AZ Data Landscape Recommendations

2023

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Executive Summary

In October 2022, ICF entered into a contract with Solari Crisis and Human Services funded through the Garcia Family Foundation (Arizona), to perform a landscape analysis of data systems, technology, and projects connected to the homeless response system across all three Continuums of Care (CoCs) in the state of Arizona. The three CoCs across the state of Arizona are the Arizona Balance of State CoC, the Tucson/Pima County CoC, and the Phoenix/Mesa/Maricopa County CoC.

Recommendations:

What follows are recommendations based on the Arizona Data Landscape project. The recommendations are summarized here and further identified in the Recommendations section of this report.

1. **Homeless Management Information System (HMIS) Architecture:** Implement a single HMIS implementation that leverages Application Programming Interface (API) technology to streamline the use of HMIS across the state.

2. **HMIS Governance:** Implement a shared HMIS governance model that maximizes the HMIS leadership of all three CoCs.

3. **System Integration (Arizona Health Care Cost Containment System [AHCCCS], Data Warehouse Enterprise for Linkage [DWEL], and Other State-level Systems):** Increase participation in the AHCCCS Closed Loop Referral System, DWEL, and investigate other state-level data systems.

4. **Data Augmentation (Domestic Violence, Tribal Nations, At-risk and Doubled-up, and Unsheltered):** Investigate strategies to increase specific subpopulation data that are underrepresented in the HMIS.

5. **Data Analytics (Arizona Housing Analytics Collaborative [AzHAC]):** Leverage AzHAC data analysis skills to increase the knowledge available through the data in DWEL.

6. **Data Literacy (Learning Management System [LMS]):** Increase the amount of training content and knowledge opportunities through the existing LMS.

Methodology:

ICF completed the following in the creation of these Arizona Data Landscape Project Final Recommendations and the complete methodology is explained in further detail in Appendix A: Methodology.

Provided a complete scan of all technologies that interact with the homeless response system and the Homeless Management Information System (HMIS) implementations across the state, including the following:

- Review of the Arizona Balance of State CoC, Tucson/Pima County CoC, and Phoenix/Mesa/Maricopa County CoC HMIS implementations
- Review of the Arizona Balance of State CoC, Tucson/Pima County CoC, and Phoenix/Mesa/Maricopa County CoC reports in the HMIS, Built for Zero, System Flow Dashboard, and the By Name List
- Review of the statewide DWEL
- Review of the AHCCCS Closed Loop Referral System

Administered a survey to solicit written feedback from partners and entities (123 responses).

Facilitated 10 focus groups and 34 interviews.

Delivered draft and final recommendations reports.

Recommendations

The Arizona Data Landscape Project Final Recommendations are designed to streamline and integrate existing technology while encouraging the exploration of additional technologies that can assist in preventing, addressing, and ending homelessness in Arizona efficiently, effectively, and equitably.

The following recommendations are broken down into the following six areas:

1. **Homeless Management Information System (HMIS) Architecture**
2. **HMIS Governance**
3. **System Integration (Arizona Health Care Cost Containment System [AHCCCS], Data Warehouse Enterprise for Linkage [DWEL], and Other State-level Systems)**
4. **Data Augmentation (Domestic Violence, Tribal Nations, At-risk and Doubled-up, Unsheltered)**
5. **Data Analytics (Arizona Housing Analytics Collaborative [AzHAC])**
6. **Data Literacy (Learning Management System [LMS])**

These recommendations are interconnected and should be read as a suite of recommendations and not individual recommendations that can be partially implemented.

Anonymous feedback from a data landscape focus group participant: **"Does there need to be so many data systems?"**

Figure 1: *Word Cloud of Arizona Data Systems*

HMIS Architecture

The State of Arizona is comprised of three HUD-defined Continuums of Care (CoCs) and three separate HMIS implementations. The lack of connections between and among the three separate HMIS implementations makes understanding the true nature and scope of homelessness across the state difficult. Without connections, a de-duplicated count of people experiencing homelessness across the State and an understanding of homeless response system service use patterns are segmented and lacks a comprehensive, statewide view.

The information gathered from interviews, focus groups, and surveys revealed that the homeless response system is looking to leverage HMIS beyond meeting HUD and federal partner baseline compliance. To effectively, efficiently, and equitably address homelessness across the State, the CoCs are seeking ways to mobilize data to make data-informed decisions and create strategies that address inequities in the homeless response system and comprehensively address the issues and barriers impacting people experiencing homelessness.

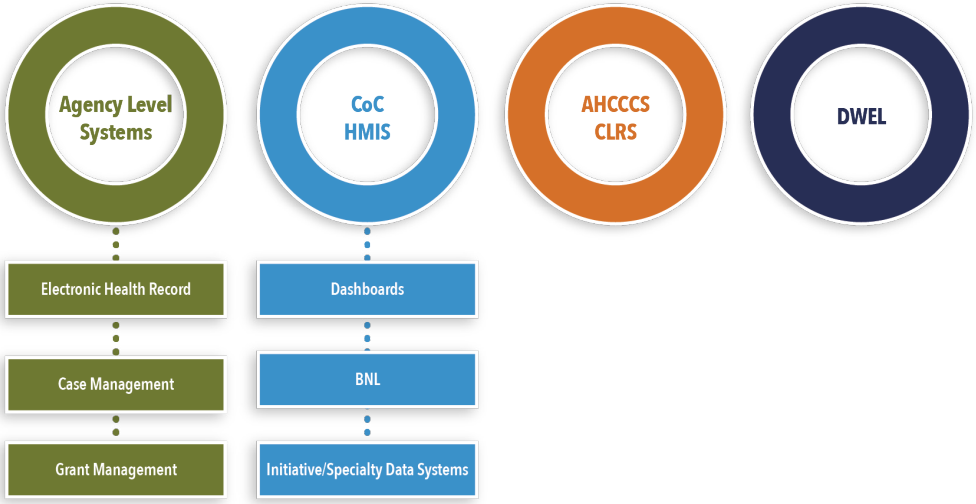

***Figure 2**: Common Arizona Data Sources*

There are providers across the State that serve more than one CoC; thus, they have user licenses for more than one HMIS, which has cost implications for the CoCs and agencies, and they are entering data into more than one HMIS. Additionally, the different HMIS implementations have slightly different business rules, policies, system setup, and administrative services available, which creates unnecessary burden on end users entering data into more than one HMIS implementation.

Currently, all three CoCs in Arizona utilize the same HMIS vendor and software; however, because the implementations of HMIS are separate, there is a duplication of resources going into HMIS because each CoC is responsible for a separate contract with the vendor, that includes separate licensing, system configuration, system operation and administration costs. In addition to the costs associated with operating three separate HMIS implementations, CoC and HMIS leadership across Arizona leverage other technologies to meet their data, reporting, and analysis needs. These other technologies lead to strain on HMIS and CoC leadership that would not be as prevalent if all three CoCs had a single implementation of HMIS. Furthermore, ICF's review noted that more than one other technology in use by the CoC contained unprotected Personally Identifiable Information (PII) that lacked the security and privacy standards required by HUD. This demonstrates the need for a more streamlined approach to HMIS that can accomplish more data collection, reporting, and analysis within the protection of HMIS rather than relying on external technology where data breaches and security incidences are more prevalent.

Additionally, nearly every agency and organization that was interviewed or participated in a focus group noted the use of one or more internal data systems that parallel HMIS to some degree. The duplication of data entry across multiple

data systems means that nearly every agency and organization is financially supporting additional potentially redundant data systems. Additionally, duplicate data entry creates a burden on staff time and resources which then takes away from client services and support, and often decreases job satisfaction among staff.

In consideration of all these factors, it is recommended that all three CoCs should investigate either a single HMIS implementation or the implementation of technology that can make connections between and among HMIS implementations and internal agency databases. Specifically, the evaluation done on the three HMIS implementations, along with current contracts with the vendor and the qualitative information gathered identifies that the Arzona CoCs want to leverage HMIS beyond the minimum HUD HMIS requirements.

Leadership across all three CoCs need to make the decision to pursue this new unified HMIS architecture. If all three CoCs decide to leverage this new architecture, a Request for Proposal (RFP) should be jointly developed that speaks to the current data needs of Arizona. This RFP should include the following:

- Baseline HUD compliance
- Bi-directional API functionality
- Cost structure that supports the robust statewide collaborations and need for a large amount of users
- Flexible and customizable software
- Enhanced reporting functionality, data visualizations, and customizable reporting capabilities

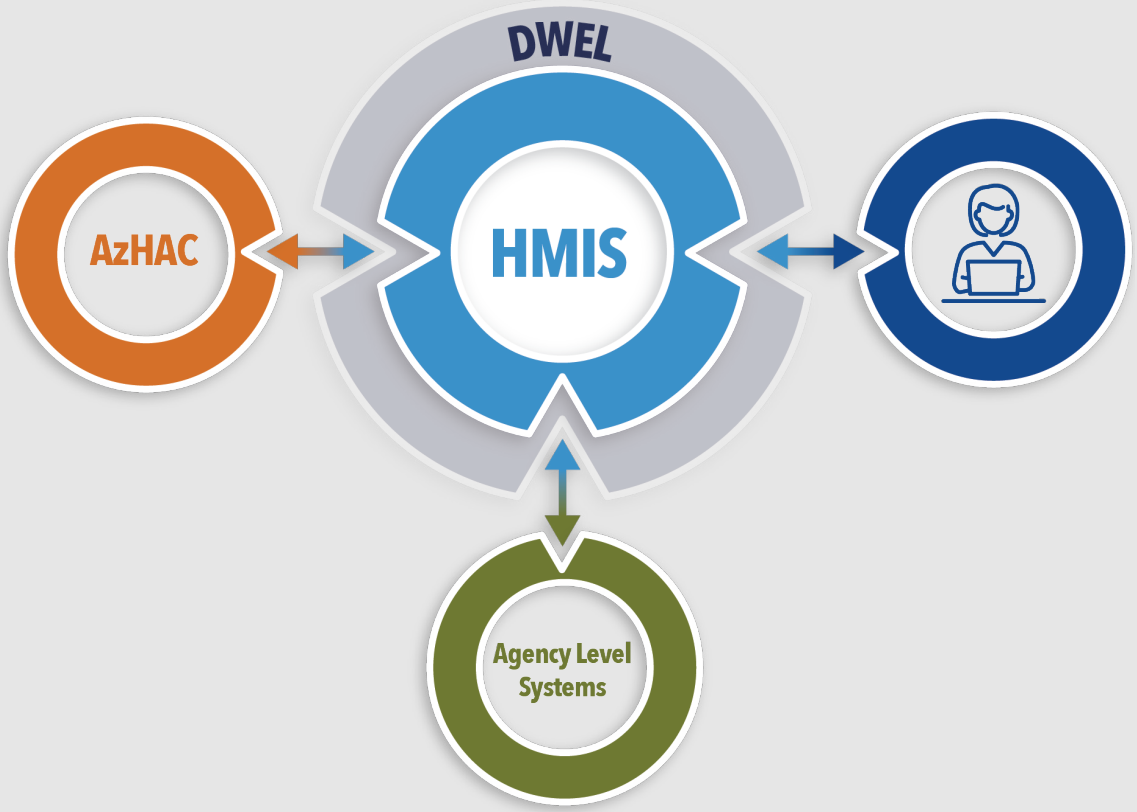

Figure 3: *New HMIS Solution Configuration*

Leverage API Technology to Reduce Duplicate Data Entry

To support agency level data collection and entry, and direct connections to HMIS, ICF is recommending bi-directional Application Programming Interface (API) that would allow agencies to have data from their internal data systems automatically imported into the HMIS approximately every 15 minutes. This will lead to less duplication of data collection and entry efforts at the agency level and improve the speed with which data gets into the HMIS through bi-directional API. This will change how HMIS leadership interacts with agency-level data systems and HMIS leadership would need to redesign how the HMIS staff operates. This model would rely on HMIS leadership to certify that agency-level data systems are compliant with HUD HMIS Data Standards before the bi-directional API option could be attained at the agency level.

Bi-directional API increases the ability to engage with non-traditional partners, such as those who specialize in culturally humble service provision for marginalized and underserved communities, including Tribal Nations, across the State. With the API functionality, these partners could import data into HMIS instead of entering data directly, which is often a significant burden on smaller and non-traditional partners.

Evaluate Coordinated Entry System Prioritization and Assessment Tool

Streamlining the CoCs' use of HMIS presents an opportunity to support the redesign of the Coordinated Entry Systems (CES) across the State. All three CoCs are in the process of assessing the CES and a different HMIS architecture and structure could also support the transition away from using the Vulnerability Index – Service Prioritization Decision Assistance Tool (VI-SPDAT) for the purposes of prioritization and assessment of individuals and families seeking services through the CES. The VI-SPDAT is available within the current HMIS software solution and was largely adopted by CoCs across the country. However, since 2020, the creator of the VI-SPDAT has provided information about why the VI-SPDAT should not be used for the purposes for which CoCs have used it, and it is no longer updated or supported in HMIS. The intentional review of how HMIS is operating and how to streamline how CoCs interact with HMIS presents a clear opportunity to re-envision CES prioritization and assessment processes.

Consideration of the New HMIS Architecture

To create efficiencies across the State and to fully support CoCs' efforts to address homelessness holistically, all three CoCs should consider a statewide HMIS implementation. This could be done in different ways, including a single, statewide HMIS implementation whereby the three CoCs transition into using a single system. Another model would include maintaining separate HMIS implementations that are connected through a bi-directional API. With this model, the CoCs would need to determine where the statewide HMIS implementation would exist, which could be one of the existing HMIS implementations or leveraging DWEL.

HMIS Governance

While the Arizona HMIS leadership and staff are extremely talented, the administration of the HMIS is segregated and fragmented by CoC across the State, which leads to inefficient administration of the HMIS and a lack of coordination. There are three different HMIS Leads, one for each CoC:

- Arizona Balance of State: Arizona Department of Housing
- Tucson/Pima County: Pima County
- Phoenix/Mesa/Maricopa County: Solari Crisis and Human Services

There are two different HMIS Administration Teams:

- Arizona Balance of State and Phoenix/Mesa/Maricopa County: Solari Crisis and Human Services
- Tucson/Pima County: Pima County

The lack of coordination and collaboration among HMIS leadership results in the duplication of efforts and an inefficient use of limited funding for HMIS and homeless response system data needs.

Leverage a Shared Governance Model for HMIS

The new HMIS architecture depends upon the creation of a statewide HMIS governance model that supports all three CoCs. The success of the DWEL leadership team can be leveraged to manage the proposed HMIS architecture. DWEL leadership has taken time and intentionality to coalesce and could be an effective leadership group for a statewide HMIS implementation.

The importance of proactive HMIS governance cannot be overstated and the development of shared HMIS governance has occurred across many multi-CoC and statewide HMIS implementations, including Colorado, Oregon, and North Carolina. In Colorado, partners focused on a shared HMIS governance structure through trust building and collaboration to support a new statewide HMIS implementation. Similar to Arizona, Colorado had three CoCs (there has since been the creation of a fourth CoC in the State) comprised of urban, rural, and suburban CoCs (Colorado Balance of State CoC, Metropolitan Denver CoC, and Colorado Springs/El Paso County CoC). The CoCs focused on building a partnership with state-level partners resulting in a functionally stronger and compliant multi-CoC HMIS implementation that effectively applies statewide solutions to appropriately address local needs. This new

partnership developed a transition plan that included joint HMIS policies and procedures, data sharing agreements, increased funding, contract administration, consistent HMIS training, improvement of HMIS coverage, improvement of data quality, HMIS Lead monitoring, reduction of barriers to HMIS participation, and the strengthening of partnerships with Victim Services Providers (VSPs) across the State. The project resulted in the following:

- Establishment of the new Colorado Statewide HMIS Collaborative. The Collaborative functionally met the federal requirements for HMIS administration and reporting, allowing CoCs in the implementation to report more accurate data on homelessness, analyze trends over time and across the State, and utilize the HMIS for system modeling and resource allocation.
- Clear data sharing agreements among partner organizations in the multi-CoC HMIS implementation.
- A strong partnership between the homeless response system and the Colorado Division of Housing, directly resulting in the commitment of additional Permanent Supportive Housing inventory.
- Clear joint HMIS governance structure across three CoCs.

A similar model in the State of Arizona could be successful and reduce efforts that are currently siloed.

System Integration (AHCCCS, DWEL, and Other State-level Systems)

The DWEL process has demonstrated that all three CoCs can work together to bring large scale data systems into operation. Additionally, DWEL is built on a data integration framework that will allow for increased collaboration with other data systems across Arizona. DWEL leadership needs to create custom outreach and messaging to engage additional state-level partners in the DWEL project and leverage AzHAC data analysis capabilities (explained more below). DWEL also features an Open Source Software (OSS) model. OSS further maximizes the potential to coordinate all HMIS leadership efforts across the state and presents the opportunity to coordinate with systems that intersect with the homeless response system. Communities such as Allegheny County, Pennsylvania and Boston, Massachusetts have leveraged OSS to develop robust and comprehensive data warehouse environments to collaborate and partner with other systems of care such as the mental health system of care and education, which is critical in comprehensively serving people experiencing homelessness. To effectively support people experiencing homelessness, the homeless response systems must serve the whole person, not just their experience of homelessness, and OSS provides an opportunity to partner with intersecting systems more closely and transparently. OSS provides the opportunity to leverage the HMIS expertise across Arizona within a flexible data environment that can connect to other systems and partners.

Based on information gathered during this landscape assessment, it is clear that the AHCCCS Closed Loop Referral System (CLRS), known as CommunityCares, is an ideal partner for CoCs and agencies. The information contained within CLRS not only leverages 211 data but also could be useful in client care coordination. In addition to CLRS, the integration of the Health Information Exchange could lead to even more client care coordination. At a minimum, ICF encourages each CoC to promote the use of CLRS and leverage the incentives being offered to participate to increase CLRS participation. Currently, CLRS is offering community-based organizations up to $15,000 in financial incentives.

The early success of DWEL has been impressive and has laid the groundwork for a more collaborative HMIS governance and shared implementation. The DWEL team has already made progress on the following issues within the CoC environment:

- Bureaucracy
- Unclear project timelines
- Poor marketing of the project
- A focus on operations more than strategy
- A varied vision for the data warehouse environment

ICF recommends continued support and strategic planning for increased uses of DWEL across the CoCs and State.

Data Augmentation (Domestic Violence, Tribal Nations, At-risk and Doubled-up, and Unsheltered)

The HMIS has its limitations in what data are collected and which entities collect and enter data into the HMIS. There are several subpopulations that are not comprehensively captured in the HMIS. This creates an incomplete picture of the full nature and scope of homelessness.

Primary among this missing subpopulation data are the following:

- **Survivors of domestic violence, sexual assault, dating violence, stalking, or human trafficking**
- **Tribal Nations members**
- **Individuals and families who are doubled-up and at-risk of homelessness**
- **Individuals and families who are in unsheltered situations**

Domestic Violence Data

The lack of data on survivors of domestic violence, sexual assault, dating violence, stalking, or human trafficking (hereafter referred to as "survivors of domestic violence") is a known limitation of the data available to CoCs in understanding the scope of homelessness and how the homeless response system is performing. The Violence Against Women Act (VAWA) provides necessary protections to VSPs who serve survivors of domestic violence who are actively fleeing the situation. When survivors of domestic violence are no longer actively fleeing, they often interact with providers that are not VSPs. Because service providers that are not identified as VSPs are not bound by VAWA, when survivors of domestic violence are served by "mainstream" service providers, they are no longer afforded the protections of VAWA in addressing their housing crisis and transition into stable permanent housing. It is at this point where data are not always available when needed because the transition from serving survivors of domestic violence by VSPs to non-VSPs is not seamless and leaves gaps in service provision.

In addition to needing data to comprehensively support survivors of domestic violence and the VSPs who serve them, CoCs also need comprehensive data on the experiences of

survivors of domestic violence during the crisis of actively fleeing the situation. Without an understanding of how the homeless response system is serving survivors of domestic violence, what is going well, and where there are opportunities to improve service provision, CoCs are limited in the strategies that can be adopted to fully support survivors of domestic violence. There is no statewide data set that meaningfully includes this data. While the data are essential to fully understand the nature and scope of homelessness, the protections of VAWA must be upheld while still serving survivors of domestic violence in an effective and efficient manner. Currently, Maricopa County is experimenting with a domestic violence data exchange, and this could be a model for the other CoCs to begin an effort to fully support survivors of domestic violence.

Each CoC should strengthen the coordination of care for survivors of domestic violence and works with the Arizona Coalition to End Sexual and Domestic Violence and VSPs to provide education on why this data is important to be included in local CoC and statewide planning efforts. Furthermore, CoCs must provide HMIS leadership to support VSPs in ensuring that the comparable databases utilized in Arizona meet the minimum HMIS requirements. Finally, working toward having de-identified data about survivors of domestic violence included in DWEL for statewide analysis would be the ultimate goal.

Engagement With Tribal Nations

The lack of data on members of Tribal Nations who are experiencing homelessness is another limitation to comprehensively understanding the scope of homelessness and the performance of the homeless response system across the State. Currently, there is only anecdotal knowledge of the nature and scope of homelessness that occurs within Tribal Nations and within the CoCs. Without data, CoCs are unable to effectively coordinate with, and advocate on behalf of, sovereign Tribal Nations to ensure that individuals and families experiencing homelessness who identify as Tribal Nations members receive the housing and services they need.

For the first time in the fiscal year (FY) 2021 CoC competition, HUD authorized that the CoC program be made available to federally recognized Tribal Nations. This authorization provided the ability for Tribal Nations to join existing CoCs or develop their own CoC. Regardless of the direction that Arizona Tribal Nations decide to pursue, all three CoCs need to be willing and able to assist with the complexities of the CoC program. This should begin with meaningful and authentic engagement, education on the CoC program, grounding in the housing services and programs available through the homeless response system, and a plan to begin data collection. To truly engage in meaningful and authentic engagement, all three CoCs must become culturally competent in the generational trauma of colonization and the history of the misuse of data of Tribal Nations members.

Additionally, HUD recently published the CoC Program Resources for Tribal Nations that can assist with the engagement and support of Tribal Nations. At a minimum, CoCs should consider designating a CoC Board seat or seats for Tribal Nations.

Meaningful Street Outreach and Unsheltered Data Collection

Complete and accurate data on individuals and families experiencing unsheltered homelessness and for programs that provide street outreach are a problem nationwide. HUD has identified unsheltered homelessness as a priority and earlier this year, funded both the Arizona Balance of State CoC and the Tucson/Pima County CoC via the Continuum of Care Supplemental to Address Unsheltered and Rural Homelessness (Special Notice of Funding Opportunity [NOFO]). Through the lens of this priority, HUD also will focus on modernizing unsheltered data collection through the FY2026 HMIS Data Standards process with the federal partners.

Unsheltered data collection should be meaningful and effective for individuals and families in unsheltered locations. One of HUD's priorities for FY2026 includes taking an intentional approach to the review of street outreach data collection practices to propose impactful and realistic updates. Currently, the collection of data for street outreach projects is not supporting or benefiting people experiencing unsheltered homelessness. Multiple times across the landscape analysis, ICF heard that finding people on the By Name List (BNL) is difficult. The collection of data, such as where the person can be found and/or contact information, could increase the ability to find people on the BNL.

Each CoCs' data committee should work with the Special NOFO recipients to develop innovative data collection protocols. Additionally, all three CoCs should incorporate the authentic and meaningful engagement of individuals and families who previously experienced and are currently experiencing unsheltered homelessness, as well as street outreach providers, as innovative unsheltered data collection methods are developed and investigate the use of mobile technologies. Furthermore, this work can be prioritized and operationalized within the new shared HMIS governance structure.

Examples of successful unsheltered data collection strategies can be found on the HUD Exchange.

Data Analytics (AzHAC)

The Arizona Housing Analytics Collaborative (AzHAC) is a tri-university collaborative among Arizona's three public universities: Arizona State University, the University of Arizona, and Northern Arizona University. AzHAC, in partnership with community leaders and partners, does extensive work in analytics and modeling around homelessness and housing. The skills that AzHAC offers to the CoCs is unparalleled and allows HMIS leadership to focus on data collection and reporting, leaving the data analysis to academic researchers. AzHAC is currently working on the following analyses:

1. **Identify and geographically map** the incidence and prevalence of homelessness among children, youth, and adults at the city, county, and state levels, with particular focus on underrepresented and underserved populations.
2. **Identify the health and psychosocial characteristics** most likely to produce homelessness and those most likely to result in successful exits from homelessness, including identifying the characteristics and costs associated with high utilizers of HMIS services.
3. **Identify which programs and interventions are most effective** in producing positive outcomes for individuals experiencing homelessness, including the development of an interactive tool designed to identify the characteristics and services among communities that effectively keep their residents housed.
4. **Build and test a predictive model** to identify risk factors and interventions to reduce homelessness.
5. **Build a Social Determinants of Health** housing assessment tool.
6. **Prioritize analytical work around homelessness** for DWEL (this scope of work is under development but not yet finalized or approved), AHCCCS, and Arizona Department of Housing.

We need data and the knowledge from that data is a service that must be funded.

Leverage the Expertise of AzHAC to Provide Data Analytics Support for CoCs

This concentration of data, resources, and deep learning should help optimize and enhance all the work that CoCs are doing to mobilize data to address homelessness across the State. Additionally, AzHAC is doing work requested by their community partners and for the partners to use in making and informing decisions, including programming and funding.

For example, the goal of the predictive model project is to reduce poverty and homelessness by getting people what they need, when they need it, and further upstream to reduce the risk of experiencing homelessness. Using linked administrative data sources to identify leading indicators of housing insecurity, AzHAC is building a predictive model to determine the likelihood of homelessness and proactively respond to the individual's or family's needs. More specifically, AzHAC will attempt to filter out people at risk of, but who would not otherwise experience, homelessness to better leverage resources.

AzHAC is using a combination of data sources to better identify markers of housing insecurity and allow CoCs to proactively engage with people leveraging optimal interventions. These data sources include the following:

- HMIS data
- Arizona 211 data
- Eviction data
- Other data as approved and shared, including the following:
  - State benefits data such as food stamps and unemployment
  - City resources data such as utility payments and calls for assistance
  - Court data such as eviction records and civil court proceedings
  - Education data
  - Criminal justice data

The predictive model developed through leveraging these data sources will support CoCs in optimizing prevention, housing problem solving, and effectively serving individuals and families at risk of homelessness. AzHAC will partner with the Maricopa Association of Governments and the cities of Mesa and Phoenix to test and iterate the model.

AzHAC should continue to work with all three CoCs to provide data analytics support, especially because this is not necessarily part of the HMIS Lead funding from the CoC program and is not a specific responsibility identified for the CoCs' HMIS Leads. The current data lake that AzHAC manages is without long-term funding because the free credits afforded AzHAC have expired. Consequently, it makes sense to leverage AzHAC's talent to support data analytics for both the DWEL environment and within HMIS.

Data Literacy (LMS)

Throughout the survey, interview, and focus group interactions, it became evident that data literacy is not consistent across the State. This is due to the existence of three CoCs, three HMIS implementations, and a multitude of other technologies in use across the homeless response system. While the homeless response system is highly vulnerable to staff turnover and burnout, data literacy needs to be a specific focus for all staff across the State.

The existence of two Learning Management Systems (LMS) that cover all three CoCs is a valuable asset. The LMS are relatively new to each CoC and there needs to be a deliberate effort to expand the content and reach of the LMS. In and of itself, this will not solve data literacy issues; however, it will be a huge improvement that each CoC can build on going forward.

All three CoCs should coordinate efforts between the two LMS and pool their resources to create content or hire experts to create content and publicize the importance of the LMS regularly. Additionally, there are a multitude of communities now managing an LMS with which Arizona can connect to leverage national best practice on training content and delivery.

Call to Action

To fully leverage and mobilize the data available about individuals and families experiencing homelessness, the Arizona Data Landscape Project must result in action within each CoC in Arizona. This section will provide immediate next steps that can be taken to implement the recommendations, including an estimate of costs (if there are costs), responsibilities, and timelines.*

*** Note:** The timelines for action steps throughout this section speak to when the immediate next steps could start, not when they will be completed. Additionally, given the intensive technical assistance being undertaken with the Tucson/Pima County CoC, their timelines might be slightly different.

1 HMIS Architecture: Move from three HMIS implementations to a statewide HMIS implementation.

Immediate Next Steps	**1.** Discussions within each CoC to determine if a statewide HMIS implementation is viable **2.** Review current HMIS vendor contracts **3.** Determine who will be involved in the development of an open and transparent RFP process to identify a new HMIS software solution as outlined herein **4.** Leverage RFP criteria located in the HMIS Architecture section of this document
Responsible Entity(ies)	**1.** CoC leadership, HMIS-specific committees of the CoCs, CoC general membership (will be based on each CoC's governance) **2.** CoC leadership, HMIS Leads and System Administrators **3.** CoC leadership, HMIS Leads and System Administrators
Timeline	**1.** The CoCs could determine by the end of the year if a single HMIS implementation is viable **2.** Review current HMIS vendor contracts by end of the year **3.** Identify RFP ad hoc committee by first quarter of 2024
Cost	The cost is dependent upon the current contracts and identified needs.

2 HMIS Governance: Implement a shared HMIS governance model that maximizes the HMIS leadership of all three CoCs.

Immediate Next Steps	**1.** Develop a statewide HMIS governance committee and ensure that it is operationalized within CoC governance. **2.** Facilitate the initial meeting with statewide a HMIS governance committee to establish priorities.
Responsible Entity(ies)	**1.** CoC leadership, HMIS leadership, and CoC HMIS committees **2.** Statewide HMIS governance committee
Timeline	**1.** Within the first quarter of 2024 **2.** Within the second quarter of 2024
Cost	There are no costs associated with developing a statewide HMIS governance committee.

3 System Integration (AHCCCS, DWEL, and Other State-Level Systems): Increase participation in AHCCCS CLRS, and DWEL and investigate other state level data systems.

Immediate Next Steps	**1.** Develop a communications strategy and messaging about the value of AHCCCS, DWEL, and other state-level systems. **2.** Build relationships with entities that CoCs want to participate in the state-level data systems.
Responsible Entity(ies)	**1.** CoC leadership, HMIS leadership, other data systems leadership, AzHAC, and AHCCCS **2.** CoC leadership
Timeline	**1.** Within the first quarter of 2024 **2.** Ongoing
Cost	There are no costs associated with developing a communications strategy and building relationships. Additional costs may be incurred as participation in systems increases and intentional planning should occur in anticipation of this.

4 Data Augmentation (Domestic Violence, Tribal Nations, At-risk and Doubled-up, and Unsheltered): Investigate strategies to increase specific subpopulation data that are underrepresented in the HMIS.

Immediate Next Steps	**1.** Identify what data systems may be in use by VSPs, Tribal Nations, entities that serve individuals and families at-risk of homelessness, and entities that serve individuals and families in unsheltered situations. **2.** Build relationships with entities that serve subpopulations who are underrepresented in the HMIS.
Responsible Entity(ies)	**1.** CoC HMIS committees and HMIS leadership **2.** CoC leadership
Timeline	**1.** Within the second quarter of 2024 **2.** Ongoing
Cost	There are no costs associated with identifying data systems in use by other entities and building relationships. Additional costs may be incurred as participation in the HMIS increases and intentional planning should occur in anticipation of this.

5 Data Analytics (AzHAC): Leverage AzHAC data analysis skills to increase the knowledge available through the data collected in DWEL.

Immediate Next Steps	**1.** Discussions with AzHAC about their services, longevity in providing their services, and the costs associated with providing services. **2.** Analysis of HMIS funding for each CoC and what specific roles and services the HMIS funding pays for to ensure that there is no duplication of effort between AzHAC data analytics and the HMIS Leads/System Administrators.
Responsible Entity(ies)	**1.** CoC leadership, HMIS leadership, and CoC HMIS committees **2.** CoC leadership and HMIS leadership
Timeline	**1.** By the end of 2023 **2.** Within the first quarter of 2024
Cost	The cost is dependent upon a discussion of AzHAC and an analysis of HMIS funding.

6 Data Literacy (LMS): Increase the amount of trainings and knowledge opportunities through the existing LMS

Immediate Next Steps	**1.** Comprehensive review of content currently available in the LMS. **2.** Analysis of content needed for buildout in the LMS. **3.** Determination of who will develop the content for the LMS.
Responsible Entity(ies)	If the CoCs have committees responsible for oversight of the LMS, it would make sense to bring these committees together in a joint, statewide working group. If not, development of a statewide working group to undertake this work would make sense.
Timeline	**1.** By the end of 2023 **2.** Within the first quarter of 2024 **3.** Within the second quarter of 2024
Cost	The Cost is dependent upon content to be developed and who will develop the content for the LMS.

Appendix A: Methodology

Appendix A explains ICF's mixed methods approach for conducting the Arizona Data Landscape project.

HMIS Implementations Review

The review of the three HMIS implementations of WellSky Community Services was conducted by two ICF technical assistance staff members with more than 15 years of experience as HMIS Leads/System Administrators with experience administering the WellSky Community Services HMIS software solution. ICF staff were provided with temporary System Administrator access for the HMIS of all three CoCs for the purposes of this landscape project. The system review included an analysis of each implementation's effectiveness, efficiency, and functionalities in supporting the local data and reporting needs of the CoCs. It should be noted that client files and personally identifiable information were not included during the review. ICF staff conducted reviews pertaining to the system-level Project Descriptor Data Elements, privacy structure, assessment workflows, reporting, and interoperability.

Review of Project Descriptor Data Elements (PDDEs)

PDDEs collect detailed information about each HMIS project's organization, project name, operating dates, project types, funding sources, grant information, and bed and unit inventory. PDDEs are the building blocks of the HMIS and, if not correct, can affect the ability to produce accurate and reliable reports. PDDEs are completed by HMIS staff no less than once annually, with information supplied by providers. The PDDEs review resulted in the identification of several areas that were inconsistent, missing, or outdated. Specific examples include the following:

- It was discovered that the prefix "zz -" denoted old or closed projects, yet these projects still had enrolled clients and were missing project end dates.
- Inconsistencies were found between project type and funding source. For example, a Rapid Re-Housing project indicated that it was funded by Emergency Solutions Grants Program Homelessness Prevention funding.

Although the data elements are completed by HMIS Leads/System Administrators, it would be helpful for the HMIS software solution to incorporate conditional PDDEs or warnings when required the PDDEs are not completed correctly. WellSky Community Services provides a project setup report in Business Objects that flags missing or invalid information. However, when generating this report, it was discovered that it had not been updated to reflect new federal partner response options as a valid response.

Client Merge Functionality

The HMIS software solution should be able to manage duplicate client records via a client merge feature. WellSky Community Services contains a feature that allows the System Administrator to compare a client record; however, this feature requires separate access to Business Objects to view the client data. After generating this report, the System Administrator then must return to WellSky Community Services and perform the functions to combine the records. This process is time consuming and cumbersome when working with a large number of duplicate clients. When analyzing the duplicate client report, each CoC showed a high number of active duplicate clients.

Basic HUD Compliance

WellSky Community Services is as compliant with HUD's basic technical and functional requirements as any other HMIS vendor/software. Additionally, the desire by CoCs to leverage data to address homelessness necessitates conversations with WellSky to understand system functionality and additional offerings available, such as a bi-directional API, to fully support CoCs in this priority.

Review of Data Sources External to HMIS

ICF reviewed a variety of data sources external to HMIS that are deployed across Arizona to determine what other systems and processes are necessary to conduct CoC business. The review included the following data sources external to HMIS:

- HMIS AZ - Solari Crisis and Human Services Tableau Visualizations
- Maricopa Association of Governments Homelessness Data
- Maricopa Association of Governments Homeless Outreach Viewer
- Solari Crisis and Human Services Tableau Visualizations

The primary focus of this review was to determine whether there are updates that could be made which would make the data sources external to HMIS more useful for people accessing the content. A secondary function of this review was to identify and evaluate potential concerns associated with the current processing and display of data external to HMIS. As a result of these reviews, there were several themes that emerged across these data sources:

- First, there was inconsistency in the level of definition for terms, acronyms, and data points.
  - As such, the visualizations that are lacking definitions are unclear in their intended messaging.
- Second, several of the visualizations do not contain context that would help viewers process the data in the intended manner.
- Third, several visualizations have a lack of color contrast that makes viewing the data unnecessarily challenging.
  - All visualizations would benefit from a full review of color contrast and user accessibility to ensure consistent messaging and equal access to data sources external to HMIS.

Privacy and Security Concerns With Data Sources External to HMIS

- Additionally, the review highlighted two specific privacy and security concerns.
- First, at the time of review, PII was exposed via the Tableau Public dashboards.
  - While accessing this information necessitated a few steps, it was available to users to view and download without requiring any login credentials.
- Second, the Maricopa Association of Governments' Homeless Outreach Viewer has a password that appears to be shared across users and the password appears to not be updated on a regular basis. Additionally, there is no required registration on an IP Allowlist (which would block unauthorized users from accessing the page based on their IP address) or VPN access (which would require users to log into a network prior to accessing the site).
  - As a result, there may be people with access to this data who should no longer have access.

Survey

An online survey was distributed via email to HMIS leadership and HMIS data users to gain additional feedback on four major themes:

1. **Availability of the data**
2. **CoC data sharing processes**
3. **Trust in the data**
4. **HMIS training**

The survey included a combination of multiple-choice questions and free-response questions. Due to the limited number of responses (123 respondents), this survey is not representative of all users. With this limitation, ICF took an exploratory approach to the analysis of the survey results.

ICF used a series of crosstabs and frequency tables to analyze the survey responses. Frequency tables were used to describe the various characteristics of the survey respondents. Crosstabs were used to compare the key characteristics of the survey respondents with the four major themes identified. See Appendix B for additional information.

Interviews and Focus Groups

ICF conducted interviews and focus groups to better understand the local needs of various partners within the Arizona Data Landscape project. The intent was to arrive at a vision for data and technology as it relates to improving the homeless response system. Partners were invited to participate in interviews or focus groups and included the following:

- Technology providers
- State funders
- Arizona CoC leadership and members
- HMIS leadership and users
- Coordinated Entry System leadership and users
- Statewide data warehouse leadership
- Multi-sector initiatives (education, AHCCCS)
- Technical assistance providers

ICF initially intended to conduct interviews and focus groups with 30 partners; however, as the interviews and focus groups progressed, more partners were identified who provided further clarity on the recommendations contained herein. In total, ICF conducted interviews with 34 individuals and 10 focus groups that contain numerous partners.

We need data and the knowledge from that data is a service that must be funded.

Interview and Focus Group Questions

Questions were formulated for the interviews and focus groups that would provide insight into the data structure at both the agency-level and the CoC/system-level. The questions used in the interviews are as follows:

- How do you interact with data in your agency and CoC role?
- What data do you interact with in your agency and CoC role?
- What data systems do you interact with in your agency and CoC role?
- How do you interact with the AHCCCS Closed Loop Referral System, DWEL, or other data projects?
- What is the process to obtain the data that you might need for your agency or CoC role (i.e., data request process)?
- Is data available when you need it (i.e., within CES)?
- What is your confidence of data literacy in your agency, CoC role, and throughout the CoC?
- How have you used data to make agency-level or system-level change?
- How do you envision using data to meet your agency and CoC role goals?
- Where throughout your agency and the CoC do you think needs better data access, reporting, and analysis?

Table 1: *Arizona Interview and Focus Group Partners*

Arizona Sub-Group	Focus Groups	Interviews
AZ-500	Balance of State (BoS) Cohort 1 BoS Cohort 2 BoS Cohort 3 BoS HMIS Subcommittee BoS Governance Advisory Board/CoC	**Michelle McManimon**, Catholic Charities, Flagstaff CES, Domestic Violence Provider
AZ-501	Pima HMIS Leads Pima CES Committee Pima County Data Committee	**Anna Billings**, TPCH Data Committee Lead, **Valerie Grothe**, Pima CES Chair, **Sasha Hawman**, Community Bridges, Inc., **Ed Sakwa**, Emerge VSP, TPCH Board Member, **Colleen McDonald**, Our Family Services, **Cindy McClain**, Former TPCH Collaborative Applicant, **Phil Pierce**, Former TPCH Data Committee Lead, **Ana Lucero**, TPCH System Performance and Evaluation Committee Lead, **Austin Puca**, TPCH Collaborative Applicant
AZ-502	Pima HMIS Leads Pima CES Committee Pima County Data Committee	**Anna Billings**, TPCH Data Committee Lead, **Valerie Grothe**, Pima CES Chair, **Sasha Hawman**, Community Bridges, Inc., **Ed Sakwa**, Emerge VSP, TPCH Board Member, **Colleen McDonald**, Our Family Services, **Cindy McClain**, Former TPCH Collaborative Applicant, **Phil Pierce**, Former TPCH Data Committee Lead, **Ana Lucero**, TPCH System Performance and Evaluation Committee Lead, **Austin Puca**, TPCH Collaborative Applicant
Statewide Data Leaders	Maricopa Cohort 2 Maricopa Data Committee	**Reyna Yslas**, Maricopa Chicanos Por La Causa, **Matthew Kelly**, Maricopa CES Committee Co-Chair, **Randy Hade**, Maricopa CES Committee Co-Chair
Statewide Funders		**Katie Gentry**, Maricopa Association of Governments, **Chris Moller**, DWEL Project Co-Lead, **Andy Wambach**, DWEL Project Co-Lead, **Linda Jensen**, DWEL Co-Lead, **Ty Rosensteel**, Solari Crisis and Human Services, **Mike Shore**, HOM, Inc.
HUD Technical Assistance Providers		**Pam Moseley**, Arizona Department of Economic Security, **John Ehlinger**, Garcia Family Foundation
Technology Providers		**Susan Podshadley**, AHCCCS, **Ian Kozak**, Green River, **Sarah Ryder**, Green River, **Edward Limon**, Contexture, **Kelly McGann**, Contexture, **Lauren Girard**, Contexture
Other Sectors		**Keith Bentely**, AzHAC, University of Arizona **Robert Wickham**, AzHAC, Northern Arizona University **Kristin Ferguson**, AzHAC, Arizona State University **George Runger**, AzHAC, Arizona State University

Appendix B: Survey Results

A survey was conducted with HMIS partners to gain feedback on the HMIS and how data are used in the homeless response system across the state. ICF received responses from 123 individuals and four major themes became evident, with the majority of the respondents providing positive responses within the context of each theme.

1. **Availability of the data: 73% of respondents said that the data was available when needed to coordinate client care and services.**
2. **CoC data-sharing processes: 82% of respondents said that CoC privacy processes made sharing client data easy.**
3. **Trust in the data: 79% of respondents said that they trust the data being reported in the HMIS.**
4. **HMIS training: 88% of respondents said that HMIS training did enhance their HMIS knowledge and skills.**

While this is not a representative sample of all users, the respondents were well distributed across their years of experience with the HMIS, HMIS data use, level of interaction with the system, role in their organization, and participation on CoC committees.

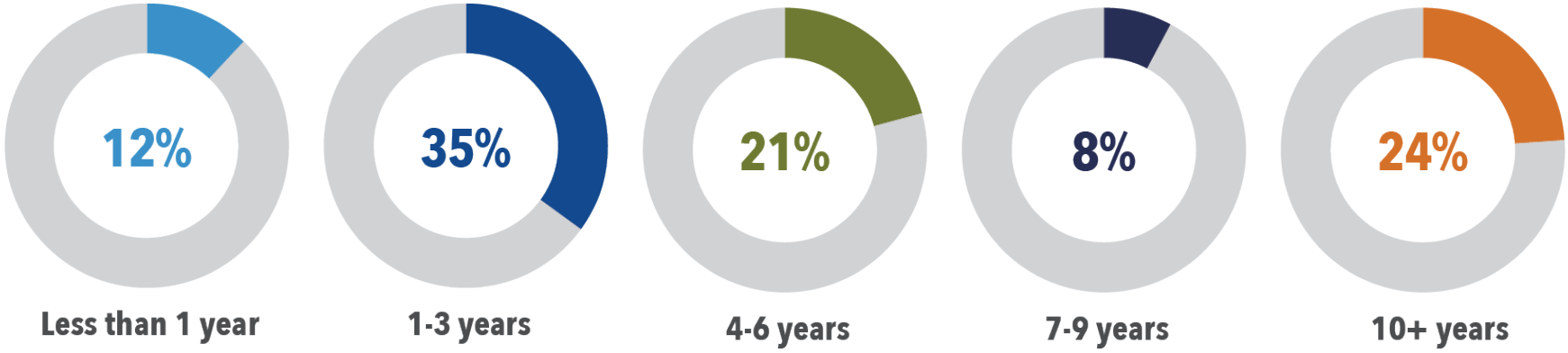

Figure 3: *Number of Years of Experience Respondents Have in HMIS*

> **"There is a lot of room for data error. Either being communicated by the client, tailoring responses based on what they think you want to hear, conflicting data, and poorly trained users."**

Trust in HMIS Data

The data from the HMIS is the keystone for reporting and are often used in coordinating services. Of the 123 respondents, 79% of them said that they trust the data reported in the HMIS.

In further evaluation of the data, it was found that trust in HMIS data generally remains high even when compared across years of experience. The two categories with the highest percentage of users who do not trust the data are respondents who have been working with the HMIS for less than one year (27% do not trust the data being reported) and respondents who have been working with the HMIS for four to six years (35% do not trust the data being reported).

The comments above are feedback given in the free-response questions of the survey by two respondents who have four to six years of experience.
Some themes to note from the comments include the following:

- Each agency uses HMIS differently.
- There are many opportunities for user error.
- End users need additional training.

79% of respondents trust the data reported in the HMIS.

"Every agency in our CoC uses the HMIS differently and there are always mistakes."

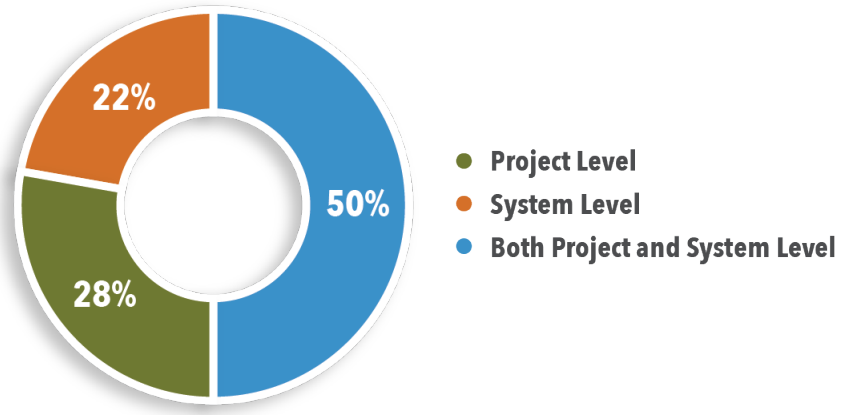

Figure 4: *Respondents Level of System Interaction*

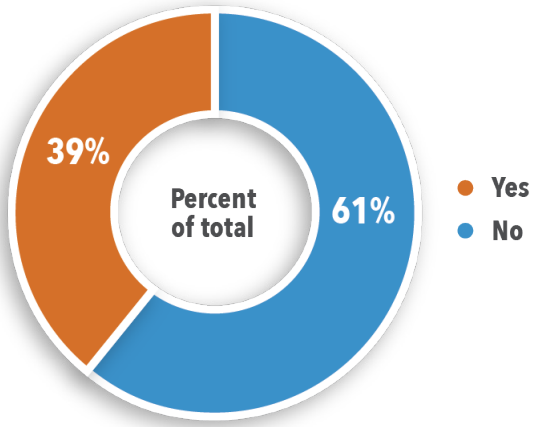

Figure 5: *Respondent Participates on a HMIS/Data Committee*

HMIS Training

While there are concerns about how well end users have been trained, the overall feedback on the training itself was positive. Eighty-eight percent of respondents found that the training does help enhance their HMIS knowledge and skills.

The percentage of respondents who found that the training enhances their HMIS knowledge and skills generally increases the longer they interact with the system. The largest group that does not find that HMIS training enhances their HMIS knowledge and skills are the respondents who have less than one year of experience with HMIS or HMIS data.

88% of respondents said that HMIS training enhances their HMIS knowledge and skills.

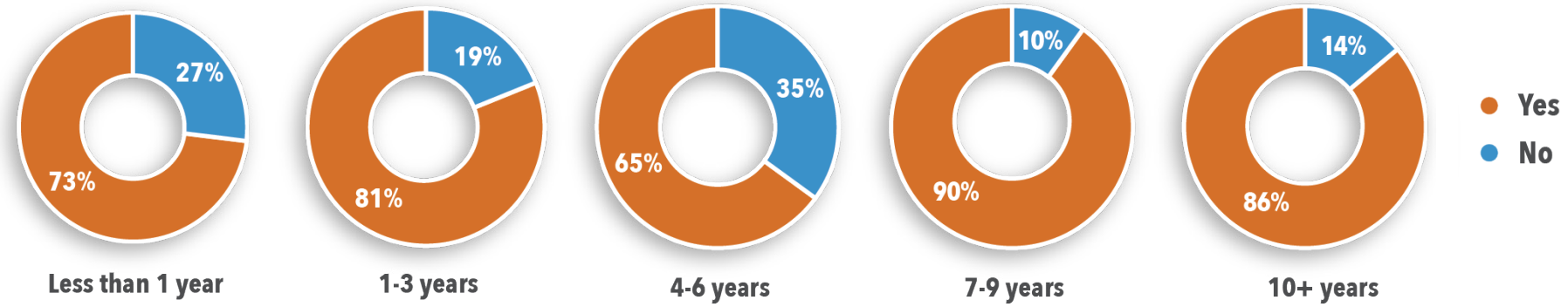

Figure 6: *Trust in HMIS by Years of Experience*

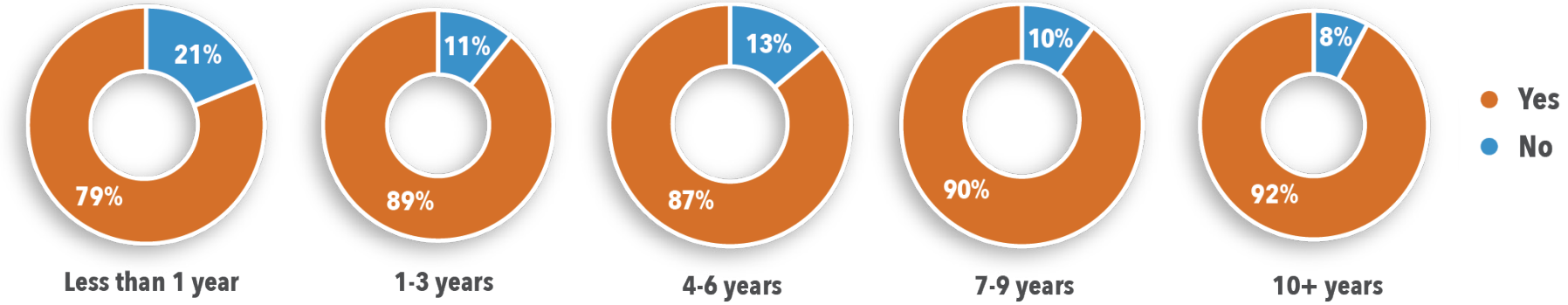

Figure 7: *Training Enhances HMIS Knowledge and Skills by Years of Experience*

Persons With Lived Experience of Homelessness

Due to the experience and knowledge of people with lived experience of homelessness, it is important to meaningfully engage and integrate them into the homeless response system. Of the 123 respondents, 39% (48 individuals) have experience navigating the homeless response system. In the evaluation of the survey, it was found that there is a decent distribution of people with lived experience of homelessness in several components of the homeless response system. Forty percent of all respondents who manage HMIS for their organization have lived experience of homelessness, and 29% of all respondents who participate on a data committee have lived experience of homelessness. Additionally, when compared with years of HMIS experience, most categories have a good distribution of people with lived experience of homelessness. The two categories with the largest percentage of persons with lived experience of homelessness is one to three years (51% of people with one to three years of HMIS experience have lived experience of homelessness) and seven to nine years (50% of people with seven to nine years of HMIS experience have lived experience of homelessness).

Overall, people with lived experience of homelessness trust the data being reported in HMIS. However, upon review of the free response answers, there are several themes to note about what could be done for HMIS to better serve people experiencing homelessness. The key themes are as follows:

- Accurate data collection
- The sue of data to coordinate services
- The development of data-informed strategies to address inequalities
- The improvement of technology to streamline HMIS data collection, data quality, and data integrity

In summary, the overall feedback for each of the four survey themes (availability of the data, CoC data-sharing processes, trust in the data, and HMIS training) was positive. However, the free-response answers indicated the need for follow-up conversations around the need for training, transparency, and collaboration across different organizations. People with lived experience of homelessness seem to be represented throughout the HMIS management and data committees.

> "Those with lived experience of homelessness typically have the best understanding of the reality of our work to prevent and end homelessness– both in terms of the problems that exist and the knowledge of the services and interventions that are the most effective solutions..."
>
> SNAPS in Focus: Integrating Persons with Lived Experiences in Our Efforts to Prevent and End Homelessness

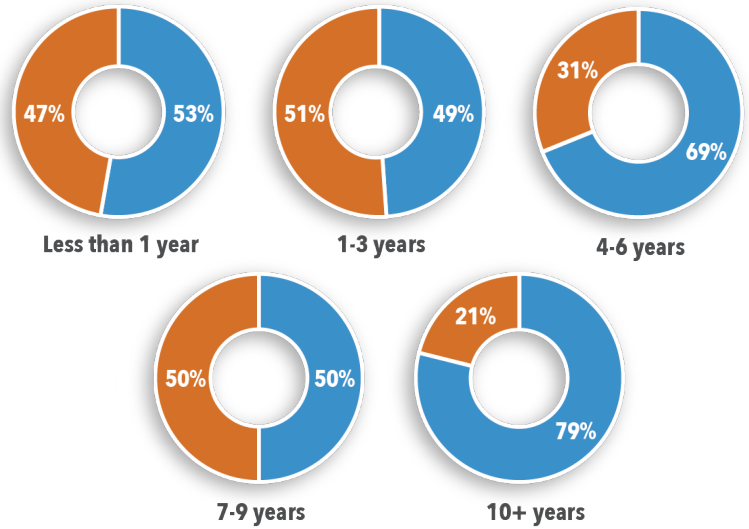

Figure 8: *Experience Navigating the System by Years of HMIS Experience*

The quotes below showcase some of these ideas and concerns. Each quote is from a respondent who identified as having lived experience navigating the homeless response system.

96% of respondents with lived experience trust HMIS and the data reported in HMIS.

"[There is a need for] more transparency and data access to address challenges and improve data literacy."

"The ability to have a streamlined app for telephone with streamlined input would be extremely beneficial for outreach teams that may not have the ability to input data as it becomes available."

"There is too much "don't touch my client" mentality in the CoC and it makes it harder to navigate a client out of homeless. My team would ask that service providers not use HMIS to shame a client."