

Section 3: Data Quality Plan

Introduction to Data Quality

Data quality refers to the extent that data recorded in the Homeless Management Information System (HMIS) accurately reflects the same information in the real world. To meet the HMIS goal of reporting on the extent and nature of homelessness, it is critical that HMIS has the best possible representation of reality as it relates to homeless people and the programs that serve them. Specifically, it should be our goal to record the most accurate, consistent, and timely information to draw reasonable conclusions about the extent of homelessness and the impact of homeless services. To best ensure we are achieving good data quality, all data entry must be captured using a HMIS Staff approved workflow.

Data elements included in this Data Quality Plan are determined by the US Department of Housing and Urban Development (HUD), Federal Partners, and the DuPage Continuum of Care. This plan is written to comply with the most recent version of the HMIS Data Standards Manual and Data Dictionary¹. The HMIS Data Standards Manual and Data Dictionary describe what information must be collected, for which projects, for whom, and at which point in time. This section is not intended to replace the details of that document but to establish local thresholds for data quality errors based on program and funding type.

The Data Quality Plan applies to all HMIS partners regardless of project type or funding source, but some data elements may only be required for specific project types as noted in the table below. Not all data elements will be included in this plan, and projects should be mindful to routinely review their program manuals² for further guidance. Any HMIS partner that is a Domestic Violence service provider shall maintain a comparable database that meets all minimum Federal and local data collection and reporting requirements.

Data Coverage

The concept of data coverage refers to the sample size and diversity of the agencies and programs who utilize the HMIS. If we want an accurate picture of our community, we must not overlook any agency or program providing services within the Continuum of Care. It is important to note that this includes HUD funded and non-HUD funded programs and agencies.

Bed Coverage Rate

DuPage Continuum of Care has set a threshold of 100% bed coverage rates for dedicated homeless lodging providers in HMIS, excluding any domestic violence provider. Domestic Violence service providers' bed coverage and point-in-time data will be submitted to HMIS annually or more frequently as needed from their comparable database. The Bed Coverage Rate is calculated by project type,

= (# dedicated homeless beds in HMIS) *divided by* (# dedicated homeless beds in DuPage CoC)

¹ <https://www.hudexchange.info/resource/3824/hmis-data-dictionary/>

² <https://www.hudexchange.info/programs/hmis/hmis-guides/#project-setup-and-data-collection-resources>

Section 3: Data Quality Plan

Other

The Data & Performance Committee, along with the partnership of the DuPage Continuum of Care’s Leadership and other related committees, will continue to evaluate the data needs of the community and will address those needs as appropriate, including but not limited to the inclusion of new HMIS participating agencies, the inclusion of new data elements, and the furthering of current data analysis.

Data Quality

Data Quality is broken down into 5 equally important components: Completeness, Timeliness, Accuracy, Training and Consistency. Each of these components must be individually monitored by those completing the data entry, Agency Data Administrators, and System Administrators.

Completeness

HMIS Staff are to ensure that the Project Descriptor Data Elements are complete for all HMIS projects³ and that the data is reviewed annually for each project with each Agency Data Administrator.

Each participating agency, project, Agency Data Administrator and user entering data into HMIS must ensure that Client Records have complete data elements that accurately reflect the client situation at that point in time, achieving an Error Rate⁴ less than the amount as specified in the Data Quality Error Rate Thresholds Table below.

Data Quality Error Rate Thresholds

Element Type	Data Element	Project Type	Client	Collection Point	Error Rate Threshold	Tools to Measure
Universal Data Element	Name and Name Data Quality	All HMIS Projects	All	Record Creation	5%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Data Element	Full or last 4 of the Social Security Number (SSN) and SSN Data Quality	All HMIS Projects	All	Record Creation	10%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Data Element	Date of Birth and Date of Birth Data Quality	All HMIS Projects	All	Record Creation	5%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Data Element	Race	All HMIS Projects	All	Record Creation	5%	<ul style="list-style-type: none"> – Data Quality Framework

³ HMIS Projects are projects that are dedicated to ending or preventing homelessness such as Street Outreach (SO), Emergency Shelter (SO), Transitional Housing (TH), Safe Haven (SH), all Permanent Housing (PH - RRH, PSH, Other), Supportive Services only (SSO), and Coordinated Entry (CE).

⁴ Error Rate includes null, don’t know/refused, and incongruent data

Section 3: Data Quality Plan

Element Type	Data Element	Project Type	Client	Collection Point	Error Rate Threshold	Tools to Measure
						<ul style="list-style-type: none"> – APR – ESG CAPER
Universal Data Element	Ethnicity	All HMIS Projects	All	Record Creation	5%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Data Element	Gender	All HMIS Projects	All	Record Creation	5%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Data Element	Veteran Status	All HMIS Projects	All Adults	Record Creation	10%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Project Stay Element	Disabling Condition (Y/N)	All HMIS Projects	All	Project Start	10%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Project Stay Element	Project Start Date	All HMIS Projects	All	Project Start	10%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Project Stay Element	Destination at Exit	ES Night-by-Night (nbn) and SO	All	Project Exit	20%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Project Stay Element	Destination at Exit	All HMIS Projects but ES-nbn and SO	All	Project Exit	10%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Project Stay Element	Relationship to Head of Household	All HMIS Projects	All	Project Start	5%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Project Stay Element	Client Location	All HMIS Projects	Head of Household	Project Start, Update	5%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Universal Project Stay Element	Prior Living Situation and related fields	All HMIS Projects	Head of Household, Adults	Project Start	10%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Program Specific Data Element	Income	All HMIS Projects, but ES-nbn	Head of Household, Adults	Project Start, Update, Annual, Exit	10%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER

Section 3: Data Quality Plan

Element Type	Data Element	Project Type	Client	Collection Point	Error Rate Threshold	Tools to Measure
Program Specific	Non-Cash Benefits	All HMIS Projects, but ES-nbn	Head of Household, Adults	Project Start, Update, Annual, Exit	10%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Program Specific	Health Insurance	All HMIS Projects, but ES-nbn	All	Project Start, Update, Annual, Exit	10%	<ul style="list-style-type: none"> – APR – ESG CAPER
Program Specific	Disability	All HMIS Projects	All	Project Start, Update, Exit	10%	<ul style="list-style-type: none"> – APR – ESG CAPER
Program Specific	Domestic Violence	All HMIS Projects	Head of Household, Adults	Project Start, Update	10%	<ul style="list-style-type: none"> – APR – ESG CAPER
Program Specific	Current Living Situation and Engagement	ES-nbn and SO	Head of Household, Adults	At occurrence	10%	<ul style="list-style-type: none"> – ESG CAPER
Program Specific	Bed Nights	ES-nbn	All	At occurrence	10%	<ul style="list-style-type: none"> – ES-DQ-Services to Exit Trifecta – ESG CAPER
Program Specific	Percent of AMI	All HMIS Projects	Head of Household, Adults	Project Start, Update, Annual, Exit	10%	<ul style="list-style-type: none"> – Basic Demographic and EE Details – SSVF Export (for SSVF projects only)

Timeliness

To ensure accuracy of our data at any given time, HMIS data entry is to be completed in less than 7 days of the client interaction. Timeliness standards apply to all projects and information collected and entered into HMIS, including but not limited to assessment data, project entries, annual reviews, project exits, and service transactions.

Our committee has determined timeliness thresholds for Entry and Annual reviews, as shown in the Timeliness Thresholds table below, with the goal of continued improvement over time. No project can retroactively improve this measure but can establish protocols to help ensure timely data entry going forward. Given our HMIS’s capabilities, we have determined that we are unable to provide an accurate measure of timeliness at Exit. We will continue to work with our Vendor to address this matter and will utilize quarterly point-in-time reporting and project specific reports to help ensure timely project exits.

Timeliness Thresholds

Timeliness Measure	Description	Project Type	Threshold: 7+ Days	Tools to Measure
Program Start	A Program Start Date will be created less than 7 days from the first day of service (ES, TH, SSO), contact (SO), or eligibility determination (all PH). The Program Start	All HMIS Projects	25%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER

Section 3: Data Quality Plan

Timeliness Measure	Description	Project Type	Threshold: 7+ Days	Tools to Measure
	Date will be equal to the first day of service (ES, TH, SSO), contact (SO), or eligibility determination (PH).			<ul style="list-style-type: none"> – Point-in Time/Housing Inventory Supplemental
Annual Review	Required for all clients in a project for 365 days or more. Annual Reviews must be completed within 30 days from the anniversary of the Head of Household’s project start date.	All HMIS Projects	25%	<ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER
Program Exit	A Program Exit Date will be recorded in HMIS in less than 7 days of learning of the client’s last service date or residence date. The Exit Date will be equal to the last day of service or residence.	All HMIS Projects, but ES-nbn and SO	Not Available	<p>NONE – Our system does not capture the date an Exit record is created, but rather when the Entry/Exit record is updated. This is not an accurate reflection of when an Exit is created, therefore we are unable to accurately measure the timeliness of this data element.</p> <p>We recommend agencies utilize current reporting to spot check for accurate service and bed utilization. Those reports include:</p> <ul style="list-style-type: none"> – Data Quality Framework – APR – ESG CAPER – Point-in Time/Housing Inventory Supplemental
Program Exit	A Program Exit Date will be recorded in HMIS in less than 7 days of learning of the client leaving the program, or when it has been 30 days since the last Shelter Stay (NBN) or Contact (SO). The Exit Date will be equal to the last day of shelter (NBN) or Contact (SO).	ES-nbn, SO	Not Available	<p>NONE – Our system does not capture the date an Exit record is created, but rather when the Entry/Exit record is updated. This is not an accurate reflection of when an Exit is created, therefore we are unable to accurately measure the timeliness of this data element.</p> <p>We recommend agencies utilize current reporting to spot check for accurate service and bed utilization. Those reports include:</p> <ul style="list-style-type: none"> – ESG CAPER – Trifecta – Point-in Time

Accuracy

We cannot assume that all information given to us by clients is truthful or that all data is always

Section 3: Data Quality Plan

entered correctly. Inaccurate data may be intentional or unintentional. In general, false or inaccurate information is worse than incomplete information, since with the latter, it is at least possible to acknowledge the gap. Thus, it should be emphasized to clients and staff that it is better to enter nothing (or preferably “Data not collected”) than to enter inaccurate information. Agencies are required to monitor their own accuracy using some of the following guidelines:

- If using paper assessments, ensure that all required data elements are included, matching all client options and wording. DuPage has a Universal Intake form available online, dupagehomeless.org/hmis/forms.
- Review data quality and program specific reports for inaccurate information (a negative age, single child enrollment, minor who is a veteran, etc.)
- Ensure the client understands what is being asked of them, what their options are, and that staff do not stray from the intent of the question.
- Audit a random sample of client records.
- Review answers to questions with clients at subsequent interactions, at minimum on an annual basis.
- Ensure accurate project start, annual review, and exit dates for all participants. (See Timeliness Threshold Table).

Training

End User training is a major component to a data quality plan. The roles and responsibilities of training users is outlined in the following: Section 1 of this SOP, DuPage Continuum of Care and HMIS Memorandum of Understanding, HMIS Partnership Agreement, Agency Data Administrator Agreement, and the End User Agreement.

All users must complete a new user training prior to receiving access to the HMIS. Training may be provided through the System or Agency Data Administrator. New user training must review the Standard Operating Procedures and the Standard Workflow, in addition to any project specific information.

New users will complete an online End User certification exam that covers topics from the new user training. Users must obtain a 75% or better to pass the test and may repeat the exam if needed. For new users, a passing grade on this exam is required to access the system.

To stay current and maintain access to HMIS, all Users must complete an annual re-training provided by System Administrators. Training topics will vary each year depending on the needs of the system.

Agency Data Administrators or an agency/program representative must attend all scheduled Agency Data Administrator trainings, and in turn relay this information to the agency users.

If, at any time, a user is not able to demonstrate proper use or knowledge of the system or has not completed the required training, they will lose access to the system.

Section 3: Data Quality Plan

Consistency

The ability to generate system-level reports is dependent upon a common definition of fields, question wording and data entry/workflow. It is up to each agency to ensure adherence to HMIS Staff approved workflows.

Monitoring Data Quality

Monitoring Data Quality is a shared responsibility between the participating agency, HMIS Staff and the Data & Performance Committee. Each of the 5 elements of data quality (Completeness, Timeliness, Accuracy, Training and Consistency) is to be monitored.

Agency/Program data quality is to be monitored by the Agency Data Administrator monthly. Each agency may choose different reports to monitor their data quality. Each Agency Data Administrator should work with the HMIS Staff to ensure they are running correct data quality reports. HMIS Staff may set up a schedule by which agencies are required to submit specific data quality reports to the HMIS Lead for review.

As a guideline, the HUD CoC APR is the recommended report for monitoring program data quality. It touches on all areas of data quality and allows Agency Data Administrators an opportunity to simultaneously monitor project performance. The following reports should additionally be considered for monitoring data quality:

Agency Reports	Annual Performance Report (APR)/ESG CAPER	Data Quality Framework	Point-In-Time and Housing Inventory Reports	Project specific reports	Frequency
Data Completeness	x	x	x	x	Monthly or more frequently
Incongruities	x	x	x	x	Monthly or more frequently
Timeliness of Data Entry	x	x	x	x	Monthly or more frequently
Project Performance	x		x	x	Quarterly or more frequently

Section 3: Data Quality Plan

System data quality & performance is to be monitored by the HMIS Lead on a monthly basis. This may be done by requesting agencies to submit specified data quality reports and/or monitoring data quality directly in the system. The HMIS Lead should report any concerns to the Data & Performance Committee.

System Reports	Annual Performance Report (APR)	Data Quality Framework	Duplicate Client	User Last Login	Point-In-Time and Housing Inventory Reports	System Performance Measures	Longitudinal System Analysis (LSA)	Frequency
Data Quality	x	x	x		x	x	x	Quarterly or more frequently
System Utilization				x				Monthly or more frequently
System Performance		x			x	x	x	Semi-Annually or more frequently