Evaluation of the Homeless Multidisciplinary Street Team for the City of Santa Monica

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Prepared for the City of Santa Monica
Preface

Homelessness is a chronic and persistent problem in Santa Monica, California. It burdens public service providers—such as hospital emergency departments and the police—and imposes substantial public costs on the city. As one approach to addressing the problem, the city put in place a program called the Homeless Multidisciplinary Street Team (HMST). The goals of the program are to improve the health of the most intensive service users among the homeless population, reduce the burden on public service providers, and reduce public costs. A RAND team evaluated the program’s success in achieving its goals. This report presents the results of that evaluation.

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Community Health and Environmental Policy Program

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# Contents

Preface ............................................................................................................................................ iii
Figures............................................................................................................................................. v
Tables............................................................................................................................................. vi
Summary ....................................................................................................................................... vii
Acknowledgments........................................................................................................................... x

1. Introduction ................................................................................................................................. 1
   Homeless Multidisciplinary Street Team ......................................................................................... 1
   Evaluation of the HMST .................................................................................................................. 1

2. Program Implementation ............................................................................................................ 3
   Client Selection ............................................................................................................................. 4
   Client Engagement and Enrollment ............................................................................................... 4
   Developing Individual Treatment Plans ....................................................................................... 4
   Evaluation of Clients and Provision of Services .......................................................................... 5
   Graduating Clients ....................................................................................................................... 6

3. Community Perceptions of Program Effectiveness .................................................................... 8

4. Changes in Outcomes and Financial Impact ............................................................................. 10
   Encounter Patterns .................................................................................................................... 10

5. Discussion, Conclusions, and Recommendations .................................................................... 17
   What We Learned ....................................................................................................................... 17
   Limitations ................................................................................................................................... 17
   Recommendations ..................................................................................................................... 18
   Conclusions ............................................................................................................................... 19

Appendix ....................................................................................................................................... 20
References ..................................................................................................................................... 30
Figures

Figure 1. Change in Encounters for HMST Clients from 12 Months Before and 1 to 12 Months After HMST .......................................................................................................................... 11
Figure 2. Average Monthly Spending per Person on SMPD Encounters........................................ 15
Figure 3. Change in Average Spending per Client ....................................................................... 16
Figure A1. Logic Model for Intervention ..................................................................................... 20
Figure A2. Outcomes over Time for HMST Clients .................................................................... 27
Figure A3. Outcomes over Time for Comparison Population.......................................................... 28
Tables

Table 1. Comparison of Outcomes 12 Months Before and 1 to 12 Months After HMST.......... 12
Table 2. Comparison of Outcomes 12 Months Before and 6 to 18 Months After HMST.......... 13
Table 3. Cost Estimates for Key Outcomes .................................................................................. 14
Table A1. Outline for Interview Protocols ................................................................................... 22
Table A2. List of Interviewees ...................................................................................................... 23
Table A3. Data Received for Evaluation ...................................................................................... 25
Table A4. Outcomes ..................................................................................................................... 25
Summary

Study Background, Purpose, and Approach

In the City of Santa Monica, California, homelessness is a chronic and persistent problem. It is also expensive. Individuals experiencing chronic homelessness suffer disproportionately from serious physical and mental health conditions and are less likely than the general population to seek services to address these conditions on their own. For these reasons, chronically homeless individuals are often repeat users of emergency services—including medical, law-enforcement, and paramedic-response services. This pattern of service use is costly for cities both in dollars and manpower. A recent study estimated that the annual municipal cost per chronically homeless individual in Los Angeles County is $38,146 (Hunter et al., 2017).

Assertive community treatment—an approach to addressing homelessness that gets people into affordable housing and provides health care and other support services—can reduce the public costs associated with chronic homelessness. In 2016, the City of Santa Monica invested $600,000 to create the Homeless Multidisciplinary Street Team (HMST). The HMST consists of a team of specialists who locate and engage the highest-cost homeless individuals in the city and then help them to obtain housing and address other needs.

The goals of the program are to improve the health and well-being of homeless individuals, reduce the burden on public service providers, and reduce public costs associated with this service use by reducing the number of times homeless individuals use public services—most notably emergency departments (EDs)—and interact with public service providers, including police and emergency medical responders.

A RAND team evaluated the program’s success in achieving its goals. We used a mixed methods approach that combined a qualitative analysis of the impact of the HMST on important stakeholder groups and a quantitative analysis of the impact of the HMST on important outcomes as well as potential cost savings associated with these impacts.

Study Results

RAND’s evaluation addressed four questions:

*How was the HMST implemented?*
To address this question, we examined the program operations.

- HMST has a caseload of 26 clients that is shared, and most services are provided in the field.
The HMST team includes a full-time program manager, a wellness case manager, a housing case manager, and a substance-abuse clinician case manager. There is also a medical doctor, a psychiatrist, a physician’s assistant, and a peer support specialist who has experienced homelessness.

The HMST emphasizes coordination across city departments and partners, including the police department, the fire department, hospitals, the city attorney’s office, and the Downtown Santa Monica (DTSM) Ambassador Program, the hospitality and maintenance group serving the DTSM business assessment district.

The HMST team creates an individual treatment plan for each client. Plans typically include goals related to housing, substance abuse, and medical support.

While many clients have successfully received housing and experienced reduced utilization rates, to date only one client has formally “graduated” and transitioned to step-down care and is no longer receiving services from the HMST. Transitioning clients to step-down care is currently the program’s greatest challenge.

How do community stakeholders view the HMST?

Our interviews showed that community stakeholders consider the team a valuable asset for dealing with the chronically homeless population. The multidisciplinary nature of the team fills a gap in the efforts by several departments who regularly interact with this population.

A commonly expressed view was that the HMST was created to work with a challenging population that has a history of negative interactions with authority. It takes time to establish a relationship with this population, so it also takes time to see impact from an intervention such as the HMST.

How did the HMST affect client service use and outcomes?

We found evidence that clients have significantly fewer encounters with the police department in the year following the first time the HMST engages with them. After a six-month period of engagement, the decrease in police department encounters is even larger, and there is evidence of a decrease in ED visits as well.

If the current clients continue to experience a decline in encounters over time, then the savings will increase; however, it is not clear whether the current clients will continue to experience further reductions or whether they have stabilized at the new, lower level of encounters. A significant challenge for the team is determining how to move clients into step-down care so that the HMST can focus on new high utilizers as clients. Only one client has been successfully stepped down.

How did the HMST affect public spending?

We estimate that net financial savings to the City of Santa Monica from decreased encounters between the chronically homeless and public service providers is between $103,000 and $259,000, an offset of between 17 percent and 43 percent of the money invested in the team.
Recommendations

- We recommend that city officials work with the stakeholders in the community to improve data collection and access for clients of the HMST and a comparison population. We were limited by the available data. Better data collection around homelessness in general would provide a way to more precisely estimate the impact of interventions like the HMST.
- We also recommend expanding data collection to a broader set of providers outside of the City of Santa Monica to track outcomes beyond the narrow focus of this evaluation. Our small sample size limited our ability to conduct more rigorous statistical analyses of outcomes as well as our ability to tell a more complete story of client experience. Extending the evaluation for a longer period would add more clients and more data.
- We recommend that the HMST provide more information on the impact of their efforts to the other stakeholders in the community. Some individuals we interviewed said they would like to know the outcomes of encounters with the clients.
- We recommend further evaluation of the experience of clients. Clients were one of the many stakeholders we interviewed. A more focused set of interviews with clients would provide useful information on the impact of the HMST.
- We recommend early coordination with potential step-down providers to improve the success of handing clients to them when appropriate. The challenge of defining success for a client and moving them into step-down care is hard to address, but clearly needed.
- We recommend reaching out to other providers in the community who may be affected by the HMST. The change in ED visits that we observed for a single local ED suggests that there may be opportunities to partner with EDs and other providers in the community who may see changes from the efforts of the HMST.

Conclusions

Our evaluation found evidence that HMST has had a positive impact on the clients they serve and that they are viewed within the community as a valuable resource. We estimated that the HMST has yielded savings to the City of Santa Monica that offset 17 percent to 43 percent of the investment. Our analyses, however, are limited to the outcomes for which data were available; they do not include many financial and nonfinancial benefits associated with the program and so should be viewed as conservative.
Acknowledgments

We would like to thank Maya Buenaventura for her early input on the evaluation. We would also like to thank Brian Hardgrave at the City of Santa Monica for his assistance with acquiring data and coordinating with the interviewees throughout the evaluation. This document benefited from the rigorous review and helpful suggestions provided by Donna Farley and Jeanne Ringel. We also appreciate the editorial assistance provided by Kofi Amofa, Lynn Everett, and Kate Gibson.
1. Introduction

Homeless Multidisciplinary Street Team

Homelessness is a persistent and growing problem in Santa Monica, California. The city has taken several approaches to address homelessness over the past decade. Despite success in reducing the rate of homelessness early on (City of Santa Monica, 2014), the number of homeless in the city grew from 662 in 2016 to 905 in 2018, reflecting the rise in the homeless population regionally (Los Angeles Homeless Services Authority, 2018).

Homelessness is expensive for cities, both in public costs and use of services. Individuals experiencing chronic homelessness suffer disproportionately from serious physical and mental health conditions. In addition, they are less likely to seek services to address these conditions on their own. For these reasons, chronically homeless individuals are often repeat users of emergency services—including medical, law-enforcement, and paramedic-response services. This pattern of service use is expensive for cities both in dollars and manpower. A recent study estimated that the annual municipal cost per chronically homeless individual in Los Angeles County is $38,146 (Hunter et al., 2017).

Assertive community treatment—an approach to address homelessness that gets people into affordable housing and provides health care and other support services—has the potential to reduce the public costs associated with chronic homelessness. In 2016, the City of Santa Monica invested $600,000 to create the Homeless Multidisciplinary Street Team (HMST). The HMST consists of a team of specialists who locate and engage the highest-cost homeless individuals in the city and then help them to obtain housing and to address their other needs. The goals of the program are to reduce service use and public costs associated with this population and to improve the health of this population by reducing its morbidity and mortality rates.

Evaluation of the HMST

How effective is this approach at reducing service use, cutting costs, and improving health among the chronically homeless? To answer this question, the City of Santa Monica commissioned the RAND Corporation to evaluate the program. The RAND team used a mixed methods approach that combines a qualitative analysis of the impact of the HMST on important stakeholder groups and a quantitative analysis of the impact of the HMST on important outcomes and potential cost savings associated with these impacts.

The analysis addressed the following four questions:

- How was the HMST implemented?
- How do community stakeholders perceive the HMST?
What are the strengths and weaknesses of the HMST?
How did the HMST affect client service use and public spending?

To address these questions, we interviewed several stakeholders who are engaged with the chronically homeless population in Santa Monica, including the HMST and their clients. We also constructed a database with key outcome measures over time for the clients of the HMST as well as another group of chronically homeless individuals to serve as a comparison group for some outcomes. We used these data to evaluate changes in outcomes. We then estimated the net benefits of changes in outcomes using cost data related to each outcome. Finally, we compared the net financial benefits of the HMST team with the costs to start and run the team. Our results appear in the next two chapters. For a more detailed account of our methods, see the appendix.
2. Program Implementation

In this chapter, we present the findings from the qualitative evaluation. We describe the HMST and its clients, how the HMST has been perceived to affect the community and organizations within it, and recommendations for improvement based on our interviews.

The goal of the HMST is to reduce the public cost of services by the highest utilizers of emergency services among the homeless population in the City of Santa Monica while also improving the health of this population. The program’s case-management strategy includes facilitating interim and permanent supportive housing, connecting clients to existing services, and being responsive to staff at other community organizations such as hospitals, the police department, the city attorney’s office, and the fire department. The clients of the HMST have serious medical, substance abuse, mental health, and behavioral challenges, which make them the highest utilizers. Therefore, the HMST intends to make the appropriate services more accessible wherever the client needs them.

In HMST, the caseload of 26 clients is shared, and most services are provided in the field. The largest cost component of the HMST is staff time. The other major component is operational costs, such as costs for office supplies, fuel for the van, and rent for the office space. The HMST team operates from 9 a.m. to 5 p.m., Mondays through Fridays, and has come to include a full-time program manager, wellness case manager, housing case manager, and substance-abuse clinician case manager. The program director splits his time directing HMST and another city homelessness program. There is also a medical doctor, psychiatrist, physician’s assistant, and peer support specialist with lived homeless experience who dedicate between 3 and 16 hours to HMST clients every week. This makes services more accessible to clients and protects staff by mitigating burnout from any member having sole responsibility for a client.

The HMST emphasizes coordination across city departments and partners, including the police department, the fire department, hospitals, the city attorney’s office, and the Downtown Santa Monica Ambassador Program, the hospitality and maintenance group serving the Downtown Santa Monica (DTSM) business assessment district. This coordination allows the team to intervene in all parts of the system on behalf of clients. For example, HMST staff can visit with clients when they are arrested or detained or when they are admitted to a local emergency room. The needs of a homeless person often go beyond the individual missions of these other city departments and organizations, each of which serves a broader need in the community. These arrangements make it possible for the HMST to easily track and attend to clients, continuing to build working relationships across the team, the clients, and the other departments and organizations.
Client Selection

The original cohort of highest-utilizer clients was selected by the City of Santa Monica Human Services Division in 2016 based on input from the city attorney’s office, the police department, and the fire department, and using added consideration for data from the emergency rooms of local hospitals. Future additions to the HMST roster are made in a similar way. Choosing the appropriate cohort takes time and energy because data come from different sources at varying levels of completeness and are not necessarily compatible. However, the ultimate goal is to determine who are the most intensive users of emergency services in Santa Monica.

Client Engagement and Enrollment

The clients targeted by the HMST are typically hard to reach and are known to reject services, so engaging them can be challenging. Therefore, formal enrollment is not necessary for engagement. The team avoids relying on coercion in order to achieve better long-term outcomes for clients through relationship-building. To initiate services, team members introduce themselves in the field and make themselves available to clients until they are comfortable, at which point a formal intake is established for enrollment. Sometimes it takes weeks to months to get to formal enrollment, either organically or by being accelerated by an incident, such as an arrest or hospital stay that compels HMST intervention. Many clients are from other states, so getting identification documents together is sometimes a challenge, but the team also helps with this.

Some clients have yet to formally enroll for HMST services, and it is more difficult for the HMST to work with clients who are not formally enrolled. Nevertheless, HMST engages and intervenes with services as long as the client is on the list of selected individuals. This allows the team to build trust among clients and respond to the needs of other organizations with respect to their clients. Doing so helps to alleviate the burden on staff who provide emergency services as well as on other organizations. At least two clients have been successfully housed without ever officially enrolling.

Developing Individual Treatment Plans

The HMST team creates an individual treatment plan for each client. Largely client-driven in the beginning, the plans grow to include activities HMST knows will help the client achieve broader goals. Plans typically include goals related to housing, substance abuse, and medical support. A staff member describes the case of one client:
There’s somebody [currently housed] that I would say is one of our biggest successes, and it took months. He would tell us, “I don’t know why you’re bothering. You should be helping that guy [instead].” It was just a long, long time of continuing to show up and doing a few little things, and then it was another thing and the next thing. He knew he was accepting a bed in a shelter and then we were working on a housing plan. . . . The little things he was willing to work on kind of snowballed.”

In the early stages, HMST focuses on small, daily tasks that a client wants done. Then, as smaller goals are accomplished, the case manager focuses on bigger goals, such as access to general relief assistance, food stamps, or doctor appointments. From this, a case manager builds a relationship, having gotten buy-in from the client by achieving the smaller goals first.

Staff reported that HMST succeeds because it can engage in more ways than other programs, many of which clients have participated in before. The cooperation necessary for clients to accept the intervention can take weeks to months. If a client does not have a plan in place, the team brainstorms to figure out how to continue to engage with the client to get one in place. Eventually, a client’s goals can be met in ways that the client may not be aware of. For example, one client was issued a stay-away order for a corner where he often panhandled and where he was tired of being engaged by the police. HMST helped him apply for general relief assistance to avoid the need for panhandling and to reduce his interaction with the police. In addition, if a client is interested in treatment and housing, the team will pursue these plans simultaneously, connecting clients to existing services they would otherwise not access on their own.

Evaluation of Clients and Provision of Services

On average, if a client is local and not in an institution, at least one HMST staff member sees that client at least twice a week. Many clients are seen almost daily. Most engagement is considered “light touch”—a team member will just say hello or pass by to make a plan for more tangible activities on another visit. The team views these casual interactions as helpful so that clients see the team as case managers and as a resource to help them. For example, there is one client who tends to be avoidant whenever he knows the team needs something from him, such as paperwork. However, when team members pass by on their way to see another client, he might approach the team to ask for whatever he needs that day.

The multidisciplinary aspect of the team is also important because of the assortment of skills and resources a client has access to among its team members. As an additional resource to medical and psychiatric specialist staff, the program director is a state-designated Lanterman-Petris-Short Act (LPS) clinician who can order an involuntary psychiatric hold on clients who need it—those whom he assesses as a danger to themselves or to others or who are greatly disabled. The team has relied on this ability many times. The team also employs a mental health specialist with a master’s degree, so that when the project director is unavailable, there is still

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1 HMST interview, June 25, 2018.
someone who can diagnose mental illness and develop meaningful treatment plans. However, while there are advantages to the HMST’s abilities in the field, there is only so much that specialists can do “with a backpack on.” Like anyone with a serious medical condition, clients require appointments and follow-up with specialists in a clinical setting. The team helps clients set up and attend these appointments, including cardiology appointments, gynecology exams, ultrasounds, MRIs, and CAT scans. The team specialists can also initiate referrals from the field-based visits and help the follow-up specialists by advocating for their clients and providing context for treatments.

Although members of the team specialize in different disciplines, the HMST is flexible in how it responds to its shared caseload. Treatment appointments are handled by the wellness care manager, while housing-related activities are handled by the housing case manager. The team also generally communicates via a text-message group so that available staff can respond to a need as it arises, outside of planned events. This helps to mitigate staff burnout, where intensive dealing with one client’s intensive needs for too long might run a toll on a staff member or lead to natural avoidance or procrastination tendencies. One staff member mentions, “It’s much easier to go back to what feels like the hamster wheel if it’s a different person, rather than going back every week to seeing this situation that doesn’t seem to be improving. [With a shared caseload,] there’s a breath of fresh air, and we would help each other out sometimes in the middle of things. I think that that’s a huge advantage to what we do.”

Graduating Clients

While many clients have successfully received housing and experienced reduced utilization rates, to date only one client has formally “graduated” and transitioned to step-down care and is no longer receiving services from the HMST. Transitioning clients to step-down care is currently the program’s greatest challenge. The city originally hoped the program would serve a new set of 25 clients every year based on the latest year’s utilization rates. Determining when and how to graduate clients has been the main issue, especially as it has taken longer than anticipated to engage, enroll, and complete the treatment of clients. “I think we’ve realized working so closely with [the HMST], that it’s a slow process, but it works,” says a police officer from the Santa Monica Police Department. In addition to trying to figure out what kinds of programs clients qualify for and which programs are appropriate, making sure they don’t fall out of housing or relapse because of a sudden difference in level of care or trust in services is also a concern.

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2 Interview with city administrator, August 30, 2018.
3 HMST interview, June 25, 2018.
4 HMST interview, June 25, 2018.
5 Interview with Santa Monica Police Department representatives, June 27, 2018.
6 HMST interview, June 25, 2018.
Client graduation is complicated by the difficulty of finding an appropriate follow-up program. Even after members of this population are housed, they require regular house visits and intensive mental health and substance abuse support. Many of their needs prevent them from being entirely self-sufficient. The one client who graduated was handed off to a less costly social service program that provides home visits and links him to community resources. This intensive case management for housed, formerly homeless people, also known as housing retention case management, is hard to find throughout Los Angeles County. Most programs are only for individuals who are homeless or have a certain amount of hospitalizations that qualify them. Otherwise, another program may prematurely discharge a client for other reasons HMST is not prepared to chance.
3. Community Perceptions of Program Effectiveness

The community stakeholders we interviewed agreed that the HMST fills a gap that their existing organizations cannot. Most could describe generally what the HMST team does, how its clients are selected, and what its intent is. There were some positive themes repeated by multiple representatives:

- The team has become a trusted contact to work with in referrals and handoffs with regard to clients, easing the burden on their own organizations. This helps ensure better handling of incidents for the clients.
- The legal authority to place individuals on psychiatric hold is an asset the HMST has that sets it apart from other teams.
- The team is good at its job, responsive, reliable, and dedicated to its clients.

All representatives also acknowledged that the intervention is probably having positive impact among some clients. However, a few added the caveat that it was difficult to be certain since they have known many chronically homeless to go through cycles and could not be sure that a client’s non-use of city services reflected a lasting positive impact on the target population. Clients could be going elsewhere, could be in a positive part of a cycle—inevitably to return, or could actually be getting better. Increasing awareness of the impact of the HMST could address this. In addition, most representatives mentioned a potential for economic outcomes due to decreased utilization rates of emergency services among the intervention clients but not necessarily among the total population, since homeless people are always arriving in Santa Monica. Some service providers not dedicated exclusively to homelessness mentioned spending between 30 percent and 50 percent of their time working with or responding to calls involving homeless individuals.

Clients of the HMST say that going beyond traditional case management has contributed to the team’s success but has also built high expectations. Many clients rely on the team after experiencing many unreliable past relationships or services. When asked how much longer they would need the program, three of the four clients interviewed responded with uncertainty. The fourth client interviewed has yet to accept services by the HMST, while the other three are actively enrolled. One of the more successful clients mentioned that the HMST team had made him want to be more responsible for his actions and had given him a sense of purpose, as if there were still something “out there waiting” for him in life. However, he did not see his life without the team in it, as long as he lived in Santa Monica. Lowering the level of care and managing expectations for clients likely needs to be done carefully and gradually.
All interviewees agreed that making progress with the target population could be slow and uncertain, but there was a lack of common understanding of what success looks like for the HMST and others working across other city departments.
4. Changes in Outcomes and Financial Impact

In this chapter, we present the findings from the quantitative analysis of data related to key outcomes for HMST clients. We compared the number of client encounters with police, fire, and emergency departments (EDs) in Santa Monica before and after working with the HMST. We also estimate the net financial impact of changes in the number of encounters using cost estimates from similar studies.

Encounter Patterns

*Client Encounters with First Responders and Emergency Departments Decreased*

Figure 1 shows the change in police, fire, and ED encounters for each client from the 12 months prior to the first 12 months following engagement with the HMST. Almost all clients experienced a decrease in police and fire encounters and ED visits. However, there were a few clients who experienced increases in these outcomes. One client, number 29, experienced significant increases in fire department encounters and ED visits.
Table 1 summarizes the change in average encounters for the HMST clients and the comparison population of chronically homeless individuals from the 12 months before engagement or the start of the HMST until the 12 months following. We received Santa Monica Police Department (SMPD) encounter data covering both the pre-period and post-period for the clients and comparison groups. The HMST clients had a much higher average number of police encounters (22.1 versus 10.9) and arrests (5.3 versus 2.0) than the comparison population in the pre-period, though this is not surprising since clients were selected because they had the highest number of police encounters in 2015 and early 2016. The comparison population included those with the next highest number of encounters.
Table 1. Comparison of Outcomes 12 Months Before and 1 to 12 Months After HMST

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Average Value for Outcomes From Year Prior to Year Following First HMST Encounter&lt;sup&gt;a&lt;/sup&gt;</th>
<th>HMST Clients (n = 26)</th>
<th>Controls (n = 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year Before</td>
<td>Year After</td>
<td>Change</td>
</tr>
<tr>
<td>Police Department</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total encounters</td>
<td>22.1</td>
<td>10.4</td>
<td>-11.7**</td>
</tr>
<tr>
<td>Arrests&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5.3</td>
<td>2.9</td>
<td>-2.5**</td>
</tr>
<tr>
<td>Fire Department</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total encounters</td>
<td>3.3</td>
<td>4.6</td>
<td>1.3</td>
</tr>
<tr>
<td>ED</td>
<td>Total visits&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3.5</td>
<td>3.7</td>
</tr>
</tbody>
</table>

NOTE: ** p < 0.05.
<sup>a</sup> Date corresponding to first encounter for the client with the HMST for HMST clients. First date of any HMST encounter for controls was September 20, 2016.
<sup>b</sup> SMPD encounters labeled "Arrest Results."
<sup>c</sup> Records from one ED.

There was a significant decline in the total number of SMPD encounters and arrests for HMST clients in the first 12 months following engagement with the HMST. They declined by 53 percent for clients, with a decrease of 18 percent for the comparison population. We received pre-period and post-period Santa Monica Fire Department (SMFD) encounter data for clients but only post-period data for the comparison population. It was not feasible in the time period of our study to get SMFD data for the comparison population for the year before the HMST. We also received only pre-period and post-period ED data for HMST clients, and we received it from only one of the two local emergency departments. There were privacy concerns for these data that made it impossible to get more ED data during the time period of our study. There are slight increases in both the average number of SMFD encounters and ED visits for HMST clients, though these increases are the result of the large increase for client 29. When client 29 is excluded from the data, there was a slight decrease in both SMFD encounters and ED visits, and SMPD encounter averages are similar to the amounts reported in Table 1. SMFD encounters for the comparison population in the post-period were higher than for the HMST clients, though we do not know what the pre-period encounters were, so we cannot compare changes. The SMFD encounter data include ED drop-offs to each of the EDs in Santa Monica. The number of total drop-offs was lower than the number of visits to the one ED in our analysis dataset, suggesting that most ED visits are walk-ins. If the SMFD data can be used as a proxy for the relative proportion of visits to each ED, then the encounter data we have represent just over half of the total ED visits.
Clients Experienced Fewer Encounters with First Responders and Emergency Departments Than Those in Comparable Homeless Population 6 to 18 Months After Engagement

Table 2 summarizes the change in outcomes between the year prior to the HMST and the year that starts 6 months after the HMST. This comparison reflects the fact that it takes some time to establish a rapport with clients, so the impact of engaging with the HMST may be stronger as time passes. Seven of the clients are not included in these analyses because the HMST did not engage them until late 2017, so they do not have a complete year of data starting 6 months after engagement. We compared the pre- and post-period values for the 19 remaining HMST clients. The pre-period SMPD encounter levels were similar to the full 26, but the number of SMFD encounters and the number of ED visits are higher in the pre-period. There were significant declines in both the number of SMPD encounters and arrests, and these declines are larger than in the first 12 months. There were also declines in both the number of SMFD encounters and ED visits.

| Table 2. Comparison of Outcomes 12 Months Before and 6 to 18 Months After HMST |
|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|                                 | **Average Value for Outcomes From Year Prior to Year Starting 6 Months After First HMST Encounter** | **Controls (n = 20)** | **HMST Clients (n = 19)** | **Controls (n = 20)** | **HMST Clients (n = 19)** | **Controls (n = 20)** | **HMST Clients (n = 19)** |
| Outcome                        |                               |                               |                               |                               |                               |                               |                               |
| Police Department              |                               |                               |                               |                               |                               |                               |                               |
| Total encounters               | 22.1                          | 6.5                           | −15.6**                       | 10.9                          | 10.5                          | −0.38                         | −3.5%                         |
| Arrests**                     | 4.7                           | 1.5                           | −3.2**                        | 2.0                           | 2.5                           | 0.5                           | 23.5%                         |
| Fire Department               |                               |                               |                               |                               |                               |                               |                               |
| Total encounters               | 2.4                           | 1.3                           | −1.2                          | NA                            | 5.7                           | NA                            | NA                            |
| ED                             |                               |                               |                               |                               |                               |                               |                               |
| Total visits                   | 4.8                           | 2.1                           | −2.7*                         | NA                            | NA                            | NA                            | NA                            |

NOTE: **p < 0.05, *p < 0.1.

a Date corresponding to first encounter for the client with the HMST for HMST clients. First date of any HMST encounter for controls was September 20, 2016.

b SMPD encounters labeled “Arrest Results.”

c Records from one ED.

Average Spending per Client Decreased

We estimate the savings associated with the changes in outcomes by assigning a cost to each of the encounter types we measure. Table 3 contains our estimates of the per-encounter costs. Each of these estimates are from a recent report on expenditures on the homeless in Los Angeles County (Wu and Stevens, 2016). Housing is an important outcome for the HMST clients. Most of them are housed by the end of the 18 months we observed. We did not include an estimate of the costs associated with housing because the City of Santa Monica does not pay this cost. It is paid for through one of three options: HUD Continuum of Care funded vouchers, County programs (such as Department of Mental Health or Department of Health Services), and, for those in higher levels of care (e.g., convalescent homes/assisted living), a combination of
Medicare and Medi-Cal. There are additional benefits and costs that we do not include either because we do not have data related to those outcomes or because they are not costs borne by the City of Santa Monica or providers in Santa Monica. For example, there may be changes in non-ED health treatment for clients that would change the costs for providers of that treatment.

### Table 3. Cost Estimates for Key Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Cost Estimate (2016 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMPD encounter, no arrest</td>
<td>$291$¹</td>
</tr>
<tr>
<td>SMPD encounter, with arrest</td>
<td>$388$²</td>
</tr>
<tr>
<td>SMFD encounter</td>
<td>$291$³</td>
</tr>
<tr>
<td>ED visit</td>
<td>$1,325$</td>
</tr>
</tbody>
</table>

**NOTE:** The original estimates from Wu & Stevens are in 2014 dollars. We have converted their estimates to 2016 dollars.

¹ This is the per-arrest cost.

² This is the per-arrest cost plus the cost of one day of jail in a male facility.

³ There is no cost estimate for an SMFD encounter. We are using the per-arrest cost to capture similar level of effort, but it is likely a low estimate because it does not include any emergency medical care that may be administered as part of the SMFD encounter.

⁴ This the average episode cost and is computed by dividing the total ED episode costs by the total episodes.

We then estimate per-person spending on the encounters we measure before and after the HMST. The largest change in outcomes was the decrease in SMPD encounters. Figure 2 shows the average spending per person on police encounters over time for both the HMST clients and the comparison population. The red line indicates when the HMST started operating. After the HMST started, spending on SMPD encounters for clients decreased to the level for the comparison population.
Figure 2. Average Monthly Spending per Person on SMPD Encounters

![Graph showing average monthly spending per person on SMPD encounters.]

NOTE: We have included spending estimates for police encounters with and without an arrest. We summed the estimated costs for total police encounters in each month and then divided by the number of clients.

Figure 3 shows the change in average annual spending per client under each of the two pre-/post- scenarios described above. In the first 12 months, spending decreased on average by $3,956 per client, or 28 percent, from the year prior to the HMST. In months 6 to 18, average annual per-client spending decreased by $9,943, or 64 percent.
NOTE: The amounts in Figure 3 are based on total estimated spending per client on all three types of encounters. The figure on the left includes the 26 clients for whom we have data for the 12 months before and after their first encounter with the HMST. The figure on the right includes the 19 clients for whom we have data for the 12 months before and 6 to 18 months after their first encounter with the HMST.

**Estimated Financial Return to City of Santa Monica**

The City of Santa Monica initially invested $600,000 for Fiscal Year 2016/2017 (July 2016 through June 2017) to start the HMST. This was followed by an additional $150,000 to cover the second half of 2017. Los Angeles County agreed to invest $300,000 to cover the first half of 2018, and the City of Santa Monica then invested $300,000 more to cover the second half of 2018. The HMST started reaching out to clients in September 2016, and our evaluation covers the first 18 months after that, ending in February 2018. The City of Santa Monica invested a total of $750,000 for the 18-month time period of our evaluation, or an average annual spending of $500,000. When we sum the total savings per client in the first 12 months and in months 6 to 18, we estimate annual savings of $103,000 in the first year and $259,000 between months 6 and 18. This represents an offset of 21 percent to 52 percent of the $500,000 average annual spending by the City of Santa Monica. The amount budgeted in the first fiscal year (2016/2017) and the current fiscal year (2018/2019) is $600,000. If we assume that the annual spending is $600,000 instead of $500,000, then our estimated savings represent an offset of 17 percent to 43 percent.
5. Discussion, Conclusions, and Recommendations

We evaluated a new multidisciplinary team created to address persistent, chronic homelessness in the City of Santa Monica. The team has the potential to improve outcomes for its clients and the city, though it may take years to fully realize that potential. We conducted structured interviews with several stakeholders as well as team members and clients, and we analyzed encounter data to estimate the impact of the team on client outcomes.

What We Learned

Overall, we found that community stakeholders considered the team a valuable asset for dealing with the chronically homeless population. The multidisciplinary nature of the team fills a gap in the efforts of several departments who regularly interact with this population. The HMST was created to work with a challenging population that has a history of negative interactions with authority. It takes time to establish a relationship with this population, so it also takes time to observe the impact of an intervention like the HMST. We found evidence that clients have significantly fewer encounters with the police department in the year following the first time the HMST engages with them. After a six-month period of engagement, the decrease in police department encounters is even larger, and there is evidence of a decrease in ED visits. We estimate that the net financial savings to the City of Santa Monica on these decreased encounters is between $103,000 and $259,000, an offset of 17 percent to 43 percent of the money invested in the team. If the current clients continue to experience a decline in encounters over time, then the savings will increase; however, it is not clear whether the current clients will continue to experience further reductions or whether they have stabilized at the new, lower level of encounters. A significant challenge for the team is how to move clients into step-down care so that the HMST can focus on new high utilizers as clients. Only one client has been successfully stepped down.

Limitations

There are several limitations to our study. Our data are limited to a small set of outcomes and do not allow us to fully control for other factors that may explain the changes we observe, such as other factors that may be changing during the same time period or random fluctuation in encounter rates. We do have police department encounter data for a comparison population of chronically homeless individuals, but the comparison population does not have the same level of encounters in the period prior to the start of the HMST, so they are not the same as the clients. We only have comparison data for fire department encounters in the time period following the start of the HMST, and we have no comparison data for ED encounters. We have ED data from
only one local ED, so we are unable to estimate the change in all ED visits in Santa Monica for
HMST clients. If the other ED saw a similar decrease in visits from HMST clients, then the total
cost savings would be higher.

Addressing homelessness is a significant policy priority in California, especially in Los
Angeles County. There are a number of interventions that address homelessness in the area, and
it is possible that the changes we observe are due in part to these other efforts. However, the
clients of the HMST were chosen in part because other efforts that have taken place over several
years to help homeless people get into stable housing and treatment have failed. The HMST
provides significant hands-on service to clients that is unlike the effort-level of other programs.
We, therefore, believe that it is likely that the changes we observe in these clients are due to the
efforts of the HMST. For example, the comparison population experienced a decrease in police
encounters over the same period, though it was less than the decrease for the HMST clients. This
could be due to the impact of other interventions that address homelessness. Nonetheless, even
after controlling for the decrease for the control population, the clients experienced a significant
decrease in police encounters.

Additional limitations include the use of cost estimates from other sources and studies and
the fact that we are limited to a small set of outcomes. The actual costs for the City of Santa
Monica may differ, and the outcomes of helping individuals find stable housing and treatment
are not limited to decreased encounters with the police and fire departments or to decreased ED
visits. Our data did not allow us to estimate potential changes in well-being, for example.

Recommendations

We offer the following recommendations.

- We recommend working with the stakeholders in the community to improve data
collection and access for clients of the HMST and a comparison population. We were
limited by the available data. Better data collection around homelessness in general
would provide a way to more precisely estimate the impact of interventions like those of
the HMST.
- We recommend expanding data collection to providers outside the City of Santa
Monica, to track outcomes beyond those within the narrow focus of this evaluation. Our small
sample size limited our ability to conduct more rigorous statistical analyses of outcomes
as well as our ability to tell a more complete story of client experience. Extending the
evaluation for a longer period would add more clients and more data.
- We recommend that the HMST provide more information on the impact of its efforts to
other stakeholders in the community. Some individuals we interviewed said they would
like to know the outcomes of encounters with clients.
- We recommend further evaluation of the experience of clients. Clients were one of the
many stakeholders we interviewed. A more focused set of interviews with clients would
provide useful information on the impact of the HMST.
• We recommend early coordination with potential step-down providers to improve the success of handing clients to them when appropriate. The challenge of defining success for a client and moving them into step-down care is hard to address but clearly needed.
• We recommend reaching out to other providers in the community who may be affected by the HMST. The change in ED visits that we observed for a single local ED suggests that there may be opportunities to partner with EDs and other providers in the community who may see changes from the efforts of the HMST.

Conclusions

We found evidence that the HMST has had a positive impact on the clients they serve and that they are viewed within the community as a valuable resource. We estimated that the investment in the HMST has yielded savings to the City of Santa Monica that offset 17 percent to 43 percent of the investment. Our analyses, however, are limited to the outcomes for which data were available; they do not include many financial and non-financial benefits associated with the program and so should be viewed as conservative.
In this appendix we describe our logic model connecting HMST efforts to client outcomes and provide details on our method for conducting both the qualitative and quantitative analyses.

**Connecting Inputs to Outcomes**

Based on the interviews and data provided, the evaluation team developed the logic model presented in Figure A1. The logic model reads left to right, identifying the major inputs, intervention activities, outputs, and outcomes. Inputs include material, logistical, and operational factors that make up the intervention. Activities are the actions carried out as part of the intervention. Outputs are the cooperative effects of the inputs and activities that indicate success of the intervention. These outputs result in affecting larger short-term, intermediate-term, and long-term goals.

**Figure A1. Logic Model for Intervention**
long-term outcomes for the community, stakeholders, and clients. The inputs, activities, outputs, and outcomes contribute to the primary program goals that motivate the intervention.

For the HMST, the major inputs are the selection of the cohort that ensures the highest utilizers are being served; the human, logistical, and financial resources that make up the intervention; and the HMST team’s relationship with its partners, including the emergency-service providers and other community partners. The intervention activities consist of providing supportive services and case management to clients, largely reliant on a cooperative engagement with clients and with partners. The inputs and activities cooperatively result in outputs that have an effect on the clients, the service providers and partners, and the wider community of Santa Monica. Outputs for the clients are related to three major areas: housing, wellness, and health. Outputs for the service providers, community partners, and the wider community include effects such as an ease of burden from the target population and better coordination across partners in dealing with homelessness via the intervention. These outputs are meant to contribute to program outcomes (e.g., improved health and well-being for clients, reduced utilization of expensive services, decreased number of chronically housed). These outcomes lead to the fulfillment of the city’s goals for the intervention.

We conducted the qualitative analysis on the basis of in-person interviews, helping to address the following questions:

- How does the HMST work in implementation?
- How are others within the Santa Monica community affected by the HMST?
- What are the strengths and weaknesses of the HMST that affect its outcomes and process?
- How can the HMST team be improved?

In addition to providing insight into the experiences of key individuals associated with the intervention, the qualitative analysis identified outcomes not captured in the analytic database or by monetary value.

**Interviews**

The RAND evaluation team worked with the City of Santa Monica to identify key groups and appropriate individuals within each group to interview. Before the interviews, the evaluation team developed interview protocols that were structured around different aspects of the intervention as outlined in Table A1. The categories and subcategories in the outline were used as guidelines to develop the full group-specific protocols included below.
## Table A1. Outline for Interview Protocols

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
</tr>
</thead>
<tbody>
<tr>
<td>History/Background</td>
<td>Involvement with or understanding of the HMST?</td>
</tr>
<tr>
<td></td>
<td>Involvement with the homeless population?</td>
</tr>
<tr>
<td></td>
<td>Lessons learned and best practices in dealing with homeless people?</td>
</tr>
<tr>
<td></td>
<td>What could be improved?</td>
</tr>
<tr>
<td>Recruitment/Identification of Clients</td>
<td>How do you know HMST to recruit?</td>
</tr>
<tr>
<td></td>
<td>- Strengths</td>
</tr>
<tr>
<td></td>
<td>- Weaknesses</td>
</tr>
<tr>
<td></td>
<td>- Ways to Improve</td>
</tr>
<tr>
<td>Enrollment</td>
<td>How do you know HMST to enroll? (if familiar)</td>
</tr>
<tr>
<td></td>
<td>- Strengths</td>
</tr>
<tr>
<td></td>
<td>- Weaknesses</td>
</tr>
<tr>
<td></td>
<td>- Ways to Improve</td>
</tr>
<tr>
<td>Development of Individual Treatment Plans</td>
<td>How do you know HMST to enroll? (if familiar)</td>
</tr>
<tr>
<td></td>
<td>- Strengths</td>
</tr>
<tr>
<td></td>
<td>- Weaknesses</td>
</tr>
<tr>
<td></td>
<td>- Ways to Improve</td>
</tr>
<tr>
<td>Evaluation of Clients and Provision of Services</td>
<td>How do you know HMST to evaluate services? (if familiar)</td>
</tr>
<tr>
<td></td>
<td>- Strengths</td>
</tr>
<tr>
<td></td>
<td>- Weaknesses</td>
</tr>
<tr>
<td></td>
<td>- Ways to Improve</td>
</tr>
<tr>
<td>Exit from the Program</td>
<td>How do individuals graduate from the intervention?</td>
</tr>
<tr>
<td></td>
<td>Has anyone graduated from the intervention?</td>
</tr>
<tr>
<td></td>
<td>- Strengths</td>
</tr>
<tr>
<td></td>
<td>- Weaknesses</td>
</tr>
<tr>
<td></td>
<td>- Ways to Improve</td>
</tr>
<tr>
<td>Data Collection</td>
<td>Does your organization collect and/or provide data to the HMST?</td>
</tr>
<tr>
<td></td>
<td>How does your organization collect data?</td>
</tr>
<tr>
<td></td>
<td>- Strengths</td>
</tr>
<tr>
<td></td>
<td>- Weaknesses</td>
</tr>
<tr>
<td></td>
<td>- Ways to Improve</td>
</tr>
<tr>
<td>Overall System and Future</td>
<td>Are you familiar with HMST clients?</td>
</tr>
<tr>
<td></td>
<td>Have you noticed changes since the intervention?</td>
</tr>
<tr>
<td></td>
<td>Does the community benefit?</td>
</tr>
<tr>
<td></td>
<td>- Strengths</td>
</tr>
<tr>
<td></td>
<td>- Weaknesses</td>
</tr>
<tr>
<td></td>
<td>- Ways to improve</td>
</tr>
</tbody>
</table>

The in-person interviews were conducted with the representatives of stakeholders in Table A2.
### Table A2. List of Interviewees

<table>
<thead>
<tr>
<th>Organization or Affiliation</th>
<th>Representatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Monica HMST Team (HMST)</td>
<td>Four staff members&lt;br&gt;One medical specialist&lt;br&gt;Four clients (from the homeless treatment group)</td>
</tr>
<tr>
<td>Santa Monica Police Department</td>
<td>Two officers&lt;br&gt;One jail administrator</td>
</tr>
<tr>
<td>Santa Monica Fire Department</td>
<td>Four representatives</td>
</tr>
<tr>
<td>UCLA Hospital Emergency Room</td>
<td>Two clinical social workers</td>
</tr>
<tr>
<td>Providence St. John’s Hospital</td>
<td>One clinical social worker</td>
</tr>
<tr>
<td>City of Santa Monica</td>
<td>One administrator&lt;br&gt;One deputy city attorney</td>
</tr>
<tr>
<td>Block by Block (Santa Monica’s Downtown Hospitality Program)</td>
<td>Two representatives</td>
</tr>
</tbody>
</table>

Interviews with the HMST team covered the intervention itself and its components, experiences on the job, and aspects of their jobs that were easy or difficult. Interviews with representatives from emergency services covered how they dealt with homeless people, their perceptions of and interactions with the HMST team, their awareness of its clients, and their own involvement with the HMST team. Interviews with clients covered their experience with the intervention since their first encounter. Interviews with all individuals covered their opinions about the strengths and weaknesses of the intervention and recommendations for improvement.

**Qualitative Analytic Approach**

We identified key themes from interviews by finding patterns and common information conveyed by interviewees. To find these patterns and commonalities, interviews were recorded, digitally transcribed, and uploaded into Dedoose software to facilitate analysis. The software was used to highlight excerpts, quotes, and key references that were then coded on an *a priori* basis derived within the context of the interview protocol. In other words, the text was coded and analyzed respective to the categories and subcategories listed in Table 1 across all of the interviewee groups. Thereafter, recurring themes emerged as key themes in the analysis. Key areas for analyzing themes included how the HMST works, the visibility of the intervention, the effectiveness of the intervention, and recommendations. In addition to key themes, we noted recommendations by the category of interviewee (e.g., staff member, client, emergency responder, external stakeholder) because of the value that context might add to a recommendation and its potential to help inform steps to improving, expanding, or replicating the HMST. We assessed the program’s strength, weaknesses, opportunities, and threats using the SWOT framework and developed a logic model to map the program’s inputs, activities, outputs, and outcomes. Normally, the process of developing a logic model can be iterative, requiring consensus across stakeholders and participants. The logic model in this report was created to
help the City of Santa Monica and the HMST identify its process and outcomes to inform reporting and decisionmaking going forward.

**Quantitative Analysis**

We combined several sources of data to construct outcome measures related to the chronically homeless population and evaluated potential changes in these outcomes over time. The quantitative analysis was conducted to address the following questions:

1. Can outcomes for chronically homeless be measured over time?
2. Are there changes in outcomes for the HMST clients?
3. Do changes in outcomes lead to cost savings for the City of Santa Monica?

**Chronically Homeless Population in Santa Monica**

The City of Santa Monica worked with the SMPD to identify homeless individuals with high counts of encounters with SMPD in 2015 and early 2016. Anecdotally, individuals with high levels of SMPD encounters are also likely to have high levels of SMFD encounters and ED visits, so the city believed that they were identifying individuals with high resource use across multiple providers. Out of approximately 100 such individuals, the city chose the 26 with the highest number of encounters and directed the HMST to engage them. The city also chose 30 additional individuals with high SMPD encounters to serve as controls for the evaluation. The SMPD, SMFD, and two local EDs were given the names and birth dates of the HMST clients and comparison population. They then identified the records in their data for these individuals. The SMPD, SMFD, and one ED provided those records to the city, who then gave the data to RAND. The second ED refused to provide data due to privacy concerns.

**Analytic Database**

We cleaned the data from each provider and combined it into an analytic database. There were a number of challenges to cleaning the data. The data were stored in different formats. The SMPD data were in scanned PDFs that needed to be converted to a useful format using Optical Character Recognition. There were also minor inconsistencies in name. We applied a machine learning algorithm to use name, middle name, and date of birth to match records. The SMFD data were in an electronic format but required significant manipulation before they could be added to the database. Table A3 summarizes the data we received. Data from the HMST describes each encounter with clients, including the date and location of the encounter. Data from the SMPD and the SMFD contain the date and location as well as the type of encounter and the disposition of the encounter. The emergency department data contain the date of the visit. The HMST and ED data contain records just for encounters with HMST clients. The HMST data cover only the period following the start of the HMST (post-period). The ED data cover both the pre- and post-periods. The SMPD and SMFD data contain records for both the clients and the
comparison population, though the SMFD data contain data for only the comparison population for dates after the start of the HMST. There are no pre-period records for the comparison population in the SMFD data. These data sources cover most of the resources associated with chronically homeless that are covered by the City of Santa Monica.

Table A3. Data Received for Evaluation

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Time Period</th>
<th>Comparison Population?</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMPD</td>
<td>January 2011 to June 2018</td>
<td>Yes. For entire time period.</td>
</tr>
<tr>
<td>SMFD</td>
<td>January 2011 to June 2018</td>
<td>Yes. Starting September 2016.</td>
</tr>
<tr>
<td>ED</td>
<td>September 2015 to July 2018</td>
<td>No.</td>
</tr>
<tr>
<td>HMST</td>
<td>September 2016 to May 2018</td>
<td>No.</td>
</tr>
</tbody>
</table>

Defining Outcomes

We used the data in our analytic database to construct several outcome measures. Table A4 lists the outcomes we evaluated. Our primary outcome measures are counts of encounters with SMPD, SMFD, and EDs. We used the encounter description data in the SMPD records to classify SMPD encounters by level of engagement: low-level, citation, and arrest. We used the HMST location data to identify whether clients were housed or receiving some form of residential treatment.

Table A4. Outcomes

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMPD</td>
<td># of encounters</td>
</tr>
<tr>
<td></td>
<td># of citations</td>
</tr>
<tr>
<td></td>
<td># of arrests</td>
</tr>
<tr>
<td>SMFD</td>
<td># of encounters</td>
</tr>
<tr>
<td>ED</td>
<td># of visits</td>
</tr>
<tr>
<td>HMST</td>
<td>Stable housing</td>
</tr>
<tr>
<td></td>
<td>Residential treatment</td>
</tr>
</tbody>
</table>

Outcomes over Time for Clients and Comparison Population

Figure A2 shows the pattern of outcomes for HMST clients over time, and Figure A3 shows the pattern for the comparison population. Each row represents an individual. The dots on each line of Figure A2 represent an encounter with the SMPD, SFPD, or ED. The color of the dots indicates the type of encounter. The small vertical lines represent encounters with the HMST for the clients. The color of the small vertical lines indicates where the encounter took place. Green represents housing. The first small vertical line is the first encounter with the HMST. Figure A3 only includes encounters with the SMPD for the comparison group since these are the only encounters we have for them that cover both the pre- and post-periods in our evaluation.
The patterns in the figures reflect the patterns described in the main text above. There is a decline in encounters over time for most of the HMST clients and little change in encounters for the comparison population.

Evaluating Changes in Outcomes

We compared the outcomes before and after the HMST started when possible. For precise comparison, we defined pre- and post-periods as 12 months each. The pre-period covered the 12 months prior to first encounter with the HMST for clients or the 12 months prior to the start of
Figure A2. Outcomes over Time for HMST Clients

NOTE: Each row in the figure represents an individual. The small vertical lines represent contact between clients and the HMST.
the HM for the comparison population. The HMST started September 2016. We defined two separate post periods. The first period covers the 12 months immediately following the first encounter with the HMST for clients or the 12 months immediately following the start of the HMST team for the comparison population. Based on our interviews with the HMST, we decided to create a second post-period that allowed for some time for the HMST to gain the trust of the clients. Most of the clients do not trust others and have often been resistant to other types of intervention. The HMST members described a period of getting to know the clients and gaining their trust before they could begin making progress. Six months was a common period for this process. The second post-period we use starts 6 months following the first encounter or start of the HMST. We analyze changes in the first 12 months following the HMST as well as changes 6 to 18 months following the HMST.

The SMPD data is the only data source we have that includes pre- and post-periods for both the HMST clients and the comparison population. We compared the relative changes in SMPD encounters over time between the HMST clients and the comparison population to give us a stronger estimate of the relative impact of the HMST on those encounters since we could control for changes that may be unrelated to the HMST. For all other outcomes we could only compare changes among HMST clients. Without a comparison group, we were less able to identify the impact of HMST on these outcomes.
There are more sophisticated analyses than a simple difference analysis that we are attempting to perform; however, we were limited by the fact that there are few clients of the HMST. The small sample size prevented us from controlling for additional predictors in our models, such as individual demographics or individual measures of health or behavior. We did not have the statistical power to cut the data in multiple ways.

**Net Financial Benefit**

After estimating changes in the outcomes listed in Table A4 for the HMST clients, we then estimated the net financial benefit of these changes. To do so, we assigned financial costs to each type of outcome. We multiplied the change by the cost to estimate the net financial benefit of the changes in each outcome. We summed up the total benefits, and this served as our total estimated net financial benefit. Table 3 provides estimates of the costs for each of the outcomes in Table A4 above. These are estimates from recent reports on costs associated with homeless populations (Hunter et al., 2017; Wu and Stevens, 2016). These are imperfect estimates since they are not directly based on the HMST team clients. However, they are estimates for services and encounters with homeless adults in Los Angeles County, so we believe they are reasonable estimates to use in our analyses.

**Program Costs**

The City of Santa Monica provided us with the costs associated with running the HMST. These include rent for office space, salaries for the team members, and the costs of any materials such as vehicles needed for the HMST. We computed the total costs and the costs per year. We also computed the costs per client. This is useful as an upper-bound estimate of the per-client costs to run a program such as the HMST, since it is unclear whether the current client count represents the maximum that the team could manage. Our understanding of the team operation is that all members work with all clients, and all resources are split evenly among the clients. In other words, all costs are fixed costs, in the sense that they do not vary by the individual clients or by the total clients. The office space and staff salaries would remain the same if there were more clients, for example. If the team could effectively manage more clients, then the per-client costs would be lower than our estimate based on the current number of clients.

**Return on Investment to the City of Santa Monica**

We combined our estimates of the net benefits for changes in the outcomes we observe with the costs of running the program to estimate the return on investment to the City of Santa Monica. We estimated the annual return. We did this because the changes that clients experience may not occur as soon as the HMST contacts them. Our understanding is that some clients were reluctant to work with the HMST initially but did work with them after establishing some level of trust. In that case, positive net benefits did not accrue in the short term. By estimating return on investment over time, we are able to capture this aspect of the HMST.
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