National Center on
INTENSIVE INTERVENTION
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U.S. Office of Special
Education Programs

Data Rich, Information Poor?
Making Sense of Progress Monitoring Data to Guide Intervention Decisions

Webinar Q&A

Question: Why are many progress monitoring tools phonics-based when reading involves more than just phonics?

Answer: Most progress monitoring tools were validated for early and intermediate grades, where students' phonemic awareness, phonics, and fluency skills comprise a significant part of the reading curriculum. Thus, when students are not making progress in specific skills at these early grade levels, it suggests that they are unlikely to meet overall grade-level reading expectations. In addition, and perhaps even more importantly, when these measures were validated, researchers looked at a variety of indicators across reading skills (e.g., phonics, fluency, vocabulary, word use) and found that measures of reading fluency and phonemic awareness (depending on students' age) were the best indicators of overall reading skill and development in young children (Fuchs, Fuchs, & Compton, 2004; Kaminski & Good, 1996; O'Connor & Jenkins, 1999). Thus, in the absence of performing a full battery of reading achievement, these measures provide a reliable and valid indicator of overall "reading health" for students in Grades K–4. After Grade 4, progress monitoring assessments typically do not emphasize these skills, unless the student is performing well below grade level.

Here are the full citations of the research cited above:

- Fuchs, L. S., Fuchs, D., & Compton, D. L. (2004). Monitoring early reading development in first grade: Word identification fluency versus nonsense word fluency. *Exceptional Children, 71*(1), 7–21.

- Kaminski, R. A., & Good, R. H. (1996). Toward a technology for assessing basic early literacy skills. *School Psychology Review, 25*(2), 215–227.

- O'Connor, R. E., & Jenkins, J. R. (1999). Prediction of reading disabilities in kindergarten and first grade. *Scientific Studies of Reading, 3*(2), 159–197.

Question: What does the research say about how many data points are needed before a teacher should make intervention decisions, such as considering changing an intervention in academics? In behavior? What is the "4-point rule"?

Answer: In general, we recommend collecting six to nine data points before making an initial decision in the area of academics. Once six to nine data points have been collected, the 4-point rule is simply a less precise, but quick way to estimate a trend line that allows teachers to estimate how a student will continue to perform. When at least eight data points have been

collected over the span of four weeks of instruction, trend line analysis can be used to determine response to instruction. A trend line can be drawn by hand or calculated by a software program. Step-by-step instructions about how to draw a trend line using the Tukey method are available in the *RTI Implementer Series Module 2: Progress Monitorin*g (http://www.rti4success.org/resource/rti-implementer-series-module-2-progress-monitoring) and the *Self-Paced Implementer Series: Using Progress Monitoring Data for Decision Making* (http://www.rti4success.org/video/implementer-series-using-progress-monitoring-data-decision-making). This citation provides an example of some of the research behind these progress monitoring decisions:

- Christ, T. J., & Silberglitt, B. (2007). Curriculum-based measurement of oral reading fluency: The standard error of measurement. *School Psychology Review, 36*(1), 130−146.

Decision rules for progress monitoring also are addressed in more detail in slides 82–92 of *Using Academic Progress Monitoring for Individualized Instructional Planning (DBI Training Series Module 2)* (http://www.intensiveintervention.org/resource/using-academic-progress-monitoring-individualized-instructional-planning-dbi-training).

In the area of behavior, guidance may be more variable depending on the context and nature of the behavior. In one of the National Center on Intensive Intervention's (NCII's) Ask the Expert videos, Dr. Joe Wehby addresses the question "*For students with intensive behavior needs, how many data points are needed to make decisions?*" (http://www.intensiveintervention.org/ask-the-expert/2013december)

Question: What suggestions do you have for teachers collecting progress monitoring data in multiple areas for different students, such as in the case of individualized education program (IEP) goals or during group interventions when students are working on multiple goals?

Answer: In this situation, we recommend that you use general outcome measures to provide an indicator of how the student is progressing overall in a specific content area (e.g., second- grade computation) for each IEP goal. This allows you to not only determine how well the student is progressing at acquiring specific skills (e.g., addition with regrouping), but also how well he/she is progressing in the specific domain. General outcome measures provide a much more useful assessment of maintenance and generalization in a particular content area than skill-specific assessments tend to accomplish. As a result, general outcome measures are more useful for instructional decision making. For information about various general outcome progress monitoring tools, please see the NCII Academic Progress Monitoring Tools Chart (http://www.intensiveintervention.org/chart/progress-monitoring).

Question: Can you recommend any progress monitoring tools or intervention programs?

Answer: Although NCII does not promote any specific progress monitoring tools or intervention programs, our Technical Review Committee conducts independent reviews of tools and interventions submitted through our review process. You can find the reviews of progress monitoring tools in academics and behavior at the following links:

- Academic Progress Monitoring Tools Chart:
  http://www.intensiveintervention.org/chart/progress-monitoring

- Behavior Progress Monitoring Tools Chart:
  http://www.intensiveintervention.org/chart/behavioral-progress-monitoring-tools

In addition, an Academic Intervention Tools Chart is available at the following link.

- Academic Intervention Tools Chart:
  http://www.intensiveintervention.org/chart/instructional-intervention-tools

A Behavioral Interventions Tools Chart will be available in spring 2014. These charts are intended to be used as consumer reports and to provide useful information to practitioners as they select appropriate tools and interventions. The charts are interactive, so if you click on the bubbles associated with the rating, you can find the data used for the review. On the websites, you can also find the standards used for the reviews. You can learn more about the tools charts by viewing the accompanying user's guides and audio tours.

Question: Where can I find normative or grade-level benchmark data for progress monitoring purposes?

Answer: Oftentimes, the progress monitoring tool will provide grade- or age-level benchmarks in a user's manual or on the organization's website. For example, Vanderbilt University publishes the normative benchmark data for common reading Curriculum-Based Measurements (CBMs), which can be found at http://boe.townofmanchester.org/departments/teach_learn_equity/MPMS/Vanderbilt%20University%20CBM%20Norms.pdf.

In addition, the progress monitoring tools reviewed on the NCII tools charts include ratings that show whether or not end-of-year benchmark data are provided for the tool, as well as the strength of the basis for the end-of-year benchmark data. These charts include reviews of the reliability and validity of other progress monitoring tools, including those specifically for reading.

Question: Can running records be used for progress monitoring? What does the research say about their validity and reliability as progress monitoring tools?

Answer: Although running records are a useful diagnostic tool, using running records as a progress monitoring tool can be problematic. A study from Carolyn Denton and colleagues examined the use of running records, and found that running records lacked reliability and validity as a progress monitoring tool (http://www.jstor.org/stable/4151799). Dr. Rebecca Zumeta's webinar, *Using Academic Progress Monitoring for Individualized Instructional Planning*, provides helpful information for practitioners when determining which types of assessments may be reliable and shares valid progress monitoring tools, particularly in the area of reading (http://www.intensiveintervention.org/webinars/2013March).

Here is the full citation for the research cited previously:

- Denton, C. A., Ciancio, D. J., & Fletcher, J. M. (2006). *Reading Research Quarterly, 41*(1), 8–34.

Question: Is it necessary to chart or graph progress monitoring data? What suggestions do you have for schools without software to create these graphs, including trend lines and goal lines?

Answer: In order to best analyze student progress monitoring data, it is important that the data are visually displayed. For this reason, charting or graphing progress monitoring data and including a goal and trend line is helpful. Vertical lines in graphs also can be used to document and display when intervention changes occurred. The *RTI Implementer Series Module 2: Progress Monitoring* (http://www.rti4success.org/resource/rti-implementer-series-module-2-progress-monitoring), *Self-Paced Implementer Series: Using Progress Monitoring Data for Decision Making* (http://www.rti4success.org/video/implementer-series-using-progress-monitoring-data-decision-making), and series of *Progress Monitoring Briefs* (http://www.rti4success.org/resource/progress-monitoring-briefs) discuss the value of graphed progress monitoring data in greater detail.

Some assessment tools, such as AIMSweb, include graphing tools. If not available, teachers can create graphs without software programs by using Microsoft Excel or Microsoft Word. One Excel graphing template that can be used to graph direct behavior ratings for behavioral progress monitoring is available by accessing http://www.intensiveintervention.org/sites/default/files/NCII_DBR_Graphing_Template.xlsx. This template is part of the *Monitoring Student Progress for Behavioral Interventions (DBI Training Series Module 3)* (http://www.intensiveintervention.org/resource/monitoring-student-progress-behavioral-interventions-dbi-training-series-module-3). There also are several free online templates and paper forms available on the Intervention Central website (http://www.interventioncentral.org/curriculum-based-measurement-reading-math-assesment-tests#6). The site provides links to paper forms, a link to the Chart Dog website for graphing, and a link to an Excel template.

Question: How frequently should progress monitoring data be collected and analyzed for students with intensive needs?

Answer: NCII recommends that teachers collect progress monitoring data for students with intensive needs at least once per week. Collecting these data more frequently will allow teachers to more closely monitor the progress of these students as well as make decisions about their interventions on a more frequent basis. In a study by Bangert-Drowns, Kulik, and Kulik (1991), the frequency of general outcome data collection had a direct impact on student performance. Taking *weekly* data struck an ideal balance between benefit to students and feasibility for teachers. Although collecting data twice a week was associated with slightly stronger student gains, it is important to consider school resources and feasibility given the diminishing returns obtained from collecting data two or more times per week. For more information about the recommended frequency of data collection, please see the following resources:

- Bangert-Drowns, R. L., Kulik, J. A., & Kulik, C.-L. C. (1991). Effects of frequent classroom testing. *Journal of Educational Research, 85*(2), 89–99.

- Fuchs, L. S., & Fuchs, D. (1986). Effects of systematic formative evaluation: A meta-analysis. *Exceptional Children, 53*(3), 199–208.

This information also is described in more detail within the *Using Academic Progress Monitoring for Individualized Instructional Planning* Webinar (http://www.intensiveintervention.org/webinars/2013March) presented by Dr. Rebecca Zumeta.

Although it is standard to collect progress monitoring data for approximately four to six weeks before making intervention changes, there are situations in which teachers may choose to make intervention changes more frequently if they have the data to support the urgent need for these changes. The sensitivity of the progress monitoring tool also will play a factor in how frequently teachers should evaluate progress and determine if changes to the intervention are needed and to what degree.

Question: What team members should be present when problem-solving teams convene to review student data and make intervention decisions?

Answer: Convening problem-solving teams with members having various areas of expertise, as well as familiarity with the child, can be beneficial when reviewing student data to make intervention decisions. Although team members will vary by school depending on staffing structure and roles, there are a number of members that NCII recommends should be present. First, the teacher who provides the intervention to the child should be present. This may be a classroom teacher, interventionist, special educator, or other teacher. If the student has an IEP, the special educator should always be present. Other recommended team members include the classroom teacher, content area coach or specialist, school psychologist or social worker, and principal or other administrator. Teams also should consider when it may be appropriate to invite the parent of the child. Overall, the team members who meet to problem-solve based on student data should represent a variety of expertise and be those who work most closely with the child.

Question: Can you provide guidance as to when it may be appropriate to use off-level assessments? What criteria should be used to determine at which level progress monitoring data are collected?

Answer: When considering the question "Should we ever assess students off level or at a different grade level than they're currently performing?" it is really important to consider the purpose of the assessment.

We typically recommend that screening should always occur at the student's chronological grade level because screeners are used to help identify risk status. Screeners also can be used to help the school determine how well they are meeting the needs of the students and whether they are on track to meet grade-level standards. As a result, if you are providing an off-level assessment for screening purposes, it may lull you into a false sense of security about how your students are performing.

However, for progress monitoring purposes where the goal is individual planning, we need to assess students at a level that is sensitive to change from where they are currently functioning. This means that if a student is in fourth grade and is reading at a second-grade level, the fourth-grade assessment is unlikely to detect his/her improvements in reading on a weekly basis over the course of the year, because it is likely that the assessment is too hard. In that case, we would instead provide the assessment at a lower level that matches where he/she is instructionally,

which will identify the improvement as it is occurring. For more information on this topic, view the *Using Academic Progress Monitoring for Individualized Instructional Planning (DBI Training Series Module 2* (http://www.intensiveintervention.org/resource/using-academic-progress-monitoring-individualized-instructional-planning-dbi-training) or the *Using Academic Progress Monitoring for Individualized Instructional Planning Webinar* (http://www.intensiveintervention.org/webinars/2013March).

Question: What does the research say about effective tools for monitoring the progress of middle school and high school students? Are there tools available to measure relevant skills such as reading comprehension?

Answer: To learn more about progress monitoring at the middle and high school levels, including the use of CBM for reading comprehension, view *The High School Tiered Interventions Initiative: Progress Monitoring*—an archived webinar developed through the collaborative work of the National High School Center, National Center on Response to Intervention, and Center on Instruction. In this webinar, Dr. Kristen McMaster provides an overview of CBM. She discusses the purpose of CBM, provides a brief description of the research, and demonstrates how CBM data can be used to monitor student progress at the secondary level. She reviews CBM tools that are available for high schools in reading, mathematics, and the content areas, and provides instructions for developing CBM tools for use at the high school level. Following Dr. McMaster's presentation, representatives from Walla Walla High School in Walla Walla, Washington, discuss how they have monitored school progress as part of their tiered intervention model. The webinar is available at http://www.rti4success.org/video/high-school-tiered-interventions-initiative-progress-monitoring.

Question: What guidance can you provide on setting appropriate goals for students? If a student is significantly behind his/her peers, how should teachers determine what is an ambitious yet feasible goal for this student that will help the student close the gap with his/her peers? What are considered "significant gains" for a student?

Answer: When setting a goal, "realistic" is often considered the definition of what students would achieve if given decent instruction. "Ambitious" should, at a minimum, be more than the average growth; otherwise, the performance gap will be maintained, not closed. Some progress monitoring tool publishers have recommendations for using the growth rates they provide.

There are three options for setting goals. The first option uses *end-of-year benchmarking*. The second option uses *national norms for weekly rate of improvement*. The third option uses an *intra-individual framework*. Benchmarking is the most ambitious of the three goal-setting methods and allows you to set a goal to get a student on track to close the achievement gap. However, for some students, this method may be too ambitious. When benchmarking is too ambitious but the student can learn at a typical rate, we recommend the use of national norms. Although the intra-individual framework is the least ambitious of the three options and may not result in closure of the gap between the student and his/her peers, it provides a benefit for students where the benchmark score is unrealistic and rate of improvement (ROI) has been persistently low. It also may be helpful for students with cognitive delays or other impairments that suggest faster ROIs are not feasible. We would recommend the use of the intra-individual

framework for students where data or prior experience suggests that other approaches are unlikely to be appropriate or realistic. This method is often used for setting IEP goals and is not appropriate for students performing at or near grade level.

To determine whether a student is making adequate progress toward their end-of-year goal, there are two different decision rules that you might use. For the 4-point rule, after **six data points** have been collected, examine the four most recent data points.

- If all four are above the goal line, increase the goal.

- If all four are below the goal line, make an instructional change.

- If the four data points are both above and below the goal line, keep collecting data until the 4-point rule can be applied (or consider trend analysis).

For trend line analysis, after **six to nine data points** have been collected, you calculate the trend of current performance (by hand or with software) and compare the student's trend line with his/her goal line.

- If the student's trend line is steeper than the goal line, increase the goal.

- If the student's trend line is flatter than the goal line, make a change to the intervention.

- If the student's trend line and the goal line are the same, no changes need to be made.

It is important to note that, although you may increase a student's goal if he or she is making gains, you should never lower a goal for a student.

Additional information about goal setting, including activities for setting goals, can be found in the following resources.

- *Using Academic Progress Monitoring for Individualized Instructional Planning (DBI Training Series Module 2)* at http://www.intensiveintervention.org/resource/using-academic-progress-monitoring-individualized-instructional-planning-dbi-training.

- *Using Academic Progress Monitoring for Individualized Instructional Planning Webinar* at http://www.intensiveintervention.org/webinars/2013March.

- *RTI Implementer Series Module 2: Progress Monitoring* at http://www.rti4success.org/resource/rti-implementer-series-module-2-progress-monitoring.

Question: How frequently should teachers share a child's progress monitoring data with parents?

Answer: There are no specific rules for how frequently teachers should share a child's progress monitoring data with parents, but it is important to recognize parents as valuable partners in the support of their child's academic and behavioral needs. Some schools or districts may set up policies for when data should be shared with parents. In addition, for students with disabilities, sharing progress monitoring data may be part of an IEP meeting, which should occur at least annually. Parents can assist by providing additional context during discussions about children's

academic and behavioral needs. By looking at their child's data, parents also can learn how to improve the support they provide at home. *Brief #4: Common Progress Monitoring Omissions: Reporting Information to Parents*, developed by the National Center on Response to Intervention, provides information about sharing progress monitoring data with families. It can be found at http://www.rti4success.org/sites/default/files/RTI%20ProgressMonitoringBrief4-Reporting%20Information%20to%20Parents.pdf.

Additional helpful resources that teachers can share with parents about progress monitoring include the following:

- *Student Progress Monitoring: What This Means for Your Child* developed by Kathleen McLane for the National Center on Student Progress Monitoring. Available at http://www.rti4success.org/resource/student-progress-monitoring-what-means-your-child

- *What is Curriculum-Based Measurement and What Does it Mean to My Child?* Available at http://www.rti4success.org/resource/what-curriculum-based-measurement-and-what-does-it-mean-my-child

Question: How can teachers utilize other, non-standardized data that are routinely collected to identify student needs and make intervention decisions? When might these additional data or assessments be necessary for making decisions?

Answer: Non-standardized data that teachers collect routinely can be valuable in helping to identify student needs and make intervention decisions. In addition to validated progress monitoring measures, other data can be used diagnostically to gather specific information about student strengths and needs. For example, in the area of reading, many teachers collect running records. Analyzing patterns of error in running records can reveal what types of reading deficits a student is experiencing and what changes to intervention may be most beneficial. In the area of mathematics, analyzing student work samples can provide a depth of information regarding where student understanding breaks down or which skills have already been mastered. Furthermore, various data points are typically collected in the area of behavior—including attendance, office referrals, and behavior report cards—that can be used to identify patterns in student behavior and possible triggers. Additional assessments such as these should be used to gather more information about student needs whenever progress monitoring data reveal that a student is not responding adequately to the current intervention. Last, although other assessments can be helpful in gathering additional information about students, teachers should be careful not to over assess students by making sure that each form of data collected has a distinct purpose.

Question: In areas where norm-referenced progress monitoring tools are unavailable, is it okay to use teacher-created progress monitoring assessments from curriculum and instructional materials?

Answer: Although standardized progress monitoring measures that are reliable and valid are ideal, these measures are not always available in every content area and at every grade level. Whenever possible, teachers should use valid, reliable progress monitoring tools to monitor student progress because they provide evidence that the assessment you are using is (a) consistent; (b) an indicator of your outcome of interest (e.g., end of grade reading skills); and (c) structured in a way that means increasing student scores are evidence of student learning. In

grade levels or content areas where standardized progress monitoring measures are not as readily available, teachers should ensure that any assessments they create align well to their curriculum, are brief, and can be given at regular intervals. When teachers create their own progress monitoring assessments, it is crucial that they regularly examine the assessments and their ability to predict success on relevant outcomes, such as how well the students perform on benchmark assessments in that content area. In addition, teacher- created assessments also may be used in combination with validated progress monitoring tools to better understand the nature of a student's skill deficits when lack of progress is evident.

Question: Do you have any suggestions for addressing fluctuating scores that may be due to the progress monitoring measure? For instance, fluctuating oral reading fluency (ORF) scores that may be due to lack of background knowledge on passages?

Answer: Reading passages that are used to measure ORF often produce a fair amount of variability as a result of student content knowledge. To address the natural variability that can occur with this measure, it is recommended that teachers have multiple data points when making intervention decisions. With ORF passages, teachers can gather reliable information about the need for an instructional change by drawing a trend line that runs across eight data points from different passages. This will minimize the problem of variability due to background knowledge.

Question: How should progress monitoring be used within a response to intervention (RTI) framework to document interventions and determine if a student is making sufficient progress?

Answer: Progress monitoring is a crucial part of the RTI framework and one of the essential components of an RTI framework as defined by the Center on Response to Intervention at American Institutes for Research (AIR) (formerly the National Center on Response to Intervention). As was discussed throughout the webinar, a progress monitoring tool should specify adequate progress that can be used for determining student movement across tiers. Various resources from the Center on RTI at AIR website (http://www.rti4success.org) discuss how to use progress monitoring tools within an RTI framework and review the different criteria necessary for decision making. One helpful resource is the RTI Implementer Series Self-Paced Learning Modules. Two modules within the series describe progress monitoring and how progress monitoring data can be used within an RTI framework (http://www.rti4success.org/rti-implementer-series-self-paced-learning-modules-progress-monitoring).

Question: How might behavior progress monitoring look different within a Multi-Tiered System of Support?

Answer: From the behavioral perspective, it is important to note the differences in progress monitoring at each tier. In Tier I, office referrals can be used, as most students in Tier I have minimal behavioral problems. At Tier II, 'Check-and-Connect' or 'Check-in/Check-out' have been used as interventions. An example of a common measure that teachers have used at Tier II is Direct Behavior Rating (DBR) for progress monitoring. At Tier III, the Direct Behavior Rating has proven successful, or direct observation if feasible.

Question: Should progress monitoring be shifted away from skills and more toward standards? Has the implementation of the Common Core impacted the use of general outcome measures (GOMs)?

Answer: The issue of progress monitoring and the Common Core is important as teachers strive to prepare students to achieve the Common Core standards. Although most popular progress monitoring measures are currently not directly aligned to the Common Core, it is important to note that in order to meet Common Core standards, students need to be competent with the kinds of foundational skills that are reflected in progress monitoring tools. For example, students must have a certain level of competence in reading and math fluency to be successful on the Common Core standards. Therefore, the lack of direct alignment between many progress monitoring tools does not invalidate their usefulness. Many researchers are currently working to extend progress monitoring tools to relate more directly to the Common Core. In the meantime, there are certain things teachers can do to keep progress monitoring tools relevant to the Common Core. For example, in the area of math, teachers can select different problem types on different days and ask students to write a substantive explanation for how and why they solved a problem in a certain way. This is one example of using existing materials in a way that extends the material to the kind of format students will encounter on Common Core assessments.