

Developing an Analysis Plan

March 14, 2012

Presentation to OAH and ACYF
Teenage Pregnancy Prevention Conference

Susan Zief

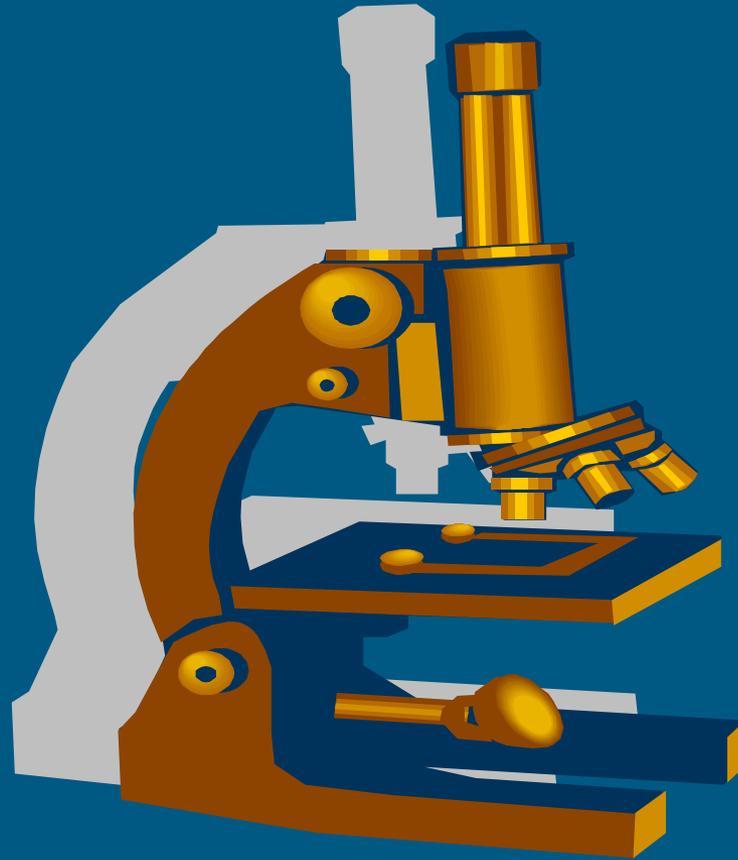
MATHEMATICA
Policy Research

Overview

- Why create an analysis plan?
- What does an analysis plan include?
- Can the plan be changed?

Why Create an Analysis Plan?

Study Findings Will Be Under a Microscope



Someone Will Question the Findings

- **Intervention may be the target**
 - Content
 - Existing evidence of its effectiveness
- **But, the evaluator will be the scapegoat**
 - “Fishing” for positive impacts?
 - Withholding null or negative impacts?
 - Perceived lack of independence between evaluator and developer?

Advance Analysis Planning Can Silence Critics

- **Demonstrates a commitment to a systematic, scientific approach**
 - Developed before data is examined
 - Transparent roadmap outlining analytic approach
 - Justifies analytic decisions
- **Benefits evaluator, as well**
 - Achieves goal of objectivity
 - Creates solid foundation with program staff
 - Provides a structure for reporting findings

What Does an Analysis Plan Include?

Three Components of an Analysis Plan

- Research questions
- Data sources
- Analytic approaches

Research Questions – Program Impacts

- **Confirmatory (primary) questions**
 - Used to establish the effectiveness of the program
 - Relevant for decision makers
 - Linked to program logic model
 - Limit to a few outcomes
 - Is it all? Or any?

- **Secondary questions**
 - Examining additional outcomes or groups of interest
 - Be parsimonious
 - Knowledge, attitudes, longer (or shorter) term follow-ups, key subgroups (well-powered)

Exploratory Research Questions

- **Not used to establish program effectiveness, but to generate hypotheses**
 - “Treatment on Treated” analyses
 - Subgroups lacking sufficient power
 - Demographics, baseline behaviors, location, cohort
 - Subgroups defined by post-intervention characteristics
- **Examining pathways and trajectories**
 - Mediating factors
 - Predictors
 - Correlations between impacts and implementation

Implementation Research Questions

- **Aids in understanding program impacts**
 - **Adherence to intended program model**
 - Delivered hours and content
 - Other program expectations
 - **Youth take-up and attendance**
 - **Contrast between treatment and control youth**
 - **Context surrounding program implementation**

Data Sources

- **Link data sources to research questions**
 - Specify exact source
 - Survey wave
- **Describe preparation for analysis**
 - Cleaning
 - Establishing psychometric properties for scales
 - Creating constructs and composite measures
 - Handling missing data

Analytic Approach

- **Model specification for primary, secondary, and exploratory analyses**
 - Dependent variables and covariates
 - Clustering and multiple comparison adjustments
 - Pooling across sites and cohorts
- **Clearly justify analytic decisions**
 - Identify tests that examine the sensitivity of results to these decisions
- **Include planned analyses of implementation data**

Can the Plan Change?

Plans Are Not Straightjackets

- **Expect the unexpected**
 - Variables can't be constructed as intended
 - Weird patterns in findings
 - Results not robust
- **Deviations from plans must be considered to provide the “true story” and support understanding**
 - Document and explain deviations

Remember What You Learned in Elementary School

-
- 1. Homework Before Playtime**
 - 2. No Peeking or Cheating**
 - 3. Be a Good Friend**
 - 4. Clean Up After Yourself**