



SPHSC 500  
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Clinical Methodology for  
Documenting Change  
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“Documenting Change -  
Benefits of Treatment”



Examining Benefits of  
Treatment

Recall two primary approaches

- ◆ Pre/Post
- ◆ Time Series – Ongoing – frequent, periodic, systematic measurement – multiple measures

## Four Main Considerations

- ◆ Change due to treatment versus maturation (or other threats to validity)
- ◆ Change that is real versus random
- ◆ Importance of change
- ◆ Impact of change

## Change due to Treatment versus Maturation

- ◆ Pre/post:
  - Control children
  - Control behaviors
- ◆ Time Series:
  - Multiple baseline design (across behaviors)
  - Withdrawal design
  - Control behaviors

## Change that is Real versus Random

### ◆ Pre/Post:

- Valid measures
- Reliable measures

### ◆ Time Series:

- Valid and reliable measures
- Withdrawal design
- Multiple baseline design (across behaviors, children, settings)


## Importance of Change

### ◆ Pre/post

- Size of change-practical significance
- Intervention Efficiency Index
- Proportional Change Index


### ◆ Time Series

- Degree of change
- Slope/rate of change
- Relevant peer comparison



## Impact of Change

- ◆ Pre/post and Time Series
  - Functional change
  - Qualitative data to supplement quantitative



## How to Use

- ◆ Try to predict change ahead of time and compare
  - Pre/post
- ◆ Evaluate as you go
  - Time Series



## Pre-Post

### Remember

- ◆ When to measure
  - Before treatment and after treatment
- ◆ What to use as measurement:
  - Standardized measures
  - Proportional change index
    - Bain and Dollaghan (1991)
  - Probes
    - Target
    - Control
    - Generalization



## Time Series

- ◆ Measuring client's performance continuously
- ◆ Changes in performance over time under different conditions (treatment versus no treatment) provides evidence of change due to treatment

## Basic Elements of Design

### ◆ Conditions or Phases

- **Baseline:** The period of time prior to the introduction of treatment; usually consists of three measurement points so as to verify the consistency or reliability of the performance being measured.
- **Treatment:** The period of time when treatment is implemented.
- **Withdrawal:** The period of time following treatment, when there is NO treatment.

### ◆ Measures - Probes

- Continuous assessment; repeated measures – during all phases
- SAME measures Why?
- Enough to see trend – 3 data points

## How Often to Measure

### ◆ Periodic and systematic

- Weekly
- Every two/three weeks
- Monthly

### ◆ Follow major treatment breaks

- Completion of a treatment step
- Completion of particular treatment criterion
- Intersperse during treatment

## How Often to Measure

### BOTTOM LINE:

- ◆ What is reasonable
- ◆ What will best allow me to monitor progress
- ◆ What will best reflect (and prove) change

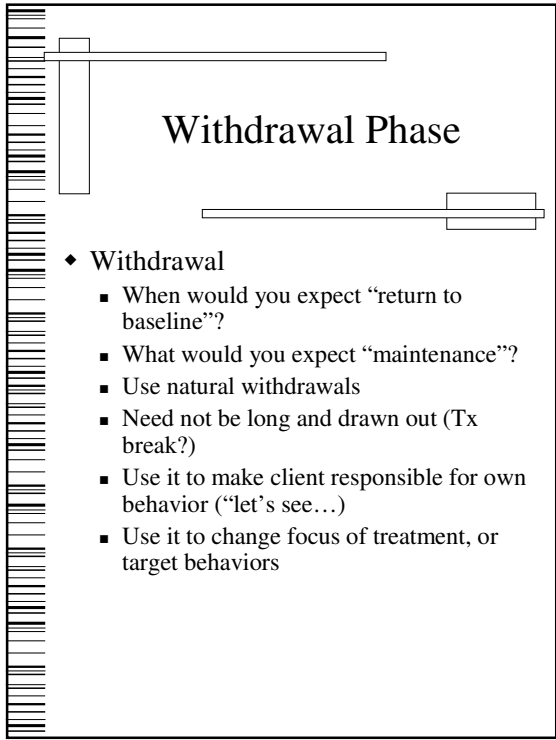
## Baseline Phase

- ◆ Purposes of Baseline
- ◆ Description
  - provides information about the extent of the individual's performance/problem
  - Useful in deciding extent and type of change needed in treatment
- ◆ Prediction
  - Baseline predicts the level of performance, rate, and degree of change without treatment
  - Goal – change prediction Expectations:
- ◆ Stability
  - Stable (increasing, decreasing, flat)
  - Not stable



## Treatment Phase

- ◆ Expectations:
  - Expect to see a change in trend with treatment
  - Examine the degree/magnitude and slope of trend
    - How does this relate to the “rate of change”
  - Trend should stabilize (trending up, down, level) before phase change.  
Stable = 3+ points in trend



## Withdrawal Phase

- ◆ Withdrawal
  - When would you expect “return to baseline”?
  - What would you expect “maintenance”?
  - Use natural withdrawals
  - Need not be long and drawn out (Tx break?)
  - Use it to make client responsible for own behavior (“let’s see...)
  - Use it to change focus of treatment, or target behaviors



## Basic Designs

- ◆ ABA Design
  - in A'
    - Behavior might maintain or continue rising
    - Behavior might return to baseline
- ◆ ABAB Design
  - ABAB Withdrawal

Just like ABA, but if behavior returns to baseline, then treatment is reapplied in B'

What if withdrawal is not possible for control?...
  - ABAB Reversal

What if reversal is not possible?...
- ◆ Multiple Baseline Design

overheads

## Multiple Baselines

Hegde, 1998:

- ◆ Multiple baseline for control Primary Types:
  - Across behaviors (e.g. 3 phonemes, 3 syntactic structures)
  - Across settings (e.g. clinic vs classroom, home)
  - Across examiners/partners (e.g. clinician vs mom)
  - Across materials (e.g. picture naming vs conversation)
- Other Types:
  - Across subjects/clients (matched subjects group design.)

## Multiple Baselines


◆ The measures in the other baselines:

- Control measure – expect no change in less closely related behavior
- Generalization measure – expect change in related behaviors (two types of generalization...)

## Learning from your clients

What are you are treating/measuring with your client:

- Target behaviors/measures
- Generalization behaviors/measures
- Control behaviors/measures
- Phases (if appropriate)



Time Series  
Methodology

Time series

- ◆ Examples