



# MRT Supportive Housing Evaluation: Enrollment in Supportive Housing Results in Significantly Greater Cross-Sector Cost Savings than “Treatment as Usual”

## Overview

The New York State Medicaid Redesign Team (MRT) was created in 2011 to develop a multi-year reform plan to address unprecedented healthcare cost growth and improve healthcare quality. One innovation tested under this Redesign is the investment in supportive housing, or affordable housing paired with supportive services (e.g., on-site case management, referrals to community-based services). High-cost, high-need Medicaid recipients who were homeless, unstably housed, or living in treatment facilities providing a higher level of care than needed were targeted for enrollment. While expensive, this investment was anticipated to improve quality of life and health outcomes for enrolled clients, thus decreasing utilization of especially expensive forms of healthcare, improving housing stability and decreasing need for alternate housing settings, and reducing spending, both as related to healthcare and across other social service sectors. **This Research Brief examines changes in clients’ total spending from one year before to one year after program enrollment, including Medicaid claims, program development and operating costs, and cross-sector spending, versus a matched group of similar but not-enrolled individuals.**

## Client Sample and Research Approach

The study utilized a Propensity Score Matching approach, a rigorous statistical technique that estimates the effect of an intervention when random assignment is not possible by comparing a treatment group with a statistically matched comparison group. For this study, the intervention group was comprised of 2,037 Medicaid clients enrolled in one of 17 MRT Supportive Housing Programs. All Supportive Housing clients had at least some recorded spending in the year before enrollment (Pre-Period), had data available for at least one year after enrollment (Post-Period), and had a Pre-Period diagnosis of a serious mental illness (77%), substance use disorder (51.5%), “other chronic condition” (49%),<sup>1</sup> or HIV (5%). The matched Comparison group included 2,037 New York State Medicaid clients who met the same coverage, spending, and diagnostic criteria.<sup>2</sup>

Medicaid fee-for-service claims (excluding capitation payments) and managed care plan encounter data were examined. Investments into supportive housing included service and operating costs and development costs; these were determined by examination of disbursement records provided by the New York State Department of Health, and were

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<sup>1</sup> The “other chronic condition” category was comprised of the twelve other most common chronic conditions, 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.

<sup>2</sup> For complete inclusion criteria and details of the Propensity Score Matching approach, please see the MRT Supportive Housing Evaluation Comparison Group report.

annualized into per-person, per-year costs.<sup>3</sup> Cross-sector costs were calculated by determining the number of days each client spent in alternative housing settings in their pre- or post-period, whether in an inpatient psychiatric hospital, OMH residential facility, or homeless shelter, then multiplying that number by an appropriate daily rate.<sup>4</sup> All costs were adjusted for inflation to 2015 dollars.<sup>5</sup>

## Key Findings

### Supportive Housing Group Changes in Medicaid Spending

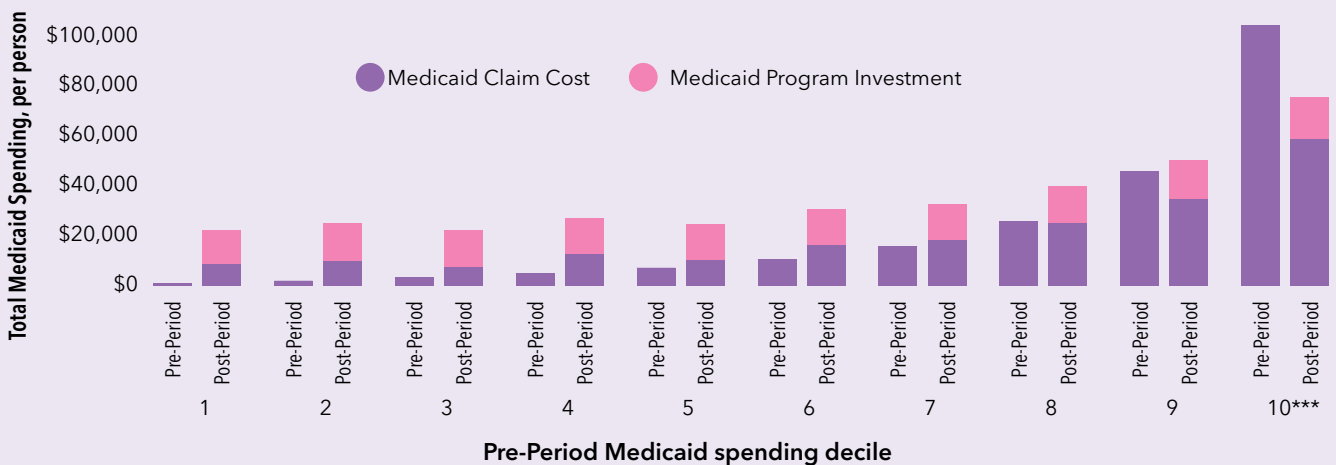
Medicaid program investment versus claim spending was first investigated within the Supportive Housing group. The Medicaid program investment totaled about \$30.7 million dollars, or about \$15,000 per person; these costs were all necessarily in the post-enrollment period. **While Medicaid claim costs declined by about \$6,800 per person, this decrease alone was insufficient to “cover” the high cost of providing housing and services, resulting in a net spending increase.**

**Table 1.** Though claim spending decreased, Supportive Housing clients showed a net increase in Medicaid spending from their Pre- to Post-Periods.

| Cost Category                  | Pre-Period          | Post-Period         | Total Cost Difference (Post-Pre) | Per-Person Difference in Total Cost (N=2,037) |
|--------------------------------|---------------------|---------------------|----------------------------------|---|
| Medicaid Program Investments   | \$0                 | \$30,760,465        | \$30,760,465                     | \$15,101                                      |
| Medicaid Claim Costs           | \$69,609,598        | \$55,712,469        | -\$13,897,129                    | -\$6,822                                      |
| <b>Total Medicaid Spending</b> | <b>\$69,609,598</b> | <b>\$92,065,444</b> | <b>\$22,455,846</b>              | <b>\$8,279</b>                                |

However, **for clients with the highest Pre-Period spending, the sizeable decrease in claim spending was greater than the investment into the program, resulting in significant net savings.**<sup>6</sup>

**Figure 1.** Supportive Housing clients in the highest Pre-Period spending decile demonstrated a significant net decrease in Medicaid spending.



<sup>3</sup> PPPY costs were taken as the total money disbursed divided by the total number of clients served and the average length of stay (for service and operating costs) or 30 years (for development costs, to estimate the lifespan of the building; where needed, development costs were amortized over 30 years).

<sup>4</sup> Daily rates for adult inpatient psychiatric stays (\$871.21) and OMH-operated community residences (\$360.62) were determined from 2015-16 setting rate information from OMH. Daily rates for homeless shelter stays (\$100) used the OCF5 2015 rate for domestic violence shelters, which some shelters use to set their budgets.

<sup>5</sup> See: [https://www.bls.gov/data/inflation\\_calculator.htm](https://www.bls.gov/data/inflation_calculator.htm).

<sup>6</sup> Paired-samples t-test for clients in Decile 10: \*\*\*  $p < 0.001$ .

### Group Differences in Changes in Total Cross-Sector Spending

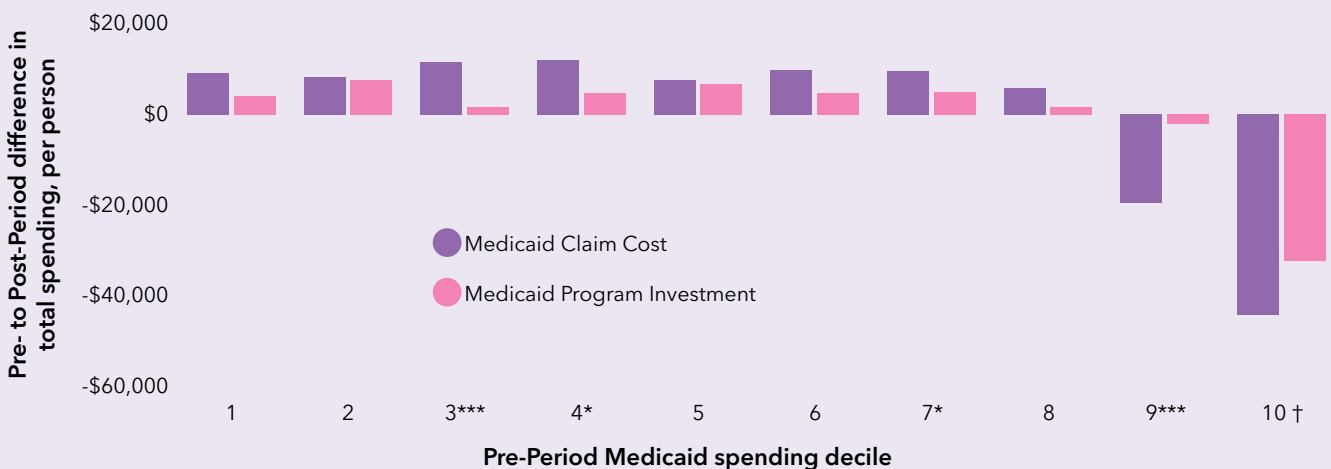
Total changes in spending, including both Medicaid and alternate housing setting costs, were then compared between the Supportive Housing and Comparison groups to determine whether the total resultant cost of the MRT-SH programs was significantly less than the total cost of “treatment as usual.” **This analysis demonstrated a significant interaction where Supportive Housing participants demonstrated greater overall spending decreases than did Comparison for a relative savings of about \$7 million, or about \$3,500 per person.**<sup>7</sup>

**Table 2.** Total spending, including the investment into the MRT-SH programs, Medicaid claims, and alternative housing stays, decreased more for Supportive Housing clients than for Comparison clients.

|  | Supportive Housing Group |                     | Comparison Group    |                     | Total Group Spending Difference | Per-Person Difference |
|--|--------------------------|---------------------|---------------------|---------------------|---------------------------------|-----------------------|
|  | Pre-Period               | Post-Period         | Pre-Period          | Post-Period         |                                 |                       |
| <b>Investments:</b>                                    |                          |                     |                     |                     |                                 |                       |
| Total Program Costs (Service & Operating, Development) | \$0                      | \$31,019,705        | \$0                 | \$0                 | \$31,019,705                    | \$15,228              |
| <b>Outcomes:</b>                                       |                          |                     |                     |                     |                                 |                       |
| Medicaid Claims  | \$69,609,598             | \$55,712,469        | \$72,981,851        | \$65,447,946        | -\$6,363,224                    | -\$3,124              |
| Alternative Housing stays                              | \$38,134,834             | \$9,011,900         | \$21,306,006        | \$23,906,191        | -\$31,723,120                   | -\$15,574             |
| <i>Total Outcomes</i>                                  | <i>\$107,744,432</i>     | <i>\$64,724,369</i> | <i>\$94,287,858</i> | <i>\$89,354,138</i> | <i>-\$38,086,343</i>            | <i>-\$18,697</i>      |
| <b>Total Costs:</b>                                    | \$107,744,432            | \$95,744,074        | \$94,287,858        | \$89,354,138        | <b>-\$7,066,638</b>             | <b>-\$3,469</b>       |

This result was again driven by the clients with the highest Pre-Period Medicaid spending.<sup>8</sup>

**Figure 2.** Supportive Housing clients in the highest two pre-period Medicaid spending deciles demonstrated significantly greater overall cost savings than did Comparison clients.

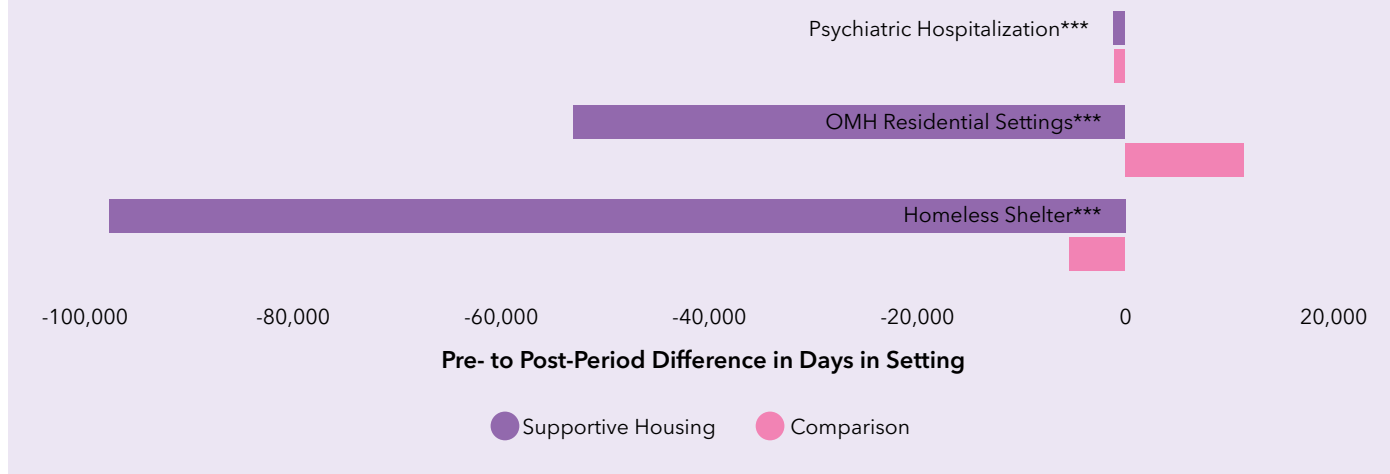


<sup>7</sup> 2 (group: Supportive Housing, Comparison) x 2 (timepoint: Pre, Post-Period) Repeated Measures ANOVA, interaction  $F(1,2036)=118.310$ ,  $p<0.001$ .

<sup>8</sup> 2x2 Repeated Measures ANOVA within each Decile: \*\*\*  $p<0.001$ , \*\*  $p<0.01$ , \*  $p<0.05$ , †  $p<0.1$ .

Further, these savings appear to be driven particularly by decreased usage of alternative housing. **While days in these settings remained steady or increased for Comparison clients, the total number of days decreased for Supportive Housing clients, particularly for OMH residential facility and homeless shelter stays.**<sup>9</sup> This decrease resulted in huge cost savings that, when coupled with the Medicaid claim savings, were sufficient to overcome the sizeable program investment.<sup>10</sup>

**Figure 3.** Supportive Housing clients demonstrated greater decreases in days in alternative housing settings than did Comparison clients.



## Conclusions

The overall treatment effects seen represent a promising result of MRT-SH. Supportive housing programs represent costly interventions, with high annual service and operating costs and sizeable development investments; as such, the significant Medicaid claim spending decreases previously found are not sufficient to result in a net savings. **But when cross-sector alternative housing spending is included, Supportive Housing participants demonstrated greater overall spending decreases than did their matched Comparison counterparts, for a relative savings of about \$7 million, or about \$3,500 per person.**

These decreases were particularly seen for clients who were especially high Medicaid utilizers before enrollment, and thus likely stem from decreases in inpatient, nursing home, and other service category spending, as shown in previous work, and decreases in utilization of OMH residential facilities and homeless shelters, all of which are quite costly. These results indicate the propriety of aiming to enroll clients meeting the above criteria and indicate the positive impact of program enrollment on participant quality of life.

New York has recognized housing as a critical health intervention. These data demonstrate that providing housing, particularly for high-utilization clients with serious health conditions and unstable housing situations, may indeed result in reduced healthcare spending. Supportive housing may even reduce need, and thus spending, for other state-funded housing-related services, including homeless shelters, mental health facilities, and nursing homes. **As such, participation in a supportive environment, combined with enrollment in Health Homes or Medicaid managed care, demonstrates a net spending benefit, leading to a more efficient use of both healthcare and general societal resources.**

<sup>9</sup> x2 test: \*\*\*  $p < 0.001$ .

<sup>10</sup> Note that nursing home stays are included in the Medicaid claims data, but also decreased more for Supportive Housing than Comparison clients; please see the MRT Supportive Housing Evaluation Cost Report 2: Volume 2 report for more information.

For full analyses and details, please see the  
***MRT Supportive Housing Evaluation Cost Report 3***



### **About the Center for Human Services Research**

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