IssueBRIEF

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NOW IS THE TIME
TECHNICAL ASSISTANCE CENTER

Using Data to Improve Student Mental Health

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Now Is The Time Project AWARE grantees, including State and Local Education Agencies, will be collecting several sources of data both for the specific purpose of evaluating their grant efforts and for the overarching purpose of improving mental health supports for young people. In general, schools are accustomed to collecting data and many have become very good at it. Most schools, whether they know it or not, have access to a wealth of data that can be used to help understand student mental health, but lack certainty about how to use these data to improve student mental health outcomes. The purpose of this Now Is The Time Issue Brief is to introduce several simple strategies that will assist State and Local Education Agencies in determining how to use various sources of data to inform mental health planning and programming.

Unit of Observation, Unit of Analysis

A student's mental health is a function of personal behaviors, cognitions, and emotions as well the surrounding environment. Measuring aspects of the school environment is as important to understanding mental health as measuring how an individual student thinks, feels, and acts. For this reason, schools should seek to gauge both aspects of the school environment and aspects of students' internal experiences in order to determine if student mental health is improving. But because data come from several sources meant to measure different things, data-based decision-making can quickly become muddied. The first step towards a clean and clear approach to using data is to match your *units of observation to your units of analysis*.

The source of data is referred to as the *"unit of observation."* Most school data that can be used to measure student mental health are sourced from individual students, staff, or parents. For instance, a student completes a school climate survey, a teacher rates a student's classroom behavior, or a

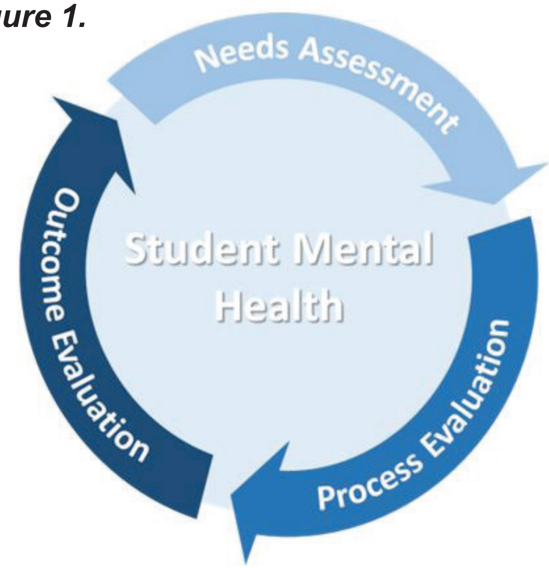
parent signs in for a parent-teacher conference. In some cases, the school itself can also be the unit of observation, such as when school policies are the source of data.

In order to avoid drawing spurious conclusions, your unit of analysis must match your unit of observation. When we want to know something about an individual student, we can simply look at that student's data. For example, if we want to examine change in a student's problem behavior over time, we could compare the number of discipline referrals that student received in September to the number received in October. Here, the individual student is the *"unit of analysis."* In other instances, we may want to know something about a classroom or a school. For example, we may look at the average response to the survey question, *"I feel safe at school,"* across all students in the school, to measure school safety. In this case, the school is the unit of analysis. The unit of analysis should align with the unit of observation, and this should be clarified prior to using data to inform practice.

Guiding Questions:

- What are we hoping to change or improve?
- In order to show the change or improvement, do we need information about an individual student, a group of students, a particular classroom, or the whole school?
- Double Check: Will the source of the data I'm collecting (i.e., unit of observation) tell me about the thing I'm hoping to change (i.e., unit of analysis)?

Figure 1.



NITT Project AWARE grantees will recognize the program evaluation cycle due to their experience writing Coordination & Integration and Evaluation Plans. Before beginning grant-funded activities, AWARE grantees conducted a comprehensive needs assessment and went on to identify process and outcome measures for each of their need-driven objectives. Beyond grant compliance, however, the program evaluation cycle should be relied upon as a standard practice for effectively leveraging resources to achieve maximum impact on valued student outcomes. SEAs, LEAs, teachers, and even students should become fluent in using the program evaluation cycle to inform all decisions that drive the distribution of resources.

The Program Evaluation Cycle: Different Questions for Different Uses of Data

Instead of beginning the process of data driven decision making by asking "*What data do we need?,"* it is more helpful to start by asking "*What questions do we want answered?"* The questions determine the types of data to be collected and what will be done with the data. There are generally three types of questions regarding student mental health improvement, each of which represents a specific stage of the program evaluation cycle:

1. *Needs Assessment.* Needs assessment questions ask, *"What do we need to do?"* They help to plan the necessary steps to improve student mental health: What are the areas of strength and need? Should efforts be focused, for example, on counseling services targeted to at-risk students or on increasing parent involvement? Answers to questions like these help with decisions about what interventions to put into place in a school. Part of conducting a needs assessment involves taking inventory of the interventions that a school already has at its disposal as well as other evidence-based interventions that the school could draw on to address any detected needs.
2. *Process Evaluation.* Process evaluation questions help to monitor how the interventions are going; they ask, *"Is what we planned to do happening?"* Process evaluation helps to gauge whether selected interventions are being implemented as planned. For example, in the implementation of a peer-mentoring program, how many mentors were trained and how often do they meet with their mentees? Answers to questions like these help determine if implementation stages and markers are being met.
3. *Outcome Evaluation.* Outcome evaluation questions allow us to study the effects of interventions and answer the question, *"Is what we're doing working?"* If selected interventions are being implemented as planned, they should result in specific objectives being met. Outcome evaluation provides multiple measures of the extent to which objectives are being met. It provides school staff with information about which strategies work as determined by students' responses to interventions. For example, if a social emotional learning program were implemented for the purpose of decreasing incidents of bullying and increasing levels of student engagement, we would examine outcome data to see if those targets are being met.

Outcome evaluation provides information about how an intervention is working, but also helps to identify new needs, thereby enhancing needs assessment. For this reason, these questions are understood to fit together in a cycle of continuous improvement (see Figure 1). Review of and feedback on data should be timely and ongoing.

Guiding Questions:

- What do we need to do? (needs assessment)
- How can we show that what we planned to do happening? (process evaluation)
- How can we show that what we are doing is working? (outcome evaluation)

The guiding questions answered using the process evaluation cycle map onto most decisions related to implementing mental health interventions in schools. If we begin by determining what it is we need to know, this will help determine what data we need and what to do with it.

Matching Types of Data to Types of Questions

Different types of data are useful for answering program evaluation cycle questions (see Toolbox 1 for a list of types of data that schools often already possess that can measure student mental health). Where possible, it is advantageous to use multiple sources of data to answer evaluation questions rather than relying on a single source. This helps to attenuate the reality that any individual source of data is an imperfect measure of a given concept or idea. For example, to measure a concept like classroom order, we might look at the average number of discipline referrals issued in a classroom. By looking, too, at results of administrator classroom observations we arrive at a clearer picture of classroom order.

To answer needs assessment questions (*What do we need to do?*), it is useful to have data on multiple indicators or for multiple student subgroups that can be compared to assess relative areas of need. For instance, a school-wide student survey that asks about perceptions of various aspects of the school environment allows for a comparison of school issues such as bullying, adult/student relationships, and substance use at school. Alternatively, it may be useful to have detailed information on a single indicator to get a better sense of how to address it. For example, looking at differences in discipline referrals by month can show the points during the school year at which behavioral interventions are most needed.

To answer process evaluation questions (*Is what we planned to do happening?*), have data that track how many students, staff, and/or parents receive services or participate in organized activities; how often they receive services or participate in activities; how well prepared providers are to deliver interventions; and whether all components of interventions are being implemented. For example, sign-in sheets for activities and events, or membership rosters for groups and clubs, can help monitor who is being reached by interventions and how often.

Guiding Questions:

- Have we identified more than one source of data for each thing we wish to change or improve?
- Do we have data from before we started our work to make comparisons between before and after we make a change?
- How frequently do we need to collect data to demonstrate the change we are looking to make?

To answer outcome evaluation questions (*Is what we're doing working?*), have both "before" and "after" (pre-post) data on the same indicator to see if change has occurred. For example, if an intervention is designed to reduce bullying, it is a good idea to measure rates of bullying before the intervention is implemented and then to use the same measure again after the intervention or individual components of the intervention are completed. Comparing data from the same measure, collected both before and after an intervention, can help show whether the desired change occurred. Accessing the necessary pre-post data can be accomplished by using data that are collected annually (as perhaps with a school-wide student survey), but it may require using data that are collected at shorter intervals to allow for more responsive feedback. Using data such as discipline referrals, which are collected daily, weekly, or monthly, can allow you to answer outcome evaluation questions with a much shorter turnaround time.

Toolbox 1. Sources of School Data Related To Student Mental Health

The following table includes a list of types of data related to student mental health that schools often collect. Not all of these data are collected with the intention of assessing student mental health. Universal screening tools, for example, are often used to directly assess mental health, but other sources of data may be collected for other purposes. For instance, most administrators conduct classroom observations for the purpose of giving teachers feedback on instructional practices, but these data are also a useful assessment of classroom order, teacher expectations and support for student learning, the physical surroundings of the classroom, and teacher-student relationships—all factors predictive of student mental health.

Toolbox 1. Sources of School Data Related To Student Mental Health

Types of Data	Description
Academic and attendance records	Student information system records of attendance, grades, and standardized test scores can serve as "downstream" indicators of mental health
Behavior monitoring tools	Staff observational reports or student self-reports for monitoring individual student positive and/or problem behavior
Classroom observations	Administrator or other staff observation of teacher classroom practices and environment that can be predictive of mental health
Discipline referrals	Student information system records of office discipline referrals that can be used to identify problem behavior
Demographic records	Student information system records of race, participation in the free and reduced-price meals program, school mobility, etc. that can be used to identify subgroup disparities in mental health outcomes
Focus groups and interviews	Structured conversations with students, staff, or parents on a specific topic, with recorded notes
Group membership rosters	Rosters for membership in groups, clubs, committees, etc. that can indicate engagement and school connectedness
Program implementation surveys	Surveys for measuring the degree to which specific programs have been implemented in schools with fidelity
Program outcome surveys	Surveys for measuring the effects of specific programs implemented in schools
Satisfaction and needs surveys	Parent and/or staff surveys to assess satisfaction with the school and for collecting feedback on needs and concerns
School climate surveys	Parent, staff, and/or student surveys to assess experiences and perceptions of the school environment (e.g., bullying, relationships, safety)
Sign-in sheets for activities	Sign-in sheets for tracking attendance and participation in school-based activities and events that can indicate engagement and school connectedness
Universal screening tools	Staff observational reports or student self-reports for identifying student behavioral and/or emotional problems

When and Where Does Data Use Fit into the School Day?

Once our questions are clear and we have the data required to answer them, the next step is to analyze the data and discuss their implications with relevant decision-makers in the school or community. Who participates in analysis and discussion will depend on the school and on the question being asked. It is easy for the process of examining school mental health indicators to be perceived as "just one more thing" that school staff have to fit into their already busy schedules. In order to effectively use data to improve student mental health, schools must create spaces for staff (and, in many cases, students) to have regular conversations about data and interventions. Four such spaces are discussed here:

- First, school-wide staff meetings or governance meetings that include parents, students, and community members can incorporate presentations, small group activities, and models that allow attendees to analyze, discuss, and make plans based on data. Involving parents is a great strategy to increase family-school collaboration.
- Second, professional learning communities (PLCs) of staff that meet to facilitate curriculum and instructional planning can ask themselves the evaluation questions above and incorporate data into their decision-making processes. Sharing data between grade levels can help teachers understand how their students responded to interventions in earlier grades.
- Third, site-based teams formed to address student behavior, wellness, or mental health (for example, a school Positive Behavioral Intervention and Supports team) are often tasked with monitoring data and using it to guide intervention.

Guiding Questions:

- Who will assist us to analyze the data we collect?
- How will we share what we have learned with different stakeholder groups (e.g., staff, parents, community, students)?
- What process will we use to decide what to do next based on what we have learned?

- Fourth, engaging student groups in discussions about school data can be a powerful strategy for tapping students' unique expertise on schooling and foster a sense of ownership and community. These discussions could occur with a student government or infused into classroom instruction in math, science, social studies, or other subject areas.

It's Okay to Ask for Help

Data collection, analysis, and interpretation can be intimidating and difficult. Further, using data does not necessarily guarantee improvements. School staff will require professional development and training to learn how to correctly review data and implement related interventions. There are many professionals on school campus' who are trained in data management as part of their graduate education, including school psychologists, science and math teachers, special educators, and district assessment staff. These professionals may be able to offer in-service training or one-on-one support, and including them on teams that discuss data can greatly improve the effectiveness of decision-making.

Toolbox 2. Establishing Data Partnerships

- Reach out to public and private universities in your state and/or community. Most universities have a department that specializes in Education that will be comprised of several faculty members, research staff, and graduate students that can assist with data collection, management, analysis, and/or interpretation.
- There exist several agencies throughout the United States, some not-for-profit and others for-profit, which specialize in managing education-related data for the purpose of program evaluation. Agency staff can assist with data collection, management, analysis, and/or interpretation.

In some cases, it may be helpful to partner with an organization that specializes in supporting schools with data use (Toolbox 2). Good partners will furnish data, analysis, and reporting that is sensitive to local need. It is important that data reports be understandable to staff, students, and parents. Data must be communicated in a way that the school community can engage in a meaningful conversation that results in collaborative and effective problem solving. The sustainability of data-use processes will be enhanced by installing user-friendly technology and data systems (Toolbox 3) that allow educators easy access to data and appropriate options for analyzing, summarizing, organizing, and displaying results.

Toolbox 3. Using Data Systems

Many organizations have developed *Student Information Systems* (SIS) designed to manage various sources of student-related data. Schools often use SIS for standard functions such as monitoring attendance and academic progress. Common SIS used for these purposes are *PowerSchool*, *Infinite Campus*, and *Aeries*. Over the past several years, schools have incorporated new uses of software systems to electronically track other sources of process and outcome evaluation data, such as various types of office discipline referrals (e.g., dress code violation, tardy) and event attendance (e.g., attendance at intervention sessions) that can be used to inform real time decision making. The table below provides examples of software tools that schools are adopting for these purposes.

Toolbox 3. Using Data Systems

Name of Data System	Developer	Description
Early Warning System betterhighschools.org/ews.asp	The National High School Center	A downloadable electronic tool that "helps schools and districts systematically: 1) identify students who are showing signs that they are at risk of dropping out of high school; 2) match these students to interventions to get them back on track for graduation; and 3) monitor students' progress in those interventions." Source: *The National High School Center, American Institutes for Research*
Hero herok12.com	Hero K12, LLC	"An in–browser web app and a mobile app to allow K–12 schools to capture a record of anything that happens on their campus." Source: *HeroK12*

Toolbox 3. Continued

Name of Data System	Developer	Description
Maxient Maxient.com	Maxient	A web-based information system designed to coordinate "student discipline, academic integrity, care and concern records, Title IX matters, or just an "FYI"... an integral component of many schools overall early alert efforts, helping to identify students in distress and coordinate the efforts of various departments to provide follow-up." Source: *Maxient*
SWIS Suite pbisapps.org	PBISApps	"A reliable, confidential, web-based information system to collect, summarize, and use student behavior data for decision making." Source: *PBISApps*

Making the Commitment to Use Data

Using myriad data sources to inform meaningful improvements in mental health outcomes for school-aged youth requires a strategic approach. As outlined throughout this Now Is The Time Brief, several critical guiding questions must be considered along the way to meeting mental health outcome goals. These guiding questions lead educators through all stages of data use: identifying what to measure, identifying a variety of sources for collecting identified measures, linking appropriate measures to new and existing prevention and intervention strategies, and gauging change over time. By diligently answering all guiding questions at each stage of data use, education agencies will avoid drawing spurious conclusions wherein the agency reports mental health outcomes that do not actually exist or, conversely, the agency fails to recognize mental health outcomes that they have worked so hard to achieve. Adhering to the highest standard of data use is hard work, but it pays off when education agencies are able to clearly communicate results to school stakeholders, government agencies, and community supporters who, as a consequence of learning about mental health outcomes, will deepen their commitment and investment in the education agency's ongoing efforts.

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