

M&E Development Series

**DATA QUALITY AND
DATA MANAGEMENT
SYSTEMS**

Data Quality Assessment

V R I P T

Data Quality Assessment

The various elements of the M&E system that we have been designing are intended to address these five domains of data quality.

Data Quality Assessment

Validity

“Data clearly, directly and adequately represent the result that was intended to be measured.”

Have we actually measured what we meant to measure?

Data Quality Assessment

Validity

Controlled using:

- **Specific Indicator Definitions**
- **Verification Processes**

Data Quality Assessment

Validity

What are some risks to validity of our reported numbers?

Data Quality Assessment

Reliability

“Consistency of the measurement and data collection process”

Are consistent procedures for data collection, maintenance, analysis, processing and reporting followed?

Data Quality Assessment

Reliability

Addressed through:

- ⦿ **Consistent use of standardized data instrument**
- ⦿ **Verification Process**
- ⦿ **Recording corrections and adjustments**

Data Quality Assessment

Reliability

What are some threats to the reliability of our data?

Data Quality Assessment

Integrity

“Measure of ‘truthfulness’ of the data”

‘Untruth’ can be introduced by either human or technical means, willfully or unconsciously.

Data Quality Assessment

Integrity

Managed through:

- **Controlled access to data and secure storage**
- **Verification Process**
- **Spot checks and cross checks**

Data Quality Assessment

Integrity

What are some risks to the integrity of our data?

Data Quality Assessment

Precision

“Measure of Bias or Error; Sufficient detail of data”

Poor precision can result in double counting or inaccuracy in stratification (by sex, by age, etc) of reported numbers.

Data Quality Assessment

Precision

Controlled by:

- ⦿ **Assigning individual ID numbers**
- ⦿ **Using nested fields to track multiple services provided to the same individual**
- ⦿ **Including disaggregation variables on standard data tools**
- ⦿ **Using Verification Processes**

Data Quality Assessment

Precision

**What threats to data precision
might we encounter?**

Data Quality Assessment

Timeliness

“Performance data is collected and processed frequently enough to regularly inform program management decisions and is sufficiently current to be useful in decision-making.”

Data Quality Assessment

Timeliness

Improved by:

- ⦿ **Schedule of due dates for each level in the data management process**
- ⦿ **Dissemination plan that takes into account information needs of program management**
- ⦿ **Data trace and verification that measures timeliness**

Data Quality Assessment

Timeliness

What are some risks to timeliness of our data?

Data Management Systems

1. Document Retention
2. Storage of Data
3. Data Verification Process

Data Management Systems

Document Retention

For how long will documents, ranging from source data to reports, be retained by the program?

Establish a policy that is in compliance with OJJDP guidelines (*at least 3 years after completion of grant activities*) and other governing bodies.

Data Management Systems

Storage of Data

Where are source documents and reports kept?

How and how often are data backed up?

Who has access to data and documents?

Who can manipulate data?

Data Management Systems

Data Verification Process

1. Self-verification of data by checking for common errors

Transposition Errors	Copying Errors	Use of Estimates
Calculation Errors	Range Inconsistency	Over-reporting
Under-reporting	Wrong reporting period	Incomplete reports
Inconsistencies		

Data Management Systems

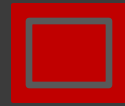
Data Verification Process

2. Calculations and aggregation steps are verified by a second handler prior to submission

3. Periodic internal completion of:
 - a. Data Verification Tool
 - b. Site-level Data Audit

Data Management Systems

Data
Verification
Tool



1. *Completeness*

What percentage
of the required
fields are
completed?



**Number of required
fields completed**

**Number of required
fields**

Data Management Systems

Data
Verification
Tool



2. *Timeliness*

Was the report
submitted on time?

Data Management Systems

Data
Verification
Tool



3. *Accuracy*

What is the ratio of reported count to verification re-count?

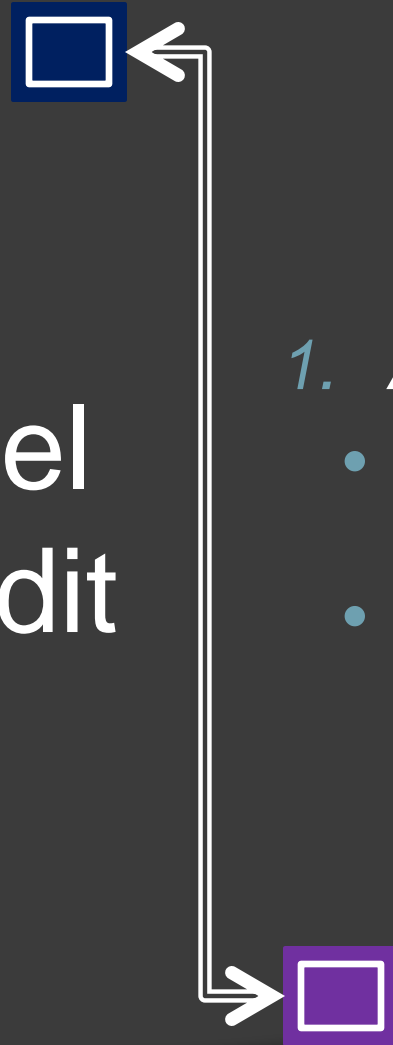
**Number submitted
on report**

=

**Number re-counted
from source
documents during
verification**

Data Management Systems

Site Level
Data Audit



1. *Assess Validity*

- inclusion/exclusion definitions are followed?
- proper disaggregation of data?

Data Management Systems

Site Level Data Audit



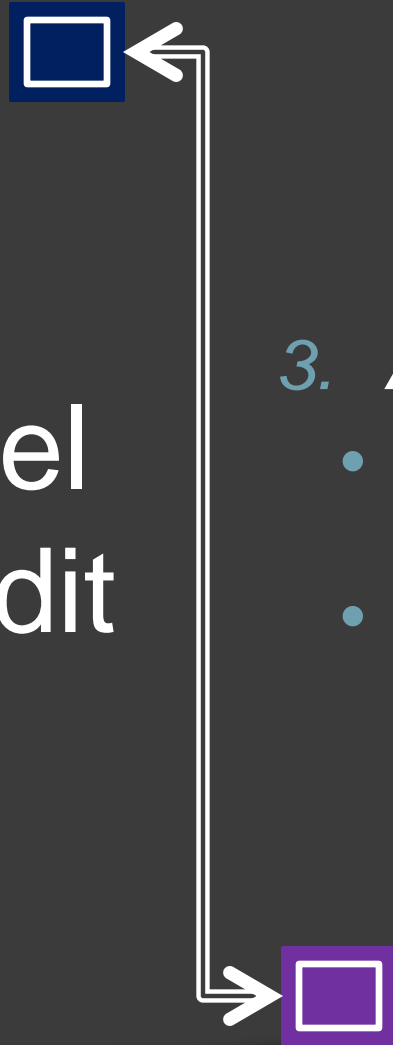
2. *Assess Reliability*

- consistent data form/collection over time?
- training for individuals that collect data?
- consistent analysis methods?
- clearly prescribed arithmetic manipulations?



Data Management Systems

Site Level Data Audit



3. *Assess Timeliness*

- presence of data collection schedule?
- absence of reporting time lags?

Data Management Systems

Site Level
Data Audit



4. *Assess Precision*

- no source or manipulation errors?
- no transcription errors?

Data Management Systems

Site Level Data Audit



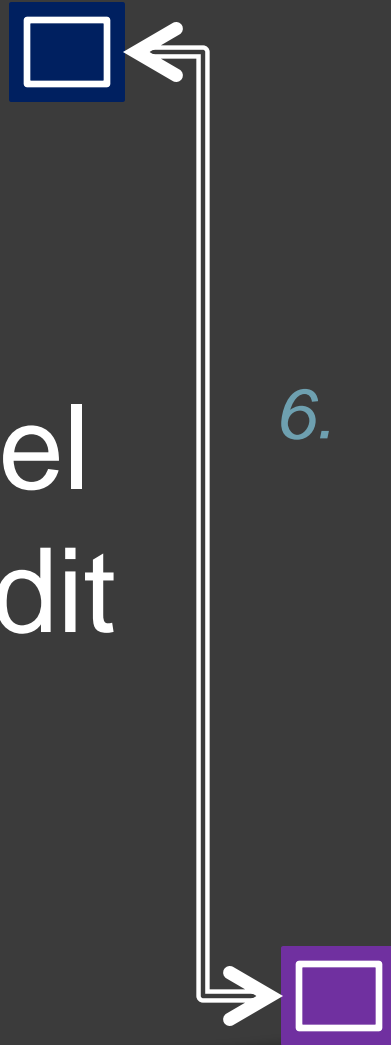
5. *Assess Integrity*

- anti-tampering controls?
- standardized data cleaning?
- hard copy storage?

Data Management Systems

Site Level
Data Audit

6. *Describe plan for addressing data quality challenges*



Data Management Systems

Data Verification Tool

Completed by Supervisor of the individual completing the form

Random Sampling of Forms

Usually Completed Monthly

Site-level Data Audit

1. Completed by internal M&E designee
2. Completed by NCMI

Entire system review & Recount selected indicator from chosen reporting period

Usually Completed Quarterly (internal)

Q&A: Data Quality and Data Management System

Questions...?

To Do...

- ◉ Write a ***Document Retention Policy*** for the youth mentoring efforts at your organization.
- ◉ Determine for the ***Data Verification Tool & Site-level Data Audit*** the actual:
 - ◉ Responsible roles
 - ◉ Sample size and selection
 - ◉ Frequency of completion
- ◉ Write a ***Data Storage Plan*** for youth mentoring documents that describes:
 - ***Where source documents and reports are kept***
 - ***How and how often data are backed up***
 - ***Who has access to data and documents***
 - ***Who can manipulate data***