4.1: Data Reporting Map

An important task of a data system is to support grant reporting. To ensure the data generated from your system is accurate, understanding (1) how the system calculates the data for each of the report fields and (2) from where the data are pulled for each calculation is critical. A data reporting matrix provides a way to document this information.

This tool provides a process for “mapping” the data from your system to fields on your reports to ensure the data are documented for your program staff and evaluators. This tool can be used by internal program staff or evaluators who have knowledge of the data system or can be completed by a data system vendor.

The first step to understand how the data “map” reports is understanding the relationship between the data sources. Use 2.1: Guide to Data Mapping and 2.2: Data Map Template to visually describe how data are related in your system.

The purpose of creating a data reporting map is to provide a reference tool to ensure the accuracy and comprehensiveness of your reports. The data map shows how each report is compiled and what data points are used. This information can be used to check the accuracy of existing reports and to work with a system vendor to build new, more accurate ones.

# Information Needed

* Data Source(s)locate where the data is stored in the database. The data source indicates the table containing the referenced data and the column or field. A data map as described in Module 2 is helpful to identify data sources and their relationships to one another.
* Data Fieldsare the locations where the data is entered into the system. This information details on which screen and in which area each data point is entered or edited.
* Business Rules / Logic of all Calculations / Constructs of Report Elementsare the rules that specify which data points are used to determine what is displayed in a report. (E.g., a report only counts records with married enrollees for a specific date range.)
* Description of Report Filters describe which data are included/excluded from a report. (E.g., only new enrollees are presented in one report.)

Having access to these fundamental building blocks allows you to develop and run prerequisite reports to identify missing data or invalid data on individual data elements. Some of this information may be requested from your data system vendor.

# Steps for Completing the Data Reporting Map

There are four steps to complete on the data reporting map. They may require working with a technical assistance provider or with your data system vendor.

1. Determine how your data system is organized. (E.g., are data held in tables, are there multiple tables?) This information is gathered from your data sources and map.
2. Identify needed information for your report. This information is gathered from your list of data fields. The information gets entered in the first column, Report Element.
3. Identify how each report element is created. (E.g., what is the business logic, are multiple data elements used?) To obtain this information, you may need to contact your data system vendor. It is entered in the second column, Business Logic.
4. Identify the location of the data elements used in the business logic. These elements will be entered into Data Element columns 3 to 5.

# Once the Data Reporting Map Is Complete

1. Check for discrepancies between the data reporting map and the existing reports. Your vendor can help you understand how report fields were calculated.
2. Use the data reporting map to fix or create new reports. If discrepancies are found between the map and existing reports, the map can be used to build queries, or logic steps, to ensure the right variables are being pulled into the report. The business logic column is used to create the logic statements used in the queries to ensure the right data elements (in columns 3 to 5) are being pulled into the report.
3. Check the new report. Test all reports by hand by counting the data used in the report and comparing them to the numbers created in the newly developed report.
4. Check for accuracy often. (Best practice is to check report accuracy at least once prior to the submission of an annual performance report or other important reports.)

*The set of rules or steps used to create a report element.*

*An item that is detailed in the report.*

*Data elements are specific individual items of information.*

## Example 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Report Element  | Business Logic for Constructing Report Element | Result Construct Data Element 1 | Result Construct Data Element 2 | Result Construct Data Element 3 |
| Report Element 1, Form 1, Table A, Question 1 | Using the Date Range provided, find all Enrolled Clients during the reporting period. **Then** Identify Marital StatusIdentify Service ReferralUsing Marital Status and Referral for Service create an aggregate, count for each column (Service Referral) and row (Marital Status). Then Add all counts for each row ThenAdd all counts for each columnThen Total all counts for rows and columns  | Person is an Enrollee Data Source Location:{Table A, Enrollee Flag indicated}Data Field Location:{Screen Name and Field Location} | Marital Status * *Single, Never Married*
* *Married*
* *Separated*
* *Divorced*
* *Widowed*
* *Unknown/Did Not Report*

Data Source Location:{Table A, Marital Status}Data Field Location:{Screen Name and Field Location}*Example: In this example, the business logic reports on clients who are enrollees (Data Element 1), and then produces counts of the clients based on marital status (Data Element 2) and referrals for services by type (Data Element 3).* | Service Referral* *Housing*
* *TANF*
* *Early Intervention*
* *Mental health treatment*
* *Substance abuse treatment*

Data Source Location:{Table A, Service Referral}Data Field Location:{Screen Name and Field Location} |

## Example 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Report Element  | Business Logic  | Data Element 1 |  Data Element 2 | Data Element 3 |
| Report Element 1, Form 1, Table B, Question 5 | Using the Date Range Provided, find all Enrolled Clients during the reporting period. **Then*** *Identify Marital Status*
* *Identify Race*

Using Marital Status and Race, create an aggregate count for each column (Race) and row (Marital Status).Then Add all counts for each row ThenAdd all counts for each columnThen Total all counts for rows and columns  | Person is an Enrollee Data Source Location:{Database Table, Enrollee Flag indicated}Data Field Location:{Screen Name and Field Location} | Marital Status * *Single, Never Married*
* *Married*
* *Separated*
* *Divorced*
* *Widowed*
* *Unknown/Did Not Report*

Data Source Location:{Database Table, Marital Status}Data Field Location:{Screen Name and Field Location}*Example: In this example, the business logic reports on clients who are enrollees (Data Element 1), and then produces counts of the clients based on marital status (Data Element 2), and race (Data Element 3).* | *Race** *American Indian or Alaska Native*
* *Asian*
* *Black or African American*
* *Native Hawaiian or Other Pacific Islander*
* *White*
* *More than one category selected*
* *Unanswered/Did Not Report*

Data Source Location: (Database Table, Race)Data Field Location: {Screen Name and Field Location} |

# Data Reporting Map Template

Report Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

| Report Element  | Business Logic  | Data Element 1 | Data Element 2 | Data Element 3 |
| --- | --- | --- | --- | --- |
| Report Element 1 |  | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: |
| Report Element 2 |  | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: |
| Report Element 3 |  | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: |
| Report Element 4 |  | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: |
| Report Element 5  |   | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: |
| Report Element 6 |  | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: | Data Source Location:Data Field Location: |