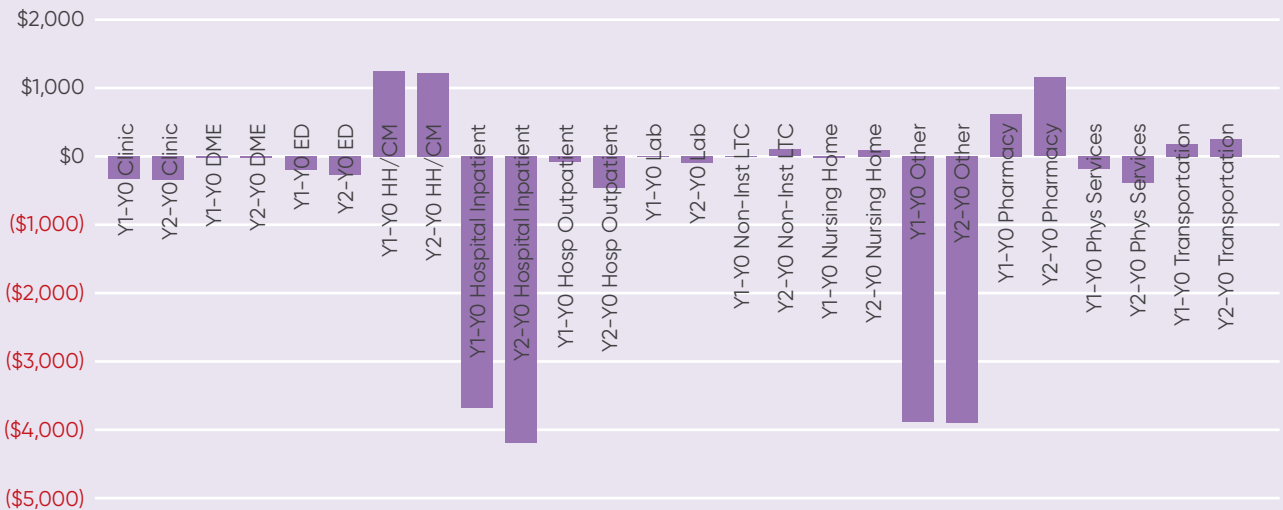
Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>47</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	467	\$13,654,551	\$11,076,299	-\$2,578,252	-\$5,521	-\$1,274	***
Pre vs. 1 Year Post	362	\$11,212,225	\$8,895,096	-\$2,317,128	-\$6,401	-\$1,213	***
Pre vs. 2 Years Post			\$8,701,980	-\$2,510,245	-\$6,934	-\$3,078	***
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	467	\$759,538	\$657,839	-\$101,699	-\$218	\$0	***
Pre vs. 1 Year Post	362	\$611,844	\$489,490	-\$122,354	-\$338	\$0	***
Pre vs. 2 Years Post			\$485,625	-\$126,219	-\$349	\$0	***
<b>DME</b>							
Pre vs. 1 Year Post (all)	467	\$31,948	\$22,727	-\$9,221	-\$20	\$0	†
Pre vs. 1 Year Post	362	\$30,431	\$22,052	-\$8,379	-\$23	\$0	n.s.
Pre vs. 2 Years Post			\$19,921	-\$10,510	-\$29	\$0	n.s.
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	467	\$354,395	\$263,479	-\$90,916	-\$195	\$0	***
Pre vs. 1 Year Post	362	\$285,733	\$214,790	-\$70,944	-\$196	\$0	***
Pre vs. 2 Years Post			\$184,206	-\$101,527	-\$280	-\$21	***
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	467	\$1,059,091	\$1,557,458	\$498,367	\$1,067	\$716	***
Pre vs. 1 Year Post	362	\$827,193	\$1,284,184	\$456,991	\$1,262	\$849	***
Pre vs. 2 Years Post			\$1,272,126	\$444,933	\$1,229	\$709	***
<b>Hospital Inpatient</b>							
Pre vs. 1 Year Post (all)	467	\$4,392,189	\$2,631,325	-\$1,760,864	-\$3,771	\$0	***
Pre vs. 1 Year Post	362	\$3,480,423	\$2,139,665	-\$1,340,757	-\$3,704	\$0	***
Pre vs. 2 Years Post			\$1,947,818	-\$1,532,604	-\$4,234	\$0	***
<b>Hospital Outpatient</b>							
Pre vs. 1 Year Post (all)	467	\$1,425,674	\$1,376,314	-\$49,360	-\$106	\$0	n.s.
Pre vs. 1 Year Post	362	\$1,145,690	\$1,114,666	-\$31,024	-\$86	\$0	n.s.
Pre vs. 2 Years Post			\$980,065	-\$165,625	-\$458	-\$24	**

<sup>46</sup> The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

<sup>47</sup> Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "†" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Lab							
Pre vs. 1 Year Post (all)	467	\$65,703	\$59,133	-\$6,570	-\$14	\$0	†
Pre vs. 1 Year Post	362	\$59,555	\$55,569	-\$3,986	-\$11	\$0	n.s.
Pre vs. 2 Years Post			\$23,239	-\$36,316	-\$100	\$0	***
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	467	\$152,439	\$205,538	\$53,099	\$114	\$0	†
Pre vs. 1 Year Post	362	\$137,272	\$141,616	\$4,344	\$12	\$0	n.s.
Pre vs. 2 Years Post			\$173,831	\$36,559	\$101	\$0	n.s.
Nursing Home							
Pre vs. 1 Year Post (all)	467	\$75,932	\$90,927	\$14,995	\$32	\$0	n.s.
Pre vs. 1 Year Post	362	\$75,932	\$68,259	-\$7,673	-\$21	\$0	n.s.
Pre vs. 2 Years Post			\$111,119	\$35,187	\$97	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	467	\$2,457,367	\$939,029	-\$1,518,338	-\$3,251	-\$51	***
Pre vs. 1 Year Post	362	\$2,143,454	\$727,702	-\$1,415,752	-\$3,911	-\$73	***
Pre vs. 2 Years Post			\$718,087	-\$1,425,366	-\$3,937	-\$151	***
Pharmacy							
Pre vs. 1 Year Post (all)	467	\$1,461,985	\$1,799,944	\$337,959	\$724	\$0	n.s.
Pre vs. 1 Year Post	362	\$1,229,214	\$1,454,748	\$225,534	\$623	\$0	n.s.
Pre vs. 2 Years Post			\$1,650,304	\$421,090	\$1,163	\$0	n.s.
Physician Services							
Pre vs. 1 Year Post (all)	467	\$818,242	\$744,226	-\$74,016	-\$158	-\$84	***
Pre vs. 1 Year Post	362	\$723,121	\$654,853	-\$68,268	-\$189	-\$65	*
Pre vs. 2 Years Post			\$581,699	-\$141,422	-\$391	-\$257	***
Transportation Services							
Pre vs. 1 Year Post (all)	467	\$600,047	\$728,359	\$128,312	\$275	\$0	n.s.
Pre vs. 1 Year Post	362	\$462,363	\$527,503	\$65,140	\$180	\$0	n.s.
Pre vs. 2 Years Post		\$462,363	\$553,938	\$91,575	\$253	\$0	n.s.

Figure 14. Savings by Category of Service, First and Second Post-Periods minus Pre-Period.



**Table 22E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=467)	Post-Period Year 2 minus Pre-Period (N=362)
5th Percentile	-\$50,816	-\$55,858
10th Percentile	-\$35,393	-\$42,123
25th Percentile	-\$12,264	-\$16,529
50th Percentile	-\$1,274	-\$3,078
75th Percentile	\$5,093	\$5,766
90th Percentile	\$15,528	\$19,223
95th Percentile	\$29,149	\$39,875

The median cost savings in the first post-enrollment year for the enrollees in this program is \$1,274. The median cost savings in the second post-enrollment year for clients who have two years of post-enrollment data available is \$3,078.

**CONCLUSIONS.** Overall, this program appears to be reducing Medicaid costs and is successfully steering participants away from costly or frequently utilized venues, including clinic, emergency department, hospital inpatient, and outpatient settings. "Other" costs, particularly for rehabilitative services, also significantly declined in the post-periods examined. However, significant cost increases are seen for the Health Homes/Care Management claims, potentially due to the increased enrollment in care management over the period.





# Office of Alcohol and Substance Abuse Services – Rental Subsidies and Supports.

- **Program Description:** The program provides rental subsidies on a Housing First basis, intensive case management, and job development and counseling services, and also funds clinical supervision of direct service staff.
- **Population Served:** Single adults with a substance use disorder who are homeless, unstably housed, or at risk of homelessness; who are Medicaid eligible; and who meet frequent utilizer criteria (had at least two inpatient hospitalizations, five emergency room visits, or one inpatient hospitalization and four emergency room visits in the previous 12 months).
- **Program Start Date:** April 2013
- **Enrollment:** 442 included in analysis; 313 had data from two years post enrollment available.
- **Comorbidities:** Most of the enrollees analyzed have Medicaid claims reflecting an SUD, with large percentages having an SMI or an other chronic condition. Over one-third of enrollees have diagnoses in 3 or more of the categories analyzed (Table 23A). While a history of SUD was a requirement for eligibility in this program, not all participants had a claim in their pre-period year with SUD as a primary diagnosis; as such, the incidence does not quite reach 100%.
- **Duration in MRT-SH:** A majority of enrollees analyzed have been in the program for 12 months or more, with a substantial group enrolled for at least two years (Table 23B).
- **Care Coordination:** While Medicaid Managed Care enrollment and dual eligibility were similar between periods, Health Homes enrollment increased in the post-period (Table 23C).

**SUMMARY.** OASAS demonstrates significant overall cost savings in the post periods examined, for both one and two years after enrollment. Clinic, DME, emergency department, hospital inpatient, outpatient, lab, physician services, and other costs all showed significant decreases across the post-period years. Transportation costs also decreased somewhat in the first post-period year, though only for the full client group. In contrast, non-institutional long-term care and Health Home/Care Management costs showed significant increases. A graphical depiction of the cost categories follows. These results indicate that MRT-SH may be successful in controlling costs in some of the more expensive areas of service.

**Table 23A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	333	76%	240	77%
Substance Use Disorder	412	93%	291	93%
Other Chronic Condition	213	48%	153	49%
HIV	10	2%	6	2%
3 or more of the above	161	37%	113	36%
All 4 of the above	1	0%	1	0%

**Table 23B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	69	16%	52	17%
Between 6 and 12 months	89	20%	50	16%
Between 13 and 18 months	72	16%	29	9%
Between 19 and 24 months	36	8%	18	6%
More than 24 months	175	40%	164	52%

**Table 23C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	82%	87%	89%
Health Home Enrollment	49%	67%	65%
Dual Eligibility	7%	7%	6%

**Table 23D. Pre-Post Medicaid Costs for Residents of OASAS Rental Subsidies and Supports, by Category of Service<sup>48</sup>**

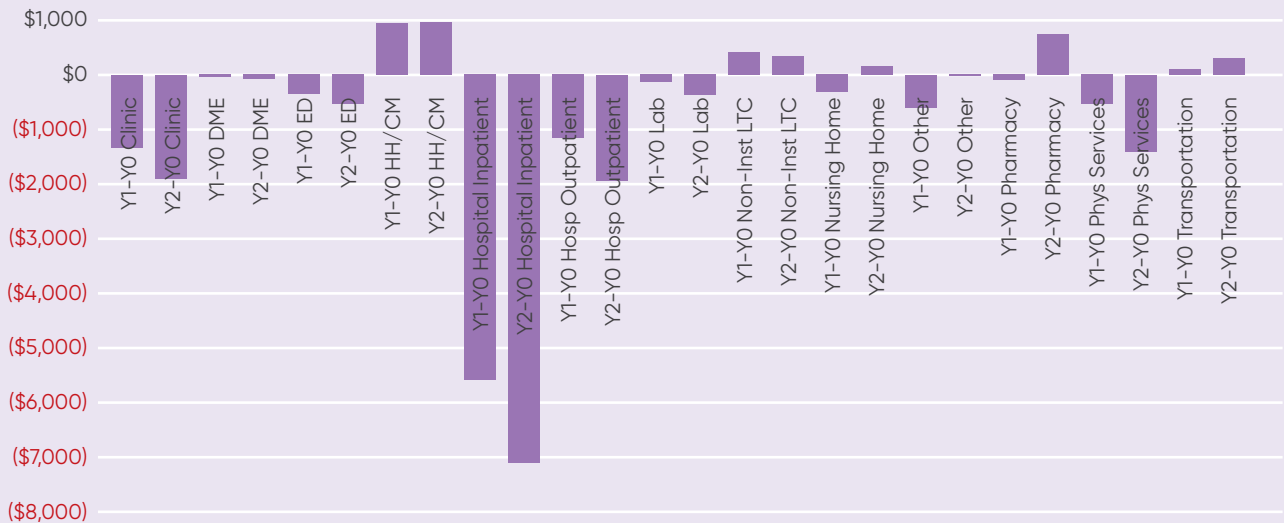
Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>49</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	441	\$17,732,979	\$12,566,136	-\$5,166,843	-\$11,716	-\$8,197	***
Pre vs. 1 Year Post	313	\$12,279,775	\$9,515,807	-\$2,763,967	-\$8,831	-\$6,099	***
Pre vs. 2 Years Post			\$8,825,992	-\$3,453,783	-\$11,034	-\$9,003	***
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	441	\$2,041,720	\$1,345,709	-\$696,011	-\$1,578	-\$404	***
Pre vs. 1 Year Post	313	\$1,396,115	\$973,049	-\$423,066	-\$1,352	-\$288	***
Pre vs. 2 Years Post			\$791,891	-\$604,224	-\$1,930	-\$812	***
<b>DME</b>							
Pre vs. 1 Year Post (all)	441	\$46,980	\$26,629	-\$20,351	-\$46	\$0	***
Pre vs. 1 Year Post	313	\$35,041	\$22,408	-\$12,634	-\$40	\$0	***
Pre vs. 2 Years Post			\$10,105	-\$24,936	-\$80	\$0	**
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	441	\$417,558	\$252,635	-\$164,923	-\$374	-\$178	***
Pre vs. 1 Year Post	313	\$322,403	\$211,895	-\$110,508	-\$353	-\$187	***
Pre vs. 2 Years Post			\$151,883	-\$170,520	-\$545	-\$248	***
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	441	\$519,169	\$868,833	\$349,663	\$793	\$495	***
Pre vs. 1 Year Post	313	\$386,644	\$684,098	\$297,455	\$950	\$837	***
Pre vs. 2 Years Post			\$692,172	\$305,528	\$976	\$677	***
<b>Hospital Inpatient</b>							
Pre vs. 1 Year Post (all)	441	\$8,065,050	\$4,584,009	-\$3,481,041	-\$7,894	-\$3,812	***
Pre vs. 1 Year Post	313	\$5,232,840	\$3,455,713	-\$1,777,127	-\$5,678	-\$1,839	***
Pre vs. 2 Years Post			\$2,975,867	-\$2,256,973	-\$7,211	-\$3,356	***
<b>Hospital Outpatient</b>							
Pre vs. 1 Year Post (all)	441	\$1,645,216	\$1,141,004	-\$504,212	-\$1,143	-\$335	***
Pre vs. 1 Year Post	313	\$1,275,968	\$908,543	-\$367,425	-\$1,174	-\$336	***
Pre vs. 2 Years Post			\$661,039	-\$614,929	-\$1,965	-\$517	***

48 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

49 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001.

Lab							
Pre vs. 1 Year Post (all)	441	\$174,591	\$118,847	-\$55,745	-\$126	-\$8	***
Pre vs. 1 Year Post	313	\$150,711	\$108,591	-\$42,119	-\$135	-\$4	**
Pre vs. 2 Years Post			\$31,358	-\$119,353	-\$381	-\$56	***
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	441	\$154,937	\$252,447	\$97,510	\$221	\$0	*
Pre vs. 1 Year Post	313	\$40,275	\$171,854	\$131,579	\$420	\$0	*
Pre vs. 2 Years Post			\$146,481	\$106,206	\$339	\$0	*
Nursing Home							
Pre vs. 1 Year Post (all)	441	\$149,431	\$51,980	-\$97,450	-\$221	\$0	n.s.
Pre vs. 1 Year Post	313	\$141,089	\$42,153	-\$98,936	-\$316	\$0	n.s.
Pre vs. 2 Years Post			\$188,939	\$47,850	\$153	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	441	\$1,197,329	\$844,086	-\$353,243	-\$801	-\$77	***
Pre vs. 1 Year Post	313	\$803,393	\$611,931	-\$191,462	-\$612	-\$46	*
Pre vs. 2 Years Post			\$796,629	-\$6,764	-\$22	-\$154	**
Pharmacy							
Pre vs. 1 Year Post (all)	441	\$1,914,325	\$1,984,953	\$70,629	\$160	-\$24	n.s.
Pre vs. 1 Year Post	313	\$1,459,282	\$1,426,587	-\$32,695	-\$104	-\$23	n.s.
Pre vs. 2 Years Post			\$1,696,041	\$236,759	\$756	-\$75	n.s.
Physician Services							
Pre vs. 1 Year Post (all)	441	\$965,886	\$661,704	-\$304,182	-\$690	-\$284	***
Pre vs. 1 Year Post	313	\$736,741	\$568,131	-\$168,610	-\$539	-\$240	***
Pre vs. 2 Years Post			\$289,810	-\$446,931	-\$1,428	-\$699	***
Transportation Services							
Pre vs. 1 Year Post (all)	441	\$440,789	\$433,301	-\$7,488	-\$17	\$0	†
Pre vs. 1 Year Post	313	\$299,274	\$330,855	\$31,580	\$101	\$0	n.s.
Pre vs. 2 Years Post			\$393,777	\$94,502	\$302	\$0	n.s.

Figure 15. Savings by Category of Service, First and Second Post-Periods minus Pre-Period.



**Table 23E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=441)	Post-Period Year 2 minus Pre-Period (N=313)
5th Percentile	-\$69,545	-\$75,486
10th Percentile	-\$43,084	-\$48,261
25th Percentile	-\$23,503	-\$23,370
50th Percentile	-\$8,197	-\$9,003
75th Percentile	\$3,059	\$2,693
90th Percentile	\$18,425	\$18,299
95th Percentile	\$34,083	\$40,163

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$8,197. The median cost savings in the second post-enrollment year for clients who have two years of post-enrollment data available in this program is \$9,003. Savings for clients in the 5th percentile outweigh spending for those in the 95th.

**CONCLUSIONS.** Overall, this program shows a statistically significant decrease in total costs. Participants in this program show decreased expenditures across most categories of service, especially for high-cost venues such as emergency departments and hospitals. However, significant cost increases are seen for non-institutional long-term care costs, indicating continued care needs, and for Health Homes/Care Management claims, potentially due to the increased enrollment in care management over the period.



# Office for People with Developmental Disabilities: Expansion of Existing Rental/ Services (OPWDD).

- Program Description:** The program provides rental subsidies and services to individuals with intellectual or developmental disabilities who move from certified residential settings with continuous supervision (supervised model residences) to more independent, less restrictive housing (supportive model certified residences or uncertified private apartments with support services such as community habilitation and personal care). A subset of program participants individually tailors their service structures through OPWDD’s Self-Direction program. The OPWDD Expansion of Existing Rental/Services is intended to help the state achieve its Americans with Disabilities Act (ADA)/Olmstead Implementation Plan goals in addition to reducing Medicaid spending.
- Population Served:** Individuals with developmental disabilities who expressed interest in more independent living or who were referred by family or provider agencies.
- Program Start Date:** May 2013
- Enrollment:** 59 included in analysis; 49 had data from two years post enrollment available.
- Comorbidities:** Enrollees are most likely to have a serious mental illness (SMI) or some other chronic condition (Table 24A).
- Duration in MRT-SH:** Over 80% of clients have been enrolled at least a year and a half (Table 24B).
- Care Coordination:** Care coordination enrollment was similar in the pre- and post-periods examined. Medicaid Managed Care and Health Home enrollment were consistently low; over half of clients had dual eligibility (Table 24C).

**SUMMARY.** OPWDD demonstrates significant overall cost savings in the post periods examined, for both one and two years after enrollment. Almost all of these savings come from decreases in the Other service category, primarily driven by decreased spending on OPWDD waiver services.<sup>50</sup> Lab costs showed a marginal decrease in the first post-enrollment year, and clinic costs a marginal decrease in the second post-enrollment year. Several service categories showed significant post-period cost increases, including Health Home/Care Management<sup>51</sup>, hospital inpatient, hospital outpatient ( $p=0.06$ ), and transportation service costs. Non-institutional long-term care spending showed some average increases. The remaining categories do not show statistically significant changes and are mixed in terms of the cost behavior in the pre- and post-periods. A graphical depiction of the cost categories follows. These results indicate that cost savings in waiver services drive overall cost savings for the program.

**Table 24A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	36	61%	29	59%
Substance Use Disorder	2	3%	0	0%
Other Chronic Condition	20	34%	17	35%
HIV	0	0%	0	0%
3 or more of the above	1	2%	0	0%
All 4 of the above	0	0%	0	0%

<sup>50</sup> OPWDD waivers services: residential habilitation in IRA/CR-supervised, rate code 269.

<sup>51</sup> OPWDD program participants were not Health Home-enrolled, but did receive other types of care management.

**Table 24B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	2	3%	2	4%
Between 6 and 12 months	5	8%	4	8%
Between 13 and 18 months	4	7%	0	0%
Between 19 and 24 months	7	12%	5	10%
More than 24 months	41	69%	38	78%

**Table 24C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	8%	7%	6%
Health Homes Enrollment	0%	0%	0%
Dual Eligibility	61%	61%	67%

**Table 24D. Pre-Post Medicaid Costs for Residents of OPWDD, by Category of Service<sup>52</sup>**

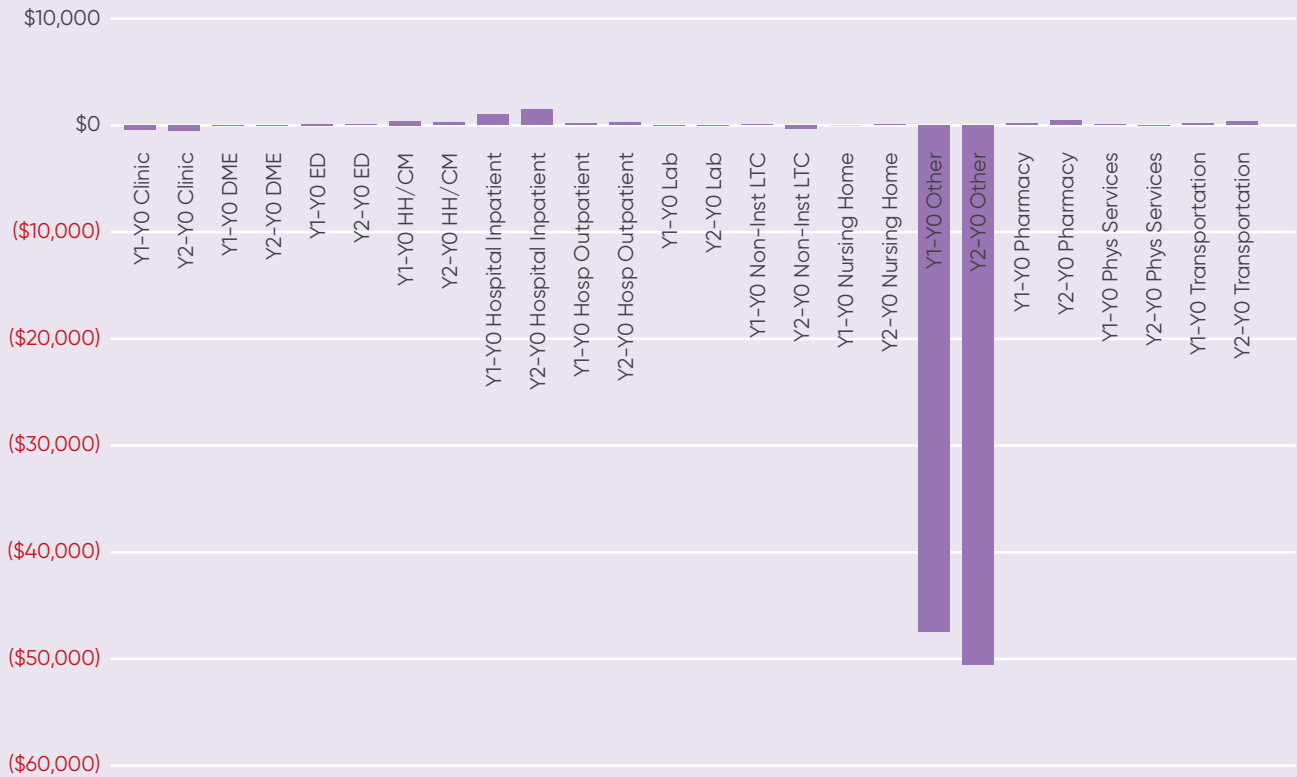
Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>53</sup>
<b>OPWDD Overall</b>							
Pre vs. 1 Year Post (all)	59	\$6,038,216	\$3,069,013	-\$2,969,203	-\$50,325	-\$55,062	***
Pre vs. 1 Year Post	49	\$4,882,172	\$2,645,772	-\$2,236,400	-\$45,641	-\$50,641	***
Pre vs. 2 Years Post			\$2,511,119	-\$2,371,053	-\$48,389	-\$59,292	***
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	59	\$154,077	\$132,425	-\$21,652	-\$367	-\$183	n.s.
Pre vs. 1 Year Post	49	\$136,925	\$116,693	-\$20,232	-\$413	-\$183	n.s.
Pre vs. 2 Years Post			\$111,703	-\$25,222	-\$515	-\$140	†
<b>DME</b>							
Pre vs. 1 Year Post (all)	59	\$9,996	\$8,090	-\$1,906	-\$32	\$0	n.s.
Pre vs. 1 Year Post	49	\$8,124	\$7,187	-\$937	-\$19	\$0	n.s.
Pre vs. 2 Years Post			\$6,079	-\$2,045	-\$42	\$0	n.s.
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	59	\$3,652	\$10,553	\$6,901	\$117	\$0	†
Pre vs. 1 Year Post	49	\$2,810	\$7,500	\$4,690	\$96	\$0	n.s.
Pre vs. 2 Years Post			\$6,043	\$3,233	\$66	\$0	n.s.
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	59	\$152,470	\$176,503	\$24,033	\$407	\$36	***
Pre vs. 1 Year Post	49	\$124,751	\$143,115	\$18,364	\$375	\$36	***
Pre vs. 2 Years Post			\$134,836	\$10,085	\$206	\$32	***

<sup>52</sup> The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

<sup>53</sup> Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "†" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Hospital Inpatient							
Pre vs. 1 Year Post (all)	59	\$23,244	\$57,927	\$34,683	\$588	\$0	n.s.
Pre vs. 1 Year Post	49	\$10,232	\$57,927	\$47,695	\$973	\$0	†
Pre vs. 2 Years Post			\$83,027	\$72,795	\$1,486	\$0	†
Hospital Outpatient							
Pre vs. 1 Year Post (all)	59	\$14,539	\$21,857	\$7,318	\$124	\$0	n.s.
Pre vs. 1 Year Post	49	\$11,390	\$19,020	\$7,630	\$156	\$0	n.s.
Pre vs. 2 Years Post			\$23,018	\$11,629	\$237	\$0	†
Lab							
Pre vs. 1 Year Post (all)	59	\$1,455	\$823	-\$632	-\$11	\$0	†
Pre vs. 1 Year Post	49	\$1,072	\$784	-\$288	-\$6	\$0	n.s.
Pre vs. 2 Years Post			\$842	-\$230	-\$5	\$0	n.s.
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	59	\$36,845	\$48,163	\$11,318	\$192	\$0	*
Pre vs. 1 Year Post	49	\$36,845	\$39,292	\$2,448	\$50	\$0	*
Pre vs. 2 Years Post			\$20,029	-\$16,815	-\$343	\$0	n.s.
Nursing Home							
Pre vs. 1 Year Post (all)	59	\$0	\$0	\$0	\$0	\$0	--
Pre vs. 1 Year Post	49	\$0	\$0	\$0	\$0	\$0	--
Pre vs. 2 Years Post			\$1,411	\$1,411	\$29	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	59	\$5,521,408	\$2,467,256	-\$3,054,152	-\$51,765	-\$57,978	***
Pre vs. 1 Year Post	49	\$4,453,189	\$2,140,111	-\$2,313,078	-\$47,206	-\$51,577	***
Pre vs. 2 Years Post			\$1,988,383	-\$2,464,807	-\$50,302	-\$58,980	***
Pharmacy							
Pre vs. 1 Year Post (all)	59	\$81,670	\$91,196	\$9,525	\$161	\$4	n.s.
Pre vs. 1 Year Post	49	\$65,813	\$73,926	\$8,113	\$166	\$0	n.s.
Pre vs. 2 Years Post			\$87,869	\$22,056	\$450	\$0	n.s.
Physician Services							
Pre vs. 1 Year Post (all)	59	\$34,015	\$35,419	\$1,405	\$24	-\$24	n.s.
Pre vs. 1 Year Post	49	\$26,642	\$29,103	\$2,461	\$50	\$0	n.s.
Pre vs. 2 Years Post			\$25,369	-\$1,273	-\$26	\$6	n.s.
Transportation Services							
Pre vs. 1 Year Post (all)	59	\$4,845	\$18,800	\$13,955	\$237	\$0	***
Pre vs. 1 Year Post	49	\$4,380	\$11,114	\$6,734	\$137	\$0	**
Pre vs. 2 Years Post			\$22,509	\$18,129	\$370	\$0	**

**Figure 16. Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 24E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=59)	Post-Period Year 2 minus Pre-Period (N=49)
5th Percentile	-\$95,050	-\$99,722
10th Percentile	-\$83,828	-\$89,237
25th Percentile	-\$68,549	-\$70,493
50th Percentile	-\$55,062	-\$59,292
75th Percentile	-\$27,396	-\$21,406
90th Percentile	-\$12,211	\$2,405
95th Percentile	\$5,382	\$20,774

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$55,062. The median cost savings in the second post-enrollment year for clients who have two years of post-enrollment data available in this program is \$59,292. As such, cost savings significantly outweighed the slight increases in spending for clients in the top 5%.

**CONCLUSIONS.** Overall, this program shows large, statistically significant decreases in total costs. The largest changes in spending are in the “Other” category, reflecting a reduction in waiver service spending. Several categories showed spending increases over the post-periods, including Health Home/Care Management and non-institutional long-term care; notably, hospital (inpatient and outpatient) and emergency department claims both rose marginally as well. Even so, these rises are far outweighed by the overall decreases seen, making the program hugely successful in reducing Medicaid spending.



# OHIP: Health Homes Supportive Housing Pilot (HHSHP).

- **Program Description:** This program offers rental subsidies and services to homeless or unstably housed Medicaid members enrolled in New York State’s Health Home program.
- **Population Served:** Homeless or unstably housed Health Home members.
- **Program Start Date:** December 2014
- **Enrollment:** 319 included in analysis; 149 had data from two years post enrollment available.
- **Comorbidities:** A majority of the enrollees analyzed have a serious mental illness (SMI), substance use disorder (SUD), or an other chronic condition. Over one-quarter of clients have claims for at least three of these diagnosis categories in the past year (Table 25A).
- **Duration in MRT-SH:** Over half of enrollees have been in the program for more than 12 months; about one-third have been enrolled for between six and twelve months (Table 25B).
- **Care Coordination:** Almost all participants were enrolled in Medicaid Managed Care and Health Homes in both the pre- and post-periods. Few enrollees were dually eligible in either period (Table 25C).

**SUMMARY.** The Health Homes Supportive Housing Pilot program showed significant savings in overall costs in the post period, for both one year and two years after enrollment. Clinic, DME, emergency department, hospital inpatient, lab, and physician service costs all showed significant decreases in the post period. Other costs showed an overall decrease in the first post-period year for the full group (primarily driven by decreases in inpatient GME costs), and an increase for the subgroup of clients who had data available for a second post-period year (mostly driven by increases in chain pharmacy spending). Transportation costs showed a marginal increase in the second post-period year. A graphical depiction of the cost categories follows. These results indicate that MRT-SH may be successful in controlling costs in some of the more expensive areas of service.

**Table 25A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	249	78%	113	76%
Substance Use Disorder	160	50%	71	48%
Other Chronic Condition	185	58%	80	54%
HIV	12	4%	4	3%
3 or more of the above	88	28%	35	23%
All 4 of the above	4	1%	1	1%

**Table 25B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	35	11%	14	9%
Between 6 and 12 months	105	33%	48	32%
Between 13 and 18 months	74	23%	15	10%
Between 19 and 24 months	49	15%	19	13%
More than 24 months	56	18%	53	36%

**Table 25C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	83%	85%	85%
Health Homes Enrollment	81%	89%	84%
Dual Eligibility	13%	13%	14%

**Table 25D. Pre-Post Medicaid Costs for Residents of OHIP: Health Homes Supportive Housing Pilot, by Category of Service<sup>54</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>55</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	319	\$11,188,943	\$9,438,071	-\$1,750,872	-\$5,489	-\$2,473	***
Pre vs. 1 Year Post	149	\$5,089,186	\$3,780,320	-\$1,308,866	-\$8,784	-\$3,079	***
Pre vs. 2 Years Post			\$4,142,127	-\$947,059	-\$6,356	-\$4,573	**
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	319	\$763,462	\$624,130	-\$139,332	-\$437	\$0	***
Pre vs. 1 Year Post	149	\$380,106	\$330,769	-\$49,336	-\$331	\$0	n.s.
Pre vs. 2 Years Post			\$330,836	-\$49,269	-\$331	\$0	†
<b>DME</b>							
Pre vs. 1 Year Post (all)	319	\$50,684	\$8,559	-\$42,125	-\$132	\$0	***
Pre vs. 1 Year Post	149	\$27,066	\$5,951	-\$21,115	-\$142	\$0	***
Pre vs. 2 Years Post			\$1,500	-\$25,566	-\$172	\$0	***
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	319	\$298,234	\$125,754	-\$172,480	-\$541	-\$86	***
Pre vs. 1 Year Post	149	\$126,841	\$67,814	-\$59,027	-\$396	-\$186	***
Pre vs. 2 Years Post			\$47,698	-\$79,143	-\$531	-\$302	***
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	319	\$618,291	\$850,376	\$232,085	\$728	\$608	***
Pre vs. 1 Year Post	149	\$310,267	\$422,104	\$111,837	\$751	\$683	***
Pre vs. 2 Years Post			\$393,418	\$83,152	\$558	\$734	***
<b>Hospital Inpatient</b>							
Pre vs. 1 Year Post (all)	319	\$4,324,218	\$3,090,349	-\$1,233,869	-\$3,868	\$0	***
Pre vs. 1 Year Post	149	\$1,978,966	\$1,201,054	-\$777,912	-\$5,221	\$0	**
Pre vs. 2 Years Post			\$1,281,965	-\$697,002	-\$4,678	\$0	**
<b>Hospital Outpatient</b>							
Pre vs. 1 Year Post (all)	319	\$1,003,501	\$1,049,725	\$46,224	\$145	\$0	n.s.
Pre vs. 1 Year Post	149	\$382,705	\$391,399	\$8,694	\$58	\$0	n.s.
Pre vs. 2 Years Post			\$438,087	\$55,382	\$372	\$0	n.s.

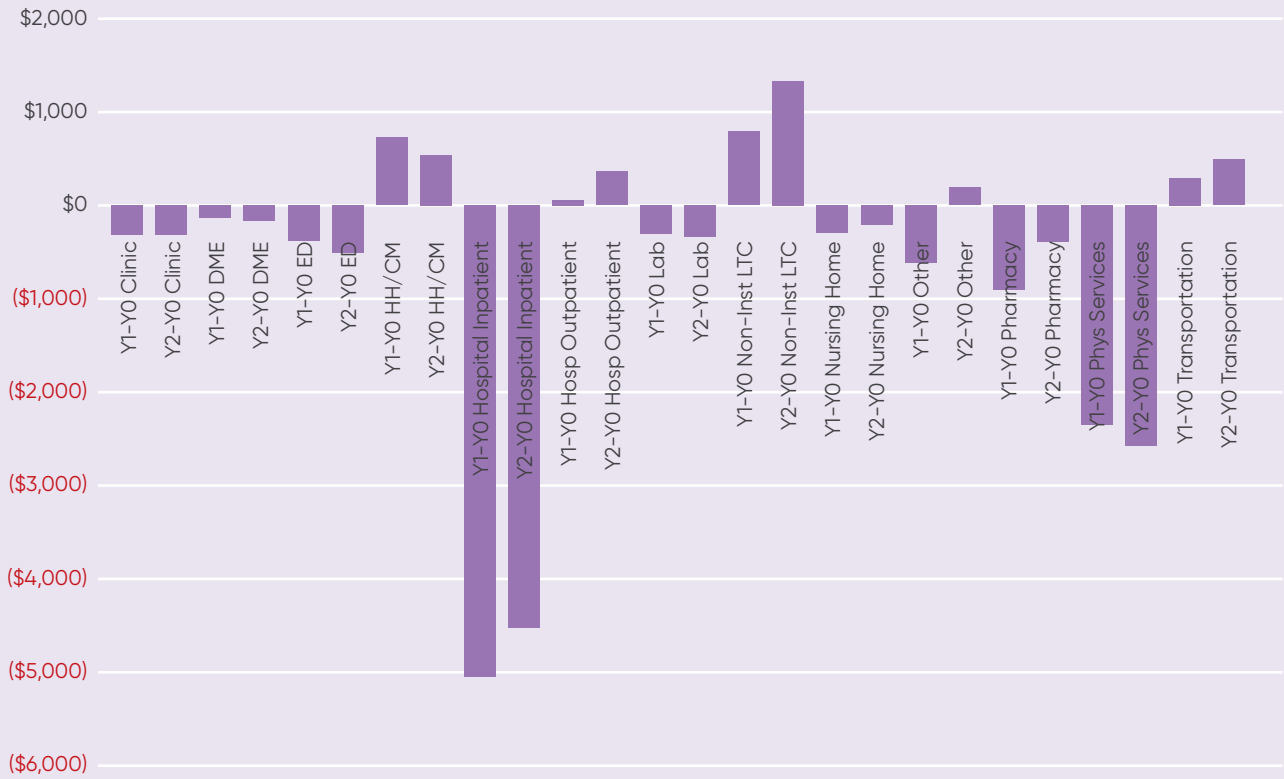
54 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

55 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "†" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Lab							
Pre vs. 1 Year Post (all)	319	\$96,378	\$85,935	-\$10,443	-\$33	\$0	***
Pre vs. 1 Year Post	149	\$55,407	\$7,975	-\$47,432	-\$318	-\$14	***
Pre vs. 2 Years Post			\$2,859	-\$52,548	-\$353	-\$23	***
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	319	\$203,494	\$354,613	\$151,120	\$474	\$0	†
Pre vs. 1 Year Post	149	\$98,100	\$219,725	\$121,626	\$816	\$0	n.s.
Pre vs. 2 Years Post			\$303,092	\$204,993	\$1,376	\$0	†
Nursing Home							
Pre vs. 1 Year Post (all)	319	\$79,141	\$104,124	\$24,983	\$78	\$0	n.s.
Pre vs. 1 Year Post	149	\$49,999	\$4,538	-\$45,462	-\$305	\$0	n.s.
Pre vs. 2 Years Post			\$17,395	-\$32,604	-\$219	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	319	\$1,136,673	\$814,136	-\$322,537	-\$1,011	-\$111	***
Pre vs. 1 Year Post	149	\$358,813	\$264,194	-\$94,619	-\$635	-\$153	***
Pre vs. 2 Years Post			\$388,118	\$29,304	\$197	-\$173	**
Pharmacy							
Pre vs. 1 Year Post (all)	319	\$1,489,736	\$1,697,963	\$208,227	\$653	\$3	n.s.
Pre vs. 1 Year Post	149	\$693,794	\$554,658	-\$139,136	-\$934	\$0	n.s.
Pre vs. 2 Years Post			\$632,733	-\$61,061	-\$410	\$22	n.s.
Physician Services							
Pre vs. 1 Year Post (all)	319	\$696,842	\$162,336	-\$534,507	-\$1,676	-\$520	***
Pre vs. 1 Year Post	149	\$462,226	\$100,509	-\$361,717	-\$2,428	-\$1,476	***
Pre vs. 2 Years Post			\$64,385	-\$397,840	-\$2,670	-\$1,409	***
Transportation Services							
Pre vs. 1 Year Post (all)	319	\$428,289	\$470,071	\$41,782	\$131	\$0	n.s.
Pre vs. 1 Year Post	149	\$164,897	\$209,631	\$44,734	\$300	\$0	n.s.
Pre vs. 2 Years Post			\$240,042	\$75,145	\$504	\$0	†



**Figure 17. Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 25E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=319)	Post-Period Year 2 minus Pre-Period (N=149)
5th Percentile	-\$56,753	-\$56,218
10th Percentile	-\$38,077	-\$42,606
25th Percentile	-\$16,671	-\$16,802
50th Percentile	-\$2,473	-\$4,573
75th Percentile	\$5,041	\$6,029
90th Percentile	\$19,593	\$37,638
95th Percentile	\$48,652	\$62,407

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$2,473. The median cost savings in the second post-enrollment year for clients who have two years of post-enrollment data available in this program is \$4,573.

**CONCLUSIONS.** Overall, this program appears to be working to reduce costs and is successfully steering participants away from costly or frequently utilized venues – in particular, hospital inpatient, clinic and emergency department settings. Further, statistically significant decreases in costs are seen for DME, laboratory and physician services.

# Office of Health Insurance Programs – Nursing Home to Independent Living (Transitions).

- **Program Description:** The Nursing Home to Independent Living (NHIL) program provides an array of services intended to establish independence, wellness, and self-management, including rental subsidies, community transition services, environmental modifications, tenancy sustaining services, and preventive health services.
- **Population Served:** Participants are elderly or physically disabled; in a nursing home or eligible for a nursing facility level of care; and homeless or unstably housed. The 33 participants included in this analysis transitioned out of a nursing home with program assistance.
- **Program Start Date:** January 2015
- **Enrollment:** 33 included in analysis; only 4 had data from two years post enrollment available, and so analyses on second-year data were not performed.
- **Comorbidities:** Enrollees are most likely to have a serious mental illness (SMI) or an other chronic condition (Table 26A).
- **Duration in MRT-SH:** The majority of enrollees have been in the program for more than one year (Table 26B).
- **Care Coordination:** Medicaid Managed Care enrollment increased notably in the post-period to include almost all participants. Dual eligibility remained high in both periods, encompassing over half the group. In contrast, Health Home enrollment remained low in both periods examined (Table 26C).

**SUMMARY.** The Nursing Home to Independent Living (Transition clients) program showed a significant decrease in overall costs from the pre-period to the first post-period year. Hospital inpatient, lab, nursing home, and physician service costs all showed significant decreases in this period. In contrast, emergency department costs showed a significant increase in this period. The remaining categories do not show statistically significant changes and are mixed in terms of the cost behavior in the pre- and post-periods. A graphical depiction of the cost categories follows. These results indicate that cost savings are occurring in several key areas, and more may be seen over time.

**Table 26A. Comorbidity Distribution for Enrollees Analyzed.**

	Post Year 1 Only	Percent of Total Group
Serious Mental Illness	20	61%
Substance Use Disorder	4	12%
Other Chronic Condition	30	91%
HIV	0	0%
3 or more of the above	3	9%
All 4 of the above	0	0%

**Table 26B. Enrollment Duration for Enrollees Analyzed.**

	Post Year 1 Only	Percent of Total Group
Less than 6 months	6	18%
Between 6 and 12 months	3	9%
Between 13 and 18 months	10	30%
Between 19 and 24 months	12	37%
More than 24 months	2	6%

**Table 26C. Care Coordination for Enrollees Analyzed.**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	58%	91%	85%
Health Homes Enrollment	18%	12%	0%
Dual Eligibility	58%	58%	14%

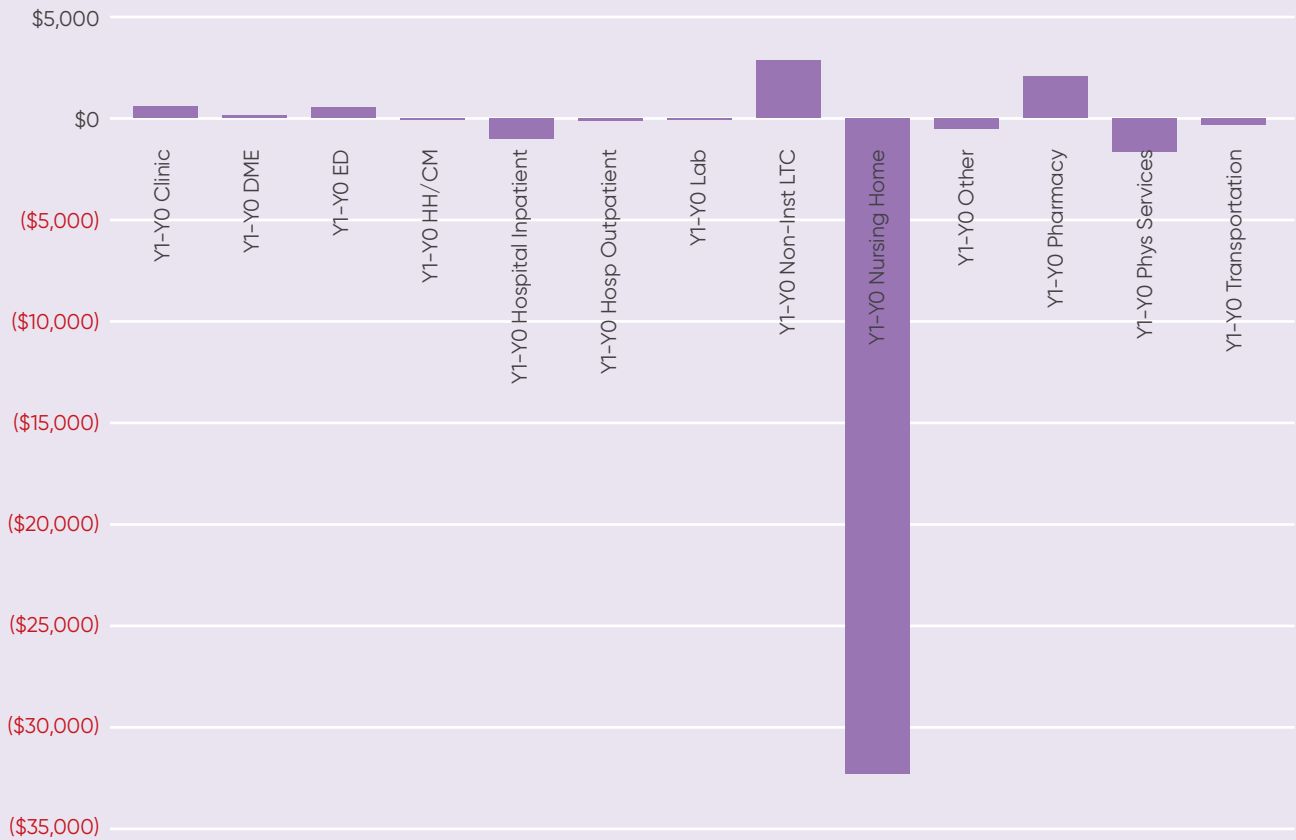
**Table 26D. Pre-Post Medicaid Costs for Residents of NHIL: Transitions, by Category of Service<sup>56</sup>**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>57</sup>
Overall	33	\$2,820,958	\$1,828,394	-\$992,565	-\$30,078	-\$38,163	**
Clinic		\$61,423	\$79,819	\$18,396	\$557	\$0	n.s.
DME		\$5,265	\$9,320	\$4,055	\$123	\$0	n.s.
Emergency Department		\$11,433	\$28,576	\$17,143	\$519	\$108	**
Health Home/Care Mgmt		\$17,270	\$14,613	-\$2,658	-\$81	\$0	n.s.
Hospital Inpatient		\$802,542	\$769,721	-\$32,821	-\$995	-\$3,955	*
Hospital Outpatient		\$46,773	\$43,188	-\$3,585	-\$109	\$0	n.s.
Lab		\$2,163	\$351	-\$1,811	-\$55	\$0	*
Non-Institutional LTC		\$379,330	\$472,955	\$93,625	\$2,837	\$0	n.s.
Nursing Home		\$1,109,888	\$39,568	-\$1,070,320	-\$32,434	-\$28,222	***
Other		\$95,304	\$77,929	-\$17,374	-\$526	-\$485	n.s.
Pharmacy		\$74,830	\$142,295	\$67,465	\$2,044	\$0	n.s.
Physician Services		\$143,643	\$89,010	-\$54,634	-\$1,656	-\$1,509	**
Transportation Services		\$71,093	\$61,048	-\$10,045	-\$304	-\$396	n.s.

<sup>56</sup> The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

<sup>57</sup> Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

**Figure 18. Mean Savings by Category of Service, Post-Period minus Pre-Period.**



**Table 26E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

Post-Period Year 1 minus Pre-Period (N=33)	
5th Percentile	-\$147,571
10th Percentile	-\$86,935
25th Percentile	-\$66,153
50th Percentile	-\$38,163
75th Percentile	-\$1,055
90th Percentile	\$46,273
95th Percentile	\$135,462

The pre-post change is highly variable between participants. The median cost savings in the first post-enrollment year for the enrollees in this program is \$38,163.

**CONCLUSIONS.** Overall, this program shows a statistically significant decrease in total costs in the first year post-enrollment. Further, this program appears to be successfully steering participants away from costly venues – in particular, nursing home and hospital inpatient settings. Further analyses in the Outcomes report may help explain the pattern of utilization of emergency department visits that lead to this cost increase.

# Office of Health Insurance Programs – Senior Supportive Housing Services (SSHS).

- **Program Description:** Senior Supportive Housing Services (SSHS) provided capital assistance and supportive services within existing senior housing communities. Capital funding was used to increase accessibility features within existing units. Supportive services were intended to sustain the residents’ ability to live independently in the community, and to avoid unwanted institutional care.
- **Population Served:** Providers performed in-reach within existing HUD as well as other senior housing communities to identify current residents who were Medicaid eligible and at risk of nursing home placement. They also performed outreach to identify low-income, Medicaid eligible seniors who were homeless and at risk of nursing home placement, and individuals transitioning out of nursing homes into senior housing.
- **Program Start Date:** December 2014
- **Enrollment:** 377 included in analysis; 230 had data from two years post enrollment available.
- **Comorbidities:** Enrollees were most likely to have an “other” chronic condition (Table 27A).
- **Duration in MRT-SH:** Over half of participants had been enrolled at least one year (Table 27B).
- **Care Coordination:** While the Health Home enrollment and dual eligibility stayed the same between periods, there was some increase in Medicaid Managed Care enrollment in the post-period for those enrollees analyzed (Table 27C).

**SUMMARY.** The Senior Supportive Housing Services pilot did not show a significant change in overall costs from the pre- to the post-periods examined, but this program was focused more on spending prevention than changes for its participants. However, several individual categories of service showed significant cost changes: DME, hospital outpatient, lab, other, and physician service costs decreased from the pre-period through the post periods examined. Hospital inpatient costs and non-institutional long-term care costs both showed a significant increase in the post-period. The remaining categories do not show statistically significant changes and are mixed in terms of the cost behavior in the pre- and post-periods. A graphical depiction of the cost categories follows. These results indicate that spending remained relatively stable between the pre- and post-periods, though whether the program successfully prevented spending increases is more difficult to establish without a comparison group of clients.

**Table 27A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Serious Mental Illness	68	18%	44	19%
Substance Use Disorder	13	3%	9	4%
Other Chronic Condition	262	69%	152	66%
HIV	2	1%	1	0%
3 or more of the above	5	1%	5	2%
All 4 of the above	0	0%	0	0%



**Table 27B. Enrollment Duration for Enrollees Analyzed**

	Total Group (Post Year 1)	Percent of Total Group	Post Years 1 & 2	Percent of Subgroup
Less than 6 months	49	13%	7	3%
Between 6 and 12 months	98	26%	13	6%
Between 13 and 18 months	98	26%	80	35%
Between 19 and 24 months	132	35%	130	57%
More than 24 months	0	0%	0	0%

**Table 27C. Care Coordination for Enrollees Analyzed**

	Pre-Period Prevalence	Post Year 1 Prevalence	Post Year 2 Prevalence
Medicaid Managed Care Enrollment	38%	47%	44%
Health Homes Enrollment	10%	11%	10%
Dual Eligibility	60%	59%	61%

**Table 27D. Pre-Post Medicaid Costs for Residents of OHIP: Senior Supportive Housing Services, by Category of Service<sup>58</sup>**

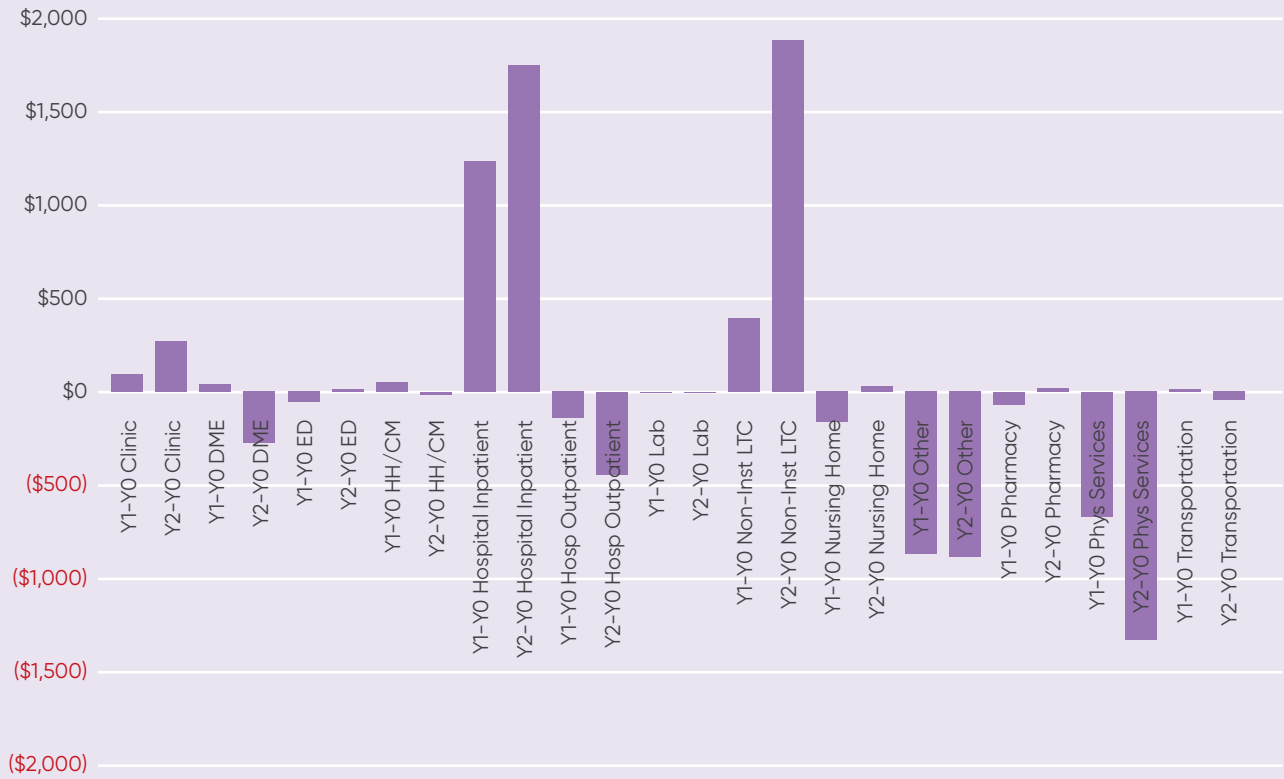
Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test <sup>59</sup>
<b>Overall</b>							
Pre vs. 1 Year Post (all)	377	\$7,240,355	\$7,567,917	\$327,562	\$869	-\$26	n.s.
Pre vs. 1 Year Post	230	\$4,182,984	\$4,151,026	-\$31,958	-\$139	\$0	n.s.
Pre vs. 2 Years Post			\$4,408,627	\$225,643	\$981	-\$169	n.s.
<b>Clinic</b>							
Pre vs. 1 Year Post (all)	377	\$222,304	\$266,982	\$44,679	\$119	\$0	n.s.
Pre vs. 1 Year Post	230	\$155,562	\$177,673	\$22,111	\$96	\$0	n.s.
Pre vs. 2 Years Post			\$217,912	\$62,350	\$271	\$0	n.s.
<b>DME</b>							
Pre vs. 1 Year Post (all)	377	\$130,032	\$115,611	-\$14,421	-\$38	\$0	**
Pre vs. 1 Year Post	230	\$96,180	\$105,865	\$9,685	\$42	\$0	n.s.
Pre vs. 2 Years Post			\$32,650	-\$63,529	-\$276	\$0	***
<b>Emergency Department</b>							
Pre vs. 1 Year Post (all)	377	\$96,139	\$83,809	-\$12,330	-\$33	\$0	n.s.
Pre vs. 1 Year Post	230	\$64,467	\$51,369	-\$13,098	-\$57	\$0	n.s.
Pre vs. 2 Years Post			\$67,906	\$3,439	\$15	\$0	n.s.
<b>Health Home/Care Mgmt</b>							
Pre vs. 1 Year Post (all)	377	\$106,138	\$120,837	\$14,699	\$39	\$0	n.s.
Pre vs. 1 Year Post	230	\$69,911	\$81,882	\$11,971	\$52	\$0	n.s.
Pre vs. 2 Years Post			\$66,185	-\$3,725	-\$16	\$0	n.s.

58 The program participants represented in this table were not necessarily enrolled in the program for the entire year. See the "Duration in MRT-SH" bullet immediately preceding table for details.

59 Sign test for difference in median cost for people with non-zero cost in the pre- and/or post-period: "+" – p<.1; "\*\*\*" – p<.05, "\*\*\*\*" – p<.01, "\*\*\*\*\*" – p<.001, "n.s." – not significant.

Hospital Inpatient							
Pre vs. 1 Year Post (all)	377	\$924,268	\$1,661,565	\$737,297	\$1,956	\$0	**
Pre vs. 1 Year Post	230	\$548,619	\$835,172	\$286,553	\$1,246	\$0	n.s.
Pre vs. 2 Years Post			\$954,588	\$405,969	\$1,765	\$0	n.s.
Hospital Outpatient							
Pre vs. 1 Year Post (all)	377	\$374,973	\$368,061	-\$6,912	-\$18	\$0	n.s.
Pre vs. 1 Year Post	230	\$273,695	\$240,975	-\$32,721	-\$142	\$0	*
Pre vs. 2 Years Post			\$170,844	-\$102,851	-\$447	\$0	**
Lab							
Pre vs. 1 Year Post (all)	377	\$3,113	\$1,794	-\$1,319	-\$3	\$0	**
Pre vs. 1 Year Post	230	\$2,442	\$1,376	-\$1,066	-\$5	\$0	*
Pre vs. 2 Years Post			\$1,277	-\$1,165	-\$5	\$0	†
Non-Institutional LTC							
Pre vs. 1 Year Post (all)	377	\$2,361,149	\$2,787,219	\$426,070	\$1,130	\$0	*
Pre vs. 1 Year Post	230	\$1,373,809	\$1,465,090	\$91,280	\$397	\$0	n.s.
Pre vs. 2 Years Post			\$1,810,900	\$437,090	\$1,900	\$0	n.s.
Nursing Home							
Pre vs. 1 Year Post (all)	377	\$1,058,340	\$910,039	-\$148,301	-\$393	\$0	n.s.
Pre vs. 1 Year Post	230	\$402,616	\$365,058	-\$37,558	-\$163	\$0	n.s.
Pre vs. 2 Years Post			\$409,724	\$7,108	\$31	\$0	n.s.
Other							
Pre vs. 1 Year Post (all)	377	\$535,350	\$255,325	-\$280,024	-\$743	\$0	***
Pre vs. 1 Year Post	230	\$431,004	\$229,780	-\$201,224	-\$875	\$0	*
Pre vs. 2 Years Post			\$225,687	-\$205,317	-\$893	-\$13	***
Pharmacy							
Pre vs. 1 Year Post (all)	377	\$327,451	\$266,141	-\$61,310	-\$163	\$0	n.s.
Pre vs. 1 Year Post	230	\$129,019	\$112,843	-\$16,176	-\$70	\$0	n.s.
Pre vs. 2 Years Post			\$133,649	\$4,631	\$20	\$0	n.s.
Physician Services							
Pre vs. 1 Year Post (all)	377	\$804,163	\$453,135	-\$351,028	-\$931	\$0	***
Pre vs. 1 Year Post	230	\$450,401	\$295,330	-\$155,071	-\$674	\$0	*
Pre vs. 2 Years Post			\$142,171	-\$308,230	-\$1,340	-\$157	***
Transportation Services							
Pre vs. 1 Year Post (all)	377	\$298,778	\$277,398	-\$21,380	-\$57	\$0	n.s.
Pre vs. 1 Year Post	230	\$185,260	\$188,616	\$3,356	\$15	\$0	n.s.
Pre vs. 2 Years Post			\$175,134	-\$10,126	-\$44	\$0	n.s.

**Figure 19. Mean Savings by Category of Service, First and Second Post-Periods minus Pre-Period.**



**Table 27E. Percentile breakdowns of cost savings (Post-Period minus Pre-Period, negative numbers represent cost savings).**

	Post-Period Year 1 minus Pre-Period (N=377)	Post-Period Year 2 minus Pre-Period (N=230)
5th Percentile	-\$28,687	-\$35,347
10th Percentile	-\$18,588	-\$24,227
25th Percentile	-\$4,378	-\$7,621
50th Percentile	-\$26	-\$169
75th Percentile	\$4,245	\$4,120
90th Percentile	\$21,602	\$21,569
95th Percentile	\$34,120	\$45,952

Median cost savings for this program are relatively modest. The median cost savings in the first post-enrollment year for the enrollees in this program is \$26. The median cost savings in the second post-enrollment year for clients who have two years of post-enrollment data available in this program is \$169.

**CONCLUSIONS.** Overall, this program does not show a statistically significant decrease in total costs, but cost reductions were not anticipated on the pre-post basis presented here. However, statistically significant decreases in costs are seen for laboratory costs, other costs, and physician services. Interestingly, the subgroup of clients with two post-periods demonstrate a statistically significant decline in costs for hospital outpatient services in both of the post-enrollment years. Additional analyses, with pre-post comparisons for each of the nine included providers, are included in the Appendices.

# Appendices.

## APPENDIX 1: CATEGORY OF SERVICE DEFINITIONS.<sup>60</sup>

Service Category	COS Code	Description
Clinic	160	Diagnostic and Treatment Center Services
DME	321	Medical Appliance, Equipment, Supply Dealer
Emergency Department <sup>61</sup> <i>Rate code &amp; claim source code</i>	2879 & claim trans src code = C or P 1402 & claim trans src code = C or P 1419 & claim trans src code = C or P 99281 & claim trans src code = E 99282 & claim trans src code = E 99283 & claim trans src code = E 99284 & claim trans src code = E 99285 & claim trans src code = E	Rate codes for ED (Fee For Service)
		Rate codes for ED procedures (Managed Care)
Hospital Inpatient	285	Inpatient
Hospital Outpatient	287	Hospital-Based Outpatient Services
Lab	1000	Laboratory (Free-Standing)
Non-Institutional Long-Term Care	0	Chain Pharmacy/Other NILTC
	260	Home Health Agency Professional Services
	263	HHA/Medical/Surgical Supply and DME
	264	Vendor Personal Care Services
	266	Personal Emergency Response Services
	267	Assisted Living Program
	284	Home Care Program
388	Long Term Home Health Care	
Nursing Home	286	Skilled Nursing Facility
	381	Skilled Nursing Facility
	383	Day Care
Pharmacy	441	Drugs
Physician Services	46	Physician Group
	460	Physician Services
Transportation	601	Ambulance-Emergency
	602	Ambulette
	603	Taxi
	605	Livery Services
	606	Transportation Day Treatment

<sup>60</sup> The table above shows Medicaid category of service (COS) codes and descriptions that were rolled up to define the broader categories of service used in the analysis. Medicaid COS codes are associated with Medicaid claims in the Medicaid database based on the nature and setting of the claim.

<sup>61</sup> Emergency Department services were defined as any claim line with rate code 2879, 1402, or 1419 or procedure code 99281 – 99285, regardless of the category of service code on the claim line.

## APPENDIX 2: MEDICAID COVERAGE TYPES CONSIDERED “FULL” FOR INCLUSION IN PRE-POST ANALYSIS.

For the purposes of the pre-post analysis, a participant was considered to have full coverage and kept for analysis if they had coverage codes contained in the following table. Coverage of any other type excluded the participant from the pre-post analysis. A 60-day or more gap in coverage within the pre-period or the post-period also excluded the participant from the pre-post analysis.

Coverage Code	Coverage Code Description
01	All Benefits
06	Provisional Eligibility
11	Legal Alien – Full Coverage
16	Home Relief
19	Community Coverage with Community LTC
20	Community Coverage with no LTC
24	Community Coverage with no LTC, Alien 5-year ban
30	Client is eligible for Medicaid and enrolled in a patient care plan
36	Family Health Plus Guarantee

### APPENDIX 3: EXPANDED SAMPLE AND SUBGROUP ANALYSES WITHIN THE HCR: ACCESS TO HOME PROGRAM.

Analyses for the Access to Home Program were expanded to include a wider sample of clients by implementing a more recent post-period end date. Participants were included in this set of analyses if they had a modification date prior to October 2017, i.e., one year later than in the full report, and had at least one year of pre-period and one year of post-period (after modification) continuous Medicaid coverage. Sixty clients met these criteria, a sizeable increase from the previous 21. Analyses were first performed across the full expanded sample; this group was then divided into subgroups based on modifications received, and pre-post comparisons were performed within each subgroup to better understand relative efficacy of modifications for these subgroups of clients.

- **Program Description:** The Access to Home program provides grants to eligible applicants to make accessibility modifications to existing owner-occupied or rental dwelling units occupied by persons with disabilities that also receive Medicaid assistance.
- **Population Served:** This program serves persons who are on Medicaid and are physically disabled or have substantial difficulty with activities of daily living (ADLs).
- **Earliest MRT-SH Enrollment Date:** February 2016
- **Enrollment:** 60 included in analysis; none had data from two years post enrollment available.
- **Comorbidities:** Enrollees were most likely to have another chronic condition (Table A.3a).
- **Care Coordination:** Almost half of participants were enrolled in Medicaid Managed Care; no participants were enrolled in Health Homes in the pre- or post-periods.

**Full Group Summary.** Once again, the Access to Home program did not appear to show large changes in overall costs in the period examined. Transportation costs showed significant decreases in this interval, and DME spending marginally significant decreases. Health home/care management costs increased, though whether this shift was due to increased useage or billing changes is unclear. Importantly, while nursing home costs did not show a significant change, there were no nursing home-based claims in the post-period, potentially indicating that clients did not enter nursing home settings soon after modification installation.

**Table A3A. Comorbidity Distribution for Enrollees Analyzed.**

	Total Group (Post Year 1)	Percent of Total Group
Serious Mental Illness	7	12%
Substance Use Disorder	2	3%
Other Chronic Condition	38	63%
HIV	1	2%
3 or more of the above	0	0%
All 4 of the above	0	0%



**Table A3D. Pre-Post Medicaid Costs for expanded Access to Homes program, by Category of Service**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test
Overall	60	\$1,977,993	\$2,014,301	\$36,308	\$605	\$456	n.s.
Clinic		\$10,042	\$13,186	\$3,144	\$52	\$0	n.s.
DME		\$15,911	\$13,965	-\$1,946	-\$32	\$0	†
Emergency Department		\$3,831	\$8,433	\$4,601	\$77	\$0	n.s.
Health Home/Care Mgmt		\$25,581	\$33,526	\$7,946	\$132	\$0	*
Hospital Inpatient		\$188,065	\$109,609	-\$78,456	-\$1,308	\$0	n.s.
Hospital Outpatient		\$41,198	\$46,087	\$4,889	\$81	\$0	n.s.
Lab		\$523	\$388	-\$135	-\$2	\$0	n.s.
Non-Institutional LTC		\$1,166,302	\$1,357,723	\$191,421	\$3,190	\$0	n.s.
Nursing Home		\$75,489	\$0	-\$75,489	-\$1,258	\$0	n.s.
Other		\$84,477	\$177,820	\$93,343	\$1,556	\$0	n.s.
Pharmacy		\$264,519	\$193,801	-\$70,719	-\$1,179	\$0	n.s.
Physician Services		\$75,802	\$43,859	-\$31,944	-\$532	\$0	n.s.
Transportation Services		\$26,253	\$15,905	-\$10,348	-\$172	\$0	**

**ACCESS TO HOME SUBGROUP DEVELOPMENT AND ANALYSES.**

As the Access to Home project is prevention-focused, clients were not expected to show significant Medicaid cost savings. However, several different types of clients, with different needs and potentially different utilization patterns, were served by the program. The relative efficacy of modifications for these subgroups of clients is here considered.

First, the number and types of modifications clients tended to receive were considered. Clients were separated into subgroups based on the modifications received, and the likely underlying needs addressed, using a factor analysis. Pre- and post-modification Medicaid spending was then examined within each subgroup, and patterns were compared between analyses.

In total, 81 unique clients had received modifications under the Access to Homes program by the end of September, 2017. 222 modifications were recorded for these clients. On average, each client received 3 modifications from the program (mean=2.74, median=3, mode=3). 17% received one modification, 20% received two, 38% received three, 21% received four, and 4% (N=3) received five modifications from the project.

**Modification Categorization**

Each recorded modification was classified as best as possible into one of six major categories: bathroom work; grab bars; floor work (e.g., “flooring,” carpeting, low-pile flooring, rubber thresholds); exterior ramps; interior door work (e.g., widening doorways, automatic door openers); and stair work (e.g., low-rise stairs, StairGlides, interior landing work, other stair modifications and repairs).

Several clients also received other house modifications, whether interior (e.g., kitchen modifications, electrical work, visual devices, etc.) or exterior (e.g., porch and deck area work, exterior stair or sidewalk work, garage door work, etc.). However, these modifications rarely occurred alone (only one client had “other” modifications and no major category modifications), so were not strong subgroup indicators. Additionally, the exterior modifications are likely to be confounded, reflecting whether the client’s house had a porch or exterior stairs more than the underlying need driving the modifications. As such, these other modifications were excluded from further analyses.

Bathroom modifications were the most frequently received (N=55, 68%), followed by the installation of grab bars (N=53, 65%), flooring work (N=39, 48%), and exterior ramp installation (N=34, 42%). Six clients (7%) received door work. 14 clients

received stair work (six had StairGlides installed, five had low-rise stairs installed, three had other stair work).

**Reduction to Major Dimensions: Factor Analysis**

As clients typically received multiple modifications, the co-occurrence structure was examined to determine which modifications were particularly likely to be received in conjunction, and thus to address similar underlying client needs. A factor analysis was performed to determine optimal separation in factor groupings. The analysis demonstrated that these combinations of modifications are best captured by three underlying components.

**Table A3E. Rotated component matrix, with major loadings,  $r > 0.3$ :**

	1	2	3
Bath	0.825		
Grab Bars	0.750		
Floors	0.520		
Exterior Ramps	-0.207	0.778	
Doors		0.583	
Stairs	-0.490	-0.543	0.907

- The first factor corresponded strongly with receiving grab bars, bath modifications, and/or floor work, and not with stair work or exterior ramp installation. These modifications potentially reflect changes for fall prevention.
- The second cluster reflected exterior ramp and/or door work, and not stair work. These modifications potentially reflect changes to allow for wheelchair use in the home.
- The third factor corresponded with stair work.

35 clients had modifications that fell under Factor 1/Fall Prevention, 30 clients had modifications that fell under Factor 2/Wheelchair Use, and 14 clients had modifications that fell under Factor 3/Stairs. One clients' modifications did not fall under any cluster, having received only other exterior work. 79 clients had modifications which loaded solely on to one factor, and one onto two, demonstrating highly separate subgroups. As such, three modification-based subgroups result in maximal component separation and minimal client overlap.

**Table A3F. N clients matching each combination of components:**

	Factor 1: Falls	Factor 2: Wheelchairs	Factor 3: Stairs
Factor 1: Falls	35	1	0
Factor 2: Wheelchairs		30	0
Factor 3: Stairs			14





**Medicaid Claim Changes Per Subgroup.**

Claims for the year pre-modification, and first year post-modification, were then examined within each modification subgroup for the 60 clients with continuous Medicaid coverage across the analysis period.

**Table A3G. Pre-Post Medicaid Costs for Factor 1/Fall Prevention, by Category of Service**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference	Sign Test
Overall	29	\$996,105	\$950,775	-\$45,330	-\$1,563	\$425	n.s.
Clinic		\$5,838	\$8,167	\$2,329	\$80	\$0	n.s.
DME		\$10,748	\$5,815	-\$4,933	-\$170	\$0	†
Emergency Department		\$3,266	\$5,653	\$2,388	\$82	\$0	n.s.
Health Home/Care Mgmt		\$17,448	\$22,062	\$4,614	\$159	\$0	†
Hospital Inpatient		\$165,500	\$80,024	-\$85,475	-\$2,947	\$0	n.s.
Hospital Outpatient		\$24,538	\$26,959	\$2,421	\$83	\$0	n.s.
Lab		\$175	\$38	-\$136	-\$5	\$0	n.s.
Non-Institutional LTC		\$453,469	\$575,814	\$122,345	\$4,219	\$0	n.s.
Nursing Home		\$60,937	\$0	-\$60,937	-\$2,101	\$0	n.s.
Other		\$69,123	\$158,819	\$89,696	\$3,093	\$0	n.s.
Pharmacy		\$130,828	\$42,838	-\$87,990	-\$3,034	\$0	n.s.
Physician Services		\$37,777	\$13,275	-\$24,502	-\$845	\$0	n.s.
Transportation Services		\$16,460	\$11,311	-\$5,150	-\$178	\$0	*

**Table A3H. Pre-Post Medicaid Costs for Factor 2/Wheelchair Use, by Category of Service**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference
Overall	18	\$570,169	\$583,379	\$13,209	\$734	\$715
Clinic		\$3,754	\$4,121	\$366	\$20	\$0
DME		\$4,765	\$2,283	-\$2,482	-\$138	\$0
Emergency Department		\$504	\$1,507	\$1,003	\$56	\$0
Health Home/Care Mgmt		\$3,928	\$5,390	\$1,462	\$81	\$0
Hospital Inpatient		\$12,052	\$19,566	\$7,513	\$417	\$0
Hospital Outpatient		\$12,306	\$9,541	-\$2,765	-\$154	\$0
Lab		\$334	\$349	\$15	\$1	\$0
Non-Institutional LTC		\$357,085	\$412,986	\$55,901	\$3,106	\$200
Nursing Home		\$14,552	\$0	-\$14,552	-\$808	\$0
Other		\$3,323	\$2,301	-\$1,022	-\$57	\$0
Pharmacy		\$100,951	\$95,261	-\$5,689	-\$316	\$0
Physician Services		\$47,082	\$25,565	-\$21,517	-\$1,195	\$0
Transportation Services		\$9,534	\$4,509	-\$5,025	-\$279	\$0

**Table A3I. Pre-Post Medicaid Costs for Factor 3/Stairs, by Category of Service**

Service Classification/ Analysis Cohort	N	Pre-Period Total Cost	Post-Period Total Cost	Total Cost Difference	Mean Cost Difference	Median Cost Difference
Overall	14	\$433,038	\$480,148	\$47,109	\$3,365	\$444
Clinic		\$450	\$898	\$449	\$32	\$0
DME		\$604	\$5,867	\$5,263	\$376	\$0
Emergency Department		\$183	\$1,272	\$1,089	\$78	\$0
Health Home/Care Mgmt		\$4,205	\$6,075	\$1,870	\$134	\$0
Hospital Inpatient		\$10,513	\$10,019	-\$494	-\$35	\$0
Hospital Outpatient		\$4,754	\$9,588	\$4,834	\$345	\$0
Lab		\$14	\$0	-\$14	-\$1	\$0
Non-Institutional LTC		\$355,749	\$368,923	\$13,174	\$941	\$0
Nursing Home		\$0	\$0	\$0	\$0	\$0
Other		\$12,622	\$16,700	\$4,077	\$291	\$0
Pharmacy		\$35,623	\$55,701	\$20,078	\$1,434	\$0
Physician Services		\$7,412	\$5,018	-\$2,394	-\$171	-\$4
Transportation Services		\$909	\$86	-\$824	-\$59	\$0

All three of these factor subgroups are relatively small; only Factor 1/Fall Prevention is large enough for statistical analyses. As such, some patterns of spending are examined, but firm conclusions may not be drawn from such limited numbers.

Consistent with the full group analyses, all three subgroups showed at least some decrease in transportation-related spending. Further, both Factor 1/Fall Prevention and Factor 2/Wheelchair Use showed some decrease in DME spending in the post period, though DME spending appeared to rise for Factor 3/Stairs clients. All three groups also showed increases in health home/care management spending, though again the cause of this shift cannot be determined from the data available. As in the full group, no subgroups showed any nursing home spending in the post period. Factor 3/Stairs did not have any pre-period nursing home spending, but similarly did not show any post-period spending either.

**CONCLUSIONS.** The three Access to Home subgroups thus demonstrate reasonably similar patterns of shifts in Medicaid spending. No group is demonstrably “more effective” than another. The Stairs subgroup might be somewhat different from the Fall Prevention and Wheelchair Use groups, but given the small number of clients in each group, conclusions must be relatively limited.



**Medicaid Redesign Team  
Supportive Housing Evaluation**

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Volume 1: Pre-Post Analyses

**November 2019**



**Department  
of Health**



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