



# Connecting the Dots: Methods and Analysis

Evaluation Learning Series

Topic #5

# Evaluation Learning Series

## Topics in the Series

The Importance of Engaging Stakeholders

How to Create a Program Description

Evaluation Questions

Evaluation Design & Indicators

Connecting the Dots: Methods and Analysis

Writing and Dissemination

# Agenda

- Data Collection Methods
- Data Analysis
- Qualitative and Quantitative Data: The Big Picture
- CDC Evaluation Framework Standards

# Data Collection Methods

# CDC Evaluation Framework

- Step 1: Stakeholders
- Step 2: Program Description
- Step 3: Focus Evaluation Design
- Step 4: Gather Credible Evidence
  - Choose indicators/measures
  - Decide on data collection methods and data sources



# Data Collection Methods

- Are there existing data sources or do you need to collect new data?
  - Primary data collection vs secondary data collection

# Primary Data Collection Methods

- Surveys
- Interviews
- Focus Groups
- Observation
- Document Review

# Primary Data Sources

- Basic Screening Survey (BSS)
- Water Fluoridation Reporting System (WFRS)
- Performance measures



# Secondary Data Sources

- State vital statistics
- Behavioral Risk Factor Surveillance System (BRFSS)
- Pregnancy Risk Assessment Monitoring System (PRAMS)
- National Health and Nutrition Examination Survey (NHANES)

# How to Decide

- Context and content
  - Assess the resources you have available for data collection
  - Determine how soon you need the results
  - Ask yourself: Is this observable?
- Stakeholder discussions
- Choose the methods/sources because they fit, not because they are familiar

# Data Sources (1)

Evaluation Questions/Indicators for School-Based Dental Program		
Questions & Indicators	Definition (Numerator and Denominator)	Data Source
<b>What was the program's reach in 2015?</b>		
<ul style="list-style-type: none"> <li>Total # children who received services in 2015-16.</li> </ul>	N/A	SOHP Coordinator
<ul style="list-style-type: none"> <li>Number of school-based programs per Health District reached in 2015-16</li> </ul>	N: Number of participating schools D: Number of participating health districts	Dental Sealants Coordinator
<ul style="list-style-type: none"> <li>Number of participating schools per School Divisions in 2015-16</li> </ul>	N: Number of participating schools D: Number of participating school divisions	-Dental Sealants Coordinator VA-SEALS Database
<ul style="list-style-type: none"> <li>Number of sealants placed in 2015-16</li> </ul>	This is the number of teeth sealed.	VA SEALS Database
<ul style="list-style-type: none"> <li>Number of children screened by grade in school year 2015-16</li> </ul>	N/A	VA SEALS Database
<b>What marketing and promotional activities occurred in 2015 to promote the sealant program?</b>		
<ul style="list-style-type: none"> <li>Number of dental sealant marketing materials distributed to VA schools in 2015-16</li> </ul>	These included posters, flyers, <u>tooth brushes</u> , tooth paste, and other print materials.	Dental Sealants Coordinator
<ul style="list-style-type: none"> <li>Number of conferences/ events attended by DHP Central Office staff to promote dental sealants in 2015-16</li> </ul>	School open houses, community health events, Parent Teacher Association	Dental Sealants Coordinator

Source: School-based Dental Program Evaluation Report of the Virginia Department of Health, 2016. Richmond: Virginia. Office of Family Health Services, Virginia Department of Health. March 2017.

# Data Sources (2)

Logic Model Element	Indicator(s)	Data Source(s) and Method(s)
<b>Outreach</b>	High-risk children and families in the district have been reached with relevant information	Logs of direct mail and health fair contacts  Demographic algorithm  Geographic Information System (GIS) algorithm
<b>Screening</b>	High-risk children have completed initial and follow-up screening	Logs and lab data
<b>Environment assessment</b>	Environments of all children over EBLL threshold have been assessed for lead poisoning	Logs of environmental health staff
<b>Case management</b>	All children over EBLL threshold have a case management plan including social, medical, and environmental components	Case file of EBLL child
<b>Family training</b>	Families of all children over EBLL threshold have received training on household behaviors to reduce EBLL	Logs of case managers  Survey of families
<b>“Leaded” houses referred</b>	All houses of EBLL children with evidence of lead have been referred to housing authority	Logs and case files
<b>“Leaded” houses cleaned</b>	All referred houses have been cleaned up	Follow-up assessment by environmental health staff  Housing authority logs

Source: U.S. Department of Health and Human Services. Centers for Disease Control and Prevention. Office of the Director, Office of Strategy and Innovation. Introduction to program evaluation for public health programs: A self-study guide. Atlanta, GA: Centers for Disease Control and Prevention, 2011.

# Triangulation

- Sequential
  - Qualitative methods used to develop a quantitative instrument
  - Interviews conducted post-survey
- Concurrent
  - Focus groups/interviews to confirm the response validity of a quantitative instrument

# The Four Standards (1)

## Utility

Consider the purpose and use of data collection. Do you want to tell an in-depth story? Or do you want to analyze a range of experiences?

## Feasibility

Which methods can you afford?

How long until the results are needed?

How often do you need the data?

Are you well-versed in the chosen data collection method or will you need assistance from an external consultant?

# The Four Standards (2)

## Propriety

Will the data collection method be seen as intrusive to participants?

Are there issues of confidentiality or participant safety in seeking answers to questions on this issue?

## Accuracy

Is the issue a measurable/observable behavior?

How honest will respondents be answering questions on this issue?

Is this something that participants will likely know?

# Data Collection: Iowa

- Planning to conduct a sealant evaluation
- Proposed data collection method: survey to assess facilitators and barriers
  - Struggled with proposed delivery method
- Reached out to CDC and some other states with experience
  - Considered context while making decisions
- Decision: Paper survey followed by focus groups



# Discussion

- Have any of the four standards posed a challenge when thinking about data collection?

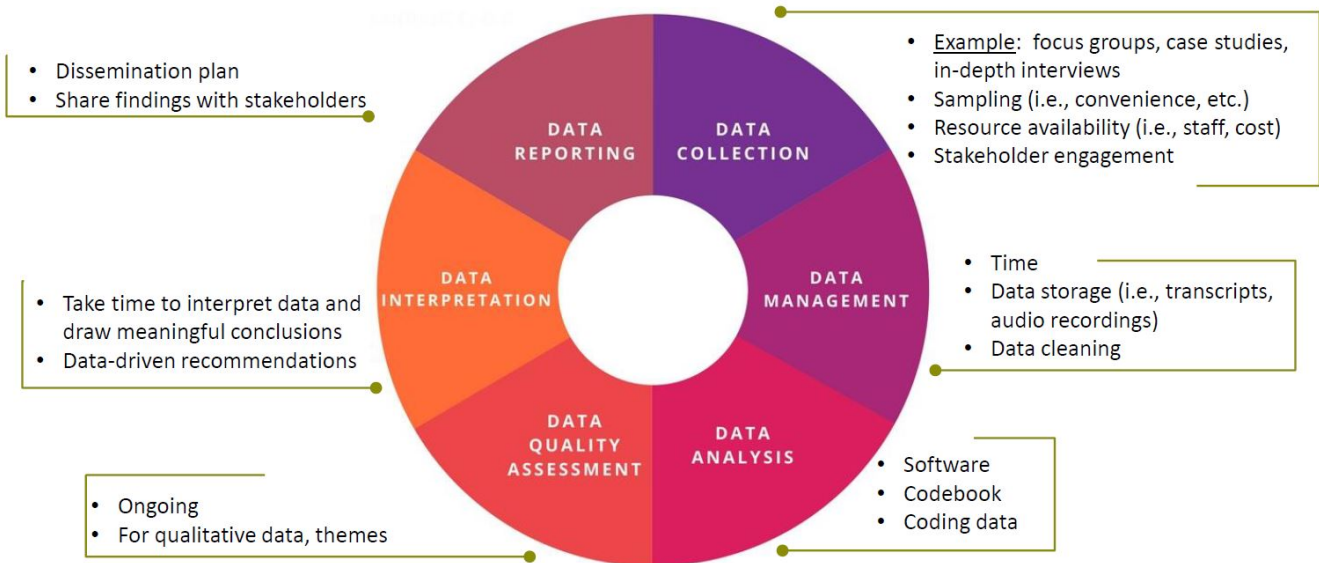


# Qualitative and Quantitative Data: The Big Picture

# CDC Evaluation Framework

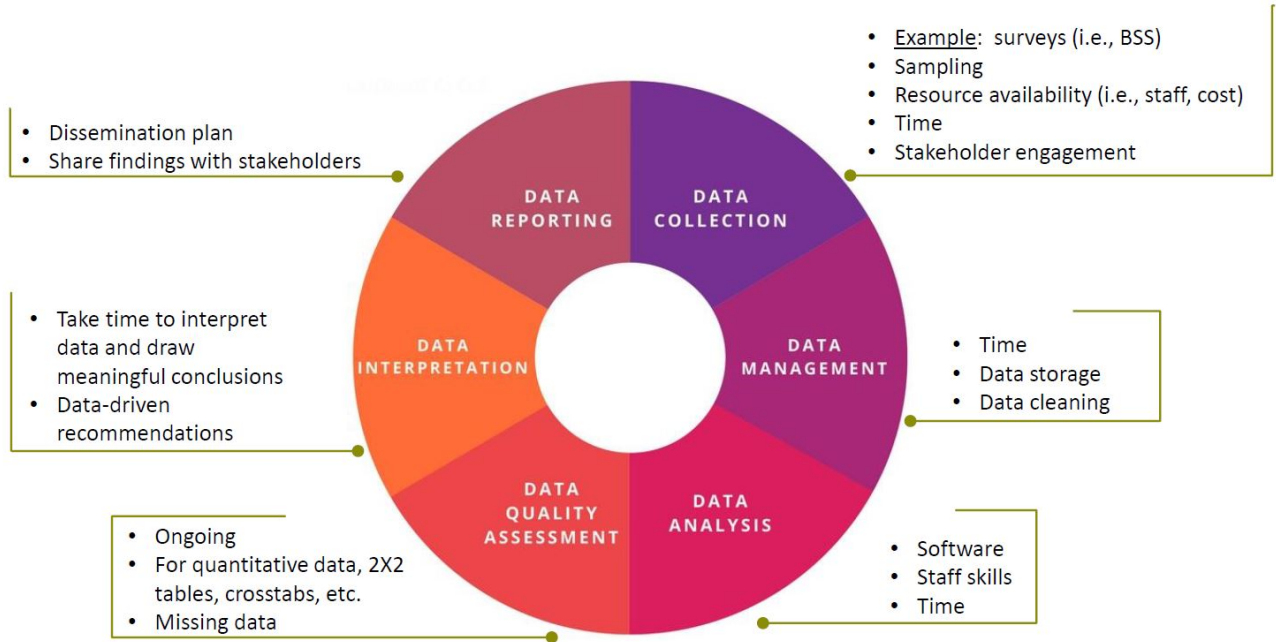


# Using Qualitative Data for Program Evaluation



Source: Patel, N. (2018). Connecting the Dots: Methods and Analysis. Webinar, Centers for Disease Control and Prevention.

# Using Quantitative Data for Program Evaluation



Source: Patel, N. (2018). Connecting the Dots: Methods and Analysis. Webinar, Centers for Disease Control and Prevention.

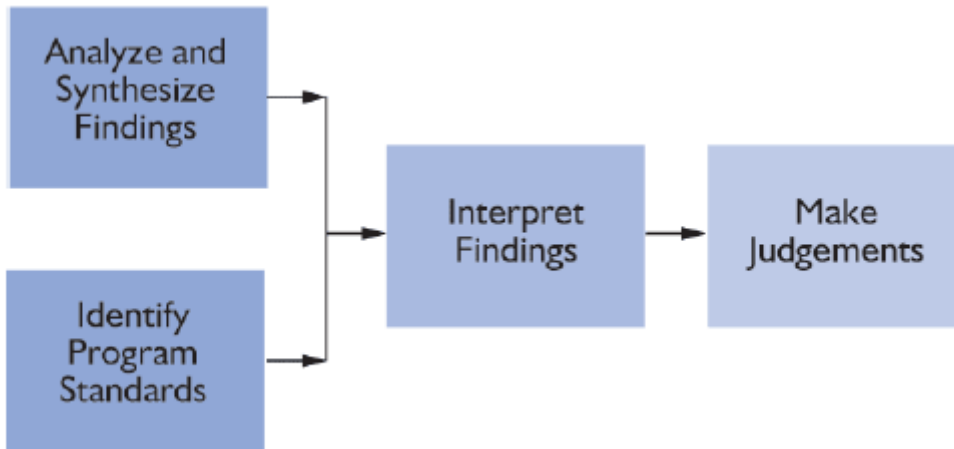
# Data Analysis Recap

# Data Analysis

- Demographics
  - Ensure meaningful interpretation
- Comparisons
  - Using statistical tests improves quality of information
  - Relate comparisons to larger context

# After Analysis & Synthesis

- Interpret findings
- Make judgements





# Program Standards

- What your stakeholders deem as fundamental to this evaluation
  - Human rights
  - Health equity
  - Resource efficiency
  - Policies

# Interpret the Findings

- Make sure you explain what the audience needs/wants to know
- Consider that there may be other explanations for your results
- Are the results consistent with theories supported by previous research?

# Tips for Justifying Conclusions

- Share preliminary findings with stakeholders
  - Leads to more thoughtful conclusions due to unique perspectives of stakeholders
- Plan, plan, plan
  - Allocate enough time to work with the data in order to prepare for analysis, interpretation, stakeholder and intra-program feedback if necessary and conclusion development

# Quantitative Data Analysis

- **Descriptive statistics**
  - Microsoft Excel or Access
- **Inferential statistics**
  - SPSS
  - SAS
  - STATA

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U.S. Department of Health and Human Services

# Qualitative Data Analysis

- **Organize themes and codes**
  - Microsoft Word
- **Other software packages**
  - EZ-Text/
    - Free CDC software package which helps to create, manage, and analyze semi-structured qualitative databases
  - Atlas-ti

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# **CDC Evaluation Framework Standards**

# The Four Standards (3)

Utility	Feasibility	Propriety	Accuracy
Have you carefully described the perspectives, procedures and rationale used to interpret the findings?	Is the approach to analysis and interpretation appropriate to the level of expertise and resources?	Have the standards and values of those less powerful or those most affected by the program been taken into account in determining standards for success?	Can you explicitly justify your conclusions?  Are the conclusions fully understandable to stakeholders?



**End of Topic #5: Connecting the Dots: Methods and Analysis**

*The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the CDC.*