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Building a Sustainable and Replicable Approach To Estimating the Prevalence of Youth Homelessness: *Final Report*

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Executive Summary

The number of young people experiencing homelessness is a growing concern in Colorado and across the United States. The lack of a safe place to call home means youths spend their time and resources meeting survival needs rather than engaging in future-oriented goals. This interrupts and can greatly diminish educational development, vocational and employment opportunities, and interpersonal relationship growth. Unhoused young people are also particularly vulnerable to sex and labor trafficking, have increased exposure to violence, and are more likely to misuse substances.

National estimates of 14–24-year-olds experiencing homelessness vary widely depending on the source and method of data collection, ranging from around 34,700 up to 1.2 million. Understanding who is unhoused, where they are located, and the circumstances that led to their experience of homelessness is central to informing support services and prevention efforts. Yet gaining an accurate count of youths experiencing homelessness has been difficult for several reasons, including:

- Agencies and organizations use differing definitions of homelessness;
- Youth may avoid self-identifying as homeless due to the associated stigma; and
- Administrative systems are siloed and no one system accurately captures the number of youths experiencing homelessness.

Study Purpose

This study was led by the Center for Policy Research and its partners at the Colorado Evaluation and Action Lab at the University of Denver and the University of Colorado, School of Medicine, to:

- Build a sustainable and replicable approach to more accurately estimate the number of youth ages 14-24 experiencing homelessness in Colorado;
- Better understand the attachment of youths experiencing homelessness to major support systems (i.e., education, homeless services, and child welfare); and
- Learn more about the characteristics of youths experiencing homelessness, including the support services they access.

Study Approach

A pilot study linking administrative data was first conducted in the City and County of Denver where it was feasible to isolate the geographic overlap for data from the homeless services, education, and child welfare systems. Lessons learned from the pilot were applied to generate a statewide estimate of youth homelessness through linking administrative data in Colorado. The approach researchers used for the statewide study included:

- **Count Youths Known to Systems.** Researchers generated an unduplicated count of youths experiencing homelessness known to one or more of the systems by:
    - Linking administrative records across three major systems that identify and support youths experiencing homelessness:

        - **Homelessness Management Information System (HMIS)** – Data on all people accessing services related to homelessness in Colorado through a Continuum of Care (CoC).
        - **Education** – Data on youths identified as experiencing homelessness collected by all Colorado school districts and compiled by the Colorado Department of Education (CDE) as required by the McKinney-Vento Homeless Assistance Act. Denver Public Schools data were used in the pilot study.
        - **Child Welfare** –Data on child welfare referrals and assessments, including information on homelessness as a risk factor and youths who run away from home. This data is collected in Trails, the statewide automated child welfare information system, which is managed by the Colorado Department of Human Services (CDHS), Division of Child Welfare.
    - Deduplicating individuals through a rigorous identity resolution process; and
    - Examining the overlap of individuals across systems.
- **Estimate Youths Unknown to Systems.** A multisystem estimation process (previously known as "capture-recapture") was used to estimate the number of youths unknown to the homeless services, education, or child welfare systems. Looking at data from these three systems over a five-year period, researchers:
    - Determined how each system defines homelessness;
    - Created contingency tables to indicate what system(s) recognized that a given youth experienced homelessness in each fiscal year of interest;
    - Selected model fit based on fit indices, confidence intervals, the literature, and qualitative findings from this study; and
    - Determined it was necessary to limit estimates of unknown homelessness to youth ages 14-17 and eliminate youth ages 18-24 from this portion of the study as they do not have an equal chance to be served by each of these systems.
- **Add Known Count to Unknown Estimate to Produce a Total Estimate**. The total estimate of Colorado youths who experienced homelessness used:
    - Data from statewide systems whenever possible (e.g., Colorado Department of Education (CDE), Colorado Department of Human Services (CDHS)) as that is more efficient than local sources from each county or school district; and
    - Regional data from HMIS, which was exported by analysts in a Continuum of Care (CoC) that had access to all regional data systems, ensuring a consistent extract across all of Colorado's CoCs.

Additionally, the research team:

- **Incorporated the Voices of Youth with Lived Experience.** Researchers held five focus groups and conducted one-on-one interviews with two groups of youths receiving services through Runaway and Homeless Youth (RHY) service providers in urban, suburban, and rural areas across Colorado. The goal was to understand their experiences with homelessness and the systems and surveys that track them, and to identify risk and protective factors associated with homelessness.
- **Engaged Data-Sharing and Homeless Service Provider Partners.** The research team conducted one-on-one interviews and held meetings with the agencies that shared data for this study and with homeless youth service providers. The aim was to better understand the implications of sharing data

and the challenges of identifying and serving homeless youths across Colorado.

Study Findings

- **Total Estimate of Youth Homelessness.** Combining the count of youths known to be experiencing homelessness with the estimation of youths unknown to data systems provides a more complete estimation.
    - The multisystem estimation method was conducted over a five-year period (2018-2022), generating annual estimates that ranged from three- to five-times the annual count of youths known to be experiencing homelessness. The box below illustrates this for the most recent year of study data, state fiscal year 2022.

Colorado Estimate of Youths Ages 14-17 Who Experienced Homelessness in SFY22

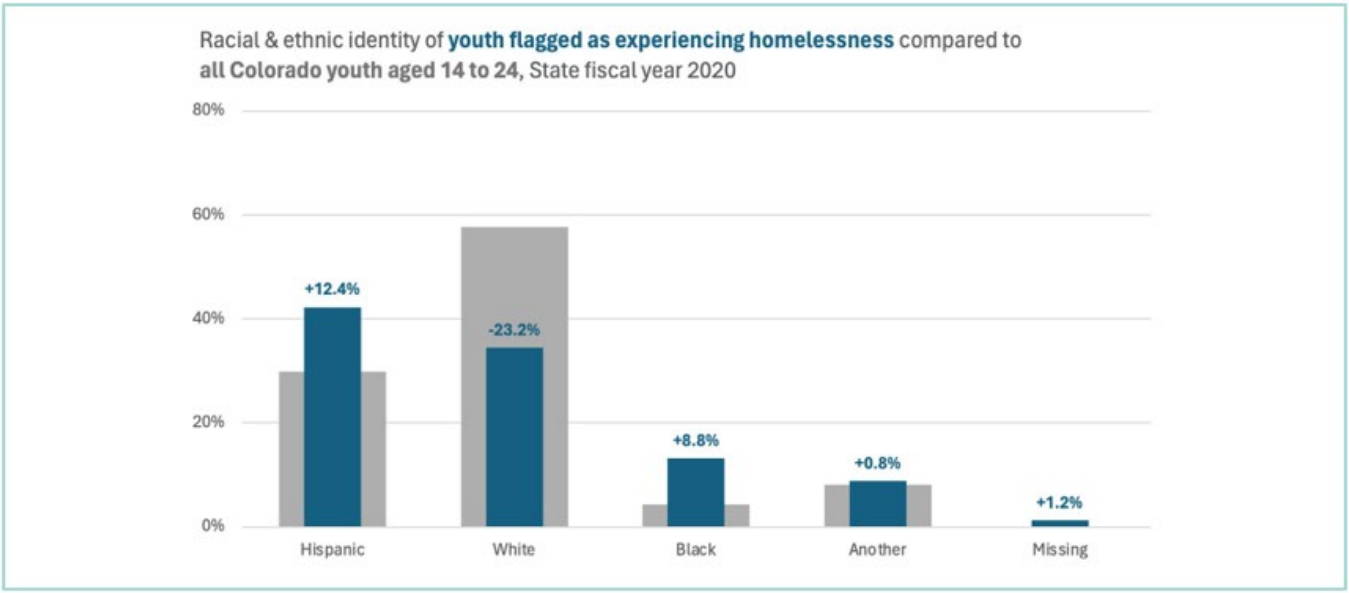
6,135 Known + **29,906** Unknown = **33,041** Total Population of Youth Who Experienced Homelessness

Colorado Youths Ages 18-24 Known to HMIS, Education, or Child Welfare as Experiencing Homelessness in SFY22

6,855

- **Attachment of Youths to Systems.** Each system plays a crucial role in identifying youths experiencing homelessness. This study found little overlap across systems, meaning youth were typically only identified as experiencing homelessness in one of the administrative datasets.
    - Of the 42,143 youths identified during the five-year period, 37,966 (90.1%) appeared in one system alone – 51.7% in education data only, 22.3% in HMIS data only, and 16.2% in child welfare data only.
    - 3,721 youths, 8.8% of the statewide sample, appeared in two out of three systems during the five-year period.
    - Only 456 youths, 1.1% of the sample, appeared in all three systems at some point during the five-year period.
    - The systems that identified youth as homeless varied by age and geographic location. Younger youths (14-18) were most often identified by the education and child welfare systems and young adults (19-24) by HMIS. Youths in the Pike's Peak CoC were most likely to be identified in HMIS, and youths in every other part of the state by the education system.
    - The racial and ethnic composition of the sample identified as homeless in any of the systems differs substantially from the overall population in Colorado:
        - 42.3% of youths experiencing homelessness were Hispanic, compared to Hispanic youths comprising 29.9% of the population in Colorado.
        - 13.2% of youths experiencing homelessness were Non-Hispanic Black, compared to Non-Hispanic Black youths comprising 4.4% of the population in Colorado.

        - 34.4% of youths experiencing homelessness were White, compared to White youths comprising 57.6% of the population in Colorado
    - Youths identifying as male or female were identified as experiencing homelessness at similar rates. However, systems other than HMIS do not routinely capture data on gender beyond male/female categories.



- **Characteristics of Youths** Experiencing Homelessness. In-depth analysis of the Denver pilot data show the characteristics of youth experiencing homelessness can be described in three groups:
    - **Youths with Limited Child Welfare Experience**. Nearly two-thirds of the young people who experienced homelessness as young adults were either not child welfare involved or had limited child welfare involvement. They were most frequently identified by the education system.
    - **Youths with Behavioral Challenges and Extensive Child Welfare Involvement**. Approximately one-quarter of young people who experienced homelessness as young adults were best described by this group of experiences. They were most frequently identified by child-welfare data.
    - **Youths with Early Child Welfare Involvement.** The smallest group in this study, these young people had an extensive life history of being served by child welfare and their families by CoCs. They were most frequently identified by HMIS data.

Study Implications

Policymakers, practitioners, and researchers in Colorado and other states can use these findings to further strengthen efforts to address and prevent youth homelessness, including:

- **Resource the Routine Use of Multisystem Estimation Methods.** Multisystem estimation methods are the known counts and the unknown estimates that leverage three or more administrative data sources. This approach shows promise in more accurately estimating the number of people experiencing homelessness and improving the tracking of progress in reducing homelessness. Achieving the routine use of this method will require dedicated funding, improved cross-agency collaboration, and strong leadership.

- **Reach Youths Unknown to Data Systems.** The allocation of resources to service providers directed to strengthening outreach efforts could grow their capacity to connect youths to systems and ensure services are provided regardless of whether youths are known in a system.
- **Improve Service Delivery.** Leveraging information from this research, like the Latent Class Analysis, can further inform and improve prevention efforts, including the equitable allocation of resources and targeting support to specific geographic areas.
- **Include Youth Voices.** Prioritizing the inclusion of the voices of youths with lived experience will grow understanding about their circumstances and better inform prevention efforts and service interventions.
- **Build on this Study.** Incorporating additional data sources in future studies, such as health care, will further clarify the combination of systems youths experiencing homelessness touch in a defined geographic area.

Contents

Introduction

The number of youths and young adults experiencing homelessness is a growing concern in Colorado and across the country. National estimates of 14–24-year-olds experiencing homelessness vary significantly depending on the source and method of data collection and range from around 34,700 up to 1.2 million (At USICH Meeting, Council Focuses on Youth Homelessness, 2024). Understanding who is unhoused, where they are located, and the circumstances that led to their experience of homelessness is central to informing the provision of services and advancing efforts to prevent and end homelessness. Yet gaining an accurate count has been a long-standing challenge for researchers and service providers alike. Recognizing this problem, the U.S. Department of Housing and Urban Development (HUD) funded a project beginning in September 2019 (Grant # H21695CA) to the Center for Policy Research (CPR) and its partner, the Colorado Evaluation and Action Lab at the University of Denver (Colorado Lab), and the University of Colorado School of Medicine to link administrative data sets across multiple programs and agencies to:

- Generate a more accurate estimate of the number of youths experiencing homelessness; and
- Learn more about the characteristics of youths experiencing homelessness, including where they access supportive services.

There are a few studies that have linked administrative data across professional sectors to determine the prevalence of youth homelessness (Richard et al., 2019; Shah et al., 2017). The limited findings of these studies suggest that any singular record is likely to underestimate the rate when compared to information combined from multiple sectors (Clark et al., 2017). Linking administrative data presents both great potential and challenges. Continued innovation in understanding and predicting trends in homelessness is necessary to mitigate risks for young people. Research has yet to explore the potential of linking a more extensive range of records, such as K–12 McKinney-Vento, child welfare, Homeless Management Information System (HMIS), and Point-In-Time (PIT). This study sought to fill that gap by linking multisystem data to better understand the prevalence of youth homelessness in an established geographic area.

The research team also incorporated the voice of youths with lived experience of homelessness into the study design. Combining lived experience with administrative data more fully revealed the challenges, barriers, and systemic issues they faced.

CPR and the Colorado Lab conducted a multi-phase study designed to develop a sustainable and replicable approach to estimating youth homelessness in Colorado by linking administrative data systems across Colorado. This study had two primary goals: to leverage administrative data linkages to build a sustainable and replicable approach for estimating homelessness among youths ages 14–24 in states where data are siloed at different geographic levels; and to describe the K–12 educational, child welfare-related, public assistance program participation, and characteristics and histories of older youths (ages 18–24) associated with homelessness.

This final report describes the process, results, findings and implications of the study, both from the smaller geographic area and the expanded statewide area.

In this report, we:

- Outline the research questions and approach used to frame this study.
- Synthesize the current state of the literature to provide a foundation for understanding the study's broader context. This includes rates of youth homelessness, risk factors associated with multisystem involvement and the experience of youth homelessness, and the current state of using linked administrative data for research purposes.
- Provide a detailed explanation of the iterative process that guided the research.
- Discuss input from key partners regarding the barriers and benefits of data sharing in Colorado and their recommendations for framing and disseminating the findings of this study.
- Report on the reactions of youth with lived experience of homelessness from focus groups and interviews. These youth shed light on their experiences with various systems, their risk factors, definitions of homelessness, and access to services across Colorado.
- Describe the approach and analysis from the pilot study with the linking of data within the City and County of Denver. An unduplicated known count of youth who experienced homelessness in the City and County of Denver are presented along with the lessons learned from the administrative data linkage in the statewide study.
- Build on the findings from the pilot study in Denver to generate a multisystem estimate of youth homelessness in the state of Colorado. The statewide multisystem estimates include the known count of youth who experienced homelessness and an estimate of youth who experienced homelessness, but that experience is not reflected in the administrative data.
- Use latent class modeling to describe the experiences and characteristics of older youths (ages 18–24) who have experienced homelessness. This model organizes youths into three distinct groups based on specific characteristics and explores each group's defining features.

The report concludes with a summary of key findings and a discussion on the broader implications of this study and its results for policymakers, practitioners, and researchers.

Existing Research on Youth Homelessness

This study started with a literature review to provide evidence to support the research questions and study design. The review focused on the risk factors associated with homelessness, the challenges faced by multi-system involved youth experiencing homelessness, known rates of youth homelessness, and research on linking administrative data across multiple systems to estimate the prevalence of a population.

Many harmful outcomes are associated with homelessness for people of all ages and demographics. Chronic medical and mental health issues such as asthma, hypertension, depression, and substance misuse are known to be associated with homelessness (Desmond & Sandel, 2017; Subedi & Ghimire, 2022), and young people who have experienced homelessness have higher levels of mental distress (Mercado et al., 2021) and worse overall health and well-being in adulthood (Collins & Thomas, 2018; Gultekin et al., 2020). For youths in particular, homelessness and housing instability have additionally damaging implications for typical development. As stated by Briton and Pilnik (2018), "[H]omelessness is disruptive to the maturation processes for both children and adolescents and profoundly impacts their cognitive, social, and emotional development" (p. 22). When basic needs are met, youths between the ages of 16–24 naturally engage with educational development, vocational and employment opportunities, and interpersonal relationship growth. Lack of permanent stable housing limits these developmentally appropriate opportunities, as youths are required to spend their time and resources meeting survival needs rather than engaging in future-oriented goals (Roy et al., 2016). The implications of this developmental interruption are significant and may influence long-term outcomes.

Studies have shown that those who first experienced homelessness in childhood were less likely to be employed as adults (Cobb-Clark & Zhu, 2017) and that youth experiencing homelessness face many barriers to living independently including unemployment, lack of employment skills, and education deficits (Parpouchi et al., 2021). The Center for Public Policy Studies found that youths experiencing homelessness face additional risk factors: vulnerability to sex and labor trafficking, exposure to violence, and engagement with substance use all increase as a result of homelessness. As many as 40% – 70% of homeless youths "engage in prostitution to meet their basic needs" (Center for Public Policy Studies, 2013, p. 2). In a qualitative study of youth experiencing homelessness in Atlanta, over half reported experiencing human trafficking in their lifetimes, with the majority stating it occurred within the past year (Wright et al., 2021). Human trafficking is a considerable threat in Colorado due to the major interstate highways, international airport, and large immigrant population (Center for Public Policy Studies, 2013). Further, interviews with 654 youths in 11 cities nationwide found that more than 60% had experienced physical and sexual violence while experiencing homelessness (Whitbeck et al., 2016).

Multisystem Involvement for Youths Experiencing Homelessness

Prior research suggests that youths who access homeless services are simultaneously likely to be involved in juvenile justice systems and/or have a history in child welfare services (Narendorf et al., 2020). Additionally, an exploratory study that linked child welfare data and homelessness service utilization data found that youths who accessed homelessness services often had varying levels of youth corrections involvement and interactions with the child welfare system (Orsi-Hunt et al., 2023).

The National Alliance to End Homelessness reports that over 25% of youths previously involved in the child welfare and foster care system become homeless within just two to four years of aging out of the foster care system (Britton & Pilnik, 2018). Forty-four percent of homeless youths interviewed in 11 U.S. cities reported having stayed in a jail, prison, or a juvenile detention center, and 78% had had at least one interaction with police. Sixty-two percent of the homeless youths interviewed had been arrested. Lack of safe and stable housing positions youths to miss school, spend time in public outdoor spaces after hours, and exchange sex or services to meet survival needs, all leading to involvement with the juvenile justice system (Administration of Children and Families, 2016; as cited by Britton & Pilnik, 2018). Moreover, research suggests anti-homeless policies across many U.S. cities have been recently bolstered and tend to result in frequent citations and "move-along" orders. These policies contribute to persistent, punitive interactions with the criminal justice system for those experiencing homelessness overall (Herring et al., 2020).

The intersection of juvenile justice and foster care involvement is unique, with linked, cross-sector, administrative data providing a useful tool for examining the characteristics of youths involved in both systems. In 2016, researchers integrated records from juvenile justice and child welfare systems across three U.S. cities. Each city's department of child and family services and juvenile court divisions provided demographic variables, observation period dates, and other systemic characteristics within their individual data sets. It was discovered that African American young men, those who experienced congregate care placements while in foster care, and youths who were older when first placed in foster care were most likely to also be involved in the juvenile justice system (Cutuli et al., 2016). A study from New York City reflected similar findings and generated further implications for youths dually involved in both foster care and juvenile justice. Researchers compared three groups: one consisted of youths strictly involved in foster care, a second group consisted of youths strictly involved in the juvenile justice system, and a third group included youths involved in both the juvenile justice and foster care systems. Through the integration of administrative data, it was found that dually- involved youths were more likely than youths from the other two groups to be involved in additional human service systems; rates of Cash Assistance, SNAP, Medicaid, single adult shelter stays, detention stays, jail stays, and emergency room visits were all higher for this third group. These findings have led practitioners to focus on prevention efforts in foster care and juvenile justice systems (Center for Innovation through Data Intelligence, 2015).

From these studies, among others, it is clear that specific experiences within the child welfare and juvenile justice systems may be predictive of homelessness and housing insecurity (Grattan et al., 2022; Curry, 2017). In Washington state, it was found that the number of foster care placements a youth endured while in the child welfare system was correlated with likelihood to face homelessness, with a higher number of placements predicting greater risk of homelessness (Shah et al., 2016). Similarly, an analysis of administrative data from the National Longitudinal Study of Adolescent to Adult Health confirmed that survivors of emotional abuse were more likely to be homeless as young adults (Curry, 2017).The inextricable relationship between child maltreatment and homelessness was further illustrated in Connecticut, where it was found that 21% of families with substantiated maltreatment allegations experienced severe housing concerns (Fowler & Ferrell, 2017). Child welfare-involved youths are significantly more likely to have a history of trauma, abuse, and neglect than their peers (Curry, 2017).

Social determinants such as race, gender identity, and sexual orientation are additional predictors of the risk of homelessness. Youths of color are considerably more likely to endure homelessness and housing instability. In Michigan, analysis of education records of the 2015–2016 school year revealed that Black students were three times as likely to experience homelessness than White students (Evangelist & Schafer,

2020). Further, there is a growing body of literature that argues that structural racism in the U.S. contributes to the over-representation of people of color in homeless populations (Richard, 2023).Youths who are pregnant or parenting, lesbian, gay, bisexual, transgender, or queer (LGBTQ+)- identifying, or who have been exposed to labor or sex trafficking, are also at increased risk of homelessness (Robinson, 2018). Cutuli and colleagues (2019) confirmed that nearly 7% of lesbian-, gay-, and bisexual-identifying youths experienced homelessness. Further, research suggests that LGBTQ youths of color face compounding risks of homelessness as indicated by a higher proportion of LGBTQ youths of color utilizing homeless shelters and services across the U.S. (Ormiston, 2022). A deeper understanding of youth involvement in multiple systems may illuminate more effective ways to prevent disproportionate homelessness for youths with historically marginalized identities.

Rates of Youth Homelessness

Estimating rates of homelessness is a challenge for service providers, researchers, and government agencies, and determining accurate measures for youths and young adults is uniquely daunting (Evangelist & Schafer, 2020). Despite the challenges, there are estimates of youth homelessness at the national, state, and local levels. According to HUD's national PIT count, a figure generated by tallying the number of people experiencing homelessness on the street or in shelters on a single night, more than 34,700 youths under the age of 25 were experiencing homelessness in January 2023 (de Sousa et al., 2023). The most recent PIT count, taken on January 30, 2023, in the Denver metro area estimated 2,101 people in families with children and 469 unaccompanied youths to be homeless (Metro Denver Homeless Initiative, 2023). The PIT estimate is likely to be lower than the actual number of youths experiencing homelessness because it omits more "hidden" forms of homelessness, including couch surfing or living in motels/hotels (de Sousa et al., 2023). A 2023 report using data from the McKinney-Vento Education for Homeless Children and Youth (EHCY) Program included the more hidden forms of homelessness and reported that around 1.2 million students experienced homelessness during the 2021–2022 school year (National Center for Homeless Education, 2023). Of those 1.2 million students, the report estimated that 20,821 homeless youths were enrolled in school in Colorado (National Center for Homeless Education, 2023).

As alluded to above, a primary hurdle to estimating rates of homelessness is the lack of shared understanding and differing definitions of homelessness across professional sectors, posing a challenge to generating meaningful and consistent data (Cutuli, Treglia, & Herbers, 2019). The Department of Housing and Urban Development defines homelessness as "[a] person sleeping in an emergency shelter, transitional housing, or a place unfit for human habitation" (HUD; as cited by Clark et al., 2017), while the McKinney-Vento Homeless Assistance Act definition of homelessness differs by including various forms of housing insecurity such as "couch surfing," "doubling up," or "lack[ing] a fixed, regular, and adequate nighttime residence" (McKinney Vento; as cited by Clark et al., 2017). A growing consensus within the field of homeless services is that a more sweeping definition could improve the appropriate allocation of resources and service delivery, especially for youths who experience the adverse impact of housing instability but currently fall outside of certain qualifying guidelines (Johnson, 2020). Currently, HUD does not consider "doubling up," or sharing someone else's residence, a form of homelessness. Therefore, the statistical decrease in family homelessness over the past 10 years may not reflect reality (Evangelist & Schafer, 2020).

Secondly, youths may not self-identify as homeless if they are "couch surfing" or temporarily staying with family or friends, despite being vulnerable to the negative influence of housing instability. It is developmentally typical for youths to avoid stigma-generating circumstances, identities, and labels, which

may also discourage them from self-identifying as homeless (Cutuli et al., 2019).

Finally, within the various sectors likely to be in contact with those experiencing homelessness, administrative data sets have historically been siloed. For example, a youth experiencing homelessness could be documented in McKinney-Vento records within the education system and simultaneously documented as homeless within child welfare data. The possibility of a single youth having duplicate documentation stands in the way of accurate estimates of homelessness, despite what is represented within the individual administrative data sets (Wiegand & Goerge, 2019). Simultaneously, it is possible that a young person may be captured in the PIT count without being recognized in the McKinney-Vento system, causing underestimates of youth homelessness (Clark, Laine, & Gaines, 2017).

Much of what is currently understood about the prevalence of homelessness is derived from retrospective, self-reported surveys of adults (Evangelist & Schafer, 2020). A lack of credible data related to population size and characteristics of youths experiencing homelessness has hindered effective service delivery (Morton et al., 2018). Historically, attempts to cross reference, integrate, and share data have met technical challenges and also encountered issues related to trust building and privacy practices between organizations (Wiegand & Goerge, 2019). It is possible that the elusive nature of homelessness compounded with trust and privacy issues has discouraged research in this area, limiting the integration of separate data sets for the purpose of estimating the prevalence of homelessness. As an alternative to data integration, researchers have turned to the analysis of single data sets over an extended period. For example, rates of student homelessness in Michigan were estimated using solely McKinney-Vento administrative data dating back 15 years. Students were tracked from kindergarten through 12th grade to identify cumulative risk of homelessness over an individual's time in the public school system. This study determined that close to 1 in 10 students experienced homelessness between kindergarten and 12th grade (Evangelist & Schafer, 2020).

Linking Administrative Data

Overall, many researchers acknowledge the power and complexities of linking administrative data in the context of an array of sectors including homelessness. Harron and colleagues summarize the complexity of the data-linking approach for any human service purpose in their 2017 article, Challenges in Administrative Data Linkage for Research. They assert that the linkage of population-based administrative data is useful in that it allows for large sample sizes and comprehensive data collection on groups that may be difficult to incentivize or trace using traditional cohort sample and survey methods. Conversely, they argue there can be inaccuracies in administrative data sets which can occur both during internal documentation within organizations and in the process of integrating data (Harron et al., 2017). Wiegand and Goerge (2019) from Chapin Hall acknowledge the great potential of integrating data to inform human service policy while providing basic guidelines for best practices in data integration at large. Firstly, they recommend that analysts and organizations reject the idea that one linking strategy will work under all circumstances as there is no single solution or algorithm that will fit all human service needs. Secondly, they highlight the need for improved communication among stakeholders, including researchers, data analysts, policy makers, and service providers.

In areas other than homelessness, administrative data linkages have been widely pursued for research purposes. For example, MDRC, Chapin Hall at the University of Chicago, the Coleridge Initiative, and Actionable Intelligence for Social Policy at the University of Pennsylvania linked administrative data to serve as a resource for Temporary Assistance for Needy Families (TANF) program management and evidence

building. The TANF Data Innovation (TDI) project created two major data resources from administrative data linkage: TANF longitudinal data and integrated TANF and employment data. TANF longitudinal data is a resource made by linking TANF data across states to aid research on TANF usage patterns. The integrated TANF and employment data combines TANF data with employment data from the National Directory of New Hires (NDNH) to explore employment patterns and outcomes related to the TANF program. Despite major accomplishments such as creating two data resources and facilitating increased collaboration among state TANF programs, the project faced several limitations in linking data. The biggest challenge was the lack of consistency in data quality and collection practices across different states. In fact, some states and territories only report sample cases rather than entire caseloads. Additionally, TDI staff reported challenges related to data privacy and the ethical use of sensitive information, necessitating stringent safeguards to protect individuals' confidentiality (Hendra et al., 2024; Wavelet et al., 2024).
In homeless services, administrative data is not used to the fullest potential. Evangelist and Shafer (2020) state that:

> *State administrative data are an underused source of information on homelessness that could supplement what we have learned from HUD counts and survey data. But as is true of all data sources on homelessness, the administrative data have limitations that could lead to undercounts of student homelessness (p. 13).*

Although research linking administrative datasets across sectors to establish rates of homelessness is limited, select studies have successfully executed the integration of various records to explore a variety of research questions related to youth homelessness prevalence and risk factors. One such study was conducted in North Carolina by the University of North Carolina at Charlotte and Urban Institute in 2015. In that study, researchers integrated three distinct sets of data on homelessness to determine discrepancies between them, with the intention of improving allocation of resources. HMIS typically used by homeless service providers, the PIT count, a snapshot of people facing homelessness on a single night in January each year, and the McKinney-Vento administrative data from the education system were integrated. Researchers found that McKinney-Vento data significantly underestimated rates of homeless youths when cross referenced with the other two data sets, with 38% of students living in an emergency shelter or in transitional housing during the 2014–2015 school year not identified within McKinney-Vento records (Clark et al., 2017). Findings from other studies mirror this outcome. An anonymous survey intended to measure homelessness was administered to students at public high schools in eight states. The survey predicted a 46% higher rate of homelessness than McKinney Vento data indicated. The implications of this inaccuracy are significant: 46% fewer youths may receive appropriate services and resources than needed (Cutuli et al., 2019).

In California, administrative data from child welfare services and homeless services (HMIS) were linked to develop a systematic understanding of the relationship between child welfare experiences and youth homelessness. More than half of the young adults accessing homeless services in San Francisco County reported experiencing maltreatment, abuse, or neglect as a child. Through this study, researchers hoped to provide an evidence base on which child welfare and homeless services providers could build cooperative service delivery, more effectively reaching their target populations and meaningfully addressing systemic issues leading to homelessness (Putnam-Hornstein et al., 2017). Further research is needed to more fully understand the interaction between child welfare and homelessness. A 2018 study suggests that housing subsidies reduce foster placement by approximately 7% on average, a result that leaves room to question

the efficacy of the housing subsidies themselves on alleviating child welfare involvement (Fowler et al., 2018). Similarly, it remains unclear if federal funding reduces homelessness for youths specifically. A 2017 study of the relationship between federal funding and rates of homelessness for marginalized families and youths suggests limitations on the efficacy of federal funding to reduce homelessness, and results are generally inconclusive (Lucas, 2017). This previous research emphasizes the need for a clearer understanding of the relationship between various human service systems and homelessness.

Several administrative data sets were linked in Washington state to predict characteristics of emerging adults aging out of foster care who experience homelessness. Records from public assistance, K–12 education, mental health services, child welfare, homeless services (HMIS), chemical dependency, the Washington State Patrol Arrest Database, and administrative court information were utilized to assess social determinants and situational circumstances experienced by young adults who access homeless services. As previously mentioned, this study was successful in identifying both personal characteristics and situational characteristics that predicted risk of homelessness for youths (Shah et al., 2017).

Study Design

The primary goal of this study was to generate a more accurate estimate of the number of youths experiencing homelessness by linking data across administrative systems used to track youths receiving services across Colorado.

Research Questions

Using a variety of methods, this study answered three research questions:

1. What administrative data linkages can be leveraged to build a sustainable and replicable approach to estimate homelessness of youths ages 14–24 in states where data are siloed at different geographic levels?
2. What are the incidents of youth homelessness in the Denver area and across Colorado?
3. What are the K–12 educational, child welfare-related, public-assistance program participation, and histories of youths associated with homelessness as older youths (i.e., ages 18–24)?

As outlined in "Building a Sustainable and Replicable Approach to Estimating Youth Homelessness: A Community Guide to Linking Administrative Data," this study took an iterative approach that began with piloting novel data linkages within the City and County of Denver. Lessons learned from analysis of the pilot study conducted with the City and County of Denver data were applied to the statewide study to estimate the number of youths experiencing homelessness in Colorado (learn more in the Iterative Approach section).

Methods

Research Questions 1 and 2

The first two questions were answered through two studies:

- **Pilot Study:** A pilot study linking administrative data was first conducted in the City and County of Denver where it was feasible to isolate the geographic overlap for data from the homeless services, education, and child welfare systems.
    - Data Sources: The Metro Denver Homeless Initiative (MDHI) contributed data on services from the Homeless Management Information System (HMIS); The Colorado Department of Human Services, (CDHS) Division of Child Welfare contributed data on involvements and removals; and Denver Public Schools (DPS) contributed McKinney-Vento data for public schools within this district.
    - Timeframe: July 1, 2017, to June 30, 2020
- **Statewide Study**: The full statewide study used on estimates of youth homelessness in Colorado. Lessons learned from the pilot were applied to generate a statewide estimate of youth homelessness through linking administrative data in Colorado. The estimates included an unduplicated count of youth known to have experienced homelessness and an estimate of the number of youths not recognized as experiencing homelessness by a CoC, education system, or the child welfare system.

- Data Sources: Data was extracted from the administrative data systems of:
  - The four Continuum's of Care (CoC)'s in Colorado contributed service and study data from the Homeless Management Information System (HMIS). Homeless services are administered by four CoCs across Colorado's 64 counties: Metro Denver Homeless Initiative represents Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson counties; Northern Colorado Continuum of Care represents Larimer and Weld counties; Pikes Peak Continuum of Care represents El Paso County; and Balance of State Continuum of Care represents the remaining 54 counties.
  - The Colorado Department of Education (CDE) contributed McKinney-Vento data for all public-school districts in the state
  - The Colorado Department of Human Services, (CDHS) Division of Child Welfare contributed data on involvements, removals, and placements from their Trails database.
- Timeframe: July 1, 2017June 30, 2022

Analytic Approach

To answer the first research question, the study authors used the iterative process presented in the "Building a Sustainable and Replicable Approach to Estimating Youth Homelessness: A Community Guide to Linking Administrative Data".

To answer the second research question, the study authors applied the results from research question one in both the pilot and statewide studies.

Pilot Study and Statewide Study

- Generate an **unduplicated count of youths known** to one or more of the systems as experiencing homelessness by state fiscal year. To accomplish this, we:
  - Linked administrative records across the HMIS, education, and child welfare systems;
  - Deduplicated individuals through a rigorous identity resolution process; and
  - Examined the overlap of individuals across systems.

Statewide Study Only

- Estimate the **number of youths unknown** to the HMIS, education, or child welfare systems as experiencing homelessness. To accomplish this, we:
  - Created contingency tables to indicate which system(s) recognized a given youth's experience of homelessness in each fiscal year of interest;
  - Applied a multisystem estimation process (previously known as "capture-recapture");
  - Selected model fit based on fit indices, confidence intervals, the literature, and qualitative findings from this study; and
  - Determined it was necessary to limit our estimates of unknown homelessness to youth ages 14-17 and eliminate youth ages 18-24 as these systems do not have an equal chance to serve older youths.
- **Add the known count to the unknown estimate** to replicate the estimate of youths experiencing

homelessness in Denver and across Colorado, despite data being siloed in different geographic locations. To accomplish this, we:

- Used data from statewide systems whenever possible (e.g., CDE, CDHS). This minimized the number of data sharing agreements and datasets that need to be integrated.
- Used regional data from HMIS that was exported by analysts in a CoC that had access to all regional data systems, ensuring a consistent extract across all Colorado's four CoCs.
- Decided not to prioritize local data (like that used for the pilot study) for the statewide study because it was not feasible to engage local systems that may recognize youths experiencing homelessness for all 64 counties in Colorado.

Number of Youths Unknown to a System

In the statewide study, we applied a multisystem estimation approach to estimate the number of youth who were not identified in one of the administrative data sources, but likely to have experienced homelessness during a time period of interest. Multisystem estimation is an approach that was originally developed for applications in ecology and wildlife biology. Through this approach, originally termed "capture-recapture," an unknown population can be estimated by taking the proportion of individuals identified in a given time period that appear in the current sample. As the name implies, multisystem estimation relies on multiple sources of identification and multiple time points to more accurately estimate an unknown population of interest. The approach has been leveraged to estimate unknown populations of people for various public health and policy applications, such as determining the prevalence of drug use (Gemmell et al., 2004) such as opioid use disorder (Barocas et al., 2018; Min et al., 2020) and stimulant misuse (Thompson et al., 2023), as well as COVID-19 (Böhning et al., 2020) and hepatitis C (Zibbell et al., 2018).

Sample

The sample for the multisystem estimation was a subset of the sample used to count youths known to the system. This portion of the analysis was limited to youths ages 14–17. This is because the multisystem estimation approach assumes that the likelihood of being reflected in a given system is equal for each participant in the sample. Because older youths (aged 18+) are unlikely to be reflected in child welfare and education data, we limited our estimation to youths aged 14–17, the age range with the greatest overlap across systems.

Analytic Approach

To obtain estimates of the youths experiencing homelessness who were not reflected in any of the systems we analyzed, we first constructed a contingency table. This table was structured at the individual- and state fiscal year-level and contains columns representing a known youth's representation in each system. For example, a three-digit nomenclature for the code "010" represents:

- The first digit represents the education system: a "0" means that the given youth did not appear in the McKinney-Vento education data for that year.
- The second digit represents homelessness services: a "1" indicates that the youth received homeless services, as reflected in the HMIS data for that year.
- The third digit represents the child welfare system: a "0" means that the youth did not appear in the child welfare data that year with a referral or risk assessment indicating homelessness.

Estimates of youths experiencing homelessness were generated from this individual-level table of three-digit codes. As the name suggests, this approach requires multiple systems and multiple years of data. With three separate systems and five years' worth of data, researchers generated annual and rolling two- year estimates of the unknown population of youths experiencing homelessness. Model selection is a nuanced and iterative process shaped by several key inputs, including: Fit indices, like Akaike's Information Criterion (AIC), which allow for comparison across models; Confidence intervals, which must be meaningfully narrow to apply findings to resource allocation; and Literature and qualitative findings, which provide insight into policies and practices that justify selection of interaction terms. With these considerations in mind, the research team evaluated a series of poisson and negative binomial models with every possible two-way interaction term. Based on the combination of criteria outlined above, the team selected a poisson model with interaction terms for education-HMIS and HMIS-child welfare interactions. In the selected model, an interaction term for education and child welfare were not included based on consultation with subject matter experts and review of model fit indices. These unknown estimates were produced for statewide data.

Methods Research Question 3

The goal of this portion of the study was to inform policies and practices aimed at preventing or lessening the duration of homelessness by better understanding the characteristics of young adults (ages 18-24) who experience homelessness, including some of their experiences within the education, child welfare, or homeless services systems. The statistical procedure of a Latent Class Analysis (LCA) was used to quantitatively identify different groups within this population.

The sample included the 1,584 young adults who experienced homelessness in Denver between the ages of 18–24 who were enrolled in Denver Public Schools at some point between grades 8–12. The purpose of limiting the sample to those with local school enrollment was to ensure evidence of the youths being in the Denver area prior to experiencing homelessness as a young adult. This sample is a subset of the initial descriptive analysis conducted in the pilot study. Inclusion in this portion of the study was defined as youths who experienced homelessness between the ages of 18-24 and were flagged in at least one of the three systems (education, child welfare, or CoC) and whose experience of homelessness lasted at least until they turned 18, even if it began before their 18th birthday.

The selection of pre-existing and situational characteristics of youths included in this study began with a review of information that could be drawn from their education, child welfare, and homeless services records. This process of identifying an initial list was done in consultation with data stewards and subject matter experts within each system. The demographic data leveraged information from all three systems, and the hierarchy for how race/ethnicity and gender were applied is described in the hierarchy description on page 20. The number of youths who identified as non-binary, transgender, or more than one gender is likely an underrepresentation because only the HMIS database collected gender identity information beyond the male/female binary. The process of reducing the number of measures to those that would most meaningfully differentiate among groups of youths experiencing homelessness was iterative. The initial list included 42 binary indicators deemed to have a potential influence on subsequent experiences of homelessness. This list was too exhaustive to be practically informative, and many of the indicators were either too rare or ubiquitous to be useful for class creation. After considering interpretability, model fit statistics, and indicator frequencies, the researchers selected a final list of 33 indicators. The table with the measures is presented in the results section.

Analytic Approach

The Latent Class Analysis (LCA) approach allows researchers to identify potential unobserved groups, called "latent classes," using observed variables in a data set. Practically, this means information surfaces about the young people who experienced homelessness between the ages of 18–24 and common patterns emerge about their experiences. The model was constructed using the generalized structural equation modeling commands available in the Stata/SE 17.0 statistical software package. The process for selecting the number of groups began with fitting multiple models: one with two classes, one with three classes, one with four classes, and one with five classes using the final set of 33 indicators. The research team evaluated their relative fit using the Bayesian information criterion, entropy, average posterior probability, Lo-Mendell-Rubin test p-values, and class composition metrics. The research team simultaneously considered interpretability of the models to inform selection of the number of classes.

Interviews with and Feedback from Key Partner Agencies

The research team conducted interviews and held meetings with key partner agencies across the state where Linked Information Network of Colorado (LINC) data-sharing agreements were implemented including: the Metro Denver Homelessness Initiative (MDHI), Youth MOVE Colorado, the Colorado Department of Human Services' Division of Child Welfare, the Colorado Department of Education, the Balance of State Continuum of Care, COACT Colorado, and the Colorado Department of Local Affairs' Division of Homeless Youth Services. Research staff conducted one-on-one interviews with representatives from key partner agencies (Colorado State Department of Housing, Colorado Department of Education, Colorado Department of Human Services, and Metro Denver Homelessness Initiative) to understand how these agencies currently collect and use data on youth homelessness, define homelessness, and share data with other organizations. Additionally, the research team convened two half-day meetings with key partners to share preliminary results, gather reactions, and inform the study approach and analysis plan. The first of these meetings was held after completing the analysis for the pilot study, when the research team gathered feedback from these partners to inform the statewide estimate. The research team later reconvened the partners to share preliminary results of the statewide study and gather input on how to present the findings.

Interviews and Focus Groups with Youths with Lived Experience

Across the pilot and statewide studies, the research team conducted a total of four focus groups and two interviews with youths receiving services through Runaway and Homeless Youth (RHY) service providers in urban, suburban, and rural areas across Colorado. Across these focus groups and interviews, 44 youths between the ages of 14–24 shared their experiences with homeless services across Colorado. Two focus groups were conducted in Denver for the pilot study, and two focus groups and two interviews were conducted during the statewide study. For the purposes of this report, the four focus groups and two interviews are reported on together. The focus group settings were a mix of virtual and in-person due to various circumstances such as geography and the COVID-19 pandemic. Before any focus group or interview took place a member of the research team discussed the details of the study with the youths and obtained their informed consent. Additionally, youths were provided with food during the focus group and given a $50 gift card incentive for participating, which they received after the focus group or interview concluded. The protocol for these data collection activities was developed and approved by the University of Denver's Institutional Review Board.

The purpose of the interviews and focus groups with youths with lived experience was to understand their experiences with homelessness and the systems and surveys that track them, as well as to identify risk and protective factors associated with homelessness. The interview/focus group guides were created to elicit responses about:

- Youths' definitions of homelessness
- Youths' experiences with certain systems and the tracking systems they use (i.e., Child Welfare, McKinney-Vento, community service providers, and/or criminal justice systems)
- Risk and protective factors associated with homelessness
- Youths' goals/vision for the future

The research team summarized the interview and focus group responses and identified patterns to derive themes. The key themes and recommendations from the youths were then used to inform the development of the Phase I Denver Pilot Research Brief, the Community Guide, and this final report.

Iterative Approach

Research Question 1. What administrative data linkages can be leveraged to build a sustainable and replicable approach to estimate homelessness of youths ages 14-24 in states where data are siloed at different geographic levels?

Setting

The setting of Colorado provides an opportunity to learn how to generate estimates of youth homelessness. Colorado is a geographically diverse state with administrative data siloed at different levels (e.g., some data are only local, other data are in statewide systems). Answering research question one began with a pilot study in a large urban geographic area to test and learn from the iterative approach described in the previous chapter. The City and County of Denver was selected as a pilot site because, relative to other areas, it was feasible to isolate the geographic overlap of CoC homeless service delivery, education, and child welfare.

- Denver Public Schools are within the City and County of Denver.
- The child welfare system includes county identifiers for all involvements, allowing researchers to limit child welfare data to Denver.
- The CoC MDHI has service data that allows for limiting the focus to Denver.

Colorado is a local control state[1] and the delivery of homeless services is administered at the local or regional level (within each CoC). Across Colorado's 64 counties there are 178 school districts. While school districts overlap multiple counties and counties contain multiple school districts, each school district maintains its own administrative data. The data on youths experiencing homelessness reported to the state education agency is limited to the information required for federal reporting. There are four regional CoCs, and each CoC is a steward of the HMIS data in their region, which contains multiple counties. While child welfare is state-supported and county-administered, child welfare data is centralized in a statewide data system

Colorado does not have a data warehouse or unique identifier that crosses administrative data systems that are relevant to estimating youth homelessness. While individual systems have state identification numbers for clients (e.g., a state-assigned student ID in education, Medicaid ID, child welfare client ID), there is not a common ID that connects individuals across systems. Furthermore, the delivery of homeless services is administered at the local or regional level (within each CoC). Across Colorado's 64 counties there are 178 school districts.

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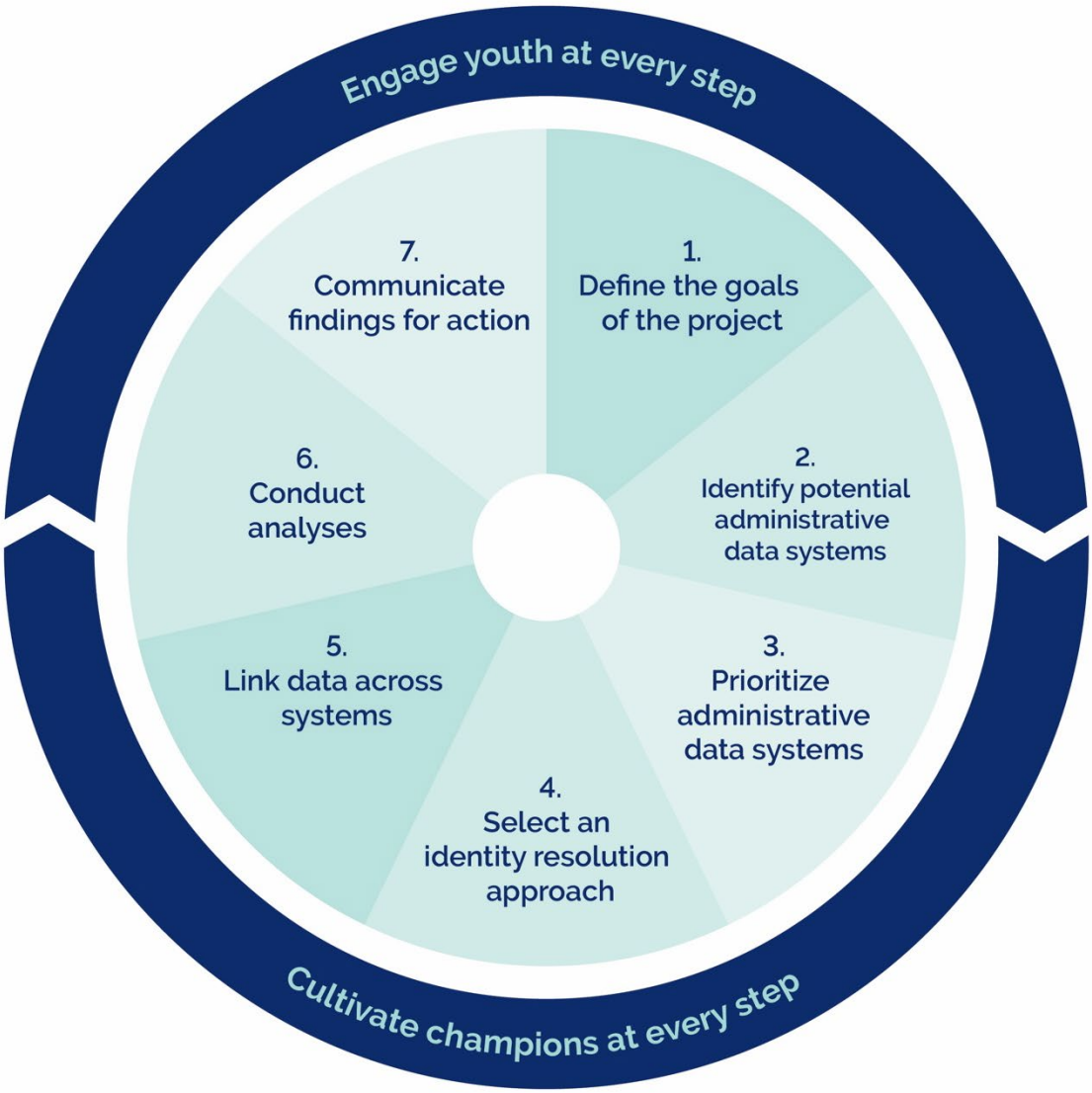
[1] Local Control State. Local government has the authority to make decisions on local issues. For example, according to the Colorado Department of Education "many pre-kindergarten through 12th-grade public education decisions - on issues such as curriculum, personnel, school calendars, graduation requirements, and classroom policy - are made by the school districts and their local school boards." Similarly, human services including child welfare are "state-supervised and county administered."

Results

To answer research question one and two, the research team used the Iterative Approach illustrated in figure 1. The results are presented for each of the seven steps and two crosscutting approaches. The Community Guide provides further discussion of this iterative process. The narrative in this section reflects the final decisions that emerged from the iterative process that informed generating estimates for youth homelessness (i.e., research question two).

Figure 1. **Iterative Approach for Linking Cross-Systems Data to Identify and Support Youth Experiencing Homelessness**



1. Define the goals of the study. What are the ages, characteristics, and geographic areas of interest for estimating youth homelessness? Ideally, what estimates would be generated (e.g., point-in-time, annual, known counts, unknown estimates)?

The two goals of this research were to: (1) leverage administrative data linkages to build a sustainable and replicable approach to estimate homelessness of youths ages 14–24 in states where data are siloed at different geographic levels, and (2) describe the K–12 educational experience, child welfare involvement, public-assistance program participation, and police involvement characteristics and histories of youths associated with homelessness for older youths (i.e., ages 18–24). Data from multiple systems was used to achieve these goals.

In this study, the annual known counts and unknown estimates that aligned with Colorado's state fiscal year were prioritized.

2. Identify potential administrative data systems. What are the data systems in the targeted geographic areas that are likely to offer information aligned with the goals of the study? Who provides services to youth experiencing homelessness, and how do they track service delivery? How do youth with lived experience identify themselves in these systems?

Selection of data systems for this multisystem estimation started with defining youth homelessness. This study used a broad definition of homelessness to encompass multiple federal definitions of homelessness and open up more data systems to be of use for the estimates. This study also used youth definitions of homelessness to help to identify potential data systems. The definitions youth provided helped to shed light on how youth experiencing homelessness interact with systems and thus helped to identify where and how they appear in administrative data systems.

Researchers supporting this study then used publicly available data and subject matter experts to rule in and rule out potential data sources based on their contributions to study goals and their adherence to the study's definition of homelessness. With the goals of this study in mind, data systems that identified youth aged 14-24 experiencing homelessness in multiple geographic locations in Denver and across Colorado were included for consideration. Researchers paid special attention to data systems that could provide data on a routine basis to support their goal of building a sustainable and replicable approach to estimating youth homelessness. Potential data systems identified included: justice system data including law enforcement systems, department of corrections, and local police data; public benefit programs like TANF and SNAP; Child Welfare SACWIS; Homeless Management Information System; and McKinney-Vento Education Data.

3. Prioritize administrative data systems. What are the feasibility and cost considerations for each data system? What does each system uniquely contribute to the estimates or the study goals?

Data from three systems were prioritized for this study: Homeless Management Information System, McKinney-Vento Education Data, and Child Welfare. Each of these systems were feasible to onboard to the identity resolution approach through the Linked Information Network of Colorado (LINC).

- **Homeless Management Information System (HMIS):** HMIS is a database that includes data for people of all ages accessing services related to homelessness in communities across Colorado. HMIS, a vital means to identify where youths experiencing homelessness appear for services and the types of services they receive, is the only national system that collects information on services provided to

individuals and families who are unstably housed or experiencing homelessness.

  - **Primary Purpose:** HMIS tracks services received by homeless individuals within communities. It allows communities to identify patterns of where and how individuals access services related to housing instability, and reports program participation and outcomes for those receiving services. HMIS data is collected through four regional Continuums of Care (CoCs) with each representing a share of Colorado's counties: Metro Denver Homeless Initiative (MDHI), Northern Colorado Continuum of Care, Pikes Peak Continuum of Care, and the Balance of State Continuum of Care. CoCs coordinate the delivery of homeless services and management of HMIS within a prescribed geographic area. MDHI is the steward of the HMIS data in Colorado and worked with the research team to provide data for this study.

- **McKinney-Vento Education Data:** The U.S. Department of Education's McKinney-Vento Homeless Assistance Act was enacted in 1987 (and reauthorized under Every Student Succeeds Act, 20 U.S.C. § 6301 [2015]) to address the education of children and youths experiencing homelessness. The McKinney-Vento program ensures "enrollment, accessibility, and educational stability for students lacking a fixed, regular, and adequate nighttime residence." The U.S. Department of Education requires that each local education agency collects data on youths who are identified for services under the McKinney-Vento program and that those data are deduplicated by the state education agency.
  - **Primary Purpose:** Identify students who qualify for and receive services under the McKinney-Vento Homeless Assistance Act. Denver Public Schools (DPS) and the Colorado Department of Education (CDE) worked with the research team to provide McKinney-Vento data for this study.
- **Child Welfare SACWIS:** Every state has a statewide automated child welfare information system (SACWIS) that serves as a system of record. SACWIS collects comprehensive data and serves as a case management tool to support the administration of child welfare programs.
  - **Primary Purpose:** Document services to children and families involved in the child welfare system. As part of an assessment process, homelessness and the risk of homelessness may be documented by case workers. Also, when a young person runs away while in the custody of child welfare, their out-of-home placement status may be documented as "runaway." The Colorado Department of Human Services (CDHS), Division of Child Welfare worked with the research team to provide SACWIS data for this study

For the Phase I Denver Pilot Study, MDHI contributed services data from the HMIS system, Denver Public Schools contributed McKinney-Vento education data, and the state Division of Child Welfare contributed data on involvements, removals, and placements from their SACWIS database. The primary inclusion parameters for each of the data sets were as follows:

- **MDHI (HMIS):** Youths received a service between July 1, 2016, and June 30, 2021, and were between 14–24 years of age at the encounter. This includes all accompanied youths aged 14–17 and all youths aged 18–24. Unaccompanied youths (aged 14–17) were not included in this export. The decision to not include unaccompanied youth was made by MDHI based on its initial interpretation of privacy laws, which was later revised to include unaccompanied youth in later phases of the research.
- **Denver Public Schools (McKinney-Vento Data Collection):** Students who were flagged for McKinney-Vento services between July 1, 2016, and June 30, 2021, and aged 14–24 at the time.
- **Child Welfare (SACWIS system called "Trails"):** Youths that indicated homelessness as a referral reason, allegation, or risk on a safety assessment, or identified as a runaway in any capacity between

July 1, 2016, and June 30, 2021. Youths were aged 14–24 at the time of involvement.

4. Select an identity resolution approach. What identity resolution tools and services are available to meet the study goals? Are there existing data sharing agreements or efforts that can be leveraged?

All administrative data for this study were connected through LINC, a state and local collaborative that supports timely and cost-efficient research, evaluation, and analytics using integrated data across public and nonprofit systems. LINC is designed to share data securely and temporarily to a centralized linking hub in state government to produce anonymized datasets for approved end users. No personally identifiable information is included in the final analytic data sets. LINC has a dedicated data scientist who specializes in identity resolution, with oversight from the acting LINC director. Probabilistic matching procedures are used, and match reports are provided to all study partners and are publicly available upon request.

LINC had data sharing agreements in place at the onset of this study with the MDHI, Denver Public Schools, and the CDHS Division of Child Welfare. This made it feasible to quickly link Denver data for the Denver Pilot Study and build capacity to include state level education data and information from the other three CoCs for statewide analysis.

5. Link data across systems. What are the common identifiers that allow for identity resolution across the data from each system? Is there a single system contributing to the population of interest or does each system need to contribute a unique portion of the population? What is the inclusion/ exclusion criteria that set the boundaries of the individuals included in the data?

The common identifiers available for linking across all three systems include:

- Date of birth
- First name
- Middle name
- Last name
- Gender

In addition to these identifiers, CoC and Child Welfare data systems include client social security numbers (SSNs), which could be used to match records across these two systems.

The inclusion criteria by system are described below:

- **CoC (HMIS):** Youths received a service indicative of a homeless experience between July 1, 2017, and June 30, 2022, and were between 14–24 years of age at the time of encounter. This includes both accompanied and unaccompanied youths aged 14–17 and older youths aged 18–24.
- **CDE (McKinney-Vento Data Collection):** Students identified as eligible for McKinney-Vento services between July 1, 2017 and June 30, 2022, and aged 14–24 when they were identified.
- **Child Welfare (Trails):** Youths aged 14–24 for whom homelessness was indicated as a referral reason, allegation, or risk on a safety assessment, or identified as a runaway in any capacity between July 1, 2017 and June 30, 2022.

Participating agencies shared extracts from their administrative databases with LINC, whose data scientists performed identity resolution and deduplication to provide the research team with a set of system-level tables. Through the matching process, everyone in the sample was assigned a unique identifier (ID), allowing researchers to link individuals across tables within and across systems. Using the underlying system-level tables, researchers created a set of binary flags indicative of a homeless experience within each system for each state fiscal year. Researchers also retained geographic information surrounding the experience of homelessness, using county identifiers to map the episode to a CoC. Researchers then created a single table containing every unique individual in the sample, their demographic characteristics, and the series of system-level flags and geographic indicators. Because youths are capable of being identified in multiple counties within a single year, either by the same system or multiple systems, counts are deduplicated at both the state level and the CoC level but counts at the CoC level are not mutually exclusive across catchment area boundaries. Within a given state fiscal year and geographic region, youths can either be uniquely identified by a single system, be identified by two out of three systems (single overlap), or identified by all three systems (double overlap). Lastly, the Colorado Division of Child Welfare's Trails database is the only system in this analysis that identifies youths as runaways. Youths identified as runaways are included in the overall counts.

6. Conduct Analysis. How have the goals of the project evolved? How can the analyses be conducted so they are responsive to the decision-making goals of each system contributing data and the broader landscape of preventing or lessening the duration of homelessness? What was learned about the quality, strengths, and limitations of each data source?

Prior to releasing findings publicly, the project team engaged the data providers in a preliminary review of all findings to ensure that the approach was responsive to each system's decision-making goals. For some systems, additional analyses were conducted that are not included in this report to inform their programming or investments. For example, the education system requested an in-depth look at school district-specific data on pre- and post-pandemic identification of youth experiencing homelessness.

In terms of what was learned in this study about data quality. All three systems gathered demographic data on race/ethnicity and gender of youths. The hierarchy of data used to describe demographic characteristics of youths was informed by representatives of each system and how those data were collected (e.g., self-report).

- Education data were used when available.
- Child welfare data were used if education data was unavailable.
- HMIS data were used if both education and child welfare data were unavailable.

For gender, HMIS was the only system that included gender values outside of the male/ female binary. To more accurately represent the youths in the sample, the HMIS gender values for youths who identified as non-binary, transgender, or more than one gender was used regardless of their gender identifications in other systems.

7. Frame and communicate findings for action. Who is the target audience? What message will resonate with distinct audiences? How do you balance reporting priorities given competing interests of key partner agencies?

From the onset of this study, the research team sought input and guidance from a broad set of audiences to ensure meaningful findings were reported for each governmental agency, youth-serving agency, and the community. Initially, key partners were convened where data sharing agreements were already in place, to gather input and guidance on linking cross-system data. The research team selected the City and County of Denver to test the methodology of linking and analyzing known counts of youth within three systems where data sharing agreements were already in place. The three systems were Homeless Management Information System (HMIS), Denver Public Schools (DPS), and child welfare data from the state automated child welfare system. Multiple convenings were held with these key partners who shared data to gather feedback and input on sharing results with targeted audiences. For the second phase of analysis that expanded to statewide estimates, the research team added key partners from the Colorado Department of Education and Runaway and Homeless Youth (RHY) service providers. Youth voice was incorporated in every aspect of the research team's communications to shed light on the real challenges and struggles that systems-involved youths experience to highlight the youths behind the data.

The target audiences and possible actions for study findings include:

- Policymakers: Increase understanding of the estimated number of youths in Colorado who are impacted by homelessness and their specific needs to inform policies that improve prevention efforts, including the targeted provision of services and equitable and adequate allocation of resources.
- Homeless Service Providers: Inform their efforts to connect youths to systems and grow outreach to ensure services are provided regardless of whether youths are known in a system.
- State Agencies: Demonstrate the power of data sharing to better inform their work and encourage more cross-system collaboration.
- Researchers: Replicate the approaches used here and build on this study by incorporating additional data sources in future studies, such as health care.
- Funders: Grow understanding of homelessness and encourage dedicated funding for continued research and the provision of services.

(Also see Actionable Use of Data, Figure 17).

Crosscutting Approaches: Cultivate Champions in Partner Agencies and Engage Youths with Lived Experience

To contextualize the quantitative data, incorporate the perspectives of those with lived experiences, and generate feedback on data analysis and sharing, the research team:

- Conducted focus groups and interviews with youths who have multisystem involvement and have experienced housing instability (youths with lived experience);
- Conducted one-on-one interviews with key partners across Colorado who participated in the data onboarding and sharing process with LINC; and
- Convened a group of data partners at two points in time to gather input and feedback on the prevalence estimates including methodology, findings, and communicating findings to a variety of audiences.

Input from key partner agencies

An important component to the study design was to hear from key partners on the challenges of identifying and serving youths experiencing homelessness across Colorado.

Data-sharing Partners

One-on-one interviews were conducted with leaders from each agency that shared data for the study. All interviewees expressed a shared belief that services for youths at risk of or experiencing homelessness could be improved by enhanced data use and sharing, and a more accurate estimate of youth homelessness was needed.

Interviewees noted a number of limitations and barriers regarding the way data is currently being used and shared across Colorado. A representative from the Department of Housing, Office of Youth Homelessness (DOH) recognized that "youths fall through the cracks" due to limited data sharing. A Colorado Department of Human Services (CDHS) representative echoed this concern, stating, "Child welfare agencies may think they have set a young person up for success, but due to the lack of data quality and data sharing, [they have] no idea if the youth has become homeless." Participants also identified barriers to data sharing including challenges coordinating memorandums of understanding, discordant definitions and guidelines regarding youth homelessness services, and lack of trust between organizations and state agencies. A representative from CDHS stated that agencies serving individuals disproportionately harmed by the child welfare system were understandably hesitant to share data and argued that it made it imperative for CDHS to build trust and address the history of systemic oppression faced by marginalized groups.

Despite the limitations and barriers, interview participants emphasized the utility of improved data sharing and data quality. A representative from Colorado's DOH discussed how more accurate data would enhance the state's ability to provide culturally responsive services to youths who have historically been ill-served by our systems such as Black, Indigenous, and People of Color (BIPOC) youths and LGBTQIA+ youths. Multiple interview participants expressed a belief that improved data would also improve funding and resource allocation. The same DOH representative argued that if DOH had access to data from all RHY providers, it could better assess statewide needs, determine how many youths each provider serves, identify the number of available and needed vouchers, and target gaps in services. This would, in turn, enable DOH to seek funding to support specific geographic areas more effectively. A CDHS representative emphasized the impact improved data would have on funding by stating, "We don't have the funding we need. And we don't have the funding because we can't prove WHY it's a problem."

Many interview participants also provided recommendations for improving data sharing, including:

- Federal oversight and buy-in to data sharing would be highly beneficial, as the current lack of coordination leaves states struggling to manage data sharing independently without federal support.
- Ensuring buy-in and appropriate training from organizations across the state for data entry into HMIS to prevent inconsistent data entry.
- Cross-system collaboration in the form of workgroups or regular touch points to discuss how, what, and where data exists and how it can best be utilized to support agency efforts.

In terms of secondary data, interview participants from both DOH and MDHI noted that the main estimate of youth homelessness they use is the Youth Supplemental Survey (YSS). The YSS is an addendum to HUD's

PIT count that is specific to youths. PIT data is widely cited as an estimate of youth homelessness on a single day out of the year. While it provides a useful snapshot for some advocates, interview participants noted the PIT has many drawbacks, including its January data collection window which falls during cold winter months in states like Colorado. Additionally, there is no direct funding tied to collecting the YSS and therefore agencies rely on volunteers to go out into the field and conduct the count. Therefore, it is believed that the YSS significantly undercounts this population. This belief was expressed by a representative from MDHI who stated, "The PIT YSS is not particularly useful in estimating the number of homeless youths in Colorado."

In addition to discussions of data, the key partners interviewed recognized that there are a variety of definitions of homelessness that are used depending on agency and context. According to a representative from DOH, varying definitions are used depending on the program and funding source, further complicating the estimates. Similarly, representatives from

MDHI acknowledged using different definitions of homelessness based on the specific purpose. This approach contrasts with other systems, such as CDHS, where a representative reported employing a broad definition of homelessness, aiming to qualify individuals for services without unnecessarily labeling them in a way that could harm them or expose them to systemic involvement.

Homeless Youth Service Provider Partners

To generate reactions, gather input, and provide guidance to the research team, convenings were held with homeless youth service providers at two points during the study. Their reactions were gathered during a meeting sharing findings from the pilot study and again during a presentation of the statewide and prevalence estimates. These partners were interested in learning how findings from this study might be used to fill program data gaps. One partner representing a CoC in Colorado had this to say when stating the importance of how we share the findings of this research: "I'm keenly interested in what we do with this data to make a difference." Partners agreed that using these findings to establish a baseline to measure progress in addressing youth homelessness while also targeting areas for greater resource allocation in both prevention and treatment efforts would be a good first step. Additional administrative data sources were also recommended, including incorporating housing voucher data typically recorded through the coordinated entry process, engaging domestic violence shelters, food bank distribution centers, juvenile justice, and behavioral health systems, among others. Ultimately, partners expressed great interest in fully understanding the results and how to effectively communicate the findings, as well as continuing the conversation on how to best utilize this data to support efforts across systems to prevent and end youth homelessness.

Input and Guidance from Youth with Lived Experience

Youths with lived experience of homelessness provided input and guidance throughout the pilot and statewide studies, including:

- Providing input and guidance to support the development of the iterative approach including how best to define homelessness, and how youth are identified (or not) in systems
- Sharing their experiences and perspectives on how they became "known" to systems or may not be identified within systems
- Providing context and reactions to the statewide estimates by sharing thoughts on how they were defined and unattached to services across a variety of geographic areas; and

- Sharing their reactions to how systems define homelessness.

Many of the youths who participated in the one-on-one interviews and focus groups were multisystem involved, and youths had varying amounts of experiences with systems like child welfare, school counseling, juvenile justice, police, medical and mental health services, and homeless shelters. Despite their interactions with these systems, many youths were unaware how they were identified and tracked in those systems' administrative records. The sections below outline the findings of these focus groups with discussion of youths' experiences in these systems, youths' definitions of homelessness, risk factors for homelessness, and their visions for the future.

Experiences with Child Welfare and Foster Care

Many of the youths participating in the interviews and focus groups had at least some experience with child welfare and foster care, and many had experiences with child welfare in multiple states. Across all interviews and focus groups, the youths with child welfare experience expressed confusion about the services they received and what services they qualified for. One youth in Denver had this to say about his experience in foster care: "The system is always kind of confusing because it's like they don't always necessarily tell you where you're going to go." Another youth in the same focus group stated that child welfare had not been helpful because she could not get a hold of her caseworker for support. A youth from a rural county in southwestern Colorado recounted a time when she tried to get independent living services from her county department of child welfare but was told she did not qualify for services. She stated she was in foster care for several years and was then adopted, so she was confused about why she was not able to get help from the agency. Many of the youths described their time in the child welfare and foster care systems as tumultuous and highly mobile. One youth in an urban city in Colorado talked about how they had to drop out of school because they had to transfer schools so much due to changing foster care placements. Additionally, many youths reported they ran away from their foster care placements at one time or another.

Experiences with Schools and School Counselors

For many of the youths with lived experience of homelessness, school is a priority. Across all interviews and focus groups, many youths expressed the long-term goals of finishing high school and going to college or a trade school. In a focus group in rural southwestern Colorado, one youth discussed their current struggle to complete high school, which prompted other youth to emphasize the importance of finishing high school. However, youth also said traditional school systems do not meet the needs of youths experiencing housing instability. Some youths had to drop out of school due to their circumstances, and others transitioned to alternative, non-traditional or virtual school programs. One youth in Denver had this to say about their experience, "I was homeless and working two jobs, that is why I dropped out of school. I couldn't focus on school, work, and living on the streets."

In terms of receiving homeless services from schools, many youths reported working with school counselors or teachers for support; however, most youths were not familiar with the terms "homeless youth liaison" or "McKinney-Vento liaison." When discussing their interactions with school counselors, many of the youths expressed disappointment with the inadequate support they received. In a focus group in an urban setting in Colorado, one youth had this to say, "They referred me to a counselor for mental health therapy. But you can't counsel a roof over my head, you know?"

Experiences with Juvenile Justice and Police

Across all the interviews and focus groups, most youths had interactions with the police in some capacity; however, many were unsure whether they had been documented as homeless in police or justice tracking systems. Youths recalled experiences with police in one of two circumstances: (1) the police were called about abuse or neglect by the youth's caretakers/family, or (2) police arrested or involved themselves with the youths due to them being homeless. Except for two instances, youths reported especially negative police experiences.

In the first circumstance, when police were called to protect these youths, many reported that the police did nothing to protect them from abuse at home. Some shared stories where they reported neglect, physical abuse, and sexual abuse, and the police never followed up on the report. Some youths even stated that after they reported neglect or abuse, police informed their parents, which led to negative repercussions for the youths. Further, youths in one focus group in rural southwest Colorado noted that police failed to connect them to resources: "They don't help you find other options. They just send you back home in handcuffs."

More youths recalled experiences like the second circumstance, where youths interact with police due to their lack of shelter. Many youths reported they had been arrested "just for being homeless" and they never faced any charges after arrest. In an interview, a youth from Lake County stated,

> *"The multiple times I've been encountered by the cops . . . they told me to leave because I'm either trespassing or loitering. Those are the excuses to use. And really, I'm just trying to get shelter from the weather. They don't try to help you or direct you to services. They never directed me to a shelter ever, which is wild to me."*

Experiences with Medical and Mental Health Services

Universally, youth participants in interviews and focus groups described a general lack of access to needed medical and mental health services. Youth experiences with medical and mental health services varied based on where the focus group was conducted. Participants described having more trouble accessing services in rural Colorado. In a focus group in rural southeast Colorado, youths reported limited access to mental health service organizations, doctors, and emergency medical services. They identified only one mental health resource in their area, but many expressed having negative experiences with it. Further, these youths stated they often had to travel long distances to receive mental health crisis services. One youth shared their experience of seeking mental health care outside their town:

> *"You have to get put in an ambulance, strapped to a bed, then have to sit in this uncomfortable car for six hours on your way to a mental hospital. It's traumatic. It makes you feel even more crazy than you feel already."*

Additionally, youths in rural areas attributed long waitlists as a major barrier to receiving mental health and medical services. In one focus group, one youth shared her experience of waiting three months for grief counseling after losing her brother to suicide. Youths in this region said it was difficult to find doctors who accept Medicaid, further hindering their access to medical care.

Youths in urban and suburban areas of Colorado identified barriers to accessing medical services such as lack of insurance or difficulty finding doctors that accept Medicaid. Many of these youth expressed reluctance to seek medical help due to poor treatment from staff upon disclosing their housing insecurity. One youth went so far as to say, "They ignore our pain . . . I'd rather die than deal with [medical professionals'] treatment of us in hospital settings."

Experiences with Homeless Shelters and Local Runaway and Homeless Youth Service Providers

Most of the youth participants had experience with either homeless shelters or local RHY service providers. The youths who had experience with adult homeless shelters reported negative opinions of the shelter, and some stated they felt unsafe in adult shelters. A youth in a suburban town northwest of Denver had this to say, "There was a lot of drama [at the shelter]. After a week, I decided I would rather be on the street." It is important to note that many youths in more rural areas of Colorado did not discuss experiences with homeless shelters, and some noted the lack of homeless shelters available to them. One youth in Lake County talked about his current situation of couch surfing and recognized there were no shelters available in his area. However, in both rural and urban areas, youths noted the need for more youth homeless shelters. One youth from Denver said, "We just need a roof, and more youth shelters." Another youth from Lake County explained why shelter services were important to youths with housing instability:

> *"People can't really get on their feet without shelter. Sure, you can go out and get a job, but then where are you going to go home to? You're going to still be sleeping outside and wrapping yourself up in blankets and risking getting trespassed or something like that . . . and if that happens enough times, you might just end up in jail and then you might not be able to go to your work anyways."*

Most of the youths in the focus groups had experience with local RHY service providers, with many reporting interactions with more than two providers over their lifetimes. Overall, the consensus about these providers was positive. In a focus group held in a suburban town northwest of Denver, youths expressed appreciation for the services they received, describing them as "life-changing" and essential for their well-being. Similarly, a focus group in rural southwest Colorado found the services helpful but noted limitations, such as the need for parental consent for certain necessities. Another youth from Lake County emphasized the significance of his local RHY service provider, stating:

> *"I'd say I'm pretty reliant on [my local RHY service provider] for most of the supplies I get. We do have teachers at my school who can provide some resources, but [my local RHY service provider] is the main resource I've gotten basic needs from."*

Youth Definitions of Homelessness

Youths with lived experience define homelessness in ways that differ from official definitions. Youth emphasize the lack of social support and safety in their definitions of housing instability. They define home as warm, comfortable, stable and safe while homelessness is the opposite. Additionally, many youths spent significant time addressing and countering the stigmas and stereotypes commonly associated with homelessness while defining the term. As an example, one youth in a focus group in a suburban town in Colorado stated, "Not all [people who experience homelessness] are on drugs." Others in the group

countered stereotypes of homeless people being lazy by pointing out that many homeless individuals are either employed or actively seeking employment. Below are some definitions that youth with lived experience shared in focus groups and interviews.

- One youth in a suburban town in northwestern Colorado said, "The definition of homelessness is vast. It's not just sleeping on the street. Homelessness is not only not having a roof, but also not having community, or family, or friends, or a lot of different things."
- Another youth in rural southwest Colorado talked about the association between homelessness and lack of safety, "There's a lot of different things [that qualify as homeless]. Like, you're in a traumatic household and you're trying to find somewhere else. You're technically being housed, but you're not safe where you are."
- Another youth from a rural county in western Colorado defined homelessness in this way, "To me, being homeless and just unstably housed is not being able to know what situation you're going to wake up to tomorrow . . . So, my definition, I guess, would just be not having a place to call your own."

Risk Factors for Homelessness

All the youths who participated in the interviews and focus groups shared several risk factors for homelessness. These included running away from home or foster care, fleeing violence, experiencing neglect, dealing with substance use and misuse, being unable to attend school due to being expelled, and lacking the necessary documents to enroll in school or apply to jobs. When youths were asked how they thought they ended up homeless, some youths referenced behavioral issues such as substance use and misuse or disruptive behavior at home or school. However, many youths stated that family dynamics, neglect, and abuse were the cause of their circumstances. One youth stated, "We're in this situation because our parents didn't step up."

Youth Resilience and Visions for the Future

Despite the challenges shared by youths with lived experience during focus groups and interviews, many demonstrated resilience and shared visions they had for their future. Youths in multiple focus groups discussed the social networks they formed with peers and adults in similar situations and offered words of encouragement during the focus group. In a focus group held in rural southwest Colorado, several youths reported discovering their RHY provider through word of mouth from one other. They also reported actively supporting each other in accessing other services. For instance, one youth accompanied another to the police station to provide moral support while reporting a sexual assault.

Furthermore, most youths we talked with were either attending school, employed in some capacity, or both. Many of those not yet employed or in school shared the tangible steps they were taking to find employment or enroll in school, such as working with their RHY provider on a resume or obtaining necessary documentation like a birth certificate or social security card. When asked about plans for the future, youths were optimistic and discussed graduating high school, going to college or trade school, or going directly into a job (e.g., construction, restaurant work, or using the job corps). Additionally, youths discussed finding their own apartments and continuing to do hobbies they love such as music or cooking.

Estimates of Youth Homelessness

Research Question 2: What are the incidents of youth homelessness in the Denver area and across Colorado?

Analytic Approach

The methods used to estimate youth homelessness in Denver in the pilot study and across Colorado in the statewide study were informed by the overarching goal of the study and are fully described on p. 9. Developing a sustainable and replicable approach to estimate homelessness among youths aged 14–24 in states where data are siloed at different geographic levels was achieved through a multisystem estimation process. The analytic process included:

- Generate an unduplicated count of youths known to one or more of the systems as experiencing homelessness by state fiscal year, by linking administrative records across the HMIS, education, and child welfare systems; deduplicated individuals; and examine the overlap of individuals across systems.
- Estimate the number of youths unknown to the HMIS, education, or child welfare systems as experiencing homelessness. To do this, we first created contingency tables to indicate what system(s) recognized a given youth's experience of homelessness in each fiscal year of interest; applied a multisystem estimation process (previously known as "capture-recapture");selected model fit based on fit indices, confidence intervals, the literature, and qualitative findings from this study; and determined it was necessary to limit our estimates of unknown homelessness to youth ages 14-17 and eliminate youth ages 18-24 as these systems do not have an equal chance to serve older youths.
- Add the known count to the unknown estimate to replicate the estimate of youths experiencing homelessness in Denver and across Colorado, despite data being siloed in different geographic locations. We used data from statewide systems whenever possible (e.g., CDE, CDHS). Regional data from HMIS was exported by analysts in a CoC that had access to all regional data systems, ensuring a consistent extract across all of Colorado's CoC HMIS. And we decided not to prioritize local data for the statewide aspects of this study because it was not feasible to engage local systems that may recognize youths experiencing homelessness for all 64 counties in Colorado.

These methods were first employed in Denver and then across Colorado. In doing so, estimates and lessons learned were generated first at a local level and then, statewide.

The interim report for the pilot study is linked here.

Unduplicated Counts of Youth Known to Have Experienced Homelessness

Total unduplicated counts of Youth Experiencing Homelessness in the City & County of Denver
The de-duplication of individuals appearing within the City & County of Denver in any of the three systems identified 9,638 unique youth as experiencing homelessness within this five-year period. This information is presented in Table 1 for the study time period and by state fiscal year (i.e., July 1 to June 30). There is an increase in the number of youths identified as experiencing homelessness by Denver Public Schools and the Metro Denver Homeless Initiative in SFY2020, which includes the onset of COVID in the last few months of the state fiscal year. The annual trends are further explored in the statewide data as that study time period continues

beyond the onset of COVID.

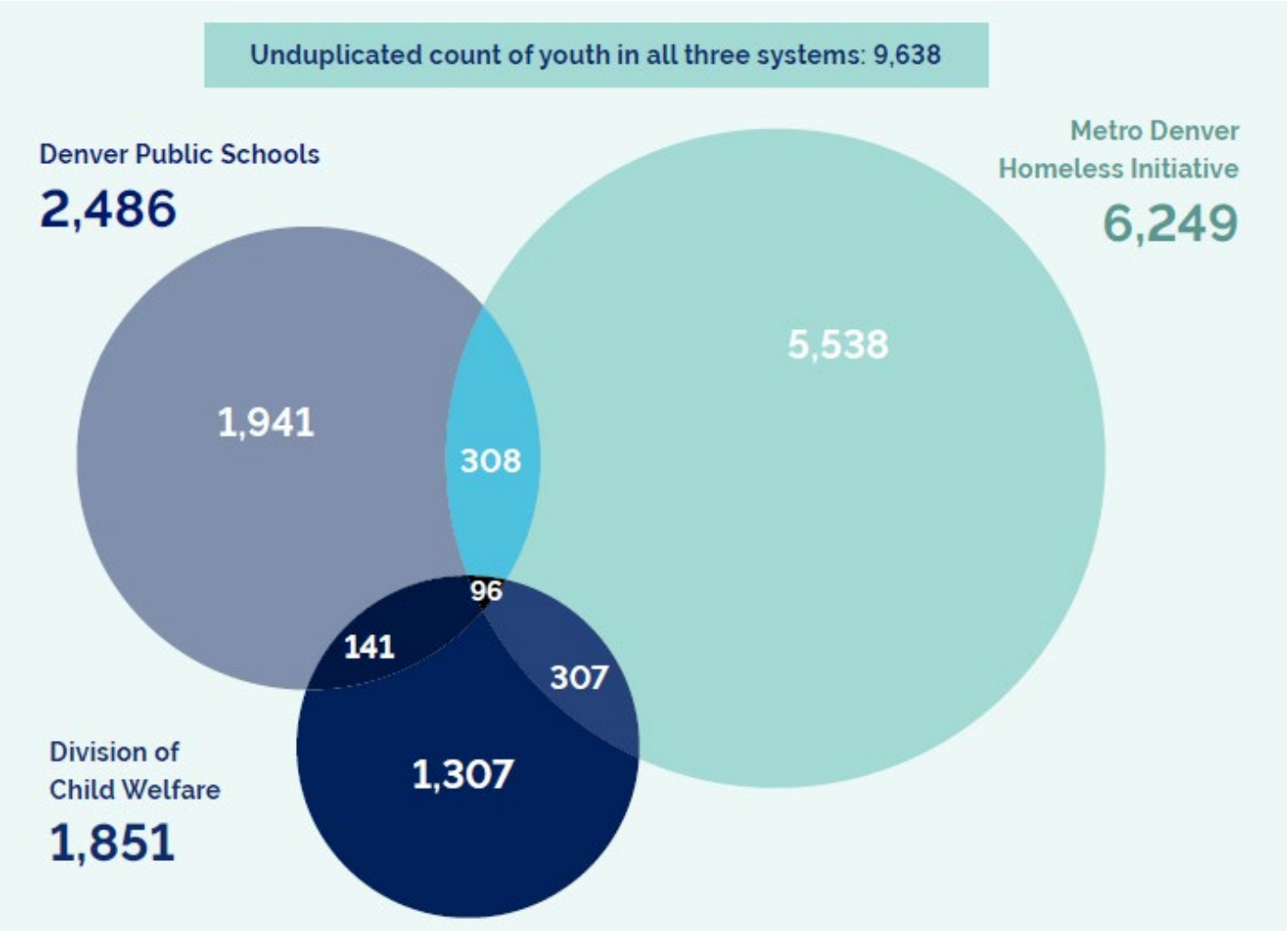
Table 1. **Total Counts of Youth Experiencing Homelessness**

Full Sample	Denver Public Schools (DPS)		Metro Denver Homeless Initiative (MDHI)		Division of Child Welfare (Trails)		Total
Overall: SFY 2017-SFY 2021							
	Count	%	Count	%	Count	%	
Deduplicated Across System	—	—	—	—	—	—	9,638
Deduplicated within Systems	2,486	25.8%	6,249	64.8%	1,851	19.2%	—
State Fiscal Year							
	Count	%	Count	%	Count	%	
SFY 2017	549	19.1%	1,866	64.9%	643	22.4%	2,876
SFY 2018	492	20.1%	1,523	62.4%	568	23.3%	2,442
SFY 2019	535	19.9%	1,726	64.1%	572	21.3%	2,691
SFY 2020	718	20.4%	2,483	70.7%	537	15.3%	3,513

Estimates of Youth Homelessness Flagged Uniquely in Each System in the City and County of Denver

Of the 9,638 youths comprising the full study sample, 8,786 (91.2%) appeared in one system only, without exhibiting any overlap within the five-year period. Seven hundred fifty-six youths (7.8%) appeared in two systems (single overlap), and the remaining 96 youths (1.0%) were identified in all three systems (double overlap) within this period. Interviews and focus groups with youth who experienced homelessness in Denver confirmed limited system overlap. These youth were highly mobile, struggled with staying connected to services through traditional systems such as school, and ultimately were unable to stay in one place long enough to access services.

Figure 2. **Youths Identified as Experiencing Homelessness in Denver by System, SFY 2017-2021**



Are we seeing these youth?

"Kai" is 17 years old, uses they/them pronouns, and is unhoused. They dropped out of school at 14, and they were involved in the child welfare system on and off. They currently receive services through the Runaway and Homeless Youth providing agency in Denver.

> *"I completed 9th grade, but the schools I went to couldn't handle my mental health, so I didn't want to go to school anymore."*

Statewide Study

KEY FINDINGS:

- 42,143 youths aged 14-24 were known to have experienced homelessness between July 1, 2017 and June 30, 2022.
- The majority of these youths (59.3%) were identified by the education system.

Total unduplicated counts of Youth Experiencing Homelessness in Colorado

Table 2, below, presents the total count of individuals identified by each of the three systems within Colorado. These counts are deduplicated at the system level and are not mutually exclusive across systems. At the state level, these three systems combined identified 42,143 youths aged 14–24 experiencing homelessness from July 1, 2017, to June 30, 2022.

- 24,997 (59.3%) were identified by CDE in McKinney-Vento data.
- 12,282 (29.1%) were identified by CoCs in HMIS data.
- 9,497 (22.5%) were identified by the state Division of Child Welfare in the Trails data.

As illustrated in Figure 3, these proportions remain relatively stable across the five-year period, with the notable exception of state fiscal years 2021 and 2022: during these first two years of the COVID-19 pandemic, the number of youths flagged in school districts fell sharply (down 24.7% from SFY 2020 to SFY 2021). This is likely a result of a change in instructional practices, including the transition to remote learning, which decreased the likelihood that a student could be identified as experiencing homelessness. During this same two-year period, youths identified as receiving homeless services within HMIS rose slightly (up 5.1% from SFY 2020 to SFY 2021 and up another 6.8% from SFY 2021 to SFY 2022). A table with the counts and percentages of youths experiencing homelessness by fiscal year is available in the appendix.

Table 2. **Known Statewide Counts of Youths Experiencing Homelessness by System and Overall**

Full Sample	Colorado Department of Education (CDE)		Continuums of Care (HMIS)		Division of Child Welfare (Trails)		Total
	Overall: SFY 2018-SFY 2022						
	Count	%	Count	%	Count	%	
Deduplicated Across Systems	-	-	-	-	-	-	**42,143**
Deduplicated within Systems	24,997	59.3%	12.282	29.1%	9,497	22.5%	-

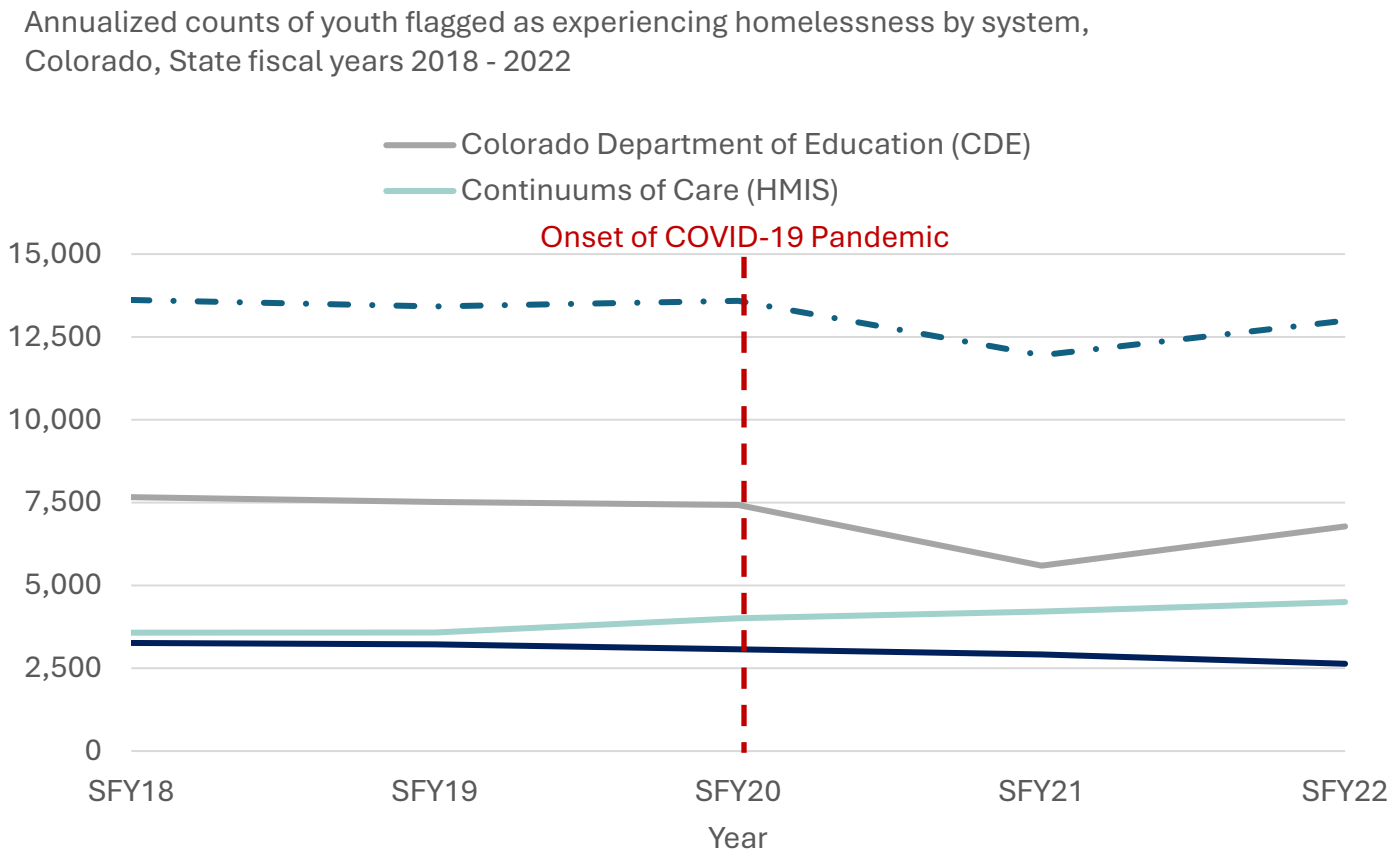
Detailed Results

Trends in the Identification of Youths Experiencing Homelessness by System

On average, a total of 13,113 youths were identified as experiencing homelessness by one or more systems each year between SFY 2018–SFY 2022. Figure 3 illustrates that the COVID-19 pandemic began at the end of FY20, and FY21 marks a decline in the number of youths identified by the education system. The onset of the COVID-19 pandemic influenced the likelihood that a youth experiencing homelessness would be identified by one of the systems included in this analysis. The dip in the total count of youths identified in SFY 2021 is unlikely to

correspond to a decrease in the actual incidence of youth homelessness; rather, it is a result of the drop in youths identified by the education system as classrooms shifted to remote learning. The sample's second largest component, youths identified within HMIS, indicates a steady increase in young people experiencing homelessness in the wake of the COVID-19 pandemic. The number of youths identified as experiencing homelessness by the child welfare system decreased gradually over the five-year study period

***Figure 3*. Trends in Identification of Youths Experiencing Homelessness**



Note: The onset of the COVID-19 pandemic roughly aligned with the end of the third quarter of SFY 2020.

Estimates of Youth Homelessness Flagged Uniquely in Each System in Colorado

There is relatively little overlap across systems when using statewide data. Each of these systems plays a crucial role in identifying youths experiencing homelessness, as very few youths are likely to appear in multiple systems in a single year, or even over a five-year period.

- From state fiscal years 2018–2022, of the 42,143 youths identified by these three systems, 37,966 (90.1%) appeared in one system alone.
- Just over half (51.7%) of the youths in the full sample appeared in the education data alone. 9,380 (22.3%) appeared in HMIS data alone.
- 6,814 (16.2%) appeared in child welfare alone.

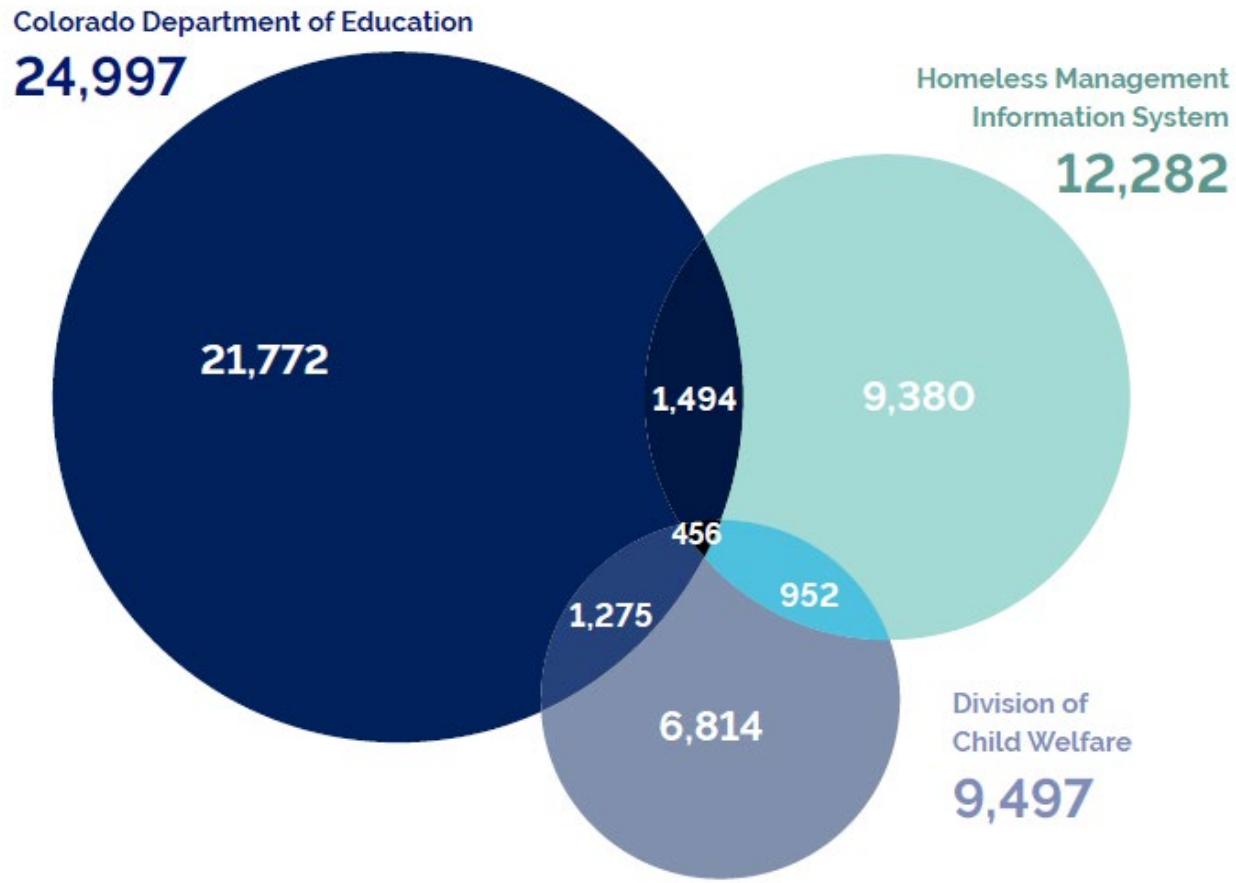
The same COVID-19-related trends noted above also appear in Table 3, below, which presents counts of youths uniquely identified by each system with no overlap. Figure 4 shows the proportion of youths identified by each system and the overlap across systems. This figure reiterates that most of the youths in the sample were identified by the education system and that the majority of youths were only identified by one system within the five-year period.

Table 3. Known Counts of Youths Experiencing Homelessness, Flagged within One System Only

No Overlap	Colorado Department of Education (CDE)		Continuums of Care (HMIS)		Division of Child Welfare (Trails)		Total
	Overall: SFY 2018-SFY 2022						
	Count	%	Count	%	Count	%	
Total	21,772	51.7%	9,380	22.3%	6,814	16.2%	**37,966**

Figure 4. Youths Identified as Experiencing Homelessness in Colorado by System, SFY 2018-2022

Unduplicated count of youth in all three systems: 42,143



Note: Overlap in this figure signifies that an individual appeared in one or more systems within the five-year period but does not necessarily indicate temporal overlap.

Overlap of Youths Experiencing Homelessness Across Systems in Colorado

Examining the overlap in identification of youths across systems is important for generating estimates of youths experiencing homelessness not identified by data through the systems. For the multisystem estimation method to work well, a minimum of three systems that uniquely identify youths is necessary.

In the statewide sample, the majority of youths were known to the education system. In the Denver pilot, the HMIS system identified proportionally more youths. This type of information can be used to inform selection of a model to estimate the number of unknown youths, as it provides insight into potential differences in how systems interact across geographic areas. In Denver, this can be explained practically by the presence of a youth shelter. Youth shelter services are not available in other areas of Colorado. Interviews with youth in more rural areas of Colorado revealed that some young people, especially those in the mountain regions which experience harsher winters, often migrate to Denver for services like shelters when they are unable to find other housing options.

Each system is integral to accurately reflect the full scope of youth homelessness within the state due to the lack of overlap in the identification of youth experiencing homelessness.

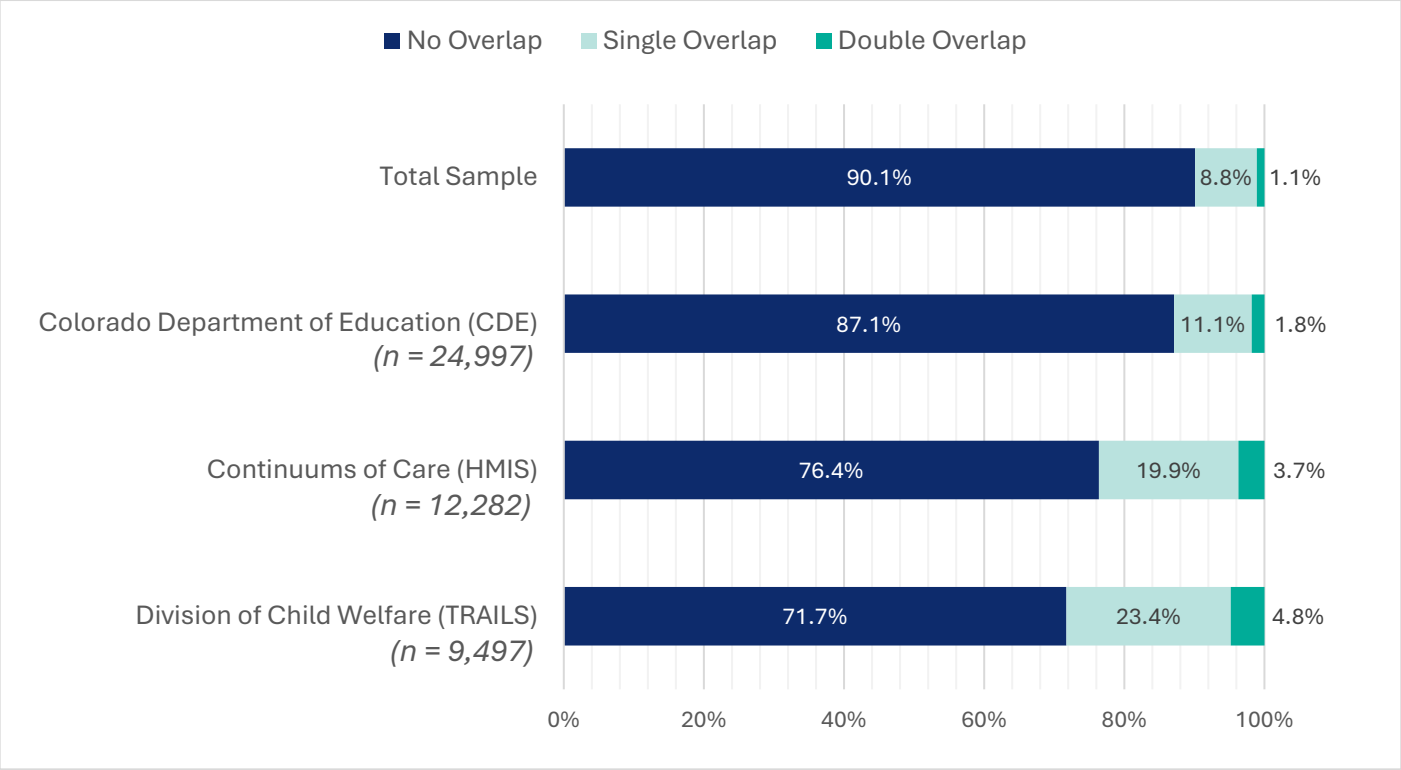
- Of the 42,143 youths in the sample, 37,966 (90.1%) appeared in only one system from SFY 2018 to 2022.
- 3,721 youths, 8.8% of the sample, appeared in two out of three systems during the five-year period.
- Only 456 youths, 1.1% of the sample, appeared in all three systems at some point during the five-year period.
- This lack of overlap could be in part explained by the instability and mobility youth reported experiencing in interviews and focus groups with youth with lived experience across the state of Colorado.

The amount of overlap exhibited varies by system.

- Youths identified by the education system in the McKinney-Vento data collection were the least likely to be identified by another system. Fewer than 13% of youths identified by the education system were flagged in another system.
- Of the youths identified in HMIS, 23.6% were identified in another system within the five-year period.
- Youths identified by the child welfare system exhibited the most overlap, as 28.2% of these youths appeared in another system.
- In focus groups and interviews with youth with lived experience, reported system involvement or knowledge of system involvement also varied between systems. All of the youth interviewed had experiences with RHY providers, and were thus identified in HMIS, but youth involvement with child welfare varied and many youths were unaware if they would show up in Mckinney-Vento education data. When asked about receiving homeless services from schools, most youth were unfamiliar with the terms “homeless youth liaison” or “McKinney-Vento liaison”, instead they shared the general support they received from teachers or school counselors.

Figure 5 below presents the proportion of youths identified by one, two, and three systems for the full sample and each component system. This figure shows that the rate of multisystem identification varies by administrative system, but most youths are only identified by one system.

Figure 5. **Overlap of Youths Identified as Experiencing Homelessness in Colorado by System, SFY 2018-SFY 2022**



Identification of Runaway Youths in Colorado

As noted previously, the child welfare system is the only system in this analysis with a designation for runaways. In interviews and focus groups, youth recognized running away from home as an aspect of homelessness. In fact, one youth in a rural town in western Colorado shared their definition of homelessness while acknowledging why they ran away from home:

> *"Homelessness is a lot of different things. It can be an unstable housing situation where you don't feel safe living in the home you are in. Homelessness could also mean that you are constantly looking for another place to live."*
>
> *- An unhoused youth in a rural town in western Colorado*

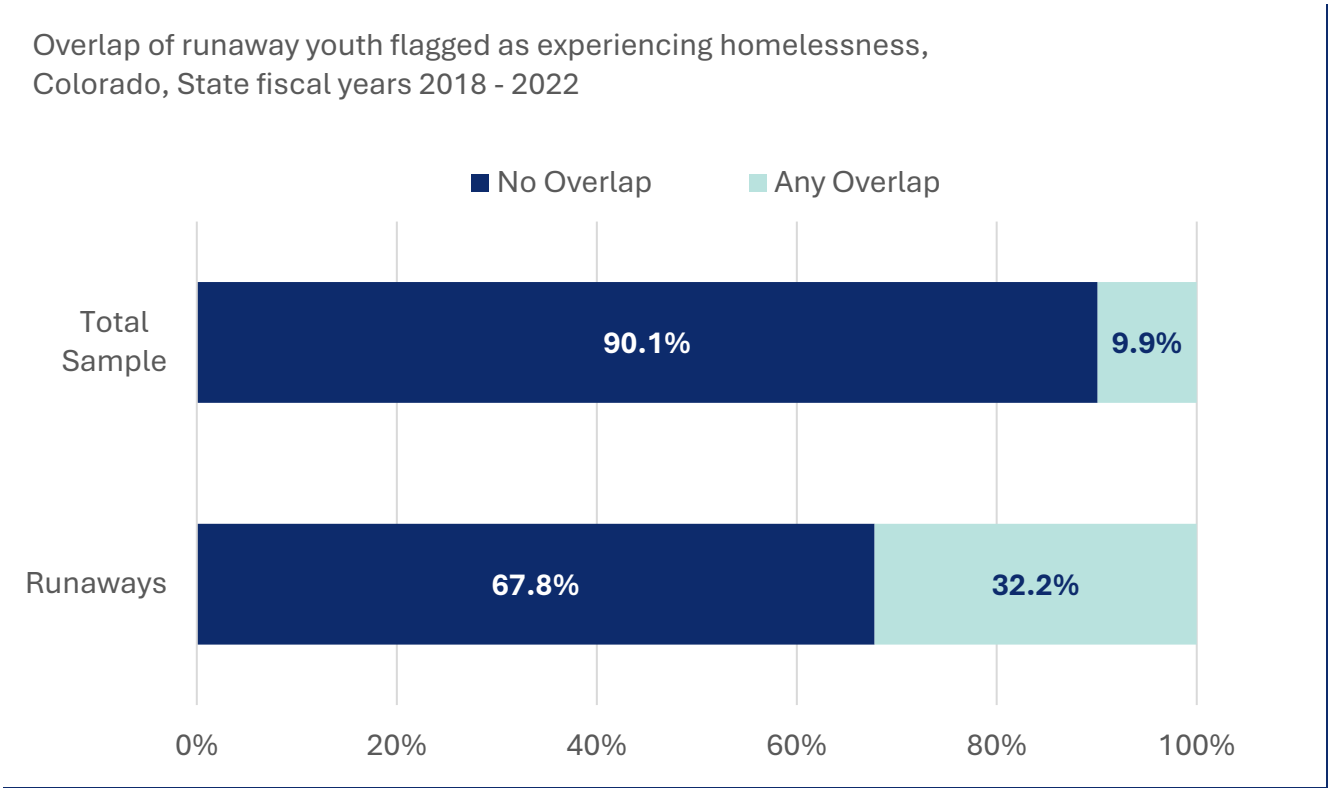
Due to the differing definitions of homelessness, we decided to both include this population in our overall counts and to examine it separately.

- At the state level, for all five years in the analysis period, there were 627 youths identified in the child welfare as runaways in some capacity, corresponding to 1.5% of the total sample.
- Within this subset of the overall population of youths experiencing homelessness, runaways were more than three times as likely to be identified by another system than youths not identified as runaways.
- Nearly one in three (32.2%) runaway youths were also flagged in HMIS or McKinney-Vento data within the same five-year period.

Figure 6, below, displays the proportion of youths with single system (no overlap) and multisystem (any overlap) identification for the total sample and runaway youths alone, demonstrating that runaway youths are far more

likely to be identified by multiple systems than other youths in the sample

Figure 6. **Overlap of Runaway Youths Flagged as Experiencing Homelessness**



Qualitative data from both the pilot and statewide study estimates support the finding that runaway youth are more likely to be identified in multiple administrative data systems. Running away from home or from foster care placements emerged as a theme in youth focus groups and interviews across the state. Among the youth who reported running away from foster care, most indicated they interacted with other systems for services, especially seeking support from their local RHY providers.

Demographics of Youths Identified as Experiencing Homelessness in Colorado

KEY FINDINGS

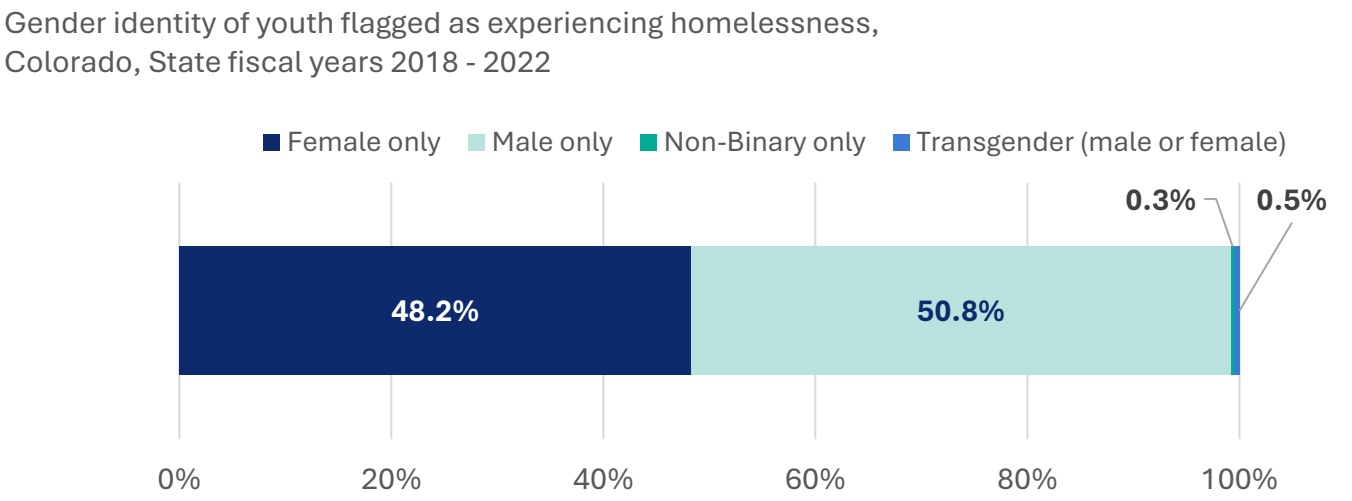
- Youths identifying as male or female experience homelessness at similar rates.
- The racial and ethnic composition of the sample differs substantially from the overall population of similarly aged youths in Colorado: Black and Hispanic youths were overrepresented in the population of youths experiencing homelessness, while white youths were underrepresented.
- The education and child welfare systems tend to identify younger youths (ages 14–18), while young adults (ages 19–24) are more likely to be identified in HMIS.

Gender Identities

Figure 7, below, presents the gender identities of youths flagged as experiencing homelessness at any point during the five-year analysis period, which appears relatively balanced between youths identifying as male or female. At the time of analysis, HMIS was the only system that included gender values outside of the male/female binary. To more accurately represent the youths in the sample, we chose to include HMIS gender

values for youths who identified as non-binary, transgender, or more than one gender, regardless of their gender identifications in other systems

Figure 7. **Gender Identity of Youths Experiencing Homelessness**



Note: The count of youths with more than one gender or for whom gender identity information was missing did not meet the study cell suppression minimum of 16, so they are excluded from this visual.

Race and Ethnicity

Figure 8, below, presents the proportion of youths with each racial and ethnic identity for all youths in the five-year study period. The largest share of youths in the sample identified as Hispanic, followed by Non- Hispanic White, Black, Another, and Missing.

When compared to the racial and ethnic composition of similarly-aged Colorado youths for 2020 alone, a few disparities emerge:

- Hispanic youths of any race represented the majority of youths experiencing homelessness in 2020 (42.3%) despite representing only 29.9% of youths aged 14-24 in the state.
- Non-Hispanic Black youths were highly overrepresented in the population of youths experiencing homelessness. In 2020, the proportion of Black youths experiencing homelessness was three times higher than their proportion within the population of Colorado youths.
- Non-Hispanic White youths were relatively underrepresented in the population of youths experiencing homelessness. Only 34.4% of youths flagged as experiencing homelessness in 2020 identified as White, while White youths comprise 57.6% of similarly aged Coloradans.

Figure 9, below, presents the racial and ethnic composition of youths identified as experiencing homelessness in 2020 compared to the population of similarly aged youths in Colorado as a whole. Researchers selected SFY 2020 as the comparison year because it was the most recent fiscal year in their data before the COVID-19 pandemic affected a full year of known counts of youths experiencing homelessness (i.e., onset of COVID was Q4 of SFY 2020). Additionally, this aligned well with the most recent Census data obtained from the Colorado State Demography Office, which was reported on a calendar year basis. This figure demonstrates the over representation of Hispanic and Non-Hispanic Black youths and underrepresentation of Non-Hispanic White youths in the sample of those identified as experiencing homelessness when compared to the state population of similarly aged youths

Figure 8. **Racial and Ethnic Identities of Youths Experiencing Homelessness, SFY 2018- SFY 2022**

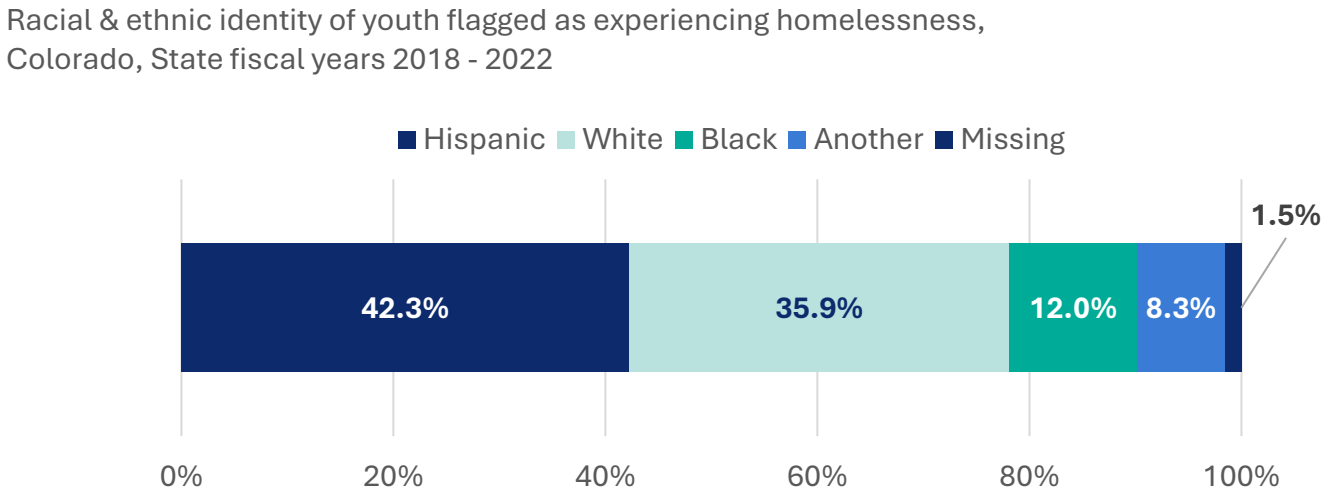
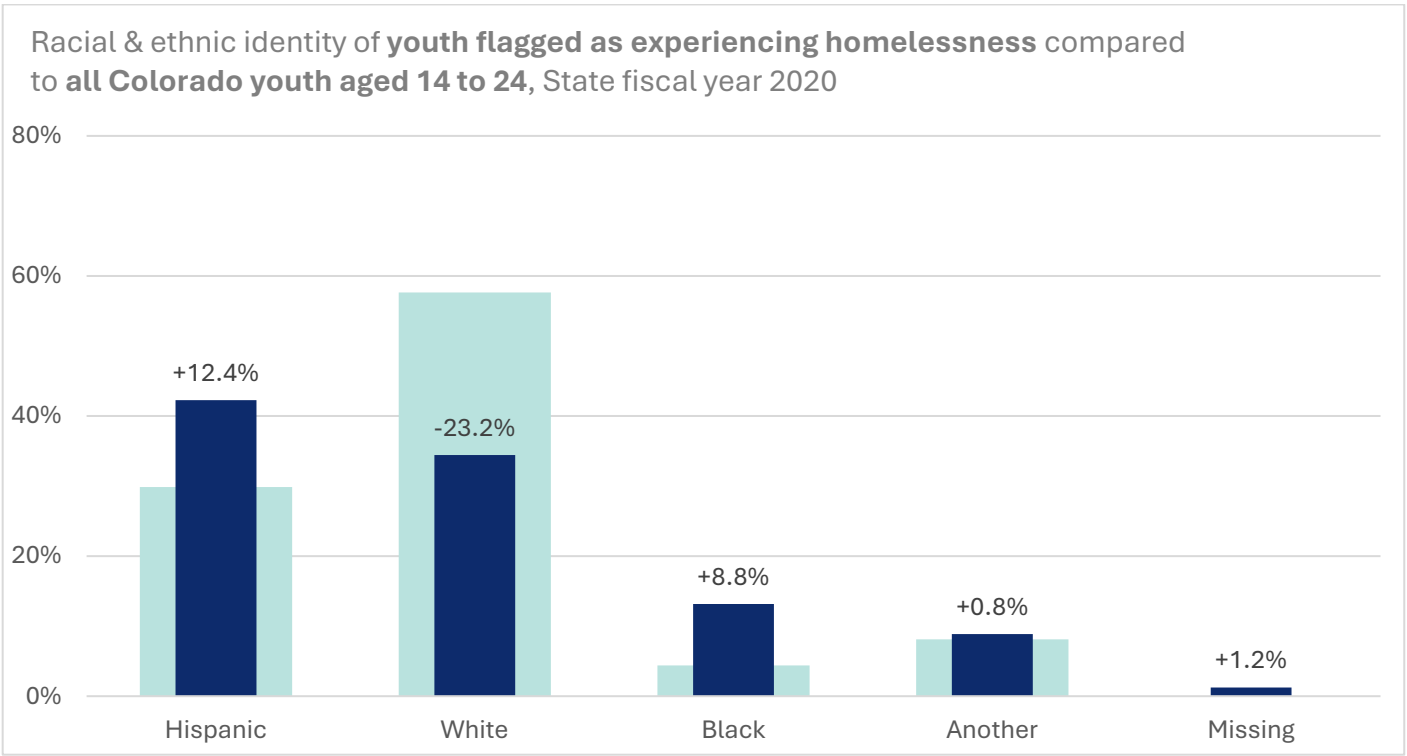


Figure 9. **Racial and Ethnic Identities of Youths Experiencing Homelessness and Colorado Youths Ages 14-24, SFY 2020**



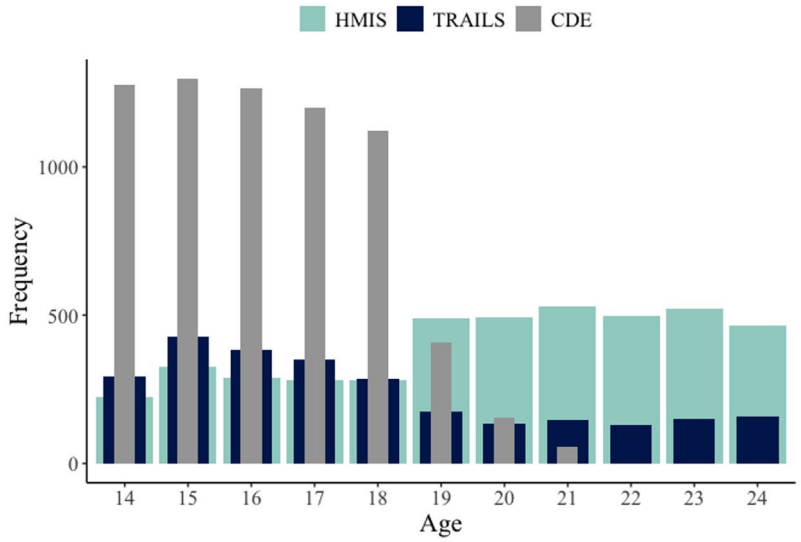
Age

In the pilot study, we found differences in age in the proportion of youths identified as experiencing homelessness within each system. This finding was replicated at the state level. Figure 10, below, presents counts of youths identified as experiencing homelessness by system and age for SFY 2022. A few key insights emerged:

- The education system (CDE) is most effective at identifying younger youths, with 14- and 15-year-olds being the most frequently identified in 2022. Older youths, especially those older than 18 years of age, are not likely to be reflected in McKinney-Vento data, as these youths may no longer be in school.

- The child welfare system (Trails) is also well suited to identifying homelessness among younger youths, especially youths ages 15–17.
- The youths identified within HMIS data tend to be older; the majority of youths in this system are over 18 years of age

Figure 10. **Age of Youths Identified as Experiencing Homelessness by System, SFY 2022**



Examining the overlap in identification of youths across systems by age is important for generating estimates of youths experiencing homelessness not identified by data through the systems. For the multisystem estimation method to work well, the systems need to serve youth consistently within that age range, as opposed to a subset of the total population (e.g., youth receiving special education services up to age 21).

Geography of Youths Identified as Experiencing Homelessness

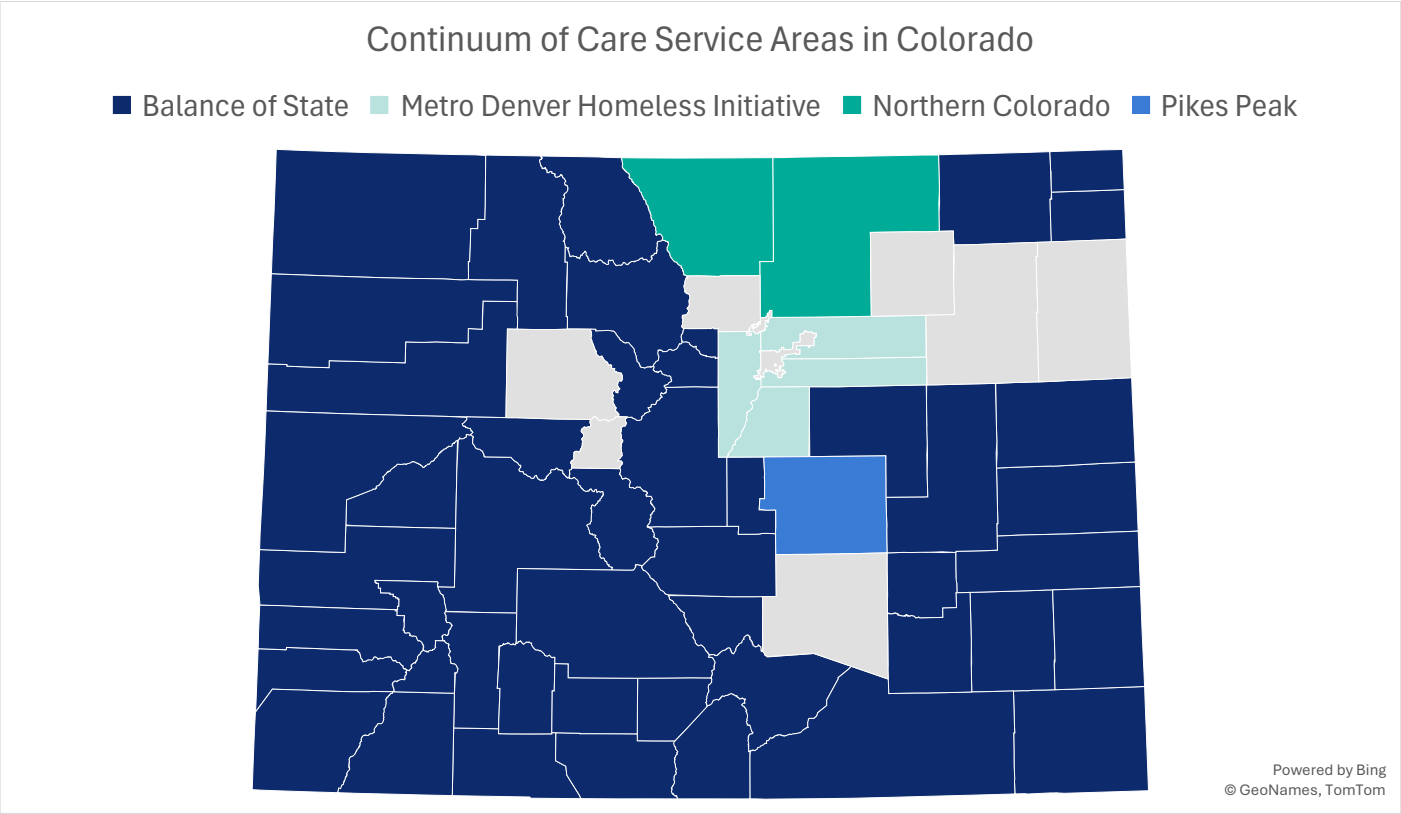
KEY FINDINGS

- System-level identification varied by geography. Youths in the Pike's Peak CoC were most likely to be identified in HMIS, while youths in every other part of the state were most likely to be identified by the education system.
- Rates of overlap varied by geography as well. Youths in Northern Colorado and Balance of State CoCs exhibited the lowest rates of multisystem identification.

As shown in Figure 11, below, homeless services are administered by four CoCs across Colorado's 64 counties:

- Metro Denver Homeless Initiative represents Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson counties;
- Northern Colorado Continuum of Care represents Larimer and Weld counties;
- Pikes Peak Continuum of Care represents El Paso County; and
- Balance of State Continuum of Care represents the remaining 54 counties.

Figure 11. **Continuum of Care Service Areas in Colorado**



Tables 4 and 5, below, present the overall and annualized counts of youths identified as experiencing homelessness within each CoC's service area. To be counted in a given cell, a youth must have been flagged by the system (indicated by the column header) in a county within the CoC service area.
The percentages are calculated by row and correspond to the total count for each CoC service area, not the statewide sample.

Based on these findings, the system through which a given youth is most likely to be identified depends largely on their county of residence.

Table 4. **Overall Known Counts of Youths Experiencing Homelessness by Continuum of Care**

Full Sample	Colorado Department of Education (CDE)		Continuums of Care (HMIS)		Division of Child Welfare (Trails)		Total
	Overall: SFY 2018-SFY 2022						
	Deduplicated within systems						Deduplicated across systems
	Count	%	Count	%	Count	%	
Metro Denver Homeless Initiative	13,805	57.6%	7,351	30.7%	5,422	22.6%	**23,967**
Balance of State	4,801	63.7%	1,575	20.9%	1,773	23.5%	**7,535**
Pikes Peak	2,294	37.5%	3,279	53.6%	1,197	19.6%	**6,115**
Northern Colorado	3,616	73.5%	498	10.1%	1,220	24.8%	**4,921**

Note: Since youths may appear in more than one CoC service area, columns do not sum to the state-level system totals presented earlier.

Table 5. **Known Counts of Youths Experiencing Homelessness by Continuum of Care and SFY**

Full Sample	Colorado Department of Education (CDE)		Continuums of Care (HMIS)		Division of Child Welfare (Trails)		Total
	Deduplicated within systems						*Deduplicated across systems*
Counties in Continuum of Care	**Count**	**%**	**Count**	**%**	**Count**	**%**	
SFY 2018							
Metro Denver Homeless Initiative	4,364	56.7%	1,965	25.5%	1,859	24.2%	—
Balance of State	1,594	64.4%	367	14.8%	509	20.6%	—
Pikes Peak	746	34.6%	1,208	56.1%	386	17.9%	—
Northern Colorado	892	66.8%	93	7.0%	434	32.5%	—
SFY 2019							
Metro Denver Homeless Initiative	4,404	56.3%	2,096	26.8%	1,815	23.2%	—
Balance of State	1,298	59.2%	407	18.6%	609	27.8%	—

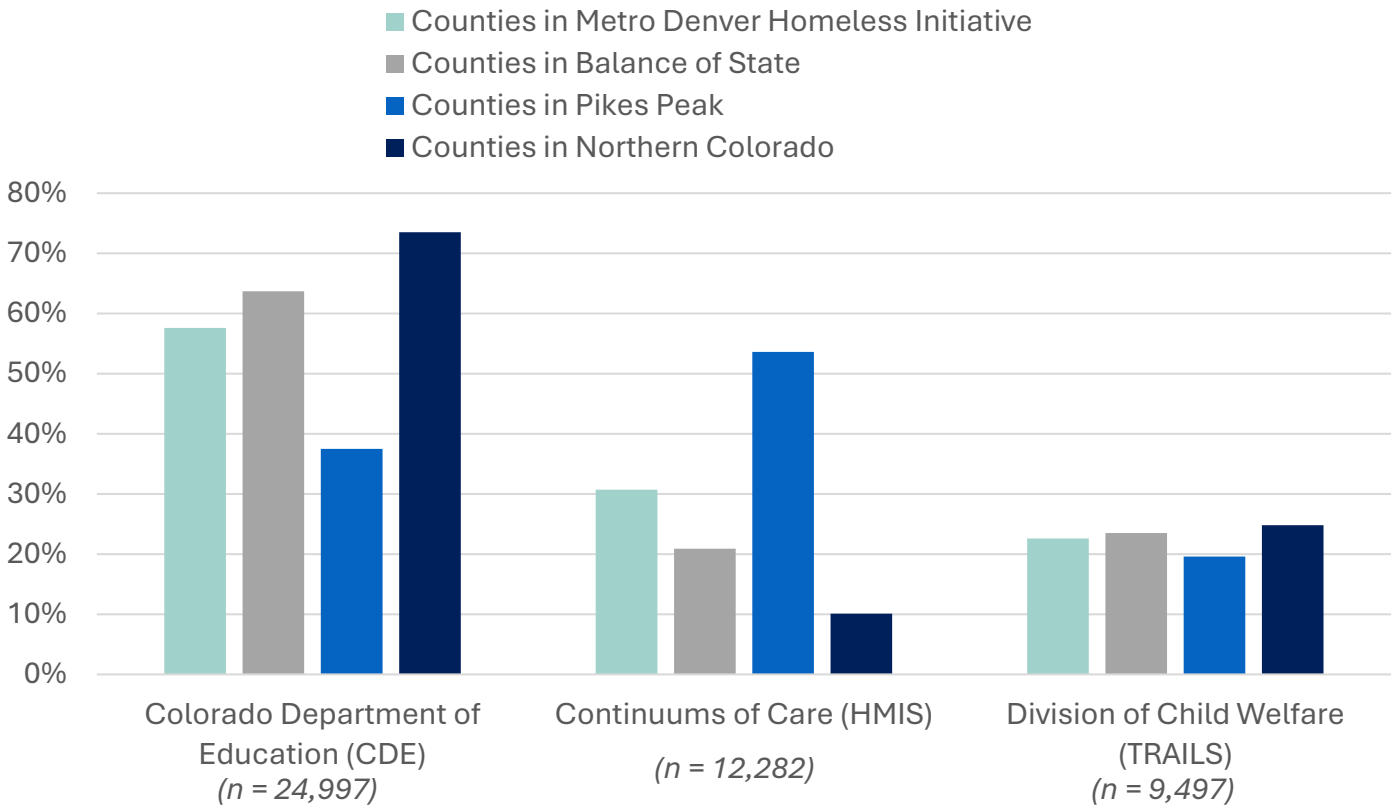
Pikes Peak	662	34.2%	1,053	54.4%	382	19.7%	—
Northern Colorado	995	69.1%	91	6.3%	429	29.8%	—
SFY 2020							
Metro Denver Homeless Initiative	4,111	52.0%	2,618	33.1%	1,714	21.7%	—
Balance of State	1,320	58.6%	506	22.5%	602	26.7%	—
Pikes Peak	706	37.5%	882	46.9%	420	22.3%	—
Northern Colorado	1,003	70.3%	91	6.4%	398	27.9%	—
SFY 2021							
Metro Denver Homeless Initiative	2,995	43.4%	2,788	40.4%	1,579	22.9%	—
Balance of State	1,023	50.9%	518	25.8%	553	27.5%	—
Pikes Peak	387	24.8%	858	55.0%	392	25.1%	—
Northern Colorado	935	67.2%	133	9.6%	393	28.2%	—
SFY 2022							
Metro Denver Homeless Initiative	3,606	48.9%	2,831	38.4%	1,474	20.0%	—
Balance of State	1,256	58.0%	509	23.5%	567	26.2%	—
Pikes Peak	493	28.4%	1,013	58.4%	342	19.7%	—
Northern Colorado	1,131	70.6%	243	15.2%	336	21.0%	—

Note: Since youths may appear in more than one CoC service area, columns do not sum to the state-level system totals presented earlier

Figure 12, below, presents the same information in a stacked bar chart, allowing for quick comparison of system composition of the sample by CoC region.

- The proportion of youths identified as experiencing homelessness within the child welfare database was the most consistent, just over 20% across CoCs.
- The majority of youths identified in the Pikes Peak CoC were flagged in HMIS (53.6%).
- With the exception of the Pikes Peak CoC, the vast majority of youths were flagged in McKinney- Vento data.

Figure 12. **Proportion of Youths Identified as Experiencing Homelessness within CoC Service Areas by System, SFY 2018-SFY 2022**



Patterns of Overlapping Identification

While the proportion of youths identified by each administrative system differed by CoC, the amount of overlapping identification did not differ from the overall state average.

- Just over 90% of youths in each CoC were flagged by one system alone during the five-year period.
- The Northern Colorado and Balance of State CoCs exhibited the lowest rate of multisystem identification; only 7.6% of youths in these two CoCs combined appeared in more than one system.

Examining the overlap in identification of youths experiencing homelessness across geographic areas can inform model selection for the multisystem estimates of the unknown population. Part of model selection is determining what interaction terms to include and if there are practically different patterns in overlap of identification across geographic areas.

Estimating the Unknown Number of Youths Experiencing Homelessness

Our analysis of the overlap in the known counts demonstrated that many youths experiencing homelessness were recognized in only one system. Most (90.1%) youths in our sample were identified in only one system. The limited overlap in identification across systems, paired with the qualitative findings, suggests there are likely to be many more youths experiencing homelessness than those who are known to be experiencing homelessness to any of the three systems included in this study.

Case Study

Cameron (she/them) is a 24-year-old youth experiencing homelessness in a suburban area outside of Denver. Cameron receives support from their local RHY provider and participated in a focus group at the drop-in center where they receive services.

Cameron's dad was not a part of her life, but they lived with her mom until she was 19, when their mom died due to illness. Before she was 19, Cameron faced housing insecurity because they couldn't afford rent while their mom was in the hospital and unable to work. Cameron reported talking to a school counselor about her housing situation and receiving some resources from her school. After her mom died, Child Welfare placed Cameron with her uncle. Due to significant sexual abuse from their uncle, she ran away from his house and opted to live on the street or find housing in youth and adult shelters across Colorado.

While living unhoused, Cameron struggled with alcohol addiction and ended up seeking care in a behavioral health/rehabilitation clinic available to low-income and housing insecure people in Colorado. She also had many encounters with the police due to her being unhoused. She reported the outcomes of the interactions with the police varied based on where she was in the state, but she never reported spending any time in jail.

At the time of this focus group, Cameron had found housing with a local Runaway and Homeless Youth (RHY) service provider that also provides youth shelter services in a suburban area of Colorado. Cameron also reported using services to get employment help and legal documents from another local homeless service provider aimed at providing services to adults experiencing homelessness.

Cameron showed tremendous resilience despite the loss, trauma, and lack of stable housing she has experienced. She reported that she has built a community of people to support her. They also reported gaining part-time employment at a thrift store in their area. Cameron reported this employment does not provide enough income to afford rent in the area, but they continue to look for employment that can support their independence. They also shared a love for music, specifically rap, and they hope to incorporate that passion into a future career path. When discussing their next steps Cameron has this to say, "Just because they are making it hard for me to live does not mean I won't get to where I want to be. I am strong and I will get there. Nothing is going to stop me, and I am not giving up."

Administrative Data System	***Factors that determine if youth is identified as experiencing in administrative data system**
Child Welfare (foster care) SACWIS	Cameron is identified in the Colorado SACWIS system because they were involved in her placement at her uncle's house after her mom's death.
Homeless Management Information System (HMIS)	Cameron appears in HMIS because she receives services from her local RHY provider.

McKinney Vento Homeless Assistance Act (Education Data)	Although Cameron did talk to a counselor at school about her housing instability, she is unknown in the McKinney-Vento data because it is undetermined if she received McKinney-Vento Services while in school.
Police Department	Cameron is unknown in police department data. It is unknown if she was ticketed in Colorado, and she was never jailed.
Medical Hospital Records	Cameron is known in hospital or medical records because she received behavioral health services in Colorado.

**Based on details provided by youth and not on review of actual administrative records.*

Multisystem Estimation

As described in the methods section of this report, multisystem estimation is an approach that estimates an unknown population by taking the proportion of individuals identified in a given time period that appear in the current sample. As the name implies, multisystem estimation relies on multiple sources of identification and multiple time points to more accurately estimate an unknown population of interest.

The sample for the multisystem estimation was a subset of the sample used to count youths known to the system. This portion of the analysis was limited to youths ages 14–17.

Detailed Results

- Table 6, below, presents the known counts of youths experiencing homelessness, unknown estimates of youths experiencing homelessness, and confidence intervals for the unknown estimates by state fiscal year. Figure 13 presents these trends in a time-series. Figure 14 presents known counts, unknown estimates, and total estimates disaggregated by CoC service area for the 2022 state fiscal year.
- Depending on the year, the unknown estimates of youths experiencing homelessness ranged from three to five times the known count for that year.
- Combining known counts and unknown estimates suggests that roughly 30,000 youths experienced homelessness in Colorado each year.
- While known counts remained relatively stable, patterns of overlap and individual system counts led the unknown estimate to increase in SFY 2020.
- Youths ages 14–17 living within the MDHI service area only constitute 28.9% of similarly aged youths in the state, but account for 55.9% of total estimated (known count + unknown estimate) youths experiencing homelessness in Colorado in 2022.

- Youths ages 14-17 in the Northern Colorado and Pikes Peak CoC service areas each represent 11.6% of total estimated youths experiencing homelessness, despite being home to only 6.3% and 6.7%, respectively, of Colorado youths aged 14-17.
- Youths ages 14-17 in the Balance of State CoC service area only represent 20.9% of total estimated youths experiencing homelessness, despite representing 59.1% of similarly aged youths in Colorado.

Table 6. **Counts of Known and Estimates of Unknown Youths (Ages 14-17) Experiencing Homelessness in Colorado**

State Fiscal Year	Known	Unknown Estimate	95% Confidence Interval		Total Estimate (Known + Unknown)
			Lower Bound	Upper Bound	
2018	6,525	22,842	19,793	26,361	29,367
2019	6,484	23,869	20,653	27,586	30,353
2020	6,418	30,206	25,699	35,503	36,624
2021	5,404	26,110	21,934	31,081	31,514
2022	6,135	26,906	22,628	31,992	33,041

Figure 13. **Trends in the Counts of Known and Unknown Youths (Ages 14-17) Experiencing Homelessness in Colorado**

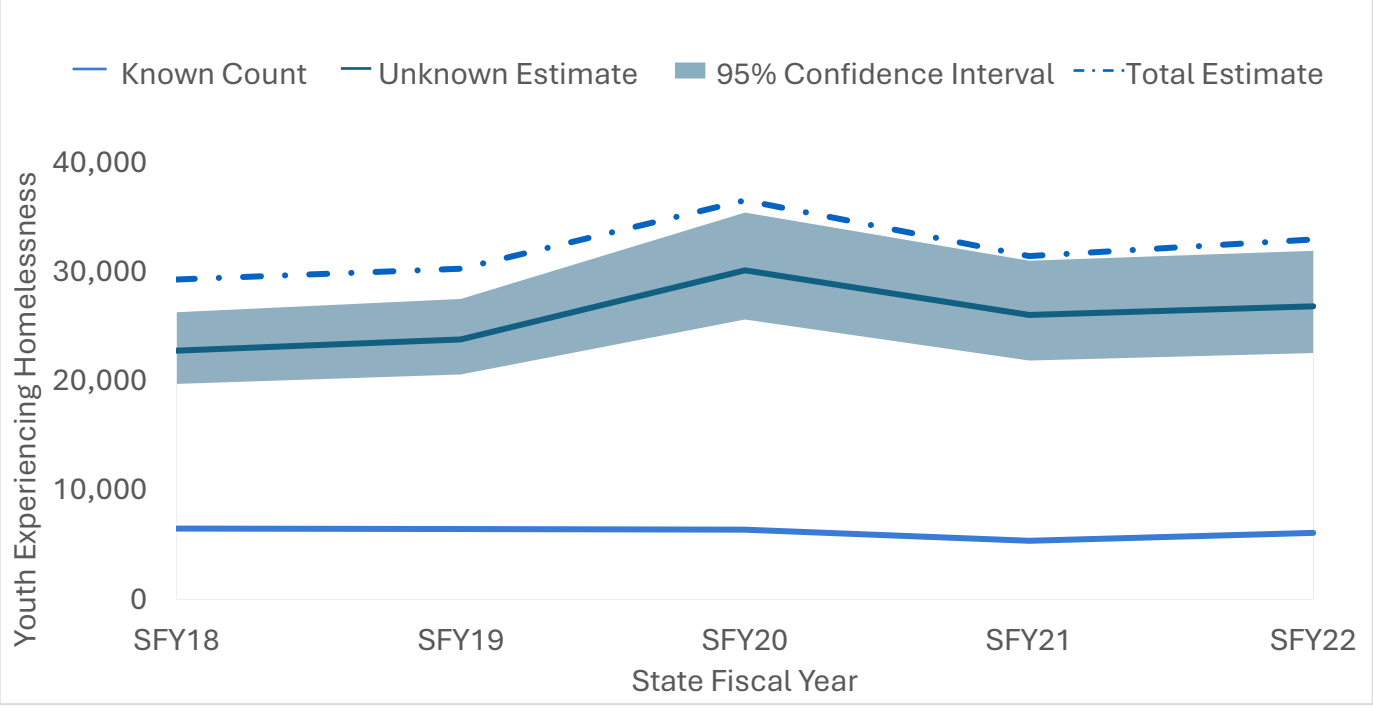
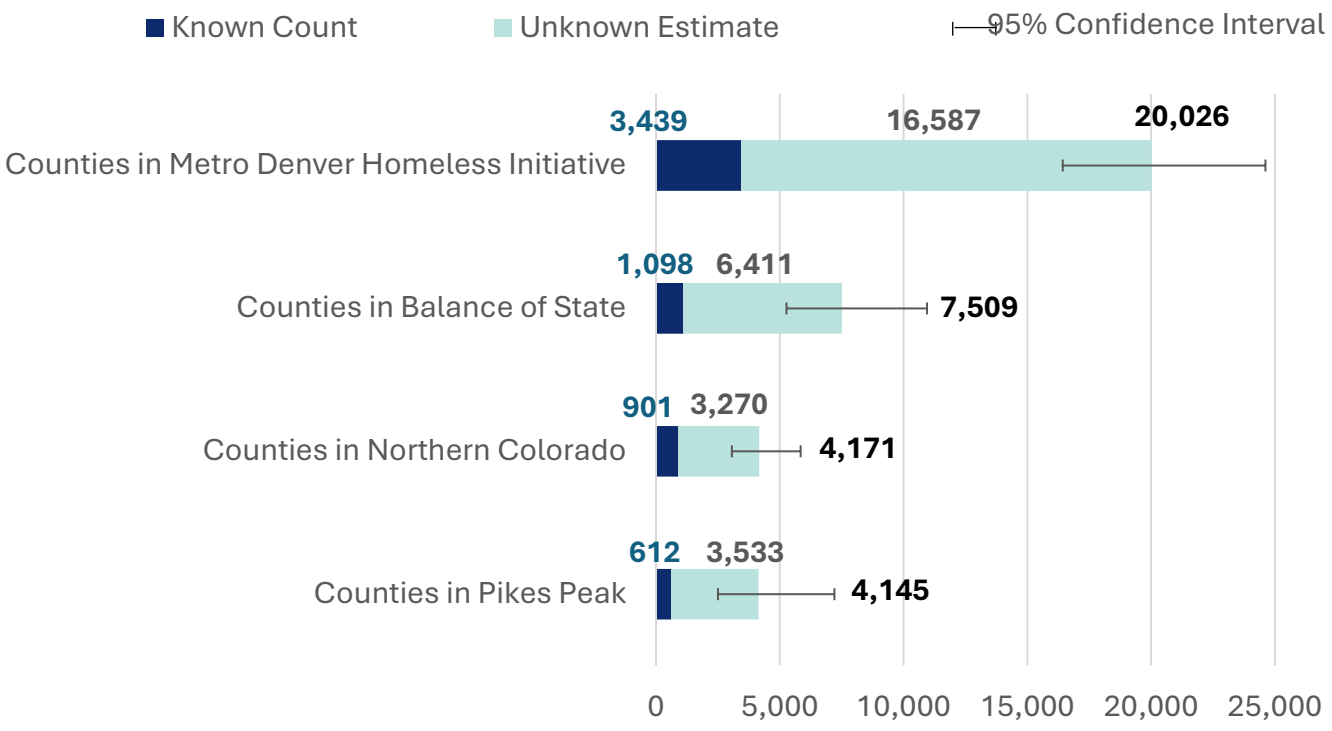


Figure 14. **Counts of Known and Unknown Youths (Ages 14-17) Experiencing Homelessness in Colorado by Continuum of Care Service Area, SFY 2022**



Description of Characteristics of Youth Experiencing Homelessness (Ages 18-24)

Research Question 3: What are the K-12 educational, child welfare-related, public-assistance program participation, and histories of youths associated with homelessness as older youths (i.e., ages 18-24)?

The goal of this portion of the study was to inform policies and practices aimed at preventing or lessening the duration of homelessness by better understanding the characteristics of young adults (ages 18-24) who experience homelessness, including some of their experiences within the education, child welfare, or homeless services systems. The statistical procedure of a Latent Class Analysis (LCA) was used to quantitatively identify different groups within this population. The sample for this portion of the study includes the 1,584 young adults who experienced homelessness in Denver between the ages of 18–24 who were enrolled in Denver Public Schools at some point between grades 8–12. The sample, process for refining the list measures, and analytic approach are fully described in the methods section of this report.

Final List of Measures

The initial list of measures included 42 binary indicators deemed to have a potential influence on subsequent experiences of homelessness. This list was too exhaustive to be practically informative, and many of the indicators were either too rare or ubiquitous to be useful for class creation. After considering interpretability, model fit statistics, and indicator frequencies, the researchers selected a final list of 33 indicators

Initial list of 42 indicators	Final list of 33 indicators used in the LCA model	Count (Percentage)	Missing (Percentage)
History of Homelessness Based on Information from All Three Data Sources			
Prior Episode of Homelessness Indicator			
Experienced homelessness between 14–18 years of age	Experienced homelessness between 14–18 years of age	438 (27.7%)	0 (0%)
Demographic Indicators			
Female	Female	794 (50.1%)	0 (0%)
White, non-Hispanic	White, non-Hispanic	184 (11.6%)	0 (0%)
Black, non-Hispanic	Black, non-Hispanic	510 (32.2%)	0 (0%)
Hispanic	Hispanic	743 (46.9%)	0 (0%)
Other youths of color, non-Hispanic	Other youths of color, non-Hispanic	147 (9.3%)	0 (0%)
Academic Indicators Provided by Denver Public Schools.*			
One school year with a chronic absence (missing 10% or more of school days)	--	--	--
Two or more school years with a chronic absence (missing 10% or more of school days)	Two or more school years with a chronic absence	1,013 (72.7%)	190 (12.0%)
Any school transfer	--	--	--
Two or more school transfers	Two or more school transfers	1,180 (74.5%)	0 (0%)

Dropped out of school	Dropped out of school	480 (30.3%)	0 (0%)
High school credential (i.e., Graduated, GED, Certificate of Completion)	High school credential (i.e., Graduated, GED, Certificate of Completion)	501 (36.1%)	198 (12.2%)
Unsatisfactory reading score on CMAS/CSAP** in grade 8	Unsatisfactory reading score on CMAS/CSAP in grade	414 (43.6%)	635 (40.1%)
Unsatisfactory math score on CMAS/CSAP in grade 8	Unsatisfactory math score on CMAS/CSAP in grade	472 (58.1%)	772 (48.7%)
One or more suspensions	One or more suspensions	598 (37.8%)	0 (0%)
Child Welfare Indicators Provided by Colorado Department of Human Services.**			
One or more referrals	One or more referrals	1,162 (73.4%)	0 (0%)
One or more assessments	One or more assessments	1,078 (68.1%)	0 (0%)
One or more child welfare cases	One or more child welfare cases	753 (47.5%)	0 (0%)
One or more Department of Youth Corrections cases	One or more department of youth corrections cases	451 (28.5%)	0 (0%)
Three or more placements	Three or more placements	483 (30.5%)	0 (0%)
One or more family-like placements	One or more family-like placements	436 (27.5%)	0 (0%)
One or more congregate care placements	One or more congregate care placements	410 (25.9%)	0 (0%)
One or more runaway episodes	One or more runaway episodes	266 (16.8%)	0 (0%)
One or more removals	--	--	--
Two or more removals	Two or more removals	260 (16.4%)	0 (0%)
Removal before the age of 14	Removal before the age of 14	293 (18.5%)	0 (0%)
Removal reason: substance use parent***	Removal reason: substance use parent	132 (08.3%)	0 (0%)
Removal reason: neglect	Removal reason: neglect	171 (10.8%)	0 (0%)
Removal reason: child behavior	Removal reason: child behavior	359 (22.7%)	0 (0%)
Removal reason: substance use by child	Removal reason: substance use by child	79 (5.%)	0 (0%)
Removal reason: housing	Removal reason: housing	74 (4.7%)	0 (0%)
Removal reason: cope	Removal reason: cope	190 (12.%)	0 (0%)
Removal reason: physical abuse	--	--	--
Removal reason: sexual abuse	--	--	--
Removal reason: parental incarceration	--	--	--
Removal reason: child disability	--	--	--
Removal reason: abandonment	--	--	--
Removal end reason: adoption*	--	--	--
Removal end reason: emancipation	Removal end reason: emancipation	132 (8.3%)	0 (0%)
Removal end reason: living with relatives	Removal end reason: living with relatives	131 (8.3%)	0 (0%)

Removal end reason: reunification	Removal end reason: reunification	314 (19.8%)	0 (0%)
Removal end reason: runaway	Removal end reason: runaway	82 (5.2%)	0 (0%)

Measure applies to grade levels 8-12 unless otherwise indicated.

***CMAS: Colorado Measures of Academic Success; CSAP: Colorado Student Assessment Program.*

****Measure applies to all child welfare involvement prior to indication of homelessness episodes experienced on or after 18th birthday.*

*****Removal reasons and removal end reasons apply to any removal experienced by a youth.*

Three-Class Model Selected

The Latent Class Analysis (LCA) approach allows researchers to identify potential unobserved groups, called "latent classes," using observed variables in a data set. Practically, this means information surfaces about the young people who experienced homelessness between the ages of 18–24 and common patterns emerge about their experiences. The research team evaluated their relative fit of different models and using the Bayesian information criterion (BIC), entropy, average posterior probability, Lo-Mendell-Rubin test p-values, and class composition metrics. The research team simultaneously considered interpretability of the models to inform selection of the number of classes.

A three-class model was selected because it resulted in relatively large, cohesive classes, each with its own distinct characteristics across the panel of indicators included in the model. The three-class LCA model was used to determine the probability that a given individual belonged to one of the classes specified by the model.

A two-class model was not practically informative, since such a coarse model would leave room for meaningful differences within each class on several indicators. The three-class, four-class, and five-class models performed similarly with respect to the measures of fit, with comparable BICs, entropy statistics well above the 0.8 benchmark, high average posterior probabilities, and Lo-Mendell-Rubin test p-values below .05. The main discrepancy between each model resided in the smallest class composition, with the four- and five-class models yielding classes with fewer than 10 individuals. Classes containing less than 5% of the overall sample can undermine a model's generalizability, as it could be the result of a handful of outliers, complicating the interpretation and future application of a model. For these reasons, the three-class model was selected.

Description of the Groups

The three-class model, identified using the approach described above, fit the data well, resulting in three groups (the term "group" is used and is analogous with "latent class") defined by their unique constellations of characteristics. While these characteristics do not necessarily predict homelessness, they help describe the demographic characteristics, and the education and child welfare experiences of youths who experience homelessness between the ages of 18–24.

Group One: Youths with Limited Child Welfare Involvement (n = 985, 62.2%)

> *Since Freshman year, my dad kicked me out... a lot of the teachers knew [that I was homeless]. They just tell you to talk to a counselor, they force you to talk to them."*
>
> *- Youth experiencing homelessness in Denver*

The first group identified was by far the largest, comprising nearly two out of three youths in the sample. This group was characterized by:

- **Less child welfare involvement** than other groups. Fewer than half (48.6%) of the youths in this group had an assessment, and only 16.1% of youths in this group had a child welfare case. Notably, none of the youths in this group experienced a removal episode.
- **Performing relatively well in school,** with a lower dropout rate, a higher rate of high school credential attainment, lower suspension rate, and lower rates of unsatisfactory scores on standardized tests of reading and math than their peers in the other two groups.
- Least frequently identified (12.7%) as experiencing homelessness by the child welfare system.
- Least frequently received homeless services through a CoC prior to age 18 (42.0%).
- The most frequently identified by the education system, with 65.3% of group members identified as experiencing homelessness at some point during their tenure at Denver Public Schools.

Group Two: Youths with Behavioral Challenges and Extensive Child Welfare Involvement (n = 386, 24.4%)

> *So, my background is more self-accountable than most people's. I went into the foster care system when I was around 12 years old because I was having a lot of anger issues..."*
>
> *- Youth experiencing homelessness in Denver*

The second largest group, comprising roughly one in four youths in the sample, is characterized by:

- **Extensive child welfare involvement** and indicators of behavioral challenges. Every member of this group had a child welfare referral and assessment. Significantly, 95.9% of these youths had more than three child welfare placements before experiencing homelessness as older youths, and 96.9% of these youths had at least one placement in a congregate care facility.
- **Behavior challenges.** Most of these youths had both a child welfare and juvenile justice case with the Division of Youth Services (DYS). Many (89.9%) had a child welfare removal in which "child behavior" was listed as a contributing factor, and more than two-thirds (67.1%) were identified as runaways at one point within the child welfare database.
- **School challenges.** More than half (54.7%) had at least one suspension from a school incident. Half of these youths dropped out of school. This group was also the least likely to earn a high school credential (10.9%).
- Most likely to identify as male (61.4%).
- Least frequently identified (13.7%) in McKinney-Vento data and therefore less likely to receive homeless services through school.
- Most frequently identified (59.8%) as experiencing homelessness by the child welfare system.

Group Three: Youths with Early Child Welfare Involvement (n = 213, 13.4%)

> *[We experienced homelessness] because we have gone through painful things, because people didn't care for us."*
>
> *- Youth experiencing homelessness in a suburban town in the Denver metro area*

The third and final group is the smallest, constituting 13.4% of the overall sample. This group is characterized by:

- **Child welfare involvement at an early age,** with 67.1% of these youths experiencing removal before the age of 14.
- Nearly all (99.5%) of these youths had a child welfare case. For these youths, the most commonly cited removal reasons were neglect (48.8%) and parental substance use (38.0%). These youths were most likely to have a placement in a family-like setting (98.6%).
- Predominantly female (60.6%).
- Most frequently identified as experiencing homelessness within HMIS, meaning they received homelessness services from a CoC before age 18.
- Fewer than half were identified within the McKinney-Vento and child welfare databases.
- Had the most even distribution of identification across systems of any group.

Table 8, below, presents the relative differences between each of the groups based on a subset of education and child welfare characteristics. An up arrow (↑) indicates the value for this group was higher than one or both of the other groups. A down arrow (↓) means the value was lower. Values that are comparable across two or all three groups are designated with a squiggly horizontal line (~).

Table 8. **Differences Between Groups Based on Education and Child Welfare Characteristics**

Characteristic	Group 1: Youths with Limited Child Welfare Involvement	Group 2: Youths with Behavioral Challenges and Extensive Child Welfare Involvement	Group 3: Youths with Early Child Welfare Involvement
Experienced homelessness between 14–18	↓	~	~
Female	~	↓	~
Race and ethnicity	~	~	~
Multiple school years with chronic absences	~	~	~
Multiple school transfers	~	~	~
Dropout rate	↓	↑	↓
High school credential attainment	↑	↓	
Suspension incidents	↓	↑	
Unsatisfactory reading and math scores	↓	↑	↑
Child welfare referrals	↓	↑	↑
Child welfare assessments	↓	↑	↑
Child welfare cases	↓	↑	↑
DYC cases	↓	↑	↓
Number of child welfare placements	↓	↑	
Family-like placements	↓	↓	↑

Congregate care placements	↓	↑	↓

Figure 15, below, plots the proportion of each group with a "yes" value for each measure. For instance, above the label "experienced homelessness between 14 and 18", there is a value of roughly 20% for the group of youths with limited child welfare involvement, indicating that 20% of the youths in this group experienced homelessness between 14–18. The plot is organized into the categories of an individual's history of homelessness, demographic characteristics, academic history, and child welfare history.

Figure 15. **Proportion Of Demographic Characteristics, Homelessness, Academic, and Child Welfare History Indicators by Group**

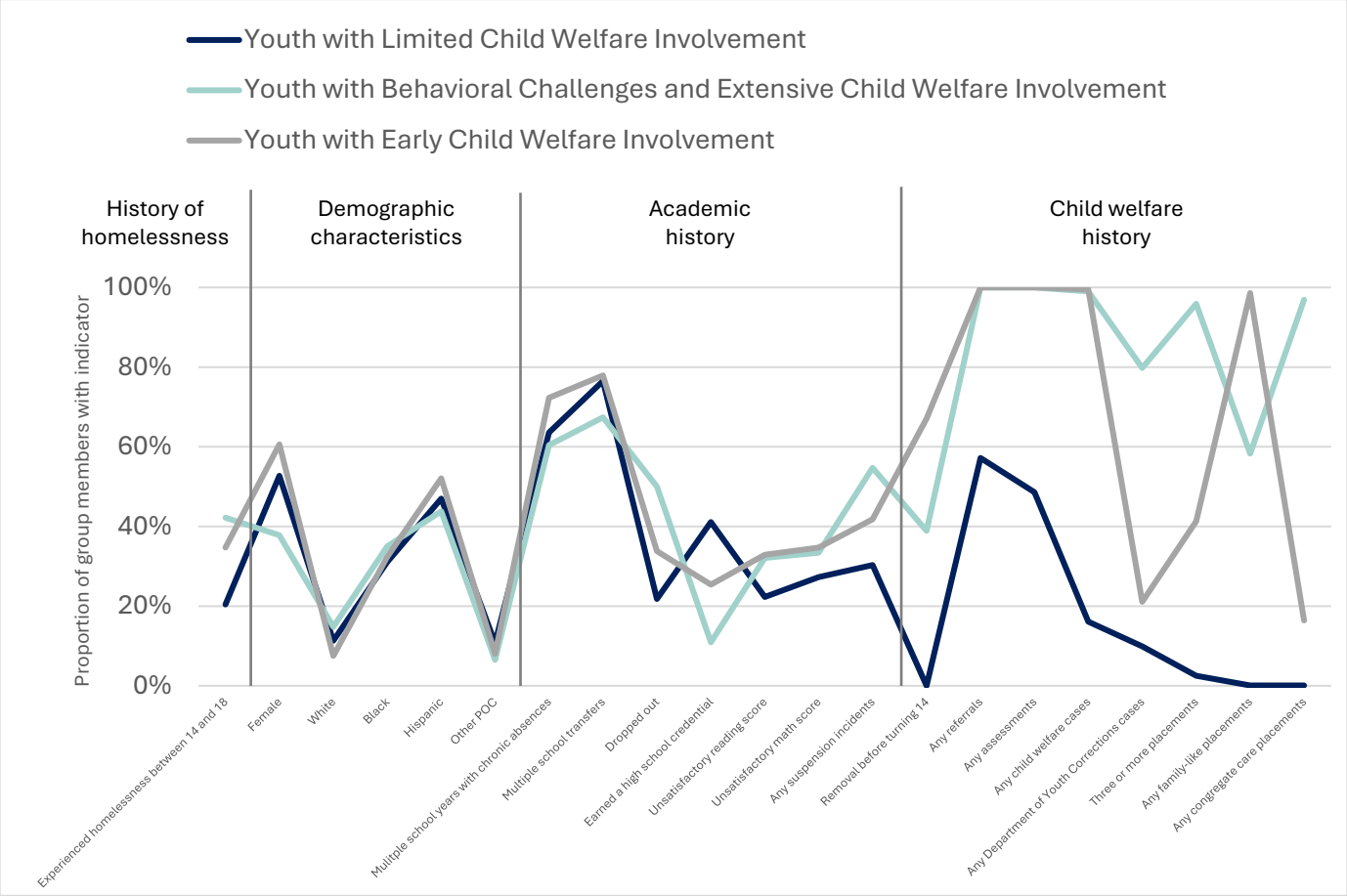


Table 9, below, includes the same information contained in Figure 15, above, presenting the values for each indicator included in the final model. These values indicate a few key differences between the groups:

- Most of the youths in the group with behavioral challenges and extensive child welfare involvement identify as male, while most of the youths in the group with early child welfare involvement identify as female.
- Youths in the group with behavioral challenges and extensive child welfare involvement were most likely to have been identified as experiencing homelessness between the ages of 14–18, followed closely by youths in the group with early child welfare involvement. Only one in five youths in the group with limited child welfare involvement were identified as experiencing homelessness between the ages of 14–18.
- For the groups with more child welfare involvement, youths in the group with behavioral challenges were

more likely to have been placed in congregate care, while the youths in the group with early child welfare involvement were more likely to have been placed in a family-like setting at some point during a removal episode.

Table 9. **Detailed Probability of Demographic Characteristics, Homelessness, Academic, and Child Welfare History Indicators by Group**

Predictors	Missing (%)	Youths with Limited Child Welfare Involvement (n = 985)	Youths with Behavioral Challenges and Extensive Child Welfare Involvement (n = 386)	Youths with Early Child Welfare Involvement (n = 213)
Demographics				
Female	--	52.7%	37.8%	60.6%
White, non-Hispanic	--	11.3%	14.8%	7.5%
Black, non-Hispanic	--	31.1%	35.0%	32.4%
Hispanic	--	47.0%	43.8%	52.1%
Other youths of color, non-Hispanic	--	10.7%	6.5%	8.0%
Prior Homelessness Experience				
Experienced homelessness between 14–18 years of age	--	20.4%	42.2%	34.7%
Academic				
Multiple school years with a chronic absence	190 (12.0%)	63.6%	60.4%	72.3%
Multiple school transfers	--	76.5%	67.4%	77.9%
Marked as a dropout	--	21.8%	50.0%	33.8%
Received a high school credential	198 (12.2%)	41.1%	10.9%	25.4%
Ever received an unsatisfactory reading score on CMAS/CSAP	635 (40.1%)	22.3%	32.1%	32.9%
Ever received an unsatisfactory math score on CMAS/CSAP	772 (48.7%)	27.3%	33.4%	34.7%
Any suspensions	--	30.3%	54.7%	41.8%
Child Welfare				
Removal before the age of 14	--	0.0%	38.9%	67.1%
Any referrals	--	57.2%	100.0%	100.0%
Any assessments	--	48.6%	100.0%	100.0%
Any child welfare cases	--	16.1%	99.0%	99.5%
Any department of youth corrections cases	--	9.9%	79.8%	21.1%
Three or more placements	--	2.5%	95.9%	41.3%
Any family-like placements	--	*	58.3%	98.6%
Any congregate care placements	--	*	96.9%	16.4%
Any runaway episodes	--	0.0%	67.1%	*
Two or more removals	--	0.0%	57.8%	17.4%
Removal reason: substance use parent	--	0.0%	13.2%	38.0%
Removal reason: neglect	--	0.0%	17.4%	48.8%
Removal reason: child behavior	--	0.0%	89.9%	*
Removal reason: substance use by child	--	0.0%	19.7%	*
Removal reason: housing	--	0.0%	9.3%	17.8%

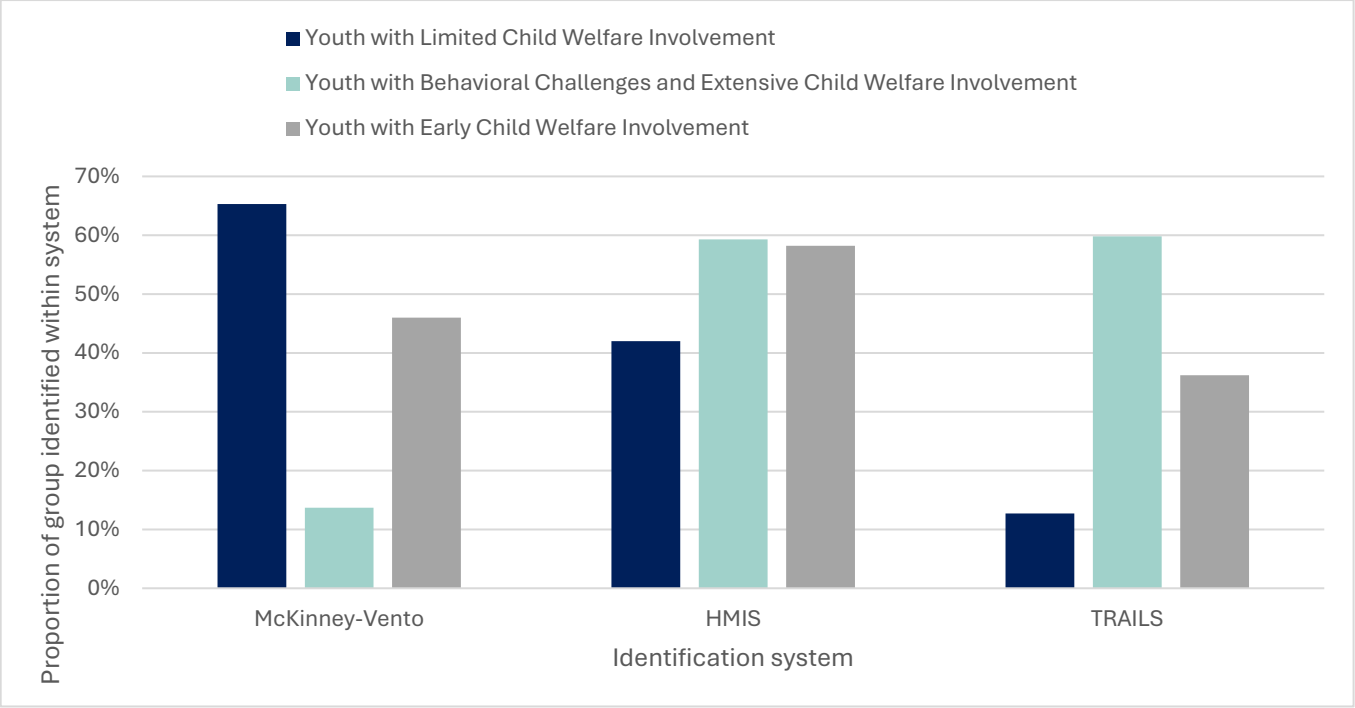
Predictors	Missing (%)	Youths with Limited Child Welfare Involvement (n = 985)	Youths with Behavioral Challenges and Extensive Child Welfare Involvement (n = 386)	Youths with Early Child Welfare Involvement (n = 213)
Removal reason: cope	--	0.0%	35.2%	25.4%
Removal end reason: emancipation	--	0.0%	28.5%	10.3%
Removal end reason: living with relatives	--	0.0%	19.2%	26.8%
Removal end reason: reunification	--	0.0%	56.0%	46.0%
Removal end reason: runaway	--	0.0%	21.0%	*

Note: "" indicates that the value within the cell did not meet the cell suppression minimum of 16 individuals.*

Figure 16, below, shows the proportion of each group identified as experiencing homelessness between 14–24 years of age by each administrative system. This figure suggests that the likelihood of youths being identified as experiencing homelessness by an administrative system may depend on the same characteristics that shaped group membership. Youths in the group with limited child welfare involvement were most likely to be identified as experiencing homelessness by the education system—roughly two out of three of these youths appeared in the McKinney-Vento data at some point between 14–24 years of age. Less than half of the members of the group with early child welfare involvement and only 13.7% of the group with behavioral challenges and extensive child welfare involvement were identified as experiencing homelessness by the education system. The HMIS was the most likely system to identify any given youth in the sample as experiencing homelessness, with just under half of youths with limited child welfare involvement and nearly 60% of the youths in both remaining groups reflected in the data. Perhaps unsurprisingly, youths with limited child welfare involvement were least likely to be identified as experiencing homelessness by the child welfare system. Nearly 60% of youths in the group with behavioral challenges and extensive child welfare involvement were identified as experiencing homelessness by the child welfare system. Just over one in three of the youths in the group with early child welfare involvement were identified as experiencing homelessness by the child welfare involvement between their 14th and 24th birthdays.

These findings suggest that youths with varying educational and child welfare histories are not uniformly reflected in educational, child welfare, and homeless service organization records on homelessness. Some youths, such as those with limited child welfare involvement, may only be identified by the education system. On the other hand, youths with behavioral challenges and extensive child welfare involvement may not appear in McKinney-Vento data at all, perhaps because of chronic absences or dropping out of school. To identify these youths and provide them with adequate resources, homeless service organizations and child welfare agencies are crucial. Taken as a whole, these findings reiterate the conclusions drawn from the overlap analysis above, namely, each system plays an irreplaceable role in identifying youths experiencing homelessness. Most of the youths in the full analytic sample only appeared in one system, and the youths included in this LCA exhibited vastly different rates of identification based on their educational and child welfare histories.

Figure 16. **Identification of Homelessness Experiences by System and Group**



Note: Homelessness indicators were not included in the model; they are provided here only for the purpose of identifying entry points for policy and program design.

Summary of Findings and Implications for the Field

Summary of Findings

This study sought to answer key research questions about the number and characteristics of youth experiencing homelessness in Colorado by developing and testing novel data linkages to automated data systems maintained by multiple agencies and programs that capture information on youth homelessness. For the pilot study, data from SFY 2017-2021 was taken from HMIS, Trails, and McKinney-Vento data to estimate the known count of youth experiencing homelessness in Denver. For the statewide study, data from SFY 2018-2022 was taken from the same administrative data systems to estimate the known and unknown count of youth experiencing homelessness across the state of Colorado. Findings lend support to the use of sharing and linking administrative data across multiple systems. The research also points to the need for cross-agency collaboration to achieve data sharing. Finally, the research highlights the value of incorporating the voices of youths with lived experience to better understand the experience of youth homelessness and to craft effective prevention and service interventions.

Key Findings from Denver and Statewide Estimates

- **No one data system accurately captures and reflects the number of youths experiencing homelessness in any given geographic location.** By linking administrative data across multiple data systems and utilizing a broad definition of homelessness and housing instability, we can more accurately gauge the true scope of the problem of youth homelessness.
- **Data systems are siloed, and homeless youths are flagged, identified and served uniquely by each system.** There is relatively little overlap across systems when using statewide data. Each of these systems plays a crucial role in identifying youths experiencing homelessness, as less than 10% of youths are likely to appear in multiple systems in a single year, or even over a five-year period.
- **Using a multisystem estimation method over a five-year period generates estimates of unknown youths experiencing homelessness. Indeed, these estimates ranged from three- to five-times the known count of homeless youth for that year.** Combining known counts and unknown estimates suggests that over 40,000 youths between the ages of 14-24 experienced homelessness in Colorado each year. While known counts remained relatively stable, patterns of overlap and individual system counts led the unknown estimate to increase in SFY 2020, which aligns with the onset of the COVID-19 pandemic.
- **Administrative data systems have varying definitions and data collection methods to identify youths experiencing homelessness.** The lack of consistency in defining homelessness and housing instability leads to an inaccurate count of the actual number of youths who are unhoused. These differences result in an undercount of the actual number of youths who need services, gaps in determining the geographic location where services should be provided, and an inequitable distribution of resources across the state and across agencies who serve homeless youths.
- **Individual data systems do not routinely identify youth involved in multiple systems or refer to one another to support and address barriers for cross-system involved youths.** There are limited referral policies and practices between agencies. In theory there are mechanisms for cross-agency communication and collaboration to support youths experiencing homelessness. In practice, agencies focus on providing the services they have access to, make referrals and reports when required by law, but otherwise have limited cross-system communication.

Key Findings from Estimates of Homeless Youth Known to Data Systems

- **There is little overlap in the identification of youths across three major data systems that capture information on youth homelessness in Colorado (HMIS, McKinney-Vento education data, and Trails child welfare).** Each system is integral to accurately reflect the full scope of youth homelessness within the state. Of the 42,143 youths in the sample, 37,966 (90.1%) appeared in only one system from SFY 2018–SFY 2022 (list the one system here). 3,721 youths, 8.8% of the sample, appeared in two out of three systems during the five-year period (list the two systems here). Only 456 youths, 1.1% of the sample, appeared in all three systems at some point during the five-year period.
- **Runaway youths accounted for 1.5% of the total sample and were more than three times as likely to appear in more than one administrative system than youths not identified as runaway**s.
- **System-level identification varies by geography. Youths in the Pike's Peak CoC were most likely to be identified in HMIS, while youths in every other part of the state were most likely to be identified by the education system.** Rates of overlap varied by geography as well with youths in Northern Colorado and Balance of State CoCs exhibiting the lowest rates of multisystem identification.
- **The racial and ethnic composition of the sample identified as homeless in any of the systems differs substantially from the overall population of similarly aged youth in Colorado. Black and Hispanic youths were overrepresented in the population of youth experiencing homelessness.** Hispanic youths of any race represented the majority of youths experiencing homelessness in 2020 (42.3%), despite representing only 29.9% of all youths aged 14–24 in the state. Black youth comprised 13.2% of the population of youth experiencing homelessness, while only constituting 4.4% of similarly aged youth in Colorado. Non-Hispanic White youths were relatively underrepresented in the population of youths experiencing homelessness. Only 34.4% of youths flagged as experiencing homelessness in 2020 identified as White, while White youths comprise 57.6% of similarly aged Coloradans.
- **There were similar numbers of youths identifying as male (52.8%) or female (48.2%) who were identified as experiencing homelessness.**
- **The systems that identified youths as homeless also varied by the youth's age.** The education and child welfare systems identify younger youths (ages 14–18), while young adults (ages 19–24) are more likely to be identified in HMIS.

Key Findings from the Analysis of the Characteristics of Youth Known to Major Data Systems

- **Three groups of youth experiencing homelessness were identified from the characteristics analysis completed using a Latent Class Analysis (LCA) model.** The groups were as follows:
    - The first group was the largest group and was characterized by less child welfare involvement, better performance in school (lower dropout rate, a higher rate of high school credential attainment, lower suspension rate, and lower rates of unsatisfactory scores), and less frequent services from CoCs before 18 years old. These youths were most frequently identified as homeless by the education system.
    - The second group had more extensive child welfare involvement due to behavioral challenges and was made up mostly of males. This group was slightly more male (61.4%) and had more DYC involvement. These youths were most frequently identified by child-welfare and least frequently identified in McKinney-Vento data.
    - The third group of youths was also involved with the child welfare system but unlike group two, entered at an early age and had open child welfare cases. This group tended to be more female

(60.6%) and had the most even distribution of identification across systems of any group; however, youths in this group were frequently identified in HMIS.

- **These findings suggest that youths with varying educational and child welfare histories are not uniformly reflected in educational, child welfare, and homeless service organization records on homelessness.** Some youths, such as those with limited child welfare involvement, may only be identified by the education system. On the other hand, youths with behavioral challenges and extensive child welfare involvement may not appear in McKinney-Vento data at all, perhaps because of chronic absences or dropping out of school.

Key Findings from Youth with Lived Experience and Key Partners

- **Most youths interviewed for this project described being involved in multiple systems**, including child welfare, school counseling, juvenile justice, police, medical and mental health services, and homeless shelters. Importantly, the administrative data for three key systems dealing with education, child welfare, and homeless services failed to show the high level of overlap in systems reported by youth with lived experience.
- **Although interviewed youths reported varying levels of experience and satisfaction with multiple systems, they expressed most satisfaction with the services they had received from RHY providers.** Notably, almost all the youths in the interviews and focus groups had experience with RHY providers, and most of the youths recognized those services as necessary for their wellbeing and stability. This was particularly the case for youth in rural areas who characterized the RHY provider as a "lifeline" providing critical support and enabling them to stay in their community.
- **Despite their interactions with the education, child welfare, and homeless systems, most youths were unaware how they were identified and tracked in those systems' administrative records.** Nor did they understand the connection between identification in these systems and their eligibility for access to various services.
- **Youths were readily able to identify the events and circumstances that had led to their homelessness, noting known risk factors.** These included running away from home or foster care, fleeing violence, experiencing neglect, dealing with substance use and misuse, being unable to attend school due to being expelled, and lacking the necessary documents to enroll in school or apply to jobs. Two common themes reported by youths when asked about why they experienced homelessness were abuse/neglect in the household and behavioral issues such as substance use and misuse or disruptive behavior at home or school.
- **Despite living through terrible experiences that had led to their homelessness and the trauma of homelessness itself, youth who participated in interviews and focus groups showed incredible resilience.** Their resilience could be seen in the community they built for themselves, their active work toward employment and/or education, and their plans for their future.
- **Youth homeless service provider partners rely on estimates of youth homelessness generated from the Point-in-Time, Youth Supplemental Survey (PIT-YSS), but acknowledge that data sharing across multiple administrative data systems would yield more accurate estimates of incidences of homelessness and improve the delivery of services to affected youth.**
- **Partners recognize the considerable challenges to data sharing including discordant definitions and guidelines regarding homelessness** and lack of trust between service providers and governmental agencies.
- **Partners recommend that major entities involved with providing services to homeless youth in Colorado, including federal agencies, state programs, and local organizations, do a better job of**

collaborating with one another on data sharing. In light of the benefits of data sharing for the identification and treatment of youth homelessness, they recommend agencies commit to resolving some of their definitional differences and trust issues.

Implications for the Field

This study sought to shed light on the prevalence of youth homelessness in Colorado, by linking administrative data across multiple systems. It also brought in the voices of youth with lived experience of homelessness and included input and guidance from the partners who shared data for this study and those who serve youths experiencing homelessness across Colorado. Several implications emerged from this study that may benefit policymakers, practitioners, and researchers in Colorado and other states as they seek to prevent and address homelessness.

Actionable Uses of Data

Figure 17, below, highlights how practitioners and policy makers can actively use these estimates to support current and future work in the field.

Figure 17. Actionable Uses of These Estimates of Youth Homelessness

Resource Routine Use of Multisystem Estimation Methods

Integrating multiple data sources can provide a more accurate estimate of youth homelessness.

- Use multisystem estimates to track progress annually on reducing youth (and adult) homelessness.
- Set benchmarks based on the total count so that it is inclusive of the known and unknown population of youths.
- Build on this pilot study to incorporate additional data sources, such as health care, that can provide an even more comprehensive picture of what combination of systems youths experiencing homelessness touch in the Denver area. This can inform cross-system interventions and supports.
- Consider using integrated information on the histories of homelessness among youths to prioritize housing for those experiencing long-term homelessness.

Reach Youths Unknown to Major Data Systems

Youths not captured in official homeless counts still have need that can be addressed by service providers.

- Advocate at the federal, state, and local levels to allocate funds and/or provide incentives to service providers to increase outreach to youths to:
  - Connect them to systems, so they are “known”, and
  - Ensure they receive needed services and support regardless of whether they are “known” in a system.

Improve Service Delivery

- Utilize these estimates to inform equitable resource allocation.
- Use findings to target geographic areas for improved service delivery.
- Leverage information from research, like the Latent Class Analysis in this report, that can inform prevention of homelessness.

Resource Routine Use of Multisystem Estimation Methods:

Resourcing the routine use of multisystem estimation methods requires dedicated funding and leadership.

Dedicating Funding. Multisystem estimation methods tend to be more costly when capacity to link and analyze data is being built (see Community Guide for description of associated activities). Over time, routine analytic work can become highly efficient and more cost effective

> **Example of Resourcing Routine, Replicable Estimates in State Government**
>
> In 2015, the Governor of Massachusetts mandated the Department of Public Health (DPH) to study key epidemiologic features of the overdose crisis, including the prevalence of opioid use disorder. As a result, the DPH invested in infrastructure for a data warehouse and formed the Office of Special Analytics. This office partnered with state agencies to bring data into a protected environment at DPH and linked data from several state agencies at the individual level. Data partners included the criminal justice system, all-payor claims, and vital records, among others. This initial investment led to the formation of academic partnerships that performed key analyses, including prevalence estimates. Since that time, the data warehouse has expanded to include data from nearly 30 state agencies that is updated about quarterly. Researchers wishing to use these data are required to pay with grant funds and report findings to DPH. This process has allowed the Office of Special Analytics to expand. Nearly 100 publications have been produced from these data and DPH has received several NIH grants. The process for prevalence estimation has been protocolized and estimates are updated on a yearly basis.

At the federal level, the Office of Management and Budget (OMB) has updated its Uniform Guidance for Grants and Agreements to recognize that "various costs related to program design, monitoring, and evaluation can be allowable costs." This makes it possible for organizations receiving federal funds to more easily support studies like this that allow for research and evaluation. At the state and local levels, creating an annual budget for this work could occur through legislation, a government agency budgeting process, blending or braiding funds across government agencies, or with the support of philanthropic resources.

Dedicated Leadership: Dedicated leadership should be well positioned to activate results in fulfillment of the goals of generating multisystem estimation. These leaders may be different from the research team of analysts who produce the estimates. This role is intended to facilitate:

- Using multisystem estimates to track progress annually on reducing youth (and adult) homelessness
- Setting benchmarks based on the total count that are inclusive of the known and unknown population of youths
- Advocating for resources to reach unknown youths
- Informing coordinating efforts across systems to improve service delivery

***Reach Youths Unknown to Data Systems*:** Using a multisystem estimation method over a five-year period led to estimates of unknown youths experiencing homelessness that ranged from three- to five-times the known count for that year. Strategies to reach unknown youths can include changes in policy, practice, or resource allocation.

- *Policy Example:* The Division of Child Welfare supported state legislation under HB 24-1403, which requires all Colorado public institutions of higher education to provide financial assistance to students who

experienced homelessness at any time while attending high school in Colorado. This policy may reach youths previously unknown to the Higher Education System as experiencing homelessness as it authorizes the state education agency to share data on students who were McKinney-Vento-eligible while in high school. Also, the newly adopted SB 20-106 changed the age to consent to shelter so youths aged 15+ can access housing support from RHY providers.

- *Practice Example:* The Division of Child Welfare is collaborating with RHY providers and CoCs to integrate a youth screening risk assessment tool that identifies youths who may be at risk of homelessness and prioritizes them for services.
- *Resource Allocation Example: The* Division of Child Welfare recently expanded Independent Living Services to older youths aging out of the foster care system to reach rural and frontier areas of Colorado where services were previously unavailable.

***Improve Service Delivery*:** With the ability to more accurately identify the number of youths experiencing homelessness and their geographic location within a state, service providers will be better positioned to collaboratively boost prevention efforts, address service gaps, and more effectively and equitably allocate resources. This will help to ensure youths receive services when they need them and where they live.

Accessing cross-systems data allows researchers to look at the characteristics, experiences, and risk and protective factors of youths experiencing homelessness. The findings on the characteristics of youth experiencing homelessness can be used to improve service delivery, including:

- *Youths with Limited Child Welfare Experience:* Nearly two-thirds of the young people who experienced homelessness as young adults were either not child welfare involved or had limited child welfare involvement, underscoring the role of the education system as the early point of entry for preventing homelessness.
    - In focus groups and interviews, youths routinely cited the importance of getting their education to ensure a pathway toward safe and stable housing. Those youths also described difficulties in maintaining access to education while experiencing homelessness.
- *Youths with Behavioral Challenges and Extensive Child Welfare Involvement:* Approximately one-quarter of young people who experienced homelessness as young adults were best described by this group of experiences.
    - For these young people, investments in evidence-based services that can address behavioral issues, increase engagement in school, and mitigate the effects of childhood trauma may set them up for stability as young adults.
- *Youths with Early Child Welfare Involvement:* The smallest group in this study, these young people have an extensive life history of being served by child welfare and their families by CoCs .
    - Because these young adults may not have the family support to transition successfully into a stable adult housing environment, they may benefit from resources like:
        - The Colorado Division of Child Welfare Independent Living Program which is testing a model intervention known as Pathways to Success. This program aims to address and prevent homelessness among this population. Pathways' services, including independent living, are available to youths involved in child welfare across the state.
        - Colorado's SB 23-082, which provides housing resources (i.e., vouchers and case management) for former foster youths working toward independence.

- Colorado's SB 22-008, which provides the resources to cover the total cost of attending postsecondary education and funds navigators to help foster youths transition successfully into postsecondary education in Colorado.

These and other resources are already improving efforts to prevent and address youth homelessness across Colorado. This study provides a more accurate estimate of the prevalence of youth homelessness in Colorado. It also explains characteristics of young people experiencing homelessness and provides a clearer picture of where these youths are geographically located throughout Colorado. This comprehensive picture of youth homelessness can support systems and agencies in better focusing their efforts to prevent and address youth homelessness across Colorado and the country.

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Appendix

Table 1. **Known Statewide Counts of Youths Experiencing Homelessness by System and Overall**

Full Sample	Colorado Department of Education (CDE)		Continuums of Care (HMIS)		Division of Child Welfare (Trails)		Total
	State Fiscal Year						
	Count	%	Count	%	Count	%	
SFY 2018	7,664	56.3%	3,574	26.3%	3,263	24.0%	13,615
SFY 2019	7,521	56.0%	3,579	26.7%	3,219	24.0%	13,420
SFY 2020	7,428	54.7%	4,008	29.5%	3,072	22.6%	13,590
SFY 2021	5,596	46.8%	4,213	35.3%	2,919	24.4%	11,948
SFY 2022	6,779	52.2%	4,498	34.6%	2,635	20.3%	12,990

Table 2. **Known Counts of Youths Experiencing Homelessness, Flagged within One System Only**

No Overlap	Colorado Department of Education (CDE)		Continuums of Care (HMIS)		Division of Child Welfare (Trails)		Total
	State Fiscal Year						
	Count	%	Count	%	Count	%	
SFY 2018	7,010	51.5%	3,035	22.3%	2,741	20.1%	12,786
SFY 2019	6,881	51.3%	3,022	22.5%	2,684	20.0%	12,587
SFY 2020	6,797	50.0%	3,386	24.9%	2,542	18.7%	12,725
SFY 2021	5,095	42.6%	3,658	30.6%	2,459	20.6%	11,212
SFY 2022	6,140	47.3%	3,838	29.5%	2,152	16.6%	12,130