

February 16, 2016

RE: "Measuring Homelessness:
Tenure, Characteristics and Movement of Clients at the Human Services Campus"
By Eric Hedberg, PhD, Bill Hart, Melissa Kovacs, PhD

Dear Reader,

The Funders Collaborative including the Arizona Department of Housing, City of Phoenix, Maricopa County, and Valley of the Sun United Way, has come together to begin to address the need to transition individuals in temporary overflow shelter situations into appropriate housing interventions.

Together we continue to work on short and long term solutions to improve safe, overnight shelter for thousands of individual at the Human Services Campus. In order to use data to inform long-term solutions the Funders commissioned Morrison Institute for Public Policy at Arizona State University to analyze the utilization of shelter services at the Human Services Campus.

We thank Morrison Institute for their in-depth and informative analysis and recommendations for action. The Funders are sharing this report with interested stakeholders, including the Regional Continuum of Care to End Homelessness, in the hopes it can be useful in the current planning for funding of service coordination, emergency shelter, rapid rehousing, and permanent supportive housing.

The Funders Collaborative encourages a discussion of the recommendations for action as proposed as potential steps to improve the data available to the community for short-term and long-term planning.

To end homelessness, we must understand it.

Sincerely,

Michael Traylor, Arizona Department of Housing,
Bruce Liggett, Maricopa County Human Services Department
Moises Gallegos, City of Phoenix Human Services Department
Amy Schwabenlender, Valley of the Sun United Way



MEASURING HOMELESSNESS

Tenure, Characteristics and Movement of Clients
at the Human Services Campus

February 2016

By Eric Hedberg, PhD
Bill Hart
Melissa Kovacs, PhD

ASU Morrison Institute
for Public Policy

ARIZONA STATE UNIVERSITY

Executive Summary

This report examines the use of shelter services at the Human Service Campus during the approximately 10-week period from May 15, 2015 through July 31, 2015. Its goal is to provide basic information on the characteristics and patterns of movement of people experiencing homelessness who accessed shelter services immediately before, during and immediately after this period. Analyzing these data is meant to aid the Funders Collaborative in drawing broader conclusions about the area's overall homeless population and in formulating policies to best serve it.

This analysis was based on HMIS data provided to Morrison Institute by Community Information and Referral Services. During the analysis period, three providers were responsible for shelter services: Central Arizona Shelter Services (CASS), the Human Services Campus Overflow Shelter (HSCOS), and the Watkins Family Shelter.

General Findings

The data reveal that the Campus provided shelter services during the analysis period to two basic populations: 1) A majority of clients who interact with the campus for brief periods and eventually leave (destinations unknown), and 2) a core group of regular clients. These regular clients tend to stay for a larger number of nights, but are also more transient. They are more likely to be scored for rapid rehousing, are older, and are more likely to be Non-Hispanic Whites. During the approximately 10-week study period, clients spent an average of 20 nights on Campus. However, great variation exists across clients, with a small fraction spending 60 or more nights. On the other hand, 48 percent of the clients spend 10 or fewer nights on the campus.

Of the 3,223 individuals served during the analysis period, about half are new (i.e., do not have previous records), and most of these new individuals end up leaving. That is, about 51 percent of the clients served during the period had previous records, and a little more than half of them ended up leaving.

The data also show that new clients – those without a record of having utilized campus shelter prior to the analysis period – are less likely to appear in the post-analysis data. This represents the “churn” of clients.

Most (41 percent) of the clients served during the analysis period were between the ages of 45 and 61. The next largest group (27 percent) reported ages between 18 and 34. A smaller percentage was between 35 and 44 (21 percent). The balance of the clients were youths and older individuals.

Most of the clients served were Non-Hispanic Whites (45 percent). The next most heavily represented group was Black or African American individuals (26 percent). Looking at clients by VI-SPDAT scores shows that about 20 percent of those served during the analysis period were

CoC Board 2-22-2016 Item #8 Morrison
HSC Analysis

not scored on the VI-SPDAT scale and about half scored for rapid rehousing. The remaining clients were split between general assistance and permanent supportive housing. On average, clients scoring GA or RRH spent the most nights on campus. Concerning age and race/ethnicity, the data show that older clients spent a longer time on campus, on average, than younger clients; Non-Hispanic Whites, Blacks, and Asians spent the most nights on campus, and Native Americans and Hispanics spent less time.

Breaking down the client numbers by provider, the data show that CASS averaged about 328 clients per night with a downward trend over the analysis period. The monthly total for CASS was about 800 in June and 700 in July. There was an upward trend in the number of clients served by HSCOS; this provider sheltered about 416 clients per night, on average. The monthly totals for HSCOS were about 1,300 clients. Watkins averaged about 132 clients per night, with a monthly total of about 300 individuals.

We conclude with recommendations for actions that will increase our understanding of the homelessness community: an external validation study of data quality; increased HMIS data collection points; and a full study of all HMIS provider data.

Table of Contents

| | |
|--|-----------|
| EXECUTIVE SUMMARY | 1 |
| GENERAL FINDINGS..... | 1 |
| TABLE OF FIGURES | 4 |
| INTRODUCTION | 5 |
| DATA AND ANALYSIS PLAN | 6 |
| <i>Providers</i> | 8 |
| ANALYSIS PLAN | 8 |
| KEY VARIABLES..... | 9 |
| <i>Campus Use Pattern</i> | 9 |
| <i>VI-SPDAT Score Group</i> | 10 |
| <i>Age</i> | 11 |
| <i>Race/Ethnicity</i> | 12 |
| ANALYSIS..... | 13 |
| CHARACTERISTICS OF CLIENTS BY CAMPUS-USE PATTERN | 13 |
| <i>VI-SPDAT Distribution</i> | 13 |
| <i>Age Distribution</i> | 13 |
| <i>Race Distribution</i> | 14 |
| UNIQUE CLIENTS SERVED..... | 14 |
| <i>Persons Served Campus Wide</i> | 14 |
| <i>Persons Served by Provider</i> | 16 |
| CAMPUS USE METRICS..... | 19 |
| <i>Total Number of Nights on Campus by Key Variables</i> | 21 |
| <i>Percent of Time on Campus by Key Variables</i> | 23 |
| FLOW BETWEEN PROVIDERS | 26 |
| RECOMMENDATIONS | 27 |
| EXTERNAL VALIDATION STUDY | 27 |
| INCREASE DATA COLLECTION POINTS | 27 |
| FULL STUDY OF ALL PROVIDER DATA..... | 28 |
| APPENDIX: UNIQUE CLIENTS SERVED BY DATE ON CAMPUS | 29 |

Table of Figures

| | |
|---|----|
| Figure 1: Excerpt Data from HMIS System | 6 |
| Figure 2: Excerpt Data from Event-Person Database | 7 |
| Figure 3: Available Data by Date and Selected Period of Analysis | 8 |
| Figure 4: Organization of Clients' Campus Use Pattern Based on Date of Events | 9 |
| Figure 5: Campus Use Pattern Distribution | 10 |
| Figure 6: Distribution of VI-SPDAT Scores | 11 |
| Figure 7: Distribution of Ages..... | 12 |
| Figure 8: Distribution of Client Race/Ethnicity | 13 |
| Figure 9: Percentage Breakdown of Demographic Characteristics by Campus Use Pattern..... | 13 |
| Figure 10: Unique Clients Sheltered on Campus by Date During Analysis Period..... | 15 |
| Figure 11: Unique Clients Sheltered on Campus in June and July 2015 | 15 |
| Figure 12: Unique Clients Sheltered by CASS by Date During Analysis Period..... | 16 |
| Figure 13: Unique Clients Sheltered by CASS in June and July 2015 | 17 |
| Figure 14: Unique Clients Sheltered by HSCOS by Date During Analysis Period | 17 |
| Figure 15: Unique Clients Sheltered by HSCOS in June and July 2015 | 18 |
| Figure 16: Unique Clients Sheltered by Watkins by Date During Analysis Period..... | 18 |
| Figure 17: Unique Clients Sheltered by Watkins in June and July 2015 | 19 |
| Figure 18: Distribution of the Total Number of Nights on Campus During the Analysis Period .. | 20 |
| Figure 19: Distribution of the Percent of Time on Campus..... | 20 |
| Figure 20: Mean Total Number of Nights on Campus by Campus Use Pattern | 21 |
| Figure 21: Mean Total Number of Nights on Campus by VI SPDAT Score..... | 22 |
| Figure 22: Mean Total Number of Nights on Campus by Age | 22 |
| Figure 23: Mean Total Number of Nights on Campus by Race/Ethnicity..... | 23 |
| Figure 24: Mean Percent of Time on Campus by Campus Use Pattern | 24 |
| Figure 25: Mean Percent of Time on Campus by VI-SPDAT Score | 24 |
| Figure 26: Mean Percent of Time on Campus by Age | 25 |
| Figure 27: Mean Percent of Time on Campus by Race/Ethnicity | 26 |
| Figure 28: Number of Clients by Provider (diagonal) and Number of Common Clients between Providers (off diagonal)..... | 26 |

Introduction

Efforts to assist people experiencing homelessness in Phoenix and the Valley have been pursued for years by public agencies, advocates, foundations, healthcare workers, faith-based organizations and others. Yet the task remains a formidable one: Every night hundreds of men, women and children subsist with few or none of the basic necessities, beginning with clean, safe shelter. The problem has been exacerbated by last summer's closure of the men's overflow shelter and the parking lot adjacent to the Human Services Campus. A public-private partnership (the "Funders Collaborative") has stepped forward to provide a crucial answer to the greater shelter needs that have resulted. Besides being crucial, however, their answer is also temporary.

As it considered ways to effect a longer-term solution, the Funders Collaborative determined that it lacked basic information about the dimensions of the problem it faced – including numbers of homeless individuals utilizing shelter services, their demographic characteristics, lengths of stay and patterns of movement on and off the Human Services Campus. Thus this report.

Morrison Institute for Public Policy was asked to provide information upon which the Collaborative could formulate policy. Using data from the Homeless Management Information System (HMIS), this report seeks to organize and analyze existing data on shelter use beyond what the current data system could allow. Focusing on a 10-week period in the summer of 2015, this analysis measures key components of Campus shelter services to understand who uses which provider's services, how often and/or for what periods they use them, and how long they remain clients of the campus before moving on.

This study is clearly limited. For one thing, it is based upon a body of existing HMIS data whose validity and scope may well vary. For another, this examination can say nothing about where Campus clients go when they leave. Still, it is hoped that the following analysis will provide a useful first step for the ongoing Funders Collaborative campaign against homelessness in Phoenix and the Valley.

Data and Analysis Plan

HMIS data were provided to Morrison Institute by Community Information and Referral Services. The original database, organized around services rendered at the Human Services Campus, contained one row for one service rendered to one unique individual. Each service was assigned a beginning and end date. Figure 1 provides an excerpt. For example, client 338 was provided emergency shelter from August 11, 2015 to August 12, 2015. This service is reflected by a single row of data. Client 362, on the other hand, received two services, shelter and assessment, during the same period, and thus he/she has two rows of data.

Figure 1: Excerpt Data from HMIS System

| Client ID | Provider ID | Provider Program Type Code | Entry Date | Exit Date |
|-----------|--------------------------------------|------------------------------|------------|-----------|
| 338 | SVDP Emergency Shelter (LDRC)(40930) | Emergency Shelter (HUD) | 8/11/2015 | 8/12/2015 |
| 343 | Welcome Center (HSC)(39975) | Coordinated Assessment (HUD) | 3/3/2015 | 3/3/2015 |
| 362 | CASS Single Adult Shelter(14681) | Emergency Shelter (HUD) | 5/13/2014 | 5/17/2014 |
| 362 | Welcome Center (HSC)(39975) | Coordinated Assessment (HUD) | 5/13/2014 | 5/13/2014 |
| 363 | LDRC Emergency Shelter(40929) | Emergency Shelter (HUD) | 7/7/2015 | 7/8/2015 |
| 363 | LDRC Emergency Shelter(40929) | Emergency Shelter (HUD) | 7/12/2015 | 7/13/2015 |

However, in order to determine the number of unique individuals served across the campus, and by which provider, the data were organized in what is called an “event-person” database. In this approach, each unique individual has a record for each night that he/she accepted shelter, as recorded in the HMIS system. Each interaction is coded with the provider and service, but now each date of service is a row of data, as seen in Figure 2. This level of detail provides the ability for statistical software to count unique individuals, regardless of service or provider, for each night, or number of services for individuals across the campus for each date.

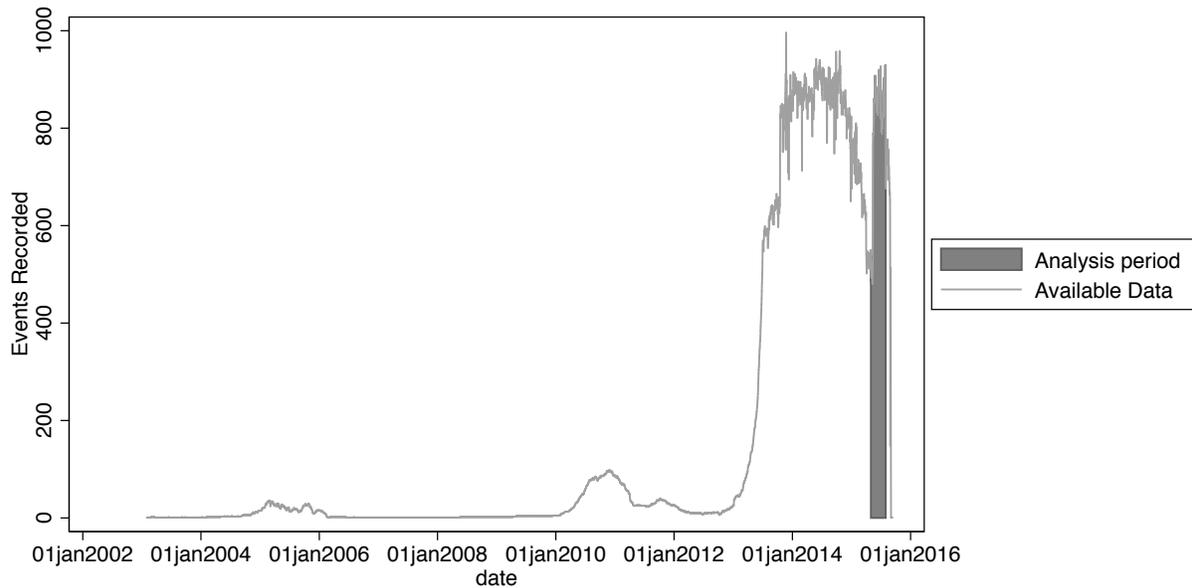
CoC Board 2-22-2016 Item #8 Morrison
HSC Analysis

Figure 2: Excerpt Data from Event-Person Database

| id | provider | services | date | event |
|-----|---------------------------|------------------------|-----------|-------|
| 338 | SVDP Emergency Shelter | Emergency Shelter | 11aug2015 | 1 |
| 338 | SVDP Emergency Shelter | Emergency Shelter | 12aug2015 | 1 |
| 343 | Welcome Center | Coordinated Assessment | 03mar2015 | 1 |
| 362 | Welcome Center | Coordinated Assessment | 13may2014 | 1 |
| 362 | CASS Single Adult Shelter | Emergency Shelter | 13may2014 | 1 |
| 362 | CASS Single Adult Shelter | Emergency Shelter | 14may2014 | 1 |
| 362 | CASS Single Adult Shelter | Emergency Shelter | 15may2014 | 1 |
| 362 | CASS Single Adult Shelter | Emergency Shelter | 16may2014 | 1 |
| 362 | CASS Single Adult Shelter | Emergency Shelter | 17may2014 | 1 |
| 363 | Welcome Center | Coordinated Assessment | 06jul2015 | 1 |
| 363 | LDRC Emergency Shelter | Emergency Shelter | 07jul2015 | 1 |
| 363 | LDRC Emergency Shelter | Emergency Shelter | 08jul2015 | 1 |
| 363 | LDRC Emergency Shelter | Emergency Shelter | 12jul2015 | 1 |
| 363 | LDRC Emergency Shelter | Emergency Shelter | 13jul2015 | 1 |
| 363 | LDRC Emergency Shelter | Emergency Shelter | 14jul2015 | 1 |
| 363 | LDRC Emergency Shelter | Emergency Shelter | 17jul2015 | 1 |
| 363 | LDRC Emergency Shelter | Emergency Shelter | 18jul2015 | 1 |

The data covered shelter events from February 2003 to September 2015. However, as is shown in Figure 3, the data prior to January of 2014 are sparse. The Funders Collaborative directed Morrison to focus on events after May 15, 2015, as that date marked a substantial improvement in the consistency and reliability of the data. In order to determine whether a client, having visited the campus, did or did not return, we shortened the analysis period by about a month to create a “boundary” date by which we could separate clients into those who return and those who do not. Thus, the analysis period is May 15, 2015 through July 31, 2015.

Figure 3: Available Data by Date and Selected Period of Analysis



Providers

During the analysis period, three providers were responsible for shelter services: Central Arizona Shelter Services (CASS), the Human Services Campus Overflow Shelter (HSCOS), and the Watkins Family Shelter. As the data broke down each of these three into component parts, the subsidiary operations were collapsed as follows: CASS combines the provider codes for CASS GPD Transitional Veteran's Program, CASS Men's Overflow Shelter, and CASS Single Adult Shelter; HSCOS combines the provider codes for LDRC Emergency Shelter, SVDP Emergency Shelter, and the Sandlot; the final, stand-alone provider is coded as Watkins.

Analysis Plan

The first step was a descriptive analysis of the clients served during this period. This included percentage breakdowns by the pattern of campus use (defined below), VI-SPDAT score group, age, and race. This report also provides demographic information as it varies by pattern of campus use.

Next, this report provides counts of unique individuals from May 1, 2015 to July 31, 2015, by night and month, for campus and individual providers.

The analysis also sought to understand other metrics of campus engagement. These included number of nights spent on campus during the analysis period, and what percent of the time that between a client's first interaction and their last interaction was spent on the campus.

Finally, we examined the extent to which different providers share clients.

Key Variables

In this section, we describe the key variables and how they were coded using the HMIS data system.

Campus Use Pattern

An important variable used in the analysis is pattern of campus use. This variable is constructed using all available data to separate clients into four patterns of campus use, based on the timing of their shelter use before, during and after the analysis period. This process required the client to have at least two nights of emergency shelter (a small percentage had only a single night). The categorization is based on two criteria: first, is he/she a new client as of May 15, 2015, and second, does he/she continue to engage the campus after July 31, 2015. The cross of these two criteria create four categories: 1) new repeater (no records prior to May 15th, but with records after July 31), 2) new leaver (no records prior to May 15th, but without records after July 31st), 3) old repeater (with records prior to May 15th, and with records after July 31st), and 4) old leaver (with records prior to May 15th, but no records after July 31st).

Figure 4: Organization of Clients' Campus Use Pattern Based on Date of Events

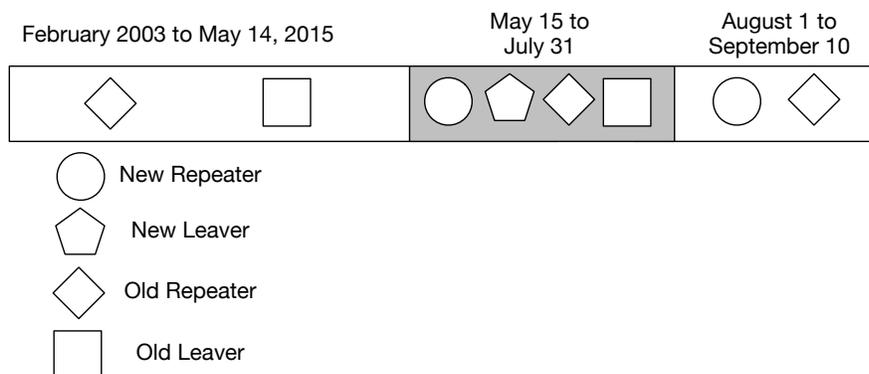


Figure 4 is a visualization of how the clients were categorized. The chart consists of three rectangles, representing the three phases of the available data. The first is the data prior to the analysis period, the middle represents the analysis period, and the third rectangle is the post-analysis period. All clients included in the analysis have records during the approximately 10-week analysis period.

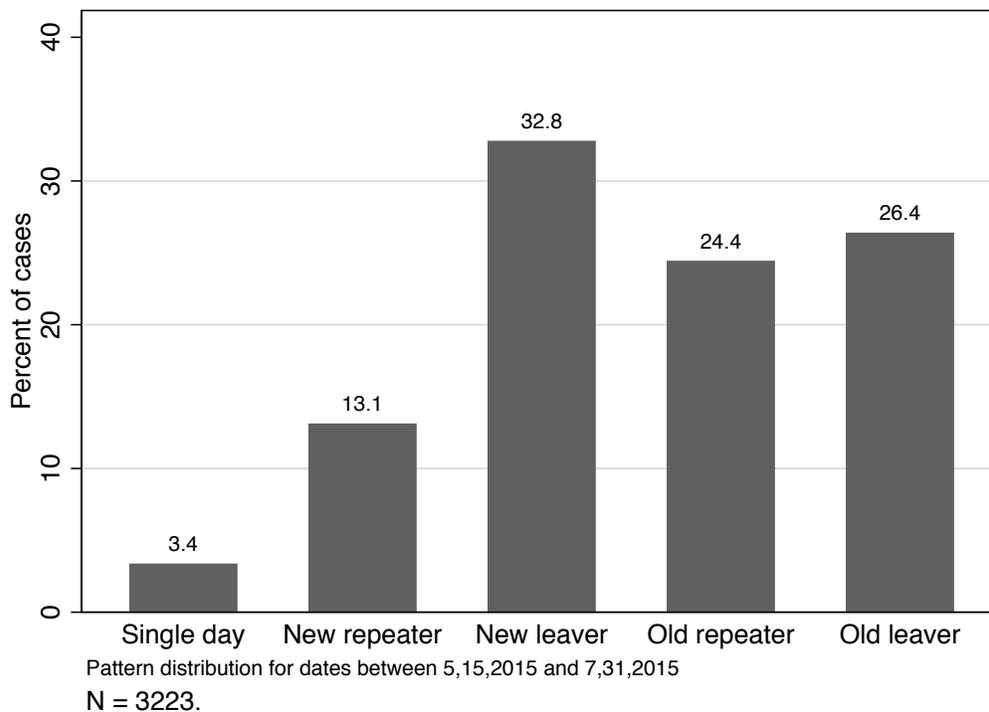
The circle in Figure 4 represents a client that does not have a record before the analysis period, but does have a record after the analysis period; thus, they are a **new repeater**. The pentagon represents a client with records only during the analysis period, and thus are **new leavers**. The diamond represents a client with a record before, during, and after the analysis period and thus are **old repeaters**, and the square represents a client with a record before and during the analysis period, but without records after the analysis period, and thus are **old leavers**.

In general terms, new repeaters represent new cases that remain on the campus for extended periods of time. New leavers represent clients that churn on and off campus relatively quickly

(but are not necessarily housed). Old repeaters represent clients with extended and continuing stays on the campus. Old leavers represent clients with a longer history on the campus but who eventually leave.

Figure 5 provides a percentage breakdown of campus-use patterns. Of the 3,223 individuals served during the analysis period, about half are new (i.e., do not have previous records), and most of these new individuals end up leaving. That is, about 51 percent of the clients served during the period had previous records, and a little more than half of them ended up leaving. The take-home message from this figure is that new clients -- those without a previous record of having utilized campus shelter -- are less likely to appear in the post-analysis data. This represents the “churn” of new clients. However, it must be stressed that these data are limited: It is not known where clients go when they leave the shelters examined in this study, be it to housing, another facility, or the street.

Figure 5: Campus Use Pattern Distribution



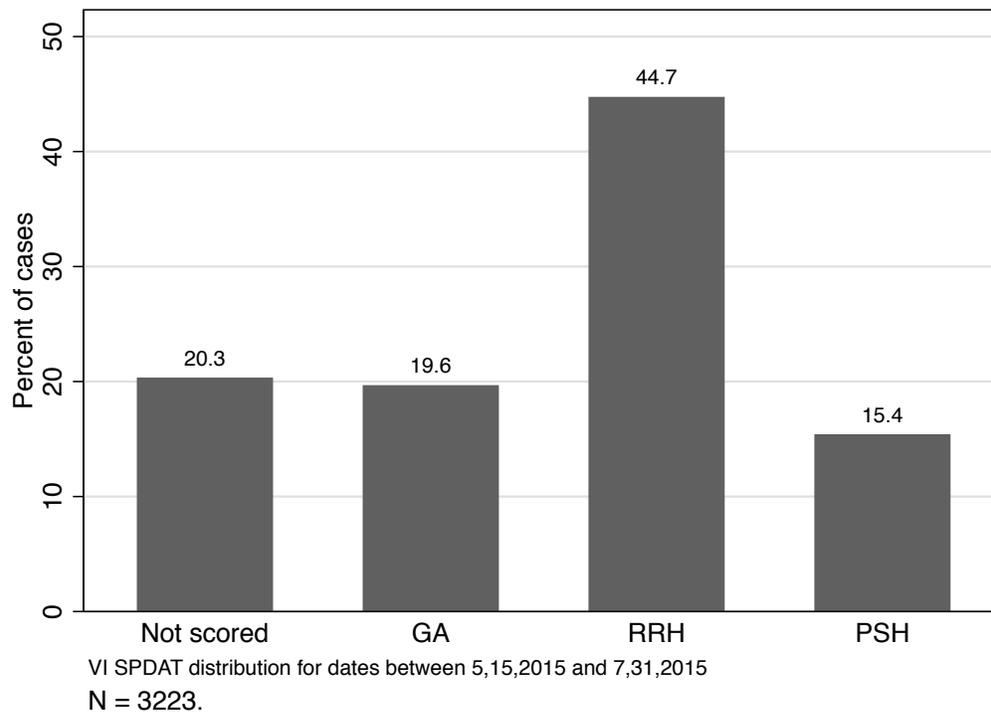
VI-SPDAT Score Group

The VI-SPDAT score is an assessment instrument that can be applied to understand the criticality and vulnerability of those experiencing homelessness. It results in a score ranging from 0 to 17 to guide housing solutions. Meaningful categories from this score include general

assistance (GA, scores from 0 to 4), rapid rehousing (RRH, scores from 5 to 9), and permanent supportive housing (PSH, scores from 10 to 17).

Figure 6 provides a percentage breakdown of the meaningful VI SPDAT categories. About 20 percent of the clients served during the analysis period are not scored, and about half are scored for rapid rehousing. The remaining clients are split between general assistance and permanent supportive housing.

Figure 6: Distribution of VI-SPDAT Scores



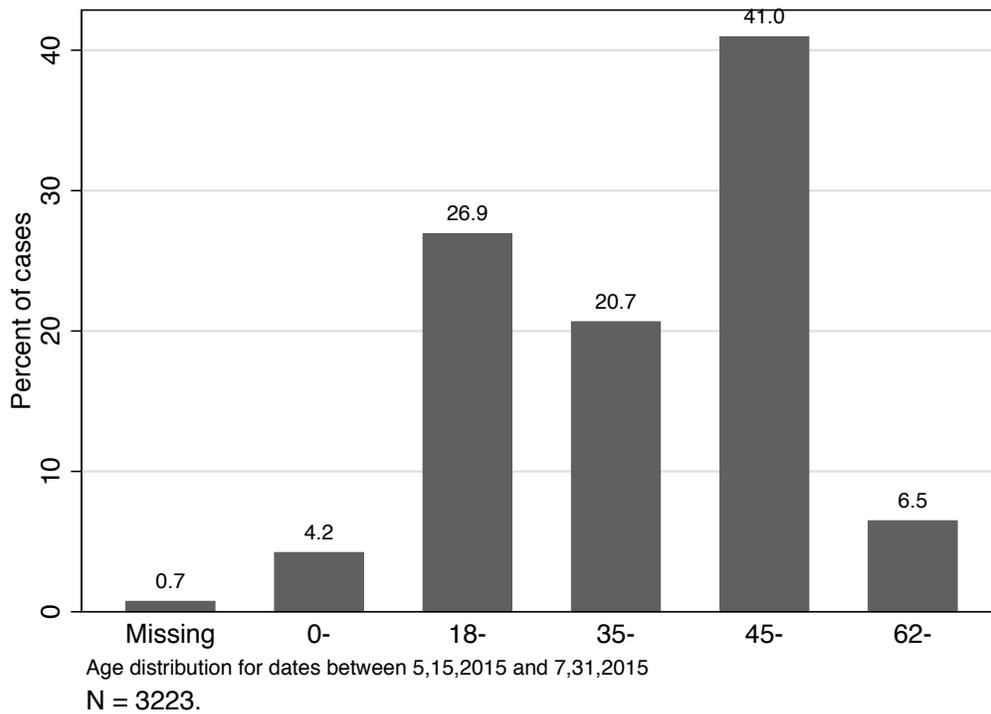
Age

Age was calculated based on the birthdate recorded in the HMIS system. This variable was categorized as follows:

- 0 to 17
- 18 to 34
- 35 to 44
- 45 to 61
- 62 and older

Figure 7 provides a percentage breakdown of the age groups represented by the clients served during the analysis period. Most (41 percent) are between the ages of 45 and 61. The next largest group (27 percent) comprises ages between 18 and 34. A smaller percentage is between 35 and 44 (21 percent). The balance of the clients are youths and older individuals.

Figure 7: Distribution of Ages



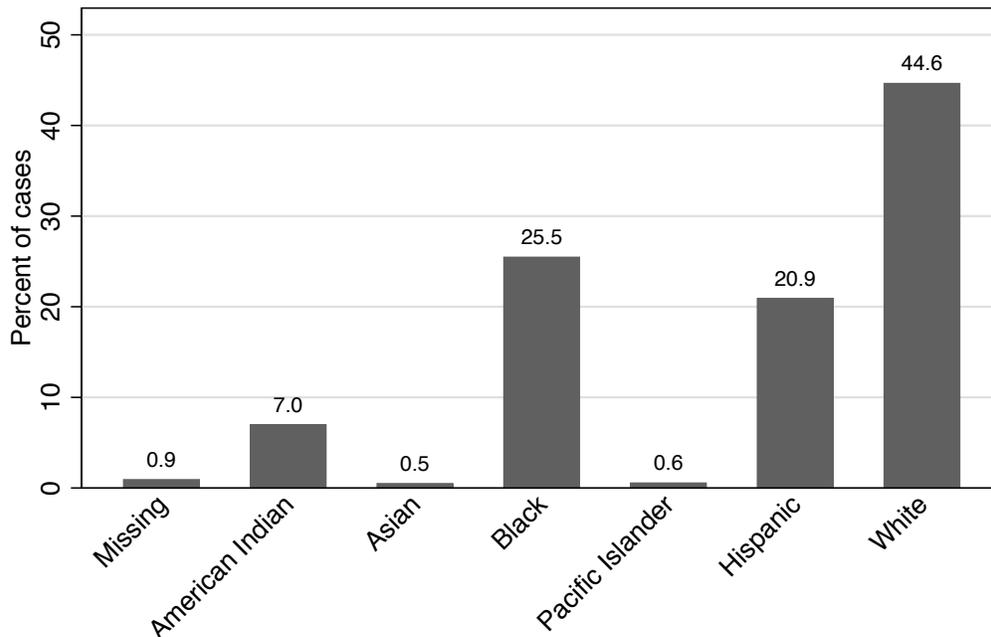
Race/Ethnicity

Race and Ethnicity were combined into a single measure with the following categories:

- American Indian
- Asian
- Black/African American
- Pacific Islander
- Hispanic
- Non-Hispanic White

Figure 8 provides the race/ethnicity breakdown of the clients served during the analysis period. Most of the clients are Non-Hispanic Whites (45 percent). The next most heavily represented group are Black or African American individuals (26 percent). About 21 percent of the clients are Hispanic or Latino/a, and about 7 percent are American Indian.

Figure 8: Distribution of Client Race/Ethnicity



Age distribution for dates between 5,15,2015 and 7,31,2015
 N = 3223.

Analysis

Characteristics of Clients by Campus-Use Pattern

Figure 9 provides an analysis of the demographic indicators by campus-use patterns. Each sub-table was statistically tested using the Pearson Chi-square test and all patterns were statistically significant – meaning that they are unlikely to have occurred by chance. For example, New Repeaters differ statistically from New Leavers, and all other categories statistically differ from each other.

VI-SPDAT Distribution

New repeaters and old repeaters were most likely to be categorized for rapid rehousing (49 and 54 percent, respectively), whereas new leavers were most likely to be not scored (36 percent). Old leavers were also most likely to be categorized for rapid rehousing (47 percent).

Age Distribution

The repeaters, both old and new, and the old leavers were most likely to be older individuals, whereas the new leavers tended to be younger.

Figure 9: Percentage Breakdown of Demographic Characteristics by Campus Use Pattern

| | New Repeater | New Leaver | Old Repeater | Old Leaver |
|-----------------------|--------------|------------|--------------|------------|
| VI-SPDAT | | | | |
| Not Scored | 15% | 36% | 7% | 13% |
| GA | 21% | 16% | 21% | 23% |
| RRH | 49% | 35% | 54% | 47% |
| PSH | 15% | 13% | 18% | 17% |
| Age | | | | |
| 0- | 5% | 8% | 0% | 3% |
| 18- | 27% | 32% | 19% | 27% |
| 35- | 20% | 22% | 20% | 20% |
| 45- | 42% | 31% | 55% | 43% |
| 62- | 5% | 7% | 7% | 6% |
| Race/Ethnicity | | | | |
| American Indian | 9% | 6% | 8% | 6% |
| Asian | 0% | 1% | 0% | 1% |
| Black | 26% | 24% | 24% | 29% |
| Pacific Islander | 1% | 1% | 0% | 0% |
| Hispanic | 20% | 25% | 19% | 19% |
| White | 44% | 43% | 48% | 45% |

Analysis of Clients from May 15 to July 31, 2015. All Patterns Statistically Significant.

Race Distribution

Whereas there were differences in campus-use patterns by age and VI-SPDAT scores, there were few differences in racial breakdowns. The exception is that new leavers tended to be more represented by Hispanic clients than other campus patterns.

Unique Clients Served

Using our person-level data, it is possible to calculate the number of unique clients served by each provider on each date, and to calculate the total number of unique individuals, regardless of provider, for each date. Figures 10-17 that follow show results of our person-level data at the campus, and the raw data for these results is listed in the Appendix at the end of this document.

Persons Served Campus Wide

During the analysis period, the campus sheltered an average of 876 clients per night. Figure 10 presents the daily totals as a bar graph. However, many of the clients served are repeaters, given that monthly totals of unique individuals are approximately 2000 (see Figure 11).

Figure 10: Unique Clients Sheltered on Campus by Date During Analysis Period

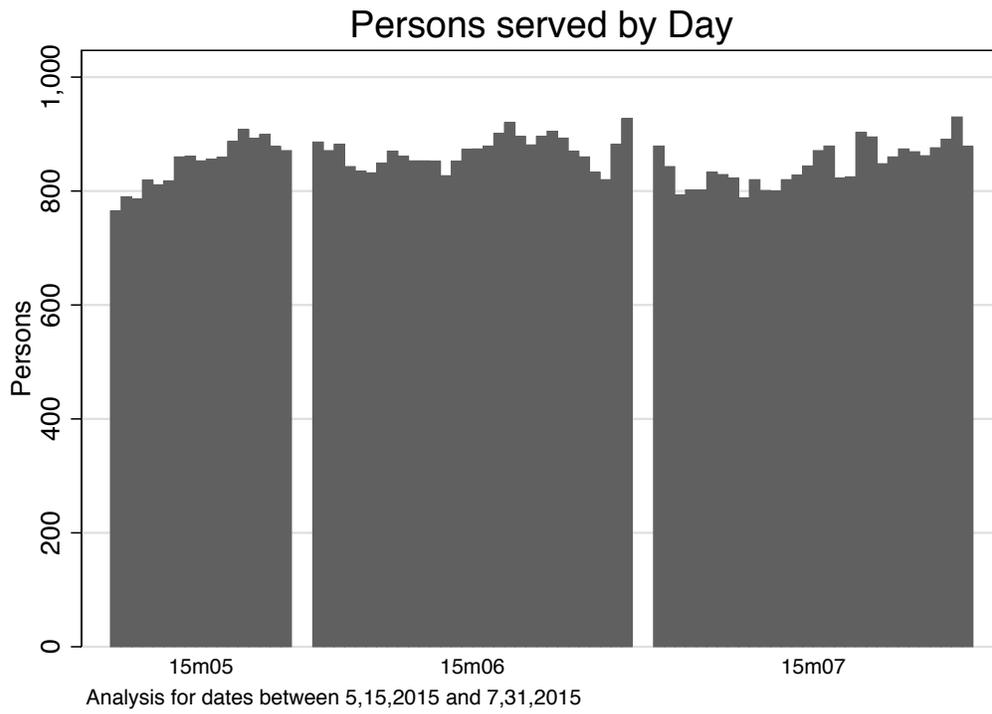
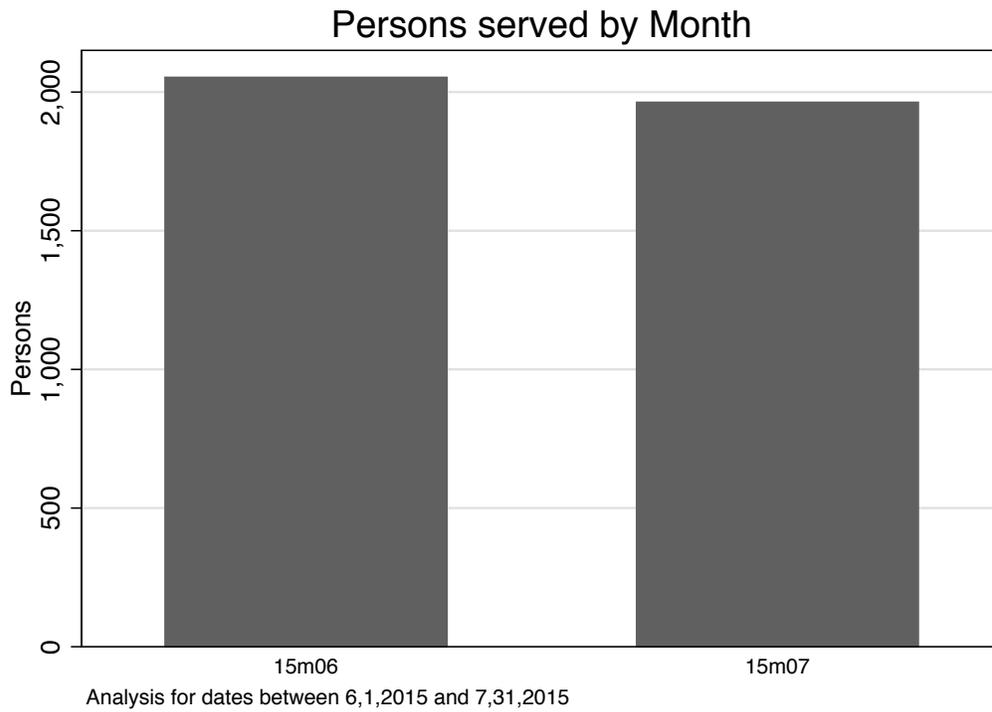


Figure 11: Unique Clients Sheltered on Campus in June and July 2015



Persons Served by Provider

Next, we present the number of individuals served by each of the three providers. Figure 12 presents the totals by night for CASS, which averaged about 328 clients per night) with a downward trend over time. The monthly total for CASS was about 800 in June and 700 in July (see Figure 13).

This downward trend is the opposite of the upward trend in the number of clients served by HSCOS (see Figure 14). This provider served about 416 clients per night on average. The monthly totals for HSCOS were about 1300 clients (see Figure 15).

Watkins served the least number of clients, averaging about 132 clients per night (see Figure 16), with a monthly total of about 300 individuals (see Figure 17).

Figure 12: Unique Clients Sheltered by CASS by Date During Analysis Period

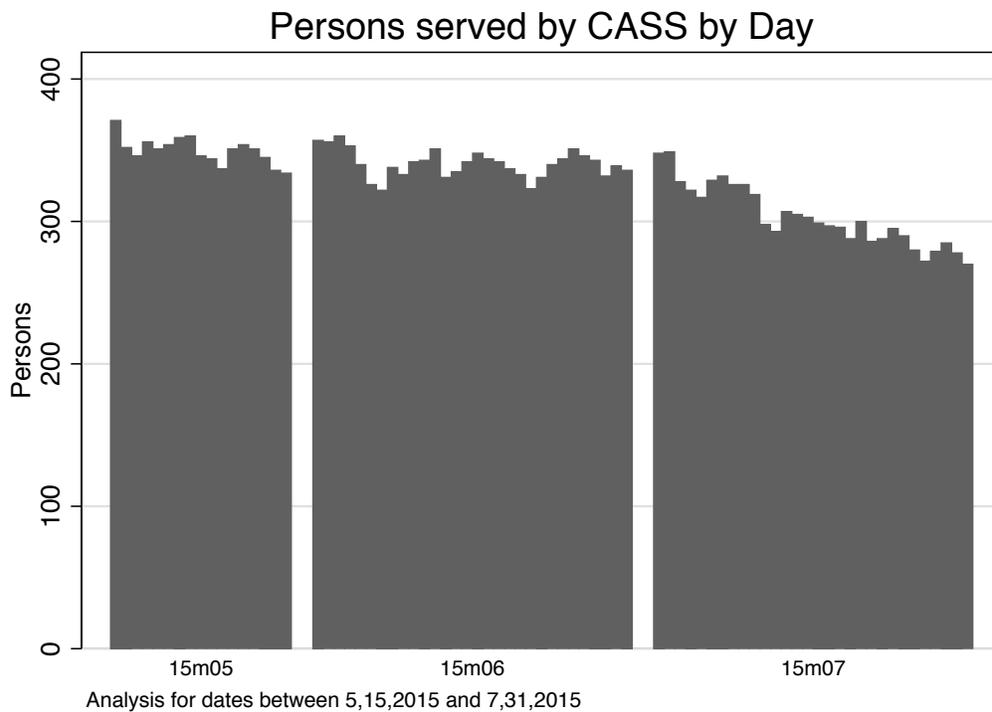


Figure 13: Unique Clients Sheltered by CASS in June and July 2015

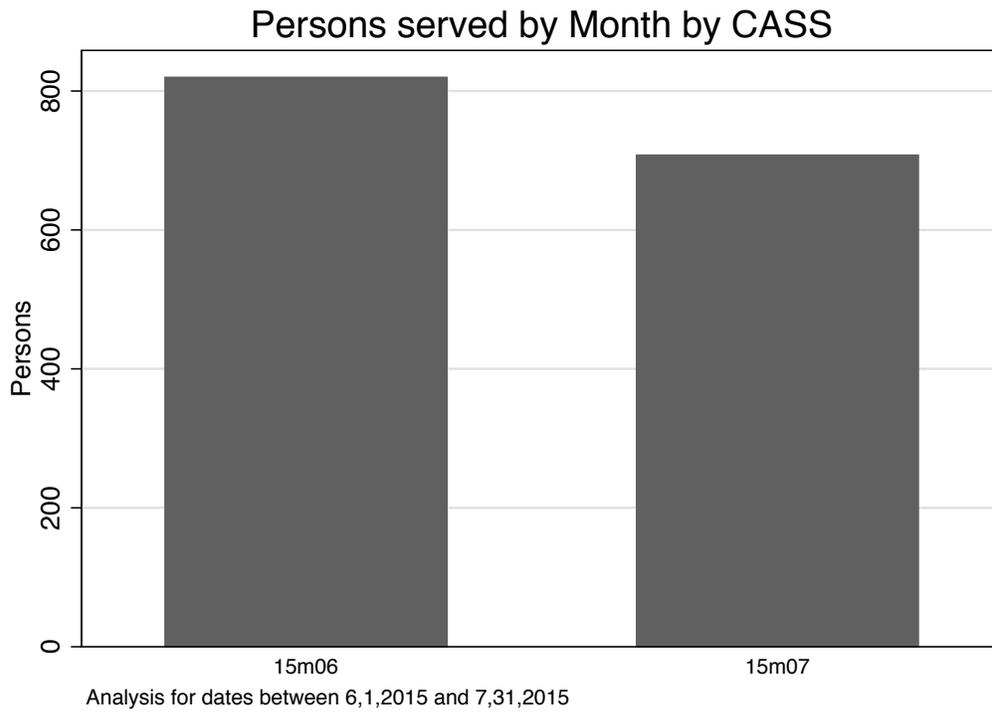


Figure 14: Unique Clients Sheltered by HSCOS by Date During Analysis Period

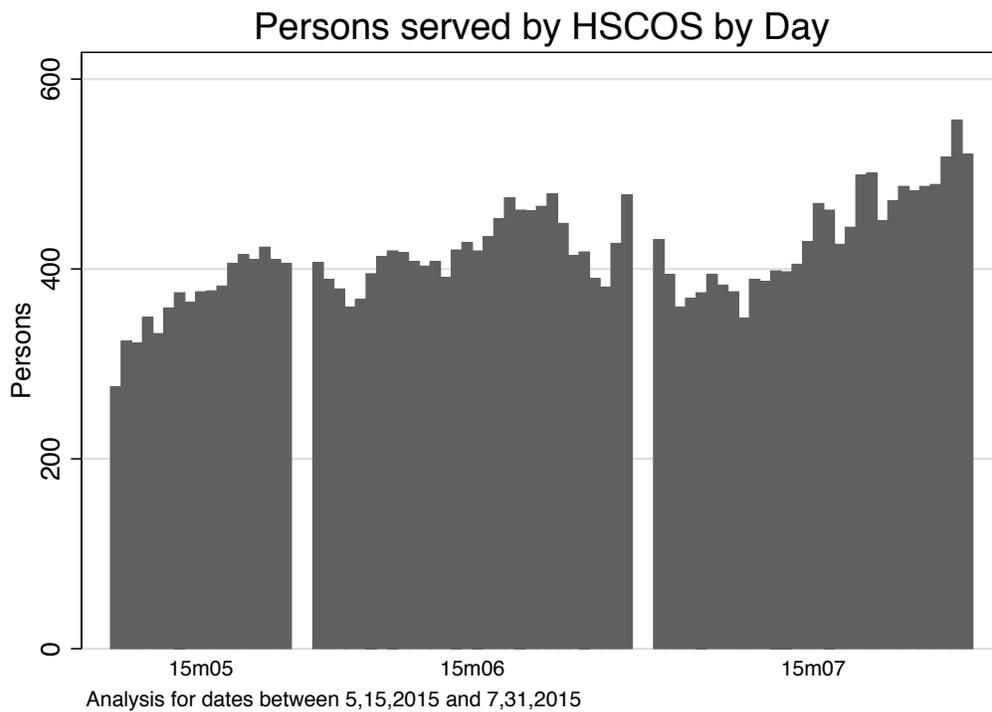


Figure 15: Unique Clients Sheltered by HSCOS in June and July 2015

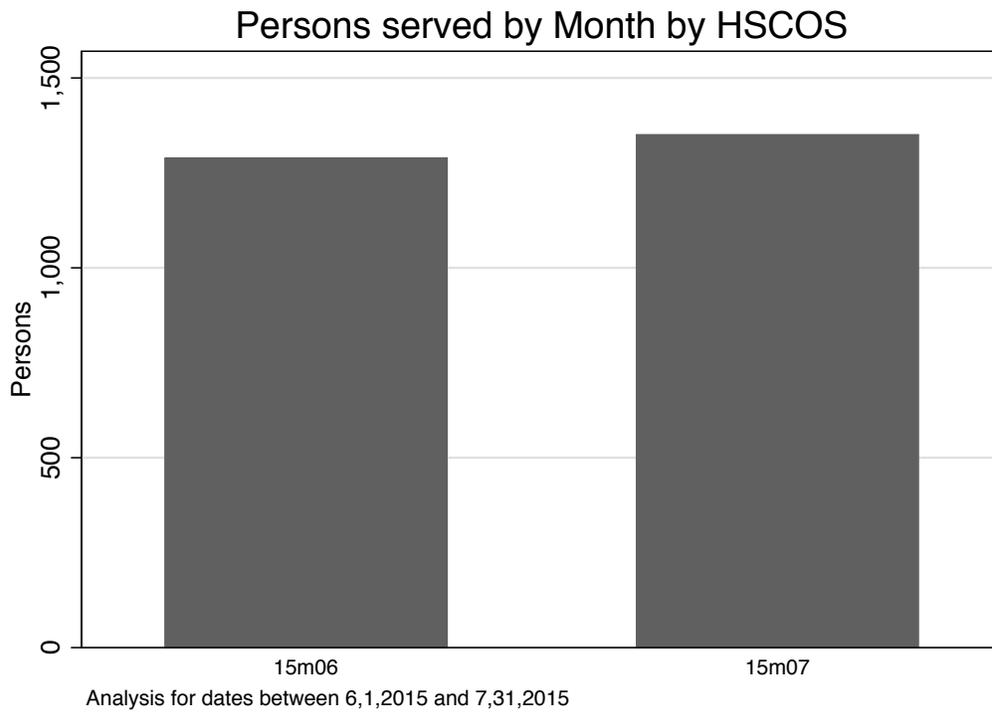


Figure 16: Unique Clients Sheltered by Watkins by Date During Analysis Period

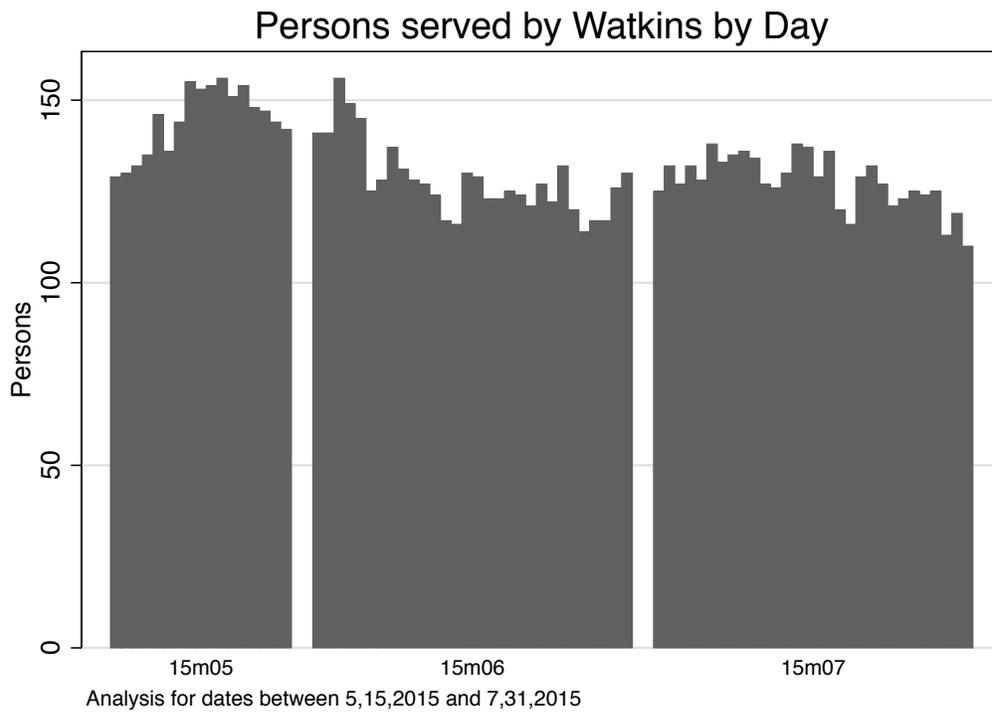
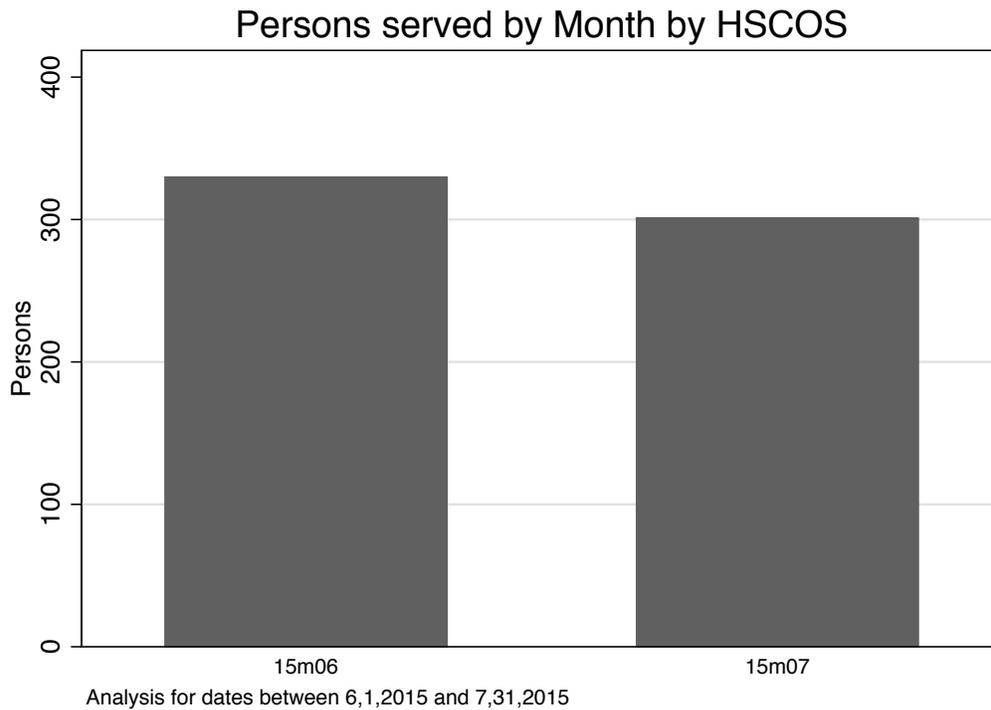


Figure 17: Unique Clients Sheltered by Watkins in June and July 2015



Campus Use Metrics

The daily totals and the monthly totals of clients served indicate that many are sheltered for multiple nights. So another analysis was conducted to look at the variation in the number of nights spent on the campus, and how much of the total span of time was actually spent on the campus. In other words, if a client has records starting on night X, with intermittent events until night Y, what percentage of the nights between Y and X did the client spend on campus?

These metrics are first examined for all clients, then analyzed to understand the variation across different client groups.

During the analysis period, the average number of nights on campus for the 3,223 clients is about 20. However, an examination of Figure 18 indicates that most of the clients spend a small number of nights on campus. In fact, 48 percent of the clients spend 10 or fewer nights on the campus.

However, the notion that many clients are transient is misplaced. On average, clients spend about 87 percent of their nights on campus. Moreover, looking at Figure 19, it is evident that most spend their entire span of events on the campus. In fact, 63 percent of the clients spend 100 percent of their time on the campus.

Figure 18: Distribution of the Total Number of Nights on Campus During the Analysis Period

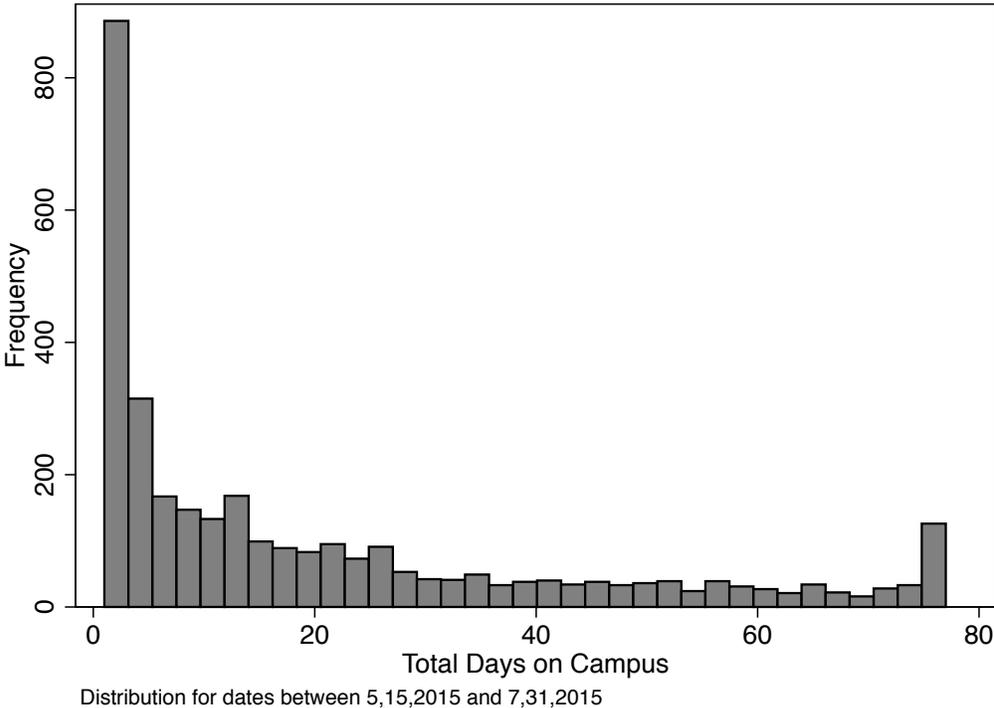
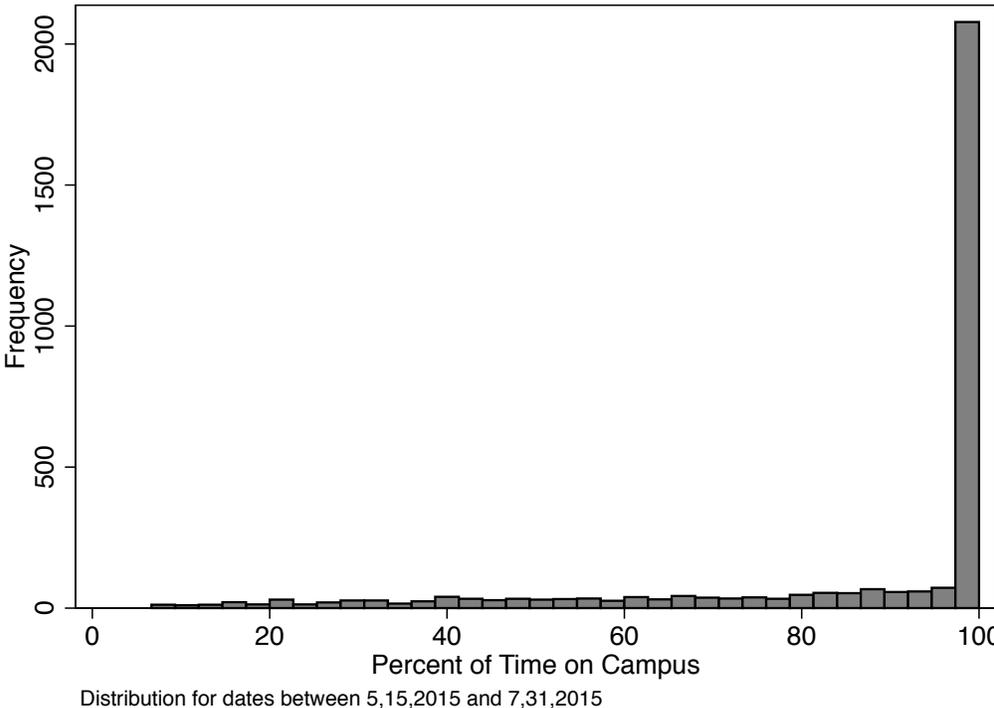


Figure 19: Distribution of the Percent of Time on Campus



Total Number of Nights on Campus by Key Variables

In this section we examine the total number of nights on the campus during the analysis period as a function of the demographic variables. Statistical significance is determined by use of an analysis of variance F test that tests whether the averages for each group are the same.

The mean number of nights spent on the campus varies significantly with the demographic variables. Figure 20 shows that the old repeaters spent, on average, the most time on the campus compared with clients in the other campus-use categories. Old repeaters spend 60 percent more time on campus than the new repeaters, on average. This difference is statistically significant.

Figure 20: Mean Total Number of Nights on Campus by Campus Use Pattern

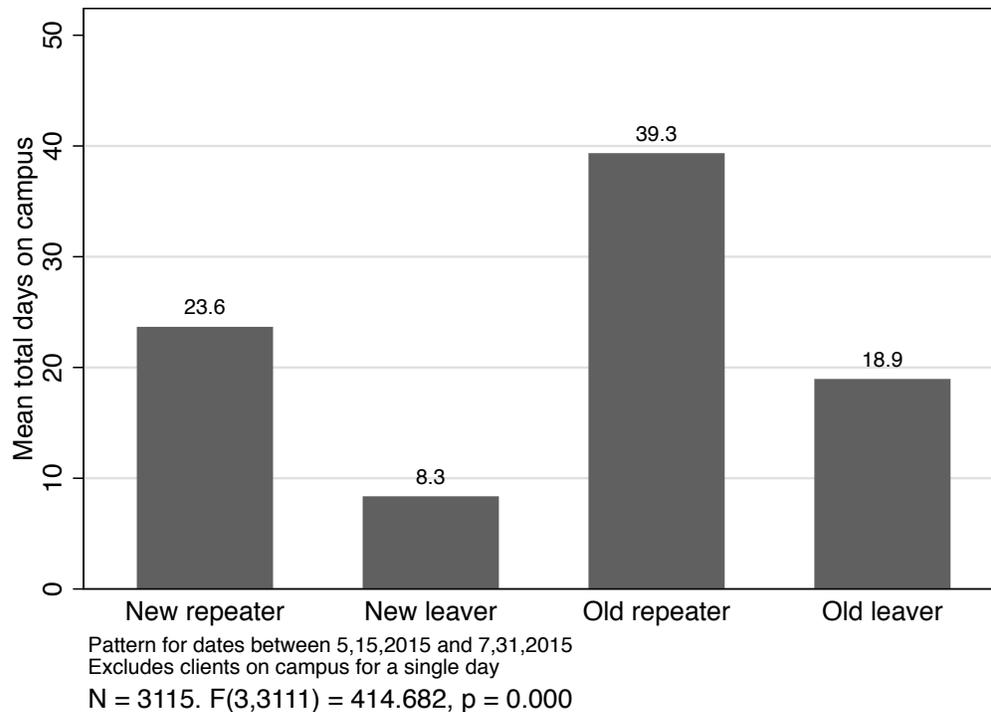


Figure 21 shows that the total number of nights spent on campus varies by VI-SPDAT score, with those in general assistance and rapid rehousing spending the most nights on campus, on average.

Number of nights spent on campus also varies by age, as Figure 22 shows, where older clients spend a longer time on campus.

Figure 21: Mean Total Number of Nights on Campus by VI-SPDAT Score

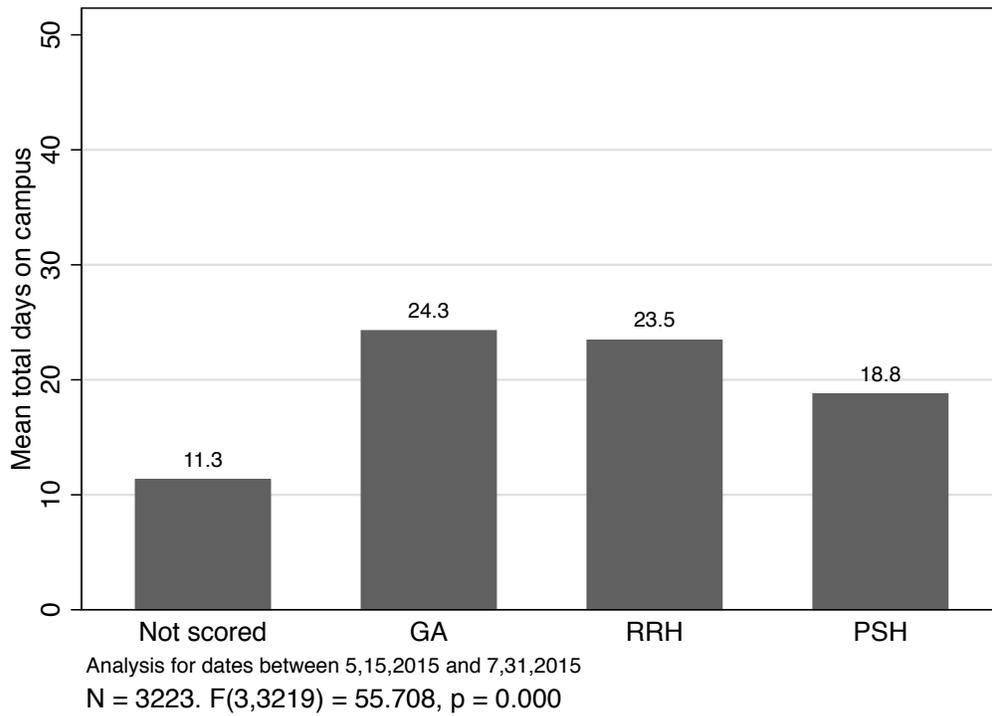
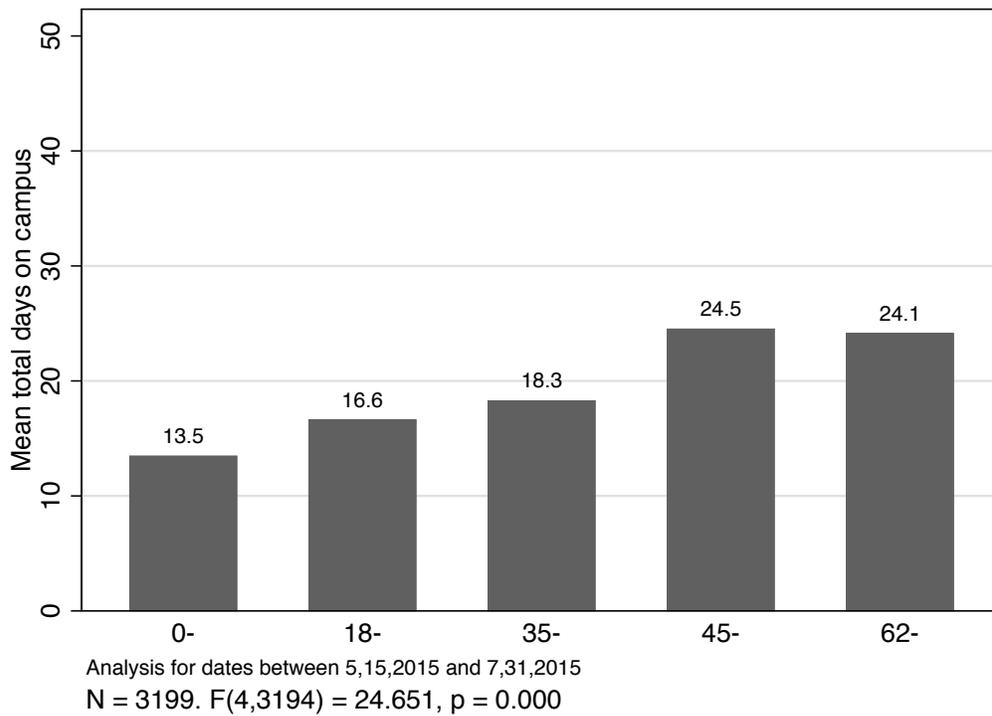
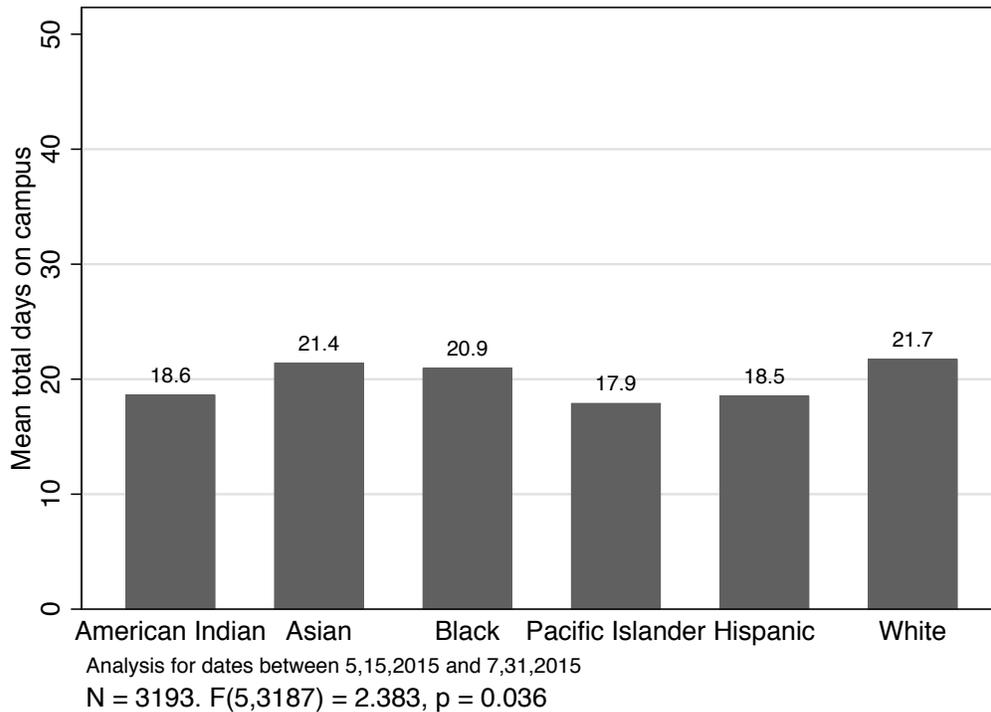


Figure 22: Mean Total Number of Nights on Campus by Age



Finally, race and ethnicity is also a factor in the total number of nights spent on the campus, with Non-Hispanic Whites, Blacks, and Asians spending the most time, on average, and American Indians and Hispanics spending less time on the campus.

Figure 23: Mean Total Number of Nights on Campus by Race/Ethnicity



Percent of Time on Campus by Key Variables

Next, we move to a similar type of analysis on the percent of time spent on the campus. The percent of time on campus is a measure of transiency, where lower values indicate more “coming and going.” Figure 24 showcases that repeaters are more likely to be transient, because their average percent is lower, compared to the leavers.

Figure 25 is also revealing in that it shows that the percent of time on campus is negatively correlated with the VI-SPDAT score—those with higher scores are more transient.

Figure 24: Mean Percent of Time on Campus by Campus Use Pattern

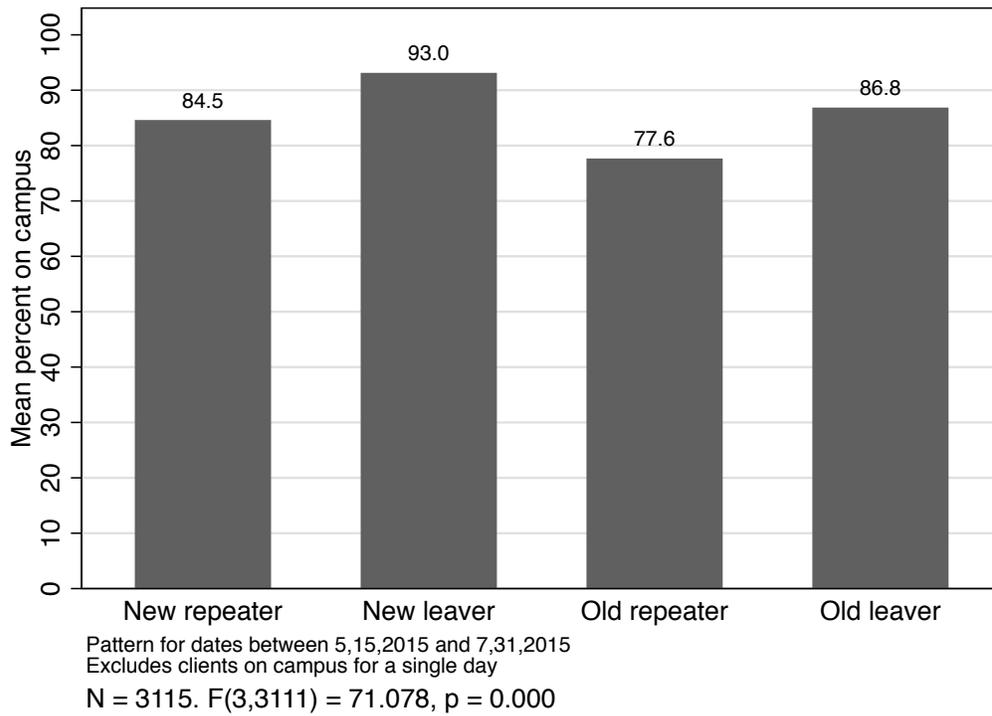


Figure 25: Mean Percent of Time on Campus by VI SPDAT Score

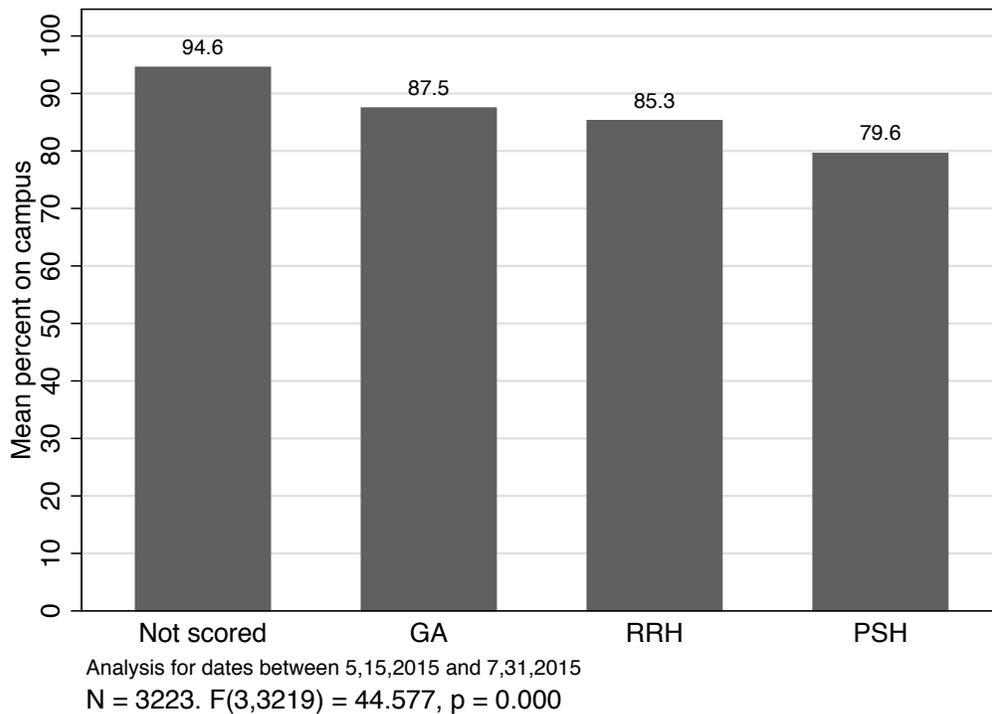
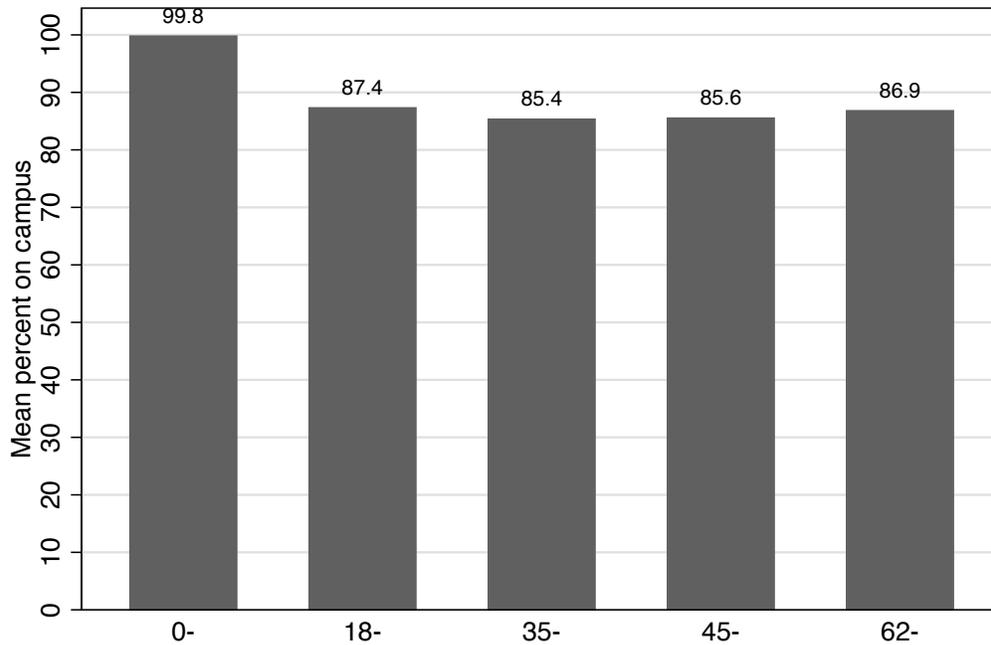


Figure 26 outlines an important age effect: youths are likely to spend their entire time on campus, whereas adults are comparatively more transient.

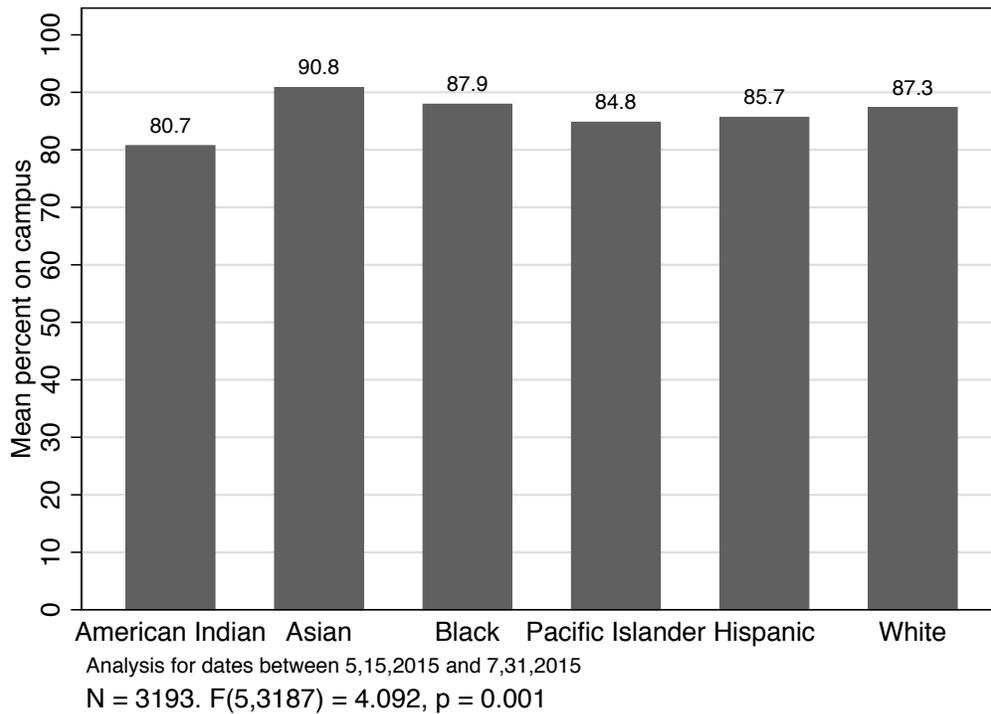
Finally, Figure 27 shows that American Indians spend less of their total time on campus than other racial or ethnic groups.

Figure 26: Mean Percent of Time on Campus by Age



Analysis for dates between 5,15,2015 and 7,31,2015
 N = 3199. $F(4,3194) = 12.636$, $p = 0.000$

Figure 27: Mean Percent of Time on Campus by Race/Ethnicity



Flow between Providers

A final analysis presented in Figure 28 showcases the number of unique clients served by each provider during the analysis period and the number that were common to any two providers. The diagonal numbers indicate the number of unique clients served by each provider. Thus, CASS served 1,381 during the analysis period, HSCOS served 2,119, and Watkins served 574. However, for example, CASS and HSCOS shared 732 clients during the analysis period, which is about half of the CASS client base and a third of the HSCOS base.

Figure 28: Number of Clients by Provider (diagonal) and Number of Common Clients between Providers (off diagonal)

| Provider | CASS | HSCOS | Watkins |
|----------|-------|-------|---------|
| CASS | 1,381 | 732 | 69 |
| HSCOS | 732 | 2,119 | 91 |
| Watkins | 69 | 91 | 574 |

While this report is highly descriptive, some key takeaways are available to provide insight in the policy making. The campus serves two basic populations: a majority of clients that interact with the campus for brief periods and eventually leave (but we don't know to where), and a core group of regular clients. These regular clients tend to stay for a greater number of nights, but are also more transient. They are more likely to be scored for rapid rehousing, are older, and are more likely to be Non-Hispanic White.

Recommendations

After conducting this analysis and spending time with these HMIS data, we conclude with three recommendations:

1. Conduct an external validation study to assess data quality, as a next step;
2. Increase data collection points within the system, to strengthen the data network;
3. Conduct a full study of all provider data in HMIS, or hire an HMIS data analyst.

We do not recommend further analyses of this data examined in this report, and detail these recommendations below.

External Validation Study

We recommend that a study be conducted to assess the quality of HMIS data. This study could take any of the following forms, or combinations of the following options:

- Construct event-history tables / data-point case studies at the client level. Here, we recommend directly interviewing clients regarding their homelessness histories, then tracing these observations in the HMIS system to check for accuracy in data capture. This is a method aimed at revealing potential errors in the HMIS system and determining error sources. This will require significant observation and interview time, along with following up on client-level information in the data system.
- Conduct a comprehensive “audit” of data points along their entire path through the HMIS system. This would include observing providers’ interactions with clients; observing providers’ entry of information from their interactions into the HMIS system; following the data into CI&R to check for its accuracy once in CI&R’s data structure; and looking at how the data points display in CI&R reporting. This approach would follow the data points’ path from inception / entry to reporting, revealing places where errors are likely to occur along the data path. Accomplishing this in a representative manner would likely require a few months’ work.
- Record differences between providers’ “shadow” data systems and the same data in the HMIS. Some providers keep a duplicate capture of the data they enter into HMIS; this recommended procedure would test the duplicate data against the identical data in HMIS. Any differences would be reported and analyzed. This would capture the same sources of data error as the option listed above (“comprehensive audit”); but it could be a faster and cheaper data-quality assessment than the first two options.

Increase Data Collection Points

We recommend increasing opportunities to track clients’ homelessness experiences. In particular, we suggest closer partnering with law enforcement and emergency psychiatric

service providers to record when and where clients experiencing homelessness are intersecting with the criminal justice and mental health systems. This could broaden our understanding of homelessness. We recognize that this recommendation – to add data-capture points into law enforcement and healthcare interactions – would be no easy task and represent a significant system change, yet we feel it would greatly enrich HMIS data.

Full Study of All Provider Data

This report accessed HMIS data from a limited set of providers during a limited time period. As detailed below, this limited the predictive capabilities of this study and the generalizability of our conclusions. As a result, we strongly recommend one of the following two options:

1. A full “dump” of all HMIS data as a follow-up to this report’s work. This would allow us to conduct prescriptive analyses of the data; would provide a powerful population dataset of seasonal and demographic variability among homelessness experiences; allow for a full understanding of service utilization across all types of providers. This approach is limited by the expenditure necessary to support a researcher to house such a data file, clean it, and analyze it. As well, the data will be time-limited and would not incorporate new client information. Our next option remedies these limitations.
2. Hire a data analyst, presumably housed at CI&R, to provide ongoing support to the homelessness provider and funder community. This person would be fully immersed in the HMIS data and committed to continually analyzing these data for quality issues and reporting on service-utilization trends. This analyst would be available to answer questions involving HMIS data from funders and providers. This option might be cheaper than the “data dump” option listed above and would allow for analysis of continuous data not truncated by time. Morrison Institute could assist with the recruitment, hiring, and training of the analyst.

All three of these recommendations would significantly increase our understanding of homelessness in our community, and serve as ideal follow-ups to the analyses in this report. We don’t recommend further analyses using the data discussed in this report. We believe we have exhausted the reliable conclusions that can be made using the data excerpt we had. The short timeframe of these data also preclude reliable projections of the number and types of individuals experiencing homelessness.

Appendix: Unique Clients Served by Date on Campus

| | Campus | CASS | HSCOS | Watkins | Date | Campus | CASS | HSCOS | Watkins |
|-------------|---------------|---------------|---------------|---------------|---------|--------|------|-------|---------|
| Mean | 875.52 | 328.18 | 415.81 | 131.53 | 6/21/15 | 905 | 323 | 461 | 121 |
| SD | 37.66 | 25.25 | 50.77 | 11.15 | 6/22/15 | 924 | 331 | 466 | 127 |
| Date | | | | | 6/23/15 | 941 | 340 | 479 | 122 |
| 5/15/15 | 776 | 371 | 276 | 129 | 6/24/15 | 924 | 344 | 448 | 132 |
| 5/16/15 | 806 | 352 | 324 | 130 | 6/25/15 | 885 | 351 | 414 | 120 |
| 5/17/15 | 800 | 346 | 322 | 132 | 6/26/15 | 878 | 346 | 418 | 114 |
| 5/18/15 | 840 | 356 | 349 | 135 | 6/27/15 | 850 | 343 | 390 | 117 |
| 5/19/15 | 829 | 351 | 332 | 146 | 6/28/15 | 830 | 332 | 381 | 117 |
| 5/20/15 | 849 | 354 | 359 | 136 | 6/29/15 | 892 | 339 | 427 | 126 |
| 5/21/15 | 878 | 359 | 375 | 144 | 6/30/15 | 944 | 336 | 478 | 130 |
| 5/22/15 | 880 | 360 | 365 | 155 | 7/1/15 | 904 | 348 | 431 | 125 |
| 5/23/15 | 875 | 346 | 376 | 153 | 7/2/15 | 875 | 349 | 394 | 132 |
| 5/24/15 | 875 | 344 | 377 | 154 | 7/3/15 | 815 | 328 | 360 | 127 |
| 5/25/15 | 875 | 337 | 382 | 156 | 7/4/15 | 823 | 322 | 369 | 132 |
| 5/26/15 | 908 | 351 | 406 | 151 | 7/5/15 | 820 | 317 | 375 | 128 |
| 5/27/15 | 923 | 354 | 415 | 154 | 7/6/15 | 861 | 329 | 394 | 138 |
| 5/28/15 | 909 | 351 | 410 | 148 | 7/7/15 | 848 | 332 | 383 | 133 |
| 5/29/15 | 915 | 345 | 423 | 147 | 7/8/15 | 837 | 326 | 376 | 135 |
| 5/30/15 | 890 | 336 | 410 | 144 | 7/9/15 | 810 | 326 | 348 | 136 |
| 5/31/15 | 882 | 334 | 406 | 142 | 7/10/15 | 842 | 319 | 389 | 134 |
| 6/1/15 | 905 | 357 | 407 | 141 | 7/11/15 | 812 | 298 | 387 | 127 |
| 6/2/15 | 886 | 356 | 389 | 141 | 7/12/15 | 817 | 293 | 398 | 126 |
| 6/3/15 | 895 | 360 | 379 | 156 | 7/13/15 | 834 | 307 | 397 | 130 |
| 6/4/15 | 862 | 353 | 360 | 149 | 7/14/15 | 848 | 305 | 405 | 138 |
| 6/5/15 | 853 | 340 | 368 | 145 | 7/15/15 | 869 | 303 | 429 | 137 |
| 6/6/15 | 846 | 326 | 395 | 125 | 7/16/15 | 897 | 299 | 469 | 129 |
| 6/7/15 | 863 | 322 | 413 | 128 | 7/17/15 | 895 | 297 | 462 | 136 |
| 6/8/15 | 894 | 338 | 419 | 137 | 7/18/15 | 842 | 296 | 426 | 120 |
| 6/9/15 | 881 | 333 | 417 | 131 | 7/19/15 | 848 | 288 | 444 | 116 |
| 6/10/15 | 878 | 342 | 408 | 128 | 7/20/15 | 928 | 300 | 499 | 129 |
| 6/11/15 | 873 | 343 | 403 | 127 | 7/21/15 | 919 | 286 | 501 | 132 |
| 6/12/15 | 883 | 351 | 408 | 124 | 7/22/15 | 866 | 288 | 451 | 127 |
| 6/13/15 | 839 | 331 | 391 | 117 | 7/23/15 | 888 | 295 | 472 | 121 |
| 6/14/15 | 871 | 335 | 420 | 116 | 7/24/15 | 900 | 290 | 487 | 123 |
| 6/15/15 | 900 | 342 | 428 | 130 | 7/25/15 | 887 | 280 | 482 | 125 |
| 6/16/15 | 896 | 348 | 419 | 129 | 7/26/15 | 883 | 272 | 487 | 124 |
| 6/17/15 | 901 | 344 | 434 | 123 | 7/27/15 | 893 | 279 | 489 | 125 |
| 6/18/15 | 918 | 342 | 453 | 123 | 7/28/15 | 916 | 285 | 518 | 113 |
| 6/19/15 | 937 | 337 | 475 | 125 | 7/29/15 | 954 | 278 | 557 | 119 |
| 6/20/15 | 919 | 333 | 462 | 124 | 7/30/15 | 901 | 270 | 521 | 110 |



Eric Hedberg, Ph.D., Senior Research Fellow, Morrison Institute for Public Policy
Bill Hart, Senior Senior Policy Analyst, Morrison Institute for Public Policy
Melissa Kovacs, Ph.D., Principal and Founder, FirstEval, LLC

FEBRUARY 2016 / Established in 1982, Morrison Institute for Public Policy is a leader in examining critical Arizona and regional issues, and is a catalyst for public dialogue. An Arizona State University resource and part of the ASU College of Public Service and Community Solutions, Morrison Institute uses nonpartisan research and communication outreach to help improve the state's quality of life.

MorrisonInstitute.asu.edu