

# REGIONAL & STATEWIDE DATA WAREHOUSING

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## WHAT is a Data Warehouse?

The term data warehouse has many meanings. It is generally agreed that a data warehouse is a copy of transaction-level data that can be queried and used for reporting and analysis. A data warehouse combines data from multiple separate sources and normally restructures that transaction-level data to make it easier to analyze and create reports. While data warehouses are used in a variety of different contexts, this document focuses on their use to combine data specific to homelessness.

Warehousing data goes beyond the daily activity of most community-level human service providers who usually collect client-level data in order to provide holistic case management to their clients, for program management purposes, for agency level reporting to funders, or to provide local Continuum-level or county/city level information for planning purposes. A data warehouse allows for combining data, such as data on homelessness, from a variety of sources such as mainstream providers and/or from a variety of Continuums and rearranges it into a schema (structure) that allows for more effective and efficient reporting and analysis.

A data warehouse is a central database integrating information from more than one source of the same type of system (e.g. multiple Homeless Management Information Systems (HMIS)) and/or from more than one source of different systems (e.g. multiple mainstream systems such as healthcare, foster care, corrections and education). It typically receives data periodically from each participating HMIS or mainstream service provider and then can be queried to produce reports. The structure of the database itself can vary depending upon the purpose, capacity, and budget of the implementing organization. For example, the database can be “normalized” or not, and can be a flat file, relational, hierarchical, multidimensional, or an object database. It may store historical data, making possible the analysis of trends over time. It may also apply a consistent approach to homelessness data across multiple HMIS databases that may otherwise vary greatly. A data warehouse allows providers and communities to keep the autonomy of their local systems while aggregating data at a higher level to examine trends, client movement, gaps in services, and effects of new policies and legislation. Finally, it is important to note that the concept of an HMIS data warehouse is relatively new and will likely evolve over time.

A data warehouse is *not* an HMIS<sup>1</sup>. It also does not typically include many of the functionalities that may be part of an HMIS, such as information and referral, client intake, services tracking and referral, case management tools, and shelter or bed register. It may contain all of the underlying HMIS and/or mainstream homelessness data, or only portions (i.e. it may exclude specific data elements, such as names or Social Security Numbers). Because it is separate from HMIS, the data can be manipulated and analyzed without impacting HMIS user operations.

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<sup>1</sup> Because of the novelty of the HMIS data warehouse concept, it is not yet clear how the HMIS Standards might apply, although it can be said that HMIS Standards provide beneficial practices for most homelessness data collection and handling, including through a data warehouse.

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### Regional & Statewide Data Warehousing: WHAT is a Data Warehouse?

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Across the country, HMIS implementations have been developing data warehouses to foster state and regional collaboration and increase understanding of homelessness across Continuum of Care or state boundaries.

## **WHY a Data Warehouse?**

The value, goal and use of a regional or statewide data warehouse that supports decision making on homelessness will vary depending on the business needs of participating public and private organizations. However, the overarching goal of a statewide or regional data warehouse is to understand the needs of homeless individuals and households while promoting greater responsiveness, accountability, and impact on the provision of services. A data warehouse is a tool to help providers, funders, and other stakeholders answer questions. A successful data warehouse project brings data from different sources together or reorganizes data so it can be used in new and innovative ways. In cases where an “open system” (sharing of client level data between providers or across geographic regions) is not possible or not desired, collecting specific data elements and creating a warehouse for analysis and reporting of this data is a cost-effective and viable option while still protecting Personally Protected Information (PPI).

Using a data warehouse approach can serve several purposes and the values are numerous. Some examples are as follows:

- Determine unduplicated statistics and count at a state or regional level – in many states or regions CoCs operate an independent HMIS; The data collected are valuable for the community but it is not possible to look at data at the state or regional level unless the data are integrated.
- Make possible accurate comparisons from different data sources by standardizing the data and the reporting.
- Span geographic areas containing multiple Continuums of Care (CoC) and/or multiple mainstream services to make possible statewide, regional or inter-metropolitan data pictures of homelessness.
- Utilize cross-systems data gathering for promoting systems change that accelerates enrollment of homeless consumers in mainstream benefits and services, and enhances effectiveness of case management.
- Conduct cross-systems and cross-jurisdictional data gathering and analysis – including data on housing, disability, employment, mental health, public assistance, education and child welfare and/or tracing regional trends and patterns over time in homeless migration, services needs and uses, and program costs and successes.
- Furnish reliable data to inform the creation of state, regional, or local CoC Plans or Ten-Year Plans to End Chronic Homelessness.
- Provide funders of homeless service agencies a better picture of the needs of homeless individuals and families, and the ability to better target their investments in housing and homeless services.
- Change public policies that contribute to homelessness or hinder solutions.

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- Support academic explorations and research on the cause and solutions to chronic or family homelessness.
- View data at the state or regional level for planning purposes, disaster preparedness, resource allocation, etc.

In addition to enhancing regional data analysis, the collaborative process involving multiple CoCs and multiple mainstream service providers can give rise to many other important benefits in the areas of HMIS and broader planning to end homelessness. These can include:

- The sharing of information and practices among HMIS projects and mainstream providers;
- The creation of cost savings through joint HMIS administration, hosting, and/or bulk purchasing;
- The generation of state-wide or regional interest in solving homelessness among elected officials, regional groups, and the public;
- The preparation of state-wide or regional Ten-Year Plans to End Homelessness, merging or coordinating the Plans of individual CoCs; and
- The sparking of regional collaboration on homelessness policy and legislative advocacy (e.g., joint approaches to discharge planning).

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