Building Effective Data Collection Plans
October 12, 2017

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Session Goals

- Participants will **learn how to develop data collection plans and systems** that result in high-quality programmatic data

- Participants will gain insights about **how to use data collected** by their program to support continuous learning and program improvement

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Session Outline

- **Purpose and importance** of data collection
- **Process/best pr**actices for developing data collection plans
- Sample **data collection plan development**
- **Resources** to help with data collection plan development

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Data

- **DATA:** The raw material used to measure your performance
  - Data collection occurs as a **planned process** that involves **recording information in a consistent way**
  - Data collection **involves multiple steps** that take place **throughout the lifecycle of the grant**. Data collection is not an end in itself

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Goals of Data Collection

- Provide a sound basis for decision making
- Improve service quality and outcomes
- Increase accountability
- Tell your story in a more compelling way

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Steps in a Data Collection Plan

1. Select data to collect
2. Identify data types and sources
3. Select or develop instruments
4. Identify data collectors
5. Set a schedule for data collection
6. Set up systems for data storage
7. Train data collectors
8. Pilot-test data collection
9. Implement data collection
10. Analyze collected data
11. Use data to improve your program

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Select Data to Collect

- Based on program's **Theory of Change**
- Should **tell effective story of program impact**
- Must be **measurable within the program year**

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Identify Data Sources

- **DATA SOURCE:** The person, group, or organization that has information to answer measurement questions.
  - Must be appropriate for type of data to be collected
  - May be existing (secondary) data or new (primary) data
  - Consider pros and cons of different sources: accessibility, cost, staff time, ethics
  - *Note: some national performance measures have required data sources*

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Select or Develop Instruments

- **INSTRUMENT CONSIDERATIONS**:
  - Must be suitable for type of change to be assessed
  - Should measure objective change: pre-post measurement is preferable to post-only
  - Should use simple and clear language that does not bias the response
  - Must be appropriate for the age, education, and language of the respondents
  - Should produce data that can be easily compiled and aggregated for reporting
  - *Note: some national performance measures have required instruments*

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Instruments and Data Quality

- **VALIDITY:** The data mean what they are supposed to mean
- **COMPLETENESS:** Everyone is reporting a full set of data
- **CONSISTENCY:** Everyone is using the same data collection methods
- **ACCURACY:** The math is done right
- **VERIFIABILITY:** There is proof that the data is correct

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Types of Instruments

- **For measuring outputs:**
  - **Tracking Sheet:** Used to document service delivery or participation
- **For measuring outcomes:**
  - **Survey:** Written questionnaire completed by respondents
  - **Interview:** Interviewer poses questions and records responses; face-to-face or via telephone
  - **Observation:** Observer records behavior or conditions using via checklist or other form
  - **Standardized Test:** Used to assess knowledge

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New vs. Existing Instruments

- **Creating New instruments:**
  - **Pros:** Can be tailored exactly to your intervention, beneficiaries, and outputs/outcomes
  - **Cons:** Creating a high-quality instrument can be expensive and time consuming
- **Existing instruments:**
  - **Pros:** No need to "reinvent the wheel"; validity and reliability may have already been verified
  - **Cons:** May cost money or be more difficult to access: may require modification to fit your program model

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Key Points

- The benefits of collecting high-quality data include providing a **sound basis for decision making**, **improving service quality and outcomes**, **increasing accountability**, and **telling your story** in a more compelling way
- Your **Theory of Change**, and key measurement questions embedded in it, are essential guides
- The **type of data** to be measured influences decisions about **sources, methods, and instruments**

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ACTIVITY

Data Collection Plan Outline

Instructions: For each data point collected by the program, fill in the requested information in the relevant column. Note that the "logic" of the document flows from top to bottom, so the information entered builds upon the data / information that was entered in the cell directly above.

	Example data point	Data point #1	Data point #2	Data point #3
Data to be collected	Outcome: number of beneficiaries who demonstrate improved knowledge of [X] Improved knowledge: score increase of 10% or more from beginning to end of program			
Source of data	Beneficiaries: economically disadvantaged residents of community [Y]			
Instrument type and description	Pre-post-test: a 25-question multiple-choice assessment created and field-tested by researchers at ABC University that measures knowledge about [X]. The same instrument is used for both the pre- and post-test.			

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SAFER CITIES AMERICORPS

10-month program w/20 HT members designed to:
- help **increase public safety**
- **improve police officer-community relations** in 5 medium-sized U.S. cities

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SAFER CITIES AMERICORPS

Interventions
1. Develop activities to connect police officers with community members including:
    - school presentations
    - informal sports events at neighborhood parks
2. Work with local civic and community organizations to:
    - share information about home/car safety tips
    - set up neighborhood watch programs
    - other strategies to reduce local crime rates

GUIDING QUESTIONS - PART A

1. What performance measure output and outcome data would you recommend that the program collect?
2. What source(s) should the program use for these data?
3. What instrument(s) should the program use for data collection?

Question 1: Output and Outcome Data

	Data point #1: Output	Data point #2: Outcome
Data to be collected		

Essential Considerations:
- At least one aligned PM connected to primary service activity
- Clearly connected to Theory of Change
- Tell compelling story of program impact
- Feasible in a single program year

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Question 1: Output and Outcome Data

	Data point #1: Output	Data point #2: Outcome
Data to be collected	Number of individuals who participate in at least one activity connecting police officers with community members	Number of individuals who report a more positive perception of police-community relations

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Question 2: Data Sources

	Data point #1: Output	Data point #2: Outcome
Source of data		

Essential Considerations:
- Type(s) of data needed
- Valid/authentic source of information
- Objectivity

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Question 2: Data Sources

	Data point #1: Output	Data point #2: Outcome
Source of data	School staff (teachers) Beneficiaries (community members, police officers)	Beneficiaries (community members, police officers, students)

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Question 3: Instruments

	Data point #1: Output	Data point #2: Outcome
Instrument type and description		

Essential Considerations (output):
- Ensure unduplicated count
- Track dosage

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Question 3: Instruments

	Data point #1: Output	Data point #2: Outcome
Instrument type and description	For students: school attendance roster For other beneficiaries: sign-in sheets that record date of activity and first and last name	

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Question 3: Instruments

	Data point #1: Output	Data point #2: Outcome
Instrument type and description	For students: school attendance roster For other beneficiaries: sign-in sheets that record date of activity and first and last name	

Essential Considerations (outcome):
- Valid for type of change
- Can assess before and after intervention
- Works for all categories of beneficiaries

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Question 3: Instruments

	Data point #1: Output	Data point #2: Outcome
Instrument type and description	For students: school attendance roster For other beneficiaries: sign-in sheets that record date of activity and first and last name	Pre-post survey that assesses attitudes about police-community relations. Must include some sort of unique identifier (first and last name or otherwise).

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Questions for Reflection

- **What data do you use** to tell the story of your program?
- **What source(s) of data** do you use? What are the pros and cons of your data sources?
- **What data collection instruments** do you currently use? Would you consider them high-quality? Why or why not?

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TAKE ACTION NOW

Using the CNCS Data Collection Plan Template,
complete sections 1-3

Identify Data Collectors

- Potential data collectors:
  clients/beneficiaries, AmeriCorps members, program staff, host-site staff, other stakeholders

- Roles: data collection, aggregation, review/verification, analysis, reporting

- Considerations: time, access, objectivity, level of knowledge/training required, confidentiality

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Set a Schedule for Data Collection

- Identify who will collect data, using which instrument, and when it will take place
- Share with the team to keep everyone informed
- Include key stakeholders in planning
- Include dates for both pre- and post- assessments
- Schedule time for collecting, analyzing, and reporting on the data

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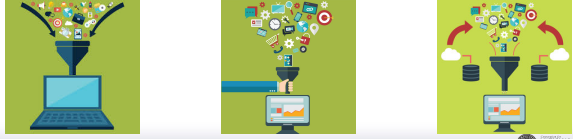
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Set Up Systems for Data Storage

- Ensure data security and confidentiality
- Allow for data aggregation and analysis
- Set up appropriate permissions for data collectors
- Retain source documentation for all data

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Train Data Collectors

- Identify qualified trainers from inside our outside your organization
- Provide written instructions for collecting the data
- Explain the importance and value of data for the program
- Walk data collectors through the instrument
- Practice and/or role play data collection
- Review data collection schedule
- Explain how to return and store completed instruments

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Key Points

Steps to implement data collection include identifying the players involved, creating a data collection schedule, setting up data storage systems, and training data collectors

Everyone should understand the purpose of data collection and have access to the data collection schedule/procedures

It is crucial to invest time and resources in setting up high-quality systems for data storage, including source documentation

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Activity

Guiding Questions, Part B

4. Who would be the most appropriate individual(s) to collect the output and outcome data?
5. What data collection schedule should the program follow?
6. How should the data and source documentation be stored?
7. What training should the data collectors receive?

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Question 4: Person(s) Responsible

	Data point #1: Output	Data point #2: Outcome
Person(s) responsible for data collection		

Essential Considerations:
- Access
- Training
- Objectivity

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Question 4: Person(s) Responsible

	Data point #1: Output	Data point #2: Outcome
Person(s) responsible for data collection	Teachers record student attendance at each school presentation. AmeriCorps members ensure that all beneficiaries participating in the activity enter the required information on the sign-in sheet.	AmeriCorps members administer the pre-post surveys and collect responses from each beneficiary.

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Question 5: Schedule

	Data point #1: Output	Data point #2: Outcome
Data collection schedule		

Essential Considerations:
- Response rate
- Meaningful results

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Question 5: Schedule

	Data point #1: Output	Data point #2: Outcome
Data collection schedule	Data collected on-site as beneficiaries enter/join activity.	Pre-survey is administered to beneficiaries when they join the activity. Post-survey is administered upon exit from the activity.

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Question 6: Data Storage

	Data point #1: Output	Data point #2: Outcome
Data storage plan, including source documentation		

Essential Considerations:
- User-friendly format
- Verifiability
- Protecting sensitive information

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Question 6: Data Storage

	Data point #1: Output	Data point #2: Outcome
Data storage plan, including source documentation	• Beneficiary names or other unique identifiers are stored in a spreadsheet along with dates and activity descriptions • Sign-in sheets and attendance lists provided by schools are stored electronically. • Data server is password protected and only program staff have access.	• Raw scores for pre- and post-surveys are stored on the same spreadsheet as the beneficiary names/dates/activities. • Individual pre- and post-surveys completed by each beneficiary are stored electronically • Data server is password protected and only program staff have access.

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Question 7: Training

	Data point #1: Output	Data point #2: Outcome
Training for data collectors		

Essential Considerations:
- Process
- Quality
- Purpose

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Question 7: Training

	Data point #1: Output	Data point #2: Outcome
Training for data collectors	• *Purpose and importance of data collection* • Essential information that needs to be collected about each beneficiary (first and last name or other unique identifier; date(s) and nature of session(s) attended • *How to ensure data quality*	• When to administer the pre- and post-survey to beneficiaries • How to administer the surveys in a way that ensures complete information, optimizes response rates, and does not bias the results • *What to do with the collected data*

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Questions for Reflection

• Who have been effective data collectors for your program, and why? What are the tradeoffs between having staff collect data vs. AmeriCorps members?

• Who in your organization is responsible for creating, disseminating, and enforcing your data collection schedule?

• What tools do you use to securely store data and source documentation?

• What challenges have you encountered training data collectors? What best practices can you share?

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Pilot-test Data Collection

• Try out instruments with a small group similar to program participants
• Discuss instruments with the respondents and data collectors
• Analyze pilot test data to ensure the instrument yields the right information
• Make changes based on pilot test analysis:
  • Improve instrument
  • Strengthen the process
• Should be done before the start of the program year

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Implement Data Collection

- Perform periodic quality control checks
- Note elements that should be revised or improved in the following year

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Analyze Collected Data

- Check data against the 5 data quality elements
- Compare to:
  - Current year targets
  - Previous year results
- Do basic statistical analysis where possible
- Compile key findings for decision-makers and stakeholders

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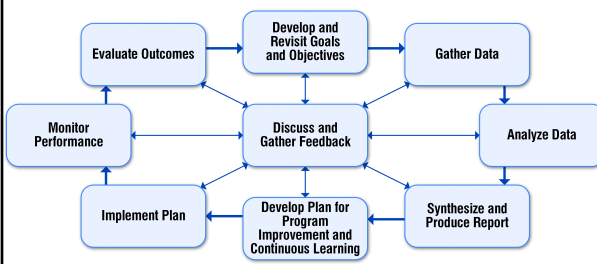
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Use Data to Improve Your Program

Evaluate Outcomes — Develop and Revisit Goals and Objectives — Gather Data

Monitor Performance — Discuss and Gather Feedback — Analyze Data

Implement Plan — Develop Plan for Program Improvement and Continuous Learning — Synthesize and Produce Report

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Use Data to Improve Your Program

Develop a culture of learning:
- Reflect on data with stakeholders and program staff at all levels
- Use data to ask questions, seek answers, and identify and solve problems
- Make data-informed adjustments to program activities
- Re-assess program goals and objectives based on analysis of collected data
- Use data as basis for long-term planning and decision making

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Key Points

Pilot testing is a helpful way to ensure that the data you collect will give you the information you need

Data collection and analysis provide valuable opportunities to assess what is going well and what can be improved

The most fundamental goal of data collection is to help you improve your program

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Activity

Guiding Questions, Part C

8. How could the program pilot-test the data collection plan?
9. What analysis should the program do on the collected data?
10. How could the collected data be used to help improve the program?

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Question 8: Pilot Testing

	Data point #1: Output	Data point #2: Outcome
Pilot-testing strategies		

Essential Considerations:
- Prior to program start
- Similar beneficiaries and settings

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Question 8: Pilot Testing

	Data point #1: Output	Data point #2: Outcome
Pilot-testing strategies	Try out the same or similar activities in summer schools or camps, or in local communities on a small scale. Have program staff test the data collection strategies in these settings to see if they yield the necessary information.	Administer the pre-post survey to AmeriCorps members during pre-service orientation so they can experience it from the "other side" and provide feedback on the process.

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Question 9: Data Analysis

	Data point #1: Output	Data point #2: Outcome
Data analysis strategies		

Essential Considerations:
- Assessment of implementation
- Progress toward targets
- Effectiveness of activities
- Variation within program

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Question 9: Data Analysis

	Data point #1: Output	Data point #2: Outcome
Data analysis strategies	• Screen data to combine duplicate entries • Compare actual with target value • Determine actual dosage for each beneficiary	• Match pre- and post-surveys and calculate difference in score; compare against definition of "more positive perception" • Compare actual with target value • Compare results for different activity types, different beneficiary subgroups, different dosage levels, different geographic areas • Look at results for individual questions to see if there are area(s) that show more or less improvement.

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Question 10: Program Improvement

	Data point #1: Output	Data point #2: Outcome
How data will be used for program improvement		

Essential Considerations:
- Reach
- Effectiveness
- Evidence

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Question 10: Program Improvement

	Data point #1: Output	Data point #2: Outcome
How data will be used for program improvement	• Does program structure need to be modified to reach more beneficiaries? • *Do I need to provide more or different training to data collectors?* • *How can I improve my data collection strategies?*	• Do I need to adjust the program dosage or nature of activities to improve outcomes? • Do resources need to be shifted toward aspect(s) of the program that are working better?

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Questions for Reflection

- Have you ever changed your data collection instrument or protocol? If so, what prompted you to do so?
- Who in your organization is responsible for quality control of your data? What systems do you have in place to validate collected data?
- Who in your organization is responsible for data analysis? How does your organization use the analyzed data?
- Share an example of how you have used data you collected to change or improve your program

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Resources

Performance Measurement Core Curriculum:
https://www.nationalservice.gov/resources/performance-measurement/training-resources
- Collecting High Quality Outcome Data courses (Part 1 and Part 2)
- Data Collection and Instruments resources

Evaluation Core Curriculum:
https://www.nationalservice.gov/resources/evaluation/all-evaluation-resources
- Data Collection course
- Reporting and Using Evaluation Results course

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Resources

Other Performance Measurement Resources:
https://www.nationalservice.gov/resources/performance-measurement/other-americorps-performance-measurement-resources
- Data Quality Review Best Practices course

2017 National Performance Measure Instructions:
https://www.nationalservice.gov/documents/main-menu/2016/2017-performance-measures-instructions
- Lists required data sources and instruments for national performance measures

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