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# EVALUATION OF FORT LYON SUPPORTIVE RESIDENTIAL COMMUNITY: PRELIMINARY REPORT

AUGUST 2017

*Prepared by Illuminate Evaluation Services, LLC*

## Legislative Audit Committee

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# TRANSMITTAL LETTER

August 31, 2017

Members of the Legislative Audit Committee:

This report contains the preliminary results of the evaluation of the Fort Lyon Supportive Residential Community Program (Fort Lyon Program). This evaluation was conducted pursuant to Section 24-32-725, C.R.S., which requires the State Auditor to retain a contractor to conduct a longitudinal evaluation of the Fort Lyon Program. This preliminary report presents a description of the Fort Lyon Program, a description of the evaluation methodology and initial results, issues for further consideration, and a literature review.

The work presented herein is based on data furnished by the Colorado Departments of Local Affairs, Health Care Policy and Financing, Human Services, and Corrections; the Colorado Judicial Branch; and the Colorado Coalition for the Homeless. We gratefully acknowledge the cooperation of all parties providing data, the Office of the State Auditor (OSA), the Department of Local Affairs, Fort Lyon Program staff, and the Fort Lyon Study Evaluation Advisory Committee. Without this cooperation, the study could not have been completed.

Respectfully submitted,
Illuminate Evaluation Services, LLC

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# REPORT HIGHLIGHTS

## FORT LYON SUPPORTIVE RESIDENTIAL COMMUNITY

PRELIMINARY EVALUATION REPORT, AUGUST 2017

Illuminate Evaluation Services, LLC

### KEY INITIAL RESULTS

- The average annual per participant cost of the Fort Lyon Supportive Residential Community Program (Fort Lyon Program) from Fiscal Years 2014 through 2016, was about $18,000 based on a 250-person capacity.
- Of the 600 participants exiting the Fort Lyon Program as of December 13, 2016, 39.7 percent completed the Program by meeting their goals (234 of 590 with complete data) and 38.6 percent exited to permanent housing (200 of 518 with complete data).
- Costs per participant decreased 27 percent for physical and behavioral health care and 66 percent for the judicial system (i.e., incarceration and probation) from pre-enrollment in the Fort Lyon Program to post-enrollment in the Program for participants who had 1-year of post-enrollment data and who received Medicaid both pre- and post-enrollment. These results are consistent with the results of cost studies conducted of other similar programs, although the cost reduction at Fort Lyon is less for than other programs.
- The more days a participant stays in the Fort Lyon Program, the greater the odds of completing the Program and exiting to permanent housing. In contrast, a participant's drug and alcohol use history, behavioral health concerns, and participation in vocational, educational, or employment programs were not significant predictors of completing the program or exiting to permanent housing.
- Participants reported significant improvements in their levels of anxiety, depression, and overall quality of life after entering the Fort Lyon Program.
- A benefit cost analysis performed for the Bent County Development Foundation on the Fort Lyon Program estimated that economic activity at Fort Lyon generated 119 jobs and approximately $10.3 million of financial activity in the Bent County area in 2015- 2016.
- Of the three comparison programs reviewed, the Fort Lyon Program had the lowest costs, and a similar average length of stay as two of the three programs.

### BACKGROUND

- The Fort Lyon Program's primary purpose is to provide transitional housing and facilitate peer-based recovery from substance use for homeless and at-risk individuals from across Colorado with a priority on homeless veterans.
- Funding for the Fort Lyon Program comes from state general funds, which averaged about $3.1 million annually, and mortgage settlement funds which averaged $1.7 million annually, for Fiscal Years 2014 through 2016.
- Between September 2013, when the Fort Lyon Program began, and December 13, 2016, the Program has served 798 individuals. Participation levels are set at an average of 250 per month.
- The average age of Program participants was 49 years, about 82 percent were male, and about 21 percent were veterans.
- Of the 798 individuals participating in the Fort Lyon Program, 600 (75 percent) had exited the Program as of December 13, 2016.

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# CHAPTER 1: HOMELESSNESS AND THE FORT LYON PROGRAM

## GENERAL BACKGROUND

The U.S. Department of Housing and Urban Development (HUD) defines homelessness under four broad categories to qualify for grants and programs. The categories include:

- **Literal Homelessness:** People who are living in a place not meant for human habitation (e.g., car), emergency shelter, transitional housing, or hotels paid for by a government or charitable organization. This also includes individuals exiting an institution where he/she resided for 90 days or less and who resided in a shelter or place not meant for habitation prior to entering the institution.
- **Imminent Risk of Homelessness:** Individuals or families who will lose their primary residence within 14 days, no subsequent residence has been identified, and have no other resources or support networks to obtain housing.
- **Homeless Under Other Statutes:** Unaccompanied youth under age 25 or families with children who do not meet the other categories or are homeless under other federal statutes, have not had a lease or permanent housing in 60 days, have moved two or more times in the last 60 days, and are likely to remain homeless because of special needs or barriers.
- **Fleeing Domestic Violence:** Individuals or families who are fleeing or attempting to flee domestic violence, have no other residence, and lack resources and support networks to obtain permanent housing.

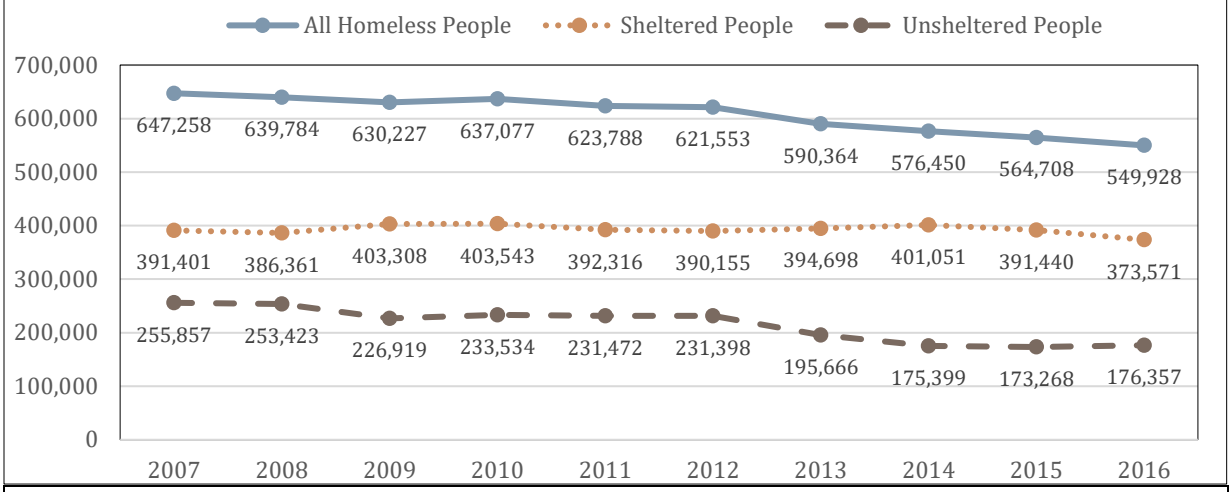
In this report, we refer to homelessness in a general sense, which includes individuals across all categories, unless otherwise stated.

The homeless population is also categorized as sheltered or unsheltered. The sheltered homeless population includes homeless persons residing in an emergency shelter, transitional housing, or safe havens, which are semi-private long-term housing for people with severe mental illness. The unsheltered homeless population refers to individuals whose primary residence is a public or private place not designed for regular sleeping (e.g., street, vehicle, parks).

HUD has produced the Annual Homeless Assessment Report (HUD Homeless Report) on a yearly basis since 2007. The reports include Point-in-Time estimates of "literal homelessness," which provide a snapshot of both sheltered and unsheltered individuals on a single night for particular populations. Exhibit 1.1 shows the number of people experiencing homelessness nationally from 2007 to 2016, according to the 2016 HUD

Homeless Report. During that time, there was a 15 percent decrease in the number of people experiencing homelessness. While the number of sheltered persons has remained relatively unchanged over the years, the percentage of unsheltered persons has declined.

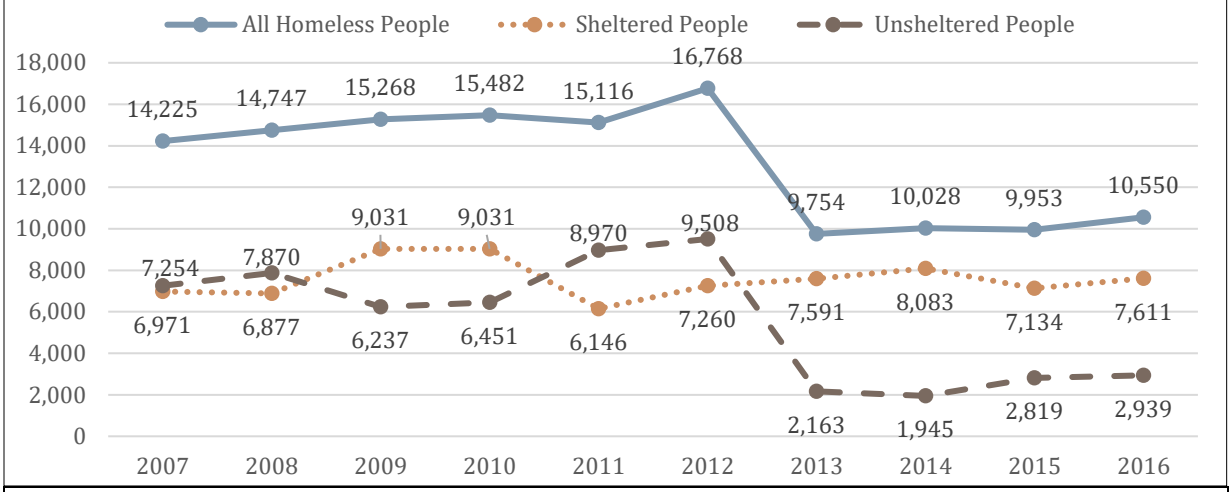
**EXHIBIT 1.1**
**NATIONAL: PEOPLE EXPERIENCING HOMELESSNESS BY SHELTER STATUS, 2007 - 2016**




SOURCE: Annual Homeless Assessment Report: Point-in-Time Data, 2016.

The HUD Homeless Reports also provide data for those defined as literal homeless for each state. From 2007 thru 2012, Colorado's homeless population increased 15.2 percent. Between 2013 and 2016 it increased 7.5 percent. According to the Colorado Coalition for the Homeless (CCH), in 2013 the methodology changed for counting unsheltered homeless individuals based on HUD direction and definition. This change did not represent a change in the actual number of homeless persons, just a reduction in the number reported (see Exhibit 1.2). The total number of sheltered persons has fluctuated over time, but there is a general upward trend in the number of sheltered persons in Colorado.

**EXHIBIT 1.2**
**COLORADO: PEOPLE EXPERIENCING HOMELESSENESS**
**BY SHELTERED STATUS, 2007-2016**




SOURCE: Annual Homeless Assessment Report: Point-in-Time Data, 2016.

A 2015 benefit cost analysis prepared for the Bent County Development Foundation analyzed the increase in homelessness through 2012 and found a strong relationship between unemployment rates in Colorado and the unsheltered populations. The findings suggest the effects of the recession from 2007 to 2009, the economy, and high unemployment rates likely contributed to the increase in homelessness through 2012. The study acknowledged that other known factors, such as mental illness and substance abuse also explain who becomes homeless.

HUD also identifies several subpopulations of homeless persons. Exhibit 1.3 shows a summary of the number of homeless persons in Colorado by subpopulation. The largest subpopulation within Colorado is the chronically homeless. According to HUD (24 CFR Parts 91 and 578 [Docket No. FR–5809–F–01] RIN 2506–AC37):

> A "chronically homeless" individual is defined to mean a homeless individual with a disability who lives either in a place not meant for human habitation, a safe haven, an emergency shelter, or an institutional care facility if the individual has been living in the facility for fewer than 90 days and had been living in a place not meant for human habitation, a safe haven, or an emergency shelter immediately before entering the institutional care facility. In order to meet the "chronically homeless" definition, the individual also must have been living as described above continuously for at least 12 months, or on at least four separate occasions in the last 3 years, where the combined occasions total of at least 12 months. Each period separating the occasions must include at least 7 nights of living in a situation other than a place not meant for human habitation, an emergency shelter, or a safe haven.

| EXHIBIT 1.3<br>COLORADO: SUBPOPULATIONS OF HOMELESS PERSONS 2016 | | | |
|---|---|---|---|
| | **Sheltered** | **Unsheltered** | **Totals** |
| Individuals with Chronic Homelessness | 949 | 880 | 1,829 (22.6%) |
| Individuals with Severe Mental Illness | 1,000 | 732 | 1,732 (21.4%) |
| Individuals with Chronic Substance Use Disorder | 835 | 581 | 1,416 (17.5%) |
| Veterans | 906 | 275 | 1,181 (14.6%) |
| Victims of Domestic Violence | 743 | 99 | 842 (10.4%) |
| Unaccompanied Youth (Age 18 to 24) | 383 | 270 | 653 (8.1%) |
| Children of Parenting Youth | 187 | 30 | 217 (2.7%) |
| Parenting Youth | 133 | 24 | 157 (1.9%) |
| HIV/AIDS | 39 | 12 | 51 (.6%) |
| Total | 5,175 | 2,903 | 8,078 (100%) |
| SOURCE: Department of Urban and Housing Development: Point-in-Time Data, January 2016<br>NOTE: These numbers do not include all individuals represented in exhibit 1.2, as some individuals experiencing homelessness do not fall into these subpopulations. | | | |

# Fort Lyon Supportive Residential Community Program

In 2013, the General Assembly enacted legislation to establish the Fort Lyon Supportive Residential Community Program (Fort Lyon Program or Program) under the Colorado Department of Local Affairs (DOLA). The Fort Lyon Program opened in September 2013 to serve as a residential community for the homeless to provide substance abuse supportive services, medical care, job training, and skill development for the participants, in accordance with statute [Section 24-32-742, C.R.S.]. According to personnel from DOLA and the CCH, the Fort Lyon Program emerged out of a need to address homelessness in the State of Colorado and a desire to test innovative programming that was built on evidence-based practices combined from different models and streams of research.

Several key factors contributed to the acuity of the need at the time the Fort Lyon Program was developed. HUD reduced funding for transitional housing around 2012, creating a significant gap in services. There was also a particular concern about the veteran population in Colorado. Overall, it was recognized that, in spite of existing programs, individuals were still "slipping through the cracks" because they did not meet requirements for some programs or the programs did not provide the combination of services needed. Thus, the Fort Lyon Program was designed to target those populations who were not being served by existing programs.

The Program is located in Bent County in the rural town of Las Animas, Colorado, on the Fort Lyon campus. The location for the Program was chosen with the thought that the rural location might benefit participants by providing a geographical buffer between the participants and the communities they come from, therefore limiting contact with the people and places that support continued substance use. Housing the Program on the campus also offered an opportunity to repurpose the Fort Lyon facility, which had

previously been the Fort Lyon Veterans Administration Hospital (from 1922 to 2001) and a state prison, which was decommissioned in 2012. Bent County manages the Fort Lyon property and facilities.

The Fort Lyon Resident Handbook (revised January 17, 2017) describes the primary purpose of the Program as follows:

> To provide transitional housing and facilitate peer-based recovery from substance use for homeless and at-risk individuals from across Colorado with a priority on homeless veterans through self-directed education, vocational, and employment readiness services in a safe and supportive residential community environment that leads to long-term recovery from addictive substances.

The Division of Housing within DOLA is responsible for managing the Fort Lyon Program. The Division of Housing contracts with CCH to administer the Program's residential and supportive services. CCH is a non-profit organization with a mission to work collaboratively with other agencies and organizations to prevent homelessness and to create housing solutions for homeless and at-risk families, children, and individuals. A four-member CCH directors' team provides onsite leadership at Fort Lyon, and their work is supported by 32 additional CCH staff members both on and offsite. For Calendar Year 2016, this consisted of 11 case managers, four administrative staff, four security staff, four kitchen staff, three peer mentors, three drivers, an outcomes specialist, a nurse case manager, and a housekeeping staff person. The entire Fort Lyon staff meets weekly to review program progress and address ongoing program development and quarterly to review data reports and outcomes. Further, the Fort Lyon Program Manager from DOLA visits the Fort Lyon Program monthly for a site visit and informal monitoring. During this time, the DOLA representative attends meetings with various stakeholders (e.g., CCH and Bent County), meets with Program leaders for strategic planning and program development, meets with participants, and attends special events. For Calendar Year 2016, the contract between DOLA and CCH set participation levels for the Fort Lyon Program at 250 participants, on average each month, with up to 10 percent vacancy.

The Fort Lyon facility includes men's and women's dorms. Currently, women have individual rooms. Men initially share rooms and may move to single rooms over time. There are also separate, stand-alone housing units with approximately three bedrooms, where participants can develop greater autonomy and responsibility toward independent living later in the Program. This includes preparing meals and managing a budget.

The facility features an auditorium, library, art room, workout facility, bicycle shop, sewing room, barber/cosmetology room, garden, and meeting rooms. There is also a large warehouse area with clothing, household goods, and furniture, which participants can access for free while at Fort Lyon and can select from to prepare for their lives upon exit.

## PROGRAM MODEL

Fort Lyon Program participants receive housing, food, and access to a variety of supports and services, with a focus on substance use and its role in chronic homelessness. The Program is operated using the following key service models:

- *Trauma Informed Care*, which recognizes that homelessness may be both the cause and result of trauma. According to the U.S. Department of Health and Human Services, Trauma Informed Care realizes the impact of trauma; understands potential paths for recovery; recognizes the signs and symptoms of trauma; responds by fully integrating knowledge about trauma into policies, procedures, and practices; and seeks to actively resist re-traumatization.
- *Peer support*, which incorporates social support for recovery, both formally through peer mentoring and informally through relationships among participants.
- *On-demand transitional recovery housing* that is voluntary, driven by client choice, entails minimal service requirements, and is accessible without an extensive wait period.

The Fort Lyon Program does not provide behavioral health or medical treatment.

## PROGRAM ACCESS AND ADMISSION

To participate in the Fort Lyon Program, an individual must be referred by a homelessness service organization or health care provider that will follow up with that individual after he or she leaves the Program. Referrals come through CCH outreach staff and through partnerships between CCH and other agencies and organizations. CCH is the lead organization of the Denver Street Outreach Collaborative, which helps connect individuals with CCH and services, including the Fort Lyon Program.

Client participation in the Program is entirely voluntary and cannot be court ordered, although participants may be court-involved during the residency. The entrance requirements for the Fort Lyon Program are:

1. Be homeless or at imminent risk of homelessness.
2. Be at least 21 years or older and a resident of Colorado.
3. Have a documented substance use disorder with previous failed attempts at treatment and express a strong motivation and desire to change.
4. Be detoxed prior to program entry – meeting the American Society of Addiction Medicine (ASAM) Level I Detox Criteria. (The ASAM criteria provide guidelines for placement, continued stay and transfer/discharge of patients with addiction and co-occurring problems.)
5. If there is a mental health diagnosis, participants must have stable symptoms and have a 30-day supply of all prescription medications at the time of transportation to the Fort Lyon campus.
6. If there are chronic health conditions, participants must be medically cleared to enter the Program and have a 30-day supply of any required medication.

7. Must not have open warrants or cases, be a registered sex offender, or have a history of sexual offenses or recent violent offenses.
8. Must agree to live in a communal living environment and comply with the Resident Handbook and Fort Lyon Policies and Procedures.

The intake process includes both pre-entry and onsite activities designed to determine whether the intentions and expectations of the individual and the Fort Lyon Program align. The intake process includes, for example, an assessment of motivation that is subsequently used to inform case management. The logistics of entering the Program also serve to screen for readiness. Once participants complete the referral packet, they are scheduled for the next available opening on a van to Fort Lyon, which is usually 14 to 30 days out. Between the initial referral and the time of transportation, there are periodic check-ins, and participants must be present and sober when the Fort Lyon van arrives to transport them to the facility.

Participants who have been actively using drugs or alcohol must have 72 hours of detox before entering the Fort Lyon Program. Participants who use methamphetamine intravenously must enter treatment for 30 days before transferring to Fort Lyon, and Fort Lyon Program staff execute a coordinated treatment plan prior to transfer. The Program has zero-tolerance substance abuse and violent behavior policies: if participants fail a random breathalyzer or urine analysis or exhibit violent behavior, they will be discharged from the Program.

There are readmission procedures for participants who leave or are asked to leave the Fort Lyon Program, which align with the Alcoholics Anonymous (AA) 12-step process. To return to the Program, the participant must identify what he or she did wrong and would do differently, meet with a Fort Lyon case manager, and write a letter for readmission. Fort Lyon Program staff review this information to determine if the participant can be readmitted. Program staff will not readmit a client who has been verbally or physically violent.

### PROGRAM SERVICES

The Fort Lyon Program offers the following supports and services to participants:

> **Case management** – Provides intensive case management to participants in conjunction with each participant's individual Goals and Outcomes Plan. This support includes ensuring access to: primary, oral, and behavioral health services; substance abuse treatment and support; housing case management and advocacy; and vocational training, employment, and educational services. Case managers meet with participants at least twice a month to review goals, progress toward the goals, and steps necessary to meet those goals. The staff holds formal weekly case reviews to assess the progress of individual participants and to collaborate on how to support participants to meet their goals.

**Vocational and educational training** – Offers some life skills and basic employment skills classes and support, including resume writing, interviewing skills, and other job readiness proficiencies. Program participants also receive opportunities for vocational training by helping with the overall operations of the campus such as food services, facilities maintenance, grounds maintenance, housekeeping, and waste water management. Additionally, Lamar Community College and Otero Junior College provide customized educational and vocational training in areas such as computer technology, construction industries, health services, and agricultural sciences.

**On-site support** – Provides support groups that are open to participants and members of the public. The Program does not offer clinical treatment, and activities are based on individual choices. Participants typically participate in peer-led AA or similar meetings and, at their discretion, in various educational, employment, and arts activities.

**Peer Mentoring** – Provides formal and informal peer support. Each dormitory is staffed with a peer mentor who serves as a role model and provides a range of support, such as talking with the client, addressing immediate needs, sharing resources, and encouraging sobriety.

**Permanent housing reintegration** – Works with participants to access permanent housing upon exit from the Fort Lyon Program.

For needs not met by on-site support, participants can access additional resources through partner programs or independently in the local communities. Locally, participants can access social services, attend church, attend college, hold employment, attend recovery meetings, or shop. Fort Lyon provides transportation, and there are bicycles available to visit nearby Las Animas, if preferred.

The Fort Lyon campus also houses the Fort Lyon Health Clinic, a U.S. Department of Health and Human Services' Health Resource and Services Administration-funded Health Care for the Homeless Clinic, which provides integrated primary and behavioral health services for the five-county region. It is a separate entity from, but partner to, the Fort Lyon Program that provides basic health services. For example, incoming participants typically undergo a basic health care work-up to establish a medical baseline, identify current health care needs, determine medication needs, and make referrals for deferred health care. The clinic also teaches basic skills around accessing health care, such as how to schedule and cancel appointments and how to plan ahead for obtaining medication refills. When a certain health care need cannot be met at the Fort Lyon Health Clinic or within the local community, or the wait lists to receive care are too long, participants are provided transportation to Pueblo for those services. Services sought in Pueblo include but are not limited to dental care, skin care, gastroenterology, urology, and cardiovascular treatment.

Fort Lyon participants are eligible for Medicaid, which covers the costs of any services provided.

## PROGRAM OPTIONS

The Fort Lyon Program is intentionally designed to allow participants the flexibility to establish their own approach to recovery. Incoming Fort Lyon Program participants undergo an orientation upon their arrival. Early in their stay, they work with their assigned case manager to create a Goals and Outcomes Plan, which consists of self-determined goals toward greater independence, abstinence, education, employment, and stable housing. In collaboration with the case manager, the participants review and update their goals periodically throughout their time in the Program. These goals help participants make decisions about which of the programs and activities offered at Fort Lyon they would like to participate in and help to define when they will complete the Program.

For their first 30 days in the Fort Lyon Program, participants are encouraged to rest, become physically healthy, and obtain deferred medical treatment; they are not allowed to leave campus. New participants are required to attend the New Beginnings education program that provides information and reflection on substance use and its impact. The program runs one hour a week for their first six weeks. All participants, throughout their stay at Fort Lyon, are required to attend a morning community meeting 3 days a week. Unexcused absences from New Beginnings or required community meetings can result in program discharge. Each dormitory has floor meetings that participants are also expected to attend, although missing these meetings does not put one at risk for discharge. Other than New Beginnings and the morning community meetings, there are no requirements to attend meetings or engage in activities, and some participants choose to not participate. At the same time, there is an expectation that participants will participate in activities related to their recovery and other goals, as well as activities that maintain the health of the community.

After 30 days, participants may leave campus during the day and after 90 days, may request an overnight pass, which is typically reserved for appointments to set up housing prior to program completion. In addition, after the first 30 days, participants may take part in additional activities, at their discretion. While participants no longer attend New Beginnings classes after their first 6 weeks, there are a number of meetings and activities, called electives, and participants are encouraged to participate in the electives that support their recovery goals throughout their stay. Electives include resident-hosted recovery meetings, such as AA and Narcotics Anonymous (NA) groups, as well as work and educational opportunities. Fort Lyon staff members believe these opportunities for engagement and leadership support individual recovery and self-advocacy. The staff encourages participants to generate new ideas for activities and provides support for these ideas to the extent they are appropriate and feasible. For example, the staff helped participants create an art room and a bike repair and check-out program. There is also a

participants' council that serves as a voice for participants and plays a role in guiding and maintaining the community. The Fort Lyon Program has offered life skills classes in areas such as healthy eating and computer skills, as the interest and needs arise. Participants reported they would like to see more offered, with an emphasis on basic knowledge essential to independent living, such as managing checking accounts, budgeting, paying bills, and establishing leases and accounts (e.g., for utilities).

Participants may also participate in paid work on campus, referred to as "work modules." For example, participants may work in the kitchen, laundry, or library; clean the facility; or assist with large improvement projects. Participants may seek multiple work modules at a given time, and they can work up to a maximum of 10 hours per week at minimum wage. This ensures that as many participants as possible can work. Further, some participants have employment within the communities outside of Fort Lyon.

Fort Lyon originally employed four vocational specialists who worked directly with the participants in the areas of job preparation, resume writing, and seeking specific jobs. However, these positions were eliminated October 31, 2015 due to budget-related staff cuts. Program leaders report they are currently exploring options and partnerships to create more vocational opportunities.

In addition, the Fort Lyon Program provides access to educational opportunities, including GED tutoring, basic adult education, and college. Participants in the Program have access to college courses, both onsite and on the Otero Junior College and Lamar Community College campuses. Fort Lyon is an official satellite campus for Otero Junior College. Representatives from the college, including the Vice President of Student Affairs and Associate Vice President of Instruction, meet with Fort Lyon Program staff regularly to review data and programming to support participants' needs as students.

The case manager who serves as the Program's Education Navigator helps participants set education goals, access education, and manage student loans in default. Costs for college are covered by the resident, and the staff assists participants in obtaining grants and loans. There are plans to expand academic services and opportunities, including GED preparation and basic adult education. Because some vocational education programs offered through Otero and Lamar are longer than a typical participants' stay in the Fort Lyon Program, staff are exploring ways of enabling participants to complete vocational certification either before or after they exit the Fort Lyon Program.

### PROGRAM COMPLETION

The Fort Lyon Program is designed as a 2-year program, but this is not a requirement. The maximum allowable length of participation is 36 months. Participants self-determine when they have completed the Fort Lyon Program, using their progress in meeting their Goals and Outcomes Plan as a guide. They make this determination with support from others, particularly their case manager, and could also include a peer mentor, or group of peers.

Participants who complete the Program may become part of the Friends of Fort Lyon, a support network of alumni that provides continued recovery and social support.

In preparation for transitioning out of the Fort Lyon Program, case managers and other support staff identify the paperwork, credentials, and benefit applications each participant needs. Other personnel work with participants to obtain the housing subsidies and transitional supports they will need upon exiting the program. A case manager who serves as the Program's Discharge Specialist assists participants in applying for housing, accessing vouchers, and making contacts with original referral sources and essential other supports. Some participants choose to return to their original communities, while others choose new locations. A number have chosen to remain in the Bent County area to maintain relationships and support systems established while at Fort Lyon and to take advantage of the low cost of living and affordable housing.

## PROGRAM PARTICIPATION

Between September 2013, when Fort Lyon opened, and December 13, 2016, the Fort Lyon Program has served 798 individuals. Exhibit 1.5 details the demographics of the 798 Fort Lyon Program participants. These data are collected in the Homeless Management Information System (HMIS). The HMIS is a local technology system used to collect client-level data on the provision of housing and services to homeless individuals and persons at risk.

| EXHIBIT 1.5<br>DEMOGRAPHICS: FORT LYON PARTICIPANTS (n = 798) | | |
|---|---|---|
| **Demographic** | **# of Fort Lyon Participants** | **% of Fort Lyon Population** |
| **Average Age** | 49.4 | |
| **Demographic by Gender** | | |
| Male | 650 | 81.5% |
| Female | 147 | 18.4% |
| Transgender | 1 | .1% |
| **Total** | **798** | **100%** |
| **Demographic by Ethnicity** | | |
| Non-Hispanic/Non-Latino | 648 | 81.2% |
| Hispanic/Latino | 142 | 17.8% |
| Don't Know/Client Refused | 8 | 1.0% |
| **Total** | **798** | **100%** |
| **Demographic by Race** | | |
| White | 574 | 71.9% |
| Black or African-American | 115 | 14.4% |
| American Indian or Alaska Native | 96 | 12.0% |
| Native Hawaiian/Pacific Islander | 7 | 0.9% |
| Asian | 3 | 0.4% |
| Don't Know/Client Refused | 3 | 0.4% |
| **Total** | **798** | **100%** |
| **Veteran** | 169 | 21.2% |
| **Victim of Domestic Violence** | 243 | 30.6% |
| **Disabling Condition** (e.g. physical disability, chronic health condition, behavioral health problem) | 481 | 60.3% |
| SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System (HMIS) data provided by Colorado Coalition for the Homeless. | | |

Exhibit 1.6 shows where participants lived prior to entering the Fort Lyon Program. The largest proportion of participants lived in an emergency shelter, followed by staying with a family member or friends, and living in a place not meant for habitation.

| EXHIBIT 1.6<br>FORT LYON PARTICIPANTS' PRIOR RESIDENCE | | |
|---|---|---|
| **Prior Residence** | **# of Fort Lyon Participants** | **% of Fort Lyon Population** |
| Emergency shelter, including hotel or motel | 196 | 24.6% |
| Staying or living in a family member's or friend's room, apartment, or house | 162 | 20.3% |
| Place not meant for habitation (e.g., car, park) | 131 | 16.4% |
| Substance abuse treatment facility or detox center | 108 | 13.5% |
| Transitional housing for homeless persons | 63 | 7.9% |
| Rented or owned by client | 34 | 4.4% |
| Jail, prison, or juvenile detention center | 30 | 3.8% |
| Permanent housing for formerly homeless persons | 23 | 2.9% |
| Hospital or other residential non-psychiatric medical facility | 10 | 1.3% |
| Psychiatric hospital or other psychiatric facility | 9 | 1.1% |
| Safe Haven (supportive housing for the hard-to-reach, unwilling, or unable) | 6 | .8% |
| Other (e.g., nursing home/long-term facility, halfway house, data not collected, client does not know) | 26 | 3.4% |
| **TOTAL** | **798** | **100%** |
| SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless. | | |

Participants may leave the Program before completion for a variety of reasons. According to data from the Homeless Management Information System, of the 798 individuals who entered the Program between September 2013 and December 13, 2016, just under 10 percent (74 participants) left the Program before completion and later re-entered.

The average length of stay, per admission, in the Fort Lyon Program, is 220 days, with stays ranging from 2 to 1,188 days. Exhibit 1.7 shows the range of participants' length of stay.

| EXHIBIT 1.7<br>RANGE OF LENGTH OF STAY | |
|---|---|
| **Length of Stay** | **% of Admissions** |
| 1 to 30 days | 13.4% |
| 31 to 180 days | 46.9% |
| 181 to 365 days | 19.2% |
| 366 to 730 days | 15.5% |
| 731 days to 1,095 days | 4.9% |
| 1,096 days or more | 0.1% |
| SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless. | |

Exhibit 1.8 shows the number of Program admissions, number of Program exits, and number of persons completing the Program by calendar year for each year since the Fort

Lyon Program began, and the percent of exits with completion. The total is more than 798 because of participants re-entering the program.

**EXHIBIT 1.8**
**PROGRAM ADMISSIONS, EXITS, AND COMPLETIONS BY CALENDAR YEAR**

| Length of Stay | 2013[1] | 2014 | 2015 | 2016[1] | TOTAL | Percent Change |
|---|---|---|---|---|---|---|
| # Admissions | 88 | 269 | 229 | 295 | 881 | 70.2% |
| # Exits | 20 | 147 | 205 | 310 | 681 | 93.5% |
| # Completions | 4 | 24 | 75 | 138 | 241 | 97.1% |
| % Exits with Completion[2] | 20.0% | 16.3% | 36.6% | 44.5% | 35.3% | 55.1% |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.
[1] The 2013 and 2016 data do not include full years. 2013 data is from September to December 2013 and 2016 data is from January 1, 2016 to December 13, 2016.
[2] This percentage is calculated by dividing the number of people who completed the Program by the number of exits. There was more than one exit for about 10 percent of the population.

Exhibit 1.9 shows where participants reported living at their last exit from the Fort Lyon Program (n = 615). Most participants were staying with a family member or friend, followed by renting or owning a place, and emergency shelter.

**EXHIBIT 1.9**
**FORT LYON PARTICIPANTS' RESIDENCE AFTER DISCHARGE FROM FORT LYON**

| Exit Destination | # of Fort Lyon Participants | % of Fort Lyon Population |
|---|---|---|
| Staying or living in a family member's or friend's room, apartment, or house | 165 | 26.7% |
| Rented or owned by client | 143 | 23.3% |
| Emergency shelter, including hotel or motel | 95 | 15.4% |
| Place not meant for habitation (e.g., car, park) | 39 | 6.3% |
| Permanent housing for formerly homeless persons | 36 | 5.9% |
| Substance abuse treatment facility or detox center | 19 | 3.1% |
| Transitional housing for homeless persons | 12 | 2.0% |
| Jail, prison, or juvenile detention center | 8 | 1.3% |
| Psychiatric hospital or other psychiatric facility | 7 | 1.1% |
| Hospital or other residential non-psychiatric medical facility | 6 | 1.0% |
| Deceased | 4 | .7% |
| Safe Haven (supportive housing for the hard-to-reach, unwilling or unable) | 2 | .3% |
| Other (e.g., nursing home/long-term facility, halfway house, data not collected, client does not know) | 79 | 12.8% |
| **TOTAL** | **615** | **100%** |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

Exhibit 1.10 summarizes the housing status of participants prior to enrollment and at exit from the Fort Lyon Program. These results show substantial changes in housing situations, with the greatest change occurring in the percent of participants acquiring permanent and transitional housing after participating in the Fort Lyon Program. Often participants are placed in transitional housing while waiting for permanent housing.

**EXHIBIT 1.10**
**HOUSING STATUS - PRE-ENROLLMENT AND EXIT**

| Housing Status | Pre-Enrollment | Exit |
|---|---|---|
| Permanent & Transitional Housing Situation (including hotel or motel paid for without emergency shelter voucher; owned by client with or without housing subsidy; permanent housing for formerly homeless persons; rental by client with or without subsidy; staying or living with family member or friend; transitional housing for homeless persons) | 40.4% | 62.9% |
| Homeless Situation (including place not meant for habitation; emergency shelter, including hotel or motel paid for with emergency shelter voucher; safe haven) | 37.0% | 17.4% |
| Institutional Situation (including hospital or other residential non-psychiatric medical facility; jail, prison, or juvenile detention; long-term care facility/nursing home; psychiatric hospital or other psychiatric facility; substance abuse treatment facility/detox) | 19.9% | 6.7% |
| Other (e.g., data not collected, client refused, client does not know, deceased) | 2.8% | 13.0% |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

## PROGRAM FUNDING

The funding for the Fort Lyon Program comes from a combination of state general funds and from Attorney General Custodial Funds/Mortgage Settlement Funds (settlement funds) set aside for Veterans' Housing and Treatment Programs. The annual cost of the Fort Lyon Program from Fiscal Year 2014 through 2016 ranged from $4.1 million to $5.2 million, with an annual average of about $4.8 million. Of this, roughly $3.1 million came from state funds and $1.7 million from settlement funds. More detailed information on program costs is provided in Chapter 3.

# CHAPTER 2: METHODOLOGY

## SCOPE OF PROJECT

Our evaluation of the Fort Lyon Supportive Residential Community Program (Fort Lyon Program or Program) was conducted pursuant to Section 24-32-725, C.R.S., which required the State Auditor to retain a contractor to conduct a longitudinal evaluation of the Fort Lyon Program that includes a pre- and post-evaluation of the Program, with 1 to 2 years prior to and after the participants' time in the Program, and to the extent possible to utilize a matched-comparison group. Specifically, statute required the evaluation to:

- Describe the annual direct cost of the Program.
- Describe the indirect costs associated with the Program, including life-cycle costs related to the buildings and grounds.
- Identify the annual amount spent on the Program by the Division of Housing within the Department of Local Affairs, or any other state agency, the federal government, any local governments; any gifts, grants, or donations to the Program; and the value of any free programs provided for Program participants.
- Describe any savings, including cost avoidance, and benefits to the State, federal government, local governments, and any service providers supported with public funds as a result of the Program, including reductions for expenditures related to health care and the criminal justice system.
- Analyze outcomes for participants for the Program in general and based on length of time in the Program or severity of substance abuse history.
- Compare outcomes, costs, and benefits for the Program with a population that is similar to Program participants, and that is not receiving care (This comparison will be included in the second year of the study)
- Compare outcomes, costs, and benefits for the Program with other programs that serve a similar client population and have similar goals for improving client well-being and reducing homelessness over the long-term.

### YEAR 1 AND YEAR 2 FOCUS

Statute designed the evaluation to take place over a 2-year period, with a preliminary report due to the State Auditor by August 2017 (referred to as the Year 1 Report) and a final report due to the State Auditor by August 2018 (referred to as the Year 2 Report). The Year 1 Report includes preliminary evaluation results, including information on the costs and benefits associated with the Fort Lyon Program, the outcomes for Program participants, and a comparison of the Fort Lyon Program with three other programs that serve similar populations.

The Year 2 Report will build on Year 1 findings and include additional information on Program implementation and participant outcomes. The Year 2 report will also include an evaluation of a comparison group that is similar to Fort Lyon participants, including both those who have received services from other programs and those who have not received any services. This information will be used to compare outcomes for Fort Lyon Program participants with the outcomes for a similar group of persons experiencing homelessness.

# METHODOLOGY

To align with the statutory objectives of this evaluation, we implemented a longitudinal, mixed methods research design. This means that we studied outcomes for participants during the time they were enrolled in the Program, and we collected both quantitative and qualitative data. For the cost analysis, we analyzed data over a two and four-year period for the two groups. This rigorous design provides information on the implementation and impact of the Fort Lyon Program. The collection of both quantitative and qualitative data adds scope and breadth to the evaluation in addition to providing the ability to triangulate the data, meaning that we analyzed multiple data sources to produce the results. The interrupted time-series analysis (longitudinal design) helps to demonstrate impact of the treatment by analyzing data prior to the intervention and after the intervention.

## DATA SOURCES

We used a variety of data sources, including reports and literature about other similar programs; data from the Departments of Local Affairs, Health Care Policy and Financing, Human Services, and Corrections, Judicial Department, and Colorado Coalition for the Homeless; interviews and focus groups with Fort Lyon Program staff and both current and past participants; interviews with staff and participants from other similar facilities; and a review of existing reports and data pertaining to the Program. A broader description of the data sources is included in Appendix A.

## DATABASE DESCRIPTIONS

We collected and analyzed data for Fiscal Years 2012 through 2016 for the Fort Lyon Program participants. This included financial data on the total costs to operate and maintain the Fort Lyon Program, participants' demographics and lengths and dates of stay at Fort Lyon, fee-for-service data for physical and behavioral health claims for participants using Medicaid, encounter data for all Fort Lyon participants receiving services through a public behavioral health provider, probation data, and incarceration and movement data. A broader description of the databases is included in Appendix A.

## ANALYSES

This evaluation follows a generally accepted methodology for conducting a cost study, including examining the cost of a wide variety of public services provided to Fort Lyon Program participants for a standardized time period, for participants prior to entering the Fort Lyon Program and during a standardized time period after entering the Program. Each agency providing data for the evaluation collects and maintains cost and service data in different formats. In some cases, agencies reported an average annual cost per person for services; in other cases, evaluators were able to obtain actual fee-for-service data. Due to the differences in cost data formats, evaluators standardized the data for analysis and reporting. To compare costs for different time periods, we adjusted all cost data to Fiscal Year 2015-2016 using the Denver-Boulder-Greeley (Denver) Consumer Price Index for all Urban Consumers (CPI-U), which is the only CPI-U for Colorado. Exhibit 2.1 displays the CPI-U for all items in the Denver-Boulder-Greeley area for the years of the study and shows the corresponding percentage adjustment to the study year.

**EXHIBIT 2.1**
**CPI-U Information**

| Year | CPI-U | Adjustment to Study Year |
|---|---|---|
| 2016 | 246.643 | |
| 2015 | 239.990 | 2.8% |
| 2014 | 237.200 | 4.0% |
| 2013 | 230.791 | 6.9% |
| 2012 | 224.568 | 9.8% |

SOURCE: Adapted by Illuminate Evaluation Services from https://www.colmigateway.com/vosnet/analyzer/results.aspx?session=cpi&pu=1&plang=E.

In the outcomes section, we used both descriptive and inferential statistics. The descriptive statistics include means and frequencies. Further, we used a growth curve model to examine changes in behavioral health. The behavioral health growth curve models included *day*, a variable that measured the number of days between the date of assessment administration and participants' first day in the program. To explore the relationship between specific program components and *completion of program* and *exit to permanent housing*, we employed logistic regression analysis and chi-square.

# CHAPTER 3: FORT LYON PROGRAM COSTS AND BENEFITS

This chapter presents our preliminary analysis of the public costs, savings, and benefits of the Fort Lyon Supportive Residential Community Program (Fort Lyon Program or Program). This section begins with a description of the direct and indirect program costs by fiscal year and includes data on the amount of funds provided to the Program and program expenditures. This section also includes a brief overview of life cycle costs, including a description of the Fort Lyon facility, its maintenance requirements, improvements made to the facility since the Fort Lyon Program began, and a description of potential future repairs and improvements needed at the facility. Next, we examine the costs of public services provided to Fort Lyon Program participants for a standardized time period prior to entering the Fort Lyon Program (referred to as pre-enrollment) and during a standardized time period after entering the Program (referred to as post-enrollment). The post-enrollment period includes the time participants spent in the Fort Lyon Program. This chapter also discusses several benefits of the Fort Lyon Program, including the regional economic impact of the Program.

## PROGRAM COSTS

Funding for the Fort Lyon Program comes from a combination of state general funds and from Attorney General Custodial Funds/Mortgage Settlement Funds (settlement funds) set aside for Veterans' Housing and Treatment Programs. The settlement funds are a one-time allocation and are available until the fund is depleted; these funds roll forward every year. The state general fund dollars are depleted first and then the settlement funds. Exhibit 3.1 summarizes the total Fort Lyon Program revenue and expenditures for each fiscal year by funding source. Indirect costs of the program did occur each fiscal year, but were minimal.

| EXHIBIT 3.1<br>FORT LYON PROGRAM FUNDING<br>FISCAL YEARS 2014 THROUGH 2016<br>(In Millions) | | | | |
|---|---|---|---|---|
| | Fiscal Year 2014[1] | Fiscal Year 2015 | Fiscal Year 2016 | Total |
| Revenue | | | | |
| State General Funds | $2.8 | $3.2 | $3.2 | $9.2 |
| Settlement Funds | $1.3 | $2.0 | $1.7 | $5.0 |
| Total Revenue | $4.1 | $5.2 | $4.9 | $14.2 |
| Expenditures | | | | |
| DOLA - Administrative | ($.04) | ($.1) | ($.06) | ($.2) |
| CCH - Program Administration | ($2.0) | ($3.1) | ($2.5) | ($7.6) |
| Bent County – Facility Maintenance | ($1.8) | ($1.8) | ($1.8) | ($5.4) |
| Other[2] | ($.24) | ($.22) | ($.06) | ($.52) |
| Total Expenditures | ($4.1) | ($5.2) | ($4.4) | ($13.7) |
| NET | $0 | $0 | $.5 | $.5 |

SOURCE: Illuminate Evaluation Services' analysis of financial data provided by the Department of Local Affairs.
[1] The Fort Lyon Program started in September 2013; Fiscal Year 2014 costs were for a partial year.
[2] Other includes expenses associated with the referral network for Fort Lyon Program participants and facility maintenance costs incurred by the Department of Corrections from July 2013 through August 2013.

The actual cost of the program is higher than indicated by the expenditures figures above because Fort Lyon Program participants contribute to the operation and maintenance of the Fort Lyon facility by working in food service, housekeeping, and grounds and facility maintenance. According to Bent County, which provides all facility and grounds maintenance, Fort Lyon Program participants' work contributions equate to an additional 18 Full Time Equivalents (FTE), which would normally cost about $840,000 annually. Program participants receive stipends for their contributions. Program staff report that this amounts to about $55,000 annually, and is paid for through the Program's budget. Essentially, resident contributions represent a cost savings of about $785,000 per year.

Additionally, the State would incur some maintenance and operations costs to maintain the Fort Lyon facility in the absence of the Fort Lyon Program [i.e., if the facility was vacant]. We estimated these costs to be about $897,000 annually, to cover utilities, light maintenance, and security, based on the costs incurred by the Department of Corrections when it was responsible for maintaining the Fort Lyon facility after the state prison was closed.

*Life cycle costs.* There are also life cycle costs associated with the Fort Lyon facility. Life cycle costs include the ongoing maintenance of the buildings and grounds, and future repairs. According to Bent County, of the 110 structures on the Fort Lyon campus, 70 are in use by the Fort Lyon Program, 32 are vacant, and 8 are in the process of being renovated for future use by the Program or other entities. The Fort Lyon Program utilizes approximately 65 percent of the total site area, which is about 517 acres.

All maintenance of the facility and grounds at Fort Lyon is completed through a contract with Bent County, using the funds allocated to the Program and distributed by the Department of Local Affairs (DOLA). Under the contract, Bent County has made improvements to the Fort Lyon facility including upgrades to the water, sewer, and irrigation systems; replacing lighting with more energy efficient options, painting, and landscaping improvements. Bent County also remodeled 10 structures that are used for housing Fort Lyon Program participants using funds from the State Weatherization Program; Bent County matched the Weatherization Program funds 50/50 using contract funds. In addition, Bent County replaced the boiler for the Fort Lyon facility through a Development Grant from the Colorado Division of Housing; Bent County matched the grant funds 50/50 using contract funds.

According to Bent County, in the next 5 to 10 years, the primary repairs needed at the facility include upgrades to the elevators at an estimated cost of about $600,000, which they reported needs to be completed before 2019 in order to avoid expensive full modernization requirement costs. Additionally, Bent County reports that updates to the energy systems would substantially improve sustainability of the Fort Lyon facility. A Technical Energy Audit (TEA) was conducted in 2014 and included a number of recommendations to improve energy efficiency. The TEA estimated the total cost of all the recommended improvements was about $2.1 million over 5 years. According to the TEA, full implementation of the improvements should generate about $345,000 in annual energy savings. DOLA and Bent County plan to implement the recommendations incrementally as funding becomes available.

In response to interest expressed by legislators on ideas for repurposing the parts of the Fort Lyon campus that are not being used by the Fort Lyon Program, Bent County and DOLA began discussions on ways to refit the unused buildings for another purpose. Bent County, recognizing the importance of the Fort Lyon campus to its community, provided the $30,000 required match and applied for and received funding from the State Historical Fund to commission a Preservation and Reuse Master Plan to give guidance in future redevelopment and potential uses of the Fort Lyon campus, in addition to the Fort Lyon Program.

### SAVINGS/BENEFITS

Since individuals who are chronically homeless are often the highest users of community services (e.g., emergency, inpatient and outpatient medical, and social services), a commonly applied method in these types of cost analysis studies is determining whether there are any pre-enrollment to post-enrollment cost savings for community services. We used enrollment date (i.e., the date an individual obtains housing) as the beginning of the post period, which is the approach used by the cost studies of other similar types of programs that we reviewed for this report. One benefit of using this methodology is that it captures the critical impact of obtaining housing; theoretically, the moment an individual gains housing, their life experience changes, regardless of any services provided. For this preliminary report, using enrollment date rather than exit date as the beginning of the post- enrollment period also

allows for a larger number of study participants and does not exclude current participants from the analysis. See Appendix B for the cost benefit analysis literature review.

For this analysis, we developed two study groups. The first group had to have at least 1 year of available post-enrollment data and the second group had to have at least 2 years of available post-enrollment data. The two study groups used for the cost analysis are described in the next section. For each study group, we compared pre- and post-enrollment costs related to physical and behavioral health care, incarceration, and probation. We also considered the economic benefit of the Program, which is discussed later in this chapter.

### COST ANALYSIS STUDY SAMPLE

All Fort Lyon Program participants were included in the cost analysis study sample if they had at least 1 year of post-enrollment data. Therefore, participants recently entering the program are not included in this analysis. Additionally, participants were included only if they were on Medicaid during both the pre-enrollment and post-enrollment period. This is to control for the effect of the Medicaid expansion implemented as part of the Affordable Care Act. The Medicaid expansion went into effect January 1, 2014, which is during the period of study for our cost analysis and more specifically is during the pre-enrollment period for many study group participants. It is likely that many participants who were not covered under Medicaid in the pre-enrollment time period were covered in the post-enrollment time period, which would lead to an underestimate of pre-enrollment health care costs because we were only able to collect costs paid through Medicaid. According to Fort Lyon Program staff, many participants did not have Medicaid until the expansion. As of April 2016, Medicaid enrollment in Colorado had grown by 72 percent since expansion began. Additionally, research shows that newly enrolled Medicaid patients often use their health insurance right away (i.e., pent-up demand), but the increase in health care costs are likely temporary (Lo et al., 2014). An analysis of all program participants regardless of whether they were on Medicaid was also conducted and is presented in Appendix C.

For participants with at least 1 year of post-enrollment data, 77 percent were on Medicaid pre-and post-enrollment and for participants with at least 2 years of post-enrollment data, 66 percent were on Medicaid pre- and post-enrollment. Approximately half of the total Fort Lyon population is included in this analysis. A total of 375 Fort Lyon participants are in the 1 year of post-enrollment group and 170 participants are in the 2-years post-enrollment group. The participants included in the 2-year study group are a subset of the 1-year study group. The majority of participants within the study groups are white males around 50 years of age. About a quarter are veterans and over half self-reported having a disabling condition, such as a physical, behavioral, or emotional impairment.

Exhibit 3.2 displays housing information for both study groups prior to entering the Fort Lyon Program. Most participants were designated as homeless or at-risk for homelessness. The *homeless* designation refers to an individual who lacks a fixed, regular, and adequate nighttime residence. An individual who is at risk of losing their primary residence in 14 days is designated as *at imminent risk of losing housing*, while *at-risk of homelessness*

includes, among other descriptions, someone who has an annual income below 30 percent of the median family income for the area and does not have sufficient resources or support networks. An individual is considered *stably housed* if they are not otherwise experiencing homelessness or at risk of homelessness.

**EXHIBIT 3.2**
**FORT LYON PROGRAM**
**DESCRIPTION COST STUDY GROUPS – HOUSING**

| Prior Housing Status | Participants with 1 Year Post-Enrollment Data | | Participants with 2 Years Post-Enrollment Data[2] | |
|---|---|---|---|---|
| | n-size | percent | n-size | percent |
| Homeless | 322 | 85.6% | 142 | 83.5% |
| Stably housed | 22 | 5.9% | 14 | 8.2% |
| At imminent risk of losing housing | 10 | 2.7% | 1 | 0.6% |
| At-risk of homelessness | 5 | 1.3% | 0 | 0% |
| Other[1] | 16 | 4.8% | 13 | 7.6% |
| Total | 375 | 100% | 170 | 100% |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.
[1] Other includes client doesn't know, client refused, data not collected.
[2] The participants included in the 2-year study group are a subset of the 1-year study group.

Exhibit 3.3 shows information on participation and length of stay in the Fort Lyon Program for the two study groups. The average total number of days participants stayed in the Fort Lyon Program is a little less than 1 year for both groups. We were not able to determine if any of the study group participants resided out of state for any portion of the pre- or post-enrollment time period. Any services received out of state during the time periods reviewed would not be captured in this cost analysis.

**EXHIBIT 3.3**
**FORT LYON PROGRAM**
**DESCRIPTION COST STUDY GROUPS –STAY INFORMATION**

| Fort Lyon Stay Information | Participants with 1-Year Post-Enrollment Data | Participants with 2-Years Post-Enrollment Data[1] |
|---|---|---|
| Median total # of days in Fort Lyon Program | 261<br>(range: 2 days-1,188 days)<br>(average: 301) | 222<br>(range: 2 days-1,188 days)<br>(average: 305) |
| Number of times entered Fort Lyon Program | 1 time: 332 (88.5%)<br>2 times: 40 (10.7%)<br>3 times: 2 (0.5%)<br>4 times: 1 (0.3%) | 1 time: 146 (85.9%)<br>2 times: 22 (12.9%)<br>3 times: 1 (0.6%)<br>4 times: 1 (0.6%) |
| Current Fort Lyon Program client | 42 (11.2%) | 6 (3.5%) |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.
[1]The participants included in the 2-year study group are a subset of the 1-year study group.

## SAVINGS DUE TO CHANGE IN COMMUNITY SERVICE COSTS PRE- TO POST- PROGRAM

The difference in pre-enrollment costs compared to post-enrollment costs for physical and behavioral health care, probation, and incarceration are described below. It is important to note that this analysis is not exhaustive and does not include all possible public costs associated with Fort Lyon participants, such as jail records, shelter records, and meal services. Costs associated with these services are more time consuming and costly to collect. For example, we would have to access information from each jail and each shelter throughout the state to include these costs in our analyses. These costs would likely be higher during the pre-enrollment period; thus, pre-enrollment community services costs may be underestimated. We will attempt to capture estimates of some of these costs for inclusion in the Year 2 report.

*Physical and behavioral health care data.* Evaluators used health care data provided by the Colorado Department of Health Care Policy and Financing (HCPF) to calculate pre-enrollment and post-enrollment costs for both study groups. The health care data included both physical and behavioral health claims for individuals who received services through Medicaid. These claims include costs for inpatient and outpatient services, pharmacy, practitioner/physician services, case management, and therapy.

The total physical and behavioral health care cost savings for the 1-year post-enrollment study group decreased about 27 percent from pre- to post- enrollment (see Exhibit 3.4). Since the HCPF database specifically captures Medicaid claims, this represents a cost savings to the public and to the federal and state government.

**EXHIBIT 3.4**
**FORT LYON PROGRAM**
**MEDICAID PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – HEALTH CARE**

| | Participants with 1-Year Post-Enrollment Data[1] | | | |
|---|---|---|---|---|
| | 1-year Pre-Enrollment Costs | 1-year Post-Enrollment Costs | Difference | % Change |
| Total | $4,584,000 | $3,330,000 | ($1,254,000) | -27% |
| Average per Participant | $12,200 | $8,900 | ($3,300) | -27% |

SOURCE: Illuminate Evaluation Services' analysis of health care data provided by HCPF.
[1]For participants with at least 1 year of post-enrollment data, 77 percent were on Medicaid pre-and post-enrollment.

The total physical and behavioral health care costs for the 2-year post-enrollment study group increased by approximately 12 percent from pre- to post-enrollment (see Exhibit 3.5). These results are still preliminary. If we see this same trend in the Year 2 report, our goal would be to further investigate possible reasons for the increase.

| EXHIBIT 3.5<br>PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – HEALTH CARE | | | | |
|---|---|---|---|---|
| | 2-Years Post-Enrollment Data[1] | | | |
| | 2-years Pre-enrollment Costs | 2-years Post-enrollment Costs | Difference | % Change |
| Total | $2,872,000 | $3,218,000 | $346,000 | +12% |
| Average per Participant | $16,900 | $18,900 | $2,000 | +12% |
| SOURCE: Illuminate Evaluation Services' analysis of health care data provided by HCPF<br>[1]The participants included in the 2-year study group are a subset of the 1-year study group. For participants with at least 2 years of post-enrollment data, 66% were on Medicaid pre- and post-enrollment. | | | | |

*Judicial system and corrections data.* We used probation and incarceration data provided by the Colorado Judicial Branch and the Department of Corrections to calculate pre-enrollment and post-enrollment costs. This data does not include jail time, which is collected at the local level.

Exhibit 3.6 shows that state judicial system costs (for probation and incarceration) decreased about 66 percent for the 1-year study group from pre- to post-enrollment. Only four participants from this study group had costs associated with incarceration during the year prior to admission to the Fort Lyon Program and only two participants had costs associated with incarceration the year after admission. Only one client had incarceration costs for both pre-enrollment and post-enrollment. The cost increase was associated with one participant who was in the Program for 109 days and was incarcerated during the post-enrollment period, but not during the pre-enrollment period and one participant who was in the Program for 5 days whose costs went up from pre- to post-enrollment.

| EXHIBIT 3.6<br>FORT LYON PROGRAM<br>PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – JUDICIAL SYSTEM DATA[1] | | | | |
|---|---|---|---|---|
| | Participants with 1-Year Post-Enrollment Data | | | |
| | 1-year Pre-Enrollment Costs | 1-year Post-Enrollment Costs | Difference | % Change |
| Probation | $92,000 | $20,000 | ($72,000) | -78% |
| Incarceration | $16,000 | $17,000 | $1,000 | +6% |
| **Total** | **$108,000** | **$37,000** | **($71,000)** | **-66%** |
| Average per Participant | $288 | $99 | ($189) | -66% |
| SOURCE: Illuminate Evaluation Services' analysis of judicial system data.<br>[1]This data does not include jail time, which is collected at the local level. | | | | |

Exhibit 3.7 shows that state judicial system costs increased slightly from pre- to post-enrollment for the 2-year study group. Only three participants from the 2-years post-enrollment study group had costs associated with incarceration during the 2 years prior to admission to the Fort Lyon Program and only three participants had costs associated with

incarceration any time during the two years after admission. Only one participant had incarceration costs for both 2-years pre-enrollment and 2-years post-enrollment. The cost increase was associated with two participants who were in the Program for 132 and 109 days, and were incarcerated during the post-enrollment period, but not during the pre-enrollment period and one participant who was in the Program for 5 days whose costs went up substantially from pre- to post-enrollment.

**EXHIBIT 3.7**
**FORT LYON PROGRAM**
**PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – JUDICIAL SYSTEM DATA[1]**

| | Participants with 2-Years Post-Enrollment Data[2] | | | |
|---|---|---|---|---|
| | 2-years Pre-Enrollment Costs | 2-years Post-Enrollment Costs | Difference | % Change |
| Probation | $47,000 | $28,000 | ($19,000) | -40% |
| Incarceration | $43,000 | $64,000 | $21,000 | +49% |
| **Total** | **$90,000** | **$92,000** | **$2,000** | **+2%** |
| Average per Participant | $240 | $245 | $5 | +2% |

SOURCE: Illuminate Evaluation Services' analysis of judicial system data.
[1]This data does not include jail time, which is collected at the local level.
[2]The participants included in the 2-year study group are a subset of the 1-year study group.

## COST ANALYSIS SUMMARY

Exhibits 3.8 and 3.9 summarize the results of all pre-enrollment and post-enrollment costs for both study groups, respectively. Overall, the total costs for the 1-year post-enrollment data study group decreased by about 28 percent. A slight cost increase of about $348,000, or about 9 percent, was found for the 2-years post-enrollment data study group.

**EXHIBIT 3.8**
**SUMMARY OF PRE-ENROLLMENT AND POST-ENROLLMENT COSTS**

| | Participants with 1-Year Post-Enrollment Data | | | |
|---|---|---|---|---|
| | 1-year Pre-Enrollment Costs | 1-year Post-Enrollment Costs | Difference | % Change |
| Health care | $4,584,000 | $3,330,000 | ($1,254,000) | -27% |
| Judicial system | $108,000 | $37,000 | ($71,000) | -66% |
| **Total** | **$4,692,000** | **$3,367,000** | **($1,325,000)** | **-28%** |

SOURCE: Illuminate Evaluation Services' analysis of pre-enrollment and post-enrollment cost data.

| EXHIBIT 3.9<br>SUMMARY OF PRE-ENROLLMENT AND POST-ENROLLMENT COSTS | | | | |
|---|---|---|---|---|
| | Participants with 2-Years Post-Enrollment Data[1] | | | |
| | 2-years Pre-Enrollment Costs | 2-years Post-Enrollment Costs | Difference | % Change |
| Health care | $2,872,000 | $3,218,000 | $346,000 | +12% |
| Judicial system | $90,000 | $92,000 | $2,000 | +2% |
| **Total** | **$2,962,000** | **$3,310,000** | **$348,000** | **+9%** |

SOURCE: Illuminate Evaluation Services' analysis of pre-enrollment and post-enrollment cost data.
[1]The participants included in the 2-year study group are a subset of the 1-year study group.

Finally, we break the summary of pre-enrollment and post-enrollment costs down per participant by dividing the numbers in Exhibits 3.8 and 3.9 by the n-size (375 for 1-year post-enrollment data group and 170 for 2-years post-enrollment data group) of each study group (see Exhibits 3.10 and 3.11). For the 1-year post-enrollment data group, the cost per participant for physical and behavioral health care and for the judicial system decreased from pre- to post-enrollment, with a total savings of about $3,500 per participant, which is a decrease of 28 percent. For the 2-years post-enrollment data group, the cost per participant for physical and behavioral health care and for the judicial system increased from pre- to post-enrollment, with a total cost increase of about $2,000 per participant, which is an increase of 9 percent.

| EXHIBIT 3.10<br>FORT LYON PROGRAM<br>SUMMARY OF PRE-ENROLLMENT AND POST-ENROLLMENT COSTS PER PARTICIPANT | | | | |
|---|---|---|---|---|
| | Participants with 1-Year Post-Enrollment Data | | | |
| | 1-year Pre-Enrollment Costs | 1-year Post-Enrollment Costs | Difference | % Change |
| Health care | $12,200 | $8,900 | ($3,300) | -27% |
| Judicial system | $290 | $100 | ($190) | -66% |
| **Total** | **$12,500** | **$9,000** | **($3,500)** | **-28%** |

SOURCE: Illuminate Evaluation Services' analysis of pre-enrollment and post-enrollment cost data

| EXHIBIT 3.11<br>FORT LYON PROGRAM<br>SUMMARY OF PRE-ENROLLMENT AND POST-ENROLLMENT COSTS PER PARTICIPANT | | | | |
|---|---|---|---|---|
| | Participants with 2-Year Post-Enrollment Data[1] | | | |
| | 2-year Pre-Enrollment Costs | 2-year Post-Enrollment Costs | Difference | % Change |
| Health care | $16,900 | $18,900 | $2,000 | +12% |
| Judicial system | $530 | $540 | $12 | +2% |
| **Total** | **$17,400** | **$19,500** | **$2,000** | **+9%** |

SOURCE: Illuminate Evaluation Services' analysis of pre-enrollment and post-enrollment cost data
[1]The participants included in the 2-year study group are a subset of the 1-year study group.

## OTHER COSTS

Results within this chapter are preliminary; we are working with agencies to collect additional and more specific data for the Year 2 report. In particular, the Year 2 report will attempt to estimate pre-enrollment housing costs (e.g., meal services, shelter, subsidized housing) and post-enrollment housing/program costs, as well as the costs of pre- and post-enrollment arrests (i.e., nights in jail). Finally, we will work with state agencies to try to obtain the data to provide a breakdown of physical and behavioral health care costs by different categories (e.g., emergency room, ambulance, pharmacy). Findings within the Year 2 report will provide a more complete picture of the costs and benefits of the Program.

## OTHER BENEFITS

In addition to the changes in costs associated with physical and behavioral health care and the state judicial system we compiled information on other benefits reported in a 2015 study of the Fort Lyon Program performed for the Bent County Development Foundation (BCDF). The BCDF was developed in 1989 to promote the general economic activity of the local Bent County community and to improve the standard of living for its existing and future participants.

*Regional economic impact.* The Bent County study estimated the regional economic impact of the Fort Lyon Program using an economic multipliers analysis. According to the study, "An economic multiplier means one activity creates additional activity in the region. For example, employment at Fort Lyon (direct) creates jobs for suppliers (indirect) that would not exist otherwise. Expenditures of income by the direct and indirect employees creates additional employment for local businesses supplying local residential services." Using economic multipliers ranging from 1.8 to 3.3 depending on the exact definition of the economic activity, the study estimated the Fort Lyon Program generated an additional 119 jobs and $10.3 million of financial activity for 2015-2016 in the Bent County area.

Bent County and Fort Lyon Program leaders shared several anecdotal examples of how the Fort Lyon Program has enhanced the community. Fort Lyon participants operate a storefront in Las Animas where they sell their art and furniture. Program leaders explained that the Program has boosted sales at the grocery store and pharmacy, and another business has been added in town, all of which contribute to the economic benefit assessed in the Bent County study. Fort Lyon Program participants have also participated in community events and volunteered their services. When asked, Bent County leaders did not identify any drawbacks of the Fort Lyon Program being located within their community. They acknowledged isolated incidents of Fort Lyon participants using substances and causing problems within the county. However, they indicted this was no different from incidents that have occurred from their own community participants.

Bent County and Fort Lyon Program leaders are also working to identify additional ways to leverage the relationship with and resources of Fort Lyon. Some ideas of programs and events that could occur at Fort Lyon to offset program costs have included long-term supportive housing for graduates, a bed and breakfast, an equine therapy program, a greenhouse program, an opiate treatment and recovery non-Medicaid facility, a call center, or a laundry/commercial cleaner facility. In addition to supporting Bent County, these programs are designed to give Fort Lyon participants additional opportunities for vocational training and volunteer experiences.

*Other benefits.* Although not available for all study group participants, the majority of study group participants with data from follow-up interviews were stably housed, currently employed, and had furthered their education since being discharged from the Fort Lyon Program. Another benefit of the Program to individual participants is a slight increase in their monthly income during their stay in the Fort Lyon Program. Monthly income is from any source including stipends from working at Fort Lyon, pensions, VA benefits, and Social Security Income. Program personnel work with participants to ensure they are receiving the full extent of public benefits. For many participants, this means an increase in their Supplemental Security Income, which is a government program that provides stipends to low-income people. On average, participants' monthly income increased a little more than $20 per month per participant during their time in the Program.

## OVERALL CONCLUSION

Overall, we found a cost savings for the 1-year post-enrollment study group for physical and behavioral health care and probation, but a small cost increase for incarceration. For the 2-year post-enrollment study group, we found a cost savings for probation, and cost increases for physical and behavioral health care and incarceration. According to a study of the Fort Lyon Program performed for the BCDF, the Fort Lyon Program generated an additional 119 jobs and $10.3 million of financial activity in Fiscal Year 2016 in the Bent County area.

# CHAPTER 4: FORT LYON OUTCOMES

Fort Lyon Program staff identify two major outcomes from participation in the Program. The first outcome, *Program Completion,* is defined as the participant meeting their goals as identified in their Goals and Outcomes Plan. This determination is made between the participant and the case manager, and all goals are individual to the participant. Examples may include goals to stop using substances, reunify with family, pay penalties and debts, and access vocational training. The second outcome, *Exit to Permanent Housing,* is defined based upon the type of housing participants transition to upon exiting the Fort Lyon Program. Ultimately, the Program is predicated upon participants completing their goals and exiting to permanent housing.

We analyzed the two major program outcomes, *Program Completion* and *Exit to Permanent Housing,* based upon participants' length of time in the Fort Lyon Program, severity of substance abuse history, severity of behavioral health issues, and participation in programming.

In addition, we looked at other outcomes for participants, including changes in the use of alcohol or illegal drugs, behavioral health symptoms, and quality of life as participants progressed through the Program. These indicators are measured based upon responses to questionnaires, which the Program administers to all participants at several points during their stay, including at the time of admission and near exit.

## Outcomes

A total of 798 individuals have participated in the Fort Lyon Program since it began in 2013 and 600 of those (73.9 percent) had exited the Program as of December 13, 2016. Overall, we found the following results with respect to the two major outcomes:

- About 40 percent of participants exiting the Program were determined to have completed the Program (i.e., met their goals). Specifically, Fort Lyon had completion data on 590 of the participants who had exited the Program and 234 of these had met their goals.

- About 39 percent of participants exiting the Program exited to permanent housing. Specifically, Ft Lyon had housing data on 518 participants who had exited the program and 200 of these had exited to permanent housing. An additional 12 percent of these 518 participants exited to transitional housing.

- On average, all 600 participants stayed 242 days (approximately 8 months), which is far less than the maximum time allowed of 3 years, or 1,095 days.

Data were missing for some participants because they refused to respond upon exiting, they did not know, were not asked, were missing data, or had died before providing the information.

Exhibit 4.1 shows information about participants' length of stay and the percent exiting to permanent housing based upon program completion.

**EXHIBIT 4.1**
**FORT LYON PROGRAM**
**DESCRIPTION OF OUTCOMES – PROGRAM COMPLETION**

| | Completed Program | | Did Not Complete Program | | Total |
|---|---|---|---|---|---|
| | Number | % | Number | % | Number |
| Participants exiting the Program[1] | 234 | 39.7% | 356 | 60.3% | 600 |
| Exit to permanent housing[2] | 163/229 | 71% | 37/289 | 13% | 200 |
| Average total # of days at Fort Lyon | 352 days (~12 months) | | 168 days (~6 months) | | |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.
[1] Data were missing for 10 of the participants exiting the Program.
[2] Data were missing for 82 of the participants exiting the Program.

We ran several analyses to determine if the length of time participants were in the Program, the seriousness of participants' substance use histories, the seriousness of participants' behavioral health issues, and participation in Fort Lyon programing influenced the outcomes of program completion or exit to permanent housing. Additional details of the analyses are located in Appendix D.

*Length of Time in Program.* We looked at whether the number of days spent in the Fort Lyon Program was related to program completion and exit to permanent housing. We found that the number of days participants were in the Program was associated with slightly higher odds of completing the Program and finding permanent housing. More specifically, for each additional day a participant stayed in the Program, the odds of completion increased by .03 percent. Similarly, for each additional day that participants stayed in the Program, their odds of finding permanent housing increased by .02 percent. While these finding are statistically significant, the effect size is small.

These findings aligned with the program philosophy that it takes time for participants struggling with addiction to become healthy. During participants' stay, they focus on their own health and recovery, engage in programming and Alcoholics Anonymous /Narcotics Anonymous meetings as determined by their own needs, and work on goals to acquire permanent housing. These data suggest a relationship between the amount of time

participants stay in the Program and success in completing their goals and attaining permanent housing.

*Substance Use Status and History.* We found that there was no significant relationship between the severity of participants' use of alcohol, marijuana, or illegal drug use history in the 30 days prior to entering the Program and program completion or exit to permanent housing. Severity of participants' substance use histories is self-reported on the Government Performance and Results Act (GPRA) questionnaire, an instrument in which Program staff collect information on participants' alcohol, marijuana, or illegal drug use prior to entering the Program.

*Behavioral Health.* We found that there was no relationship between the severity of participants' anxiety or depression ratings at intake and program completion or exit to permanent housing. To get an overall measure of anxiety and depression for participants, we averaged the Generalized Anxiety Disorder 7-item scale (GAD-7), a widely-used measure in behavioral health to screen and measure generalized anxiety disorder, and the Patient Health Questionnaire (PHQ-9), a nine-item instrument to screen and measure the severity of depressive symptoms for each participant just prior to them exiting the program.

*Program Participation*. We found that there was no relationship between participating in vocational, educational, or employment programming and program completion or exit to permanent housing.

### OTHER OUTCOMES

We also looked at outcomes reported by participants related to their alcohol and drug use and behavioral health after their participation in the Fort Lyon Program. We analyzed the changes on survey responses from entry into the program until the last administration when participants completed the program.

*Alcohol and Drugs.* The length of time participants spent in the Program had a statistically significant impact on alcohol and drug use. Several times throughout their stay, participants completed the GPRA, a questionnaire that asked about their drug and alcohol use in the past 30 days. Using the GPRA data, we found that for each additional day in the Program, the use of alcohol and drugs decreased by a factor of .01 or less.

CCH personnel conducted post program interviews with 49 participants. The interview dates varied from 30 days, 6 months, and 12 months post program. Of the 49 participants, 55 percent, or 27 participants, reported using no alcohol or drugs in the past 30 days. The sample size is small, but this finding is promising.

*Behavioral Health and Emotional Wellbeing.* We also analyzed results from several pre- and post-assessments to determine if participants reported improvements in anxiety, depression, and quality of life throughout their participation in the Program. We used a growth curve model to examine changes in behavioral health that included *day*, a variable that measured the number of days between the date of assessment administration and participants' first day in the Program. We found:

*Generalized Anxiety.* Participants experienced a statistically significant decrease in anxiety levels as they progressed through the Program, based on their scores on the GAD-7 at intake and exit. The scores can range from 0 to 21, with higher scores indicating more severe symptoms. Participants' scores decreased from the moderate anxiety range (10 to 14) to the mild anxiety range (5 to 9), as shown in Exhibit 4.2.

*Depression.* Participants experienced a statistically significant decrease in depressive symptoms as they progressed through the Program, based on their scores on the PHQ-9 at intake and exit. Scores can range from 0 to 27, with higher scores indicating more severe symptoms. Participants' scores decreased from the moderate depression range (10 to 14) to the mild depression range (5 to 9), as shown in Exhibit 4.2.

**EXHIBIT 4.2**
**FORT LYON PROGRAM**
**BEHAVIORAL HEALTH RESULTS**

| | Program Intake | Program Exit |
|---|---|---|
| GAD-7 (Anxiety) (n=202) | 11.87 | 7.47 |
| PHQ-9 (Depression) (n=211) | 12.73 | 7.86 |

SOURCE: Illuminate Evaluation Services' analysis of data provided by Colorado Coalition for the Homeless.

*Quality of Life.* Participants showed statistically significant increases in overall quality of life and satisfaction with their health that were positively associated with the number of days they were in the Program, based on their scores on the World Health Organization Quality of Life-BREF (WHOQOL), which they complete multiple times throughout the Program. The WHOQOL contains four domains, including Physical Health (7 items), Psychological Health (6 items), Social Relationships (3 items), and Environment (8 items). Two additional items asked about quality of life and satisfaction with health. Individual questions are scored on a scale from 1 to 5. Domain scores are the averages of the questions on a scale of 1 to 5. Higher scores indicate a better perception of quality of life. Analyses of the four domains also showed positive, statistically significant relationships between each domain and the length of time participants were in the Program. Exhibit 4.3 shows the results from the WHOQOL.

| EXHIBIT 4.3<br>QUALITY OF LIFE | | |
|---|---|---|
| | **Program Intake** | **Program Exit** |
| **Quality of life (n=213)** | | |
| Mean Score | 2.58 | 3.85 |
| % Rating Good/Very Good | 21.4% | 74.3% |
| **Satisfaction with health (n=213)** | | |
| Mean Score | 2.61 | 3.52 |
| % Rating Good/Very Good | 23.3% | 60.8% |
| **Physical Health Domain (n=212)** | | |
| Mean Score | 2.90 | 3.22 |
| **Psychological Health Domain (n=212)** | | |
| Mean Score | 3.01 | 3.74 |
| **Social Relationships Domain (n=212)** | | |
| Mean Score | 2.72 | 3.52 |
| **Environment Domain (n=211)** | | |
| Mean Score | 2.80 | 3.67 |
| SOURCE: Illuminate Evaluation Services' analysis of data provided by Colorado Coalition for the Homeless. | | |

*Participants' reported outcomes.* We talked with 23 current participants and 20 former participants (includes those participants who completed the Program and those who did not) of the Fort Lyon Program through individual interviews and in focus groups. The participants we talked to described a number of benefits and outcomes from the Program, including:

- Staying sober or reducing alcohol and illegal drug use
- Acquiring permanent or temporary housing
- Developing a support network
- Addressing behavioral and physical health issues
- Learning responsibility and earning money through employment/vocational modules
- Acquiring training or education
- Reunifying with family
- Having an extended, supported period of time to address persistent concerns and behaviors, develop goals, and lay the foundation for working on those goals
- Acquiring credentials and completing deferred paperwork to access resources and benefits

## SUMMARY

The results show that almost 40 percent of participants completed the Fort Lyon Program and almost 39 percent exited to permanent housing during 2013 through 2016. Of those who completed the Program, 71 percent exited to permanent housing. Results also show that while in the Program, participants reported a decrease in alcohol, marijuana, and

illegal drug use, and Post-Program interviews showed similar results. In addition, participants reported significant improvements in their behavioral health related to anxiety and depression, physical health and health satisfaction, social relationships and the environment, and overall quality of life.

Further, according to our analysis, the only significant predictor was days in program. These results show that the more days a participant stays in the Program, the greater the odds of completing the Program and exiting to permanent housing. This finding is consistent with the Fort Lyon Program philosophy of allowing participants time to work on their sobriety, become healthy, and complete their goals. In contrast, a client's drug and alcohol use history; behavioral health concerns; and participation in vocational, educational, or employment programs were not significant predictors of completing the Program or exiting to permanent housing.

# CHAPTER 5: COMPARISON TO OTHER SIMILAR PROGRAMS

For the purposes of the current report, we visited three different facilities that share similar goals to the Fort Lyon Program. The purpose of these visits was to learn more about differences and similarities in program implementation and to explore outcomes. In most cases, the outcomes are self-reported from the facilities. Although there are Housing First programs in Colorado and other states, which connect individuals to permanent housing, we did not compare outcomes of Fort Lyon to Housing First programs. The Housing First programs do not require sobriety and do not offer treatment or educational, vocational, or life skills services. In contrast, while Fort Lyon does not require treatment, it does offer a variety of services and sobriety is a requirement. Therefore, we did not believe this would be a valid comparison.

## Comparison of Program Outcomes

The Fort Lyon Program is unique in its approach to recovery-oriented transitional housing for individuals who are homeless, and this makes it difficult to make direct program-to-program comparisons. The Fort Lyon Program serves to address both homelessness and substance addiction, while other programs typically focus on one or the other. The location also is unique, as Fort Lyon is in a rural setting, while most other programs are located in urban or suburban settings. Some programs require a fee to participate, while others do not. The Fort Lyon Program structure differs as well. Some programs are structured and require participants to work through specific phases before moving to the next phase, while others are flexible. Some have a peer mentor component, while others do not. All programs described below provide case management and offer vocational, educational, and employment support, although the intensity and structure varies considerably. Following is a brief description of the programs and some cross-program comparisons.

### HARVEST FARM

The Harvest Farm New Life Program, located outside Fort Collins, Colorado, was established in 1989 by the Denver Rescue Mission. According to the resident handbook, the goal of Harvest Farm is to "help men attain a life of self-sufficiency by developing and maintaining healthy relationships and life-giving habits." There are clear similarities between the programs. Like the Fort Lyon Program, Harvest Farm is a residential program in a rural setting, and there are opportunities to work toward education and employment goals through work on the farm and through partnerships with education programs.

Harvest Farm differs from the Fort Lyon Program in that it serves men only, is smaller than Fort Lyon with approximately 70 participants, and will accept participants from outside

Colorado. It has a strong spiritual and religious foundation and incorporates spiritual development and Christian Counseling into the program. Compared to the Fort Lyon Program, progression through the Harvest Farm Program is more structured, with an initial intake and candidacy period. Participants must choose one of three tracks for focused development: education, career, or life skills. Case management is more intensive and includes weekly meetings with the participants. Participants are required to undergo counseling as part of their treatment. Extracurricular activities include sports, addiction recovery meetings, volunteering at local missions, and a hobby workshop.

### SOBRIETY HOUSE

Sobriety House, located in Denver, was established in 1967 and is the oldest residential treatment center in Colorado. It is an alcohol and drug rehabilitation center serving men and women. Originally, Sobriety House's primary target population was the homeless. However, the program has expanded, and the priority populations now include veterans, pregnant women, IV drug users, and women with dependent children, with less of a focus on persons experiencing homelessness.

Sobriety House differs from the Fort Lyon Program in that it is a residential program with only 84 beds, and substance abuse treatment is provided onsite. Participants can proceed through a variety of phases. Phase 1 is an intensive residential treatment program; participants participate in 50 hours of group therapy and 1 hour of individual counseling per week. The program also includes a family education day. Participants may transition to Phase 2, which is a transitional residential treatment program. During Phase 2, participants are expected to work either onsite or offsite, unless they are a full-time student or are disabled. They also participate in mandatory group therapy for 2 hours, three times per week, and in 1 hour of individual counseling each week. Phase 3 includes outpatient treatment, or participants can live onsite in a sober living environment. Sobriety House is a non-profit corporation partially funded by Colorado through the Department of Human Services' Office of Behavioral Health. There is a sliding scale to ensure that Sobriety House meets the needs of their target population. According to information provided to us by Sobriety House, full-pay participants pay a fee of $5,280 for Phase 1, $2,000 per month for Phase 2, and $75 per counseling session for Phase 3, plus reduced rent if they choose to live in sober living.

### CENTRAL CITY CONCERN

Central City Concern, located in Portland Oregon, was established in 1979 to serve adults and families who are impacted by homelessness, poverty, and addiction. Central City Concern has several different housing programs, with over 800 staff, serving over 13,000 participants. The goal of Central City Concern is to provide "comprehensive solutions to ending homelessness and achieving self-sufficiency." It meets the mission by (1) providing direct access to housing to support lifestyle change, (2) integrating healthcare services, (3)

developing peer relationships that nurture and support personal transformation and recovery, and (4) attaining income through employment and accessing benefits.

Similar to Fort Lyon, Central City Concern focuses on peer mentoring to support recovery, and clinical services are provided offsite. However, unlike Fort Lyon, all participants participating in the program must also be in treatment, and participants are required to attend 12-step or faith-based support groups. Most participants transfer directly from treatment programs or detox, and they participate in ongoing outpatient treatment while in the program. To increase accountability, participants are expected to participate in check-in groups with their case manager on a daily basis. Case managers are also part of the substance use teams, and they meet with counselors to coordinate care. Central City Concern has an 80-hour community volunteer program that participants must complete over a three- to four-month period, and they also offer supportive employment services. Because of the size of Central City Concern and the number of different programs, there is a pipeline of permanent housing available to participants after completing the program.

Exhibit 5.1 shows some similarities and differences in the programs we visited.

**EXHIBIT 5.1**
**FORT LYON PROGRAM**
**COMPARISON OF OTHER SIMILAR PROGRAMS**

| | Fort Lyon | Harvest Farm | Sobriety House | Central City Concern |
|---|---|---|---|---|
| Program Focus | Homelessness/ Substance Abuse | Homelessness/ Substance Abuse | Substance Abuse | Homelessness/ Substance Abuse |
| Location | Rural | Rural | Urban | Urban |
| Fee-for-Service | No | No | Yes | No |
| Substance Abuse Treatment Required | No | Yes | Yes | Yes – prior to admission/ Outpatient Treatment |
| Behavioral Health Treatment | Access to Services | Provides Services | Provides Services | Access to Services |
| Structure | Flexible | Phased Program | Phased Program | Flexible |
| Peer Mentors | Yes | No | No | Yes |
| Length of Participation | 2 Years (additional year if making progress towards goals) | 52 weeks to 27 months | 28 days/Phase 1 Up to 6 months/Phase 2 | 2 Years (additional time if making progress towards goals) |

SOURCE: Illuminate Evaluation Services' analysis of qualitative data.

## OUTCOMES

Because our comparison programs vary in structure, the programs collect data and define outcomes differently. Exhibit 5.2 shows some general comparisons of the programs. Data

were self-reported by the programs. These data should be used for general comparison purposes rather than decision-making. It is notable that the average length of stay at Fort Lyon, Harvest Farm, and Central City Concern is similar, and the costs of the Fort Lyon Program and Central City Concern are similar.

**EXHIBIT 5.2**
**CLIENT COST AND COMMUNITY SAVINGS OF FORT LYON RESIDENTIAL COMMUNITY**

| | Fort Lyon[1] | Harvest Farm[2] | Central City Concern[2] | Sobriety House[2] |
|---|---|---|---|---|
| % Participants Completing Program | 39.7% (Complete personalized goals) | 17.0% (Complete five phases) | 72% (Complete personalized goals) | 98.0% (Reduced Drinking after 28 days) |
| Average Length of Stay | 220 days | 210 days | 240 days | 24 days (28 day program) |
| % Participants Acquiring Housing Upon Exit | 38.6% | Not Available | 67% | Not Available |
| Average Cost per participant for a full year | $18,000/year | $26,706/year | $19,788/year | $30,560/year[3] |

SOURCE:
[1] Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by the Colorado Coalition for the Homeless.
[2]Data provided by program leaders. Data has not been validated by Illuminate Evaluation Services.
[3]Participants only stay up to six months. To create a full year cost, we included the cost for two full-pay participants.

## Comparison of Cost Studies

Appendix B includes a summary of cost studies for programs addressing homelessness or addressing homelessness and substance abuse compared to the Fort Lyon Program. Comparing pre- to- post enrollment costs is difficult because the studies differ substantially in population demographics, location, number of participants, study design, data analyzed, and length of study. All studies, except for Albuquerque's Heading Home Initiative, occurred prior to Medicaid expansion.

Exhibit 5.3 includes a comparison of the Fort Lyon Program cost savings results to four other programs. The studies of these programs compared the service costs (e.g., for medical and behavioral health care, probation, and incarceration) before participants entered the

program and once they began participation. These studies did not include the program costs in the comparison. It is important to note the four other studies included different data, including local data, which were not included in this preliminary Fort Lyon report

**EXHIBIT 5.3**
**COMPARISON OF COST STUDIES**
**IMPACT ON SERVICE COSTS**

| Program | % Change in Cost Pre- to Post- Program | Number of Participants | Year of Study |
|---|---|---|---|
| Fort Lyon | -28% | 375 | 2017 |
| City of Albuquerque Heading Home Initiative | -35% | 73 | 2016 |
| Denver Housing First Collaborative | -61% | 19 | 2006 |
| Permanent Supportive Housing (Maine) | -63% | 99 | 2007 |
| Housing First Seattle, WA | -53% | 95 | 2007 |

SOURCE: Illuminate Evaluation Services' cost analysis and review of other cost studies.

# CHAPTER 6: ISSUES FOR FURTHER CONSIDERATION

There are multiple models for programs currently in use to address homelessness, and they vary in the populations they serve, their target outcomes, and their philosophical foundations and commitments. The literature on methodologies for supporting people with housing instability and on eliminating homelessness is quite extensive. As described in detail in Appendix E, current research in best practices typically highlights the following practices or model components:

- Dual focus on addiction and homelessness
- Trauma-informed approach
- Peer mentoring/social support
- Programmatic flexibility and/or client choice
- Comprehensive and integrated services
- Coordinated assessment and outreach systems to support access
- Use of data

A review of the literature on these practices is included in Appendix E. The Fort Lyon Supportive Residential Community (Fort Lyon Program or Program) exhibits each of these practices to some degree, as discussed below.

## BEST PRACTICES IN USE AT THE FORT LYON PROGRAM

*Dual focus on addiction and housing*. Substance abuse can be both a cause and consequence of homelessness, and therefore it is advisable to address both issues simultaneously. This approach is central to the Fort Lyon Program's approach, which is to target individuals dealing with substance abuse and homelessness and provide support for both. Recovery from addiction is emphasized and supported through program activities and through requirements for sobriety while participating in the Program. Access to stable housing is also emphasized and supported, directly by assisting participants with the steps to locate and obtain housing, and indirectly by providing life skills and opportunities to gradually assume responsibilities for independent living.

*Trauma-informed care approach.* Trauma can also be a cause and consequence of homelessness and substance abuse. The Fort Lyon Program provides learning and reflection opportunities for staff and participants to understand the vulnerabilities associated with trauma and avenues toward healing. As this is central to the Program's philosophy and implementation, the Program is aligned with this practice.

*Peer mentoring.* The Fort Lyon Program incorporates social support for recovery, formally through peer mentoring and informally through relationships among participants. Peer mentoring in the Fort Lyon Program consists of a peer mentor assigned to each dorm. The peer mentors support participants in monitoring progress toward goals and selecting activities to support those goals. Peer mentors also help participants learn about the Program and locate resources, and simply listen to participants if they need to talk. The Fort Lyon Program also promotes informal peer support through activities and peer-led recovery groups. Most participants who were interviewed said they valued peer support, whether from the formal peer mentor, members of a support group they attended, or specific friendships.

*Programmatic flexibility and/or client choice*. Some research suggests that programs with the flexibility to meet participants' differing needs and to allow participants to make choices may be more successful in the long run in terms of self-management and other outcomes. The Fort Lyon Program intentionally provides a fair amount of latitude to allow participants to progress at their own pace, set their own goals and priorities, and exercise choice in most aspects of participation, including leadership.

### BEST PRACTICES UNDER DEVELOPMENT AT THE FORT LYON PROGRAM

*Comprehensive and integrated services.* Through the Fort Lyon Program and its partners, participants have access to a range of medical and psychological services, as well as support groups for recovery from addiction. Participants also have opportunities to develop basic employment skills and access education, although both staff and participants told us they believe these opportunities need to be expanded. Case managers work with participants individually as they develop and monitor progress toward goals and to ensure needs for services are met and, ideally, integrated. While the Fort Lyon Program does not provide comprehensive services (e.g., formal behavioral health treatment, full medical services) as part of the Program, it seeks to integrate these services on an individual basis for each client by identifying participants' needs through case management and providing referrals, contacts, and transportation for participants to obtain the needed services. Over time, staff members have been developing networks to ensure Fort Lyon participants have access to needed services.

*Coordinated assessment and outreach systems to support access.* Coordinated assessment systems are necessary to identify, refer, and assess individuals who may benefit from a particular program. Implementing effective coordinated systems requires collaboration and efficient communication among agencies, as well as effective assessment tools and procedures. From the outset, Department of Local Affairs and Fort Lyon staff have sought to establish procedures that ensure the best match between participants and the Program. They have reviewed and altered their approach as the Program has matured. While assessment and outreach processes are still under development for the Fort Lyon Program, they continue to receive direct attention. Importantly, staff members acknowledge the

significance of effective outreach and assessment for the Program's success both internally, and within the larger array of Colorado's services.

*Use of data.* Successful programs typically use data broadly, from identification of high utilizers, to making evidence-based decisions for individuals and the program, to monitoring outcomes. The Fort Lyon Program staff meet quarterly to review data reports. According to staff members, these reports allow them to make targeted changes in the Program and monitor the impact of those changes. For the purposes of our evaluation, we collected data from a variety of other organizations, such as the Department of Health Care Policy and Financing, the Department of Human Services' Office of Behavioral Health, the Department of Corrections, and the Judicial Branch. This required establishing new data-sharing processes. As data restrictions allow, it may be useful for Fort Lyon Program staff to develop similar agreements to monitor both short- and long-term outcomes. Access to these data can help Program leaders and oversite agencies to use data-driven and utilization-based strategies to identify individuals who are homeless and high utilizers of costly public services. Further, Program leaders and oversight agencies would be able to monitor outcomes of participants for a longer term after leaving the Program to understand the full impact of the Program.

## ISSUES FOR FURTHER CONSIDERATION

For the Fort Lyon Program to be more effective, it is important to coordinate data to drive decisions and provide services. Multiple systems and agencies support and interface with the Program for outreach, implementation, and follow up. A highly-coordinated system would ideally include data-driven and utilization-based strategies to identify individuals who are both chronically homeless and high utilizers of costly public services. It would also support monitoring. Our evaluation established initial data-sharing agreements, but coordination among agencies and systems to support service delivery and data is still under development. For the Fort Lyon Program to function at its optimal level, systems coordination must continue to grow. With nearly 4 full years since initial implementation, this may be the time to review program design and establish long-term plans for stabilizing and growing the Program to maximize its value to the State.

# APPENDIX A: DATA SOURCES

To complete the Fort Lyon Supportive Residential Community Program (Fort Lyon Program or Program) evaluation, we used the following data sources and evaluation tools.

*Literature review.* Evaluators conducted a literature review to provide context for the study. The review included an analysis of data on other, similar residential programs and outcomes, if available, throughout Colorado. We also conducted a research review of program implementation, costs and benefits, and best practices of other programs throughout the nation serving the homeless population.

*Existing data.* The evaluation team developed data-sharing agreements and accessed existing data from a variety of sources. This included the Colorado Departments of Local Affairs, Health Care Policy and Financing, Human Services, and Corrections; the Colorado Judicial Branch; and the Colorado Coalition for the Homeless (CCH).

*Interviews and focus groups.* Evaluators conducted interviews and focus groups with a total of 106 people. This included Fort Lyon Program leadership (n=5), Program staff (n=22), current Fort Lyon participants (n=23), former Fort Lyon participants (n=20), stakeholders from other agencies (e.g., Bent County, Otero College, outreach workers) (n=26), and staff and participants at the comparison sites (n=10).

*Fort Lyon site visit.* Two evaluators visited Fort Lyon over the course of 4 days to conduct interviews and focus groups, tour the facility, and observe classes, groups, the intake process, and staff and participant meetings.

*Comparison facility site visit.* The evaluation team visited three other facilities that offer similar services, including Harvest Farm in Wellington Colorado, Sobriety House in Denver Colorado, and Central City Concern in Portland Oregon. Harvest Farm and Central City Concern offer supportive residential services to individuals struggling with homelessness and addiction. Fort Lyon Program leaders previously visited both organizations to inform programming at Fort Lyon while it was under development. Sobriety House offers recovery services to individuals struggling with addiction. Sobriety House program leaders wrote a letter of support for Fort Lyon. During our visits, we interviewed the site directors, other staff members, and some participants, and we toured the facilities. At Central City Concern, we sat in on an informational presentation presented by program leaders and listened to four participants describe their experience at Central City Concern. We also conducted an interview with a member of the senior leadership team at the Denver Rescue Mission, which sponsors Harvest Farm.

*Program documents, existing reports, and data.* The evaluation team reviewed documents pertaining to Fort Lyon's implementation of programming, including schedules, quarterly and yearly data reports produced by the CCH, and publicly available reports.

## DATABASE DESCRIPTIONS

This section provides a brief description of each dataset used for the cost analysis and an explanation of how costs were calculated. Using these datasets, evaluators calculated the program costs and pre-program and post-program costs for each participant for the use of several public services.

*Department of Local Affairs (DOLA) data.* DOLA provided financial data from the Colorado Operations Resource Engine (CORE) on the total costs to operate and maintain the Fort Lyon Program for Fiscal Years 2014 through 2016. The financial data provided includes both direct costs and indirect costs. Using this data, evaluators calculated costs for the housing and services provided by the Fort Lyon Program.

*Colorado Coalition for the Homeless (CCH) data.* CCH provided data on participants' demographics, length and dates of stay at Fort Lyon, and pre- and post-survey results for September 2013 through December 13, 2016 obtained from the Homeless Management Information System (HMIS) and a CCH-run supplemental database. Evaluators used this data to calculate program and housing costs, determine the pre- and post- period costs for each participant, and analyze participant outcomes.

*Colorado Department of Health Care Policy and Financing (HCPF) data.* HCPF provided actual data on Fort Lyon Program participants for Fiscal Years 2012 through 2016. This database included fee-for-service and capitation payments for both physical and behavioral health claims for participants using Medicaid.

*Colorado Department of Human Services, Office of Behavioral Health (OBH) data.* OBH provided encounter data for all Fort Lyon participants receiving services through a public mental health provider from Fiscal Years 2012 through 2016. The data in the encounters database overlaps with claims data in the HCPF database. Evaluators controlled for this overlap by only including costs for participants who were not in the HCPF database. More specifically, evaluators included service costs only for participants with an Indigent Special Services code who did not appear in the HCPF database. Rates for behavioral health services were provided by HCPF and matched to the OBH dataset. Due to the complex nature of the cost data provided, evaluators used costs for the behavioral health care provider used by the majority of Fort Lyon Program participants - Mental Health Center of Denver as a proxy for all other behavioral health care providers.

*Judicial system data.* The Colorado Judicial Branch provided probation data on Fort Lyon Program participants for Fiscal Years 2012 through 2016. The data included the annual cost per offender for each fiscal year. Evaluators calculated the number of probation days for each participant by subtracting the actual term date (date probation ended) from the start date. In cases where the actual term date was blank, evaluators used the expected term date. Evaluators calculated the cost per day per offender for each fiscal year.

*Colorado Department of Corrections (DOC) data.* DOC provided data on Fort Lyon Program participants for Fiscal Years 2012 through 2016. This data included information on

incarceration, but does not include jail time. Movement data was provided for each client, including the facility the client was housed in and the date they were moved to a different facility. The cost data included the daily cost at each facility by fiscal year. Evaluators used movement dates to calculate the number of days each client was at each facility and the cost per day at the corresponding facility.

# APPENDIX B: COST BENEFIT ANALYSIS LITERATURE REVIEW

Individuals who are chronically homeless are often the highest users of community services. These individuals are more likely than non-homeless people to use emergency services, and inpatient and outpatient medical and social services. The criminal justice system is another community resource which is significantly impacted by homelessness. The Colorado Coalition for the Homeless (CCH) estimates that Colorado taxpayers spend over $43,000 each year for each homeless individual. According to federal Department of Housing and Urban Development (HUD) point-in-time estimates of homelessness, a total of 10,550 individuals were homeless in Colorado on a single night in January of 2016, therefore costing Colorado taxpayers about $450 million per year.

Public programs are increasingly being required to show whether their services are a good investment of public funds, and whether program costs are justified by program outcomes.[1] An analysis of the costs and benefits of a program can help assess whether a particular treatment benefits society by reducing the burden on the health care system, the criminal justice system, and other social services. Several approaches to this type of analysis are outlined in the literature: cost analysis, cost-effectiveness analysis, and cost-benefit analysis. A cost analysis is a thorough description of the type and amount of all resources used in the providing of services. A cost analysis often covers general information such as the total cost of a program for a defined period for an average participant and more specific information related to the cost of certain aspects of a program. A cost-effectiveness analysis investigates the relationship between program costs and program outcomes. Typically, cost-effectiveness studies compare different programs and/or different treatment modalities or techniques. A cost-benefit analysis measures both the costs and the benefits of a program in monetary terms. The intent of such an analysis is to determine whether program expenditures are less than, similar to, or greater than program benefits.

How and when supportive/residential treatment should be offered to homeless individuals remains up for debate.[2] Some have argued that residential programs are cost-effective

[1] Yates, B. T. (1999). *Measuring and improving cost, cost-effectiveness, and cost-benefit for substance abuse treatment programs.* Report for the National Institute on Drug Abuse. Division of Clinical and Services Research. Retrieved from www.drugabuse.gov/PDF/Costs.pdf.

[2] Drake, R. E., Osher, F. C., Wallach, M. A. (1991). Homelessness and dual diagnosis. *American Psychologist, 46,* 1149–1158.
President's New Freedom Commission on Mental Health. (2003). *Achieving the promise: transforming mental health care in America.* Retrieved from http://www.mentalhealthcommission.gov/reports/FinalReport/toc.html.
Rosenheck, R. A., Kasprow, W., Frisman, L., & Liu-Mares, W. (2003). Cost-effectiveness of supported housing for homeless persons with mental illness. *Archives of General Psychiatry, 60,* 940–951.

alternatives to time-limited housing or hospitalization.[3] Others view residential treatment as unnecessary and expensive.[4] Nationwide, the housing treatment model called Housing First is becoming increasingly popular since it is an evidence-based nationally recognized best practice. This model offers homeless participants immediate, non-time limited, independent housing with limited requirements for engaging in treatment or for remaining sober.[5] As national and state policies shift toward the Housing First model, several recent cost studies have been conducted. We provide the summarized results of these cost studies below. It should be noted that although these studies are similar to the Fort Lyon Supportive Residential Community Program (Fort Lyon Program or Program) study, there are important differences. For example, most of these studies took place over multiple years and included a much smaller number of participants so the amount and type of data collected varied.

Although, program models, population demographics, location, and study design differed, overall, the studies reviewed showed significant economic benefits for housing homeless individuals suffering from co-occurring behavioral health and substance abuse issues. The methods and results of these studies were used to inform the cost analysis for the evaluation of the Fort Lyon Program. In particular, the 2016 cost study conducted on Albuquerque's Heading Home Initiative served as a guide for the current study.

One such study on Albuquerque's Heading Home (AHH) Initiative conducted by the Institute of Research at the University of New Mexico used a long-term cost study approach similar to the one we used in this evaluation.[6] The Albuquerque study compared the cost of different services for a set time period before study participants entered the program to the cost of services after participants entered the program. Through an in-depth record request from a variety of agencies, the researchers were able to gather data on jail bookings,

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[3] Anderson, A. (1999). Comparative impact evaluation of two therapeutic programs for mentally ill chemical abusers. *International Journal of Psychosocial Rehabilitation, 4,* 11–26.
Fenton, W. S., Mosher, L.R., Herrell, J. M., & Blyler, C. R. (1998). Randomized trial of general hospital and residential alternative care for patients with severe and persistent mental illness. *American Journal of Psychiatry, 155,* 516–522.
Hawthorne, W. B., Green, E. E., Gilmer, T., Garcia, P., Hough, R. L., Lee, M., et al. (2005). A randomized trial of short-term acute residential treatment for veterans. *Psychiatric Services, 56,* 1379–1386.
McHugo, G.J., Bebout, R.R., Harris, M., Cleghorn, S., Herring, G., Xie, H., et al. (2004). A randomized controlled trial of integrated versus parallel housing services for homeless adults with severe mental illness. *Schizophrenia Bulletin, 30(4),* 969–982.

[4] Carling, P. J. (1992). Housing, community support, and homelessness: Emerging policy in mental health systems. *New England Journal of Public Policy, 8,* 281–295.
Hogan, M. F., & Carling, P. J. (1992). Normal housing: A key element of a supported housing approach for people with psychiatric disabilities. *Community Mental Health Journal, 28,* 215–226.
Tsemberis, S., Gulcur, L., & Nakae, M. (2004). Housing first, consumer choice, and harm reduction for homeless individuals with a dual diagnosis. *American Journal of Public Health, 94,* 651–656.

[5] Tsemberis, S. (1999). From streets to homes: An innovative approach to supported housing for homeless adults with psychiatric disabilities. *Journal of Community Psychology, 27,* 225–241.

[6] Guerin, P., & Minssen, A. (2016). *City of Albuquerque Heading Home Initiative Cost Study Report Final.* University of New Mexico, Institute for Social Research.

substance abuse treatment, ambulance pick-ups and transports, emergency room usage, outpatient and inpatient treatment of physical and behavioral health services, arrests, emergency shelter usage, meal site usage, and other services (i.e., case management, dentistry etc.). The researchers acknowledge the difficulties in obtaining this data and that each agency collects and reports cost data in different formats and using different methods. Some agencies provided data to researchers on the actual cost per service, while others provided cost per day or costs per year, or provided charges and not costs. Researchers reported the number of services in different areas utilized before the program and after entry to the program. Overall, researchers found that ambulance/emergency rescue services, emergency room visits, hospital inpatient treatment, jail bookings, and shelter services decreased. The researchers also reported the cost difference associated with these changes (see Exhibit B.1). The total service cost reduction was 34.5 percent. After factoring in the cost of housing and services provided by AHH, the cost of services decreased by 15.2 percent for study group participants who were in the study a minimum of 2 years and a maximum of 3 years.

**EXHIBIT B.1**
**ALBUQUERQUE'S HEADING HOME INITIATIVE: COSTS FOR 73 STUDY PARTICIPANTS**

| | Pre-Costs | Post-Costs | Difference | Percent Change |
|---|---|---|---|---|
| Ambulance/Emergency Rescue | $338,400 | $229,900 | ($108,500) | -32.1 |
| Emergency Room | $810,400 | $188,000 | ($622,500) | -76.8 |
| Hospital Inpatient | $3,938,100 | $1,735,200 | ($2,202,900) | -55.9 |
| Outpatient Behavioral | $125,400 | $113,100 | ($12,300) | -9.8 |
| Outpatient Medical | $1,245,100 | $1,793,800 | $548,600 | 44.1 |
| Jail | $132,100 | $58,500 | ($73,500) | -55.7 |
| Shelter | $105,300 | $38,400 | ($67,000) | -63.6 |
| Social Services | $168,800 | $337,200 | $168,400 | 99.8 |
| **Total** | **$6,863,500** | **$4,494,000** | **($2,369,500)** | **-34.5** |
| AHH Housing Costs | $0 | $889,600 | $889,600 | 100.0 |
| AHH Service Costs | $0 | $439,900 | $439,900 | 100.0 |
| **Grand Total** | **$6,863,500** | **$5,821,200** | **($1,042,300)** | **-15.2** |

SOURCE. Table adapted from Guerin & Minssen, 2016, page 30. Table only includes study group members who were in the study a minimum of 2 years and a maximum of 3 years (n=73).

A similar study was conducted by Perlman and Parvensky in 2006 on the Denver Housing First Collaborative (DHFC).[7] Similar to the Albuquerque study, this study investigated the actual health and emergency service records of a sample of 19 participants of the DHFC for the 24 month period prior to entering the program and the 24 month period after entering the program. Cost data for several different service areas were collected, including emergency room, inpatient medical or psychiatric, outpatient medical, detox services, incarceration, and shelter costs and utilization. Researchers reported the number of

[7] Perlman, J., & Parvensky, J. (2006). *Cost benefit analysis and program outcomes report.* Retrieved from http://denversroadhome.org/files/FinalDHFCCostStudy_1.pdf.

services in different areas utilized before the program and after entry to the program as well as the costs associated with each service (see Exhibit B.2). The costs went down from pre-entry to post-entry in every service area except for outpatient. The total service cost reduction was 61.4 percent.

| EXHIBIT B.2<br>DENVER HOUSING FIRST COLLABORATION: COSTS FOR 19 STUDY PARTICIPANTS | | | | |
|---|---|---|---|---|
| | **Pre-Costs** | **Post-Costs** | **Difference** | **Percent Change** |
| Emergency Room | $99,900 | $65,600 | ($34,300) | -34.4 |
| Inpatient | $197,200 | $67,100 | ($130,200) | -66.0 |
| Outpatient | $33,200 | $50,200 | $17,000 | 51.2 |
| Detox | $197,100 | $31,600 | ($165,900) | -84.2 |
| Incarceration | $34,200 | $8,100 | ($26,000) | -76.2 |
| Emergency Shelter | $13,700 | $0 | ($13,700) | -100.0 |
| **Total** | **$575,200** | **$222,600** | **($353,100)** | **-61.4** |
| SOURCE: Table adapted from Perlman & Parvensky, 2006. | | | | |

A 2007 study by Mondellow, Gass, McLaughlin, and Shore in the State of Maine investigated the cost-effectiveness of permanent-supportive housing (PSH).[8] For this study, researchers examined the cost of different services for study participants 1 year prior to being provided PSH and 1 year after. Cost data for emergency shelter, ambulance, emergency room, police contacts, jail, and physical and behavioral health care were collected on 99 study participants. The costs went down from pre-entry to post-entry in every service area examined, with a total service cost reduction of 62.5 percent (see Exhibit B.3).

| EXHIBIT B.3<br>MAINE PERMANENT SUPPORTIVE HOUSING: COST FOR 99 STUDY PARTICIPANTS | | | | |
|---|---|---|---|---|
| | **Pre-Costs** | **Post-Costs** | **Difference** | **Percent Change** |
| Ambulance | $45,900 | $15,400 | ($30,500) | -66.5 |
| Emergency Room | $206,500 | $78,100 | ($128,400) | -62.2 |
| Physical Health care | $197,100 | $31,600 | ($165,500) | -84.0 |
| Behavioral Health care | $569,400 | $338,300 | ($231,100) | -40.6 |
| Police Contacts | $22,900 | $7,800 | ($15,100) | -65.9 |
| Jail | $61,800 | $23,500 | ($38,300) | -62.0 |
| Emergency Shelter | $241,500 | $9,100 | ($232,400) | -96.2 |
| **Total** | **$1,345,000** | **$503,800** | **($841,200)** | **-62.5** |
| SOURCE: Table adapted from Mondellow, Gass, McLaughlin, and Shore, 2007. | | | | |

In another study using a propensity score matched group of wait-list control participants compared to Housing First program participants in Seattle, researchers found a significant

[8] Mondello, M., Glass, A., McLaughlin, T., and Shore, N. (2007). *Cost of homelessness, cost analysis of permanent supportive housing.* Retrieved from http://shnny.org/uploads/Supportive_Housing_in_Maine.pdf.

reduction in median monthly costs for program participants.[9] This study examined the cost of jail and incarceration, shelter and sobering center use, hospital medical services, detoxification and treatment, emergency medical services, and Medicaid-funded services. The median monthly costs for participants decreased from $4,066 per person to $1,492 after 6 months and then to $958 after 12 months. A total cost rate reduction of 53 percent was found for participants compared to the control group.

A study of the Reaching Out and Engaging to Achieve Consumer Health (REACH) program in San Diego (a Housing First model) is one of the few studies to examine the costs of a program relative to a control group.[10] This study specifically examined behavioral health service costs (i.e., case management, outpatient services, inpatient and emergency services, and behavioral health services provided in the criminal justice system) for 177 REACH participants compared to a propensity matched control group of 161 participants. Researchers investigated the cost of services for REACH participants from up to 2 years before entry into the program and 2 years after entry. The control group was matched in demographic and clinical characteristics, and were initiating services at the same time. The researchers found an increase in the cost of case management and outpatient services for REACH participants compared to the control group, but these costs were offset by reduced spending on inpatient and emergency services, and behavioral health services provided by the justice system.

One of the first studies performing a benefit-cost analysis of a modified therapeutic community (MTC) for homeless individuals with both mental illness and chemical abuse was published by French et. al. in 2002.[11] The study compared three treatment groups to one another using data from 12 months pre-admission and 12 months post-admission. Participants were sequentially assigned to either a MTC of moderate intensity, a MTC of low intensity, or to treatment-as-usual (TAU). The main outcomes investigated were criminal activity, healthcare utilization, and productivity (employment). Researchers used the Drug Abuse Treatment Cost Analysis Program (DATCAP) to calculate costs. Standardizing everything to 1994 dollars, the researchers estimated the average economic cost of MTC per treatment episode at $20,361 and the benefit for MTC relative to TAU at $273,698, which represents a net benefit of $253,337 ($273,698 - $20,361) and a benefit-cost ratio of $13.44 ($273,698/$20,361). In other words, researchers found the economic benefit of MTC is more than 13 times greater than the incremental economic cost.

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[9] Larimer, M., Malone, D., Garner, M., et al. (2009). Health Care and public service use and costs before and after provision of housing for chronically homeless persons with severe alcohol problems. *The Journal of the American Medical Associations, 301(13),* 1347-1357.

[10] Gilmer, T., Manning, W., & Ettner, S. (2009). A cost analysis of San Diego County's REACH program for homeless persons. *Psychiatric Services, 60(4),* 1-6.

[11] French, M. T., McCollister, K. A., Sacks, S., McKendrick, K., & DeLeon, G. (2002). Benefit-cost analysis of a modified therapeutic community for mentally ill chemical abusers. *Evaluation and Program Planning*, 25(2), 137-48.

# APPENDIX C: COST ANALYSIS STUDY – FULL SAMPLE

The cost analysis presented here is for the full sample of Program participants and does not exclude participants who were not on Medicaid during the pre-enrollment period. All Fort Lyon Program participants were included in this analysis if they had at least 1 year of post-enrollment data. A total of 486 Fort Lyon participants had at least 1 year of post-enrollment data and 258 participants had at least 2 years of post-enrollment data. The participants included in the 2-year study group are a subset of the 1-year study group. The majority of participants within the two study groups are white males around 50 years of age. About a quarter are veterans and over half reported having a disabling condition, such as a physical, behavioral, or emotional impairment.

Exhibit C.1 displays housing information for both study groups prior to entering the Fort Lyon Supportive Residential Community Program (Fort Lyon Program or Program). Most participants in both study groups were designated as homeless or at-risk for homelessness.

**EXHIBIT C.1**
**FORT LYON PROGRAM**
**DESCRIPTION COST STUDY GROUPS – HOUSING**

| Prior Housing Status | Participants with 1 Year Post-Enrollment Data | | Participants with 2 Years Post-Enrollment Data[2] | |
|---|---|---|---|---|
| | n-size | percent | n-size | percent |
| Homeless | 421 | 86.4% | 220 | 85.3% |
| Stably housed | 28 | 5.8% | 20 | 7.8% |
| At imminent risk of losing housing | 11 | 2.3% | 1 | 0.4% |
| At-risk of homelessness | 6 | 1.2% | 0 | 0% |
| Other[1] | 20 | 4.3% | 17 | 6.5% |
| Total | 486 | 100% | 258 | 100% |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.
[1] Other includes client doesn't know, client refused, data not collected.
[2] The participants included in the 2-year study group are a subset of the 1-year study group.

Exhibit C.2 shows information on participation and length of stay in the Fort Lyon Program for the two study groups. The average total number of days participants stayed in the Fort Lyon Program is a little less than 1 year for both groups. We were not able to determine if any of the study group participants resided out of state for any portion of the pre- or post- enrollment time period. Any services received out of state during the time periods reviewed would not be captured in this cost analysis.

| EXHIBIT C.2<br>FORT LYON PROGRAM<br>DESCRIPTION COST STUDY GROUPS –STAY INFORMATION | | |
|---|---|---|
| **Fort Lyon Stay Information** | **Participants with 1-Year Post-Enrollment Data** | **Participants with 2-Years Post-Enrollment Data[1]** |
| Median total # of days in Fort Lyon Program | 268<br>(range: 2 days-1362 days)<br>(average: 318) | 249<br>(range: 2 days-1362 days)<br>(average: 336) |
| Number of times entered Fort Lyon Program | 1 time: 421 (86.6%)<br>2 times: 60 (12.3%)<br>3 times: 3 (0.6%)<br>4 times: 2 (0.4%) | 1 time: 215 (83.3%)<br>2 times: 39 (15.1%)<br>3 times: 2 (0.8%)<br>4 times: 2 (0.8%) |
| Current Fort Lyon Program client | 52 (10.7%) | 11 (4.3%) |
| SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.<br>[1]The participants included in the 2-year study group are a subset of the 1-year study group. | | |

## SAVINGS DUE TO CHANGE IN COMMUNITY SERVICE COSTS PRE- TO POST- PROGRAM

The difference in pre-enrollment costs compared to post-enrollment costs for physical and behavioral health care, probation, and incarceration are described below. It is important to note that this analysis is not exhaustive and does not include all possible public costs associated with Fort Lyon participants, such as jail records, shelter records, and meal services. Cost associated with these services are more time consuming and costly to collect. For example, we would have to access information from each jail and each shelter throughout the state to include these costs in our analyses. These costs would likely be higher during the pre-enrollment period; thus pre-enrollment community services costs may be underestimated. We will attempt to capture estimates of some of these costs for inclusion in the Year 2 report.

*Health care data.* The total physical and behavioral health care cost savings for the 1-year post-enrollment study group was about $832,000 (see Exhibit C.3), which was an 18 percent decrease from pre- to post-enrollment. Since the HCPF database specifically captures Medicaid claims, this represents a cost savings to the public and to the federal and state government. We were not able to determine health care costs for those Fort Lyon Program participants who were not enrolled in Medicaid. These claims include costs for inpatient and outpatient services, pharmacy, and practitioner/physician services.

| EXHIBIT C.3<br>FORT LYON PROGRAM<br>PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – HEALTH CARE | | | | |
|---|---|---|---|---|
| | Participants with 1-Year Post-Enrollment Data | | | |
| | 1-year Pre-Enrollment Costs | 1-year Post-Enrollment Costs | Difference | % Change |
| Total | $4,602,000 | $3,770,000 | ($832,000) | -18% |
| Average per Participant | $9,500 | $7,800 | ($1,700) | -18% |

SOURCE: Illuminate Evaluation Services' analysis of health care data provided by HCPF.
Note. Two outliers were not included in the analysis, as their total post-enrollment costs were over double the costs of the next highest client. Additionally, these participants were in the Fort Lyon Program 5 days or less.

The total physical and behavioral health care costs for the 2-year post-enrollment study group increased by approximately $1.1 million (see Exhibit C.4), which was a 38 percent increase from pre- to post-enrollment. One explanation for this increase may be related to Medicaid expansion occurring in 2014, which could have had a larger impact on this study group since their pre-enrollment period extends into the period before Medicaid expansion. Essentially,some of the pre-enrollment costs for this group may not be captured in the HCPF database because participants were not on Medicaid in the pre-enrollment time period. Hospitals and other health care providers may have been covering the costs for non-insured participants during the pre-enrollment time period.

| EXHIBIT C.4<br>FORT LYON PROGRAM<br>PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – HEALTH CARE | | | | |
|---|---|---|---|---|
| | Participants with 2-Years Post-Enrollment Data[1] | | | |
| | 2-years Pre-Enrollment Costs | 2-years Post-Enrollment Costs | Difference | % Change |
| Total | $2,886,000 | $3,985,000 | $1,099,000 | +38% |
| Average per Participant | $11,200 | $15,400 | $4,200 | +38% |

SOURCE: Illuminate Evaluation Services' analysis of health care data provided by HCPF
[1]The participants included in the 2-year study group are a subset of the 1-year study group.
Note. Two outliers were not included in the analysis, as their total post-enrollment costs were over double the costs of the next highest client. Additionally, these participants were at Fort Lyon 5 days or less.

*Behavioral health care data for non-Medicaid participants.* Behavioral health care data provided by the Office of Behavioral Health (OBH) within the Department of Human Services was used to calculate pre-enrollment and post-enrollment behavioral health care costs for participants who did not appear in the HCPF database. Behavioral health care data includes the cost of services such as group and individual therapy, case management, and drug and/or alcohol services for individuals covered under the state- and federally- funded Indigent Care Program, who do not receive services through Medicaid.

The total behavioral health care cost savings for the 1-year post-enrollment study group was about $46,000 (see Exhibit C.5), which was a 92 percent decrease from pre- to post-enrollment.

| EXHIBIT C.5<br>FORT LYON PROGRAM<br>PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – BEHAVIORAL HEALTH CARE | | | | |
|---|---|---|---|---|
| | Participants with 1-Year Post-Enrollment Data | | | |
| | 1-year Pre-Enrollment Costs | 1-year Post-Enrollment Costs | Difference | % Change |
| Total | $50,000 | $4,000 | ($46,000) | -92% |
| Average per Participant | $130 | $10 | ($120) | -92% |

SOURCE: Illuminate Evaluation Services' analysis of behavioral health care data provided by OBH.
Note. Data provided by OBH overlaps with claims data in the HCPF database. Evaluators controlled for this overlap by only including OBH costs for participants who were not in the HCPF database. More specifically, evaluators included service costs only for participants with an Indigent Special Services code who did not appear in the HCPF database.

The total behavioral health care cost savings for the 2-year post-enrollment study group was $114,000 (see Exhibit C.6), which was a 97 percent decrease from pre- to post-enrollment. Decreases in this cost data are likely due to Medicaid expansion, with more participants receiving behavioral health services under Medicaid after enrolling in the Fort Lyon Program rather than under the Indigent Care Program. Both of the study groups showed a cost savings, which represents a costs savings to the public and to the state and federal government for this service.

| EXHIBIT C.6<br>FORT LYON PROGRAM<br>PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – BEHAVIORAL HEALTH CARE | | | | |
|---|---|---|---|---|
| | Participants with 2-Years Post-Enrollment Data[1] | | | |
| | 2-years Pre-Enrollment Costs | 2-years Post-Enrollment Costs | Difference | % Change |
| Total | $118,000 | $4,000 | ($114,000) | -97% |
| Average per Participant | $460 | $16 | ($440) | -97% |

SOURCE: Illuminate Evaluation Services' analysis of behavioral health care data provided by OBH.
[1]The participants included in the 2-year study group are a subset of the 1-year study group.
Note. Data provided by OBH overlaps with claims data in the HCPF database. Evaluators controlled for this overlap by only including OBH costs for participants who were not in the HCPF database. More specifically, evaluators included service costs only for participants with an Indigent Special Services code who did not appear in the HCPF database.

*Judicial system and corrections data.* The total probation cost savings for the 1-year post-enrollment study group was about $69,000 (see Exhibit C.7), which represents a 70 percent decrease from pre- to post-enrollment. The total incarceration costs for this study group increased from pre- to post-enrollment by about $15,000 (see Exhibit C.7), which represents a 95 percent increase from pre- to post-enrollment. Only four participants from this study group had costs associated with incarceration during the year prior to admission to the Fort Lyon Program and only three participants had costs associated with incarceration the year after admission. Only one client had incarceration costs for both pre-enrollment and post-enrollment. The cost increase was associated with two participants who were incarcerated

during the post-enrollment period, but not during the pre-enrollment period. Combining the costs for both probation and incarceration for this study group, yielded a total decrease in costs from pre-enrollment to post-enrollment of about $54,000, or 47 percent, which represents a cost savings to the public and to the federal and state government.

| EXHIBIT C.7<br>FORT LYON PROGRAM<br>PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – JUDICIAL SYSTEM DATA[1] | | | | |
|---|---|---|---|---|
| | Participants with 1-Year Post-Enrollment Data | | | |
| | 1-year Pre-Enrollment Costs | 1-year Post-Enrollment Costs | Difference | % Change |
| Probation | $99,000 | $30,000 | ($69,00) | -70% |
| Incarceration | $16,000 | $31,000 | $15,000 | +95% |
| **Total** | **$115,000** | **$61,000** | **($54,000)** | **-47%** |
| Average per Participant | $240 | $126 | ($114) | -47% |
| SOURCE: Illuminate Evaluation Services' analysis of judicial system data.<br>[1]This data does not include jail time, which is collected at the local level. | | | | |

The total probation cost savings for the 2 years post-enrollment study group was about $7,000 (see Exhibit C.8), which represents a 14 percent decrease from pre- to post- enrollment. The total incarceration costs for this study group increased from pre- to post- enrollment by $63,000 (see Exhibit C.8), which represents a 105 percent increase from pre- to post-enrollment. Only four participants from the 2-years post-enrollment study group had costs associated with incarceration during the two years prior to admission to Fort Lyon and only four participants had costs associated with incarceration any time during the two years after admission. Only one participant had incarceration costs for both 2-years pre-enrollment and 2-years post-enrollment. The cost increase was associated with two participants who were incarcerated during the post-enrollment period, but not during the pre-enrollment period and one participant whose costs went up substantially from pre- to post-enrollment. Combining the costs for both probation and incarceration for this study group, yielded an increase in costs from pre-enrollment to post-enrollment of $56,000, or 51 percent.

| EXHIBIT C.8<br>FORT LYON PROGRAM<br>PRE-ENROLLMENT AND POST-ENROLLMENT COSTS – JUDICIAL SYSTEM DATA[1] | | | | |
|---|---|---|---|---|
| | Participants with 2-Years Post-Enrollment Data[2] | | | |
| | 2-years Pre-Enrollment Costs | 2-years Post-Enrollment Costs | Difference | % Change |
| Probation | $49,000 | $42,000 | ($7,000) | -14% |
| Incarceration | $60,000 | $123,000 | $63,000 | +105% |
| **Total** | **$109,000** | **$165,000** | **$56,000** | **+51%** |
| Average per Participant | $422 | $640 | $217 | +51% |
| SOURCE: Illuminate Evaluation Services' analysis of judicial system data.<br>[1]This data does not include jail time, which is collected at the local level.<br>[2]The participants included in the 2-year study group are a subset of the 1-year study group. | | | | |

## COST ANALYSIS SUMMARY

Exhibits C.9 and C.10 summarize the results of all pre-enrollment and post-enrollment costs for both study groups, respectively. For the 1-year post-enrollment data study group, the there was a decrease in costs from pre-enrollment to post-enrollment of about $932,000, or 20 percent. For the 2-years post-enrollment data study group, there was an increase in costs from pre-enrollment to post-enrollment of about $1,041,000 or 33%.

**EXHIBIT C.9**
**SUMMARY OF PRE-ENROLLMENT AND POST-ENROLLMENT COSTS**

| | Participants with 1-Year Post-Enrollment Data | | | |
|---|---|---|---|---|
| | 1-year Pre-Enrollment Costs | 1-year Post-Enrollment | Difference | % Change |
| Health care | $4,602,000 | $3,770,000 | ($832,000) | -18% |
| Behavioral health care for non-Medicaid participants | $50,000 | $4,000 | ($46,000) | -92% |
| Judicial system | $115,000 | $61,000 | ($54,000) | -47% |
| **Total** | **$4,767,000** | **$3,835,000** | **($932,000)** | **-20%** |

SOURCE: Illuminate Evaluation Services' analysis of pre-enrollment and post-enrollment cost data.

**EXHIBIT C.10**
**SUMMARY OF PRE-ENROLLMENT AND POST-ENROLLMENT COSTS**

| | Participants with 2-Years Post-Enrollment Data[1] | | | |
|---|---|---|---|---|
| | 2-years Pre-Enrollment Costs | 2-years Post-Enrollment Costs | Difference | % Change |
| Health care | $2,886,000 | $3,985,000 | $1,099,000 | +38% |
| Behavioral health care for non-Medicaid participants | $118,000 | $4,000 | ($114,000) | -97% |
| Judicial system | $109,000 | $165,000 | $56,000 | +51% |
| **Total** | **$3,113,000** | **$4,154,000** | **$1,041,000** | **+33%** |

SOURCE: Illuminate Evaluation Services' analysis of pre-enrollment and post-enrollment cost data.
[1]The participants included in the 2-year study group are a subset of the 1-year study group.

# APPENDIX D: DATA FROM OUTCOMES ANALYSES

The information below details the data supporting the Fort Lyon Supportive Residential Community Program (Fort Lyon Program or Program) outcomes analyses completed for Chapter 4.

*Length of Time in Program.* We analyzed whether the number of days spent in the Fort Lyon Program was related to program completion and exit to permanent housing using logistic regression models. Exhibits D.1 and D.2 show the results.

**EXHIBIT D.1**
**LOGISTIC REGRESSION MODEL PREDICTING PROGRAM COMPLETION**

| | B | Se | $\chi 2$ | df | P | Exp(B) |
|---|---|---|---|---|---|---|
| Days | .003 | .000 | 44.90 | 1.00 | <.01 | 1.003 |
| Constant | -0.95 | .172 | 30.53 | 1.00 | <.01 | .390 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

**EXHIBIT D.2**
**LOGISTIC REGRESSION MODEL PREDICTING PERMANENT HOUSING**

| | B | Se | $\chi 2$ | df | P | Exp(B) |
|---|---|---|---|---|---|---|
| Days | 0.002 | 0.00 | 20.52 | 1.00 | <.01 | 1.002 |
| Constant | -0.61 | 0.17 | 12.84 | 1.00 | <.01 | 0.54 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

*Substance Use Status and History.* We looked at whether participants' substance use history as self-reported on the Government Performance and Results Act questionnaire, an instrument in which program leaders collect information on participants alcohol, marijuana, or illegal drug use prior to entering the Program, was related to program completion and exit to permanent housing. Using logistic regression modeling, we found that there was no significant relationship and shown in Exhibits D.3 through D.8.

**EXHIBIT D.3**
**LOGISTIC REGRESSION MODEL PREDICTING PROGRAM COMPLETION BY ALCOHOL USE**

| | B | Se | $\chi 2$ | df | P | Exp(B) |
|---|---|---|---|---|---|---|
| Alcohol Use | -0.01 | 0.01 | 1.25 | 1.00 | 0.26 | 0.99 |
| Constant | -0.40 | 0.21 | 3.65 | 1.00 | 0.06 | 0.67 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

**EXHIBIT D.4**
**LOGISTIC REGRESSION MODEL PREDICTING PERMANENT HOUSING BY ALCOHOL USE**

| | B | Se | $\chi 2$ | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| Alcohol Use | 0.00 | 0.01 | 0.10 | 1.00 | 0.75 | 1.00 |
| Constant | -0.35 | 0.22 | 2.49 | 1.00 | 0.11 | 0.70 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

**EXHIBIT D.5**
**LOGISTIC REGRESSION MODEL PREDICTING PROGRAM COMPLETION BY ILLEGAL DRUG USE**

| | B | Se | $\chi 2$ | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| Illegal Drug Use | -0.03 | 0.02 | 2.80 | 1.00 | 0.09 | 0.97 |
| Constant | -0.41 | 0.18 | 5.43 | 1.00 | 0.02 | 0.66 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

**EXHIBIT D.6**
**LOGISTIC REGRESSION MODEL PREDICTING PERMANENT HOUSING BY ILLEGAL DRUG USE**

| | B | Se | $\chi 2$ | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| Illegal Drug Use | 0.01 | 0.02 | 0.56 | 1.00 | 0.45 | 1.01 |
| Constant | -0.47 | 0.19 | 6.43 | 1.00 | 0.01 | 0.62 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

**EXHIBIT D.7**
**LOGISTIC REGRESSION MODEL PREDICTING PROGRAM COMPLETION BY MARIJUANA USE**

| | B | Se | $\chi 2$ | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| Marijuana Use | -0.03 | 0.02 | 3.25 | 1.00 | 0.07 | 0.97 |
| Constant | -0.34 | 0.20 | 2.72 | 1.00 | 0.10 | 0.71 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

**EXHIBIT D.8**
**LOGISTIC REGRESSION MODEL PREDICTING PERMANT HOUSING BY MARIJUANA USE**

| | B | Se | $\chi 2$ | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| Marijuana Use | 0.00 | 0.01 | 0.02 | 1.00 | 0.88 | 1.00 |
| Constant | -0.37 | 0.22 | 3.01 | 1.00 | 0.08 | 0.69 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

*Behavioral Health.* We looked at whether behavioral health was related to program completion and exit to permanent housing. At intake, participants completed the Generalized Anxiety Disorder 7-item scale (GAD-7), a widely-used measure in behavioral health to screen and measure generalized anxiety disorder. Participants also completed the Patient Health Questionnaire (PHQ-9), a nine-item instrument to screen and measure the severity of depressive symptoms. To get an overall measure of anxiety and depression for participants, we averaged GAD-7 and PHQ-9 scores from survey administrations prior to the end of the Program. We found that there was no significant relationship between the severity of participants' anxiety or depression ratings at intake and program completion or exit to permanent housing. See exhibits D.9 to D.12.

**EXHIBIT D.9**
**LOGISTIC REGRESSION MODEL PREDICTING PROGRAM COMPLETION BY GAD-7 AVERAGE**

| | B | Se | $\chi 2$ | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| GAD Average | -0.06 | 0.02 | 7.19 | 1.00 | 0.01 | 0.94 |
| Constant | 0.76 | 0.25 | 9.21 | 1.00 | 0.00 | 2.13 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

**EXHIBIT D.10**
**LOGISTIC REGRESSION MODEL PREDICTING PERMANENT HOUSING BY GAD-7 AVERAGE**

| | B | Se | $\chi 2$ | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| GAD Average | -0.01 | 0.02 | 0.39 | 1.00 | 0.53 | 0.99 |
| Constant | 0.08 | 0.25 | 0.11 | 1.00 | 0.74 | 1.09 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

**EXHIBIT D.11**
**LOGISTIC REGRESSION MODEL PREDICTING PROGRAM COMPLETION BY PHQ-9 AVERAGE**

| | B | Se | $\chi 2$ | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| PHQ Average | 0.00 | 0.01 | 0.00 | 1.00 | 0.99 | 1.00 |
| Constant | 0.18 | 0.15 | 1.50 | 1.00 | 0.22 | 1.20 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

**EXHIBIT D.12**
**LOGISTIC REGRESSION MODEL PREDICTING PERMANT HOUSING BY PHQ-9**

| | B | Se | $\chi 2$ | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| PHQ Average | 0.01 | 0.01 | 0.68 | 1.00 | 0.41 | 1.01 |
| Constant | -0.15 | 0.18 | 0.75 | 1.00 | 0.39 | 0.86 |

SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless.

*Program Participation*. Exhibit D.13 shows the percent of participants enrolled in vocational, educational, or employment programs.

| EXHIBIT D.13<br>PROGRAM PARTICIPATION | |
|---|---|
| **Programming** | **% of Fort Lyon Participants** |
| Vocational Programming (modules) | 70.8% |
| Educational Programming | 28.3% |
| Employment | 11.4% |
| SOURCE: Illuminate Evaluation Services' analysis of Homeless Management Information System data provided by Colorado Coalition for the Homeless. | |

We used chi-square models to examine whether participation in vocational modules was related to program completion or placement in permanent housing. Vocational program participation was not related to either completion ($\chi 2[1] = 1.18$, p = n.s.) or permanent housing ($\chi 2[1] = 0.05$, p = n.s.). Similarly, educational program participation was not related to either completion ($\chi 2[1] = 0.89$, p = n.s.) or permanent housing ($\chi 2[1] = 0.03$, p = n.s.). Finally, employment program participation was not related to either completion ($\chi 2[1] = 3.95$, p = n.s.) or permanent housing ($\chi 2[1] = 1.18$, p = n.s.).

# APPENDIX E: HOMELESSNESS OUTCOMES RESEARCH/BEST PRACTICES LITERATURE REVIEW

The Fort Lyon Supportive Residential Community Program (Fort Lyon Program or Program) provides recovery-oriented transitional housing to individuals in Colorado who are homeless. The Program combines housing with peer support and educational, vocational, and employment services. Many participants of the Fort Lyon Program have complex histories characterized by trauma, multiple years of homelessness and financial instability, and/or addiction.

Homelessness, its causes, and its elimination are complex issues with no single solution. The Fort Lyon Program provides a unique approach for addressing the needs of some of the most vulnerable individuals within the homeless population: the chronically homeless, those with substance use issues, and our veterans. This literature review highlights key best practices in addressing homelessness, as relevant to the Fort Lyon Program.

## COORDINATED ASSESSMENT AND OUTREACH SYSTEMS

In the last decade, efforts to address homelessness have emphasized the systems that support these efforts, rather than the successes of individual programs. These systems approaches include efforts to improve the collective efforts of the organizations and agencies directly or indirectly providing resources to end homelessness. This includes coordination of intake and assessment processes to improve the outreach, integration, and responsiveness of existing systems:

> Coordinated Assessment, if comprehensive and well-integrated with mainstream service systems, can help communities move toward their goal of ending homelessness by improving the speed, accuracy, and consistency of the client screening and assessment process and targeting scarce resources more efficiently and accurately in order to be most effective.[12]

Coordinated assessment systems are tailored to the local community's needs, existing resources, and systems that serve the homeless population either directly or indirectly. Active partners may include emergency services, hospitals, shelters, jails, courts, welfare

[12] CHS (2015). *Improving Community-wide Targeting of Supportive Housing to End Chronic Homelessness: The Promise of Coordinated Assessment*. New York: CSH. Available at: http://www.csh.org/resources/improving-community-wide-targeting-of-supportive-housing-to-end-chronic-homelessness-the-promise-of-coordinated-assessment/

agencies, detox centers, and street outreach programs. Inclusion of entities that serve the broader population is essential for a coordinated system to prioritize highest-cost utilizers and quickly move them into housing where they can also receive needed services and be stabilized. In this way, centralized assessment and intake processes can reduce costly crises care interventions.

Coordinated systems rely on strong linkages and communication with mainstream public systems and institutions to support efficient identification, referral, and assessment processes. This includes data-sharing agreements and data-matching to identify high-cost utilizers across agencies, and to identify points of contact for these individuals for outreach purposes.

### DUAL FOCUS ON ADDICTION AND HOMELESSNESS

Substance abuse can be both a cause and a result of homelessness, and therefore both issues must be addressed. However, there are debates about whether housing support should be provided contingent on participation in substance abuse treatment and evidence of treatment progress.

While multiple theories and approaches to housing for the homeless exist, two are prevalent in discussions and research: the linear housing model and the housing first model. In the linear housing model, participants move progressively through stages, improving skills, clinical stabilization, and self-sufficiency. In a stepwise fashion, the client moves through housing arrangements that are progressively less restrictive and improved in quality. Failing to meet criteria or having a setback can result in the client moving back to a previous level of support and housing. For people dealing with addiction, the progression includes substance abuse treatment and increasing evidence of sobriety as they progress through the stages. The requirements to participate in substance use treatment and to demonstrate sobriety have led some to label this the "treatment first" approach.

In contrast, the housing first approach separates housing and treatment, providing permanent housing that is not contingent on other factors such as sobriety, development of specific skill sets, participation in treatment, and other requirements that may be in place in linear housing models. According to the National Alliance to End Homelessness, "The housing first approach views housing as the foundation for life improvement and enables access to permanent housing without prerequisites or conditions beyond those of a typical renter."[13] In a brief on housing first,[14] HUD notes that housing first can support improvements in health, behavioral health, substance use, and employment, and that "sobriety, compliance in treatment, or even criminal histories are not necessary to succeed

[13] National Alliance to End Homelessness. (2016) *Fact Sheet: Housing First*. Available at: http://www.endhomelessness.org/page/-/files/2016-04-26%20Housing%20First%20Fact%20Sheet.pdf
[14] See https://www.hudexchange.info/resources/documents/Housing-First-Permanent-Supportive-Housing-Brief.pdf

in housing." The emphasis is often on harm reduction, or reducing the negative consequences and risky behaviors of substance use. Harm reduction strategies range on a continuum from safer drug use, to managed substance use, to abstinence, focusing on what is achievable. Although the earliest housing first approaches opened in the late 1980s, they did not become prevalent until more recently. Housing first approaches are now being used and assessed in communities across the United States. As an example, the Denver Housing First Collaborative was established in 2003 by the Colorado Coalition for the Homeless.

Research on the most effective housing model for individuals struggling with addiction has been mixed. This may be due, in part, to differences in measures of addiction severity, definitions of sobriety, outcome measures (e.g., sobriety versus reduction in substance use, cost/benefits, housing retention), the presence or absence of co-occurring behavioral or physical health issues, and other ways of understanding the composition of the study populations. In addition, there are differences among housing first programs, and differences among treatment first programs, with different approaches working for different people. Research methodologies have also varied, and randomized controlled trials are limited. While there has been support for and proponents of both the treatment first[15] and housing first[16] for individuals with addictions, recent studies have highlighted the benefits of housing first programs. It is worth noting, however, that some reviews of the literature suggest substance abuse may be associated with lower housing retention rates for some populations but not others.[17] Regardless of the approach, there is agreement that substance abuse is both a cause and a result of homelessness, and both issues need to be addressed simultaneously.[18]

Therapeutic communities (TC) represent one integrated strategy for addressing homelessness and substance abuse. While TC programs differ, most are long-term, residential, recovery-oriented communities with strong self-help and social support components. Originally organized and led by peers, TCs have evolved over time. Some now

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[15] For example: Kertesz, S., Crouch, K., Milby, J., Cusimano, R, and Schumacher, J. (2009). Housing first for homeless persons with active addiction: Are we overreaching? *Milbank Quarterly 87(2)*: 495-534.

[16] For example: Padgett, D., Stanhope, V., Henwood, B., and Stefancic. (2011). Substance abuse outcomes among homeless clients with serious mental illness: Comparing housing first with treatment first programs. *Community Mental Health Journal 47(2*): 227-232; Collins, S., Clifasefi, S., Dana, E., Andrasik, M., Stahl, A., Kirouac, M., Welbaum, C., King, M., and Malone, D. (2012). Where harm reduction meets Housing First: Exploring alcohol's role in a project-based Housing First setting. *International Journal of Drug Policy, 23(2):* 111-119; and Tsembris, S., Gulcur, L., and Nakae, M. Housing First, consumer choice, and harm reduction for homeless individuals with a dual diagnosis. *American Journal of Public Health, 94(4):* 651-656.

[17] Johnsen, S., and Teixeira, L. (2010). *Staircases, elevators, and cycles of change: 'Housing First' and other housing models for homeless people with complex support needs*. London: Crisis and Centre for Housing Policy; Perl, L., and Bagalman, E. (2015). *Chronic homelessness: Background, research, and outcomes* (CRS Report No. R44302). Retrieved from Congressional Research Service website https://fas.org/sgp/crs/misc/R44302.pdf ; Zerger, S. (2002). *Substance abuse treatment: What works for homeless people? A review of the literature.* Nashville, TN: National Health Care for the Homeless Council.

[18] Gillis, L., Dickerson, G, and Hanson, J. (2010). Recovery and homeless services: New directions for the field. *The Open Health Services and Policy Journal, 3*: 71-79.

include certain forms of treatment, medical services, and medical staff.[19] After reviewing 30 studies on the effectiveness of TCs, researchers observed that while outcomes were variable across communities, there was evidence of beneficial outcomes in diverse treatment settings, particularly for higher levels of addiction in some groups, such as those who are homeless. The variations in outcomes were less reflective of type of TC than the needs of the participants: "Not the differential effectiveness of TCs, but rather individuals' assets and community resources and their personal needs and goals will determine whether TC treatment is indicated on the road to recovery."[20] They concluded, "TCs can be supportive places where participants can learn some of the internal control and refusal skills conducive to stable recovery. Motivation, social support and coping with stress without using substances appear to be key factors in successful recovery.

### TRAUMA-INFORMED APPROACH

The Substance Abuse and Mental Health Services Administration (SAMHSA), an agency within the U.S. Department of Health and Human Services, is committed to reducing "the impact of substance abuse and mental illness on America's communities."[21] SAMHSA promotes trauma-informed care and identifies a program, organization, or system as trauma-informed if it:

1. *Realizes* the widespread impact of trauma and understands potential paths for recovery;
2. *Recognizes* the signs and symptoms of trauma in participants, families, staff, and others involved with the system;
3. *Responds* by fully integrating knowledge about trauma into policies, procedures, and practices; and
4. Seeks to actively resist *re-traumatization*.[22]

Following an extensive review of the principles of trauma-informed care proposed by multiple workgroups, organizations, expert panels, and researchers, Hopper, Bassuk, and Olivet (2010) offered the following definition:

> Trauma-Informed Care is a strengths-based framework that is grounded in an understanding of and responsiveness to the impact of trauma, that emphasizes physical, psychological, and emotional safety for both providers and survivors, and

[19] See https://www.drugabuse.gov/

[20] Vanderplasschen, W., Colpaert,, K., Autrique, M., Rapp, R., Pearce, S., Broekaert, E., and Vandevelde, S. (2013). Therapeutic Communities for Addictions: A review of their effectiveness from a recovery-oriented perspective. *The Scientific World Journal,* vol. 2013, Article ID 427817.

[21] https://www.samhsa.gov/about-us

[22] ibid.

> that creates opportunities for survivors to rebuild a sense of control and empowerment.[23]

Research shows correlations between homelessness and previous exposure to trauma. In an extensive review of the literature, SAMHSA reports that individuals who have been homeless for more than one week during adulthood are significantly more likely than those who have not experienced homelessness to report exposure to traumatic environments or experiences, including experiencing personal violence or witnessing violence toward others.[24] Based on their review of studies of trauma-informed care, Hopper, et al., conclude that service settings that provide trauma-informed care are associated with reductions in substance use and psychiatric symptoms and may be associated with a reduction in use of crisis-based services and improved housing stability. Providers utilizing trauma-informed approaches reported improved relationships with participants and among staff, along with stronger perceptions of safety. The authors conclude that integrated trauma-informed care services are cost-effective as they do not cost more than standard programming.

### PEER MENTORING/SOCIAL SUPPORT

Peer-based support services have a long history in the field of addiction and recovery. The implementation and outcomes of peer-based support have been extensively addressed in research literature.[25] Peer support can provide emotional, informational, and practical support, and can facilitate additional social contacts to create community and a sense of belonging. In programs addressing recovery and homelessness, peer support can range from informal but essential relationships among participants to formal roles for peers as mentors, practitioners, and leaders in the design, delivery, and evaluation of services.[26] Peer support is integral to the philosophy of TCs, to 12-step approaches to recovery, and in many housing first models. One author observed, "Peer-based recovery support services can help

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[23] Hopper, E., Bassuk, E., and Olivet, J. (2010). Shelter from the storm: Trauma-informed care in homelessness services settings. *The Open Health Services and Policy Journal, 3*, 80-100.

[24]Center for Substance Abuse Treatment (US). *Trauma-Informed Care in Behavioral Health Services*. Rockville (MD): Substance Abuse and Mental Health Services Administration (US); 2014. (Treatment Improvement Protocol (TIP) Series, No. 57.) Available from: https://www.ncbi.nlm.nih.gov/books/NBK207201/

[25] For example, White, W. (2008). *Recovery management and recovery-oriented systems of care: Scientific rationale and promising practices*. Pittsburgh, Pa, USA: Northeast Addiction Technology Transfer Center, Great Lakes Addiction Technology Transfer Center and Philadelphia Department of Behavioral Health & Mental Retardation Services; and Center for Substance Abuse Treatment (2009). *What are Peer Recovery Support Services?* HHS Publication No. (SMA) 09-4454. Rockville, MD: Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

[26] Gillis, L., Dickerson, G, and Hanson, J. (2010). Recovery and homeless services: New directions for the field. *The Open Health Services and Policy Journal, 3*: 71-79.

shift the larger treatment system from a focus on brief biopsychosocial stabilization to a focus on the long-term recovery process."[27]

### COMPREHENSIVE AND INTEGRATED SERVICES

The needs of homeless individuals are often complex, requiring access to multiple services across systems. Research from trauma-informed care settings, for example, suggests that integrated care is associated with better outcomes and is cost-effective.[28] However, services may be fragmented at both the systems and service delivery levels.

At the systems level, there are multiple challenges to integration of services and programs, such as policy, program priorities, limited resources, accountability structures, and philosophical differences regarding outcomes and approach. At the level of service delivery, efforts to reduce fragmentation of service delivery and to provide comprehensive and integrated services have been underway for a number of years. One approach, the Assertive Community Action Treatment (ACT), has been in existence since the 1970s but has re-emerged more recently. ACT teams include representatives of services, such as social workers, nurses, psychiatrists, peer counselors, and employment workers. There are multiple models for how ACT interfaces with systems and participants through outreach, program implementation, and follow up. Other service delivery models for providing integrated and comprehensive services exist. Agencies and organizations across the country, including the Colorado Coalition for the Homeless,[29] are developing local efforts to improve integration of services at the systems and service delivery levels.

### PROGRAMMATIC FLEXIBILITY AND/OR CLIENT CHOICE

In some settings, approaches to addressing homelessness and substance abuse have extrapolated from studies in primary health care that have found positive outcomes when patients have opportunities for self-management.[30] Applying these principles, they have similarly shifted toward client choice and consumer-driven programming and allowing for programming flexibility.[31] These approaches take into consideration individual variation in

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[27] White, W. (2009). *Peer-based addiction recovery support: History, theory, practice, and scientific evaluation*. Chicago, IL: Great Lakes Addiction Technology Transfer Center and Philadelphia Department of Behavioral Health and Mental Retardation Services.
[28] Hopper, E., Bassuk, E., and Olivet, J. (2010). Shelter from the storm: Trauma-informed care in homelessness services settings. *The Open Health Services and Policy Journal, 3*, 80-100.
[29] Colorado Coalition for the Homeless. (2013). Developing an Integrated Health Care Model for Homeless and Other Vulnerable Populations in Colorado. Denver, CO: Colorado Coalition for the Homeless.
[30] White, W. (2008). *Recovery management and recovery-oriented systems of care: Scientific rationale and promising practices*. Pittsburgh, Pa, USA: Northeast Addiction Technology Transfer Center, Great Lakes Addiction Technology Transfer Center and Philadelphia Department of Behavioral Health & Mental Retardation Services.
[31] Gillis, L., Dickerson, G, and Hanson, J. (2010). Recovery and homeless services: New directions for the field. *The Open Health Services and Policy Journal, 3*: 71-79.

recovery, rate of progress, and capacity for healing at a given point in time. Although program structures differ from program-to-program, consumer-driven models allow participants to make choices in key areas, such as whether to use substances, seek treatment for substance use, seek psychiatric treatment, take medications, etc. These choices do not impact housing status or access to other supports offered by the program.

Several studies have found positive outcomes in programs that provide client choice regarding personal goals, treatments, housing options, and length of time to complete goals. For example, one study found participants of a consumer-driven housing first program reported higher levels of choice and maintained high housing retention rates relative to participants in a more restrictive model, without exacerbation of psychiatric symptoms or increased substance abuse.[32] Another study of adults dealing with homelessness and mental illness compared a "consumer-driven housing first program" with "treatment as usual" that required psychiatric treatment and sobriety before housing, The results showed direct relationships between the consumer-driven housing first model, a decrease in homelessness, and an increase in perceptions of choice.[33]

### USE OF DATA

Data for tracking program outcomes and evidence-based programming decisions is essential to ensure program effectiveness, for resource allocation, and to compare treatment approaches. Program monitoring requires reliable and valid data collection tools, consistent data collection processes, appropriate analytic strategies, unbiased interpretation, and efficient dissemination. Client confidentiality issues must also be addressed. Multi-agency data-sharing agreements and policies that support them are necessary, particularly with integrated service delivery and for monitoring post-program client outcomes. Evidence of the importance of data collection practices is increasingly apparent in comprehensive efforts to provide integrated service delivery,[34] and there are multiple sources of support for developing these practices.[35]

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[32] Tsembris, S., Gulcur, L., and Nakae, M. (2004). Housing First, consumer choice, and harm reduction for homeless individuals with a dual diagnosis. *American Journal of Public Health, 94(4):* 651-656.
[33] Greenwood, R., McDaniel, N, Winkel, G, and Tsembris, S. (2005). Decreasing psychiatric symptoms by increasing choice in services for adults with histories of homelessness. *American Journal of Community Psychiatry, 36* (3/4): 223-238.
[34] For example, Colorado Coalition for the Homeless. (2013). *Developing an Integrated Health Care Model for Homeless and Other Vulnerable Populations in Colorado*. Denver, CO: Colorado Coalition for the Homeless.
[35] For example, The National Center on Family Homelessness. (2012). *Evaluating Programs: Strategies and Tools for Providers Serving Homeless Families.* Needham, MA: National Center on Family Homelessness.; and HUD's *Homeless Programs Resource Allocation and Monitoring Strategies* presentation (2010) available at https://www.hudexchange.info/resource/1725/homeless-programs-resource-allocation-and-monitoring-strategies/