

OVERVIEW OF QUANTITATIVE FINDINGS FROM THE ROADMAP INITIATIVE

*Informing Efforts to Remove Systemic Barriers to Stability for People
Experiencing Homelessness with Complex Needs*



MARCH 2021

PREPARED AND PRESENTED BY

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Introduction

Access to permanent housing, financial security, and quality health care is necessary for leading a healthy life. Persistent systemic inequities deny many Chicagoans access to such foundational stability, particularly residents of communities harmed by segregation, disinvestment, and discrimination.¹ For a few thousand Chicagoans, this lack of stability, compounded in some cases by barriers to managing complex medical and/or behavioral health conditions,² contributes to cycling between the city's emergency shelter system, hospitals, and the Cook County Jail. Despite repeatedly interacting with institutions seeking to serve them – on average spending as many as one out of every five days in an institutional setting – our public and private systems struggle to identify and engage these clients, help address their underlying needs, and remove barriers and offer resources to support them on a pathway to stability. This collective failure comes at incredible personal cost to these residents, their families, and society more broadly.

The Road Map Initiative (RMI) seeks to identify solutions to support people who are cycling across our shelter system, hospitals, and the Cook County Jail. The project combines qualitative insights from policymakers, practitioners, and people with lived experience with a quantitative analysis linking administrative records of people's interactions with the homeless services, health, and criminal legal systems in Chicago.

As part of the RMI, the University of Chicago Health Lab partnered with Smart Policy Works and representatives from key agencies and nonprofits, including All Chicago, the Cook County Sheriff's Office (CCSO), and the Illinois Department of Public Health (IDPH),³ to learn more about people cycling at comparatively high rates between these systems and to identify resources to help them heal and thrive. A key contribution of the quantitative analysis is the successful linkage of administrative records across social sectors to follow patterns of engagement with the hospital system, homeless services, and the Cook County Jail over time.⁴ In order to help inform the design and delivery of services intended to support individuals interacting with multiple systems, our partners hoped to learn more about:

¹ Chicago Department of Public Health. "Healthy Chicago 2.0 Community Health Assessment: Informing Efforts to Achieve Health Equity, 2016-2020). Link last accessed on November 12, 2020 at:

https://www.chicago.gov/content/dam/city/depts/cdph/CDPH/Healthy%20Chicago/HealthyChicago_CHA_4102017.pdf

George, S., et al. "The plunder of Black wealth in Chicago: New findings on the lasting toll of predatory housing contracts." *Durham, NC: Duke University, The Samuel DuBois Cook Center on Social Equity. Retrieved June 1 (2019): 2019.*

²Jenny Gold, Kaiser Health. "Affordable Mental Health Care? It's Getting Even Tougher to Access." *Chicagotribune.com*, Chicago Tribune, 12 Dec. 2019, www.chicagotribune.com/lifestyles/health/sc-hlth-expensive-mental-health-care-1204-20191129-zfjrxkg625bsfb2phpczu3zcmm-story.html.

³ Please note that the conclusions, opinions, and recommendations expressed in this publication are not necessarily the conclusions, opinions, or recommendations of the Illinois Department of Public Health, All Chicago Making Homelessness History, or the Cook County Sheriff's Office.

⁴ In order to respect the privacy of people's personally identifiable information (PII) and Protected Health Information (PHI) and comply with the corresponding laws governing the use of this data, efforts to share people's data across service agencies typically require a lengthy legal approval process. In the case of this report, we received Institutional Review Board approval to

1. **Who** is cycling in and out of institutional settings in the health, homeless services, and criminal legal systems?
2. What do their common **profiles** tell us about what barriers they may face to stability or their potential underlying needs that may be unmet by existing services?
3. How can practitioners **identify** people who are cycling in real-time?
4. How can we **engage** people who are cycling and help them stabilize and thrive?

Therefore, the aim of RMI is to elucidate the unmet needs of people who interact with multiple systems – via shelters and homeless outreach services, hospitals, and the jail – so that interventions, services, and resources can be deployed to effectively engage them.

A Note on Terminology

The goal of the RMI and this report is to improve engagement, services, and available resources for people who face a variety of barriers to stability, many of which result from systemic racism and structural inequities. People who are cycling in multiple systems can overcome incredible adversity, particularly when institutions and practitioners effectively engage and help them navigate (or remove) the complex barriers they face to achieving their unique aspirations. For this report’s quantitative analysis, we examine people’s levels and types of interactions with homeless services, health, and criminal legal systems to learn more about their characteristics and underlying unmet needs.

When deciding how to refer to this population for the purposes of this report, we chose to keep with much of the existing literature and use the term “high users” of services to literally denote people who have higher-than-usual patterns of interactions with these three systems. We have several hesitations about adopting this common terminology. Most importantly, we believe that this language can be interpreted as employing a deficit framing. We also recognize that the terms “users” and “service use” do not perfectly represent this population’s interactions with the systems involved. Particularly in the case of individuals detained in the jail, the term “use” is a misnomer that directly contradicts individuals’ involuntary detention. However, for the sake of consistency with existing literature, we employ these terms as a literal reflection of the source of any record included in this report. While we use the following terms consistently throughout this report, we first wanted to acknowledge these important limitations.

Systems: We use this term as an umbrella reference to denote interactions with the homeless services sector, hospital stays, and / or periods of detention in the Cook County Jail.

Cycling Users: People who interacted with multiple systems, meaning that they had at least one emergency room or hospital inpatient stay, at least one experience accessing homeless services, and/or one detention in the Cook County Jail over the four-year study period.

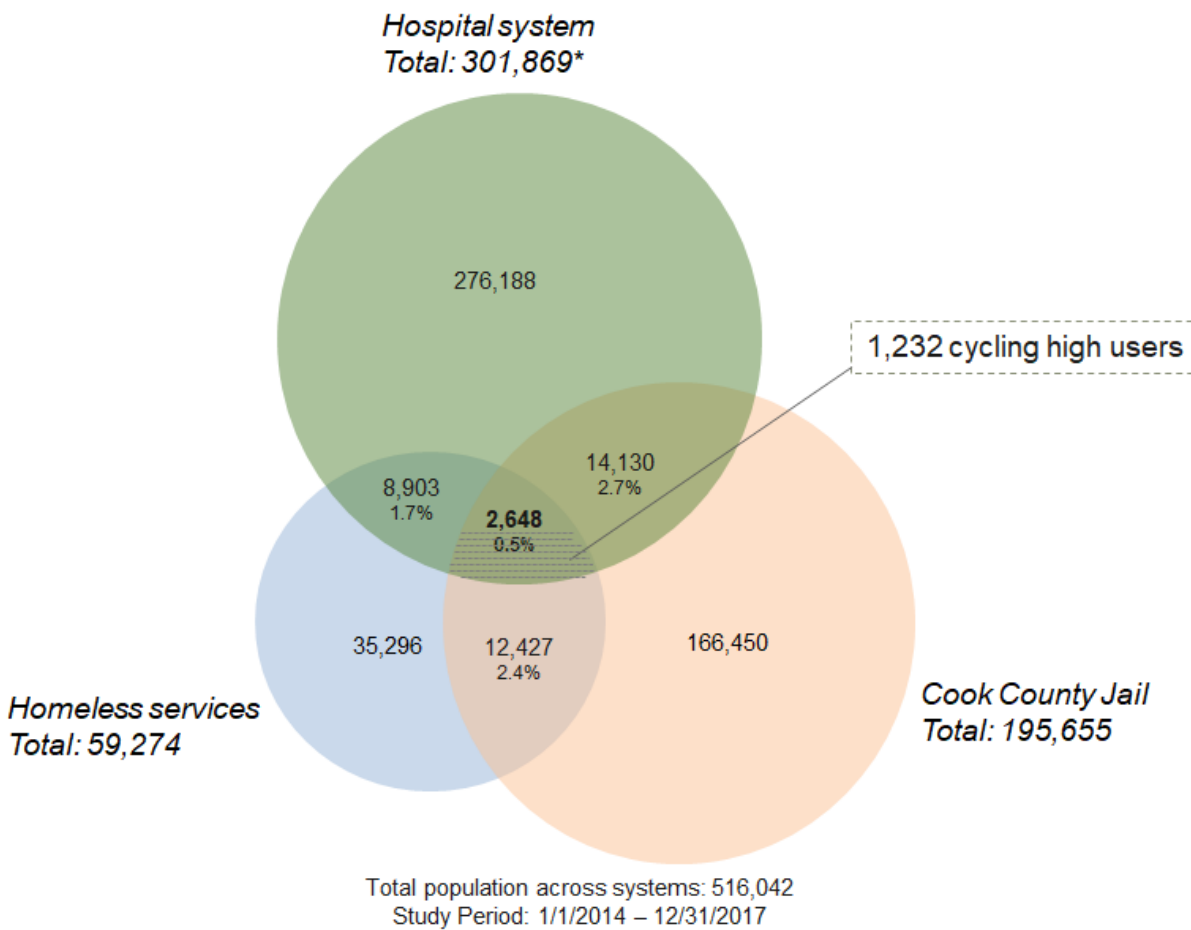
High Users: Individuals who met the definition of a “high user” in at least one system, i.e. people who have comparatively high rates of interactions with that system as compared to the typical client, patient, or person who is detained.

access PII and PHI for research. We have gone to extraordinary but necessary lengths to protect the privacy of people’s personal data. For more information on the extensive procedures we employ to protect the privacy of people’s PII and PHI, please see Appendix A.

Overview of Findings

As part of the Road Map Initiative, the UChicago Health Lab linked administrative records of more than 500,000 people who accessed homeless services, had at least one emergency department (ED) or inpatient hospital stay, or were detained in the Cook County Jail over a four-year period from January 1, 2014 to December 31, 2017. Working together with partners, we also established cutoffs in service utilization to identify people demonstrating high use in each system when compared to the typical homeless services client, person in detention, or hospital patient.

Very few people – only 2,648 – cycled across all three systems during the study period. More commonly, people accessed services in two of the three systems (approximately 35,000 people).



* IDPH only shared records for people who met its own internal definition of a high user or who had at least one stay in the Cook County Jail or accessed homeless services during the study period

Engagement with multiple systems appeared to be indicative of someone’s likelihood of interacting at comparatively high rates: people who cycled across all three systems had the highest probability of

exhibiting patterns of high use in at least one system, and individuals who cycled across two systems were more likely to be a high user⁵ than individuals who were single-system users.

Among the 2,648 people who interacted with all three systems, about half (1,232) were considered a high user of at least one system or were interacting at comparatively high rates across all three systems. We refer to this group as **cycling high users**. Cycling high users exhibited the following characteristics:

- Predominantly male (86%) and Black (84%)
- Relatively older (50 years old on average at first system encounter during the study period)
- Spent an average of 1 out of 5 days in an institutional setting (hospital, emergency shelter, or detained in Cook County Jail)
- Most frequently accessed the hospital for causes associated with mental disorders
- Most common charges for detention in the Cook County Jail reflected substance use disorders (possession of a narcotic) and “crimes of survival” associated with living in extreme poverty and experiencing homelessness (such as retail theft and trespassing)

We found that these cycling high users could be classified into three general profiles:

Older singles with complex needs	Older singles with highest rates of behavioral health challenges	Younger individuals with families
1,059 people (86%)	124 people (10%)	49 people (4%)
Demographics		
<ul style="list-style-type: none"> • 85% Black and 88% male • Majority older than 45 (81%), average age 51 	<ul style="list-style-type: none"> • Most likely to be White (18%) • Oldest cluster (90% over age 45, average age 53) 	<ul style="list-style-type: none"> • Most likely to be Black (94%) and female (57%) • Majority below 45 years old, average age 33
Description		
Exhibit the varied needs and vulnerabilities of cycling high users, including high rates of disabling conditions and medical and mental health needs while detained in Cook County Jail	A particularly vulnerable subset of cycling high users, with the highest rates of medical and mental health services received while detained in Cook County Jail.	Exhibit low rates of behavioral health issues, but high emergency shelter and hospital use

Across the three profiles, mental disorders and circulatory disorders were the most common primary cited reason for inpatient hospital stays.⁶ The main reasons for emergency department (ED) visits were symptoms such as coughing and various pains, musculoskeletal afflictions, and mental health-related disorders. Within Cook County, the majority of both inpatient stays and ED visits occurred in the city of Chicago, most commonly in the zip code of the Illinois Medical District (60612).

⁵ We define this term in Table 1 in the report using cutoffs based on an analysis of service utilization patterns in each system over the four-year study period.

⁶ Older singles with the highest rates of behavioral health conditions presented most often with circulatory disorders, while the other two groups presented with mental disorders more often. The reasons are cited in ICD-9 and ICD-10 codes, and only examine the primary reason for a visit on that day. These administrative codes are not intended to diagnose underlying conditions that may have contributed to reasons for the visit.

An earlier version of this analysis, which focused on cycling high users of only the homeless services system and the Cook County Jail,⁷ showed that people cycling in these two systems were typically younger than three-system cycling high users (with an average age of 38 years rather than 50 years). People in this group had similar profiles to the three-system cycling high users, but almost half (42%) were in a large profile of younger singles, the vast majority of whom were under the age of 35. The younger singles were the least likely of all profiles to access permanent housing in Chicago's Continuum of Care and had many fewer contacts, on average, with the hospital system.

Framework for policy responses

Efforts to engage people cycling between multiple systems must focus on addressing systemic inequities in access to housing, health care, and family-sustaining income and benefits, as well as improved care coordination, follow-up, and service integration. Here in Chicago and across the nation, innovative approaches to help interrupt cycling and promote stability include:

1. Preventing or diverting entry into the homeless services, criminal legal, and emergency health systems whenever possible
2. Screening for cross-system involvement (or investing in shared data infrastructure across social sectors)
3. Offering discharge or transition planning in advance of release from an institutional setting
4. Providing immediate-, medium- and long-term case management services after release from an institutional setting
5. Connecting multi-system clients to a continuum of housing supports including transitional housing, rapid rehousing, or permanent supporting housing, depending on need and eligibility

The Health Lab strives to improve public health, its impacts, and how it is discussed. If you identify an area of our work that you believe misses a critical perspective or employs language that needs improvement, please contact Rebecca Neusteter, Executive Director of the Health Lab, at rebeccaneusteter@UCHICAGO.EDU.

Key Findings and Policy Implications

Throughout this report, we highlight key findings as we present our analysis. We have compiled them here for ease of reference and to draw attention to their possible applications for policy and practice.⁸

⁷ Prior to receiving access to hospital data from the Illinois Department of Public Health, the Health Lab published a preliminary policy brief on cycling high users of the homeless services system and Cook County Jail. *Merging Data from Cook County Jail and the Homeless Management Information System: Preliminary Findings* (September 2019). <https://urbanlabs.uchicago.edu/projects/merging-data-from-cook-county-jail-and-the-homeless-management-information-system-preliminary-findings>

⁸ As partners in this project, All Chicago Making Homelessness History, the Cook County Sheriff's Office, and the Illinois Department of Public Health provided data from Chicago's Homeless Management Information System (HMIS), the Cook County Jail, and hospitals, respectively, and advised the Health Lab's analysis. The policy positions in this report do not necessarily represent the views of All Chicago, the Cook County Sheriff's Office, or the Illinois Department of Public Health.

Key finding #1

It is rare for a person to have interacted with all three systems in a four-year period. There are fewer than 3,000 people in the Chicago area who accessed the hospital, shelter system, and were detained in the Cook County Jail in a four-year period.

Policy implication #1

Involvement with multiple systems itself may be an important indicator that someone faces additional barriers to stability and may benefit from additional engagement and outreach.

Key finding #2

Four out of ten Continuum of Care (CoC)⁹ clients interacted with the hospital system and / or the Cook County Jail in the four-year study period.

Policy implication #2

Given the high rate at which CoC clients interact with other systems, cross-system partnerships to ensure warm handoffs and smooth transitions of care may benefit clients and improve key CoC system performance measures.

Key finding #3

Even though they interact with all three systems, the vast majority of cycling high users (87%) are only high users of one system, or they frequently interact with all three but do not meet the cutoff for high use in any one system.

Policy implication #3

Individual systems may not currently prioritize cycling high users for more intensive services if they are not considered a high user of that system. Policies or programs that identify and incentivize serving people based on their holistic needs – as reflected by their cumulative cross-system involvement, as opposed to their interactions with just one system alone – may help remove administrative roadblocks to additional services and promote stability.

Key finding #4

Cycling high users are 84% Black and 86% male, despite Black people comprising only 24% of the Cook County population and 30% of Chicago's population.

Policy implication #4

Systemic policies that institutionalize discrimination in access to housing; disproportionately incarcerate Black people (and particularly Black men); and result in inequitable access to health care and mental health services all help explain why Black people, and particularly Black men, are overrepresented among cycling high users. Efforts to promote the stability of cycling high users need to address these

⁹ The Continuum of Care is a membership organization comprised of more than 100 organizations and individuals who work to prevent and end homelessness in Chicago. Mandated by the U.S Department of Housing and Urban Development (HUD), the CoC strategizes and plans a coordinated, comprehensive approach to providing housing and services for people experiencing homelessness.

underlying structural inequities wherever possible and also ensure that policies and programs have an explicit focus on promoting racial equity.

Key finding #5

Families with children show up as a small, but consistent, profile among those cycling at comparatively high rates across multiple systems. Women are disproportionately represented in this group of cycling high users (the majority identify as female).

Policy implication #5

Programs and policies that target cycling high users should address the wide-ranging and unique considerations of parents and caregivers with children, including supporting reunification efforts wherever possible; helping ensure access to childcare and continued school engagement; and identifying safe housing options that can accommodate all family members.

Key finding #6

Cycling high users spent one out of five days in an institutional setting in the four-year study period.

Policy implication #6

Proactive outreach and engagement could help service providers build relationships with these clients and connect them to specialized, person-centered services. Stabilizing people who are cycling earlier in their trajectory may help prevent traumatic and costly short-term emergency service use in the future. For people who are already cycling at the highest rates, access to housing and supportive services may help them stabilize and reduce emergency service use.

Key finding #7

Almost half of cycling high users of the homeless services system and the Cook County Jail are young singles (40%) who are the least likely among all cycling high user profiles to access permanent housing within the CoC (fewer than 10 percent).

Policy implication #7

Younger people cycling between the homeless services system and Cook County Jail may benefit from outreach and engagement approaches that are tailored to youth, as well as access to a continuum of housing options. Empowering these young people with the supports and tools necessary to achieve foundational stability and their own aspirations may help prevent ongoing cycling and trauma in future decades of life.

Key finding #8

Involvement with more than one system is associated with an increased likelihood of being a cycling high user.

Policy implication #8

In the current environment in which practitioners do not have access to a client's administrative records from other systems, a brief universal screening tool asking clients to self-report recent homeless

episodes, hospital visits, or detentions could help identify cycling high users or individuals about to become cycling high users in real time, and target them for additional outreach and services.

Key finding #9

When being released from Cook County Jail, the risk factor associated with the greatest increase in likelihood of experiencing homelessness in the next 18 months is having had a previous homeless episode (particularly in the month immediately preceding jail entry). Conversely, when leaving emergency shelter, the risk factor associated with the greatest increase in the likelihood of entering the Cook County Jail in the next 18 months is having had a prior jail booking.

Policy implication #9

Identifying these characteristics may help target people for additional services at the time of entry or exit from Cook County Jail or homeless services, with the goal of decreasing the total number of people cycling between these two systems.

Key finding #10

Cycling high users most frequently access hospitals in zip codes that include the Illinois Medical District, the Magnificent Mile, Hyde Park / Woodlawn, and the Ukrainian Village.

Policy implication #10

Hospitals in these zip codes most frequently serve cycling high users, and thus may be the most motivated to engage in cross-system partnerships to improve care coordination and connect cycling high users to services addressing key social determinants like housing.

Section 1:

Who is cycling between Chicago's homeless services, hospitals, and Cook County Jail?



Section 1: Who is cycling between Chicago’s homeless services, hospitals, and Cook County Jail?

How many people are cycling across multiple systems?

We linked administrative records from Chicago’s homeless services sector (also known as the Continuum of Care or “CoC”), hospitals,¹⁰ and Cook County Jail to identify people cycling in and out of these three settings over time. We examined the administrative records of more than 500,000 people who accessed homeless services, had at least one emergency department (ED) or inpatient hospital stay, and / or were detained in the Cook County Jail over a four-year period from January 1, 2014 to December 31, 2017.

Who is included in our study population?

The Health Lab received administrative records for all people who accessed services in Chicago’s Continuum of Care (CoC) (approximately 60,000 people in the four-year study period) and anyone who was detained in the Cook County Jail (approximately 200,000 people).

However, significantly more people accessed the hospital at least once during the same period of time. Due to the sheer volume of hospital administrative records, the Illinois Department of Public Health chose to share records for a smaller subset of people who accessed hospitals during the study period. This group of just over 300,000 people comprised:

- (1) People who also accessed services in the CoC or who were detained in the Cook County Jail, and
- (2) People who had at least 7 emergency department visits in a single calendar year.

Throughout the report, we highlight when this methodological decision has implications for how to interpret findings.

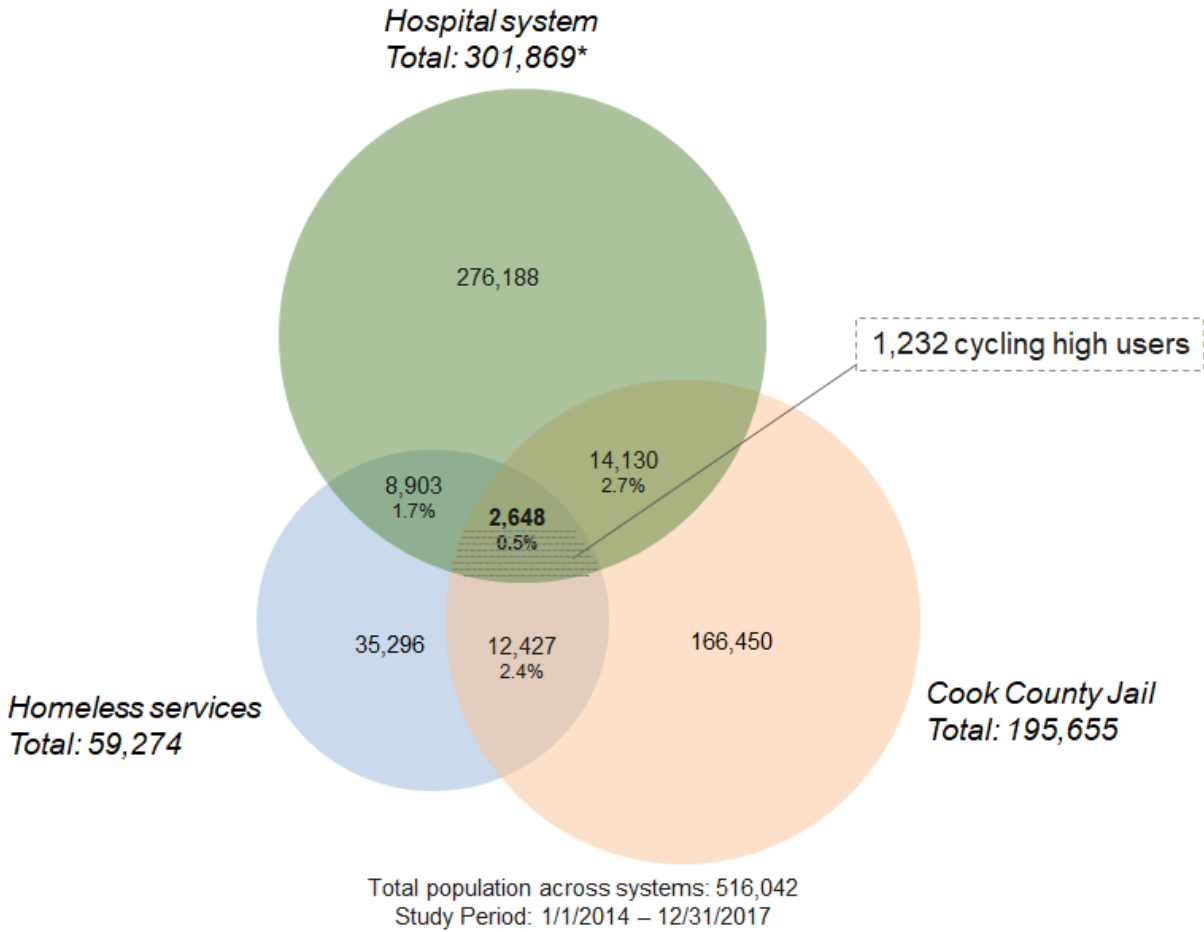
One key finding is that people rarely cycled across all three systems. As *Figure 1* below shows, fewer than 3,000 people (2,648) had at least one ED or hospital stay, accessed homeless services, *and* were detained in the Cook County Jail over the four-year period. It was more common for people to access services in two of the three systems (approximately 35,000 people total out of the 500,000 examined), including:

- Approximately 14,000 people who had at least one hospital stay and at least one detention in the Cook County Jail.
- Approximately 12,500 people who accessed homeless services and had at least one detention in the Cook County Jail.

¹⁰ Note that due to the sheer volume of hospital admissions, the Health Lab was not able to obtain data on all individuals who accessed hospitals in Chicago over the study period. Instead, IDPH provided hospital records for individuals who interacted with either of the other two systems, or who IDPH considered to be an annual high hospital user, according to an internal definition of having at least seven emergency department visits within one calendar year. The implication of analyzing this more limited population is that not all people who only utilized hospitals are included in this analysis. IDPH shared administrative records for approximately 300,000 people who had interacted with at least one of the other two systems and/or met their internal definition of a high hospital user.

- Approximately 9,000 people who accessed homeless services and had at least one hospital stay, either as an inpatient stay or through an emergency department (ED) visit.

Figure 1: Interaction patterns with homeless services, the hospital system, and Cook County Jail



* IDPH only shared records for people who met its own internal definition of a high user or who had at least one stay in the Cook County Jail or accessed homeless services during the study period

Key Finding #1:

Key finding #1: It is rare for a person to have interacted with all three systems in a four-year period. There are fewer than 3,000 people in the Chicago area who accessed the hospital, shelter system, and were detained in the Cook County Jail in a four-year period.

Policy implication #1: Involvement with multiple systems itself may be an important indicator that someone faces additional barriers to stability and may benefit from additional engagement and outreach.

Cross-system engagement was particularly common among people who experienced homelessness and accessed services in Chicago’s CoC.¹¹ Of all homeless services clients, 41% (approximately 24,000) had at least one hospital stay and / or one jail stay in the four-year period. Five percent of CoC clients (2,648) interacted with all three systems. Cross-system engagement was less common among individuals who had been detained in the jail: 15% of people who were detained at some point in the study period (approximately 29,000) also had at least one hospital stay and / or accessed CoC services while experiencing homelessness at some point during the study period.¹² Only 1% of people who were detained (2,648) interacted with all three systems.¹³

Key Finding #2:

Finding #2: Four out of ten CoC clients interacted with the hospital system and / or the Cook County Jail in the four-year study period.

Policy implication #2: Given the high rate at which CoC clients interact with other systems, cross-system partnerships to ensure warm handoffs and smooth transitions of care may benefit clients and improve key CoC system performance measures.

Who qualified as a high user of one or more systems?

Our partners sought to understand how many people repeatedly interacted with their system more frequently than others. We examined how often people interacted with each system over time, examining their total number of stays and days in a homeless service setting (either in emergency shelter or engaged in street outreach), the Cook County Jail, or a hospital (in emergency or inpatient settings). Working together with our partners, we established cutoffs to identify people demonstrating high use in each system as compared to the typical CoC client, person in detention, or patient. We have outlined these thresholds in Table 1 below, and include more detailed analyses about how we arrived at these cutoffs in Appendix B. These definitions of “high use” in the homeless services and criminal legal systems generally align with existing cutoffs set by other national and municipal policies and programs.¹⁴ In the case of the hospital system, these proposed cutoffs are comparatively higher than levels set in the

¹¹ Supported by All Chicago, the Chicago Continuum of Care is a collective of more than 100 organizations and individuals committed to ending homelessness in Chicago. The services and projects that the CoC is involved in range from housing, financial assistance, community partnerships, data analytics, training, and research. In-depth information about the CoC is available on All Chicago’s website: <https://allchicago.org/continuum-of-care/>

¹² We concluded that hospital visits in the IDPH data almost certainly do not include in-patient or emergency hospital stays at Cermak Health Services while detained at Cook County Jail. The data likely do include care that people who are being detained received at hospitals other than Cermak Health Services while detained.

¹³ Since we did not receive data on all patients who ever visited a hospital during the study period from IDPH, we cannot estimate the overall rate at which hospital patients in general have cross-system engagement.

¹⁴ For example, HUD’s definition of chronic homelessness includes at least 12 consecutive months experiencing literal homelessness in the homeless services system, or at least three episodes of homelessness over three years. The Frequent User Service Enhancement (FUSE) program, which connected high users of the criminal legal and homeless services systems with permanent supportive housing in New York City, set eligibility criteria at four jail stays and / or four emergency shelter stays in a five-year period.

existing literature,¹⁵ primarily due to the fact that our subsample of hospital patients was comprised of those already determined by IDPH to have high annual use.

Table 1. Definitions of high users in each system, as determined by a person’s level of interaction with each system during the four-year study period ¹⁶

For the purposes of this report, a person is considered a high user of a system if the frequency of their interaction meets or exceeds any of the cutoffs listed below in that system		
Cook County Jail	Homeless services	Hospitals
<ul style="list-style-type: none"> • 4 or more stays in Cook County Jail • 3 or more stays in Cook County Jail, <i>if</i> the total number of days detained across all stays is 365 or more 	<ul style="list-style-type: none"> • 5 or more stays in emergency shelter¹⁷ • 3 or more stays in emergency shelter, <i>if</i> the total number of days across all stays exceeds 120 • 365 or more days spent in shelter, regardless of the number of stays • 365 or more days engaged in street outreach 	<ul style="list-style-type: none"> • 16 or more ED visits • 21 or more days spent in the ED across all visits • 10 or more hospital inpatient stays • 76 or more days spent in an in-patient setting, regardless of the number of stays

How many people qualified as a high user of at least one system?

Using the definitions outlined above, our analysis identified just over 80,000 high users of at least one system (80,061). We found:

- Just over 5,000 people (5,136) who qualified as high users of homeless services, representing approximately 1 out of 10 CoC clients (8.7%).
- Just over 20,000 people (20,989) who qualified as high users of the Cook County Jail, representing approximately 1 out of 10 detained individuals (10.7%).
- Almost 55,000 people (54,754) who qualified as high users of hospital systems, representing approximately 1 out of 6 (18.1%) patients that IDPH internally identified as high hospital users on an annual basis.

Please note that in the case of hospital high users, this ratio of patients would be significantly lower if our study sample had included everyone who accessed hospital services. The ratio as presented represents the number of hospital high users that we identified over the four-year study period as a

¹⁵ Wodchis et. al (2016). A 3-year study of high-cost users of health care. CMAJ., Tsai et. al (2018). Reducing High-Users’ Visits to the Emergency Department by a Primary Care Intervention for the Uninsured: A Retrospective Study. Inquiry: a Journal of Medical Care Organization, Provision and Financing. The Department of Health and Human Services defines high ED use as three visits in a single year.

¹⁶ For more information on how we worked with partners to set these cutoffs, please see Appendix B.

¹⁷ The term “emergency shelter” includes transitional housing but excludes Youth Transitional Housing or Permanent Housing with Short-term Supports.

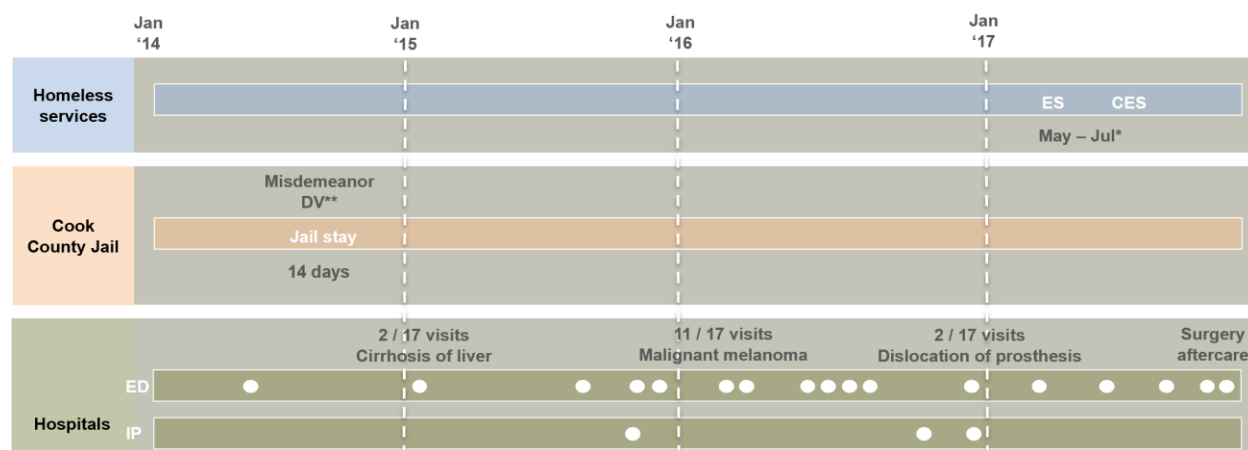
percentage of hospital patients who IDPH already identified as high hospital users within a single calendar year.

How many people qualified as a cycling high user?

Among the 2,648 people who interacted with all three systems in the four-year study period, about half (1,232) were also considered a high user of at least one system or were interacting at comparatively high rates across all three systems.¹⁸ We refer to this group of people as cycling high users. Examining their service use patterns across multiple systems has several important implications for policy and practice.

First, approximately two out of three cycling high users (820 out of 1,232, or 67%) were high users of only one system. While these individuals did interact with the other two systems during the study period, their engagement may have been minimal, as demonstrated by the service use history of one cycling high user in our data, presented below in *Figure 2*. This person presents as a high user of the hospital system, but only has one stay in the Cook County Jail and accesses emergency shelter only once near the end of the study period. For practitioners at the Cook County Jail and in the CoC, this person would not present as a high user of their system, which may decrease their likelihood of identifying this person as having complex needs and prioritizing them for additional levels of engagement and services. This person would also likely not meet the Department of Housing and Urban Development (HUD)’s definition of “chronic homelessness,” which is one of several criteria used for prioritizing clients for permanent housing.

Figure 2: Example of service use patterns of a cycling high user who meets the high user definition in only one system (the hospital system)



Only a very small number of cycling high users, fewer than 15 individuals (less than 1% of all cycling high users) met the definition of a high user in all three systems. Approximately 12% of cycling high users (153 people) were high users of two systems. These low percentages are likely in part due to the fact that if a person is interacting with one system, they are less likely or unable to engage with the other two systems (particularly in the case of detention in the Cook County Jail).

¹⁸ We considered a person a high user if their service use was in the top half of the distribution in *all three* systems, regardless of whether they met a definition of high user in any one individual system.

Finally, approximately one in five of the cycling high users (249 people, 20%) were not considered a high user of any one system but demonstrated high use cumulatively across systems. For these individuals, the number of interactions they had with all three systems was higher than average (i.e. they were in the top half of the distribution for total number of stays and days among all clients, patients, and people who were detained).

Key Finding #3:

Key finding #3: Even though they interact with all three systems, the vast majority of cycling high users (87%) are only high users of one system or, alternatively, they demonstrate high use cumulatively across systems without meeting the cutoff for high use in any one system.

Policy implication #3: Individual systems may not currently prioritize cycling high users for more intensive services if they are not considered a high user of that system. Policies or programs that identify and incentivize serving people based on their holistic needs – as reflected by their cumulative cross-system involvement, as opposed to their interactions with just one system alone – may help remove administrative roadblocks to additional services and promote stability.

What are common characteristics of cycling high users?

As an overall population, cycling high users of all three systems (1,232) exhibited the following characteristics, as observed in administrative records:

- Predominantly male (86%)
- Predominantly Black (84%)
- Relatively older (50 years old on average at first system encounter during the study period)
- Most frequently accessed the hospital for causes associated with mental disorders, but exhibited a wide range of medical needs
- Most common charges for detention in the Cook County Jail reflected substance use disorders (possession of a narcotic) and “crimes of survival” associated with living in extreme poverty and experiencing homelessness (such as retail theft and trespassing)

What historic context and systemic inequities inform our findings about the demographic characteristics of cycling high users?

The fact that cycling high users so disproportionately include Black men suggests that racial inequities may contribute to individuals cycling across multiple service settings. In the criminal legal system, substantial literature has documented the overcriminalization of Black men—not only that they are jailed at a disproportionate rate, but also that policies have contributed to these disparate outcomes.¹⁹

¹⁹ According to the Vera Institute for Justice, the rate of Black incarceration in Cook County Jail peaked in 2002 at 941 per 100,000, compared to just 66 per 100,000 for white people. Since then, this disparity has decreased as incarceration rates for both Black and white people decreased—to 541 per 100,000 for Black people and 39 per 100,000 for white people. Many

In the Cook County Jail on October 8, 2020, 72.5% of individuals detained were Black (approximately 3,983 people),²⁰ despite Black people comprising only 23.8% of the Cook County population.

Similar systemic discrimination has resulted in racial disparities in housing. Black neighborhoods in Chicago have been disinvested in and targeted for extraction of resources for decades, resulting in fewer jobs and economic opportunities.²¹ For example, the effects of deindustrialization and resulting job loss in many Black neighborhoods were compounded by predatory contract leasing that prevented Black Chicagoans from acquiring billions of dollars in the 1950s and 1960s.²² Factors such as the racial wage gap, mass incarceration, and disproportionate eviction filing rates all contribute to a Black person being nearly six times more likely to experience homelessness in Chicago than a white person.²³

Finally, some of the largest inequities in access to health insurance and mental health services in Chicago occur by race and ethnicity.²⁴ In particular, access to mental health services in the City of Chicago has drastically reduced in the last decade.²⁵ This service landscape may contribute to the disproportionate use of the emergency health system among predominantly Black cycling high users.

As systemic inequity has resulted in Black individuals being overrepresented in each one of these systems individually, they account for a high proportion of cycling high users.

historic and current policies - from the “Black Codes” in the south following the Civil War to the “war on drugs” – have contributed to the overrepresentation of Black men in the criminal legal system. See: Ram Subramanian, Kristine Riley, and Chris Mai. *Divided Justice: Trends in Black and White Jail Incarceration, 1990-2013*. New York: Vera Institute of Justice, 2018; Michelle Alexander. *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*. New York: The New Press, 2012.

²⁰ Cook County Sheriff’s Daily Report, 10/8/2020. https://www.cookcountysheriff.org/wp-content/uploads/2020/10/CCSO_BIU_CommunicationsCCDOC_v1_2020_10_08.pdf

²¹ UIC Institute for Research on Race and Public Policy. *Between the Great Migration and Growing Exodus: The Future of Black Chicago?* <https://uofi.app.box.com/s/vb27q325rrp2sjpd8otjs2zawe7ufrue>

²² George, S., et al. “The plunder of Black wealth in Chicago: New findings on the lasting toll of predatory housing contracts.” *Durham, NC: Duke University, The Samuel DuBois Cook Center on Social Equity*. Retrieved June 1 (2019): 2019.

²³ Housing Action Illinois. *Black and White Disparities in Homelessness*. September 2019.

https://housingactionil.org/downloads/Policy/RacialDisparitiesinHomelessnessIL_September2019.pdf

²⁴ Healthy Chicago 2.0 – Partnering to Improve Health Equity, 2016-2020. Chicago Department of Public Health. Report last accessed on December 9, 2020 at

<https://www.chicago.gov/content/dam/city/depts/cdph/CDPH/Healthy%20Chicago/HC2.0Upd4152016.pdf>

²⁵ Inequitable access to mental health services in the City of Chicago has been exacerbated in the last decade. Mattie Quinn. *This Is What Happens When a City Shuts Down Mental Health Clinics*. *Governing Magazine*, October 2018.

<https://www.governing.com/topics/health-human-services/gov-chicago-mental-health.html>

Key Finding #4:

Key finding #4: Cycling high users are 84% Black and 86% male, despite Black people comprising only 24% of the Cook County population and 30% of Chicago's population.

Policy implication #4: Systemic policies that institutionalize systemic discrimination in access to housing; disproportionately incarcerate Black people (and particularly Black men); and result in inequitable access to health care and mental health services all help explain why Black people, and particularly Black men, are overrepresented among cycling high users. Efforts to promote the stability of cycling high users need to address these underlying structural inequities wherever possible and ensure that policies and programs have an explicit focus on promoting racial equity.

Section 2: What do the common profiles of Cycling High Users tell us about the barriers they face to stability?



Section 2: What do the common profiles of cycling high users tell us about the barriers they face to stability?

What common profiles do we see among people who cycle in all three systems?

We sought to learn more about the diverse profiles of cycling high users to help policymakers and practitioners tailor services that address their underlying needs and help them achieve their unique aspirations. We used information available in administrative records – such as client demographics, service use patterns, criminal charge types, and administrative proxies for behavioral health challenges – to conduct a cluster analysis, a statistical technique that uses select characteristics to categorize a larger population into subgroups with similar qualities.

We found three common profiles of cycling high users:

- Older single adults with complex needs (majority above 45 years old; 1,059 people, 86%)
- Older single adults who have the highest rates of behavioral health challenges (majority above 45 years old; 120 people, 10%)
- Younger individuals with families (majority below 45 years old; 50 people, 4%)²⁶

The first profile, older single adults with complex needs, is the largest group, and revealed the varied medical, behavioral health, and unmet social needs of multisystem cycling high users. The second profile represents a particularly vulnerable subset of cycling high users, comprised of the oldest individuals experiencing the highest rates of behavioral health issues that we are able to observe in administrative data. Individuals in this profile were also most likely to be high users of the Cook County Jail. The last profile included younger individuals in families with children. The predominantly young Black women in this profile exhibited low rates of behavioral health issues, but high emergency shelter and hospital use.

More information about each of these profiles is in Table 2 below.²⁷

²⁶ The only proxy that we have of family status in the data is if a person accessed homeless services with their children. For a variety of reasons, this metric likely undercounts the number of cycling high users who have children.

²⁷ It is important to note that these are not the only clusters present among the study population. The clustering method forms groups depending on the variables chosen, and thus the technique with different variables of emphasis could lead to different clusters with different characteristics. This information should be taken as a general resource to help guide care, but all decisions should be made on a case-by-case basis by trained professionals.

Table 2: Key characteristics associated with the three common profiles of cycling high users

Older singles with complex needs	Older singles with highest rates of behavioral health challenges	Younger individuals with families
1,059 people (86%)	124 people (10%)	49 people (4%) ²⁸
Demographics		
<ul style="list-style-type: none"> • 85% Black and 88% male • Majority older than 45 (81%), average age 51 	<ul style="list-style-type: none"> • Most likely to be White (18%) • Oldest cluster (90% over age 45, average age 53) 	<ul style="list-style-type: none"> • Most likely to be Black (94%) and female (57%) • Youngest cluster, average age 33
Needs & Vulnerabilities		
<ul style="list-style-type: none"> • 68% self-report a disabling condition • 70% self-report receiving benefits • 76% self-report health insurance • When detained in jail: <ul style="list-style-type: none"> - 21% received a medical alert - 31% received mental health services - 29% required detox upon entry • Most common charge is possession of narcotics 	<ul style="list-style-type: none"> • 71% self-report a disabling condition • Least likely to self-report receiving benefits (60%) • Highest rates of co-occurring behavioral health issues. When detained in jail: <ul style="list-style-type: none"> - 63% received a medical alert - 64% received mental health services - 59% required detox upon entry • Common charges include “crimes of survival,” like retail theft, trespassing, violation of parole 	<ul style="list-style-type: none"> • Lowest rates of co-occurring behavioral health issues. When detained in jail: <ul style="list-style-type: none"> - 0% received a medical service alert - 20% received mental health services - 16% required detox upon entry • Most common charge is domestic violence • Highest self-reported rates of surviving domestic violence (26%)
System Utilization		
<ul style="list-style-type: none"> • Average of 312 days of cross-system engagement in four-year period (1 out of 5 days in an institutional setting) • Comparatively high number of days in emergency shelter (112) and days engaged in street outreach (30) • 78% accessed emergency shelter, but only 14% ever accessed permanent housing 	<ul style="list-style-type: none"> • Highest average number of days (371) of cross-system engagement in four-year period (1 out of 4 days in an institutional setting) • Most likely to be high users of the jail • Highest number of stays (8) and days (275) detained in jail 	<ul style="list-style-type: none"> • Average of 284 days of cross-system engagement (1 out of 5 days in an institutional setting) • Comparatively high number of days in emergency shelter (113 days) • Most likely to be high users of hospital systems • About twice as many ED stays (16) / days (23) and inpatient stays (8) / days (51) as other profiles • Most likely to ever access permanent housing (25%)

²⁸ Individuals in families with children comprise a slightly larger percentage of cycling high users of the homeless services system and the Cook County Jail (7%, almost 500 individuals).

Understanding sources of data on proxies for behavioral health conditions

While in Cook County Jail, people who are being detained receive additional services if they have an “alert” from Cermak Health Services designating specific medical or behavioral health needs. These operational alerts inform the type of care they receive. While an alert does not serve as a formal medical or mental health diagnosis, it does reflect an observed or self-reported need for different levels of services or placements for that person’s care. Psychological needs are designated by psychiatric alerts (P-alerts) and medical needs are designated by medical alerts (M-alerts). P- and M-alerts are accompanied by a numerical rating ranging from 2–4, with a higher rating indicating more intensive need. For example, a P2 alert indicates a mental health need like requiring access to prescription medication, while a P4 alert requires an institutional level of mental health care. If a person requires detox services upon entry to the jail, this administrative record appears as a detox alert (D-alert).

Key Finding #5:

Key finding #5: Families with children show up as a small, but consistent, profile among those cycling at comparatively high rates across multiple systems. Women are disproportionately represented in this group of cycling high users (the majority identify as female).

Policy implication #5: Programs and policies that target cycling high users should address the wide-ranging and unique considerations of parents and caregivers with children, including supporting reunification efforts wherever possible; helping ensure access to childcare and continued school engagement; and identifying safe housing options that can accommodate all family members.

What are the most common reasons that cycling high users enter the hospital?

Our analysis suggests that there is a complex set of chronic health conditions, acute injuries, and behavioral health challenges prompting cycling high users to visit hospitals. To understand the reasons that people accessed the hospital, we examined their primary diagnosis given by ICD-9 and ICD-10 codes, which cited the main reason for the visit on that day. We did not have access to the secondary or additional diagnoses associated with each visit. Therefore, this single diagnosis does not serve as an accurate method of identifying all underlying chronic health conditions, mental health diagnoses, or comorbid alcohol or substance use disorders, although some ICD codes may directly reflect these conditions if they are the primary reason for a visit.²⁹ ICD codes are also used to classify diagnoses for

²⁹ Horsky, J., Drucker, E. A., & Ramelson, H. Z. (2018). Accuracy and Completeness of Clinical Coding Using ICD-10 for Ambulatory Visits. AMIA Annual Symposium Proceedings, 2017, 912–920.

many reasons other than record-keeping – such as for reporting expenses and mortality statistics.³⁰ As a result, the analysis of primary diagnosis via ICD codes should not be interpreted as offering insight into the levels of chronic health conditions, mental health disorders, or alcohol or substance use disorders within this population. However, they do speak to the primary reason someone visited the hospital on any given day.

Table 3 below shows that across the three cycling high user profiles, mental disorders and circulatory disorders were the most common primary reasons for inpatient hospital stays. Mental disorders represented 15% of all inpatient stays in older singles with complex needs, and 33% of inpatient stays in younger individuals with families. In both profiles, schizoaffective disorder and alcohol dependence were the most common mental disorder diagnoses. In contrast, older singles with the highest rates of behavioral health conditions presented most often with circulatory disorders. Some of the associated diagnoses categorized under circulatory disorders, including myocardial infarction and acute congestive heart failure, might reflect medical complications associated with substance use disorder.

The main reasons for ED visits cited symptoms such as coughing and various pains. However, both older single profile groups also visited the ED due to musculoskeletal afflictions, while younger individuals with families visited the ED for mental health-related disorders.³¹

Table 3. Most common primary reasons, as cited by ICD-9 / ICD-10 codes, for hospital use among cycling high users over the four-year study period

Specific Health Diagnoses*			
Encounter Type	Older singles with complex needs	Older singles with highest rates of behavioral health conditions	Younger individuals with families
Inpatient Stays	<u>Mental health disorders (14.9%)</u> 1. Schizoaffective disorder 2. Alcohol dependence 3. Unspecified psychoactive substance use, with unspecified withdrawal	<u>Circulatory disorders (13.3%)</u> 1. Hypertensive heart and chronic kidney disease with heart failure, or unspecified chronic kidney disease 2. Myocardial infarction 3. Acute congestive heart failure	<u>Mental health disorders (33.1%)</u> 1. Schizoaffective disorder 2. Alcohol dependence 3. Major depressive disorder
	<u>Symptoms, Ill-defined (20.4%)</u> 1. Chest pain 2. Abdominal pain 3. Cough	<u>Symptoms, Ill-defined (47.4%)</u> 1. Chest pain 2. Abdominal pain 3. Cough/shortness of breath	<u>Symptoms, Ill-defined (24.9%)</u> 1. Chest pain 2. Abdominal pain

³⁰ CDC. (2019, March 1). ICD - ICD-10-CM - International Classification of Diseases, (ICD-10-CM/PCS Transition). https://www.cdc.gov/nchs/icd/icd10cm_pcs_background.htm

³¹ Primary diagnoses can be used for reasons other than disease specification – such as for reporting expenses and mortality statistics. As such, this single diagnosis may conflate individuals who present with slightly different issues under the same designation. In addition, ICD codes are not always meant to reflect how chronic these illnesses are, nor their underlying comorbidities and causes.

	<u>Musculoskeletal diseases (13.0%)</u> 1. Low back pain 2. Pain in knee 3. Pain in limb	<u>Musculoskeletal diseases and respiratory diseases (13.0%)</u> 1. Asthma 2. Low back pain 3. Pain in limb, lumbar radiculopathy, bronchitis, and upper respiratory infections	3. Dizziness and Giddiness/Epigastric pain/Intercostal pain <u>Mental disorders (20.6%)</u> 1. Alcohol abuse and dependence 2. Opioid abuse and dependence 3. Major depressive disorder
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What is the current estimated direct service costs to society of failing to effectively serve cycling high users?

In addition to reflecting the ongoing effects of racial inequity, cycling high users’ repeated interactions with hospitals, homeless services, and the Cook County Jail suggest that existing systems are not effectively engaging them and connecting them to the services and resources needed to stabilize. Failure to effectively support cycling high users comes at incredible personal cost to these residents and their families, as well as great financial cost to society, as shown in *Table 4* below.³² Over the four-year study period, an estimate of the cost of providing direct services to this group of just over 1,200 people was approximately \$300 million, and this estimate only includes costs associated with hospital stays,³³ emergency shelter, and time spent in Cook County Jail.³⁴ While each of these cost estimates are imprecise and have important inherent limitations, they can provide a broad sense of the comparative costs incurred by different sectors and different profiles of cycling high users.

³² To calculate cost estimates based on system utilization, we obtained per person, per night estimates of cost for stays in emergency shelter, transitional housing, and the Cook County Jail from representatives in the respective systems. Estimates of hospital costs were taken from charges provided by individual hospitals for each stay, and therefore do not represent hospital expenses or actual payments.

³³ There are several important limitations of the cost estimates that we received from hospitals. These cost estimates were based on the amount that hospitals charged for services rendered, as opposed to the cost that was reimbursed, so in this sense represent an overestimate of the reimbursed cost to hospitals. On the other hand, these costs only include services provided within the hospital setting, but do not take into account the costs associated with the care and transportation provided prior to arriving at the hospital (e.g. through interactions with the emergency response system, if applicable) or after discharge (e.g. through the receipt of outpatient care, if applicable). In this sense, these costs represent an underestimate of total cost to the system.

³⁴ This estimate does not include costs of arrest or time in prison, court processing costs, primary care or ambulatory services in the health system, or outreach services, homelessness prevention services, or daytime services in the homeless services system.

Table 4: Estimated per person and total group costs associated with serving cycling high users in each system

	(1) Older singles with complex needs (1,059 people)	(2) Older singles who are most vulnerable (124 people)	(3) Younger individuals with families (49 people)
Mean cost per person over study period			
Emergency shelter	\$2,172 (0.9%*)	\$941 (0.5%)	\$987 (0.2%)
Transitional housing	\$934 (0.4%)	\$323 (0.2%)	\$3,120 (0.6%)
Cook County Jail	\$18,172 (7%)	\$38,264 (19%)	\$11,560 (2%)
Hospital system	\$221,097 (91%)	\$161,080 (80%)	\$472,508 (97%)
Total per person cost across 3 systems	\$242,335	\$200,608	\$488,175
Total sum group cost across all 3 systems	\$256,632,765	\$24,875,392	\$23,920,575

* Percentages in parentheses represent the percentage of each system cost out of total per person cost across all three systems.

Hospital visits drove the largest percentage of costs across all three systems, representing 91% of the total per person cost in older singles with complex needs, 80% in especially vulnerable older singles, and 97% in younger individuals with families. Due to their high hospital usage, younger individuals with families incurred the highest total per person cost across all three systems. Even though there were only 49 individuals in this group, they nevertheless incurred almost \$24 million dollars in total costs charged over the four-year period.

Key Finding #6:

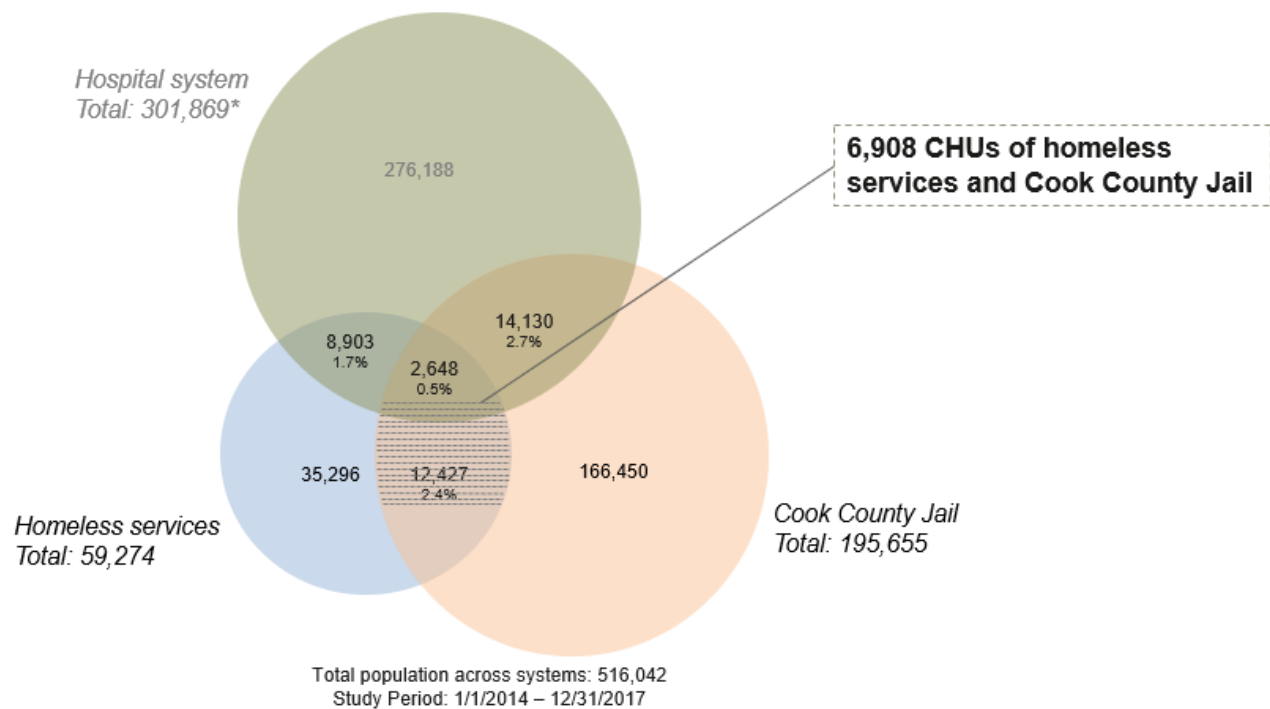
Key finding #6: Cycling high users spent one out of five days in an institutional setting in the four-year study period.

Policy implication #6: Proactive outreach and engagement could help service providers build relationships with these clients and connect them to specialized, person-centered services. Stabilizing people who are cycling earlier in their trajectory may help prevent traumatic and costly short-term emergency service use in the future. For people who are already cycling at the highest rates, access to housing and supportive services may help them stabilize and reduce emergency service use.

What common profiles do we see among people who are cycling high users of homeless services and / or the Cook County Jail?

As part of the first phase of analysis for RMI, which we conducted prior to receiving IDPH’s hospital data, we closely examined the service use patterns of people cycling across the homeless services system and the Cook County Jail. As seen in *Figure 3* below, we found just over 15,000 people who interacted with both systems during the study period, representing approximately one in four of all CoC clients (25.4%) and just fewer than one in ten detained individuals in Cook County Jail (7.7%). Approximately half of the people in this group (6,908) qualified as cycling high users. Our first policy brief includes an in-depth discussion of the cycling high users of the homeless services system and Cook County Jail.³⁵ We review key highlights here to underscore important similarities and contrasts with cycling high users of all three systems.

Figure 3: Interaction patterns with homeless services and Cook County Jail



Like the three-system cycling high users, cycling high users of the homeless services system and Cook County Jail were also predominantly Black (79%) and male (82%). However, the most notable difference was that they were on average much younger, with an average age of 38 years instead of 50 years for the three-system cycling high users.

³⁵ Merging Data from Cook County Jail and the Homeless Management Information System: Preliminary Findings (September 2019). <https://urbanlabs.uchicago.edu/projects/merging-data-from-cook-county-jail-and-the-homeless-management-information-system-preliminary-findings>

To learn more about the approximately 7,000 cycling high users of the homeless services system and the Cook County Jail, we conducted a cluster analysis to identify common profiles. Similar to the three-system cycling high users, we found six clusters that cohered into three key common profiles:

- Older single adults with complex needs (majority above 35 years old; approximately 3,700 people, 53%)
- Younger individuals with families (majority below 35 years old; approximately 500 people, 7%)
- **Younger singles (majority below 35 years old; approximately 2,800 people, 40%)**

The first two profiles – older singles with complex needs and younger individuals with families – mirrored profiles also present among the three-system cycling high users. However, a notable difference from the three-system cycling high users was that the cycling high users of the homeless services system and the Cook County Jail also included a large group of younger singles, 84% of whom were under the age of 35. The younger singles were the least likely of all profiles to access permanent housing in the CoC. (Less than 10% accessed permanent housing during the study period.) Approximately 40% received mental health services while detained in the Cook County Jail. Among those who received mental health services, one in three (33%) required in-patient psychiatric treatment. The young singles also had much lower levels of contact with the hospital system: only 6%, or 161 people, had a hospital stay during the study period, as compared to 26%, or 966 people, of older singles with complex needs. However, among those who did access the hospital system, the most common reasons for inpatient stays and ED visits were mental health disorders.

What impact does cross-system involvement at a young age have on a person's lifelong service use trajectory?

Unfortunately, our analysis only examines four years of data, which precludes us from examining how involvement with the homeless services and criminal legal systems at a young age impacts one's likelihood of becoming a cycling high user of all three systems later in life. However, existing research examining this question has shown that interactions with the correctional system at an early age coupled with a young adult's lived realities and surroundings can usher in a pattern of continuous system use.³⁶ Growing evidence underscores the corrosive effects that early involvement in the criminal legal system can have on emotional, mental, behavioral, and social development.³⁷ For example, a recent longitudinal study found that cumulative incarceration during adolescence and early adulthood was independently associated with worse physical and mental health later in adulthood.³⁸ In many ways, young adults who interact with the criminal legal or correctional system can be negatively impacted for the rest of their lives.

³⁶ People who experience trauma as a child, have a parent in jail, or receive lower levels of education continue to be at greater risk of justice involvement. For these individuals, the experience of the juvenile justice system—being arrested, facing their parents, spending time in a correctional facility, interacting with a probation officer or a judge—is retraumatizing. Huebner, B. M., & Gustafson, R. (2007). The effect of maternal incarceration on adult offspring involvement in the criminal legal system. *Journal of Criminal Legal*, 35(3), 283–296. <https://doi.org/10.1016/j.jcrimjus.2007.03.005>

³⁷ Cauffman, E., Scholle, S. H., Mulvey, E., & Kelleher, K. J. (2005). Predicting First Time Involvement in the Juvenile Justice System Among Emotionally Disturbed Youth Receiving Mental Health Services. *Psychological Services*, 2(1), 28–38. <https://doi.org/10.1037/1541-1559.2.1.28>

³⁸ Barnert, Elizabeth, et al. "Physical Health, Medical Care Access, and Medical Insurance Coverage of Youth Returning Home After Incarceration: A Systematic Review." *Journal of Correctional Health Care*, vol. 26, no. 2, Apr. 2020, pp. 113–128, doi:10.1177/1078345820915908.

In recent years, reforms in the juvenile justice system have contributed to a shift from punitive approaches to rehabilitative models of care³⁹ and a decline in the arrest rates of young adults.⁴⁰ However, this shift has also increased the reliance on youth correctional systems for mental health or specialized treatment instead of using community-based services.⁴¹ As a result, offending young adults are likely to receive mental health services within juvenile correctional facilities even though such facilities are not intended for rehabilitation. Furthermore, the United States Department of Justice has documented that the mental health services typically offered for youth in juvenile justice are often inadequate or unavailable.⁴² Thus, arrest at an early age, stringent policies faced for arrests⁴³ and rearrests,⁴⁴ and lack of appropriate resources and services while incarcerated often streamline the pathways through which young adults develop into cycling high users across systems in adulthood.

What is the current estimated cost to society of failing to effectively serve cycling high users of the homeless services system and the Cook County Jail?

In contrast to the three-system cycling high users for whom hospital interactions is the primary driver of cost, jail detention is the primary cost driver for most of the cycling high users of the homeless services system and Cook County Jail, as shown in *Appendix C*. This is particularly true for the young singles, for whom their stays in Cook County Jail accounted for 64% of their average per person cost across all three systems. While the average per person cost of cycling high users of the homeless services system and the Cook County Jail was significantly lower than the average per person costs of three-system cycling high users (\$39,000 - \$76,000 per person cost for two-system cycling high users as compared to \$200,000 - \$488,000 per person cost for three-system cycling high users), their total costs as a group (\$368 million) were higher than that for the three-system cycling high users (\$300 million) over the study period. This difference is due to the fact that they were a bigger group (approximately 7,000 people) than the three-system cycling high users (approximately 1,200 people).

³⁹ Grisso, Thomas. "Adolescent Offenders with Mental Disorders." *The Future of Children*, vol. 18, no. 2, 2008, pp. 143–164. *JSTOR*, www.jstor.org/stable/20179982. Accessed 12 Nov. 2020.

⁴⁰ Hockenberry, Sarah, and Puzanchera, Charles. 2020. *Juvenile Court Statistics 2018*. Pittsburgh, PA: National Center for Juvenile Justice.

⁴¹ Teplin, Linda A et al. "Psychiatric disorders in youth in juvenile detention." *Archives of general psychiatry* vol. 59,12 (2002): 1133-43. doi:10.1001/archpsyc.59.12.1133

⁴² United States Department of Justice. *Department of Justice Activities under the Civil Rights Institutionalized Persons Act: Fiscal Year 2010*. CRIPA; Washington, DC, USA: 2011

⁴³ Peralta, Eyder. "Kalief Browder, Jailed For Years Without Trial, Kills Himself." NPR, NPR, 8 June 2015, www.npr.org/sections/thetwo-way/2015/06/08/412842780/kalief-browder-jailed-for-years-at-rikers-island-without-trial-commits-suicide.

⁴⁴ Nellis, Ashley (2017) *Still Life: America's Increasing Use of Life and Long-Term Sentences*. Washington, DC: The Sentencing Project.

Key Finding #7:

Key finding #7: Almost half of cycling high users of the homeless services system and the Cook County Jail are young singles (40%) who are the least likely among all cycling high user profiles to access permanent housing within the CoC (fewer than 10 percent).

Policy implication #7: Younger people cycling between the homeless services system and Cook County Jail may benefit from outreach and engagement approaches that are tailored to youth, as well as access to a continuum of housing options. Empowering these young people with the supports and tools necessary to achieve foundational stability and their own aspirations may help prevent ongoing cycling and trauma in future decades of life.

Section 3: How can practitioners identify people who are cycling in real time?



Section 3: How can practitioners identify people who are cycling in real time?

Like many other cities around the nation, practitioners in the homeless services system, hospitals, and the Cook County Jail in Chicago do not currently have access to people's administrative records from other systems. This practical limitation may make it difficult to identify cycling high users at the time of serving them, particularly if the encounter is brief. One possible solution may be to implement a very short universal screening tool to ask whether a person has had prior interactions with the other systems. Some institutions in Chicago already ask versions of these questions, although they do not track responses in a consistent manner across organizations.

Our analysis seeks to provide practitioners with tools to help identify people at heightened risk of cycling high use at the point of contact. Several insights from our analysis have practical implications:

1. We confirmed that **cross-system involvement itself (i.e. "cycling")** is associated with a higher likelihood of being a high user;
2. We identified common **risk factors** for cycling across the homeless services system and the Cook County Jail; and
3. We located **hospital "hot spot"** zip codes where cycling high users are more likely to frequent the ED and have inpatient stays.

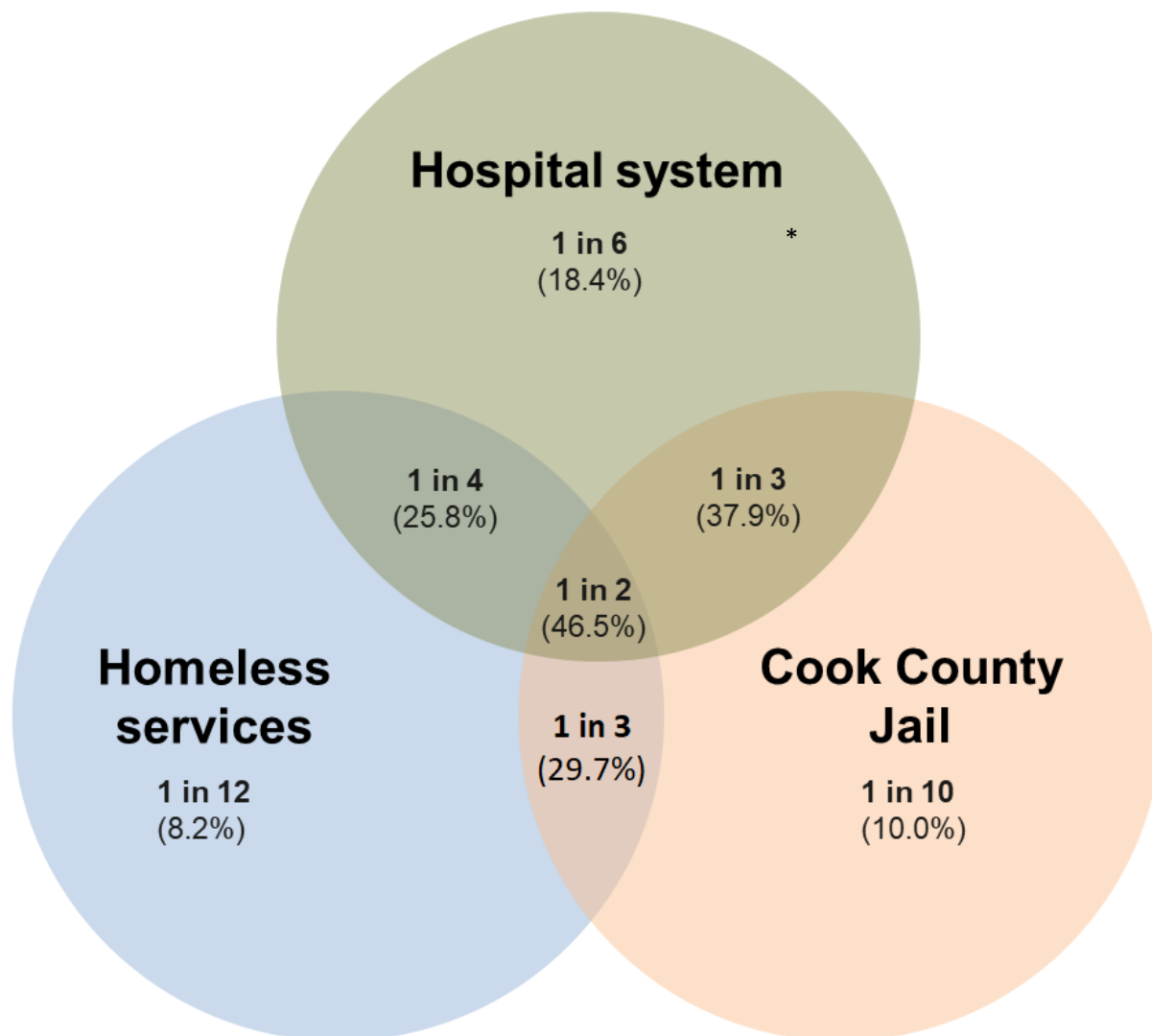
We offer more detail on each analysis in the following sections.

1. Are people cycling in multiple systems more likely to be a high user?

It may be challenging for practitioners to determine whether a person is a cycling high user without having access to administrative records from other systems. Given this practical limitation, we conducted an analysis to determine whether cross-system engagement alone, which would be easier to determine based on self-report, is associated with patterns of high use. We found that people who cycle between systems typically have a higher likelihood of meeting at least one definition of a high user.

Below, Figure 3 illustrates that people who cycle in more than one system have a higher likelihood of being a high user of at least one system.

Figure 4: Ratio of single-sector and multi-system users who meet at least one definition of a high user⁴⁵



** Due to the sheer volume of hospital admissions, the Health Lab was not able to obtain data on all people who accessed hospitals in Chicago over the study period. Instead, IDPH provided hospital records for individuals who interacted with either of the other two systems, or who IDPH considered to be an annual high hospital user, according to an internal definition of having at least seven emergency department visits within one calendar year. The implication of analyzing this more limited population is that not all people who only utilized hospitals are included in this analysis. IDPH shared administrative records for approximately 300,000 people who had interacted with at least one of the other two systems and/or met their internal definition of a high hospital user.*

Given the possible implications of more proactively engaging all cross-system clients, as opposed to targeting cycling high users specifically, *Appendix D* includes a more in-depth analysis of some of the

⁴⁵ Possible types include a high user of at least one individual system (hospital, CoC, or Cook County Jail) or a cross-system high user (meaning that the person is not a high user of any one system, but cycles across systems at comparatively high rates).

common characteristics of multi-system cycling users as a group. These analyses may help practitioners tailor services to specific groups of clients involved in multiple systems.

Key Finding #8:

Key finding #8: Involvement with more than one system is associated with an increased likelihood of being a cycling high user.

Policy implication #8: In the current environment in which practitioners do not have access to a client's administrative records in other systems, a brief universal screening tool asking clients to self-report recent homeless episodes, hospital visits, or detentions could help identify cycling high users in real time and target them for additional outreach and services.

2. Are there common risk factors to help identify people at high risk of cycling between the homeless services system and the Cook County Jail?

Our analysis of cycling high users of the homeless services system and the Cook County Jail, as outlined in more detail in our first policy brief, examined risk factors associated with an increased likelihood of cycling across these two systems.⁴⁶

First, we examined characteristics associated with a person's likelihood of experiencing homelessness within 18 months of being discharged by the Cook County Jail. Factors associated with an increased risk of future homelessness included:

- Having prior homelessness episodes, especially in the month prior to jail entry
- Having prior jail stays
- Receiving mental health services while in jail
- Older age (being older than 45 years old)

We also examined factors associated with an increased risk of entering the Cook County Jail within 18 months of engaging in homeless services, which included:

- Having prior jail bookings
- Having prior homelessness episodes
- Younger age (being younger than 45 years old)
- Evidence of having a disabling condition (i.e. self-reporting the presence of any condition that limits ability to work or perform daily activities, or receiving Supplemental Security Income or Social Security Disability Insurance)

⁴⁶ Merging Data from Cook County Jail and the Homeless Management Information System: Preliminary Findings (September 2019). <https://urbanlabs.uchicago.edu/projects/merging-data-from-cook-county-jail-and-the-homeless-management-information-system-preliminary-findings>

Key Finding #9:

Key finding #9: When being released from Cook County Jail, the risk factor associated with the greatest increase in likelihood of experiencing homelessness in the next 18 months is having had a previous homeless episode (particularly in the month immediately preceding jail entry). Conversely, when leaving emergency shelter, the risk factor associated with the greatest increase in the likelihood of entering the Cook County Jail in the next 18 months is having had a prior jail booking.

Policy implication #9: Identifying these characteristics may help target people for additional services at the time of entry or exit from Cook County Jail or homeless services, with the goal of decreasing the total number of people cycling between these two systems.

3. Where are cycling high users commonly hospitalized?

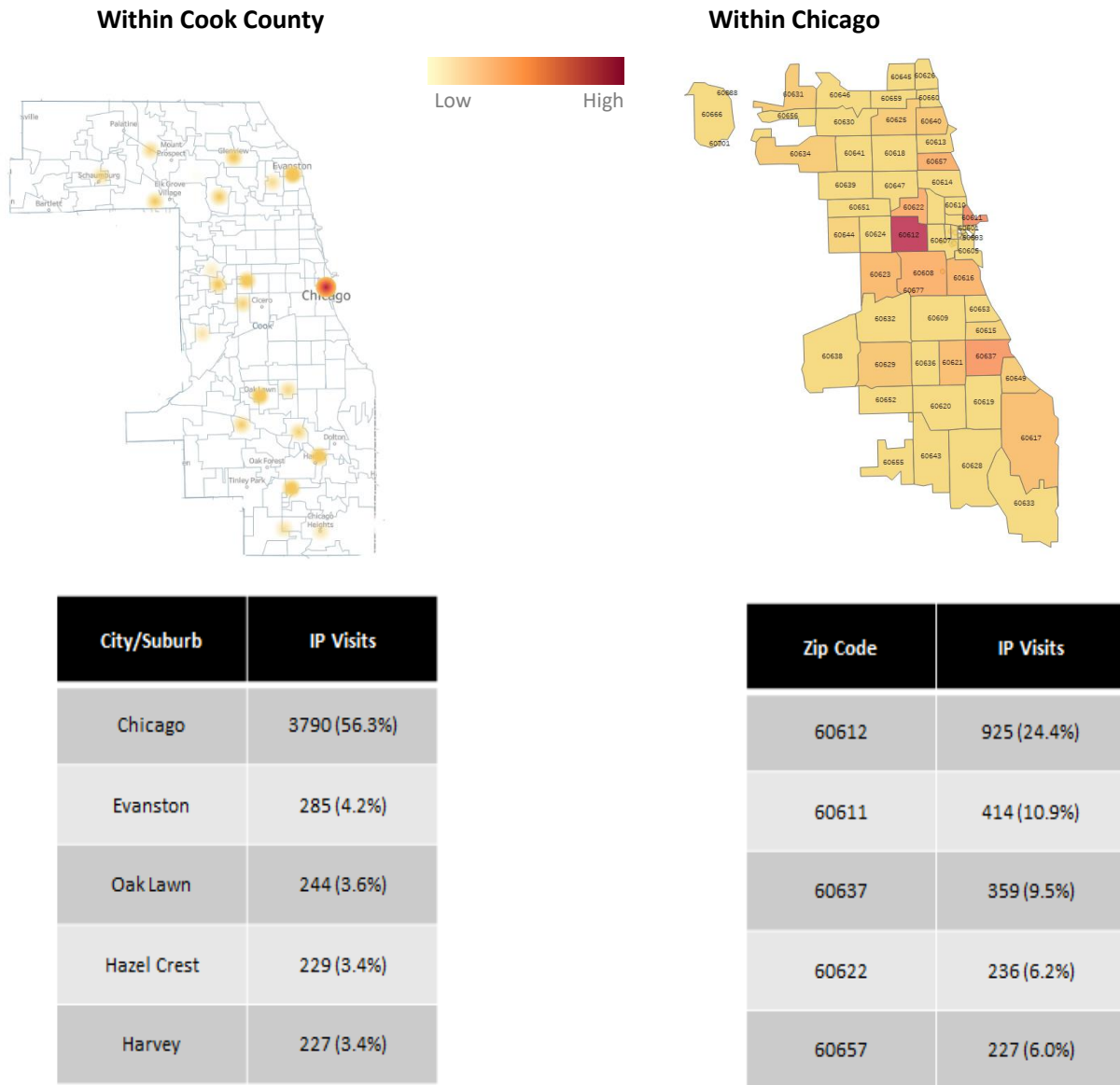
We conducted an analysis to identify the zip codes in which cycling high users most frequently accessed the hospital, either as part of an ED or inpatient stay. The “heat maps” below show the zip codes in which cycling high users had the most hospital visits and stays. It is important to note that while the data do not speak to how patients arrived at the hospital, many patients are transported to hospitals without choice for which hospital they attend.

Emergency department visits

As shown below in *Figure 4*, within Cook County, over half of the recorded ED visits for cycling high users occurred in the city of Chicago (56.3%), followed by Evanston (4.2%), Oak Lawn (3.6%), Hazel Crest (3.4%), and Harvey (3.4%).

Within Chicago, the zip code in which cycling high users had the most ED visits was 60612 (24.4%), which includes the Illinois Medical District. This zip code was closely followed by 60611 (10.9%), which comprises the Magnificent Mile and Streeterville areas, and 60637 (9.5%), which encompasses parts of Hyde Park, Woodlawn, and the University of Chicago.

Figure 5: ED visits for cycling high users within the City of Chicago and Cook County



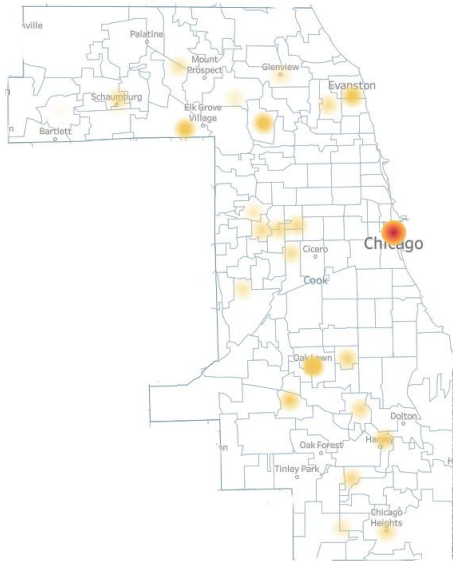
Inpatient Stays

As shown below in *Figure 5*, within Cook County, over half of the recorded inpatient stays for cycling high users occurred in the city of Chicago (59.2%), followed by Oak Lawn (4.5%), Park Ridge (3.3%), Elk Grove Village (3.1%), and Evanston (3.0%).

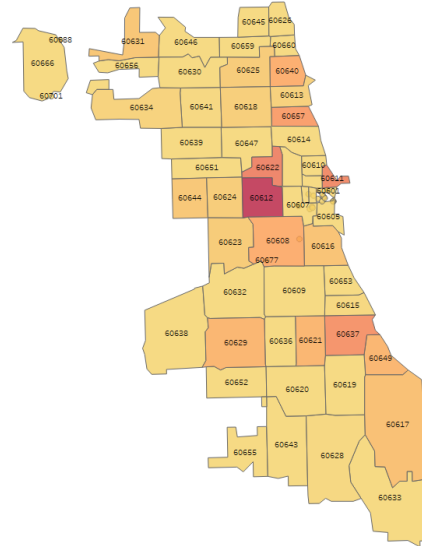
Within Chicago, inpatient visits were slightly more spread out throughout the city than ED visits. As compared to the 24.4% of ED visits that were concentrated within the Illinois Medical District, 19.5% of inpatient visits were in the same district. The second highest concentration of inpatient visits was in the 60622 zip code (10.7%) - comprising the Ukrainian Village, West Town, and Humboldt Park, followed by the 60611 zip code (9.7%).

Figure 6: Inpatient visits for cycling high users within the City of Chicago and Cook County

Within Cook County



Within Chicago



City/Suburb	IP Visits
Chicago	1725 (59.18%)
Oak Lawn	132 (4.5%)
Park Ridge	95 (3.3%)
Elk Grove Village	90 (3.1%)
Evanston	87 (3.0%)

Zip code	IP Visits
60612	336 (19.5%)
60622	185 (10.7%)
60611	168 (9.7%)
60637	149 (8.6%)
60657	125 (7.2%)

Key Finding #10:

Key finding #10: Cycling high users most frequently access hospitals in zip codes that include the Illinois Medical District, the Magnificent Mile, Hyde Park / Woodlawn, and the Ukrainian Village.

Policy implication #10: Hospitals in these zip codes most frequently serve cycling high users, and thus may be the most motivated to engage in cross-system partnerships to improve care coordination and connect cycling high users to services addressing key social determinants like housing.

Section 4: How can we collectively engage people who are cycling and help them stabilize and thrive?



Section 4: How can we collectively engage people who are cycling and help them stabilize and thrive?

Social determinants, including unstable housing, justice involvement, and poverty, often interact to influence health and wellbeing. This reality continues to motivate cross-system coordination to help Chicagoans who are cycling across multiple systems. While cycling high users represent a small portion of the population, they account for a large share of cross-system spending.⁴⁷ Thus, improved care coordination and service integration are gradually improving to help address underlying needs and remove barriers to stability. These efforts seek to improve outcomes across multiple areas of life for participants and ensure healthy, stable, and safe communities across Chicago.

Here in our city and across the nation, communities are taking a variety of approaches to help interrupt cycling and stabilize clients, including:

1. Preventing or diverting entry into the homeless services, criminal legal, and emergency health systems whenever possible⁴⁸
2. Screening for cross-system involvement (or investing in shared data infrastructure across social sectors)⁴⁹
3. Offering discharge or transition planning in advance of release from an institutional setting⁵⁰
4. Providing immediate-, medium- or long-term case management services after release from an institutional setting⁵¹

⁴⁷ Mitchell MS, León CLK, Byrne TH, Lin WC, Bharel M. Cost of health care utilization among homeless frequent emergency department users. *Psychol Serv.* 2017 May;14(2):193-202. doi: 10.1037/ser0000113. PMID: 28481604.

⁴⁸ Examples for diversion into the criminal legal system include programs to divert into mental health services, substance use treatment, and permanent supportive housing (for the chronically homeless), as well as policies to decriminalize homelessness, substance use disorder, and other low-level offenses. Other approaches include reimagining the first responder system to deploy Emergency Medical Services or Crisis Intervention Teams. Shelter diversion strategies are being deployed in several cities across the country, as well as here in Chicago.

⁴⁹ Some counties across the country, including Allegheny County in Pennsylvania and Los Angeles County among others, have invested tens of millions of dollars over several years to more fully integrate data systems across social sectors. Regardless of whether communities are fully integrating data systems or implementing a brief universal screening tool, enhancing coordination between health care workers, social service providers, and criminal legal practitioners can help streamline processes and generate better methods of identifying high users both across and within each system. For example, stakeholders in the homeless services, hospitals, and criminal legal systems individually engage and track people with treatable psychiatric issues such as schizophrenia or severe bipolar disorder. If the systems shared a data infrastructure, a person who is flagged within the homeless services system will be easily identified for continued services if they are also seen within the hospital system. While developing such a system would be a massive undertaking, it could be instrumental in cross-system work that can provide the necessary outcome data to justify expanding Medicaid coverage for specific programs targeting high users. Furthermore, such a measure can subsequently contribute to new ways of identifying and measuring program impact and cost-effectiveness.

⁵⁰ Discharge planning from detention centers may include jail in-reach services, placing housing navigators in detention centers, and referring returning citizens to holistic care centers immediately upon release, spearheaded by the Supportive Release Center in Chicago and continuing with the Community Resource Center. Discharge planning from hospitals may include connecting patients with social workers or housing navigators in “hotspot” hospitals.

⁵¹ There are several standardized models for providing case management, including Standard Case Management (SCM), Assertive Community Treatment (ACT) for clients with SMI, and Intensive Case Management (ICM). Critical Time Intervention (CTI) is designed specifically to support clients during a critical life transition, such as release from an institutional setting like jail or prison, hospitals, or emergency shelters.

5. Connecting multi-system clients to a continuum of housing supports depending on need and eligibility, including:
 - Transitional housing⁵²
 - Rapid Rehousing (RRH) or rental subsidies⁵³
 - Permanent Supportive Housing⁵⁴

The handful of rigorous evaluations that have been conducted of initiatives that employ such approaches suggest that participants experience improved outcomes across multiple areas of life, including reduced arrests,⁵⁵ reduced emergency shelter use,⁵⁶ and reduced hospitalizations.⁵⁷ We hope that the rich information included in this policy brief will help stakeholders in Chicago and beyond enhance existing efforts to better serve high cycling residents, as well as spur new investments and collaborative approaches to interrupt cycling and remove barriers to stability. The Health Lab seeks to produce rigorous evidence of the positive effects of such approaches, which helps identify scalable models; promote government adoption at the state, federal, or national level; and make the case for sustainable sources of funding.

By engaging with policymakers, practitioners, people with lived experience, and members of the philanthropic community in the coming months, Smart Policy Works and the Health Lab hopes partners will identify recommendations for how these findings can inform policy, practice, and the resources available to support people who are cycling on a path to stability. Through these partnerships, we hope to co-generate rigorous evidence of effective models that can be scaled to affect systemic change.

⁵² There are several types of transitional housing to help support people upon release from institutional settings. Medical respite care is intended to serve housing unstable patients with acute or chronic medical needs at the point of release from the hospital. Community Corrections Facilities provide transitional housing for returning citizens upon release from a carceral setting. Recovery Housing offers transitional housing with supportive services focused on mental health and substance use disorder.

⁵³ Several programs such as the Breaking Barriers program in Los Angeles and the Connecticut Flexible Rental / Financial Assistance program connect returning citizens to rapid rehousing or rental assistance programs.

⁵⁴ Several programs locally and in other cities across the country have sought to connect cycling high users to permanent supportive housing. The FUSE program in multiple cities (coordinated by the Corporation for Supportive Housing), Pathways to Housing in NYC, and the At Home program in Canada, and Cook County Health's Flexible Housing Subsidy Pool in Chicago all connect clients with multi-system involvement to permanent supportive housing.

⁵⁵ In the states of Ohio and Washington, two targeted programs, Returning Home Ohio (RHO) and Reentry Housing Pilot Program (RHPP) were successful in reducing rearrests and emergency shelter use among formally incarcerated individuals. The success of RHO and RHPP can be attributed to collaborative efforts between the justice system and service providers to address recidivism risk factors, such as housing instability and unemployment, and offer other essential supports. For instance, each RHPP site had a participant case management plan that included targeted treatment services, offender accountability strategies, and subsidized housing at the county level. Lutze, Faith E., Jeffrey W. Rosky, and Zachary K. Hamilton. "Homelessness and reentry: A multisite outcome evaluation of Washington State's reentry housing program for high risk offenders." *Criminal legal and Behavior* 41.4 (2014): 471-491.

⁵⁶ Fontaine, Jocelyn, et al. "Supportive housing for returning prisoners: Outcomes and impacts of the returning home—Ohio Pilot Project." Washington, DC: Urban Institute (2012).

⁵⁷ Aubry, T., Nelson, G., & Tsemberis, S. (2015). Housing first for people with severe mental illness who are homeless: a review of the research and findings from the at home—Chez Soi demonstration project. *The Canadian Journal of Psychiatry*, 60(11), 467-474.

APPENDICES



Appendices

Appendix A

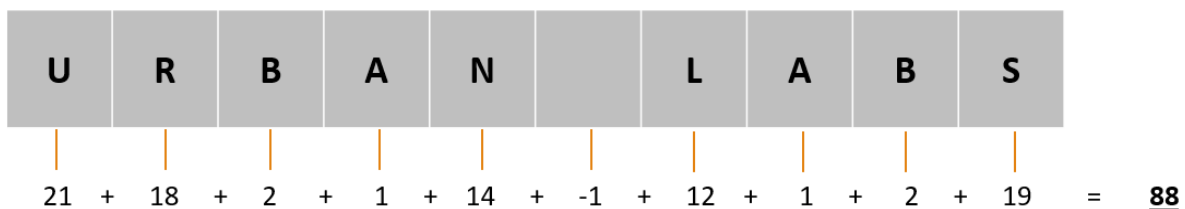
Appendix A describes the process by which the Health Lab sought to protect the privacy and security of the sensitive data used in the study. Because the data in this study includes highly sensitive personal information, keeping this information protected is of paramount importance, especially in the case of the IDPH hospital data, which is considered Protected Health Information (PHI).

Part of the challenge of directly sharing and combining data from the three systems was the necessity of using personally identifiable fields to link records from the same individuals across the different systems. The Health Insurance Portability and Accountability Act (HIPAA) governs the use and management of PHI. Health information from any HIPAA covered entity (health plans, health care clearinghouses, health care providers that electronically transmit any health information) that includes any demographics, locations, contact information, biometrics, or record identifiers are considered PHI.

Record linkage of IDPH data to HMIS and CCSO data

To adhere to HIPAA guidelines, the Health Lab developed a hashing protocol that allowed for the transformation of identifiable names from each dataset into completely different sets of characters. The transformation is extremely difficult to reverse algorithmically. The Health Lab worked closely with IDPH to deploy this protocol, which allowed analysts to perform record linkage on the name fields without having to view the actual names of the individuals.

The process of hashing involves obtaining a value by transforming a string of characters using a certain function. A very simple example of one such transformation is taking the index of each alphabet in a word/phrase and summing them up:



In this case, “Urban Labs” outputs a value of 88. The expectation is that if we apply the same function to the same string on any system, the output value is the same, allowing us to compare/match the output without referencing the original “Urban Labs” string, while at the same time obscuring information from the original set of characters.

This is, of course, a very rudimentary example that has many flaws – 1) there are many different combinations and sequences of letters that will result in the same sum of 88, and 2) it is not very secure and easily reversible. The algorithm that we applied to the hashing of the identifiers in our dataset is much more complex, minimizes collisions (“collisions” are different sequences that result in the same output when the algorithm is applied), and non-reversible without a secure key. This ensures that the data and personally identifiable information are kept secure during the record linkage process and minimizes the risk of accidental or malicious exposure in the case of a data breach.

We then matched the records that we had from HMIS and CCSO to IDPH data on these transformed strings, using the date of birth field as a double check for individuals with similar names. We obtained a match rate of 85% for the data that we had against the records in the IDPH data. The matched IDs were then sent back to IDPH, who then provided us with the hospital utilization data on the individuals that successfully matched. The 15% that did not match either had significant errors in their name data (the minhash algorithm is robust to small differences) or did not have healthcare utilization data in the IDPH system.

Appendix B

Appendix B offers additional insight into our analysis of service utilization over the four-year study period in each system. We sought to determine cutoffs that differentiated people who demonstrated disproportionately higher service utilization patterns than typical clients, patients, or detained individuals. Concurrently, we also worked with our data partners to understand what elements of service utilization that they prioritized in defining high users of their own system. The graphs below show the utilization patterns of high users versus non-high users for each system.

As with many previous studies, we looked at the distribution of use across individuals in a specific sector and paid special attention to the top 5 and 10 percentile bands. Wodchis et.al (2016) looked at annual healthcare use and found that individuals in the top 10 percentile tend to stay above average in subsequent years. Tsai et. al (2018) looked at emergency department visits quartiles in a hospital in Columbia, South Carolina, and found that the top quartile averaged 5.43 visits per year.

Figure B1: Analysis of the number of jail stays across all detained individuals in the Cook County Jail from 2014-2017

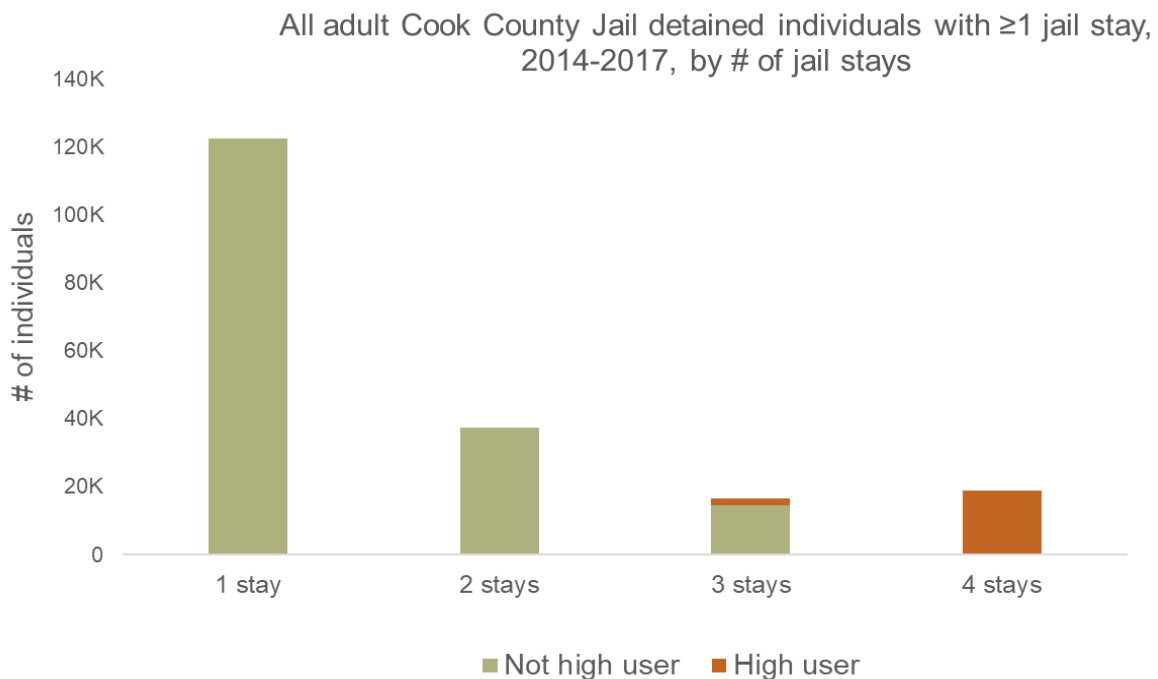
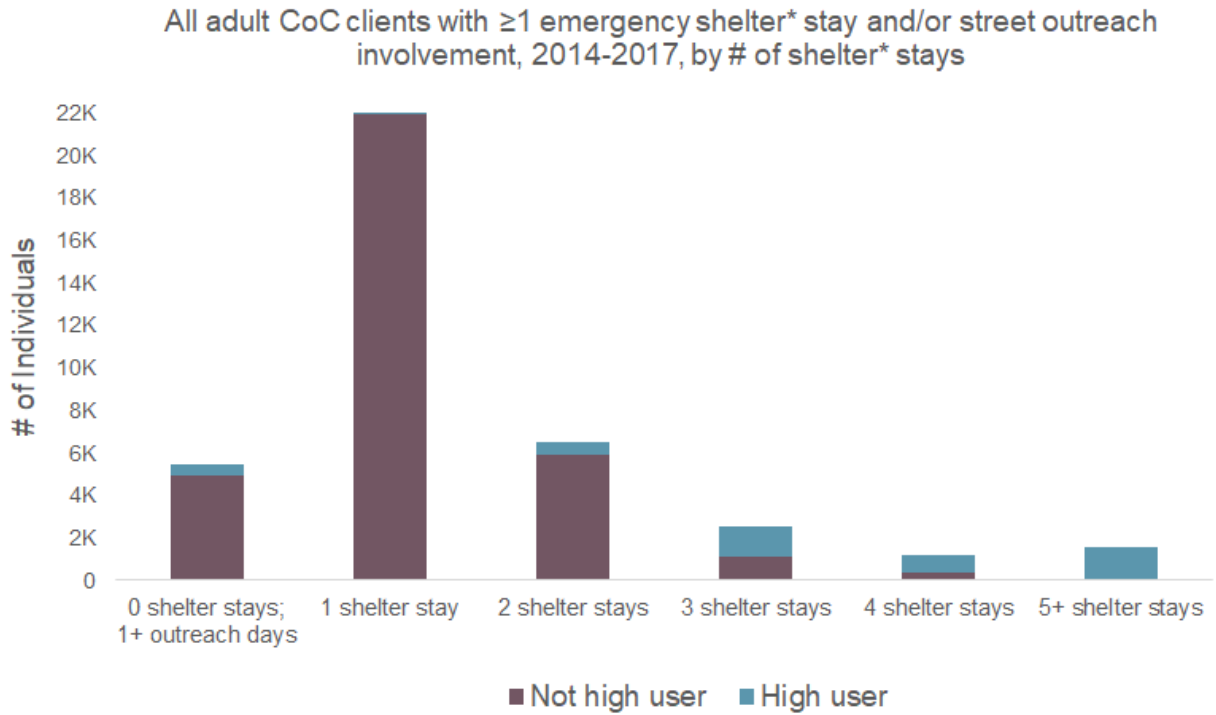
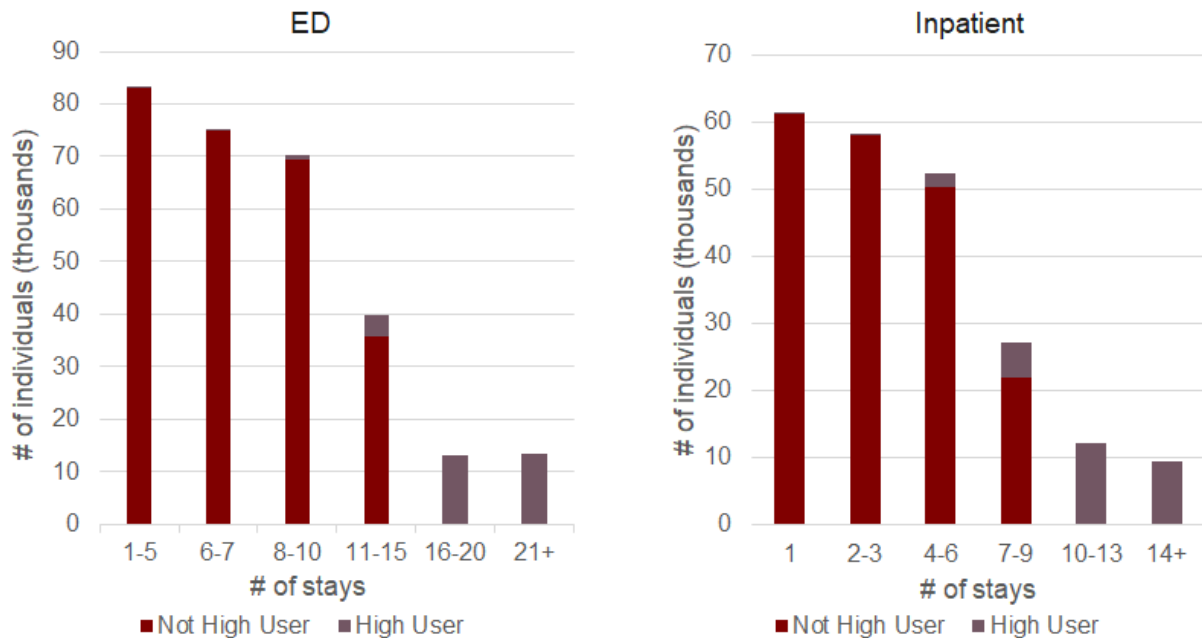


Figure B2: Number of adult CoC clients with emergency shelter stays and/or street outreach involvement from 2014-2017, grouped by number of shelter stays



* Individuals with 1-4 shelter stays may also qualify as high users based on their outreach involvement, not shelter usage. Includes transitional housing. Does not include Youth Transitional Housing or Permanent Housing with Short-term Supports.

Figure B3: Number of individuals who had ED (left) and Inpatient (right) encounters from 2014-2017, grouped by number of stays



Appendix C

Table C1: Estimated per person and total group costs associated with serving cycling high users of the homeless services system and the Cook County Jail

	Older singles with complex needs			Young individuals with families	Young singles	
	(1A) Oldest Singles N = 2,401	(1B) Highly Vulnerable N = 427	(1C) Substance Use N = 831	(2) Young families N = 493	(3A) Young Singles N = 2,285	(3B) Dom. Violence N = 471
Emergency shelter	\$2,180	\$990	\$1,161	\$886	\$1,762	\$1,333
Transitional housing	\$1,200	\$376	\$673	\$4,365	\$534	\$556
Cook County Jail*	\$26,767	\$38,668	\$29,097	\$18,859	\$25,238	\$20,410
Hospital systems**	\$37,673	\$35,921	\$23,075	\$14,991	\$11,602	\$20,631
Total across all 3 systems						
Per person cost	\$67,820	\$75,954	\$54,005	\$39,099	\$39,136	\$42,930
Sum group cost	\$162,495,745	\$32,052,498	\$44,824,460	\$19,236,886	\$89,385,433	\$20,176,911

Appendix D

Appendix D compares the characteristics of different multi-system cycling users to single-sector users.

Comparing Multi-System Cycling Users to Other Homeless Services Clients

People cycling just between the homeless services system and the Cook County Jail demonstrated high rates of vulnerabilities on many characteristics reported in homeless services administrative records, even when compared to three-system cycling users. As shown in Table 1, people cycling between the homeless services system and the Cook County Jail were:

- The least likely to self-report receiving income (37%)
- The least likely to self-report having health insurance (66%)
- Second least likely to self-report receiving non-cash benefits (59%)
- Second most likely to self-report surviving domestic violence (14%)
- The least likely to have ever accessed permanent housing in the CoC (13%)

Table 1: Comparison of key characteristics of multi-system cycling users to single-sector users in homeless services

	Three-system users	Homeless services and jail users	Homeless services and hospital users	Homeless services-only users
Ever reported receiving income	51%	37%	67%	52%
Ever reported having health insurance	73%	66%	76%	67%
Ever reported receiving non-cash benefits	67%	59%	66%	57%
Self-reported domestic violence survivor	9%	14%	12%	16%
Ever accessed permanent housing	19%	13%	30%	19%

Conversely, homeless services and hospital cycling users were among the most likely to self-report access to benefits (i.e., health insurance, non-cash benefits, and permanent housing), suggesting in part that they may be more likely to meet associated eligibility criteria. Somewhat surprisingly, single-system users engaged with homeless services only also demonstrated needs for health insurance and non-cash benefits, as well as a history of domestic violence.

Comparing Multi-System Cycling Users to Other Individuals Detained

Three-system cycling users, as well as homeless services and Cook County Jail cycling users, exhibited the highest levels of vulnerability on proxies for medical and behavioral health challenges reported in Cook County administrative records. These two groups were:

- More likely to receive mental health services during detention (signified by a “P alert”), including receiving in-patient psychiatric services (“P4 alert”)
- More likely to receive medical services during detention (signified by an “M alert”)

- More likely to receive detox treatment upon jail entry (signified by a “D alert”)
- More likely to have been released to prison (as signified by a transfer to the Illinois Department of Corrections)

Table 2: Comparison of administrative records of multi-system users to single-sector users in the Cook County Jail

	Three-system users	Jail and homeless services users	Jail and hospital users	Cook County Jail-only users
Ever received a “P alert”	27%	30%	12%	9%
Ever received a “P3 alert”	7%	7%	3%	2%
Ever received a “P4 alert”	5%	7%	2%	2%
Ever received a “M alert”	20%	12%	14%	6%
Ever received a “D alert”	27%	23%	14%	8%
Ever released to prison (Illinois Department of Corrections)	29%	30%	19%	20%

Hospital system and Cook County Jail cycling users did demonstrate elevated levels of vulnerability on medical and behavioral health challenges as compared to Cook County Jail-only users, but the differences were only slight.

Comparing Multi-System Cycling Users to Other Hospital Patients

We did not compare multi-system cycling users to other hospital patients because the administrative records did not include additional characteristics beyond length of stay and cost of charges while in the hospital. Furthermore, we only received records for patients that IDPH had already identified as annual high hospital users, as opposed to typical patients, which restricted this analysis.⁵⁸

⁵⁸ Three-system users experienced similar numbers of hospital days (in both the emergency and inpatient setting) and charges as other hospital patients engaged in one other system. Patients who were single-system hospital users had the highest number of hospital days and charges, but that was expected, since the single-system records obtained from IDPH only involved their high users. Three-system users were also similarly distributed in terms of service locations as other hospital patients engaged in one other system within Cook County and Chicago.