



# Data Quality Review: Best Practices

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## AmeriCorps State and National 2015 Symposium



Corporation for  
**NATIONAL &  
COMMUNITY  
SERVICE** 

# Session Overview

- Why the emphasis on data quality?
- What are the elements of high-quality data?
- How should programs and commissions assess data quality for their sites/subgrantees?
- What are some common “red flags” to look for when reviewing programmatic data?
- What corrective actions should programs and commissions take if they encounter data quality issues?
- What resources are available to help with data quality?

# Why Data Quality is Important

- Fundamental grant requirement
- Trustworthy story of collective impact for stakeholders
- Sound basis for programmatic and financial decision-making
- Potential audit focus



# Elements of Data Quality

- Validity
- Completeness
- Consistency
- Accuracy
- Verifiability



# Validity

- **Official definition:** Whether the data collected and reported appropriately relate to the approved program model and whether or not the data collected correspond to the information provided in the grant application.
- **Plain language definition:** The data mean what they are supposed to mean
- How grantees/commissions should assess data validity for sites/subgrantees:
  - Review data collection tools; compare to objectives and PMs
  - Ask about data collection protocols
  - Request a completed data collection tool

# Validity

- Examples of potential problems:
  - Invalid tools
    - Mismatch between tool and type of outcome
    - Incorrect approach to pre/post testing
    - Failure to use tools required by the National Performance Measure Instructions
  - Invalid data collection protocols
    - Assessing the wrong population
    - Implementing protocols in the wrong ways or times

# Completeness

- **Official definition:** The grantee collects enough information to fully represent an activity, a population, and/or a sample.
- **Plain language definition:** Everyone is reporting a full set of data
- How grantees/commissions should assess data completeness for sites/subgrantees:
  - Keep a list of data submissions
  - Check source documentation
  - Request data at consistent intervals

# Completeness

- Examples of potential problems:
  - Subgrantees/sites missing from totals
  - Non-approved sampling
  - Inconsistent reporting periods



# Consistency

- **Official definition:** The extent to which data are collected using the same procedures and definitions across collectors and sites over time
- **Plain language definition:** Everyone is using the same data collection methods
- How grantees/commissions should assess data consistency for sites/subgrantees:
  - Request written data collection procedures; ask about dissemination/implementation
  - Cross-compare definitions and protocols

# Consistency

- Examples of potential problems:
  - No standard definitions/methodologies
  - Lack of knowledge about required procedures and/or failure to follow them
  - Staff turnover

# Accuracy

- **Official definition:** The extent to which data appear to be free from significant errors
- **Plain language definition:** The math is done right
- How grantees/commissions should assess data accuracy for sites/subgrantees:
  - Check your addition
  - Request data points from service locations
  - Check for double-counting in source data
  - Watch out for double-reporting

# Accuracy

- Examples of potential problems:
  - Math errors
  - Counting individuals multiple times
  - Reporting the same individuals under different program streams

# Verifiability

- **Official definition:** The extent to which recipients follow practices that govern data collection, aggregation, review, maintenance, and reporting
- **Plain language definition:** There is proof that the data are correct
- How grantees/commissions should assess data accuracy for sites/subgrantees:
  - Require source documentation
  - Review quality control plans

# Verifiability

- Examples of potential problems:
  - Inexplicable data points
  - Estimated values

# Common “Red Flags” in Reported Data

- a) Large completion rates reported early in the program year
- b) Actuals that are exactly the same as target values or consist solely of round numbers
- c) Actuals that are substantially higher or lower than target values or are out of proportion to the MSY or members engaged in the activity
- d) Substantial variation in actuals from one site to another
- e) Substantial variation in actuals from one program year to the next
- f) Outcome actuals that exceed outputs
- g) Outcome actuals that are exactly the same as outputs

# Example #1



Grant Number: 13AFHNY001

Application ID: 14AC169488

## eGRANTS Progress Report

Sponsor/Grantee: **Jobs for All- State A**

- General Information
- Demographics**
- MSYs/Members
- Performance Indicators
- Performance Measures
- Narratives
- Summary/Staff Review

Screen Instructions

Enter a numerical value in each field. If you do not collect data on an indicator, enter a zero (0) in that field.

Refer to GPR Instructions for details on which

Demographics

Demographic Information		Value
1	Number of individuals who applied to be AmeriCorps members	<input type="text" value="25783"/>

Focus Area	Objective	MSY Target	MSY Actual	Difference	% of Target	Member Target	Member Actual	Difference	% of Target
Economic Opportunity	Employment	10.00	* <input type="text" value="8.00"/>	-2.00	80.00%	10	* <input type="text" value="8"/>	-2	80.00%
Economic Opportunity	Financial Literacy	2.85	* <input type="text" value="2.85"/>	0.00	100.00%	6	* <input type="text" value="6"/>	0	100.00%
	<b>Sub Total:</b>	<b>12.85</b>	<b>10.85</b>	<b>-2.00</b>	<b>84.44%</b>	<b>16</b>	<b>14</b>	<b>-2</b>	<b>87.50%</b>
	<b>GRAND TOTAL:</b>	<b>12.85</b>	<b>10.85</b>	<b>-2.00</b>	<b>84.44%</b>	<b>16</b>	<b>14</b>	<b>-2</b>	<b>87.50%</b>



# Example #1

The grantee reported a large number of applicants for relatively small number of members (nearly 2,000 applicants for every filled slot)

**eGRANTS Progress Report** Sponsor/Grantee: **Jobs for All- State A**

General Information | **Demographics** | MSYs/Members | Performance Indicators | Performance Measures | Narratives | Summary/Staff Review

Screen Instructions

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		Demographic Information						Value
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Focus Area	Objective	MSY Target	MSY Actual	Difference	% of Target	Member Target	Member Actual	Difference	% of Target
Economic Opportunity	Employment	10.00	* <input type="text" value="8.00"/>	-2.00	80.00%	10	* <input type="text" value="8"/>	-2	80.00%
Economic Opportunity	Financial Literacy	2.85	* <input type="text" value="2.85"/>	0.00	100.00%	6	* <input type="text" value="6"/>	0	100.00%
							14	-2	87.50%
							<input type="text" value="14"/>	-2	87.50%

## Possible explanations:

- Very high demand for AmeriCorps member positions
- The number of AmeriCorps applicants is not reported correctly



# Example #1: Additional Context

	A	B
1	<b><u>Jobs for All - Number of AmeriCorps Applicants Reported to CNCS</u></b>	
2	Jobs for All National Program	25,783
3	Jobs for All - State A	25,783
4	Jobs for All - State B	25,783
5	Jobs for All - State C	25,783
6	Jobs for All - State D	25,783



# Example #1: Additional Context

	A	B
1	<b><u>Jobs for All - Number of AmeriCorps Applicants Reported to CNCS</u></b>	
2	Jobs for All National Program	25,783
3	Jobs for All - State A	25,783
4	Jobs for All - State B	25,783
5	Jobs for All - State C	25,783
6	Jobs for All - State D	25,783

Applicant numbers are being double-reported on the national grant and state subgrants

To ensure accuracy, the Jobs for All organization should separate out the applicants for each state program and report them separately from the national numbers

# Example #2



## Financial Literacy Education Program - Financial Literacy - PM 1

Measure Type or Resource Type	Measure #	Target	Actual
Output	O1: Number of econ disadv individuals receiving financial literacy services.	100	106
Outcome	O9: Individuals with improved financial knowledge.	40	106



# Example #2

The number of participants with increased knowledge (outcome) is exactly the same as the number of program participants (output)

## Financial Literacy Education Program - Financial Literacy - PM 1

Measure Type or Resource Type	Measure #	Target	Actual
Output	O1: Number of econ disadv individuals receiving financial literacy services.	100	106
Outcome	O9: Individuals with improved financial knowledge.	40	106

### Possible explanations:

- The program is extremely effective in achieving improved financial knowledge among program participants
- The number of individuals with improved financial knowledge is not being reported correctly

# Example #2: Additional Context

## Financial Literacy Program Post-Assessment

### Assessment of Knowledge Gains

Please respond to the questions below based on your experience participating in the Financial Literacy Corps' financial literacy training program.

**1. How satisfied were you with the program?**

Very Satisfied

Somewhat Satisfied

Neutral

Somewhat Dissatisfied

Very Dissatisfied



**2. Do you feel that you learned something from your participation in the program?**

Yes

No

**3. What suggestions do you have for how to improve the program for future participants?**

Done



# Example #2: Additional Context

## Financial Literacy Program Post-Assessment

### Assessment of Knowledge Gains

This assessment is primarily a customer satisfaction survey that does not objectively measure changes in knowledge

Please respond to the questions below based on your experience participating in the Financial Literacy Corps' financial literacy training program.

#### 1. How satisfied were you with the program?

Very Satisfied

Somewhat Satisfied

Neutral

Somewhat Dissatisfied

Very Dissatisfied



#### 2. Do you feel that you learned something from your participation in the program?

Yes

No

#### 3. What suggestions do you have for how to improve the program for future participants?

To ensure validity, the grantee should use a pre-post assessment tool that asks content-based questions directly related to the subject matter

# Example #3

State X Commission Subgrantee Volunteer Counts – End of Year

Program	Description	MSY	Number of volunteers reported
<u>EduCorps</u>	AmeriCorps members provide after-school tutoring and mentoring to students who are at risk of dropping out	253	458
Healthy Corps	AmeriCorps members recruit community volunteers to provide fitness and nutrition activities for youth	24	306
Vet Corps	AmeriCorps members help newly returning veterans re-integrate into their communities	45	49
Capacity Builders Corps	AmeriCorps members recruit and support volunteers and help to build effective volunteer management practices in community organizations	120	40,814
Disaster Corps	AmeriCorps members increase individual and community disaster resiliency by helping individuals develop disaster preparedness plans	28	255
Green Corps	AmeriCorps members serve, learn and train for employment while restoring local waterways and forest ecosystems	40	104



# Example #3

State X Commission Subgrantee Volunteer Counts – End of Year

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Green Corps	AmeriCorps members serve, learn and train for employment while restoring local waterways and forest ecosystems	40	104

The number of volunteers reported by one subgrantee is about 100x higher than the others and represents over 300 volunteers per MSY

Possible explanations:

- The subgrantee’s AmeriCorps members are highly effective in recruiting and supporting volunteers
- The number of volunteers is not being reported correctly by this subgrantee

# Example #3: Additional Context

Volunteer Sign-In Sheet: April 10

Name	Time In	Time Out
Jane Doe	9:30am	11:30am
Patty King	10AM	12PM
ZEKE WATSON	11:00AM	3:00PM
Antonio Garcia	10:30	1:30

Volunteer Sign-In Sheet: April 24

Name	Time In	Time Out
Patty King	12PM	4PM
ANTOINE PARKER	3 <sup>PM</sup>	8 <sup>PM</sup>
Jane Doe	2:00pm	6:00pm
Luann Harper	1:30 p.m.	3:30 p.m.

Total volunteers for the month of April:

8

# Example #3: Additional Context

The total volunteer tally double-counts the same volunteers across multiple service events

To ensure accuracy, the subgrantee should implement a volunteer management system that ensures that each individual volunteer is reported only once

Volunteer Sign-In Sheet: April 10

Name	Time In	Time Out
Jane Doe	9:30am	11:30am
Patty King	10AM	12PM
ZEKE WATSON	11:00AM	3:00PM
Antonia Garcia	10:30	1:30

Volunteer Sign-In Sheet: April 24

Name	Time In	Time Out
Patty King	12PM	4PM
ANTOINE PARKER	3 <sup>PM</sup>	8 <sup>PM</sup>
Jane Doe	2:00pm	6:00pm
Luann Harper	1:30 p.m.	3:30 p.m.

Total volunteers for the month of April:

8

It is also important to report only volunteers recruited or supported directly by AmeriCorps members, not volunteers recruited/supported by staff or by other volunteers

# Example #4

## After-school Tutorials - K-12 Success - PM 3

Measure Type or Resource Type	Measure #	Target	Actual	Diff	% of Target	Met Target
Output	ED1: Number of students who start in a CNCS-supported education program.	400	644	244	161.00 %	Yes
	<b>Explanation</b>					
Output	(PRIORITY) ED2: Number of students completing a CNCS-supported education program	360	581	221	161.39 %	Yes
	<b>Explanation</b>					
Outcome	(PRIORITY) ED5: Number of students with improved academic performance in literacy and/or math	320	95	-225	29.69 %	No



# Example #4

The actual value for the outcome is significantly lower than the target value even though the output actuals exceed the targets

## After-school Tutorials - K-12 Success - PM 3

Measure Type or Resource Type	Measure #	Target	Actual	Diff	% of Target	Met Target
Output	ED1: Number of students who start in a CNCS-supported education program.	400	644	244	161.00 %	Yes
	<b>Explanation</b>					
Output	(PRIORITY) ED2: Number of students completing a CNCS-supported education program	360	581	221	161.39 %	Yes
	<b>Explanation</b>					
Outcome	(PRIORITY) ED5: Number of students with improved academic performance in literacy and/or math	320	95	-225	29.69 %	No

### Possible explanations:

- The program was largely unsuccessful in improving academic performance among student beneficiaries
- The number of students achieving improved academic performance is not reported correctly

# Example #4: Additional Context

▼ After-school Tutorials - K-12 Success - PM 3

Measure Type or Resource Type	Measure #	Target	Actual	Diff	% of Target	Met Target	Explanation / Corrective Action
Output	ED1	400	<input type="text" value="644"/>	244	161.00 %	Yes ▼	<a href="#">Enter Explanation</a>
Output	ED2	360	<input type="text" value="581"/>	221	161.39 %	Yes ▼	<a href="#">Enter Explanation</a>
Outcome	ED5	320	<input type="text" value="95"/>	-225	29.69 %	No ▼	<div style="border: 1px solid gray; padding: 5px;"> <p>95% of the students who completed the program increased their standardized test scores over the course of the program year</p> </div> <div style="text-align: right; margin-top: 5px;"> <span>Close</span> <span>Cancel</span> <span>Copy</span> </div>



# Example #4: Additional Context

The grantee reported a percentage rather than a raw number

▼ After-school Tutorials - K-12 Success - PM 3

Measure Type or Resource Type	Measure #	Target	Actual	Diff	% of Target	Met Target	Explanation / Corrective Action
Output	ED1	400	<input type="text" value="644"/>	244	161.00 %	Yes ▼	<a href="#">Enter Explanation</a>
Output	ED2	360	<input type="text" value="581"/>	221	161.39 %	Yes ▼	<a href="#">Enter Explanation</a>
Outcome	ED5	320	<input type="text" value="95"/>	-225	29.69 %	No ▼	95% of the students who completed the program increased their standardized test scores over the course of the program year

To ensure consistency with the output and outcome (and in accordance with the National Performance Measure Instructions), the grantee should report the total number of students who demonstrated increased academic performance (552), not the percentage

The grantee should also ensure that the students counted under this measure meet the minimum level of increase in standardized test scores that was specified in the approved grant application

# Example #5



## Demographics

Demographic Information	Value
Number of individuals who applied to be AmeriCorps members	116
Number of episodic volunteers generated by AmeriCorps members	389
Number of ongoing volunteers generated by AmeriCorps members	68
Number of AmeriCorps members who participated in at least one disaster services project	44
Number of disasters to which AmeriCorps members have responded	10
Number of individuals affected by disaster receiving assistance from members	2,000
Number of veterans serving as AmeriCorps members	2



# Example #5

## Demographics

Demographic Information	Value
Number of individuals who applied to be AmeriCorps members	116
Number of episodic volunteers generated by AmeriCorps members	389
Number of ongoing volunteers generated by AmeriCorps members	68
Number of AmeriCorps members who participated in at least one disaster services project	44
Number of disasters to which AmeriCorps members have responded	10
Number of individuals affected by disaster receiving assistance from members	2,000
Number of veterans serving as AmeriCorps members	2

The number of individuals affected by disaster receiving assistance from members is an unusually round number

Possible explanations:

- Members served exactly 2,000 individuals over the course of the program year
- The number of individuals receiving assistance from members is not reported correctly

# Example #5: Additional Context

<p>▶ <a href="#">Grantee Narrative</a></p>	<b>Status</b> <input checked="" type="checkbox"/> Clarification Required <input type="checkbox"/> Clarification Resolved <input type="checkbox"/> Review Complete
<p>▶ <a href="#">Program Officer Analysis</a></p>	
<p>▶ <a href="#">Program Officer Feedback</a></p>	
<p>▶ <a href="#">Program Officer Clarification Items</a></p>	
<p>▼ <b>Grantee Clarification</b></p> <div style="border: 1px solid #ccc; padding: 5px;"><p>Members responded to approximately one natural disaster per month over the course of the 10-month program year. We estimate that our cohort of members assisted about two hundred individuals during each disaster event, resulting in a total of 2000 individuals (10 events x 200 individuals per event).</p></div>	



# Example #5: Additional Context

▶ Grantee Narrative	Status <input checked="" type="checkbox"/> Clarification Required <input type="checkbox"/> Clarification Resolved <input type="checkbox"/> Review Complete
▶ Program Officer Analysis	
▶ Program Officer Feedback	
▶ Program Officer Clarification Items	
▼ Grantee Clarification	
<p>Members responded to approximately one natural disaster per month over the course of the 10-month program year. We estimate that our cohort of members assisted about two hundred individuals during each disaster event, resulting in a total of 2000 individuals (10 events x 200 individuals per event).</p>	

The grantee estimated the value of the demographic indicator rather than measuring it

To ensure verifiability, the grantee should ensure that they have specific data collection procedures for all reported values and are maintaining source documentation for each number



# Example #6

## 2014 Mid-Year GPR:

### Capacity Building & Leverage-1-Enhanced Organizational Effectiveness

Interventions : Capacity Building Activity

Measure Type	Measure #	Target	Actual	Progress
Outcome	G3-3.10	13	8	61.54 %
Output	G3-3.4	15	9	60.00 %

*G3-3.4 (output): Number of organizations that received capacity building services from CNCS-supported organizations or national service participants*

## 2014 End-of-Year GPR:

### Capacity Building & Leverage-1-Enhanced Organizational Effectiveness

Interventions : Capacity Building Activity

Measure Type	Measure #	Target	Actual	Progress
Outcome	G3-3.10	13	7	53.85 %
Output	G3-3.4	15	10	66.67 %

*G3-3.10 (outcome): Number of organizations reporting that capacity building activities have helped to make the organization more effective*

# Example #6



## 2014 Mid-Year GPR:

▼ Capacity Building & Leverage-1-Enhanced Organizational Effectiveness

Interventions : Capacity Building Activity

Measure Type	Measure #	Target	Actual	Progress
Outcome	G3-3.10	13	8	61.54 %
Output	G3-3.4	15	9	60.00 %

## 2014 End-of-Year GPR:

▼ Capacity Building & Leverage-1-Enhanced Organizational Effectiveness

Interventions : Capacity Building Activity

Measure Type	Measure #	Target	Actual	Progress
Outcome	G3-3.10	13	7	53.85 %
Output	G3-3.4	15	10	66.67 %

The number of organizations reporting that capacity-building activities have helped to make the organization more effective has decreased from the mid-year GPR to the end-of-year GPR

Possible explanations:

- One organization changed its mind about whether capacity-building activities had helped to make it more effective
- The number of organizations is not reported correctly

# Example #6: Additional Context

2014 End-of-Year GPR:

▼ **Capacity Building & Leverage-1-Enhanced Organizational Effectiveness**

Interventions : Capacity Building Activity

Measure Type	Measure #	Target	Actual	Progress
Outcome	G3-3.10	13	7	53.85 %
Output	G3-3.4	15	10	66.67 %
Amount		\$0.00	\$ 0.00	0.00 %
Grantee Note	We provided training to 10 organizations during the second half of the program year. Of these, 7 responded positively to a post-training survey about whether the training had made them more effective.			



# Example #6: Additional Context

2014 End-of-Year GPR:

▼ Capacity Building & Leverage-1-Enhanced Organizational Effectiveness

Interventions : Capacity Building Activity

Measure Type	Measure #	Target	Actual	Progress
Outcome	G3-3.10	13	<input type="text" value="7"/>	53.85 %
Output	G3-3.4	15	<input type="text" value="10"/>	66.67 %
Amount		\$0.00	\$ <input type="text" value="0.00"/>	0.00 %
Grantee Note	We provided training to 10 organizations during the second half of the program year. Of these, 7 responded positively to a post-training survey about whether the training had made them more effective.			

The grantee only reported on values for the second half of the program year

To ensure completeness, the grantee should report the cumulative outputs and outcomes for the whole program year as requested by the End-of-Year GPR instructions

To ensure validity, the grantee should use a pre-post assessment for G3-3.10 as required by the National Performance Measure Instructions and should ensure that the timing of the post-assessment allows for genuine measurement of changes in organizational effectiveness

# Corrective Actions for Data Quality Issues

- Notify your CNCS Program/Grants Officer and discuss best way forward
- For issues related to invalid tools, incorrect protocols, or wrong definitions:
  - Switch to the correct tool/protocol/definition immediately if feasible; if not, switch in the next program year
  - Do not report data collected using incorrect tool/protocol/definition. Document reasons for not reporting.
- For issues related to incomplete reporting, math errors, or double-counting/double-reporting:
  - Correct the values
  - Put together quality control procedure

# Corrective Actions for Data Quality Issues

- For issues related to missing/incomplete source documentation:
  - Develop a system for retaining source data
  - Do not report values for which there is little/no evidence. Document reasons for not reporting.

# Resources for Data Quality Review

- Performance Measurement Core Curriculum ([www.nationalservice.gov/resources/performance-measurement/training-resources](http://www.nationalservice.gov/resources/performance-measurement/training-resources))
  - Performance Measurement Basics
  - Theory of Change
  - Evidence
  - Quality Performance Measures
  - **Data Collection and Instruments**
- Evaluation Core Curriculum: Implementing an Evaluation ([/www.nationalservice.gov/resources/evaluation/implementing-evaluation](http://www.nationalservice.gov/resources/evaluation/implementing-evaluation))
  - Basic Steps of an Evaluation
  - **Data Collection**
  - Managing an Evaluation

# Resources for Data Quality Review

- National Performance Measure Instructions ([http://www.nationalservice.gov/sites/default/files/documents/ACSN\\_PM\\_Instructions\\_2015\\_NOFO\\_1.pdf](http://www.nationalservice.gov/sites/default/files/documents/ACSN_PM_Instructions_2015_NOFO_1.pdf))
- CNCS Monitoring Tool: Data Quality Review Tab

				Data Quality	
Not assessed	Yes	No			Comments
			The Data Quality review is designed to assess the quality of reported data. The review entails engaging grantees in a dialogue about the underlying processes used to gather and handle data and will cover the following data quality elements: validity, completeness, consistency, accuracy, and verifiability.		
<i>Validity addresses whether the data collected and reported appropriately relates to the approved program model and whether or not the data collected corresponds to the information provided in the grant application. In evaluating validity, CNCS staff will determine if the performance measure data being collected appear to measure the project's demographic data, performance measures, and/or outcomes.</i>					
1			Are the reported data consistent with the approved program design?		
2			Is the program measuring what it intended to measure?		

