

Taking your Evaluation Plan to the Next Level:

Developing Evaluation Analysis Plans to Inform Data Collection Processes and Measurement

Taletha Derrington, DaSy & NCSI
Debbie Cate, ECTA
Tony Ruggiero, DaSy

Improving Data, Improving Outcomes
New Orleans, LA
August 2016



Session Objectives

- Identify essential elements of an analysis plan
- Summarize types of data and analysis considerations
- Apply essential elements and guiding questions to begin developing an analysis plan



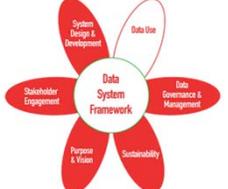
Session Outline

- Essentials of data analysis plans
- Evaluation plan components and data analysis
- Types of data and analytic methods
- Developing analysis plans – two examples
- Small group practice
- Work on your own plans!



Analysis Plans & the DaSy Framework

- **Quality Indicator DU1:** Part C/619 state staff plan for data analysis, product development, and dissemination to address the needs of the state agency and other users.
- **Quality Indicator DU2:** Part C/619 state staff or representatives conduct data analysis activities and implement procedures to ensure the integrity of the data.



<http://dasycenter.org/resources/dasy-framework/>



Essential Elements of a Data Analysis Plan

- Purpose of the analysis
- Description of the general topic of analysis
- Details for the analysis that specify:
 - What – topic to be analyzed
 - Why – hypotheses or rationale
 - How – specific variables, types and order of analyses
- Documentation of decisions and findings

DaSy & ECTA, 2015

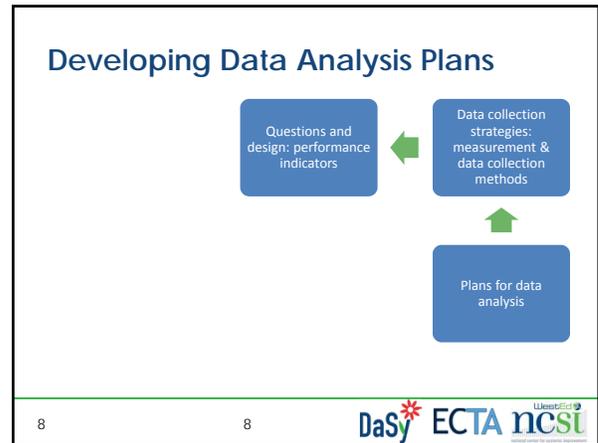
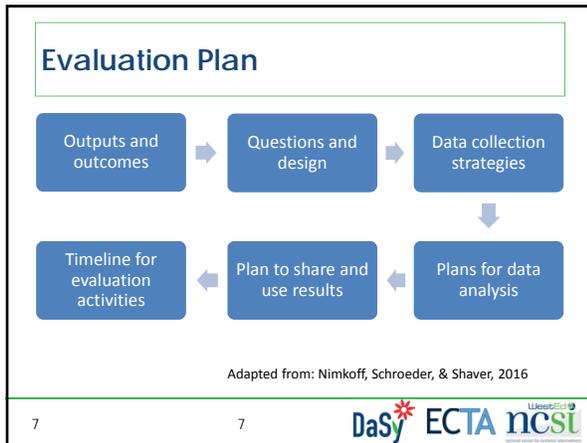


Essential Elements of a Data Analysis Plan

- Details for the analysis that specify:
 - What – topic to be analyzed
 - Why – hypotheses or rationale
 - How – specific variables, types and order of analyses

DaSy & ECTA, 2015





Developing Data Analysis Plan Details

F. Evaluation Plan

1. Evaluation of Improvement Strategy Implementation

How Will We Know the Activity Happened According to the Plan? (performance indicator)	Measurement/Data Collection Methods	Timeline (projected initiation and completion dates)

2. Evaluation of Intended Outcomes

Type of Outcome	Outcome Description	Evaluation Questions	How Will We Know the Intended Outcome Was Achieved? (performance indicator)	Measurement/Data Collection Method	Timeline (projected initiation and completion dates)
Short term					
Intermediate					
Long term					

- ### Data Analysis Plan Details: What are you analyzing?
- Performance indicators
 - Piece of information that measures (*indicates*) whether outcomes are being achieved, i.e. *performance*.
 - Evidence that will allow the SSIP Team to track change or progress.
 - Other factors that might influence performance
 - Time
 - When implementation occurred
 - Child, family, program, and/or community characteristics

- ### What is a “good” performance indicator?
- A few criteria:
1. The indicator is clearly related to the outcome and is a measurement of the outcome.
 2. Usually contains a statistic, a number (e.g., a percentage, an average, a total) to track to see whether it goes up or down.
 3. State whether you want to see an increase or decrease.
 4. The wording of an indicator should suggest how you are going to measure the outcome.
 5. Feasible for you to collect the data.

- ### Well-written Performance Indicators
- An increase (*direction*) in the average score (*number*) on the Proficiency Test given at the end of training (*method of measurement*)
 - An increase (*direction*) in the average score (*number*) on the Provider Skills Checklist (*method of measurement*)

Types of Data and Analysis Considerations

- Types: Performance indicators & other factors can be
 - Numeric (e.g., SS1, SS2)
 - Categorical: ordered (e.g., age group) or non-ordered (e.g., ethnicity)
 - Qualitative (e.g., responses to open ended survey or interview questions)
- Considerations: All types of data often need "transformation" to be analyzed
 - Create groups from numbers or bigger/different categories
 - Themes from qualitative data
 - Different comparisons and statistical techniques are appropriate for different types of data

13

Analysis of Implementation

Activity	How Will We Know the Activity Happened According to the Plan? (performance indicator)	Measurement / Data Collection Methods	Analysis Plan
Infrastructure: State lead agency (SLA) develops process for using COS data to assess progress and make program adjustments.	All local lead agencies (LLA) complete steps in self-assessment tool to use data for program adjustments	Review of all LLA self-assessments by SLA staff	?

14

Essential Elements of a Data Analysis Plan

- Details for the analysis that specify:
 - What – topic to be analyzed
 - Why – hypotheses or rationale
 - How – specific variables, types and order of analyses

15

Analysis of Implementation

Activity	Performance Indicator	Measurement / Data Collection Methods	Analysis Plan
Infrastructure: State lead agency (SLA) develops process for using COS data to assess progress and make program adjustments.	All local lead agencies (LLA) complete steps in self-assessment tool to use data for program adjustments	Review of all LLA self-assessments by SLA staff	<ul style="list-style-type: none"> What specific data, or variables, are we going to collect? Will we need to transform the data? How will we organize the data? What types of analyses or data displays do we want?

16

Developing a Data Analysis Plan

- Variable: LLA completion of self-assessment
 - How do we know it is completed?
 - What specific data do we collect during review?
- Transformations: 10 steps in self-assessment
 - Numeric: % of steps completed?
 - Categorical: all completed / not all completed?
- Data organization: create a database
- Types of analyses/data displays: Trend analysis using chart of % of completed self-assessment steps for each program

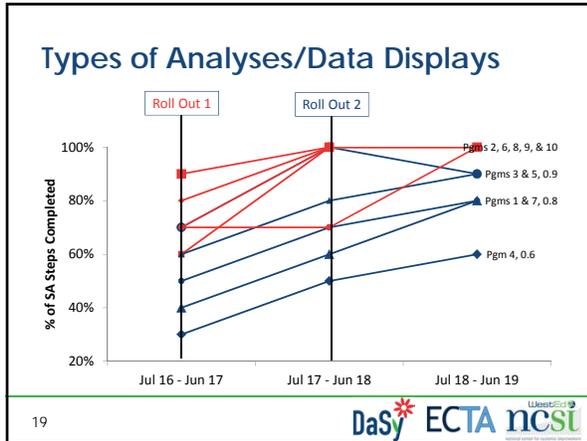


17

Create a (Mock) Database

LLA ID	YR1: Num SA	YR1: Num SA	YR1: % Cat SA	YR2: % Cat SA	YR1: SA	YR2: SA
1	1	5	20%	0%	N	N
2	2	10	20%	0%	N	N
3	3	6	50%	0%	N	N
4	4	3	33%	0%	N	N
5	5	8	62%	0%	N	N
6	6	7	71%	0%	N	N
7	7	4	40%	0%	N	N
8	8	9	80%	0%	N	N
9	9	10	100%	0%	Y	Y
10	10	10	100%	100%	Y	Y

18



Analysis of Implementation

Performance Indicator	Measurement / Data Collection Methods	Analysis Plan
All local lead agencies (LLA) complete all 10 steps in self-assessment tool to use data for program adjustments	Review of all LLA self-assessments by SLA staff, and count the number of the steps in the SA that were adequately completed. Provide definition/guidance/examples of adequate completion.	<ul style="list-style-type: none"> Variables: LLA completion of self-assessment (SA) measured by % of the SA steps completed each year, measured annually. Comparisons/data display: graph the % of steps completed for each LLA each year; plot lines to measure when state disseminated the process; watch for increasing or decreasing trends and time from dissemination to inform adjustments

20

DaSy ECTA ncsi



Analysis of Long Term Outcomes

Outcome	Evaluation Question(s)	Performance Indicator	Measurement/ Data Collection Methods
More EI enrollees will demonstrate greater than expected growth in social-emotional (SE) skills upon exit from EI	Did children who entered EI with SE COS ≤ 5 in SE substantially increase their rate of growth by the time they exited EI?	At least 50% of children who entered with SE COS ≤ 5 shifted from OSEP progress category b to categories c or d.	COS ratings at entry and exit captured in state data system

22

DaSy ECTA ncsi

OSEP Progress Category & Summary Statement Refresher

- OSEP progress categories (a, b, c, d, e) are calculated from two COS ratings and two different time points (for federal reporting, at entry and exit from EI/ECSE).
- Summary statement 1 = $(c + d) / (a + b + c + d)$
- A “shift” of children from b to c or d would put them in the numerator as well as the denominator and increase SS1

HOWEVER...

23

DaSy ECTA ncsi

Analysis of Long Term Outcomes

Outcome	Evaluation Question(s)	Performance Indicator	Measurement/ Data Collection Methods
More EI enrollees will demonstrate greater than expected growth in social-emotional (SE) skills upon exit from EI	Did children who entered EI with SE COS ≤ 5 in SE substantially increase their rate of growth by the time they exited EI?	At least 50% of children who entered with SE COS ≤ 5 shifted from OSEP progress category b to categories c or d.	COS ratings at entry and exit captured in state data system

24

DaSy ECTA ncsi

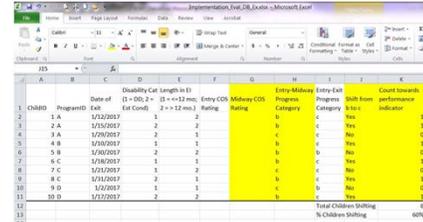
Developing a Data Analysis Plan

- Variables: midway OSEP progress category, exit OSEP progress category, shift from b to c or d, program ID, exit date, disability category, length of service category.
- Transformations: calculate the “shift” variable from the midway and exit progress categories as yes/no; calculate length of service as ≤ 12 mo. or > 12 mo.

25

Developing a Data Analysis Plan

- Data organization: create a mock database, consider if you can add variables to your state’s data system



26

Developing a Data Analysis Plan

- Analyses/data displays: Every 6 months...
 - Calculate the % of children who shifted overall and by program ID, disability category, and length of service category.
 - Prepare trend line graphs over time by program ID, disability category, and length of service category.
 - Perform chi-squared comparisons of shift by disability category and by length of service category .
 - Use Meaningful Difference calculator ($p < .10$) to compare program % and state %.

27

Analysis of Long Term Outcomes

Performance Indicator	Measurement / Data Collection Methods	Analysis
At least 50% of children who entered with SE COS ≤ 5 shifted from OSEP progress category b to categories c or d.	<ul style="list-style-type: none"> • COS ratings at entry, midway through enrollment, & exit; midway & exit progress categories captured in state data system • Calculate midway to exit category shift • Begin after 1 year of implementing new midway COS ratings; calculations every 6 mo. 	<ul style="list-style-type: none"> • Variables: midway and exit OSEP progress categories; shift from b to c/d; program ID; exit date; disability category; length of service (LOS) category • Transformation: calculate LOS category • Data organization: add midway COS rating & OSEP progress categories to state data system; create report for analytic dataset to calculate shift. • Analyses/data displays: Calculate the % of children who shifted by program, disability category, and LOS category; time trend line graphs; chi squared & meaningful difference analyses (details).

28

Small Group Practice



29

Analysis of Short Term Outcomes

Outcome	Evaluation Question(s)	Performance Indicators	Measurement / Data Collection Methods	Analysis
Staff / contractors have increased understanding of the child outcomes summary (COS) rating process	Did staff and contractors participating in training master the foundational knowledge and skills required in the COS process?	Among trained staff and contractors: <ul style="list-style-type: none"> • 100% take the COS-CC check • 80% pass the COS-CC 	Child Outcome Summary – Competency Check (COS-CC)	<ul style="list-style-type: none"> • Variables? • Transformations? • Data organization? • Analyses/data displays? • Do we need to revise performance indicators or measurement / data collection methods?

30

Analysis of Intermediate Outcomes

Outcome	Evaluation Question(s)	Performance Indicator	Measurement /Data Collection Method	Analysis
Teams complete COS process consistent with best practices	To what extent do teams implement the COS process as intended, consistent with best practices?	75% of teams observed meet established criteria on the adapted COS-TC checklist.	Adapted COS-TC checklist completed by peer coach	<ul style="list-style-type: none"> • Variables? • Transformations? • Data organization? • Analyses/data displays? • Do we need to revise performance indicators or measurement / data collection methods?

31 DaSy ECTA ncsi

Share Out & Questions



32 DaSy ECTA ncsi

Work on your own plans!



33 DaSy ECTA ncsi

Share Out & Questions



34 DaSy ECTA ncsi

Resources

- DaSy & ECTA. (2015). Planning, conducting, and documenting data analysis for program improvement. http://dasycenter.sri.com/downloads/DaSy_papers/DaSy_SSP_DataAnalysisPlanning_20150323_FINAL_acc.pdf
- Derrington, T., Vinh, M., Winer, A., & Hebbeler, K. (April-May, 2015). The Data Are in the Details: Translating Evaluation Questions Into Detailed Analytical Questions. IDC Interactive Institutes, <https://ideadata.org/resource-library/55bb08f140ba074738b456c/>.
- Derrington, T., Winer, A., Campbell, S., Thompson, V., Mazza, B., Rush, M., Hankey, C. (April-May, 2015). Maximize the Return on Your Data Investment: Planning and Documentation for Data Collection and Analysis. IDC Interactive Institutes, <https://ideadata.org/resource-library/55c24511140ba04778b457d/>.
- Early Childhood Outcomes Center, ECTA. (2009). Summary Statements for Target Setting—Child Outcomes Indicators C3 and B7. <http://ectacenter.org/~pdfs/eco/SummaryStatementDefinitions.pdf>
- Early Childhood Outcomes Center, ECTA. (2012). Developmental Trajectories: Getting to Progress Categories from COS Ratings training resources webinar. <http://ectacenter.org/eco/pages/selflearning.asp>.
- ECTA, DaSy, NCSI, & IDC. (2015). Sample SSIP Action Plan Template. http://ectacenter.org/~docs/topics/SSIP/SSIP_improvement_plan_template.doc.
- Nimkoff, Schroeder, & Shaver. (May/June, 2016). SSIP Phase III: Operationalizing Your Evaluation Plan. IDC Interactive Institutes, Kansas City, MO & Savannah, GA.

35 DaSy ECTA ncsi

Thanks!

- Taletha Derrington, taletha.derrington@sri.com
- Debbie Cate, debbie.cate@unc.edu
- Tony Ruggiero, tony.ruggiero@aemcorp.com

DaSy	NCSI	ECTA
• http://dasycenter.org/	• http://ncsi.wested.org/	• http://ectacenter.org/
• Twitter @DaSyCenter	• Twitter @TheNCSI	• Twitter @ECTACenter
• Facebook https://www.facebook.com/dasycenter		• Facebook https://www.facebook.com/ecta-center-304774389667984/

36 DaSy ECTA ncsi

The contents of this presentation were developed under grants from the U.S. Department of Education, # H373Z120002, #H326P120002, and #H326R140006. However, those contents do not necessarily represent the policy of the U.S. Department of Education, and you should not assume endorsement by the Federal Government. Project Officers: Meredith Miceli, Richelle Davis, Julia Martin Eile, Perry Williams, and Shedeh Hajghassemali.

