

CHAPTER 5

Treatment Integrity Data

What Will This Chapter Tell Me?

Treatment integrity data indicate how much of and how well an intervention is being implemented. To decide if an intervention is impacting the target student(s), treatment integrity data should be reviewed alongside progress monitoring data. In the PRIME Model, treatment integrity data are the primary source of information to decide when and how to support the implementer. This chapter defines treatment integrity and explains how a treatment integrity tool can be developed. After reading this chapter, you will be able to describe treatment integrity and create a treatment integrity tool to evaluate implementation.

What is Treatment Integrity?

Treatment integrity is the extent to which an intervention is implemented as planned. Basically, reviewing treatment integrity data will tell you how much of an intervention is being implemented and what—if any—intervention steps are being missed.

In general, interventions that are implemented with a greater level of treatment integrity have a higher likelihood of resulting in positive student outcomes. That statement makes sense; the more a student receives an evidence-based intervention, the more that stu-

dent can benefit from the intervention. If a student is only exposed to 50% or 70% of an intervention or if a student is exposed to 100% of an intervention but only once a week as opposed to daily, he or she may not be able to sufficiently benefit from the intervention. Higher levels of treatment integrity ensure the student is appropriately exposed to the intervention. For other reasons why treatment integrity is important see Chapter 1.

Treatment integrity is believed to be multidimensional. That means there may be several dimensions, or aspects, of treatment integrity important to evaluating intervention implementation. Available research tells us three dimensions seem especially important—adherence, quality, and exposure—and are explained below.

- *Adherence* is the degree to which the specific intervention steps are implemented as planned. Adherence data can be reviewed by session or by intervention step. For instance, adherence data can represent the proportion of intervention steps that were delivered during each intervention session. If a teacher delivered 10 out of 11 steps of a reading intervention, the adherence dimension for that session would be 91% ($[10/11] \times 100 = 91\%$). Alternatively, adherence data can represent the percentage of sessions during which specific intervention steps were delivered. If a reward was to be provided daily, but was only delivered on 2 days during one school week, the adherence of that specific intervention step would be 40% ($[2/5] \times 100 = 40\%$).
- *Quality* refers to how well the intervention steps are implemented (e.g., high versus poor quality of implementation). Quality ratings may include a Likert scale of operationalized definitions of quality or a checklist of relevant high-quality behaviors (see Step 3 below). It makes sense that simply walking through the steps of delivering an intervention but not doing so at the right time or with appropriate enthusiasm, may not be sufficient for promoting student outcomes. For example, a behavior sup-

port plan could include a paraprofessional providing specific praise along with a token that can be traded in for later reward to reinforce the student engaging in “safe” behavior during transitions. If the praise is delivered 45 minutes after a transition with a flat affect and no reference to the behavior expectation the student demonstrated, it is unlikely that the student will learn why he is earning tokens and later reinforcement. But if specific, contingent praise is consistently delivered with enthusiasm immediately after the transition it will be more likely to change student behavior.

PRIME Tip

Adherence and quality are closely related, but reflect different dimensions of treatment integrity. A step must be implemented (i.e., adherence), before quality can be reviewed. However, simply because the step is implemented does not mean it is delivered with quality. If a step is not implemented, no quality rating can be provided.

- *Exposure* is the extent to which the student is exposed to the intervention. Specifically, exposure is related to the frequency and duration (i.e., length) of implementation. Exposure is often described as (a) the number of minutes an intervention is provided for or (b) the number of intervention sessions delivered to a student. For example, if a student only attended 3 out of 5 possible Tier 2 reading support sessions during the week, the exposure dimension of treatment integrity is 60% ($[\frac{3}{5}] \times 100 = 60\%$). If another student attended all 5 of the Tier 2 reading support sessions, but left each 30-minute sessions after 15 minutes, the exposure dimension of treatment integrity is 50% ($[\frac{75\text{min}}{150\text{min}}] \times 100 = 50\%$). We wouldn't expect a student who was only exposed to 50-60% of the intervention to have the same outcomes as a student who was present for the full duration of all the sessions.

Adequate levels of adherence, quality, and exposure are essential for an evidence-based intervention to result in positive student

outcomes. The aim of the PRIME Implementation Supports is to effectively facilitate implementers' sustained treatment integrity over time. To do so, the consultant must measure treatment integrity of the intervention plan. With treatment integrity data, the consultant will decide if implementation support is needed, determine what support is appropriate, and evaluate if that support is effective (Chapters 8 and 9 include a description of this process). To do so, a treatment integrity tool will need to be developed and used to evaluate intervention implementation.

Developing a Treatment Integrity Tool

To assess intervention implementation, treatment integrity data must be collected systematically. Some interventions, particularly manualized interventions, include treatment integrity measures with the intervention materials. When an intervention does not include these measures or when an intervention is developed or individualized for a particular student, educators must create their own treatment integrity tools.

The development of a treatment integrity tool has 4 steps:

- Identify intervention steps,
- Choose an assessment method,
- Select or create an appropriate data collection form, and
- Develop a data collection plan.

These steps are described below.

Step 1: Identify intervention steps

To measure the implementation of an intervention, the specific intervention steps need to be defined. To do so, develop operational, measurable definitions of each intervention step. This process may be easier for some interventions than others. Review the evidence-based intervention and list the specific, behavioral steps necessary to complete the intervention.

For example, a behavior support plan likely includes antecedent,

teaching, and consequence strategies. The specific activities within these three types of strategies could be considered intervention steps. These items may include a list of intervention steps such as (a) review behavior expectations in the morning, (b) teach student how to request attention appropriately, and (c) provide specific praise when student meets the behavior expectation. The intervention step “teach student how to request attention appropriately” might be operationally defined as “Tell student to raise his hand if he needs support; model hand raising; have the student practice raising his hand when he needs support; and provide praise and feedback.”

To check if your list of intervention steps and definitions is sufficient, consider whether it would be possible to observe and measure each intervention step. Or ask someone unfamiliar with the intervention if they can clearly understand the list of intervention steps. If not, revise your definition to be sufficiently observable and measurable.

As you define an intervention, consider the dimensions of treatment integrity that are most relevant for each intervention step. In most cases, adherence, quality, and exposure are likely relevant. However, for some intervention steps, only a specific dimension is applicable. For example, if an intervention requires the implementer to read a manualized script, a rating on intervention steps could be provided for both adherence to the script and the quality of its delivery. In addition, there could be an overall rating for exposure, or how long the intervention session lasted. A different student might involve the implementer providing a token sheet to a student weekly; for this intervention step it’s possible that only adherence would be relevant.

Step 2: Choose an assessment method

The three options for treatment integrity assessment methods include permanent product review, direct observation, and self-report. The following table describes how each of these methods can be used and some of the strengths and limitations of each method.

	<i>What is it?</i>	<i>Strengths</i>	<i>Limitations</i>
<i>Direct Observation</i>	The consultant systematically observes the implementation of the intervention plan and then rates the extent to which he or she observes specific intervention steps	<ul style="list-style-type: none"> •Appropriate for most interventions •Allows for measurement of adherence, quality, and exposure •Most direct assessment method 	<ul style="list-style-type: none"> •Time intensive for observer •May not be possible to observe across entire intervention implementation •Implementers may act differently when observer is present
<i>Permanent Products</i>	Review products created naturally through implementation to determine the degree to which the intervention steps were implemented	<ul style="list-style-type: none"> •Less likely to be affected by implementer or student reactivity •No need for an observer to be present during implementation •No additional work for implementer 	<ul style="list-style-type: none"> •Not all intervention steps result in a permanent product •In most cases, only would be possible to rate adherence
<i>Self-Report</i>	Implementer rates the extent of implementation of the intervention steps on a checklist or form throughout or after an intervention session	<ul style="list-style-type: none"> •Quick way to assess treatment integrity after an intervention session •Possible to evaluate adherence, quality, and exposure •Self-report may act as a prompt for intervention implementation 	<ul style="list-style-type: none"> •Implementer report may not always be as accurate

Implementation of a Tier 2 reading intervention, for example, could be evaluated through direct observation, permanent products, or self-report. For direct observation, the consultant would need to be present during the session to rate the extent of the implementer's

delivery of specific intervention steps. In this case, adherence, quality, and exposure would all be relevant and able to be evaluated through direct observation. The Tier 2 reading session could also be evaluated through permanent product review. In this case, the implementer would provide any materials produced during intervention implementation, such as any written examples modeled by the implementer and student written products. Then the consultant would review the permanent products for evidence of implementation of each intervention step. For this example, it is likely that some intervention steps would not be able to be evaluated, as they did not result in permanent products. Also, adherence would be the only dimension assessed. For self-report, the consultant might develop a checklist of the intervention steps involved in the Tier 2 reading session. Then, immediately following the intervention session, the implementer would rate his or her adherence and quality and record student exposure.

When deciding among these assessment methods, the consultant and implementer may consider the particular strengths and limitations of the methods themselves, as well as their match to the situation. Some of the specific considerations include the (a) match between the assessment method and the type of intervention being assessed, (b) resources available and feasibility of the assessment method, and (c) preferences of the implementer and consultant. The consultant may also consider the intensity of the intervention and what decisions are likely to be made based on these data (e.g., student intervention support, special education decisions, placement decisions). More intensive situations likely call for a more direct treatment integrity assessment method to be used.

PRIME Tip

It may be possible and appropriate to use more than one method of treatment integrity assessment. For example, a consultant and implementer may decide that they will use direct observation and self-report. That is, the implementer will report implementation

daily, but the consultant will come to observe implementation on a monthly basis.

Step 3: Create an Appropriate Data Collection Form

Based on the treatment integrity assessment method chosen, the consultant will need to develop a data collection form to rate and record the treatment integrity data. There are three parts of a treatment integrity data collection form: (a) a list of the intervention steps, (b) a space to rate each relevant treatment integrity dimension for each intervention step, and (c) instructions and a space to calculate the percentage of implementation. These three parts of the data collection form are described below.

- A. The **list of intervention steps** should include the operational definitions developed as a part of Step 1. The list should also include relevant treatment integrity dimensions for each intervention step. For example, for a social skills intervention, adherence and quality are likely relevant for most intervention steps. But exposure might only be relevant for the overall implementation of the intervention. This information should be specified on the data collection form.

- B. For each **intervention step**, an appropriate rating option must be determined for each relevant treatment integrity dimension. That is, if adherence and quality are applicable then a distinct rating is needed for both dimensions of treatment integrity. Possible rating options include checklists, Likert scales, multiple choice scales, and narrative response. The following table describes each of these ratings and their related strengths and limitations.

<i>Ratings</i>	<i>What is it?</i>	<i>Strengths</i>	<i>Limitations</i>
Checklist	Dichotomous rating of whether step did or did not occur	<ul style="list-style-type: none"> •Easy to develop, complete, and summarize 	<ul style="list-style-type: none"> •May not account for the nuances of implementation or partial implementation
Likert scale	Range of ratings from full implementation to no implementation	<ul style="list-style-type: none"> •Relevant for all dimensions of treatment integrity •Relatively easy to develop, complete, and summarize 	<ul style="list-style-type: none"> •Decision rules need to be developed about what counts as “full” versus “partial” implementation
Multiple choice	List of brief descriptions that correspond with different extents of implementation	<ul style="list-style-type: none"> •Relevant for all dimensions of treatment integrity •Specific behavioral markers may increase consistency of ratings, as opposed to more general ratings 	<ul style="list-style-type: none"> •May be time consuming to develop as intervention steps may each require unique descriptions •Decision rules need to be developed about what counts as “full” implementation
Fill in the blank	Space for brief narrative in response to specific prompts/ questions	<ul style="list-style-type: none"> •Relevant for all dimensions of treatment integrity •Flexible format •Can account for nuances in implementation 	<ul style="list-style-type: none"> •May be time consuming to develop and complete •Decision rules need to be developed about what counts as “full” implementation

The following table illustrates examples of each of these rating formats for the intervention step “provide behavior-specific praise when the student demonstrates safe behavior during circle time.”

<i>Ratings</i>	<i>Adherence</i>	<i>Quality</i>	<i>Exposure</i>
Checklist	<p>Checklist</p> <p>When the student demonstrated safe behavior during circle time, was behavior-specific praise provided?</p> <ul style="list-style-type: none"> •Yes •No 	<p>Was the behavior-specific praise delivered immediately with enthusiasm and reference behavior expectations?</p> <ul style="list-style-type: none"> •Yes •No 	<p>Was the student present throughout circle time?</p> <ul style="list-style-type: none"> •Yes •No
Likert scale	<p>When the student demonstrated safe behavior during circle time, was behavior-specific praise provided?</p> <ul style="list-style-type: none"> •Implemented as planned •Implemented, but differently than plan •Not implemented 	<p>When provided, what was the quality of the behavior-specific praise?</p> <ul style="list-style-type: none"> •Excellent •Good •Fair •Poor 	<p>When was the student present during circle time?</p> <ul style="list-style-type: none"> •Throughout •More than 50% •Less than 50% •Never
Multiple choice	<p>When the student demonstrated safe behavior during circle time, was behavior-specific praise provided?</p> <ul style="list-style-type: none"> •Following 100% of opportunities •Following half or more of opportunities •Following less than half of opportunities •Not provided following opportunities •No opportunity 	<p>When provided, what quality indicators of praise were present?</p> <ul style="list-style-type: none"> •Behavior-specific •Contingent •Reference behavior expectations 	<p>When was the student present during circle time?</p> <ul style="list-style-type: none"> •Throughout •More than 50% •Less than 50% •Never

Fill in the blank	Student demonstrated safe behavior on ____ occasions. Behavior specific praise provided on ____ occasions.	Provide an example of the praise provided: _____	Circle time lasted for ____ minutes. The student was present for ____ minutes.
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C. The last component of the data collection forms is **developing instructions and including space to calculate the percentage of implementation**. That is, from the form, you'll need to be able to calculate a quantitative summary of treatment integrity for a session.

There are two types of quantitative summary scores. The intervention step treatment integrity refers the extent to which specific intervention steps are implemented across sessions. Session treatment integrity can be calculated as the level of treatment integrity for each session. This type of summary form will help to summarize treatment integrity data across time and will inform decisions to provide additional support to the implementers or modify the intervention plan. The information summarized for these review meetings can be graphed, a topic that is described in Chapter 8.

Step 4: Develop a data collection plan

In the final step, the logistics of data collection are organized. Though it may seem that simply developing the treatment integrity form, as completed in steps 1-3, is sufficient, it is important to make sure that the logistics of data collection are clear and feasible. The planning for data collection includes (a) training an individual responsible for collecting the data; (b) determining the frequency of data collection; (c) establishing regular data review.

A. To ensure that the treatment integrity data are collected in an accurate and systematic manner as possible, training is necessary. That is, the data collector (e.g., implementer, school psycholo-

gist, consultant) will need to learn about the assessment method generally and the treatment integrity data collection form specifically. Depending on the data collector, it might be useful to provide background information about treatment integrity and the intervention itself. This training might include Direct Training (see Chapter 3 for a description of this process) as well as practice with another rater to ensure that both individuals are rating implementation similarly.

- B. To decide how frequently to collect treatment integrity data, consider the situation and method of assessment. When reviewing the situation, consider the intensity of the intervention as well as the type of decisions that will be made based on the treatment integrity data. For interventions that have greater intensity (e.g., student is out of the classroom often, intervention requires substantial resources) assess treatment integrity more frequently. Likewise, if high-stakes decisions will be made based on the data (e.g., student intervention support, special education decisions, placement decisions), treatment integrity should be assessed frequently. The method of assessment likely will impact the decision about how frequently to assess data also. For instance, it is generally more feasible for an implementer to use a self-report method following each intervention session, than a consultant to observe an intervention session each day. If the chosen treatment integrity assessment method is self-report, it could be completed more frequently, as compared to direct observation.

PRIME Tip

Once the plan for how frequently treatment integrity data will be assessed is developed, make sure the logistical planning is in place. For example, you may develop a calendar of treatment integrity assessment dates with reminders or print copies of the treatment integrity data forms. The specifics may vary by method. For direct

observation, the data collector must learn the intervention schedule to ensure he or she is present during implementation. Make sure these logistical steps are considered and completed to ensure that treatment integrity assessment is completed as planned.

C. For data-based decision making, treatment integrity data must be regularly reviewed alongside progress monitoring data. The specifics of this review are described in Chapter 8 and 9 and materials to support this process are in Appendix I. For the purposes of developing a treatment integrity data system, the focus of this chapter, it is necessary to plan when treatment integrity assessment data will be reviewed. As with the frequency of data collection, the frequency of the data review will depend on the situation and intensity of the decisions made based on the data. Once the frequency of data review is established, make sure relevant stakeholders can be present for the meeting and that progress monitoring data are also available.

What Did I Learn About PRIME?

Treatment integrity data indicate how much of and how well an intervention is being implemented. It includes multiple dimensions, including adherence, quality, and exposure. The development of a treatment integrity tool involves four steps: identify intervention steps, choose an assessment method, select a data collection form, and develop a data collection plan. Through this process, you will create a treatment integrity tool(s) to gather implementation data. These tools can be subsequently used to make data-based decisions about student progress and the possible need for or effectiveness of PRIME Implementation Supports.

Chapter 5 Key Terms

Adherence

Exposure

Direct Observation

Intervention Step Treatment Integrity

Permanent Products

Quality

Self-report

Session Treatment Integrity