



# Addressing Homelessness in the San Francisco Bay Area: A Framework for Regional Data Sharing



[www.homebaseccc.org](http://www.homebaseccc.org)

#### **About Homebase**

Homebase is a nationally recognized expert on homelessness and a skilled organizer and facilitator. For over 30 years, Homebase has worked at the local, state, and federal levels to build systems that implement innovative and proven best practices. Homebase's process emphasizes system design and collective action, optimizing the impact of resources and partnerships to address homelessness. Based in San Francisco, Homebase works hand-in-hand with the Bay Area's homeless systems of care and other partners to develop effective systems, transform resources, and cultivate community-wide collective impact partnerships.

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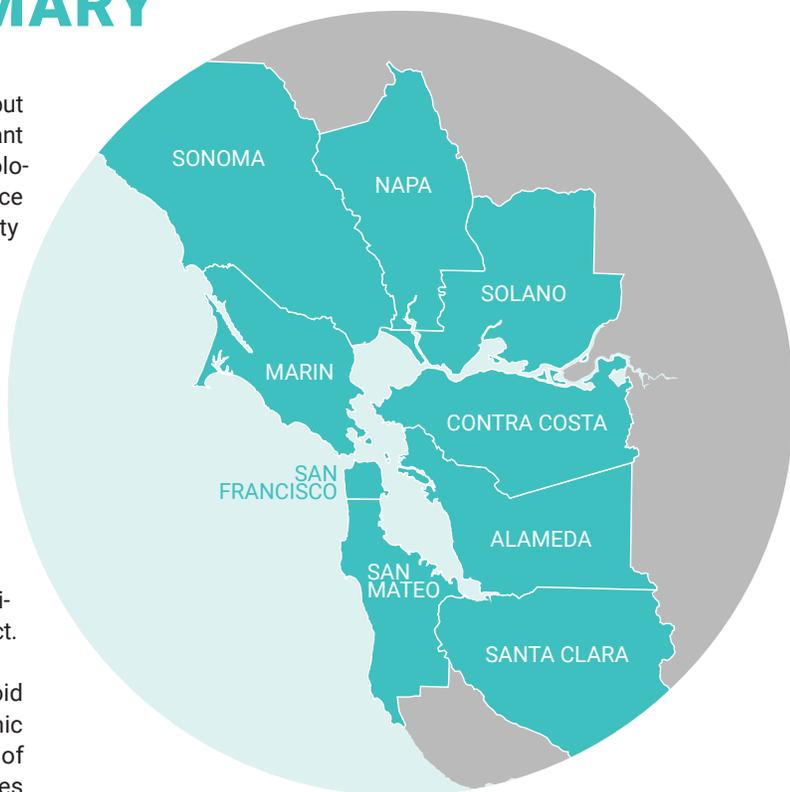


# 1. EXECUTIVE SUMMARY

The Bay Area region is bound together not just by geography, but also by economic, social, and political ties. It is a rich and vibrant region, home to some of the world's most innovative technologies. Together, its cities and counties comprise a powerful voice to re-envision local and state policies that constrain our ability to collectively end the homelessness crisis.

In many respects, especially pertaining to people's experiences with homelessness and housing, the Bay Area functions as one region rather than nine distinct counties. It is a unique area with large transportation systems that allow people to move easily across the region's jurisdictions. People work, live, and travel throughout the region, routinely touching different support systems and accessing services across jurisdictional lines. However, siloed data systems in each county result in missed opportunities to understand people's experiences of homelessness and prevent communities from coordinating programs and services to deepen impact.

In the Bay Area, the lack of coordination creates a tragic void in the homeless system safety net, and a barrier to systemic changes needed to sustainably meet the needs of tens of thousands of individuals and families. Crossing county lines means erasure of people's entire service history, losing access to the programs and providers who may have helped them in the past, as well as the benefits and resources that support their survival day-to-day. At best, this means starting over. At worst, it means falling through the cracks entirely. For others, the silos between jurisdictional systems prevent continuity of care that could end their homelessness, instead creating gaps in and redundancy of services. And, for the region as a whole, these jurisdictional silos prohibit the region from effectively scaling critical services.



Regional data sharing is essential to ascertain a true picture of homelessness in the Bay Area, including information that can elucidate trends, gaps, needs, and outcomes.

A regional understanding of homelessness can support development of innovative and targeted policies at many levels (local and regional) to respond to community needs and to the unique mobility of the Bay Area's homeless population. A regional picture of homelessness can strengthen strategic resource allocation and deployment, as well as maximize efficient and effective use of limited resources. More collaborative data sharing can even enable service providers to coordinate care by

equipping them with shared information about the clients they serve, including their historical needs and interactions with all of the service systems across the Bay Area.

While the ability to share data regionally has significant implications for strengthening local and regional homelessness response in the Bay Area, there are various options and functionalities to consider. **To support Bay Area decision makers in determining the best solution for the region, this Framework for Regional Data Sharing answers the following questions:**

- ✓ What do we mean by data sharing?
- ✓ What are the limitations of the Bay Area’s existing systems?
- ✓ How are other communities sharing HMIS data across the country?
- ✓ What are the key decision points around system design?
- ✓ What needs to happen next?

It is entirely feasible to establish a regional data sharing system. There are models throughout the country that show similar systems already in place – systems that are functional and contributing greatly to communities’ ability to address long-term systemic problems such as homelessness.

### Benefits of Regional Data Sharing:

- Inform Local Planning and Resource Investment
- Measure Outcomes and Impacts
- Coordinate Care Delivery

Today, the Bay Area has the opportunity to lead the State of California in addressing homelessness by undertaking regional data sharing. This Framework describes in detail many of the factors decision makers will need to consider when adopting a regional data sharing system, which include:

 The **level of data sharing** that is necessary to make a Bay Area regional effort meaningful;

 **Technical aspects** of a new data sharing system – providing definitions and recommendations on what to consider regarding vendor selection, data quality, and reporting and visualization software;

 Details about **roles and responsibilities** – including choices to be made about governance structures, leadership decisions, and staffing;

 **Policies and procedures** that ensure local communities can move forward fairly, equitably, while at the same time protecting the rights, integrity, and humanity of the people they care for – topics such as privacy, security, and data quality standards; and

 A **roadmap for implementation**, including a timeline of governance and technical steps to be taken.

Most importantly, the Framework articulates the value and importance of regional data sharing as a way to ensure that the nine Bay Area counties are collaborating effectively to address the systemic issues that face so many of our most vulnerable and disenfranchised residents. A regional approach to homelessness is visionary, practical, and essential to solving homelessness in the San Francisco Bay Area.





## 2. INTRODUCTION

Nowhere are the opportunities for a regional response to homelessness – and the risks of a failure to collaborate – more evident than in the nine independent data systems maintained by each county in the Bay Area. The region collectively invests millions of dollars annually in Homeless Management Information Systems (HMIS) to track demographic and service data of people experiencing homelessness. Yet each of the Bay Area’s nine systems are siloed from one another, with no ability to coordinate across county lines.

At the same time, the Bay Area is an extensive, interconnected metropolitan area with a vast network of public transportation that allows people to move across its nine counties easily. People routinely travel throughout the region – to and from work, to access services, or to change residences. As many as one in every five people experiencing homelessness became homeless in a different Bay Area county from their current location. Many more regularly rely on systems and services across multiple communities or inadvertently change jurisdictions as they transition in and out of neighborhoods, programs, institutions, and interventions – such as Rapid Rehousing – that often result in relocation across counties. As a result, trends in any single locality produce a resounding ripple effect across the entire region. Natural disasters, (including pandemics), costs of housing, criminalization of homelessness, encampment strategies, and local policy: the circumstances and decisions of each jurisdiction, made in isolation, dramatically affect the whole region.

The disparate data systems hosted by each county lead to missed opportunities to not only understand people’s experiences of homelessness, but they prevent communities from

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**A Homeless Management Information System (HMIS) is a local information technology system used to collect client-level data and data on the provision of housing and services to homeless individuals and families and persons at risk of homelessness.<sup>1</sup>**

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collaborating to streamline treatment and services to ensure people are moving from homelessness to permanent housing and supportive services more readily.

For people who are in need of assistance, it doesn’t require much effort to simply cross a bridge and find themselves moving between two separate systems, required to provide duplicate information or more often than not, even start all over.

While the Bay Area has long recognized the importance of data, historical efforts to share information regionally were bogged down both by the lack of political will and technological limitations – challenges the Bay Area is now uniquely positioned to overcome. Of the nine Bay Area systems, seven presently rely on the same software from the same HMIS vendor. And all nine counties maintain the same universal data elements required by the U.S. Department of Housing and Urban Development (HUD). Still, in 2020, none of the systems are able to share information with one another.

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<sup>1</sup> [Homeless Management Information System \(HMIS\)](#), HUD Exchange.

For the Bay Area to respond effectively, efficiently, and thoughtfully to the systemic issues that impact thousands of people experiencing homelessness across the region, it is time to adopt data sharing across all nine homeless systems of care. A system to share data across the region would:

- Ensure **data-driven policies at the system and jurisdictional levels** to respond to regional trends and more effectively serve the extremely mobile Bay Area homeless population;
- **Create a region-wide ability to monitor and strengthen resource allocation and deployment**, not only for care coordination, but also to track across jurisdictional boundaries to ensure effective, fair, and just use of resources;
- Remove some of the most significant barriers to **coordinated care for thousands of homeless individuals and families** in the region; and
- Provide a **true picture of homelessness in the Bay Area**, including crucial information about trends, gaps, systemic issues, and the number and type of solutions that would disrupt and overcome the Bay Area's homeless crisis.

In order to accomplish the goals of a centralized system, it is essential that we understand the systems that are already in place in each county and determine the most effective way to allow each homeless system of care to meet the needs of the people they serve while still contributing to a more effective regional response.

This report provides the Bay Area's key stakeholders with a menu of options for HMIS and additional data sharing approaches that are legally, politically, and technically possible. Any feasible system will be designed to:

- Develop and deploy crucial resources in a strategic and coordinated way;
- Share information across county lines;
- Support regional planning;
- Measure impact across counties;
- Efficiently and effectively align care and services across counties;
- Incorporate data from regional sources outside of HMIS;
- Adapt to changing data elements, standards, and community needs over time; and
- Leverage the Bay Area's regional diversity to collectively build the system that will successfully overcome the homelessness crisis.

Developing a regional data sharing system will be complex, with several phases of activity. Additional key activities will include building community support, identifying champions, determining the funding model, establishing a governance board, hiring staff, executing privacy agreements, selecting a vendor, building the data warehouse, automating data feeds, defining reporting capabilities, training users, testing the system, and launching ongoing operational maintenance.

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Doing so requires that the region:

- Affirm a **Data Sharing Framework**;
- Look to the lessons from other **National Data Sharing Models**;
- Identify a **Data Sharing Approach** that considers the needs and capabilities of the regional partners; and
- Establish appropriate **Governance Structures and Operations** to enable systemwide oversight and leadership

By taking the right steps, and with careful consideration, the Bay Area region has the ability to establish a centralized database that would be wholly transformative.

# 3. THE REGION: THE SAN FRANCISCO BAY AREA

The State of California continues to call for regional approaches to housing and homelessness, as well as data sharing in general. We are clearly in a crisis, with hundreds of thousands of people living on the streets, in cars, on the sidewalks, in parks, by rivers, under bridges, and in shelters across the state. Local housing and service providers are seeking to evaluate investments and outcomes across county lines. The State's call for shared regional systems recognizes the need for comprehensive planning and analyses, community-wide care coordination, and the capability to develop a shared platform for integrating other regional data sources.

The San Francisco Bay Area region is comprised of nine counties – Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. The nine counties are deeply interconnected, resulting in an extensive history of regional and cross-jurisdictional partnerships to advance collective social and economic goals.

Like many other issues, homelessness in the San Francisco Bay Area is a regional challenge that cannot be solved by any county or city alone. Despite the tremendous work of the Bay Area's dedicated service providers and systems leadership over the past decade, the number of people experiencing homelessness across the Bay Area continues to grow. Publicly available data from each homeless system of care indicates that on any given night there may be close to 30,000 people experiencing homelessness in the nine Bay Area counties together (close to 20% of California's homeless population).

An array of regional entities – the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), Bay Area Air Quality Management District (BAAQMD), Bay Conservation and Development Commission (BCDC), and the Regional Water Control Board – attest to the Bay Area's regionality. More recently, the integration of MTC and ABAG, the Committee to House the Bay Area (CASA) Task Force on Housing Solutions, and the Bay Area Council Economic Institute's April 2019 report on Bay Area Homelessness, "A Regional View of a Regional Crisis," clarify that housing and homelessness are regional issues:

*Until very recently, homelessness was considered the problem of individual cities and counties. For a metropolitan region like the Bay Area, which is divided into 9 counties and 101 cities, this approach fails to meet the needs of an intra-regionally mobile homeless population. For instance, the Bay Area's myriad datasets on homelessness are incompatible, and assets are planned and built without coordination or optimization.<sup>3</sup>*

Regional solutions are essential to solve regional challenges. As the Bay Area's CASA Compact emphasized, "[A] regional approach to challenges such as homelessness ... can balance inequities and imbalances across multiple jurisdictions that have to contend with varying market strengths, fiscal challenges

## Regional Homelessness Data Coordination: Los Angeles Regional HMIS and Project 50

- In 2007, Los Angeles embarked on "Project 50," a data sharing proof of concept that shared data between Permanent Supportive Housing (PSH), county behavioral health, criminal justice, and medical health system administrative data;
- The project generated savings that was 108% of the cost of the initiative, meaning slightly more money was saved than spent. Over two years the savings increased to \$4,774 per occupied unit; and
- Not only were there administrative savings, but the intervention group experienced a decreased use and cost of the criminal justice system (28% decrease vs. increase of 42% control group), decreased costs in medical care (68% decrease vs. 37% decrease of the control group), and increased use of mental health and substance use services.<sup>2</sup>

Since Project 50, Los Angeles County has expanded their homeless data systems to include Glendale, Pasadena, and Orange Counties and is looking to integrate data from other sectors to institutionalize cost saving and care improvement mechanisms.

<sup>2</sup> [Project 50: Ending Chronic Homelessness with Permanent Supportive Housing and Integrated Data Systems](#), Los Angeles County, August 2015; [Project 50: The Cost Effectiveness of the Permanent Supportive Housing Model in the Skid Row Section of Los Angeles County](#), County of Los Angeles Chief Executive Office Service Integration Branch, June 2012.

<sup>3</sup> [Bay Area Homelessness: A Regional View of a Regional Crisis](#), Bay Area Council Economic Institute, April 2019.



and staff expertise.”<sup>4</sup> Addressing the Bay Area’s interrelated crises of housing affordability, homelessness, transportation, and income inequality require regional planning and alignment.

In 2018, recognizing the need for a regional collaboration, leaders from the Bay Area’s homeless systems of care in the nine counties came together and committed to transcend the jurisdictional barriers that undermine cross-county coordination. The jurisdictional decision makers from across the Bay Area formed the Bay Area Regional Working Group on Homelessness and began convening on a quarterly basis with the goal of fostering a shared regional vision to impact how the region addresses homelessness. (The Regional Working Group is staffed and facilitated by Homebase, a San Francisco-based, nationally recognized expert on homelessness with over 30 years of experience working at the local, state, and federal levels.)

While individual Bay Area communities have established robust homeless response systems with significant resource investments, the systems are not coordinated across county lines, largely due to the entrenched consequences of state and federal program design. Collectively, the Bay Area counties invest millions of dollars annually to maintain nine fully independent and isolated HMIS. The result, however, is that the Bay Area, as a whole, has only a limited understanding of homelessness as a regional problem – without regional data, we do not have a full picture of homelessness in the Bay Area, the extent of service duplication and inefficiencies, or the success of investments in system and program interventions.

## California Homeless Data Integration System

Under the leadership of Governor Newsom, the State is collecting and integrating data from each local HMIS into a State Homeless Data Integration System (HDIS) that will display aggregate data from all homeless systems of care in California. California’s effort to address the dearth of data sharing on a statewide level is an important first step toward greater collaboration and coordination. See pg. 28.

<sup>4</sup> [CASA Compact: A 15-Year Emergency Policy Package to Confront the Housing Crisis in the San Francisco Bay Area](#), The Committee to House the Bay Area, January 2019.

As people experiencing homelessness flow in and out of jurisdictions, take shelter on regional public transportation, and individually access systems of care in multiple communities, the challenges of ensuring they receive the expeditious and streamlined assistance they require to exit homelessness are compounded. Without a shared regional data system, resources across the Bay Area are duplicated and the people most in need continue to fall through the cracks that exist between systems.

The Bay Area's solutions to homelessness require the counties come together to develop an ability within the region to align – and track – the care and resources individuals receive across jurisdictions, to evaluate outcomes, and to optimize regional resources to meet regional needs. Coordinating data across the Bay Area region would allow for:

- Comprehensive Planning
- Measured Outcomes and Interventions
- Reductions in Redundancies
- Care Coordination

## Examples of Regional Questions about Homelessness

Regional data sharing will allow the Bay Area to better understand homelessness to inform planning, measure outcomes, reduce redundancies, and coordinate care. The following are examples of the types of questions that can only be answered through regional data sharing.

### Comprehensive Planning:

- What are the regional needs? Across individual county lines? At the regional level?
- How effectively is the region serving people of color? People with disabilities? Seniors? People with mental health and/or substance use disorders? LGBTQ? Women? Families? Are there targeted demographic populations that the region could better serve through coordinated and comprehensive planning?
- What interventions require a regional approach? What interventions would be more effective at a local level? Both?
- Are there service priorities that should align throughout the region? If so, would they benefit from regional planning and coordination?

### Measured Outcomes and Interventions:

- Are local outcomes consistent across the region? Are certain populations' needs different depending on the county where they reside?
- What programs and services are working well at the local level? What programs and services would be better addressed at the regional level?
- Are there effective local programs that should be scaled up to the regional level? Pilot projects?
- Where are the gaps in services/programs? Where are there unnecessary overlaps? When and where are people falling through the cracks? Which populations are falling through the cracks?
- Would regional collaboration be a more effective way to address systemic issues of racism and other forms of discrimination?

### Reductions in Redundancies:

- Where are there efficiencies that can be maximized through regional coordination?
- Are there administrative cost savings by sharing systems more effectively?

### Care Coordination:

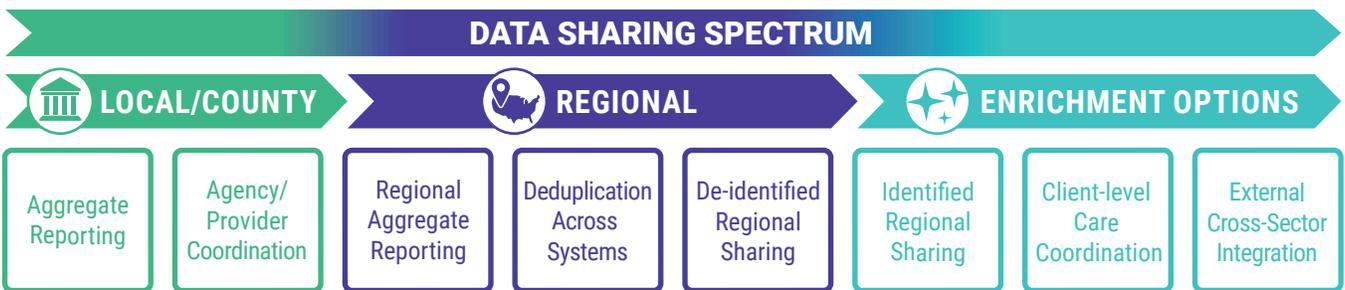
- How can we better track movement of clients across borders to allow for greater continuity of care?
- How can different service providers across county lines coordinate to support the same individuals?
- How can we better prevent duplication of services?



# 4. THE HOMELESSNESS DATA SHARING FRAMEWORK

Each county in the Bay Area has spent countless hours and considerable financial investment to develop and maintain a robust system to leverage local data to prioritize resources and reduce homelessness in their community. The systems already include some degree of local data sharing, via the community’s local HMIS. However, only the most high-level aggregated data are shared across jurisdictional lines, significantly limiting regional coordination and impact.

The Framework outlined in this report provides a structure for evaluating opportunities to leverage the Bay Area’s data systems in a regional, coordinated homelessness response, using a Data Sharing Spectrum. The further right on the Data Sharing Spectrum one moves, the more complex the system becomes, the more capabilities users have, and the more opportunities to use data to address the Bay Area region’s homelessness crisis.



## LOCAL/COUNTY

Local data sharing, already taking place independently in each Bay Area county.

### Aggregate Reporting

Compiled, de-identified data within a single homeless system of care for tracking performance and providing reports that show patterns, practices, and gaps in how people are being served by the individual homeless system of care (often required by funders).

Data used for reports such as: Point-In-Time (PIT) count, Housing Inventory Chart (HIC), System Performance Measure Report (SPM), Annual Performance Report (APR), Longitudinal Systems Analysis (LSA), and additional reports.

### Agency/Provider Coordination

Share client-identifying data between agency and service providers and programs within a homeless system of care to facilitate coordination of client care and referrals.



## REGIONAL

Approaches to sharing data across county lines.

### Regional Aggregate Reporting

De-identified data collected from multiple homeless systems of care and stored in a central data environment. Data are not deduplicated across systems; can report patterns, practices, and gaps in how people are being served for the entire region.

### Deduplication Across Systems

Identified data from multiple homeless systems of care are deduplicated and matched in a central data environment to create a more accurate picture of homelessness.

### De-identified Regional Sharing

Data are deduplicated and personal identifying information (PII) is replaced with artificial identifiers (i.e., de-identified) to maintain the privacy of individuals in the system, in order to understand at an individual-level patterns, practices, and gaps in care.



## ENRICHMENT OPTIONS

Opportunities to add functionalities and/or integrate additional systems to enhance the impact of regional data sharing.

### Identified Regional Sharing

Sharing identified and deduplicated data between homeless systems of care to facilitate system-level coordination.

### Client-level Care Coordination

Sharing identified data between homeless systems of care where projects can view client-level data and process referrals and coordinate care across multiple systems.

### External Cross-Sector Integration

Sharing and integrating deduplicated data from different sectors outside of the homeless systems of care (e.g., health, foster care, criminal justice, education, etc.) with identified data from one or more homeless systems of care and sharing that data in a central data environment. Data shared across sectors may also take place within one system of care.

<sup>5</sup> [CoC Housing Inventory Count Reports](#), HUD Exchange.

<sup>6</sup> [APR Guides, Tools, and Webinars](#), HUD Exchange.

<sup>7</sup> [Longitudinal Systems Analysis \(LSA\)](#), HUD Exchange.

## DEFINITIONS

### Point-In-Time (PIT) Count:

Each Continuum of Care (CoC) conducts a “Point in Time” (PIT) Count of people experiencing homelessness on a single night in January. The PIT Count provides the best data available on the size and characteristics of the homeless population over time.

### Housing Inventory Count (HIC):

An inventory of housing that each CoC conducts annually during the last ten days in January. The reports count the number of beds and units available on the night designated by program type. The HIC includes beds dedicated to serve persons who are homeless as well as persons in Permanent Supportive Housing. New data include in HIC reports on beds dedicated to serve specific subpopulations.<sup>5</sup>

### System Performance Measure Report (SPM):

HMIS data used to track progress and challenges in addressing homelessness, which includes measurements of housing stability of formerly homeless households and the number of people in the community falling into homelessness for the first time.

### Annual Performance Report (APR):

HUD requires CoCs to submit an Annual Performance Report (APR) electronically to HUD every operating year. Data collection for the APR is aligned with the most recent version of HMIS Data Standards.<sup>6</sup>

### Longitudinal Systems Analysis (LSA):

A report produced from a CoC’s HMIS and submitted annually to HUD, which contains critical information about how people experiencing homelessness use their system of care.<sup>7</sup>



## A. HMIS: The Bay Area's Existing Systems

Every Bay Area county's local HMIS collects information about the provision of services to people experiencing or at risk of homelessness.<sup>8</sup> The systems work with federally approved HMIS vendors that provide software and technical assistance to each community.

All programs that receive state or federal funding to address homelessness are required to enter certain standardized data into their local HMIS for the purpose of deduplicating, de-identifying, aggregating, and reporting to federal, state, and local governments. Homeless systems of care use these data to plan, coordinate between implementing partners, prioritize subpopulations, and use resources effectively.<sup>9</sup> Providers and system leaders also use the data to measure program and system outcomes and ensure that programs are meeting their funding and reporting requirements.

Additionally, each separate county homeless system of care administers a centralized Coordinated Entry System (CES) to prioritize people experiencing and at risk of homelessness for certain housing resources and other interventions. All nine Bay Area counties use their local HMIS to administer their individual CES. Service providers and other Coordinated Entry access points use the HMIS to add assessment data about the people entering the homeless system of care, which allows the community to track and prioritize people and services.

Because much of the data are standardized from one HMIS to another, there is significant opportunity to establish processes for sharing data across jurisdictional lines as a foundation for data-driven regional coordination. Sharing Coordinated Entry System data can further deepen our understanding of the Bay Area's true gaps and opportunities in addressing homelessness.

### What is a Coordinated Entry System?

Every community that receives federal funding to address homelessness is required to have a Coordinated Entry System (CES). "Coordinated entry is an important process through which people experiencing or at risk of experiencing homelessness can access the crisis response system in a streamlined way, have their strengths and needs quickly assessed, and quickly connect to appropriate, tailored housing and mainstream services within the community or designated region.

Standardized assessment tools and practices used within local coordinated assessment processes take into account the unique needs of children and their families as well as youth. When possible, the assessment provides the ability for households to gain access to the best options to address their needs, incorporating participants' choice, rather than being evaluated for a single program within the system. The most intensive interventions are prioritized for those with the highest needs."<sup>10</sup>

<sup>8</sup> [FY 2020 HMIS Data Standards](#), Version 1.7, HUD, June 2020.

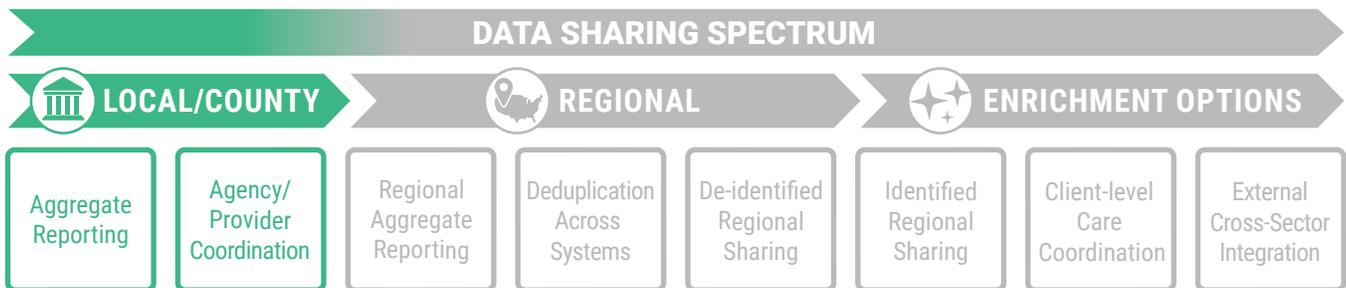
<sup>9</sup> [HMIS Data and Technical Standards Final Notice](#), HUD, July 30, 2004.

<sup>10</sup> [Opening Doors: Federal Strategic Plan to Prevent and End Homelessness](#), United States Interagency Council on Homelessness, As amended in 2015.

## HMIS Functionality

HMIS provides the ability for homeless systems of care to conduct basic, local data sharing, including:

-  **Aggregate Reporting**, which is key to identifying important patterns in how well individuals and subpopulations are being served in the system, successfully moving from homelessness to housing, and, in some instances, identifying when people are falling through the cracks; and
-  **Agency/Provider Coordination**, which is key to providing the network of agencies and providers – including health care providers, municipal agencies (e.g., police and fire), shelter providers, social service agencies, and community-based organizations – with important information to enable them to serve their clients in a more thoughtful and coordinated way.



### Aggregate Reporting:

 Compiled, de-identified data within a single homeless system of care for tracking performance and providing reports that show patterns, practices, and gaps in how people are being served by the individual homeless system of care (often required by funders).

All HMIS are required to support aggregate reporting across the county homeless system of care. At a minimum, the system administrator has access to the HMIS data countywide and is able to generate aggregated system and program-level reports, required by HUD and other funders.

Annual reports such as the Point-in-Time Count (PIT) or the Annual Performance Reports (APRs) support homeless systems of care and agencies operating within them to track outcomes, better understand trends, and plan for the future. However, the usefulness of these reports is limited, especially for local and regional planning and tracking and improving outcomes. As aggregated snapshots, HMIS reports do not take cross-jurisdictional data into consideration. They cannot accurately:

- Measure service need and gaps;
- Track movements between systems;
- Evaluate provider performance and impact;
- Identify improvements in care;
- Promote coordination within the homeless system of care; or
- Allow for regional coordination.



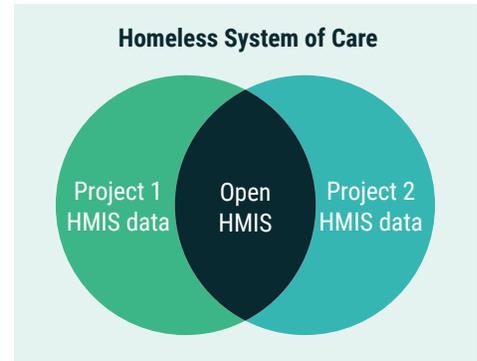
### Agency/Provider Coordination

Sharing client-identifying data between agency and service providers and programs within a homeless system of care to facilitate coordination of client care and referrals.

Every Bay Area community's HMIS also supports some degree of data sharing to facilitate coordination. In some counties, data sharing is limited to providers of homelessness services who are directly using HMIS, but other parts of the region have a variety of data sharing initiatives that allow for some form of data sharing across sectors.

An HMIS can be open, closed, or mixed in regard to the extent of data sharing. In a true open HMIS, any program within the homeless system of care can see all other program data in the system. This includes the history of HMIS clients within the care system and any pending or current programs they are assigned. Open systems are designed to make data actionable for the coordination and support of each individual and household. In closed systems, programs can only see the data that they collect, solidifying the limitations listed above. All nine Bay Area communities describe their HMIS as an "open" system.

While each county identifies its system as open, the degree of openness varies across communities. Some communities share only enrollments and assessment outcomes, while others limit access to specific projects depending on the client's responses to a release of information (ROI).



## Limitations of the Bay Area's HMIS Silos

While each Bay Area county invests significantly in its own HMIS at the system and program levels, that data are not shared across county lines, significantly limiting the region's ability to use data to meaningfully impact the Bay Area's homeless crisis:

*Intake, monitoring, and outcome data for people experiencing homelessness is siloed across service providers, negatively impacting service delivery, creating expensive redundancies, and reducing accountability. Regional planners should work together to break down data silos.<sup>11</sup>*

The disjointed system fails to take advantage of the collective synergy of the Bay Area to overcome localized challenges and build a truly right-sized regional system of care; the silos limit the ability to obtain a true understanding of the Bay Area:

- **What Does Homelessness Look Like in the Region?**
- **What Strategies and Interventions Work or have been Ineffective?**
- **When and Where do Systems Overlap or Result in Gaps in Services or Coverage?**

<sup>11</sup> [Bay Area Homelessness: A Regional View of a Regional Crisis](#), Bay Area Council Economic Institute, April 2019.

### **What Does Homelessness Look Like in the Region?**

- Planners do not have data about how people move across borders before, during and after experiencing homelessness. They don't know what are the reasons for peoples' experiences, what obstacles they confront, or what might make it easier for people to become housed;
- Project strategists miss opportunities to target interventions when population trends are invisible because the data are siloed;
- Because homelessness and demographics differ by geography, siloed systems prevent any regional understanding of what homelessness looks like and prevent reporting on the similarities and differences across the region, therefore limiting the ability to collectively and meaningfully address systemic issues; and
- Siloed systems preclude the region from identifying how transit access influences where people who are homeless live and how they are served.

### **What Strategies and Interventions Work or have been Ineffective?**

- Evaluators don't have data to track people after they leave the local homeless system of care – e.g., they can't prove that prevention/Rapid Rehousing (RRH) worked after clients exit programs;
- Planners are unable to capitalize on strengths and assets of individual communities mobilized for collective good;
- Communities do not have data to know what strategies work to shorten the time from innovation to implementation; and
- Nine different counties building their own complete continua of services without regard to what's available in neighboring counties, wastes unnecessary resources by duplicating what's already available, economics of scale, etc.

### **When and Where do Systems Overlap or Result in Gaps in Services or Coverage?**

- Case managers and care providers are unable to communicate or coordinate care across geographical or sector boundaries;
- Homeless systems of care are unable to use data to understand gaps and overlaps to support smart investment practice and/or address systemic issues; and
- Resources cannot be matched/shared/integrated across county lines to address gaps (e.g., one county has land but no funding, another one has funding to build housing but no available land).

As people experiencing homelessness flow in and out of jurisdictions, take shelter on regional public transportation, and individually access systems of care in multiple communities, the challenges of ensuring they receive the expeditious and streamlined assistance they require to exit homelessness are compounded. Resources are duplicated and the people most in need continue to fall through the cracks that exist between systems.

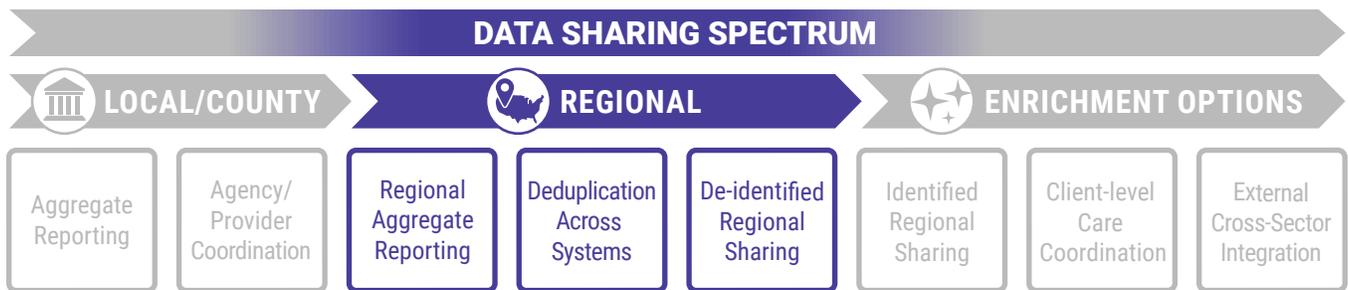
## B. Approaches to Regional Data Sharing

Expanding data sharing across the region has far-reaching benefits for the Bay Area. There are two approaches that both create new opportunities for homeless systems of care to improve how data are used, but more importantly, how individuals and families are cared for in the region: Regional Data Sharing and Enrichment Options.

### Regional Data Sharing: Opportunities for Sharing HMIS Data Beyond Borders

Basic regional data sharing can take three forms:

-  **Regional aggregate reporting**, which allows for aggregate reporting for the nine Bay Area counties, rather than data that are trapped in siloed homeless systems of care;
-  **Deduplication across systems**, which allows the region to have more accurate count of the region's homeless population; and
-  **De-identified regional sharing**, which allows the Bay Area to protect the privacy of people they are serving and still be able to observe how individuals move through the system in order to identify patterns and practices that illustrate policies and practices that are not effectively serving people experiencing homelessness.



#### Regional Aggregate Reporting

De-identified data collected from multiple homeless systems of care and stored in a central data environment. Data are not deduplicated across system systems; can report patterns, practices, and gaps in how people are being served for the entire region.

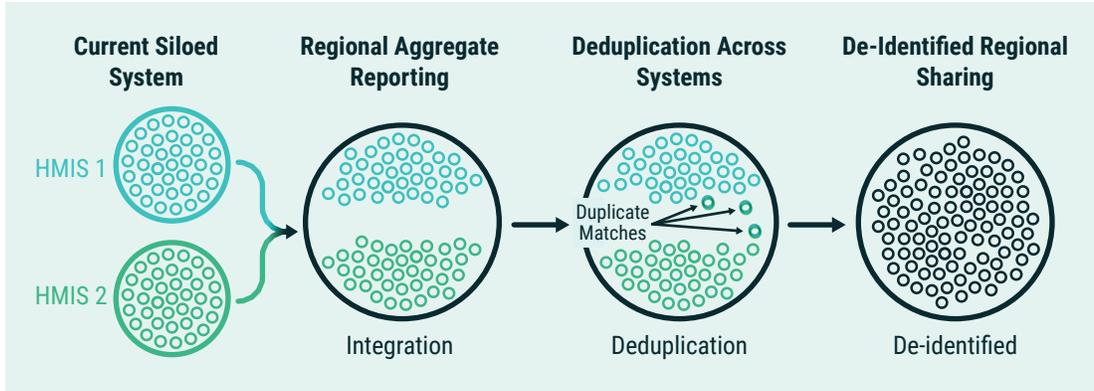
Regional aggregate reporting allows multiple, siloed systems of care to combine their data as a whole to provide a snapshot of what homelessness truly looks like throughout the entire Bay Area region. It complements the stories we are able to tell about our local homeless systems of care. Regional aggregate reporting can provide necessary data that enables decision makers to look through an equity lens to identify regionwide systemic racism, ageism, disability discrimination, gender discrimination, and other big picture issues with the system at large.

Regional Aggregate Reporting can:

- Illustrate patterns and practices that exist across all Bay Area homeless systems of care;
- Point to differences across the homeless systems of care, not only to identify localities that may

need more support or resources, but also those that are doing well and can be used as role models or sites for pilot projects; and

- Indicate populations or subpopulations in need of special attention or more targeted resources.



### Deduplication Across Systems

Identified data from multiple homeless systems of care are deduplicated and matched in a central data environment to create a more accurate picture of homelessness.

Deduplication across systems takes regional data sharing a step further by enabling accurate measure of the number of unique people experiencing homelessness regionwide, which is not possible to do through the local HMIS reporting systems.

Deduplication Across Systems can:

- Combine multiple systems of care data into one central system and identify all the duplications – i.e., the individuals who show up twice or multiple times across the region;
- Clean up local system data to ensure people aren't being counted more than once in their local HMIS;
- Report accurately on the number of unique people throughout the region who are homeless; and
- Provide the State and other decision makers with data they can rely on to ensure appropriate investments into the region.

### De-identified Regional Sharing

Data are deduplicated and personal identifying information is replaced with artificial identifiers (i.e., de-identified) to understand at an individual-level patterns, practices, and gaps in care without disclosing private information of the specific individuals involved.

De-identified regional sharing drills down even further to understand individuals' experiences with homeless systems of care across the region, while still protecting their privacy and security.

Regional De-identified Regional Sharing can:

- Track anonymously individual experiences of people throughout the region to find if/when people are falling through the cracks; and
- Map individual paths across the region, illustrating how people move from one system of care to another, and sometimes back again.

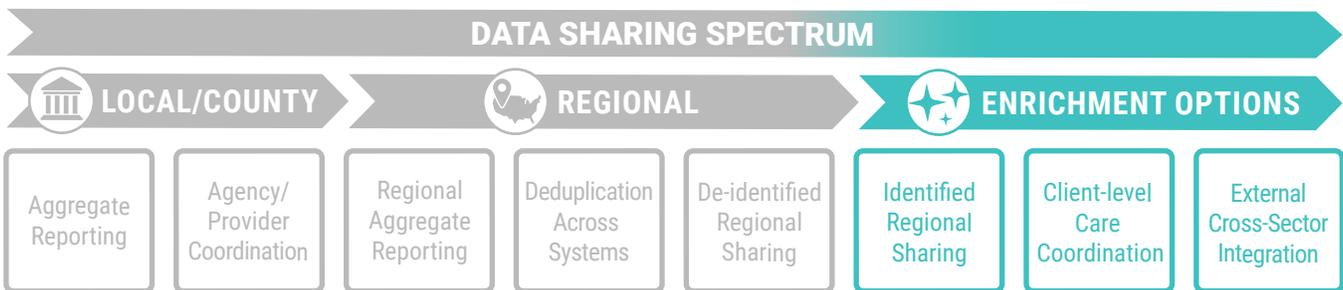
## Enrichment Options

Many additional options exist to expand a shared system beyond HMIS regional data sharing. Enrichment options build on the structure and benefits of regional data sharing, but significantly broaden the Bay Area region’s ability to collaborate and coordinate across all nine homeless systems of care.

Enrichment options include:

- 
**Identified regional data sharing**, which provides client-level data to facilitate coordination across the region;
- 
**Client-level care coordination**, which allows for shared information amongst and between multiple systems of care for referrals and coordination of care directly for individuals experiencing homelessness; and
- 
**External cross-sector integration**, which provides the potential to coordinate outside of the homeless systems of care to collaborate with other public sector and human services agencies to expand the region’s ability to care for the whole person.

Each of these approaches is discussed in greater detail below.





**Identified Regional Data Sharing:**  
Sharing identified and deduplicated data between homeless systems of care to facilitate system-level coordination.

Administrators in each participating system of care have the ability to view PII of individuals across the region. Such a robust and usable data sharing system is affected by many factors, including how often data are shared, how many systems are participating, and who has access to what types of data.

Identified Regional Data Sharing can:

- Support regional alignment of resource prioritization and strategies to reduce service duplication;
- Provide secure storage of digitized identity and eligibility documentation;
- Align coordinated entry across the multiple systems of care; and
- Reduce the burden on people experiencing homelessness to create a new profile in each county as they travel to receive services.



### Client-level Coordination

Sharing identified data between homeless systems of care where projects can view client data, process referrals, and coordinate care across multiple systems

Client-level care coordination permits shared access to identified data by providers across the Bay Area's homeless systems of care.

Client-level Coordination can:

- Provide access to all the client's service providers through one centralized system, regardless of what county they are from;
- Support homeless service providers to share client records, see histories, and identify providers who they may want to contact to learn more about a person before or during treatment;
- Enable services providers to create more coordinated and comprehensive care plans; and
- Allow services providers to conduct electronic referrals, locate clients, and receive event notifications.



### External Cross-Sector Integration

Sharing and integrating deduplicated data from different sectors outside of the homeless systems of care (e.g., health, foster care, criminal justice, education, etc.) with identified data from one or more homeless systems of care and sharing that data in a central data environment. Data shared across sectors may also take place within one system of care.

A regional data system can support the integration of data from other sectors – such as public health, foster care, criminal justice, or education – systems that often transition people into or out of the homeless system of care. Coordinating across sectors and systems can enable individual counties and the region to develop a more complete view of people's experiences with homelessness across multiple systems of care and enable greater and more effective collaboration across the region to help people faced with income inequality, discrimination, and other systemic issues.

External Cross-Sector Integration can:

- Provide regionwide data for prioritization and coordination of services across multiple sectors;
- Enable cross-sector analysis;
- Identify high utilizations across multiple sectors;
- Help better target interventions during critical crisis periods;
- Track inflow and outflow of people between multiple systems; and
- Ensure that transitions out of institutional care do not result in homelessness.

## C. Benefits of Sharing Regional Data

A regional data sharing system would have meaningful impact on the ability to conduct local planning to address homelessness, to measure outcomes and investment impacts, and to support coordination of care and support for people experiencing homelessness. Enrichment options that allow identifiable client-level data sharing would have even greater impact by creating opportunities to coordinate across homeless systems of care – ensuring individuals moving through the Bay Area have continuity of care without having to restart the process of seeking help every time they transition to a new location.

### Planning

#### Regional Population Planning

Regional data sharing can obtain an accurate number of unique individuals throughout the region by deduplicating data from nine distinct HMIS systems.

#### Movement

Deduplicated records across all nine HMIS can illustrate the flow of individuals and families across the region to facilitate and improve regional planning.

#### Site Selection

Regional data sharing can help the Bay Area homeless systems of care understand where people, jobs, services, housing, and underutilized space is available, which can help make regionwide decisions about where to invest in new housing and services.

#### Administrative Efficiencies

Regional data sharing can provide a more complete view of data across the nine HMIS to identify potential administrative and programmatic efficiencies within and amongst the homeless systems of care. Shared systems also have the potential to reduce administrative costs, leaving more funding for direct services and care.

#### Equitable Investing

Combining demographic data across all nine HMIS can provide information to better ensure equity in investments across various subpopulations and throughout the region.

#### Communitywide Planning

With identified data shared across communities and sectors, planners can leverage by-name lists to quantify resource needs, offering a deduplicated, regional context to make the case for investment in additional resources.

#### Planning, Research, & Care Coordination

Current systems are not designed to incorporate multi-sector data in the future. Enabled by enrichment options, systems and sectors could integrate planning efforts, better addressing the multidisciplinary needs of clients.

#### Inflow & Outflow

To understand impact, regional planning must account for inflows (who is becoming homeless) and outflows (who is getting housed). Deduplicated data across the region's systems of care would give us an accurate regional picture of inflow and outflow for the first time, which could better inform regional gaps and needs.



## Measuring Program Outcomes and Investment Impacts

### Tracking

Regional data sharing can accelerate the nine counties' collective ability to count individuals as they move through the region (de-identified) and develop accurate metrics about transitions from homelessness to housing. Regional counting is particularly important in the Bay Area, where individuals and families experiencing homelessness often need to find housing in counties other than the county where they experience homelessness.

### Closes Gaps

Often, gaps in metrics and evaluation are not always due to individuals falling through the gaps, but rather lack of data. Analyzing data across and between nine HMIS help develop a better understanding of how long outcomes last and where and when they break down, identifying true gaps rather than simple gaps in data.

### Impact Investments

Regional data sharing can provide more robust data to evaluate pilot projects, collaborate across counties for investments, or to support collaborative funding opportunities.

### Improving Program-level Services

Communities will be better informed about technical and systematic fixes needed when they have knowledge about what is working and not working on a program level in context with other similar programs.

### Broad Accountability

Regional data sharing allows for enhanced partnerships with other public programs to effectively measure transitions between the homeless system of care and the foster care system, child welfare system, the criminal justice system, schools, and health care.

### Tracking Outcomes

Enrichment options with client-level data will allow systems of care to more quickly and accurately measure, test, and identify high impact programs and service models. Understanding what works well can facilitate decisions about what can be replicated, expanded, or brought up to scale.

### Better and Smarter Investment

The ability to track outcomes and impacts can enable funders to coordinate investment at a regional level, instead of operating within existing county-level silos that were established by other funding streams

## Care Coordination

### Care Delivery

Deduplicated and de-identified records across all nine HMIS can enhance services to individuals and families across the region by facilitating care delivery across counties, especially around communication.

### Matching

A complete list of available housing resources and services for individuals across the area can facilitate better matching of housing options through more tailored matches and reduced time to match.

### Coordinated Care Planning

A 360-degree view of a person's history with homeless services will empower care workers to anticipate need and think creatively about the assets available to help people. A centralized location for all implementing partners to support and care for a single individual will result in improved outcomes, better client experience, and possible establishment of client-centered care coordination teams.

### Housing First

By promoting Housing First and self-determination, data sharing across systems and sectors can support an individual's choice or freedom of movement through a system and ensure that networks are not siloed in one isolated area.

## D. Bay Area Strengths and Challenges for Data Sharing

The existing HMIS structure provides a strong foundation for data sharing. Several factors will influence the region's ability to share data effectively, including:

- Degree of Shared HMIS Software;
- Alignment of Data Elements;
- Existing Local Data Sharing Practices;
- Extent of Local HMIS Bed Coverage; and
- Variation in Local Data Quality and Culture.

While certain local variations will pose challenges that will need to be overcome over time, not only is there good will and intention to collaborate, but the Bay Area's overall existing systems and structures lend themselves well to regional data sharing.

### Degree of Shared HMIS Software

Seven of the nine Bay Area counties use the Clarity Human Services HMIS (provided by Bitfocus). Two counties – Solano and Sonoma – each run different systems (WellSky's Service Point, and Efforts to Outcomes' Social Solutions software, respectively). The shared use of Clarity across the majority of the Bay Area counties could facilitate development of a shared regional system by:

- Reducing the complexity of data transfers because the number of disparate HMIS vendors is limited; eliminating the need for multiple data transfers;
- Simplifying the compatibility issues, since most data sit with one provider with uniform data formats and processes; and
- Initiating incremental transfers, a connection through Clarity would allow access to 70% of the regional data all at once, requiring minimal changes for most of the counties.

### Alignment of Data Elements

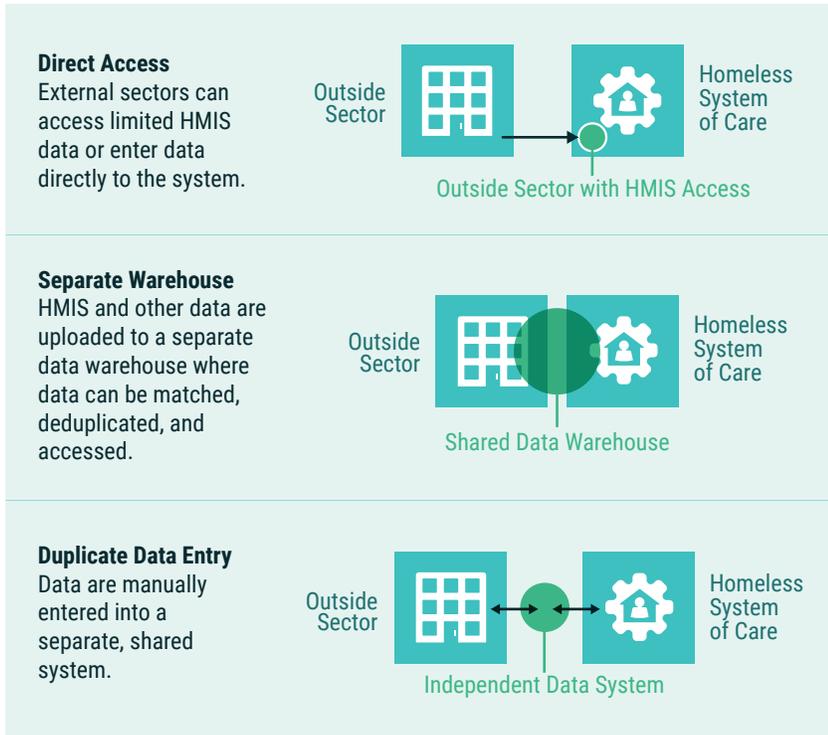
HUD requires all CoCs to collect a specified set of data elements in HMIS. The required data points are collected the same way across all systems nationally. The uniform data provide a robust backbone for a regional system that would support a more comprehensive and accurate understanding of both the demographics of the Bay Area homeless community and services provided across the region.

Each CoC also collects unique data elements in addition to those required by HUD, presenting opportunities and challenges for data sharing. Different data may not be able to be shared without additional efforts to align the data across all nine communities. For example, each local CES uses different assessment criteria to identify vulnerability and prioritize the distribution of resources. Leveraging the CES data regionally will require investment and time to accurately represent the local differences. Over time, communities may be interested in building out more custom features to help use the custom data for their own purposes.



## Existing Data Sharing Practices

Most Bay Area counties also engage in some form of data sharing outside the homeless system of care to support coordination and prioritization of resources. In the Bay Area, cross-sector data sharing typically takes three forms:



The vast majority of the Bay Area's nine counties are engaged in some form of cross-sector data sharing, often involving local Whole Person Care initiatives.

## County Data Sharing – Whole Person Care Initiative

Twenty-five cities and counties in California were challenged to integrate care coordination between health care, behavioral health, and human services programs.<sup>12</sup>

- Under the “Whole Person Care Initiative,” the State provided \$3 billion distributed to 25 counties and one city to pursue projects that engaged in cross-sector data sharing with the express purpose of integrating care coordination across sectors:
- All nine Bay Area counties engaged in one of the Whole Person Care projects or in similar initiatives:
- Each project had to identify a vulnerable Medi-Cal population to target, which included high utilizers of care, people with chronic physical conditions, people with severe mental illness or substance use disorders, people experiencing or at risk of homelessness, and/or people involved with the justice system; and
- Generally, projects utilized one of two data sharing methods: (1) Expanding electronic health record (EHR) capabilities (EHR are digital versions of a patients’ paper charts, available in real-time, which make information available instantly and securely to authorized users); or (2) Creating a new coordinated data system. Under either option, many implementation partners were required to enter the same data twice, once into their old system and a second time in the new system (this was especially true for partners who used an HMIS to collect and store data).

The data exchanges varied by community, complexity of system, and the level of coordination by partnering agencies. The data ranged from case notes and care plans to administrative data.

<sup>12</sup> [Catalyzing Coordination: Technology’s Role in California’s Whole Person Care Pilots](#), The California Healthcare Foundation, April 2019.

Several Bay Area communities allow organizations or municipal departments outside of the homeless system of care to access administrative HMIS data. Some examples include:

- Outreach teams through police departments looking to connect persons on the street with resources;
- Health care service agencies partnering with the homeless system of care to identify high utilization;
- Veteran’s Administration (VA) projects accessing HMIS to coordinate VA funding and advocate for veterans;
- School districts that are looking to support their students and families; and
- An Eviction Defense Collaborative working to prevent homelessness and identify those who may succeed with limited prevention or diversion support.

## Extent of Local HMIS Bed Coverage

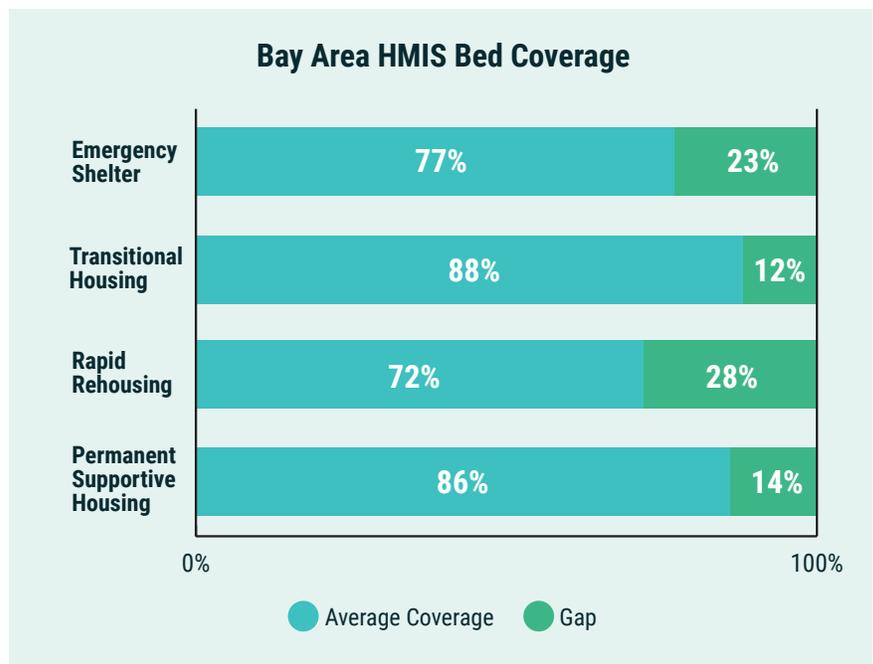
While many federal and state agencies require programs to enter data to HMIS as a condition of funding, not all funding sources require data to be collected through HMIS. As a result, not all data associated with serving the homeless community are entered into the local HMIS. In fact, the ratio of homeless-serving programs and beds that participate in HMIS, varies significantly across the Bay Area counties.

For example, as of April 2019, while the overall total HMIS bed coverage documented in each of the nine Bay Area counties is high, it is not 100%.<sup>13</sup> Rather, an average of only 77% of Emergency Shelter beds, 72% of Rapid Rehousing beds, and 86% of Permanent Supportive Housing beds are represented in HMIS across the region.

HMIS coverage by type of housing varies significantly across the counties – from 100% coverage across all housing types for one Bay Area county and lows of 22% and 33% coverage of Rapid Rehousing and Permanent Supportive Housing for a different Bay Area county.

Because each Bay Area county’s bed coverage is different, regional data will vary in comprehensiveness from one county to the next, even in a regional data system. Additionally, some local programs that are not required to participate in HMIS may not collect all of the required data elements that would be desired in a regional data sharing system, resulting in gaps in available data.

Of importance, however, is that the Bay Area’s rates of HMIS bed coverage data continue to rise, resulting in ever-more comprehensive data on homeless-serving systems. The existing coverage rates for the Bay Area are high; taken together the HMIS data can provide a meaningful picture of resource availability and outcomes across the region. Regional coordination may even provide an incentive for systems to mirror one another further, resulting in even more comprehensive bed coverage data.



<sup>13</sup> Data in this section are taken from FY2018 System Performance Measures, 2019 Point-in-Time Count, and 2019 Housing Inventory Chart data, as reported to HUD.

## Variation in Local Data Quality and Culture

Data quality varies across the Bay Area counties and the projects operating within them. The variations likely result from local differences in data investment and culture, the extent to which data are applied and analyzed, burdens of multiple entry requirements, program-level systems for data collection and reinforcement of best practices, and challenges in locating clients. In the 2018-2019 reporting year, data quality around known exits from homelessness in the Bay Area ranged from an average of 72% for Emergency Shelter data to 97% for Rapid Rehousing data.<sup>14</sup>

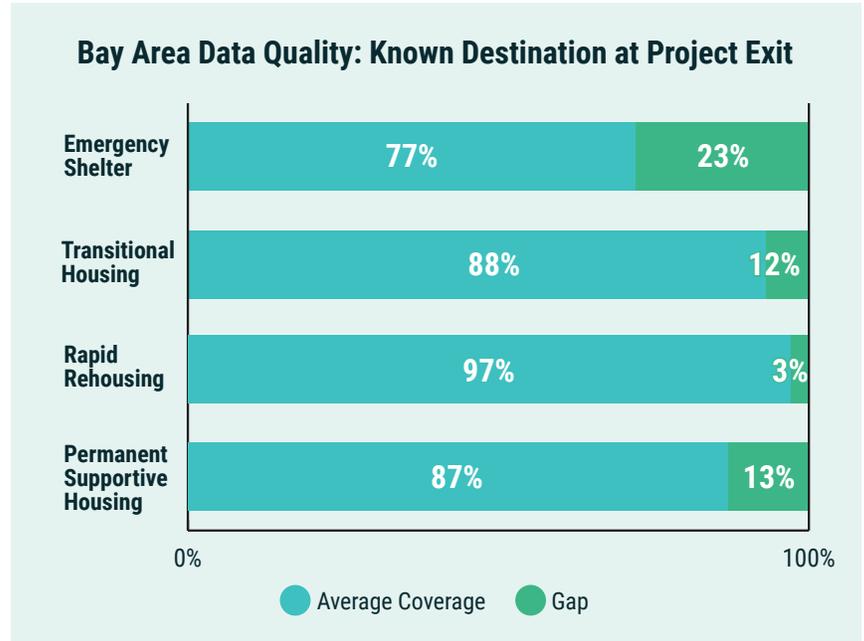
The greatest variation is in data around Emergency Shelter beds, where it is most difficult to track clients who may depart without providing a destination. All Transitional Housing, Permanent Supportive Housing, and Rapid Rehousing exceed 82% average data quality in every Bay Area community.

Regional data sharing could close some of the data gaps that exist, particularly on transitions and exits from homelessness. With access to information across counties, challenges in locating clients while they are still in the system and tracking them once they are housed, would be ameliorated.

Currently, Bay Area communities vary in how they use data for tracking performance and public communications. While few communities have established public dashboards, some Bay Area homeless systems of care are in the process of developing dashboards and several others have expressed interest. Similarly, a growing number of Bay Area homeless systems are utilizing data reports beyond those required by HUD, to support local analysis and planning. All nine Bay Area counties have articulated commitments to data-driven culture and have invested significantly in enhancing their HMIS infrastructure and ability to leverage their HMIS data to more meaningfully respond to homelessness.

## E. Conclusion

The Bay Area's regional nature and robust investments in the nine existing county-level HMIS will meaningfully facilitate development of a regional system. While variations in system software, utilization, and other local factors will pose challenges, recent improvements in data quality, the shared use of HUD Data Elements, most of the region's use of the same HMIS vendor, and the urgent need for better data and regional coordination to overcome the Bay Area's homelessness crisis will facilitate development of a shared system. As discussed below, a variety of pilot options are arising nationally, and the Bay Area's implementation of a regional system could not be more timely. With the collective will throughout the region to work together to solve the growing homelessness crisis, it is time to take steps to adopt a regionwide data sharing system.



<sup>14</sup> Ibid.



## 5. NATIONAL DATA SHARING MODELS: SOLUTIONS ACROSS THE COUNTRY

Data sharing initiatives in the housing and homelessness sectors are underway all across the country. States, counties, and even cities have recognized that greater data sharing is an important component of any solution to address homelessness. There are various models for Bay Area leaders to consider that represent different approaches, ranging from simple to more complex solutions.

### Notable National Models for Regional HMIS Data Sharing

Each of the following models affirms the feasibility of regional data sharing in the Bay Area and highlights the opportunities and challenges of different approaches:



**The State of Maryland**  
Statewide HMIS Roll-up



**The State of Nevada**  
Coordinated Case  
Management & Planning



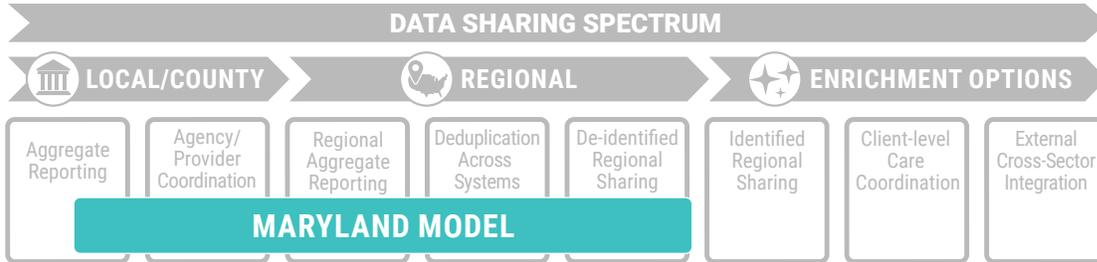
**The City of Boston**  
Green River "Open Path Design"  
Planning & Care Coordination



**Allegheny County**  
Instantaneous  
Systemwide Model

## Maryland Model: Statewide HMIS Roll-Up

The State of Maryland operates a statewide data warehouse of client-level data from 16 HMIS across the state. The system allows for coordinated planning and funding strategies based on data stored in a central data environment. Client-level data sharing allows the state to deduplicate data across homeless systems of care. The state can share with counties a true deduplicated picture of local, regional, and state homelessness.



### PRIMARY GOALS

- To provide a statewide snapshot of homelessness to facilitate state planning and funding strategies across 16 homeless systems of care.
- To reduce the administrative burden on local communities to prepare and submit aggregate reports.

### DATA ACCESS

- State and local stakeholders have access to basic dashboards, which provide de-identified information around trends, outcomes, and the number of people who are accessing services from multiple systems of care.
- Publicly-available dashboards provide basic information.

### OPERATING STRUCTURE

- Each month, the vendor uploads into a data warehouse HUD-required client-level HMIS data from 15 homeless systems of care that use the same HMIS vendor. The largest system of care uses a different HMIS vendor, therefore provides a separate upload of their data.
- The warehouse matches and deduplicates all individuals, strips their PII, and generates a unique identifier.

### SYSTEM BENEFITS

- Allows for automated HUD reporting.
- Supports coordinated planning and evaluation across multiple homeless systems of care.
- Uploads are simple and automated for 15 of the 16 communities.

### SYSTEM LIMITATIONS

- The data collected in the data warehouse are limited to HUD-required HMIS Universal Data Elements.
- Dashboards are limited to basic information. State and local planners must request custom reports when specific questions are raised.
- Only de-identified data are shared with communities.
- Integrating care coordination or identified data sharing functionalities are not possible with the current technology.

### SYSTEM DEVELOPMENT FACILITATORS

- The goals of the system were limited in scope.
- Sharing only de-identified data reduced privacy concerns.
- Service providers were not required to learn a new system.
- All but one of the homeless systems of care used the same HMIS software, making it easy to upload to a central data warehouse; however, the system that does not is the largest, most independently funded in the state, and an alternate solution needed to be designed to integrate that system of care's data into the shared system.

### VENDOR

- Wellsky

### SIMILAR EXAMPLES

- Similar examples include Louisiana, Michigan, and Ohio.
- Proposed California Statewide System, known as the Homeless Data Integration System (HDIS) (April 2020)

## California State System

The State of California is currently building the Homeless Data Integration System (HDIS), which will be fully implemented by early spring 2021. The State’s vision for the HDIS is that it “will be a technology solution that allows the State of California to access and compile standardized homelessness data collected by individual homeless systems of care in order to make data-driven policy decisions aimed at preventing and ending homelessness in California.” The system will be administered by the Homeless Coordinating and Financing Council (HCFC), which is housed within the Business, Consumer Services and Housing Agency.

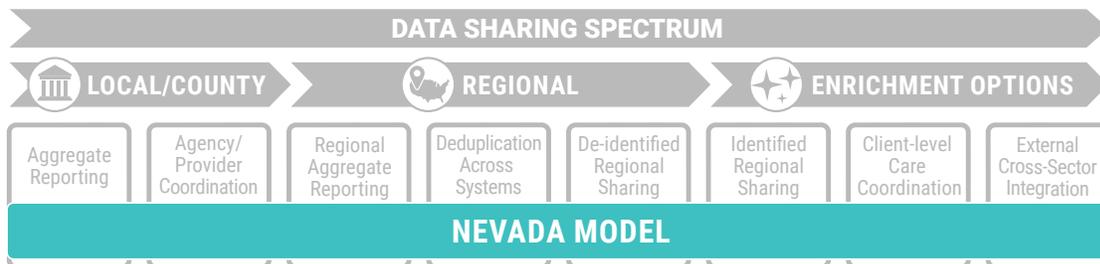
HDIS will pull identified client data required by HUD from each homeless system of care’s HMIS into a de-identified cloud database of homeless client service activity. In future iterations, HDIS will also pull client data from other state systems to provide a more holistic picture of state and locally provided services. The State will use the information to produce unduplicated estimates

of the number of people experiencing homelessness in California, enable cross-jurisdictional analysis of homeless systems of care, identify patterns of service use, evaluate the impact of services, and identify gaps in services. The State has executed data use agreements with all 44 California Continuums of Care to share their identified client data into HDIS.

The State will provide some de-identified and deduplicated data back to communities in the form of data dashboards and queries. The system also is intended to support efforts to coordinate and collaborate locally to help improve coordination across different homeless systems of care. While there are no immediate plans to provide client-identifiable data at the local level, the system will have the capabilities to provide de-identified data at the regional level and there may be potential to leverage HDIS to provide more customized data sharing between communities and regions.

## State of Nevada Model: Coordinated Case Management & Planning

The State of Nevada has a centralized system leveraging one HMIS vendor across three homeless systems of care. All three systems of care use the same HMIS vendor and software, so data does not need to be warehoused in a separate location. The connection is “live,” enabling any HMIS update made anywhere in Nevada to be viewed in real time, which creates the opportunity for real-time coordinated case management and planning.



### PRIMARY GOALS

- To better plan and distribute funding.
- To decrease duplicate intakes and assessments.
- To streamline referrals and better coordinate case management.

### DATA ACCESS

- State and local leaders have access to customizable and interactive dashboards that provide de-identified information including general trends, general outcomes, and the number of people who are accessing services in multiple systems of care.
- Some data from managed care organizations and hospital systems are incorporated with the state HMIS. The data are viewable by planners and lead agencies.
- Some partners (see for example Clark County) have expanded their own data sharing capabilities using the same platform.

<sup>15</sup> [Homeless Data Integration System \(HDIS\), HDIS Procurement Solicitation Request](#), State of California Business, Consumer Services and Housing Agency, April 3, 2020.

<sup>16</sup> [California Homeless Data Integration System \(HDIS\), Project Tracking, Stage 1 Business Analysis](#), California Department of Technology, April 2, 2018.

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**OPERATING STRUCTURE**

- The system is a “no-warehouse” solution, meaning shared data can stay in the disparate systems and still be shared with each other and allow for cross-jurisdictional queries.
- A “live” / real-time connection between HMIS from different homeless systems of care.

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**SYSTEM BENEFITS**

- The same vendor provides HMIS software to all homeless systems of care in Nevada.
- The system is capable of providing real-time data sharing.
- The software includes functionalities to support custom reporting and GIS that can support encampment monitoring.
- Care coordination is integrated into the existing system, and service providers and planners don’t need to learn a new system or access third-party technology.
- Planning and impact evaluations across homeless systems of care are possible with a single unduplicated data set.
- The system has been used to justify spending money in targeted ways, such as state resources to fund respite facilities.

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**SYSTEM LIMITATIONS**

- Linking coordinated entry system data or case management software requires further investment.
- The sharing of HMIS data is limited to HUD-required data elements and limited administrative hospital data and additional elements that are chosen by the state.

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**SYSTEM DEVELOPMENT FACILITATORS**

- State and local actors were invested in data sharing and continue to provide leadership for improving systems of care.
- Leadership was able to pass state and local laws making data sharing possible.
- HMIS data were already the primary source of information for planning in all communities.

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**VENDOR**

- Bitfocus / Clarity Human Services Software

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**SIMILAR EXAMPLES**

- Los Angeles Regional HMIS (Los Angeles County, Glendale, Pasadena, Orange County)

## Coordination Across Sectors: Clark County (Nevada) Data Integration

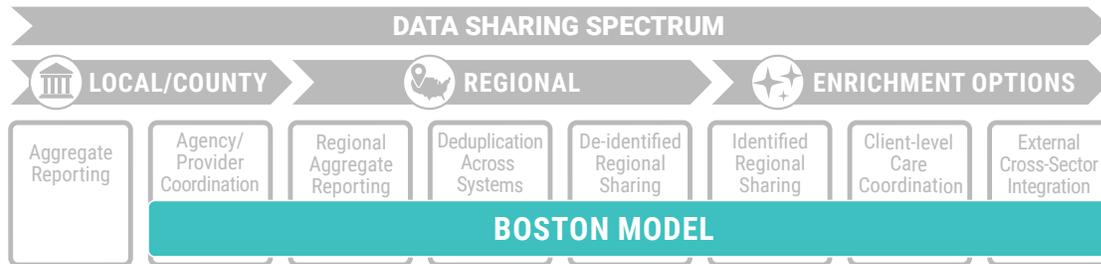
Currently, Clark County, Nevada merges HMIS data, electronic health records (EHRs), fire and rescue data, Medicaid data, and Clark County jail and detention data to identify frequent users of homeless, emergency, health, and jail and detention services. Once identified, individuals are prioritized and connected to housing interventions or other needed resources. Some participating partners enter and view data directly in HMIS, while others with HMIS-compatible data systems send and receive data from HMIS digitally.

Historically, jail and detention data in Clark County were fragmented into four separate systems with jurisdictional barriers. Additionally, Nevada state laws prohibited the sharing of historical criminal records. Clark County worked with the state to amend laws to allow sharing of jail and detention data. Simultaneously, the jail and detention systems received a Bureau of Justice Assistance grant to consolidate detention data systems. As of June 2020, Clark County is looking to expand data sharing to include other jurisdictions (e.g. court systems).



## City of Boston Model: Green River “Open Path Design” Planning & Care Coordination

The City of Boston started implementing HMIS prior to HUD’s standardized HMIS requirements, resulting in three separate HMIS within one homeless system of care. To streamline functionalities, they created an open source HMIS data warehouse that consolidates and extracts data daily from each HMIS, matching and deduplicating data before integrating them with client-level data from other sectors (e.g., electronic health records, criminal justice data, and case management software data). Similarly, the city also developed its own Coordinated Entry System (CES) before HUD standardized CES requirements.



- PRIMARY GOALS**
- To eliminate the need to double enter information.
  - To automate HUD reporting across disparate HMIS vendors.
  - To facilitate local planning and funding strategies and to include Medicaid billing information.
  - To enable cross-sector care coordination.
  - To automate housing resource matching.
  - To create a platform for resource utilization.

- DATA ACCESS**
- Boston’s Open Path warehouse design has four key data access points that are tailored for a specific category of user with corresponding data viewing permissions and restrictions.
  - The service care portal is designed for homeless service workers (e.g. case managers, administrators and those involved in care conferencing) to access client-level information and coordinate care.
  - The care provider portal is designed for the health care workforce to build and implement care plans in collaboration with homeless service partners.
  - The de-identified analytic reporting tool is designed for planners and city officials.
  - The coordinated access-to-housing tool matches individuals and families in the system with housing units or vouchers through the incorporation of vulnerability assessments, as well as automated assessments based on an individual’s HMIS history.
  - The system provides access for researchers and program staff to use open source statistical computing software to build models and analyze data.

- OPERATING STRUCTURE**
- Each evening, data from each HMIS, electronic health records, and case management software systems are extracted by the warehouse and vendor and incorporated into the centralized data.
  - Data are then matched and deduplicated and, when available, linked to a photo so that care workers and medical providers can ensure that data is matched correctly.
  - Data are made accessible in different formats according to the options above.

- SYSTEM BENEFITS**
- Open source / “Out of the Box” software allows customization in one community to be applied in other communities.
  - The system integrates data from multiple sectors.
  - The system allows for communication with electronic health records and case management software and combines multiple HMIS, eliminating the need for duplicate entry.
  - The system allows communities to conduct their own self-directed research using “R” language data analysis and other open source statistical tools.

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**SYSTEM  
LIMITATIONS**

- Requires that users learn a new system and have facility using multiple systems.
- Considerable investment is required by communities to analyze data, customize reports, and provide training and technical assistance to users.

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**SYSTEM  
DEVELOPMENT  
FACILITATORS**

- Local leadership, including elected officials, were invested in data sharing and wanted to reduce the time from first assessment to housing.
  - Boston Health Care for the Homeless, the largest provider of health care in the region, is a local leader and invested in data sharing
  - The timeline view and client-level dashboards provides care workers with a 360-degree view, a “care profile,” of a person’s interaction with the care system across homeless and health sectors that includes services provided, care plans, and a timeline view to chart change of need over time.
  - The care profile is viewable to all providers with permission across the care system.
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**VENDOR**

- Green River

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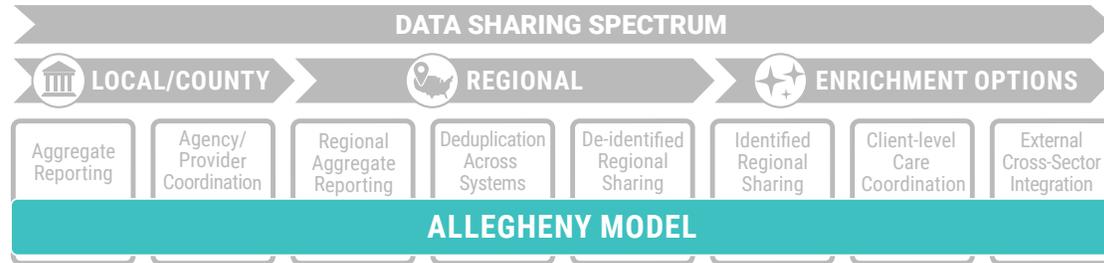
**SIMILAR  
EXAMPLES**

- Texas



## Allegheny County Model: Instantaneous Systemwide Model

Allegheny County in Pennsylvania built a system to integrate HMIS with more than 20 sources of human services data across the county, including child protective services, mental and physical health services, and 911. The warehouse is connected to central data systems by real-time connections, which can support care coordination. The integrated system powers a broad range of reporting capabilities and supports care coordination. The system offers public-facing dashboards, sector-specific dashboards, coordination and planning dashboards, and ad hoc reporting. Additionally, program administrators are able to automate consumer feedback surveys periodically and tie responses directly to the individual and program providing care.



- PRIMARY GOALS**
- To establish one system across all sectors, where data are integrated with HMIS as one of many component parts.
  - To provide care workers with a 360-degree view of a person’s interaction with the care system across all sectors to include services provided, care plans, and a timeline view to chart change of need over time.
  - To inform and consolidate planning and budgeting processes and help prioritize efforts.
  - To integrate data science with program monitoring and evaluation to improve services.

- DATA ACCESS**
- All data are integrated into the same system, matched across sectors, and stored in a warehouse.
  - Data are shared in real-time.
  - Different sectors have different viewership abilities based on program, need, and coordination.
  - Because all data systems are connected, cross-sector coordination is readily available.
  - Case workers from one sector can immediately see if their client is receiving services or has ever received services from a different sector.

- OPERATING STRUCTURE**
- Ten sectors, including the homeless system of care, enter data directly into the system.
  - At least 11 other data systems from other sectors (e.g. birth, public housing, juvenile probation, public schools, labor and industry) are integrated with the system.
  - The data collected outside of the Allegheny system are sent to it and integrated across all client records.

- SYSTEM BENEFITS**
- Real-time data exchange is possible between all sectors and the data warehouse.
  - Care coordination functionalities are built in, the care profile is viewable to all providers with permission across the care system, and case management software is integrated within the system.
  - Automated reporting for local, state, and federal funders is standard.
  - The system is using machine learning and other predictive analytics tools to improve service delivery and interventions simultaneously.
  - The system is helping programs to target interventions, e.g., by identifying and targeting people who may need mental health or substance use treatment and have never accessed it.
  - All sectors in the county are included in the same data system, with integration of all HMIS data elements and coordinated data elements.

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**SYSTEM  
LIMITATIONS**

- Custom development is difficult and costly to build and maintain due to unknown requirements, changing source systems, and limited availability of specialized technical resources.
- Implementing this system in a new community would require a complete overhaul of the data across the region and across sectors.
- Can be challenging to match individuals across sectors using incomplete identification data, such as name, data of birth, address, and social security number.

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**SYSTEM  
DEVELOPMENT  
FACILITATORS**

- Strong buy-in and leadership existed at all levels.
  - Allegheny County is able to use their system effectively because they invested heavily in human capital, including data science and analytics.
  - Service providers were not required to learn or implement a new system.
- 

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**VENDOR**

- Deloitte

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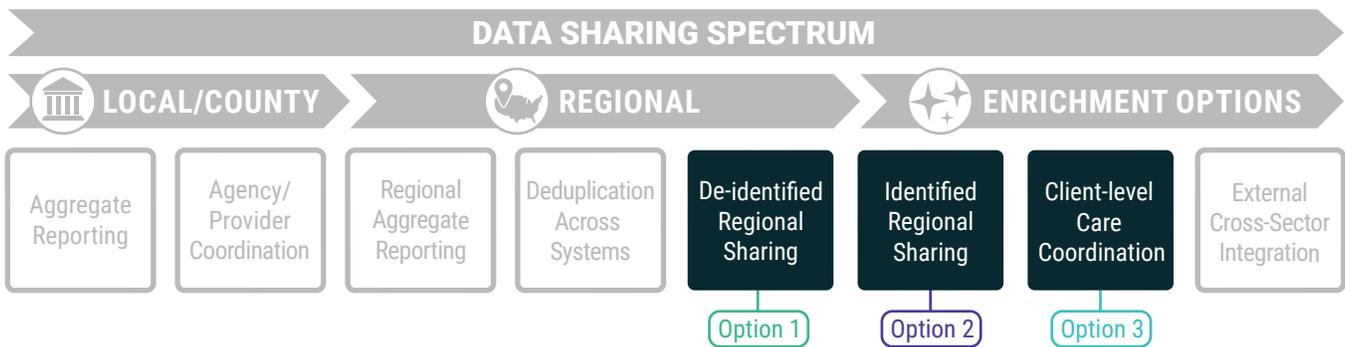
**SIMILAR  
EXAMPLES**

- This system is unique in the United States. Canada and Europe have some similar examples.

# 6. OPTIONS FOR REGIONAL DATA SHARING IN THE BAY AREA

The Bay Area region has several viable options for a data sharing system. The more robust the system, the more opportunities for care coordination and alignment. Three options that best align with the region's data sharing goals are:

- Option 1** De-identified Regional Sharing
- Option 2** Identified Regional Sharing
- Option 3** Identified Regional Sharing with Client-level Care Coordination



## **Option 1** De-identified Regional Sharing

A De-identified Regional Sharing System would create a central system that each of the nine homeless systems of care could use, which would be a significant and positive step forward. It would allow each county to access comprehensive aggregate information about all clients served across the region. While no client-level data would be available (unless it is information from each county's own data), Option 1 would also provide all nine Bay Area counties anonymous regionwide data about individuals that could be used to identify patterns, practices, gaps, systemic issues, and other unintended consequences. The new HDIS underway at the State level will likely provide similar functionality to meet regional data sharing needs as envisioned under Option 1 at no additional cost to communities.

### OPERATING STRUCTURE

- Identified data are sent to a centralized operations or technical team from each community's HMIS. Identifiers are then removed from the database, enabling broad end-user access to de-identified data.

#### ✓ PROS

- No security and privacy concerns of accessing client-level personally identifiable information.
- Lower costs of system development and ongoing operations, limited user training.
- Potential to use State HDIS currently that will be developed by early spring 2021 and will be available at no additional cost to communities.

#### ✗ CONS

- Client-level by-name lists, care coordination, and cross-sector integration are not possible.

## Option 2 Identified Regional Sharing

An Identified Regional Sharing System would create a central system that would support both aggregate reporting and regional access to non-anonymous client-level data. System access can be limited either to a centralized regional technical team or permit limited access at the county level for a small number of individuals with security and privacy permissions in each system of care. These individuals would have access to client-level data of individuals served across the entire region, regardless of the counties where each client is receiving services, to facilitate system-level coordination. An alternative approach would also support access to de-identified or aggregated data for county-level staff and other stakeholders to deepen privacy protections.

### OPERATING STRUCTURE

- Identified data are sent to a centralized regional technical team. Client-level PII stays in the database after deduplication, which allows for deeper analytical functionalities. Access to the database can be limited to the technical team or provided to system-level staff with security authorization.
- A dual-interface approach would maintain two separate structures for analytical needs: a de-identified set of data for broad distribution and identifiable information for detailed data access such as client-level by-name lists.

#### ✓ PROS

- Access to identified data is limited to a small number of individuals with security and privacy permissions in each system of care or to the technical team.
- Access to identified data, while limited, can support robust regional, system, and program-level analysis and cross-jurisdictional coordination (e.g., of individuals who regularly receive services in multiple counties).
- Can be designed to support enhanced functionalities and access over time as regional needs change.

#### ✗ CONS

- Requires enhanced security and privacy controls to protect PII.
- Access to client-level data is not supported for direct service providers but must instead be coordinated at the regional or county system level.
- The dual-interface approach would require separate user interfaces, one for each of the two separate structures.

## Option 3 Identified Regional Sharing with Client-level Care Coordination

An Identified Regional Sharing System with Client-level Care Coordination would be the most robust for regionwide work and alignment of care for Bay Area residents experiencing homelessness. Similar to an open HMIS, a central system is shared by each of the nine homeless systems of care and their direct service providers to facilitate sharing of client care information to support coordination of service provision.

### OPERATING STRUCTURE

- Identified data are sent to a centralized technical team from each community's HMIS. Client-level PII stays in the database after deduplication, which allows for deeper analytical functionalities.
- Includes client-level data that allow users to view details about a client across all systems of care in the region.

#### ✓ PROS

- More individuals have access to client-level data, allowing for greater alignment and coordinated support for individual clients across the region.

#### ✗ CONS

- Requires the highest level of security and privacy protections to control PII.
- Requires additional training for a variety of user types.

### Regional Data Integration

As homelessness is a cross-sector issue, it is important to note that data from other sectors – such as health care, criminal justice, and education – could be built into any of the three options, which would enable a more complete understanding of the multiple sectors with which a client may interact. Combining data across sectors is complex because of the need to match users with different identifiers, which requires marrying different time periods, types of data, and, most importantly, privacy agreements.

## Regional Data Sharing Options and Functionalities

	<b>Option 1</b> Regional De-identified Sharing	<b>Option 2</b> Regional Identified Sharing	<b>Option 3</b> Regional Care Coordination
<b>What data is maintained in the system?</b>			
Client-level identifiers	Identifiers are removed after deduplication	Client identifiers are maintained in separate centralized system with limited role-based access	Client identifiers are maintained in central system with provider-level access
<b>What data comes out of the system?</b>			
De-identified data	Ability to analyze aggregate trends	Ability to analyze aggregate and client-level trends	Ability to analyze aggregate and client-level trends
Client-level identifiers	Ability to analyze at an aggregate level	Ability to analyze at an aggregate level	Ability to analyze client-level trends and coordinate care at service provider level
Demographics	Ability to analyze at an aggregate level	Ability to analyze at an aggregate level	Ability to analyze at an aggregate level
Regional program outcomes and mobility (inflows/outflows)	Ability to analyze in aggregate	Ability to analyze aggregate or client-level	Ability to analyze aggregate or client-level
<b>What are the capabilities of the system?</b>			
Understand the # of clients in more than one HMIS	Yes	Yes	Yes
Identify strengths and gaps in Bay Area responses to homelessness	Yes	Yes	Yes
Understand trends/patterns across homeless systems	Yes	Yes	Yes
Understand outcomes across homeless systems	Only as aggregated trends	Yes	Yes
Understand where clients are accessing services	Only as aggregated trends	Yes	Yes
Generate by-name lists of clients served across HMIS	No	Yes	Yes
Locate clients in different counties	No	Yes, by system staff	Yes, by system staff
View client information and coordinate care across HMIS	No	Yes, limited	Yes
<b>What are some community examples?</b>			
Maryland	Yes	n/a	n/a
Nevada	Yes	n/a	n/a
Clark County, NV	n/a	n/a	Yes
Boston, MA	Yes	Yes	Yes
Allegheny, PA	Yes	Yes	Yes

For a more detailed discussion of data access considerations and privacy implications, see sections VII (C) & (D) respectively.

### **DEFINITIONS:** Release of information (ROI)

An ROI is a consent form signed by clients that allows HMIS participating agencies to collect, use, and share their protected personal information.

### Institutional Review Board (IRB)

An IRB is an administrative body responsible for protecting the rights and welfare of human research subjects.

# 7. REQUIREMENTS OF A REGIONAL DATA SHARING SYSTEM

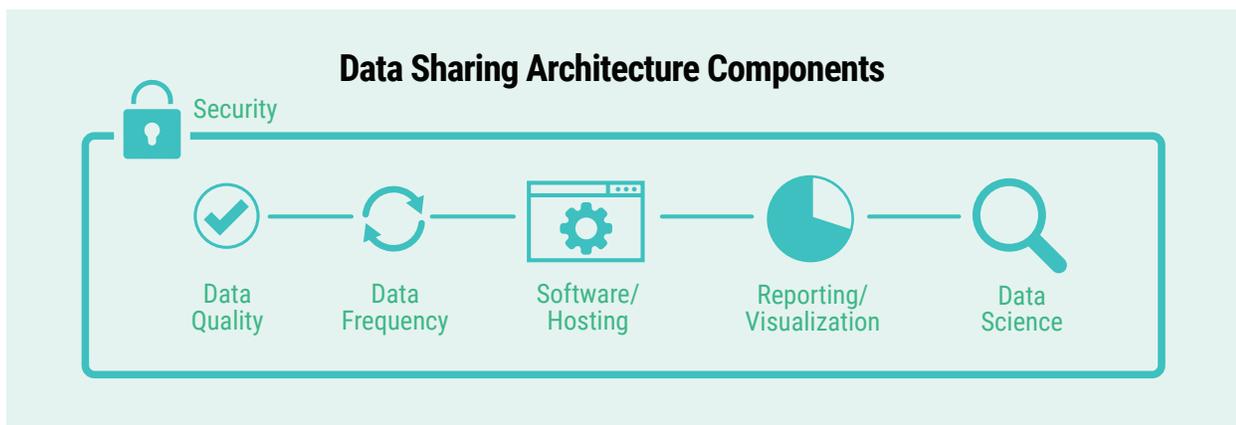
For any of the data sharing options outlined above, five core requirements will need to be addressed in order to establish a regional data sharing system:

- **Define the System Architecture**, including security, data quality, software and hosting, data frequency, reporting and visualization, and data science functionalities;
- **Select a Vendor** to build or implement a solution;
- **Establish Roles and Responsibilities**, including governance, operations, project management, system security, training, change management, and help desk/customer service, data engineering, data analysis, and end users;
- **Develop Privacy Protections**, including written agreements, consumer consent, notice, and policies and procedures; and
- **Identify Cost Drivers**, including number of systems of care integrated, data to be shared, and degree of data enrichment.

The complexity and implementation process for each of these steps will depend on the Option selected by Bay Area Regional Stakeholders. Decisions regarding the system's robustness and functionalities will impact a variety of factors including potential for leveraging the State HDIS currently in development, governance and privacy structures, and end-user processes.

## Define the System Architecture

Bringing data together across the region will create more powerful tools to understand the challenges and opportunities to address homelessness in the Bay Area. Regardless of the approach used to share data, there are several technical requirements to consider. The system architecture establishes the organization of the system, its structures, components, principles, and behavior. The graphics below outline the various components of system architecture with details for each below.



## Security

To safeguard data security, the system architecture must include tools and processes to restrict access to data, ensuring that the right data are available to the right people at the right time. Sharing sensitive data across different agencies and systems requires robust security across all elements of the data sharing spectrum. Key components of data security should include:

- **Two-factor authentication** requires use of both a password and another security measure, such as a text confirmation, before entry;
- **Role-based security** requires assigned roles – such as an administrator, manager or viewer – and each role is assigned different levels of access to data. For example, the system places strict limits on access for some users, such as viewers, and more expansive access for those responsible for the system, such as administrators;
- **Row-based security** protects confidentiality if PII is enabled in the system. Special permissions may be required on a row-by-row basis to ensure restricted access to sensitive data. A very limited number of individuals are provided row-based security; and
- **Auditing and Logging** requires maintaining logs of user access in order to monitor and audit adherence to data privacy rules.

## Data Quality and Alignment

To use and analyze data effectively, the data have to be properly captured and entered into HMIS. Quality can be improved through data entry training, front-end data entry masking controls, and internal business rules. The highest quality data in HMIS are typically found in the universal and core data elements mandated by HUD. Many systems of care also track custom data elements for other purposes, which may not meet the same level of consistency and quality as HUD-required data. Additionally, quality may be compromised when custom data elements in one system, even with the same name, may not contain the same data or usage as the other system. Thus, it is important to have a system that can map the differing elements and align them to conform to the underlying data structure.

## Software and Hosting

All systems will require some form of hosted software solution. There are a number of types of software solutions and tools to consider:

- **Proprietary software solutions** are owned and managed by a private entity requiring fees for software licensing and maintenance costs;

- **Open Source software solutions** do not require a fee for licensing the software, but some vendors may require a fee for maintenance support;
- **On premise vs. “in the cloud”** defines how the system is installed. The system either is installed “on-premise” (on a physical server on site, sometimes known as “on-prem”) or hosted “in the cloud” (software and servers that run on the internet). Most modern systems are hosted in the cloud, providing flexibility, high performance, high security and lower costs to maintain. Both solutions can provide appropriate security for sensitive PII;
- **Hosting vendors** are businesses that provide the technology that enables the system to be hosted “in the cloud,” such as Amazon Web Services or Microsoft Azure. The choice of a hosting vendor often closely ties to the choice of the software vendor supporting the system; and
- **Reporting software solutions** provide tools and software that enable the system to perform detailed analytics. Different vendors will have relationships with different reporting tools and software. The system architecture should be designed with the ability to connect a variety of different solutions to the underlying data to enable long-term analytic flexibility.

## Data Frequency

Data frequency is the time cadence by which data are transferred from source systems to a shared environment. Different analyses and business challenges will require different cadences. Many existing HMIS reporting solutions migrate data on a monthly basis. Frequency of data movement may impact solutions chosen, as the more frequent the movement required, generally the more expensive the solution.

- **Real-time** means the moment data are entered in HMIS, they are available in downstream systems for analysis. Real-time solutions are the most expensive to architect, host and maintain. True real-time solutions are rare in some industries, as few use cases require instant notification. For some public benefit programs, however, real-time data processing is used to help ensure people obtain the benefits they are eligible for. For example, in some states, real-time data processing is used to check income eligibility for Medicaid; and
- **Batch processing** is the process of moving a batch of data all at once on a periodic basis (e.g., daily, weekly or monthly). Many analytical needs can be met through batch processing solutions. The frequency of batch processing often depends on how frequently data are entered in the system. In some agencies, data are first written down on paper (for example, an application form), then entered by-hand into the HMIS on a weekly basis. If there is no effort to enter data more frequently, it doesn't make sense to move data between systems more frequently.

Agencies may be incentivized to increase the frequency of their batch processing when they are able to see the downstream uses of data.

## Reporting and Visualization

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There are tools and processes to extract data from systems for analysis and display. Tools that enable the use of visualizations are very popular, led by innovative companies such as Tableau, Power BI, Qlik, and other open source solutions.

- **Standard reports** are available right “out of the box” from most software solutions, with predesigned reports that cover the most ordinary reporting needs. Standard reports are designed and developed for the lowest common denominator to cover the basic reports that many customers will be able to use;
- **Custom reports** provide the technology and tools to address unique analytical questions. When sharing data across the system, new needs and questions will arise, therefore different tools and capabilities will be needed. Custom reports often require highly skilled technical resources to design and build customized solutions. The customization can happen within the organization through IT support, from a vendor, or from a third-party consultant; and
- **Self-service access** allows data analysts to build analytic solutions on their own without requiring help from IT. While not as common in the public sector, many analysts in non-IT groups have deep technical skills and are able to perform analytics without the need of IT interventions or third-party vendors.

## Data Science

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Moving beyond simple reporting and visualization, data science is the process of developing predictions and correlations requiring specialized skills and tools. The public sector is just beginning to understand its capabilities in machine learning and artificial intelligence. However, academic researchers use a variety of sophisticated tools and techniques to analyze data, including languages, such as R and Python, which can identify new and unknown trends in data. Planning for data science ensures systems have the security protocols, staffing goals, and funding mechanisms in place to capitalize on technology improvements over time.

## Select a Vendor

Developing a data sharing solution requires the use of a vendor to build or implement the solution. With California as one of the world's most advanced technology centers, there are many vendor options to choose from. The table below outlines key questions to raise in the request for proposal (RFP) process. The table includes the following features:

- Key groups of questions by **subject** area;
- **Details** of questions to be asked;
- Information about **why ask** a question; and
- The **priority** of the answers a vendor will provide, which will help inform the ultimate weighting of the responses:
  - **Low** – good to have but can be achieved in a variety of ways;
  - **Medium** – information that may vary by vendor and can be mitigated in different ways based on the solution options chosen; or
  - **High** – the “must haves” that will drive success of the overall solution and therefore must be considered carefully.

Subject	Detail	Why ask?	Priority
<b>Bay Area Experience</b>	Experience working in Bay Area systems (current or past)?	Assess whether vendor has knowledge of local challenges	Low
<b>HMIS Experience</b>	HMIS vendor or integration of HMIS data experience	Understand HUD role and changes	High
<b>Security Controls</b>	Describe security model	Ensure ability to protect PII	High
	Does system utilize row-based security?	Ability to do client-based analysis, control client level integration	Medium
	Is solution HIPAA <sup>17</sup> and PII certified?	Overall solution security	High
<b>Software License Cost</b>	What are the actual software costs?	Planning and budgeting	Medium
	What are the one-time implementation costs?	Understand one-time implementation costs	Medium
	What are the ongoing maintenance costs?	Understand ongoing costs	Medium
<b>Data Extract Transform and Load (ETL) Capability</b>	Describe ETL processes and tools used?	Planning for expertise required	Medium
<b>Cross-Sector</b>	Ability to connect to external data?	Planning for cross-sector integration	Medium
<b>Data Latency</b>	How frequently are data updated? Does system support daily uploading?	Impact on analytical capabilities; more frequent updates may increase impact in long term	High

<sup>17</sup> For more information on HIPAA and other privacy protections, See Section VII (D).

Subject	Detail	Why ask?	Priority
<b>Data Model</b>	Does system have an integrated HMIS data model?	Knowledge of HMIS system integration; ability to integrate quickly	High
	Does the data model accommodate custom HMIS fields?	Ability to increase capability of local custom data elements	Medium
	Does the data model accommodate integration of non-HMIS data?	Ability to enable cross-sector data	Medium
	Does the data model have separate schemas for identified and de-identified data?	Limits ability for users to access identified data if unable based on role-based security	High
<b>Hosting</b>	What vendor provides hosting for the solution? If applicable, why was that hosting solution selected?	Ensure robust hosting and experience	Medium
	Does hosting vendor support HIPAA and PII security standards	Ensure secure access	High
<b>Human Centered Design</b>	Has the vendor conducted any user testing of its tools?	Ensure that the vendor has a practice of considering user input in the design of their products	High
	Did the vendor use human-centered design practices when developing the specific product being considered?	Ensure that the design and functionality of the product under consideration is user-friendly for all types of users who will engage with the system	Medium
	Does the vendor regularly and systematically seek feedback from users even after the product is on the market	Ensure that the vendor considers user experience over the lifetime of the product	Low
<b>Reporting Capability</b>	What reporting tools are included?	Reporting capability	Medium
	Does the system include prebuilt exportable reports and metrics?	Reduces development time for new metrics	Medium
	Is the system compatible with other reporting tools (e.g., Tableau, PowerBI)	Ensure ability to access data for variety of ad hoc reporting needs	High
	Does the system support geographic and mapping capability?	Ability to map clients or solutions for increased capability	High
<b>Licensing Type</b>	Is the solution proposed open source, licensed software or custom development?	Impact on ownership and risk of successful completion	Medium
<b>Staffing for Reporting and Help Desk</b>	Is support provided by vendor or does support need to be developed independently?	Vendor provided support reduces operational needs of the data sharing organization; useful for organizational planning	Medium

## Establish Roles and Responsibilities

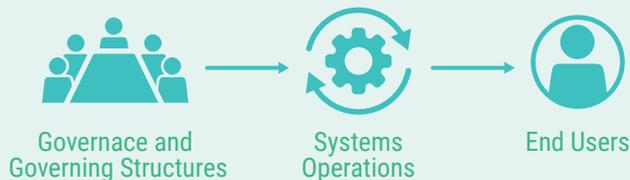
The data sharing system will not be possible without people and structures in place to guide implementation. Aligned to the data sharing framework, there are several key roles required for success. Among these are:

 **Governance and governing structures**, which provide systemwide oversight and leadership to regulate the system;

 **Systems operations**, with dedicated staffing to ensure the system is functioning as intended and responding to the needs of its stakeholders; and

 **End users**, including planners, agency staff, and partner organizations.

### Data Sharing Roles and Responsibilities



## Governance

Robust data governance is key to long-term success of any data initiative. A well-defined and managed system with proper data governance can help ensure alignment, minimize risk, promote compliance, guide data use, and guarantee oversight of the operations of the data system. It also can help organizations better understand their role in the use of data and ensure that the unique needs of security, privacy, and consistency are adhered to throughout the system.

Planning for regional data sharing will require systemwide leadership and administration. A regional system needs buy-in, self-determination, and clear agreements to collaborate. Establishment of a cross-functional data governance group can help drive accountability for systemwide data needs and prioritization for investments across the system. The group can require participation from stakeholders to ensure both systemwide alignment and commitments that everyone is working toward a consistent vision.

The optimal governance structure is inclusive, with membership of governing bodies comprised of select community leaders and including significant representation of people with lived experience of homelessness, with non-representative and independent boards providing oversight or serving in an advisory capacity. Additionally, the governance structure needs administrative offices and staff who carry out the day-to-day tasks of running the data system. The following are a list of important functions and responsibilities that can be assumed by these types of governing bodies.

The development and operation of a regional data sharing system calls for substantial leadership and input from people with lived experience of homelessness in the Bay Area. From the implementation of data privacy protections to the development of a regional approach to data-informed decision making, unhoused and formerly unhoused people are the stakeholders most directly affected by a regionwide data system. People with lived experience of homelessness should be included in all decision-making and oversight components of the governance structure.

## Regional Data Sharing Governing Responsibilities

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### Systemwide Oversight and Leadership

- Primary decision-making body that manages membership, financial contributions, vendors, training and technical assistance contracts;
  - Provides final approval for data system use;
  - Directs the future development of regional data sharing.
- 

### Vendor Oversight

- Provides oversight and accountability of the vendor
  - Arbitrates grievances between members and vendor.
- 

### Policy and Privacy Oversight

- Proposes, amends, and adopts government charters and policy and procedures documents, as needed.
  - Ensures that privacy requirements are being met by the system;
  - Addresses privacy concerns raised by members.
- 

### Diversity, Equity & Inclusion Oversight

- Oversees the integration of an equity lens to the collection and analysis of system data.
- Carries responsibility for ensuring fair and just communication around data sharing and reporting.
- Promotes diversity, equity, and inclusion in recruiting member organizations and participants to other governance bodies.

Note: Can be independent or incorporated into the framework of the governing structure.

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### Ethics, Research and Data Requests

- Oversees and approves all research proposals and activities using data from the system.
  - Fields routine requests for data.
- 

### Operational Oversight

- Provides oversight to the “technical team” or department that operates day to day activities
  - Provides support to system users and trains new users.
  - Hires and oversees Regional Data System Manager.
  - Determines other necessary staff (e.g., Director, managers, analysts, training coordinators, help desk employees, etc.). The need for additional staff is dependent on the scope of data sharing and the contract with the vendor.
- 

### Community and Stakeholder Relations and Outreach

- Engages key community stakeholders, including persons with lived experience, HMIS Lead Agencies, large shelter programs, etc.,
  - Communicates directly with county managers and Boards, Mayors and City Council members, funders, and community organizations.
  - Facilitates, as needed, Advisory Councils.
  - Recruits non-voting community members on governing committees to incorporate the voice of key stakeholders from around the region.
- 

### Public Relations

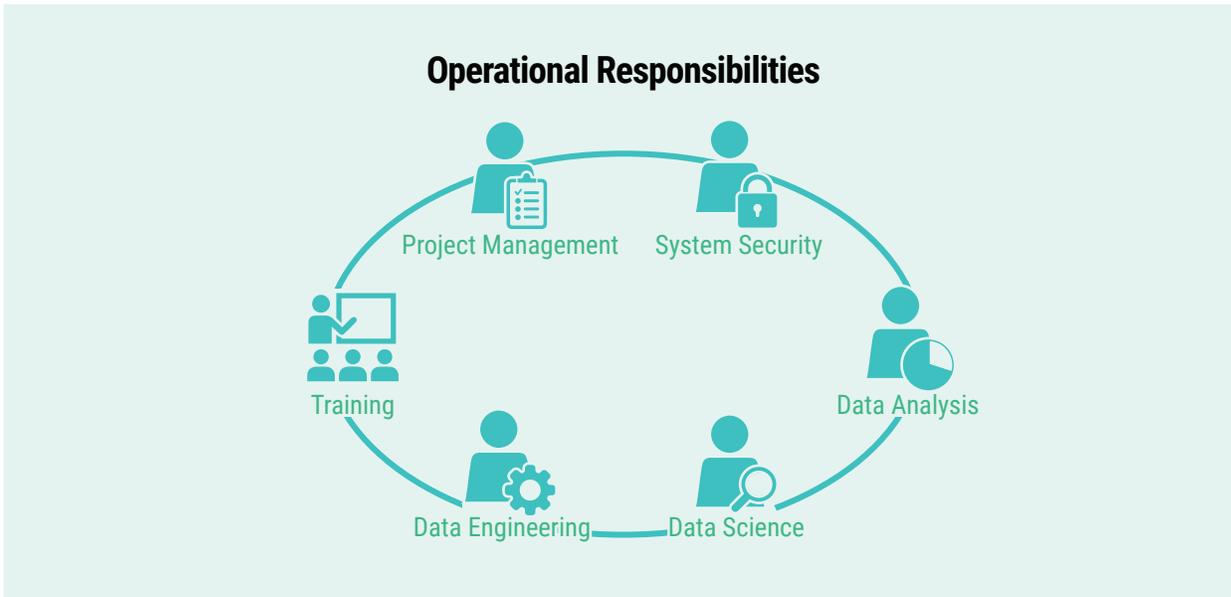
- Manages outward-facing communications with regard to reports, media, and public engagements.
  - Decides whether to create outward-facing dashboards or other public relations materials/tools to communicate to the public what is being done to address the crisis of homelessness.
- 

For an example governing framework, see Appendix B.

## Operations

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In addition to the governance needed to sustain partnerships and promote effective cross-jurisdictional planning, investment in operations is vital to the usability and functionality of the system. As identified in the governance structure above, operations can be supported by a “Technical Team,” led by a Regional Data Administrator. While the technical team can take many forms, there are some key roles and responsibilities that a new regional system should consider.



## Operational Responsibilities

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### Project Management

- Ensures all stakeholders are working toward the same goals on time, on budget, and matching the scope and quality desired by the community.
- 

### System Security

- Ensures that the system remains secure at the technical level.
- Works closely with the legal, privacy, and data engineering teams to ensure only authorized personnel access data.
- Makes sure role-based and row-based security rules are adhered to.

Note: Does not require a full-time position, as once systems are set up and rules/standards are in place, the responsibilities can be accomplished through audits and reviews.

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### Change Management/ Training/ Help Desk

- Provides ongoing training and help desk functions to ensure users maximize use of the system.
  - Offers help desk support for simple data questions, data quality research, logins/password resets, and other technical assistance.
- 

### Data Engineering

- Transports data between the different systems.
- Applies business rules and transformations.
- Updates system with any changes in HUD Data Standards.

Skills required: Database administration, SQL, ETL, system administration and security expertise.

Note: In some instances, the role can be held by a vendor, but in others, it may be more fruitful to have internal staff.

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### Data Analysis

- Produces reports and visualizations.
- Translates functional requirements into technical code.
- Creates reports for analysis.

Skills required include facility in programs such as SQL, Tableau, PowerBI, Excel, R, SAS, or other data reporting tools.

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### Data Science

- Provides answers to questions that may not be initially known.
- Utilizes capabilities such as machine learning and artificial intelligence to predict changes in ways not yet identified.

Skills required: Fluency in programs such as R, Python, SQL and other tools.

Note: In the human services sector, data scientists can be academic researchers, research foundations, and/or universities focused on the social sciences.

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In some cases, one person may be able to take on multiple roles.

## End Users

End users are the individuals who will access the regional data sharing system and its data. Different end user roles will need different levels of access. Similarly, different roles within an organization or government will likely have differing data needs. It is important that the level of access is granted only with a corresponding legitimate and specific need for the data, especially where personally identifiable information (PII) or protected health information (PHI) are shared (for a better understanding of PHI, see section VII (D)(5) below). Levels of access may range from access to de-identified public facing dashboards to universal access at the central administrative level. For each role, the total population for which data are available may vary. While authorized users at the central level may have access to all data, data access could be restricted for other roles (e.g., a case manager might have role-based access only to identified regional data for the clients they engage and have ROIs from).

### Potential End User Roles

#### **Regional Administrator/ Technical Team**

- Conducts operations.
- Provides technical support and assistance to all end users.
- Controls permissions for access of other end users.

#### **Local and Regional Planning Bodies**

- Monitors and evaluates the impact of recipient programs across different sectors.
- Identifies gaps and overlaps in the homeless services system.
- Coordinates regional plans to mobilize resources.
- Determines how best to allocate public resources.

Note: Access to data can be limited to de-identified information.

#### **Funder**

- Monitors and evaluates the impact of recipient programs across different sectors.
- Determines how best to allocate private resources.

Note: Access to data can be limited to de-identified information.

#### **Local Government**

- Monitors and evaluates the impact of recipient programs across different sectors.
- Determines how best to allocate public resources.

#### **Communications/ Marketing**

- Shares data analyses with decision makers.
- Communicates with general public about the use of resources and how communities are addressing homelessness

#### **Project/Program Manager within a CoC**

- Oversees care coordination.
- Conducts project / program monitoring and evaluation.

#### **Frontline Staff/ Service Provider**

- Provides care coordination.
- Undertakes historical case review.
- Reviews data to connect/collaborate with other service providers.

#### **Researcher**

- Analyzes data.
- Undertakes research.
- Evaluates data and/or programs.
- Publishes findings.
- Conducts surveys, focus groups, or other user experience testing.

#### **Outside Sectors**

- Matches administrative data.

## Develop Privacy Protections

Protecting the privacy of consumer data is an important part of any data sharing system. Best practices require that data systems have various components to ensure protection and autonomy of consumers. The same security and consent frameworks that allow partner agencies within a homeless system of care to share protected information will also facilitate the sharing of information in a regional system and effectively ensure that consumer data are protected.

To protect consumer privacy, a shared regional system will include the following components:

- **Written agreements** between parties sharing data;
- **Consumer consent**, as required by applicable laws;
- **Notice to consumers regarding** how their information will be shared; and
- **Policies and procedures** to safeguard protected consumer information.

Implementation and utilization of these components can ensure consumers understand how their information will be shared, that personal information will be protected, and that the regional system complies with applicable laws.

### Applicable Law and Recommended Practices

Federal and state laws governing HMIS data, consumer personally identifiable information (PII), and protected health information (PHI), collectively “protected information,” guide compliance requirements and recommended practices to protect consumer privacy.

The primary federal law governing HMIS administration, the 2004 HMIS Data and Technical Standards, provides the foundation for sharing HMIS data, which permits disclosure of data among agencies for coordination of services and creating de-identified data. The Standards mandate that protected information is collected by lawful and fair means with the knowledge or consent of the individual. Consumer consent is typically granted through an ROI that, when signed, allows protected information to be entered into the local HMIS and shared with partner agencies.

Other federal and state laws also apply to the sharing of personal data contained in the HMIS See below for a quick view of the privacy laws implicated in a shared regional system and Appendix C for a more comprehensive overview and analysis.

### Overview of Applicable Privacy Laws

Applicable Law	Type of Data Protected	Federal or California Law
2004 Data and Technical Standards Notice, Section 4 (HMIS Privacy and Security Standards or Standards)	HMIS Data	Federal
The Health Insurance Portability and Accountability Act, 45 CFR Parts 160, 162, and 164 (HIPAA)	Protected Health Information	Federal
The Health Information Technology for Economic and Clinical Health Act (HITECH Act)	Protected Health Information	Federal
42 CFR Part 2	Substance Abuse Treatment Information	Federal
The Confidentiality of Medical Information Act (CMIA)	Protected Health Information	California
The Lanterman-Petris-Short Act (LPS)	Mental Health Records	California
California Health and Safety Code §1280.15	Protected Health Information	California

## Written Agreements - Between Parties Sharing Data

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Two written agreements between parties are required in order to collect and process HMIS data in a shared regional system: *Data Use Agreements and Authorized User Agreements*.

### **Data Use Agreements (DUA)**

A data use agreement (DUA) is established between the regional system and participating HMIS Lead agencies, who will be providing data to the shared regional system. DUAs will also be needed between the regional system and any partner agency participating in the regional system who will have access to and view the data of authorized users. A DUA will establish the responsibilities of each party and the necessary obligations to comply with applicable laws.

A DUA should:

- Outline the legal and practical responsibilities of each party accessing or viewing the data and establish agreed-upon security protocols;
- Certify that no HMIS data shared by partner agencies with a shared regional system will include Victim Service Provider (VSP) data;<sup>18</sup>
- Identify applicable laws and policies that each party must follow to ensure compliance; and
- Require compliance with any necessary safeguards to protect data.

### **Authorized User Agreements (AUA)**

An authorized user agreement (AUA) is between the regional system and any individuals from partner agencies that will be accessing the system. An authorized user agreement should be signed by any staff member who will be viewing protected information in the shared system.

An AUA should include the following:

- An articulation of the responsibilities of each authorized user, including the protection of consumer information and compliance with the shared regional system's security protocols;
- Prohibition of the use of consumer information to discriminate against consumers in any manner; and
- Agreements to participate in required trainings on the safeguarding of consumer information and to comply with all necessary safeguards.

Inclusion of these provisions will ensure that all users are in compliance with the applicable provisions of HIPAA, the CMIA, and LPS Act.

## Consent to Share HMIS Information

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Informing individuals of how their information will be used and documenting their consent to share that information is essential to preserving the privacy of persons experiencing homelessness.

Informed consent is typically required by each local homeless system of care to allow a partner agency to upload, view, or access a consumer's protected information. Most, if not all, of the nine Bay Area counties have adopted local policies that consumer information can only be collected in HMIS and shared with other partner agencies when the consumer authorizes that in an ROI. To adopt a regional data sharing system, it is recommended that partner agencies include language in their ROIs that explicitly authorizes consumer information to be shared with the regional system.

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<sup>18</sup> Per the HMIS Standards, VSPs are prohibited from entering client-level data into the local HMIS under standard privacy and security standards. As such, no HMIS data collected by a shared regional should include VSP data.

### Sample additional language for a regional ROI:

I authorize that the personally identifiable information I provide may be collected and processed in the Regional Data Sharing System (RDSS) and viewed by persons certified as Authorized Users from Partner Agencies and Continuums of Care (CoC) listed here: *INSERT WEBLINK*.<sup>19</sup> I understand that sharing my information with the RDSS will help coordinate services that may benefit me. However, if I choose not to share my information with the RDSS, I will not be denied or refused any services. I agree that my consent, unless revoked, authorizes the RDSS to keep and process my data for up to 10 years after the RDSS concludes that I no longer receive services from partner agencies in the *INSERT CoC NAME*.

Alternatively, a separate ROI amendment can be implemented and signed along with the homeless system of care's existing ROI. Regardless, in either option, once the language is signed by a consumer, they have been notified of how their personal data will be shared and will have directly authorized the regional data sharing of their information.

## Consent Required to Share Protected Health Information (PHI)

Protected health information (PHI) requires a higher level of privacy protections than other personal information. In California, PHI is protected under the Health Insurance Portability and Accountability Act (HIPAA), the HITECH Act, and the California Medical Information Act (CMIA). HIPAA permits collection of PHI with consumer consent.<sup>20</sup> Once consent is obtained, those entities collecting PHI (called "covered entities") may use and disclose patient data in accordance with the terms of the consent.

Covered entities usually procure consumer consent to share PHI with their local HMIS. To extend those consents to authorize data sharing with a regional system, consent forms will need to include explicit authorization from the consumer permitting the covered entity to release PHI to their local HMIS and the regional data system, its administrators, contractors and employees and any authorized users of the regional system. Covered entities may also use their own health privacy consent forms that are compliant with applicable rules and submit it to the shared regional system.

### Note Regarding 42 CFR Part 2 Covered Information:

Some partner agencies who hold themselves out as providing diagnosis, treatment, or referral for treatment for a substance use disorder are restricted by 42 CFR Part 2, which holds a higher privacy standard for information relating to the identity, diagnosis, prognosis, or treatment of any patient. This likely affects only a small number of providers as these limitations likely restrict the participation of Part 2 entities in local HMIS systems. Homeless service providers that provide referral for substance use disorder treatment as an incidental service or as one primary function of many are typically not deemed covered by 42 CFR Part 2. Please see Appendix C for additional analysis.

### California Health & Safety Code §11845.5.

Under this special California law, a patient's identity and records from an alcohol and other drug abuse treatment or prevention effort conducted, regulated, or directly or indirectly assisted by the California State Department of Alcohol and Drug Programs are confidential and highly protected pieces of health information. The rule likely only applies to a small subset of providers that contribute to HMIS. However, it may be in the best interest of the statewide data sharing effort to exclude from participation alcohol or drug abuse treatment providers that are directly or indirectly assisted by the Department.

<sup>19</sup> The shared regional system will maintain a central web address that lists all current partner agencies and authorized users of the system.

<sup>20</sup> Please see Appendix C for full analysis.

## Notice to Consumers

Many of the applicable privacy laws require that a consumer receive adequate notice regarding the use of their protected information. Adequate notice serves to empower people experiencing homelessness to make decisions about the use of their own personal information and preserve consumer autonomy. All nine Bay Area homeless systems of care currently provide or post HMIS-required privacy notices for consumer review. The notices include descriptions of the reasons for collecting HMIS information.

Under HMIS Standards, consent to share data may be inferred for uses and disclosures determined by the covered partner agencies to be compatible with the uses specified in the notice. Because sharing data across homeless systems of care facilitates a consumer's provision of services or referrals to meet their needs, providing consumer data through a regional system likely is compatible with purposes identified in the existing HMIS privacy notices.

### Bay Area Notice Review:

As of May 2020, the HMIS privacy notices from each Bay Area CoC included language that allows for the sharing of information to facilitate a consumer's provision of services or referral to services that meet their needs.

Partner agencies that are HIPAA-covered are also responsible for providing notice. All 9 Bay Area homeless systems of care are already providing such notices to consumers when required.

By continuing to require and monitor consumer provision of notices already being provided by partner agencies, a shared regional system can ensure that consumers are provided adequate, legally required notice.

## Policies and Procedures

Policies and procedures of organizations and systems must explicitly mandate the protection and safeguarding of consumer data. Each homeless system of care has its own set of policies and procedures, many of which include mandates regarding the necessary safeguards and security policies required to protect consumer information and abide by applicable privacy laws.

If adopted by a regional data sharing system, the DUA and AUA will require each partner agency and authorized user to comply with the regional data sharing system's security policies, which should include best practice security measures (see above) and language mandated by applicable privacy laws. A regional data sharing system should also regularly monitor for compliance to assess whether all partner agencies are properly following the required policies.

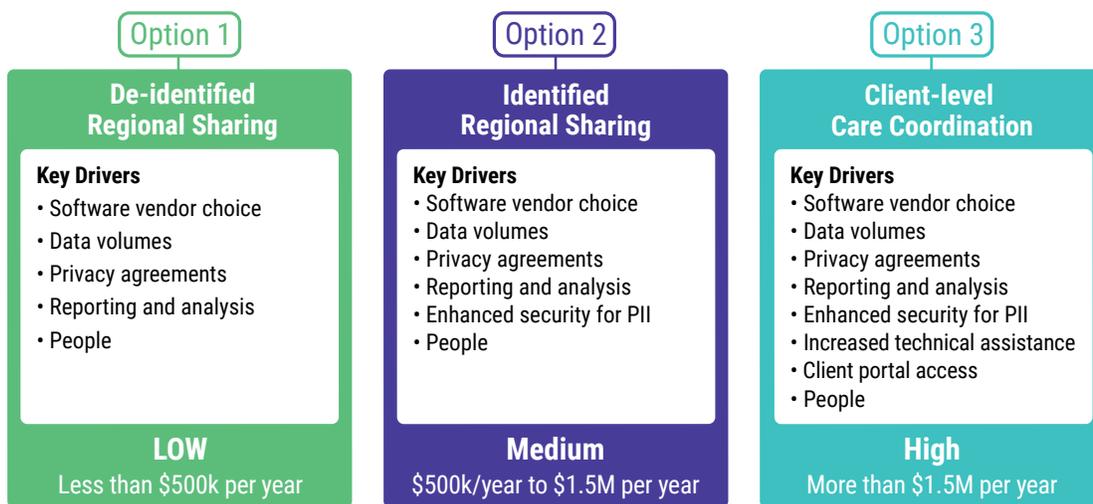


## Costs

The costs of the system will be contingent on the scope and solutions being incorporated into the system. Several key drivers impact the costs of a data sharing system, including two primary ones:

- **Data sharing functionalities.** Costs vary based on the complexity of the data sharing system’s selected features, users, and data enrichment options; and
- **Number of systems of care that will be sharing data.** As more systems are included in the solution, the costs of integrating increase.
- **Leveraging State HDIS.** It may be possible to leverage the infrastructure of the statewide HDIS to support RDSS goals, including to provide the de-identified data sharing functionalities described in Option 1 at no additional cost to communities.

### Data Sharing Cost Drivers



Examples and details throughout the Framework address each of the components of the data sharing spectrum. Based on research and consideration of needs, we have outlined three key options to illustrate potential cost analyses. Different components can be chosen through an RFP process to determine the proper level of capability and costs required for implementation. The costs outlined are broad estimates based on experience, industry research, and some initial vendor conversations.

There are two main cost categories to consider:

- One-time start-up costs for creating a new system and ongoing support costs; and
- Ongoing costs of operations.

### One-time Costs of Creating System

One-time costs cover the resources needed to set-up the system and build a technical team. Examples of these costs would include:

- **Legal/privacy fees** (required for setting up privacy agreements between systems of care);
- **Software implementation** fees that enable the sharing of data, depending upon the option chosen (For example, open source solutions may not have licensing fees but require time and resources to integrate data feeds and set up user roles and reporting, whereas a custom developed solution would require extensive set-up fees, and a hybrid solution will fall in the middle); and
- **Training/change management**, which includes staff needed to train users, as well as the change management and training needs to ensure an integrated solution is not differentiated from the use of existing tools like HMIS.

## Ongoing Costs of Operating System

Once the system is set-up, there will be ongoing operational costs. Examples of ongoing costs include:

- **Software licenses**, which can range depending on the software (e.g., products like Clarity have higher costs, while open source tools will be free but require set-up consulting fees);
- **Hosting** data and software that enables the system to be hosted on a cloud infrastructure; and
- **Technical team salaries** of approximately 2 to 6 people (depending on the option chosen and the timeline to hire and ramp-up).

	<b>Option 1</b> Regional De-identified Sharing	<b>Option 2</b> Regional Identified Sharing	<b>Option 3</b> Regional Care Coordination
<b>Estimated Costs</b>	Less than \$500k/year	\$500k to \$1.5M/year	More than \$1.5M/year
<b>Cost Drivers</b>	Ability to analyze aggregate trends	Ability to analyze aggregate and client-level trends	Ability to analyze aggregate and client-level trends
<b>Client-level identifiers</b>	<ul style="list-style-type: none"> <li>• Changes in existing software licenses</li> <li>• Increased technical assistance</li> <li>• New reporting capabilities</li> <li>• Privacy agreements</li> </ul>	<ul style="list-style-type: none"> <li>• Software vendor selection</li> <li>• Data volume increases that impact hosting costs</li> <li>• Additional privacy agreements for identified data</li> <li>• Enhanced reporting and analysis requirements</li> <li>• People to provide technical development and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Additional software capabilities</li> <li>• Enhanced privacy agreements with external systems</li> <li>• Additional people for development and reporting</li> <li>• Increased technical assistance and change management</li> </ul>

# 8. ROADMAP FOR CREATING A REGIONAL SYSTEM

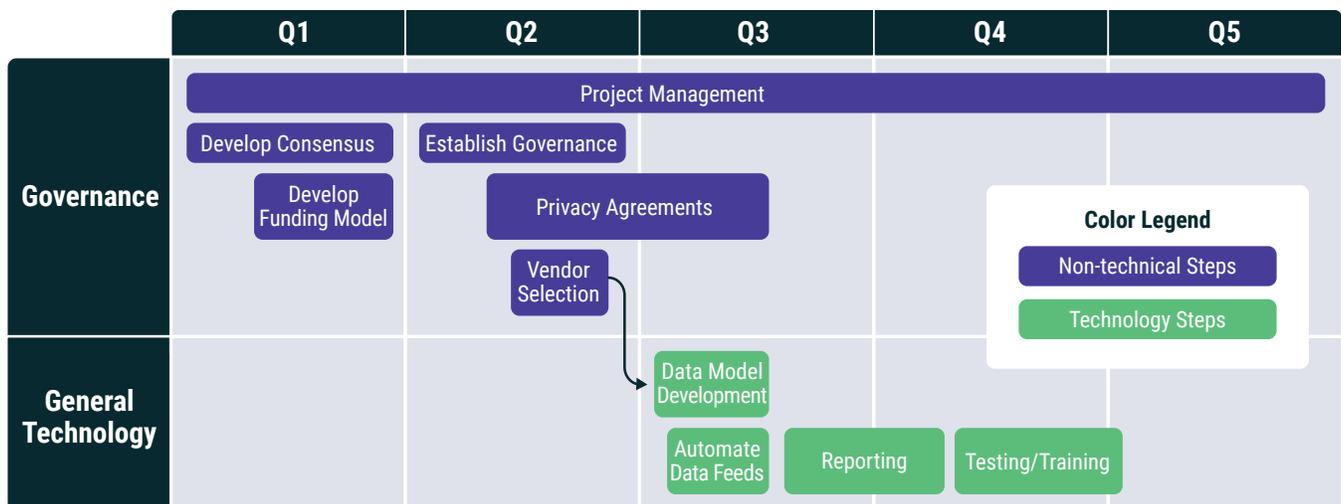
Developing a shared Bay Area regionwide data environment will be complex and require many distinct phases of activity. The roadmap below outlines the steps required to build-out a data sharing system in the Bay Area. The timeline is an estimate of duration based on quarters. The sections include:

- **Governance** – The purple boxes show a high-level view of key non-technical steps required to establish data sharing capabilities; and
- **General Technology** – The green boxes illustrate the key technical steps required to build out the technical capabilities.

Through research and planning, there are three additional models to consider, which will impact the project timeline:

- **Out-of-the-box model:** Some vendors may have products that include all the capabilities desired with limited need for additional development. Under this model, the technical steps can be faster than the other models;
- **Hybrid model:** Some vendors may have some capabilities already developed that will then require some level of modification to complete. The timeline will be longer than an out-of-the-box model; and
- **Custom model:** Vendors will offer software that requires development of all of the capabilities from scratch. Many system integrators have the capabilities to build a solution that meets all of the community’s requirements. They will often take longer to design and develop and be more expensive than the out-of-the-box or hybrid options.

## Bay Area Regional Data Sharing Roadmap

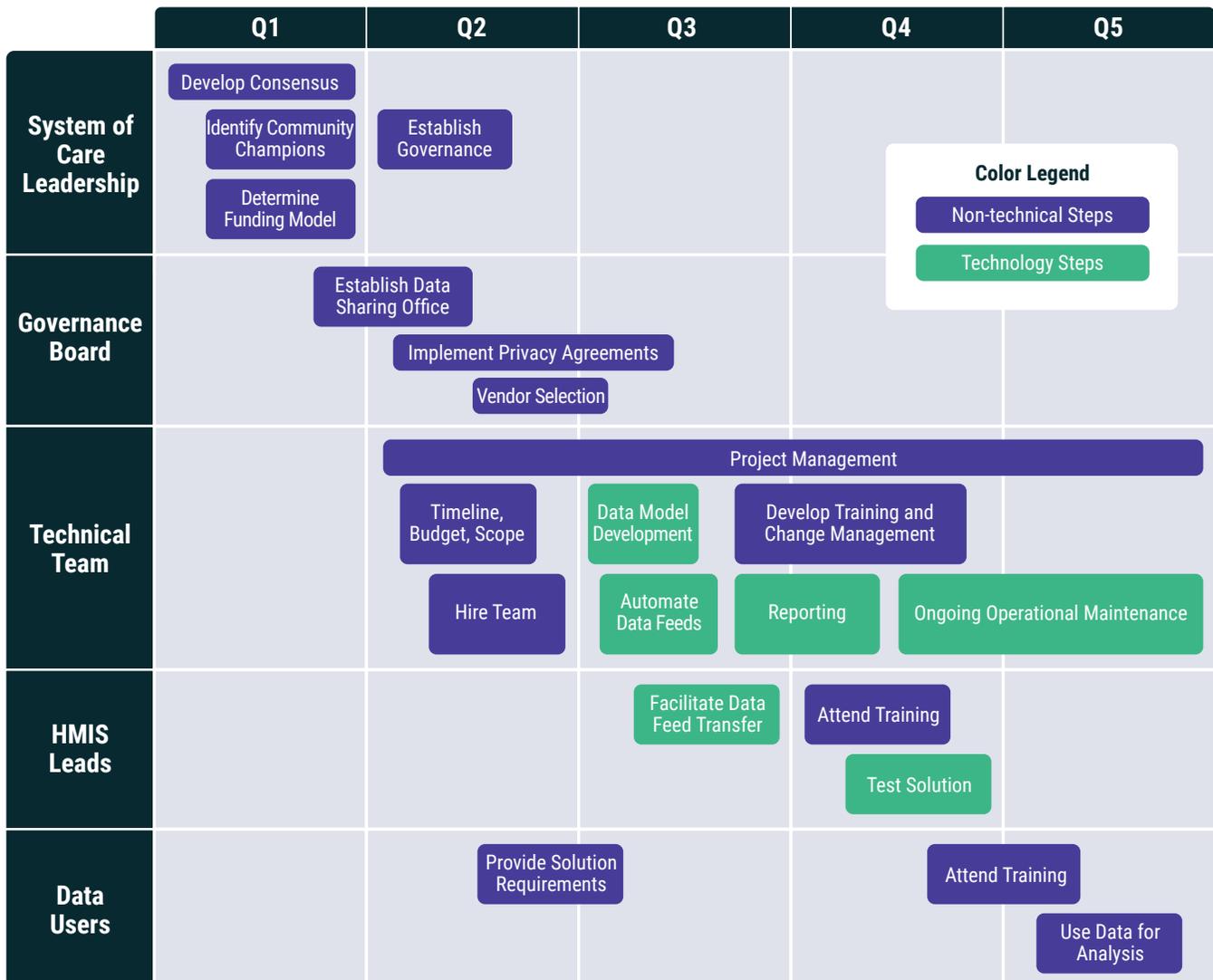


The roadmap chart below is broken out into distinct activities based on different roles across the community including:

- **System of Care Leadership**, which include the political leaders of each system of care;
- **Governance Board**, which includes individual leaders from each system of care who govern the overall data sharing capabilities;
- **Technical Team**, which is responsible for implementing and managing the development and maintenance of data sharing;
- **HMIS Leads** are the technical leads from each system of care who interact with data on a daily basis; and
- **Data Users** represent a select group of various consumers of data, including system of care leadership, researchers, and case managers, depending on the data need.

Highlighted below in the roadmap are the key implementation steps for each role with detailed explanations that follow:

### Bay Area Regional Data Sharing Roadmap by Key Roles



## Key Role Responsibilities

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### System Leadership

- Builds community support so that all systems of care agree on the functional goals for data sharing, including the types of data to collect, functional reporting goals, governance structures, privacy, security and financing requirements.
- Identifies community champion/s responsible for championing the solution in the region; those who will help overcome objections and provide requirements and feedback for the system.
- Determines funding model, including the expectations for participation and financial responsibility.
- Establishes a centralized governance structure, the Governance Board, to take on oversight of the solution and ultimately establish an office of data sharing.
- Ensures meaningful participation by people with lived experience of homelessness in system design and decision-making.

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### Governance Board

- Establishes Office of Data Sharing to run the day-to-day operations of the regionwide data sharing. The staff will be accountable to the Governance Board.
- Hires a Director who will be accountable to the Board and responsible for hiring the rest of the Technical team.
- Establishes privacy agreements across systems of care and memoranda of understanding between each homeless system of care and the centralized Governance Board.
- Determines the format for new ROIs for client-level data.
- Selects primary vendor/s who will deliver a solution once a governance structure is in place.
- Includes membership with lived experience of homelessness.

Note: Vendor selection and privacy agreements can proceed in parallel.

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### Technical Team

- Undertakes project management to ensure all of the pieces come together, with action items captured and risks mitigated.
- Establishes timeline and budgets.
- Hires the full technical team needed to implement the solution.
- Develops training and change management protocols to ensure users understand the data capabilities and can best utilize and drive adoption of the solution.
- Establishes technical phases. In general, there are key areas to be built-out, regardless of the vendor chosen. The roadmap above combines certain functions into logic boxes that will be expanded when a vendor is chosen.
  - Develops data model: Builds and deploys both identified and de-identified data warehouse structures aligned to HUD universal and core data elements.
  - Automates data feeds: Sets up data to automatically flow from each homeless system of care into the shared data warehouse. Will need to address: timely flow of data (e.g., Monthly, Weekly, Daily); how historical updates of data are integrated; and security controls to ensure access limited to only those roles and people who have been specifically chosen and vetted by the Governance Board.
  - Defines reporting capabilities: Depending on the solution chosen, will need to define and implement reports and processes to give end users access to the integrated shared data. The best starting point will be to provide access to de-identified data for broad system planning to understand utilization across the region and enable site selection, resource utilization, data quality, and other core needs.
  - Maintains ongoing operational maintenance: Once the system is live, the technical team will maintain day-to-day support, help desk operations, security roles, and analytical support to the community of users.

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(Continued on next page)

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**HMIS Leads**

- Facilitates transfer of data feeds from each system of care to the shared infrastructure.
- Attends trainings on the capabilities of the system to understand the differences for day-to-day operations.
- Tests solutions to ensure that data are flowing accurately and that security and privacy protections are in place and functioning as intended.

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**Data Consumer**

- Provides solution requirements by providing feedback to the technical team and leadership before the system is designed to ensure a more functional end product.
- Attends trainings on the capabilities of the system to understand the differences for day-to-day operations
- Uses data for analyses to support the region to make homelessness rare, brief and non-recurring.
- Provides ongoing user feedback to leadership, the technical team, and the vendors.

Note: A mechanism should be in place in the system itself that allows user feedback about the system, real-time help desk support for when issues arise, and ongoing human-centered user testing when changes or advances are made to the system.

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## 9. CONCLUSION

As people experiencing homelessness travel in and out of jurisdictions, take shelter on regional public transportation, and individually access systems of care in multiple communities, the challenges that exist to ensure they receive the expeditious and streamlined assistance they require to exit homelessness are exacerbated. Jurisdictional data silos mean that resources are duplicated and the people most in need continue to fall through the cracks that exist between systems.

The Framework for Regional Data Sharing has laid out options for Bay Area homeless systems of care to break down the silos and begin to coordinate in new ways. A regional data sharing system can enable dynamic analysis of Bay Area homelessness trends and regional needs over time. It can support regional planning, advocacy, and system/program improvements to enhance outcomes, as well as reduce service duplication and maximize efficiencies. Over the longer term, the system can support more effective care coordination for individual clients.

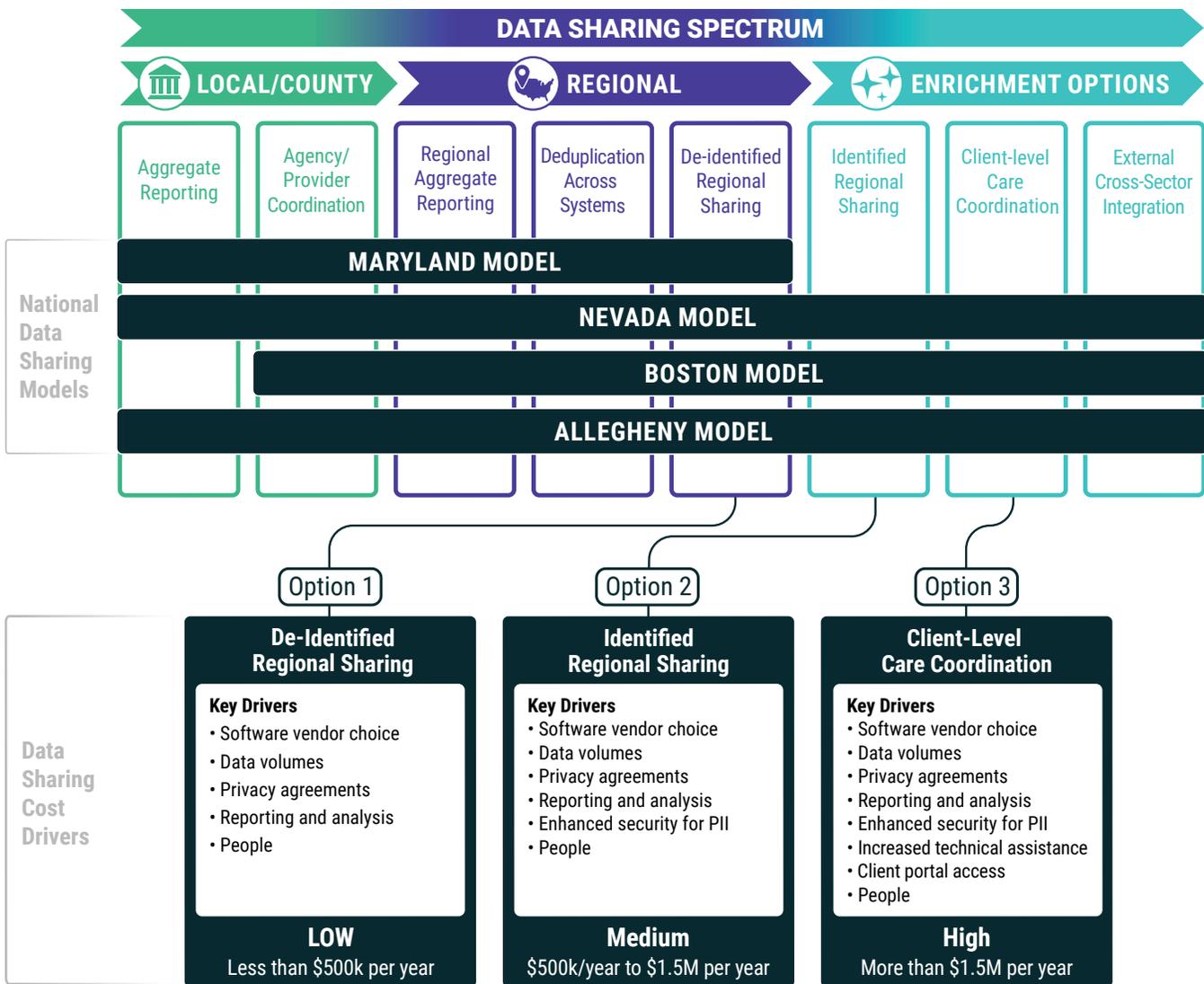
As the region grows more interconnected day by day, and the issue of homelessness worsens, now is the time for Bay Area homeless systems of care to come together around a shared vision of collaboration. Regional data sharing can empower much-needed coordination of ideas, innovations, policies, and resources, uniting the San Francisco Bay Area in the effort to end homelessness altogether.



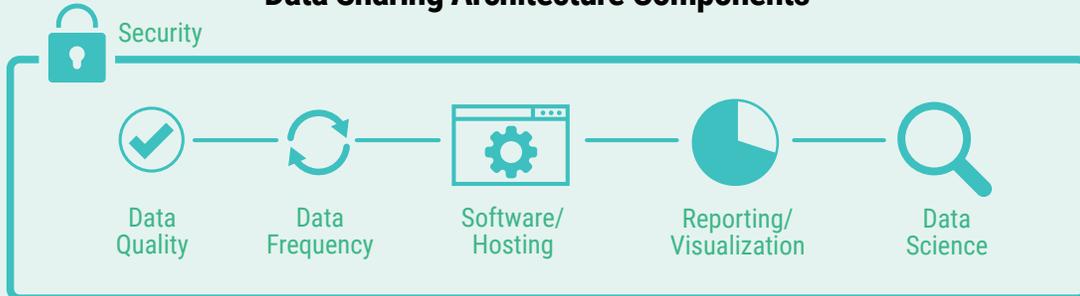
# APPENDICES

- **Appendix A:** A Data Sharing Framework
- **Appendix B:** Governing Framework Example
- **Appendix C:** Applicable Privacy Laws
- **Appendix D:** Timeline by Quarters

## Appendix A: Data Sharing Framework



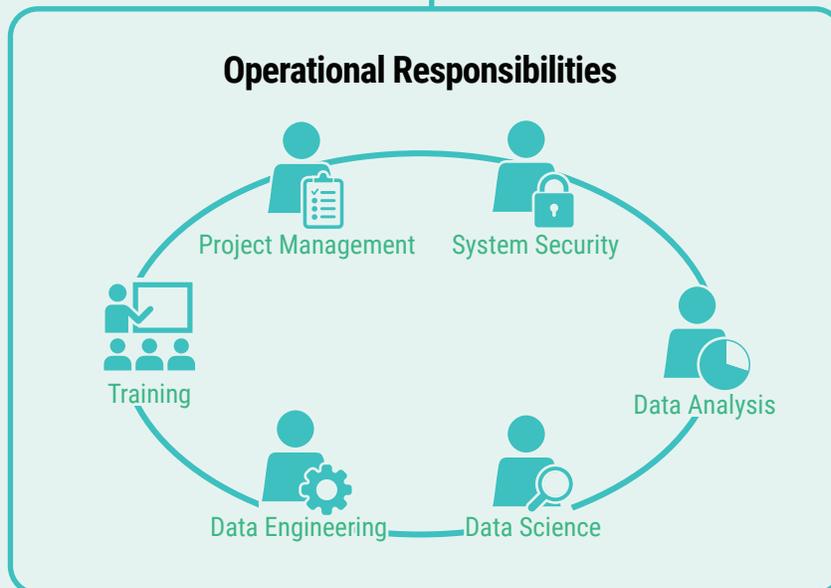
## Data Sharing Architecture Components



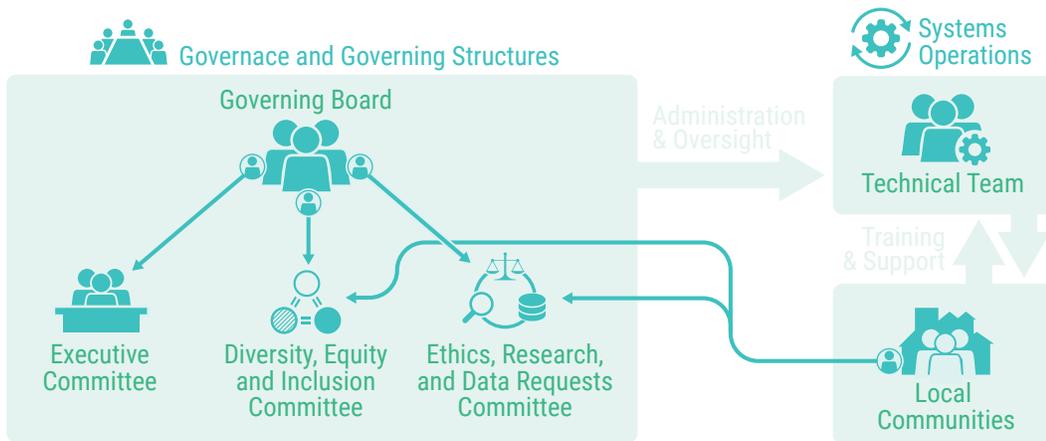
## Data Sharing Roles and Responsibilities



### Operational Responsibilities



## Appendix B: Governing Framework Example



The following is an example of a governance framework that includes the governing bodies, administrative offices, and staff functions needed to carry out system roles and responsibilities.

### Governing Board

The Governing Board acts as the primary decision-making authority for the data sharing system, meeting regularly (e.g., monthly, quarterly). Responsibilities may include:

- ✓ Appointment and oversight of the Regional Data Administrator;
- ✓ Development, execution, and oversight of contracts with the warehouse vendor;
- ✓ Regular oversight of the data warehouse;
- ✓ Development and guidance of the vision and sustainability;
- ✓ Final approval of research that involves data from the system; and
- ✓ Final approval of all policies, procedures, and membership issues.

The structure of the Governing Board may include:

- **Voting Members** who may include one or more representatives from each participating homeless system of care; and
- **Non-Voting Members / Advisory Panel** that may include a Regional Data Administrator, several community members, people with lived-experience, and other identified stakeholders



## Executive Committee

The Executive Committee is a small group comprised of members of the Governing Board who are responsible for implementing the recommendations of the Governing Board. Responsibilities may include:

- ✓ Implementation of recommendations from the Governing Board;
- ✓ Oversight of data alignment and quality standards across homeless systems of care;
- ✓ Quarterly updates to the Governing Board; and
- ✓ Oversight of the technical team and Regional Data Administrator.

The structure of the Executive Committee may include:

- **Chair and Vice Chair** elected from the Governing Board who serve on the Executive Committee, in addition to other officers such as the Secretary and/or Treasurer; and
- **One to three rotating members** from the Governing Board.



## Diversity, Equity and Inclusion Committee

A small group comprised of community and Governing Board members that provides oversight for diversity, equity, and inclusion initiatives using system data. Responsibilities may include:

- ✓ Provision of fair and just communication around data sharing and reporting;
- ✓ Promoting diversity, equity, and inclusion in recruiting member organizations and participants to other governance bodies; and
- ✓ Ensuring use of an equity lens in all aspects of data work in the region.

The structure of the Diversity, Equity and Inclusion Committee may include:

- **Chair** who is a rotating member from the Governing Board; and
- **Non-Voting Members** can include 1 Regional Data Administrator, 1 representative from a partnering University / Institutional Review Board (IRB), 3-6 community members and organizers, and at least 3 persons with lived experience



## Ethics, Research, and Data Requests Committee

A small group comprised of community and Governing Board members that provides oversight of ethics, research, and data requests. Responsibilities may include:

- ✓ Internal oversight for all collection, analysis, and sharing of data; and
- ✓ Oversight of all approved research projects and activities involving data use.

The structure of the Ethics, Research, and Data Requests Committees may include:

- **Chair** who is a member from the Governing Board; and
- **Non-Voting Members** can include 1 Regional Data Administrator, 1 representative from a partnering University / Institutional Review Board (IRB), 3-6 community members and organizers, and at least 3 persons with lived experience.

## **Technical Team** (Operations)

The Technical team manages, implements, and develops the software tools and processes to share data daily. Responsibilities may include:

- ✓ Management of the system and user access on a day-to-day basis;
- ✓ Management of timely uploads of data from all communities;
- ✓ Training and technical support to individuals interacting with the system;
- ✓ Management of external and internal data requests, seeking approval from Governing Board when needed; and
- ✓ Data support for regional planners and funders seeking to implement innovative solutions to homelessness.

The structure of the Technical Team may include:

- **Regional Data Administrator/Director** is a staff person who manages the regional data system, provides updates and guidance to both the Executive Committee and the Governing Board, and manages the regional technical team;
- **Program Manager** is a staff person who manages the budget, timeline, and people to deliver data sharing solutions;
- **Data Scientist** is a staff person who identifies insights in data to drive operational improvements and find undiscovered connections in the data;
- **Data Analyst** is a staff person who produces reports and analyses for various operational needs;
- **Systems Administrator** is a staff person who ensures the overall system is operational, data transfer processes occur on schedule, and security controls are protecting sensitive data;
- **Training Coordinator** is a staff person who defines training plans for various stakeholders aligned to system and operational goals and manages trainers; and
- **Trainer(s)** are staff who train end users on the usage of shared data while maintaining security and privacy commitments.

## Appendix C: Applicable Privacy Laws

The following table outlines each law implicated in a regional data sharing system. It outlines:

- **What** is the general purpose of each applicable law;
- **Who** is covered by the provisions in each law in the context of regional data sharing; and
- **How** to satisfy the requirements of the applicable law when adopting regional data sharing.

<b>2004 HMIS Data and Technical Standards</b>	
<b>What</b>	<ul style="list-style-type: none"> <li>• The Privacy and Security Standards section (the Standards) of the <a href="#">2004 HMIS Data and Technical Standards</a> describes how data are to be collected and safeguarded in HMIS.</li> <li>• The Standards apply to a “covered homeless organization” (CHO), which is any organization that records, uses or processes protected personal information (PPI) for an HMIS. Further, any CHO that is covered under HIPAA is not required to comply with the privacy or security standards in the notice if the CHO determines that a substantial portion of its PPI about homeless individuals is protected health information (PHI) as defined in the HIPAA rules.</li> <li>• The Standards mandate the collection of PPI by lawful and fair means with the knowledge or consent of the individual, where appropriate, and further require that a notice be posted for consumers that describes the general purposes for which PPI will be used. Consumer consent is not required in order to enter data into HMIS. However, per the 2020 HMIS Standards Manual, consumer consent should be procured to share HMIS data.</li> <li>• Under the Standards, consent may be inferred for uses and disclosures determined by the CHO to be compatible with those specified in the notice.</li> </ul>
<b>Who</b>	<ul style="list-style-type: none"> <li>• Partner agencies who are CHOs; and</li> <li>• Regional data sharing system as a CHO (the entity that processes HMIS data).</li> </ul>
<b>How</b>	<ul style="list-style-type: none"> <li>• <b>Written Agreements:</b> Regional data sharing partners and HMIS lead agencies enter into Data Use Agreements that outline the agreed upon responsibilities under the Standards.</li> <li>• <b>Consumer Consent:</b> Participating homeless systems of care should update their Requests for Information (ROI) to authorize data sharing with a regional data sharing system or have consumers sign a separate ROI Amendment which allows for regional data sharing.</li> <li>• <b>Notice:</b> Partner agencies continue to provide privacy notices to consumers as required under the Standards.</li> <li>• <b>Policies and Procedures:</b> A regional data sharing system implements and monitors compliance with systemwide policies and procedures that align with the requirements in the Standards.</li> </ul>
<b>Source</b>	<ul style="list-style-type: none"> <li>• <a href="#">Homeless Management Information Systems (HMIS); Data and Technical Standards Final Notice</a>, The Privacy and Security Standards section, July 30, 2004.</li> </ul>

## Health Insurance Portability and Accountability Act (HIPAA)

### What

- [HIPAA](#) (45 CFR Parts 160, 162, and 164) is the primary federal law that addresses health information privacy and applies to “Covered Entities.” Covered Entities include health care providers, health insurers, health care clearinghouses, and business associates.
- The [HIPAA Privacy Rule](#) at 45 CFR [Part 160](#) and Subparts A and E of Part 164 establishes when and how PHI held by Covered Entities can be accessed and disclosed. It establishes standards for privacy, security, and standardization of electronic transactions that restrict the use or disclosure of individuals’ PHI.
- Under the Privacy Rule, Covered Entities sharing PHI with third parties may collect PHI under an exception to the rule or by direct consumer authorization. The core elements of adequate consumer authorization include:
  - A meaningful description of the information to be disclosed;
  - The name of the individual or the name of the person authorized to make the requested disclosure;
  - The name or other identification of the recipient of the information;
  - A description of each purpose of the disclosure (e.g., the statement “at the request of the individual” is sufficient when the individual initiates the authorization and does not, or elects not to, provide a statement of the purpose);
  - An expiration date or an expiration event that relates to the individual; and
  - A signature of the individual or their personal representative (someone authorized to make health care decisions on behalf of the individual) and the date.
- HIPAA requires consumer authorization for the purposes of regional data sharing. Any shared data sharing system is not required to enter into additional written contracts, such as a business associate agreements, with HIPAA-covered partner agencies.

### Who

- Partner agencies that are health care providers and/or business associates

### How

- **Written Agreements:** Consumer authorization is required for the sharing of PHI with a regional data sharing system. No additional written agreements are required between HIPAA Covered Entities and a regional data sharing system beyond the standard data sharing agreement.
- **Consent:** Each Covered Entity partner agency should continue to collect consent and authorization for the sharing of PHI per the HIPAA consent and authorization standards. The authorization should specifically allow the sharing of PHI with the partner agency’s local HMIS and a regional data sharing system and its authorized users.
- **Notice:** Covered partner agencies must continue to provide HIPAA-compliant privacy notices to consumers.
- **Policies and Procedures:** Once consumer authorization has been obtained, the data retained in a regional data sharing system are no longer HIPAA-covered. However, the shared regional system should implement and monitor compliance with systemwide policies and procedures that will ensure the protection and security of consumer health information.

### Source

- [Health Insurance Portability and Accountability Act \(HIPAA\)](#), 2013.

## Health Information Technology for Economic and Clinical Health Act (HITECH Act)

<b>What</b>	<ul style="list-style-type: none"><li>• The HITECH act strengthened HIPAA to provide additional protections and privacy restrictions.</li><li>• It extended HIPAA's coverage to include "Business Associates," a person or entity that that performs certain functions or activities that involve the use or disclosure of PHI on behalf of, or provides services to, a Covered Entity.</li><li>• Because of HITECH, HIPAA coverage now extends to any entity that "creates, receives, or transmits" PHI on behalf of a Covered Entity or on behalf of a Business Associate, including contractors of Business Associates.</li><li>• HITECH further expanded HIPAA requirements regarding notification to affected individuals when health information was compromised.</li></ul>
<b>Who</b>	<ul style="list-style-type: none"><li>• Partner agencies that are Business Associates under HIPAA; and</li><li>• HMIS lead agencies that are Business Associates under HIPAA</li></ul>
<b>How</b>	<ul style="list-style-type: none"><li>• See analysis under HIPAA Section above.</li></ul>
<b>Source</b>	<ul style="list-style-type: none"><li>• <a href="#">Health Information Technology for Economic and Clinical Health Act (HITECH Act)</a>.</li></ul>

## Confidentiality of Substance Use Disorder Patient Records: 42 CFR Part 2

<b>What</b>	<ul style="list-style-type: none"><li>• Confidentiality of Substance Use Disorder Patient Records, <a href="#">42 CFR Part 2</a>, protects the confidentiality of substance use disorder (SUD) patient records by restricting the circumstances under which Part 2 Programs or other lawful holders can disclose such records.</li><li>• Covered entities under Part 2 are federally assisted programs that “hold themselves out” as providing and provides diagnosis, treatment, or referral for treatment for a SUD. Covered information includes all records relating to the identity, diagnosis, prognosis, or treatment of any patient.</li><li>• Homeless service providers that provide referrals to SUD treatment are not typically deemed Part 2 covered entities unless: 1) substance use disorder diagnosis, treatment, or referral is their primary function; and 2) the service provider promotes itself to the community as providing those services. Thus, service providers that refer consumers to SUD treatment as an incidental service or as one primary function of many functions may not be covered entities.</li><li>• In general, Part 2 programs are prohibited from disclosing any information that would identify a person as having or having had a SUD unless that person provides written consent.</li><li>• The consent provision that applies to regional data sharing systems is the one that covers disclosures to entities without a treating provider relationship with the patient. Consumer consent must provide either: (1) the name of an individual; (2) a provider’s name; or (3) a more general description of the recipient is allowed, but there still must be a provider relationship for entities that facilitate the exchange of health information. Written consumer consent must include: (1) the name/s of the entity/ies and (2) either (A) the name/s of individual or entity participant/s or (B) a general designation of the recipient if there is a treatment provider relationship.</li><li>• Further, redisclosing this information to partner agencies will require additional explicit written consumer consent.</li></ul>
<b>Who</b>	<ul style="list-style-type: none"><li>• Partner agencies that are federally assisted substance use disorder programs.</li></ul>
<b>How</b>	<ul style="list-style-type: none"><li>• The highly limiting nature of the consent restrictions in Part 2 does not make it administratively feasible for a regional data sharing to collect Part 2 covered data.</li><li>• To ensure that Part 2-covered information is protected and secure, any regional data sharing system should not collect HMIS data from Part 2-covered entities.</li><li>• However, a regional data sharing system may receive data from Part 2-covered entities that is not covered by Part 2. In other words, data that do not include information identifying a person as having or having had a SUD (e.g. the universal HUD data elements so long as they do not reference a person’s SUD).</li></ul>
<b>Source</b>	<ul style="list-style-type: none"><li>• <a href="#">Confidentiality of Substance Use Disorder Patient Records, 42 CFR Part 2.</a></li></ul>

## The Confidentiality of Medical Information Act (CMIA)

<b>What</b>	<ul style="list-style-type: none"><li>• The <a href="#">CMIA</a> is a California law that protects the privacy of an individuals' medical information (in electronic or paper format) from unauthorized disclosure by limiting disclosures by providers of health care, health plans, and contractors.</li><li>• CMIA extends privacy protections to PHI.</li><li>• Covered entities include health care providers, health service plans, and individuals and businesses that contract with those entities for work that involves access to medical information.</li><li>• The CMIA's basic prohibition against disclosure is set forth in Civil Code § 56.10(a) and provides that "[n]o provider of health care, health care service plan, or contractor shall disclose medical information regarding a patient of the provider of health care or an enrollee or subscriber of a health care service plan without first obtaining an authorization unless an exception applies."</li><li>• Section 56.11 of the CMIA also mandates specific consent requirements for covered entities.</li><li>• Entities covered under the CMIA are typically also HIPAA-covered. When this is the case, covered entities will often align documentation to be compliant with the provisions in both the CMIA and HIPAA.</li></ul>
<b>Who</b>	<ul style="list-style-type: none"><li>• Partner agencies that are health care providers, health service plans, and contractors.</li><li>• HMIS lead agencies that are health care providers, health service plans or that contract with partner agencies that are CMIA-covered.</li><li>• Data sharing systems as a contractor of HMIS lead agencies that are health care providers, health service plans or that contract with partner agencies that are CMIA-covered.</li></ul>
<b>How</b>	<ul style="list-style-type: none"><li>• <b>Written Agreements:</b> None are mandated by the CMIA, however a standard data use agreement between a regional data sharing system and covered entities will outline the agreed upon responsibilities regarding consent under the standards.</li><li>• <b>Consent:</b> Each covered partner agency should continue to collect consent for the sharing of PHI per the CMIA consent standards. Entities covered under the CMIA are typically also HIPAA-covered. Most HIPAA-covered entities utilize consent forms that comply with both HIPAA and CMIA. For sharing data with a regional data sharing system, authorizations should specifically allow the sharing of PHI with the system and its authorized users.</li><li>• <b>Notice:</b> There are no notice requirements under the CMIA.</li><li>• <b>Policies and Procedures:</b> A regional data sharing system should implement and monitor compliance with systemwide policies and procedures that align with the requirements in the CMIA.</li></ul>
<b>Source</b>	<ul style="list-style-type: none"><li>• <a href="#">The Confidentiality of Medical information Act (CMIA)</a></li></ul>

## The Lanterman-Petris-Short Act (LPS Act)

<b>What</b>	<ul style="list-style-type: none"><li>• The <a href="#">LPS Act</a> is a California law with the stated purpose to end the inappropriate, indefinite, and involuntary commitment of persons with mental health disorders. It also establishes a right to prompt psychiatric evaluation and treatment and sets out strict due process protections for mental health clients. In addition, the LPS Act contains patient consent requirements for the disclosure of mental health information.</li><li>• Information covered under the LPS Act includes records obtained in the course of providing psychiatric and mental health treatment to voluntary or involuntary recipients of services.</li><li>• The LPS Act mandates that in communications between qualified professional persons in the provision of services or appropriate referrals, or in the course of conservatorship proceedings, the consent of the patient, or his or her guardian or conservator, shall be obtained before information or records may be disclosed by a professional person employed by a facility to a professional person not employed by the facility who does not have the medical or psychological responsibility for the patient's care.</li><li>• Entities covered under the LPS Act are typically also HIPAA-covered. When this is the case, covered entities will often align documentation to be compliant with the provisions in both the LPS Act and HIPAA.</li></ul>
<b>Who</b>	<ul style="list-style-type: none"><li>• Partner agencies that enter records obtained in the course of providing psychiatric and mental health treatment to voluntary or involuntary recipients of services into HMIS.</li></ul>
<b>How</b>	<ul style="list-style-type: none"><li>• <b>Written Agreements:</b> No written agreements are mandated by the LPS Act, however a standard data use agreement between a regional data sharing system and covered entities will outline the agreed upon responsibilities regarding consent under the standards.</li><li>• <b>Consent:</b> Each covered entity partner agency should continue to collect consent and authorization for the sharing of protected mental health information per the LPS Act. Entities covered under the LPS Act are typically also HIPAA and CMIA covered. Most HIPAA/CMIA covered entities utilize consent forms that comply with HIPAA, CMIA and the LPS Act. For sharing data with a regional system, authorization and consent forms should specifically allow the sharing of PHI with a regional data sharing system and its authorized users.</li><li>• <b>Notice:</b> There are no notice requirements under the LPS Act.</li><li>• <b>Policies and Procedures:</b> A regional data sharing system should implement and monitor compliance with systemwide policies and procedures that align with the requirements in the CMIA.</li></ul>
<b>Source</b>	<ul style="list-style-type: none"><li>• <a href="#">The Lanterman-Petris-Short Act</a> (LPS Act)</li></ul>

## California Health and Safety Code § 1280.15

<b>What</b>	<ul style="list-style-type: none"><li>• <a href="#">California Health and Safety Code § 1280.15</a> mandates that clinics, health facilities, home health agencies, and hospices shall prevent unlawful and unauthorized access to medical information.</li><li>• Covered entities include clinics, health facilities, home health agencies, or hospices licensed pursuant to §§1204, 1250, 1725, or 1745.</li><li>• Covered information includes patient medical information protected under the CMIA, as described above.</li><li>• Entities covered under §1280.15 typically are also HIPAA and CMIA covered. Covered entities will often align documentation to be compliant with the provisions in §1280.15, CMIA, and HIPAA.</li></ul>
<b>Who</b>	<ul style="list-style-type: none"><li>• Partner agencies that are clinics, health facilities, home health agencies, or hospices licensed pursuant to California Health and Safety Code §§1204,1250, 1725, or 1745.</li></ul>
<b>How</b>	<ul style="list-style-type: none"><li>• <b>Written Agreements:</b> No written agreements are mandated by §1280.15, however a standard data use agreement between a regional data sharing system and covered entities will outline the agreed upon responsibilities under the standards.</li><li>• <b>Consent:</b> Each covered entity partner agency should continue to collect consent for the sharing of protected mental health information. Entities covered under §1280.15 are typically also HIPAA and CMIA covered. Most HIPAA covered entities utilize authorization forms that comply with both HIPAA and the §1280.15.</li><li>• Consent forms in a regional data sharing system should specifically allow the sharing and processing of PHI with the system and its authorized users.</li><li>• <b>Notice:</b> There are no notice requirements under section §1280.15.</li><li>• <b>Policies and Procedures:</b> A regional data sharing system should implement and monitor compliance with systemwide policies and procedures that align with the mandate in §1280.15.</li></ul>
<b>Source</b>	<ul style="list-style-type: none"><li>• <a href="#">California Health and Safety Code § 1280.15</a></li></ul>

## Appendix D: Timeline by Quarters

Another way to look at the regional data sharing roadmap is by quarter instead of by role. The by-quarter view helps show the order in which activities will occur.

### Timeline: Responsibilities by Quarter

<p><b>Quarter 1</b></p>	<ul style="list-style-type: none"> <li>• Build community support so that all systems of care agree on the functional goals for data sharing, including the types of data to collect, functional reporting goals, governance structures, privacy, security, and financing requirements.</li> <li>• Identify community champion/s responsible for championing the solution in the region; those who will help overcome objections and provide requirements and feedback for the system.</li> <li>• Clarify how the solution will be funded and determines funding model, including the expectations for participation and financial responsibility.</li> </ul>
<p><b>Quarter 2</b></p>	<ul style="list-style-type: none"> <li>• Establish a centralized governance structure, the Governance Board, to take on oversight of the solution and ultimately establish an office of data sharing.</li> <li>• Establish Office of Data Sharing to run the day-to-day operations of the regionwide data sharing. The staff will be accountable to the Governance Board.</li> <li>• Hire a Director who will be accountable to the Board and responsible for hiring the rest of the Technical team.</li> <li>• Establish privacy agreements across systems of care and memoranda of understanding between each homeless system of care and the centralized Governance Board.</li> <li>• Determine the format for new releases of information (ROI) for client-level data.</li> <li>• Select primary vendor/s who will deliver a solution once a governance structure is in place.</li> <li>• Undertake project management to ensure all of the pieces come together, with action items captured and risks mitigated.</li> <li>• Establish timeline and budgets.</li> <li>• Hire the full technical team needed to implement the solution.</li> <li>• Provide solution requirements by providing feedback to the technical team and leadership before the system is designed to ensure a more functional end-product.</li> </ul>
<p><b>Quarter 3</b></p>	<ul style="list-style-type: none"> <li>• Establish technical phases. In general, there are key areas to be built-out, regardless of the vendor chosen. The roadmap above combines certain functions into logic boxes that will be expanded when a vendor is chosen.               <ul style="list-style-type: none"> <li>○ Develop data model: Build and deploy both identified and de-identified data warehouse structures aligned to HUD universal and core data elements.</li> <li>○ Automate data feeds: Set up data to automatically flow from each homeless system of care into the shared data warehouse. Will need to address: timely flow of data (e.g., Monthly, Weekly, Daily); how historical updates of data are integrated; and security controls to ensure access limited to only those roles and people who have been specifically chosen and vetted by the Governance Board.</li> </ul> </li> <li>• Provide solution requirements by providing feedback to the technical team and leadership before the system is designed to ensure a more functional end-product.</li> </ul>

## Quarter 4

- Develop training and change management protocols to ensure users understand the data capabilities and can best utilize and drive adoption of the solution
- Define reporting capabilities: Depending on the solution chosen, will need to define and implement reports and processes to give end users access to the integrated shared data. The best starting point will be to provide access to de-identified data for broad system planning to understand utilization across the region and enable site selection, resource utilization, data quality, and other core needs.
- Attend trainings on the capabilities of the system to understand the differences for day-to-day operations
- Test solutions to ensure that data are flowing accurately, and that security and privacy protections are in place and functioning as intended.
- Facilitate transfer of data feeds from each system of care to the shared infrastructure.

## Quarter 5

- Maintain ongoing operational maintenance: Once the system is live, the technical team will maintain day-to-day support, help desk operations, security roles, and analytical support to the community of users.
- Use data for analyses to support the region to make homelessness rare, brief and non-recurring.
- Provide ongoing user feedback to leadership, the technical team, and the vendors.

Note: A mechanism should be in place in the system itself that allows user feedback of the system, real-time help desk support for when issues arise, and ongoing human-centered user testing when changes or advances are made to the system.



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