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Fostering SMART Partnerships to Develop an Effective Continuum of Behavioral Health Services and Supports in Schools

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The education sector offers compelling opportunities to address the shortcomings of traditional mental health delivery systems and to prevent and treat youth mental, emotional, and behavioral (MEB) problems. Recognizing that social and emotional wellness is intrinsically related to academic success, schools are moving to adopt multi-tier frameworks based on the public health model that provide a continuum of services to all children, including services to address both academic and MEB problems. In this article, we review the potential value of multi-tier frameworks in facilitating access to, and increasing the effectiveness of, mental health services in schools, and review the empirical support for school-based mental health interventions by tier. We go on to describe a community–academic partnership between the Seattle Public Schools and the University of Washington School Mental Health Assessment, Research, and Training (SMART) Center that exemplifies how multi-tier educational frameworks, research and evidence, and purposeful collaboration can combine to improve development and implementation of a range of school-based strategies focused on MEB needs of students. Finally, we present a set of 10 recommendations that may help guide other research and practice improvement efforts to address MEB problems in youth through effective school mental health programming.

In the United States, roughly one out of every five children experiences a mental health problem severe enough to warrant diagnosis (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). These problems interfere with youth functioning across domains, negatively impacting social relationships (Cook, Williams, Guerra, Kim, & Sadek, 2010) and placing students at increased risk for academic failure (Vander Stoep, Weiss, Kuo, Cheney, & Cohen, 2003) and school dropout (Moore, Redd, Burkhauser, Mbwana, & Collins, 2009). When left unaddressed, mental, emotional, and behavioral (MEB) problems of youth are likely to persist into adulthood and may result in costly long-term outcomes such as incarceration (Moore et al., 2009), unemployment (Nielsen et al., 2011), and reliance on public assistance (Fergusson, Boden, & Horwood, 2007).

The education sector offers compelling opportunities to address the shortcomings of mental health delivery systems and to prevent and treat youth MEB problems. First, schools are particularly convenient access points, reducing barriers to treatment that plague traditional outpatient settings, such as transportation, health insurance, and parental involvement (Pullmann et al., 2013; Pullmann, VanHooser, Hoffman, & Heflinger, 2010). Schools may be particularly effective in promoting access to care for historically underserved groups, such as ethnic minority youth (Lyon, Ludwig, Vander Stoep, Gudmundsen, & McCauley, 2013). Second, since free and compulsory education is offered to children aged 5–18 in the United States (Cabus & De Witte, 2011), schools are uniquely positioned to deliver a range of interventions from preventive to intensive. Third, school-based mental health interventions, when

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integrated with academic learning, have shown promise not only to promote MEB well-being but also to improve academic performance (e.g., Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Walker, Kerns, Lyon, Bruns, & Cosgrove, 2010). Finally, a positive educational climate that promotes a sense of belonging at school can itself buffer certain students from outside risk factors (Klein, Cornell, & Konold, 2012). For all the above reasons, significant advocacy and federal attention has been directed toward providing students with access to school-based mental health (SBMH; President's New Freedom Commission, 2003; U.S. Department of Health & Human Services, 1999). In part because of this advocacy, SBMH programs have grown progressively in the United States and are now widely available, to the point that the majority (70–80%) of mental health services for youth are provided in schools (Farmer, Burns, Phillips, Angold, & Costello, 2003; Rones & Hoagwood, 2000).

In this article, we highlight the value of the public health model and related multi-tier frameworks in facilitating access to, and increasing the effectiveness of, mental health services in schools. Next, we briefly review the empirical support for school-based delivery of mental health interventions. We go on to describe a community–academic partnership between the Seattle Public Schools (SPS) and the University of Washington (UW) School Mental Health Assessment, Research, and Training (SMART) Center, as a way of exemplifying how purposeful collaboration between researchers and practitioners can overcome common shortcomings in SBMH and translate educational adaptations of the public health model into specific research-based interventions and strategies. Finally, we present a set of 10 principles that extend from our lessons learned in conducting this work, and that guide our quest to prevent and address MEB problems in youth through effective school mental health programming.

Applying the Public Health Model to Education

Along with the substantial opportunities provided by schools to intervene in MEB disorders of childhood, an array of barriers and challenges must be addressed. For example, schools have traditionally operated under a "Refer-Test-Place" model (Cash & Nealis, 2004), in which only those children who struggle in mainstream educational settings are referred for an assessment of their needs for special education or other individualized services. The model has resulted in the "wait-to-fail" phenomenon in education, in which students who struggle socially, emotionally, and academically often fail for prolonged periods of time until their needs can no longer be ignored by educators (Shinn & Walker, 2010). Such traditional approaches often produce a substantial gap in services for students with serious needs and can exacerbate problems that might have been successfully addressed through more proactive attention.

As an alternative, multi-tier frameworks based on the public health model have garnered increased empirical attention and practical adoption in education. From its origins in the 1960s (Leavell & Clark, 1965), the public health model eventually evolved into the educational sector, most notably beginning in the 1990s with the introduction of Response to Intervention (RTI) as an alternative model to service delivery that involves (a) delivering a continuum of services to support the academic success of all students and (b) gathering data for earlier identification and progress monitoring of students with learning needs to ensure that they receive more timely and effective intervention (Gresham, 2005). As RTI was gaining popularity, initial momentum for the Positive Behavior Interventions and Supports (PBIS) model was established with the reauthorization of the Individuals with Disabilities Act of 1997 and a federal grant to establish a national center on PBIS for students with significant behavior problems. Continued interest in PBIS morphed into the National Technical Assistance Center on PBIS and the current schoolwide, multi-tier framework for preventing, reducing, and managing behavior problems. As shown in Figure 1, the public health model of primary, secondary, and tertiary prevention is conceptually and structurally similar to both the RTI (National Center on Response to Intervention, 2010) and PBIS models (Lewis & Sugai, 1999).

In Table 1, we summarize the commonalities and differences in each of these frameworks and the general progression of them over time, with the public health model undergirding the evolution of both RTI and PBIS in schools as multi-tier frameworks for promoting student success. It is important to note that RTI and PBIS represent essentially the same public health model informed framework with sometimes slightly different terminology and different instructional focus (e.g., RTI focusing on academics and PBIS focusing on behavior). Both, however, share the same goal of improving student school experiences and outcomes. As shown, while each model has three tiers, the overall emphasis of each model varies somewhat, as does the focus on each tier. As a result, the core sources of data that inform intervention and assignment of individuals to tiers also varies. In the current article, we adopt the terminology of *Multi-Tier Systems of Support* (MTSS) as a reflection of this term's current status in the field of education as representing an integrative framework for organizing school-based approaches to preventing and addressing academic problems, as well as MEB problems that impact student academic progress.

Despite the evolution of terminology over time, it is clear that schools have long been seen as a particularly conducive setting for a public health agenda that promotes the wellness of an entire population (Barrett, Eber, & Weist, 2013; Cappella, Frazier, Atkins, Schoenwald, & Glisson, 2008). As such, RTI, PBIS, and MTSS are all descendants and share common core principles of the public health model. For one, the models emphasize the provision of appropriate services and supports for all students. Primary, universal, or Tier 1 prevention and promotion efforts are thus a greater focus in multi-tier models than in the "Refer-Test-Place" approach (Cash & Nealis, 2004). Second, systematic surveillance, progress monitoring, and data-based decision making are core strategies at every level of support. Such data collection informs where an individual student is situated within the multilevel system and provides the basis for disability determination for students who have not responded to less intensive supports (Gresham, 2005).

In the MTSS framework, Tier 1 interventions are delivered to all students and can include a research-based core curriculum, culturally and linguistically responsive instructional practices, universal screening to assess current level of performance, social emotional curricula delivered in the classroom, and clear behavioral expectations and supports (National Center on Response to Intervention,

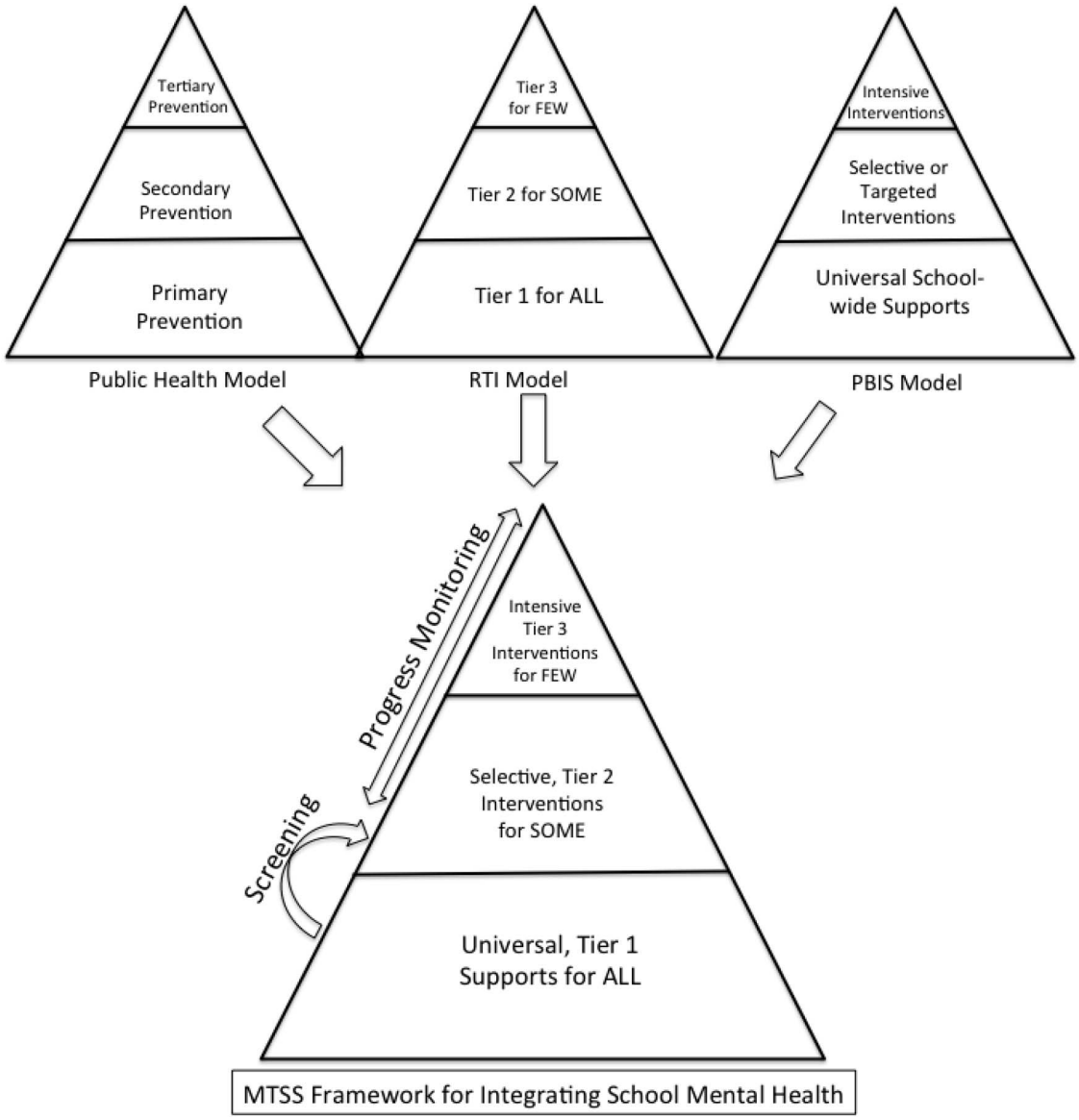

Figure 1. Integration of multilevel intervention models into a comprehensive Multi-Tier System of Supports (MTSS) for school-based social and emotional programming.

2010; Lewis & Sugai, 1999). Students who are identified as needing additional help beyond available Tier 1 supports receive targeted support at Tier 2. Typical Tier 2 interventions take the form of adult-led individual or small-group instruction, delivered as part of the general education programming (Burns & Coolong-Chaffin, 2006; National Center on Response to Intervention, 2010). Brief, individualized interventions from SBMH providers are also classified as Tier 2 (e.g., Lyon, Bruns, Weathers et al., 2014). Those who continue to struggle after receiving secondary-level supports are provided with intensive, individualized, Tier 3 interventions (National Center on Response to Intervention, 2010). Tier 3 supports are often for students with complex needs and, therefore, involve specially trained professionals (e.g., behavior specialists, mental health providers, and social workers).

Effectiveness of School Mental Health Programming Across Multiple Tiers of Support

Excellent reviews of the evidence base for SBMH programming across the three tiers of support have been provided previously (e.g., Farahmand, Grant, Polo, & Duffy, 2011; Fazel, Hoagwood, Stephan, & Ford, 2014; Hoagwood et al., 2007; Rones & Hoagwood, 2000), and we will not attempt a comprehensive review here. There is evidence for positive effects of school-based programs across tiers; however, as described below, few rigorous studies of more intensive and individualized Tier 2 and Tier 3 SBMH interventions exist. We briefly review the evidence here to provide context for the description of the SMART Center's efforts

Table 1. *Comparison of Leading Multilevel Models Relevant to School-Based Service Delivery*

	Public Health Model	Response to Intervention (RTI)	PBIS Model
Years Introduced	1965–1970	1990–2001[a]	1997–2002
Levels	Primary prevention Secondary prevention Tertiary prevention	Tier 1 for all students Tier 2 for some students Tier 3 for a few students	Universal schoolwide supports Selective/targeted interventions Intensive interventions
Emphasis of the model	Prevention, reversal, or management of disorder or illness	Prevent, remediate, or intensively treat academic problems	Prevent and address externalizing behaviors and promote positive school climate
Data-based decision making	Collection of prevalence data and examining risk for an illness or disorder	Academic screeners and progress monitoring instruments based on curriculum-based measures	Office discipline referrals for screening purposes and point sheets or direct behavior ratings for progress monitoring.
Limitations	System focuses on prevention of specific diseases, illnesses, and disorders, and fails to integrate promotion-based strategies that optimize physical and mental health	Primary focus on academics with limited attention to the integration of MEB supports.	Multi-tier model based on behavior analytic principles that focuses narrowly on preventing and addressing externalizing behaviors.

Note. PBIS = Positive Behavior Interventions and Supports. [a] = The concept of RTI was introduced by Gresham (1991) and was emphasized in a series of reading intervention studies conducted by several research groups. The formal RTI term was not fully introduced until 2001 during a Learning Disabilities Summit hosted by American Institute of Research and later referred to in law in 2004 with the reauthorization of the Individuals with Disabilities Education Act.

to improve elements of SBMH programming across all tiers of support in Seattle Public Schools, and our recommendations for further research and policy.

Universal Screening and Assessment

Universal school-based screening, another extension of the public health model, has been proposed as one method for early identification of both academic (VanDerHeyden, Witt, & Gilbertson, 2007) and mental health problems (Levitt, Saka, Romanelli, & Hoagwood, 2007). Universal screening involves systematic assessment of an entire school population to identify students in need of additional supports. Data can also be aggregated to compare groups or settings within that larger system to determine where significant needs and strengths exist. Conducting ongoing screening allows for monitoring of the prevalence and incidence of specific problem behaviors, enabling schools to prioritize and direct resources toward prevention or intervention efforts that are most needed.

Despite the proposed benefits, less than 2% of schools utilize a systematic screening process to identify risk for MEB problems (Romer & McIntosh, 2005). While limitations to adoption have been documented (e.g., parental and community concerns about screening, lack of flexibility in content, relatively low response rates), little research has been conducted on the impact of screening and assessment efforts on school and MEB outcomes. Although Green et al. (2013) found that a school's level of effort in screening and early identification was related to the level of mental health service use among students, screening efforts may also unintentionally label children if effective interventions are not available or provided, creating stigma that undermines their academic and MEB performance (Sayal et al., 2010). Thus, screening efforts must be linked to effective interventions that are matched to students' identified needs.

Tier 1 Strategies

A number of school-based primary prevention programs have demonstrated empirical support for improving student outcomes, spanning from externalizing behavior such as aggression (Wilson & Lipsey, 2007), internalizing problems such as anxiety (Neil & Christensen, 2009), and substance use (Tobler et al., 2000). A notable exception is Tier 1 interventions for depression, which have demonstrated weaker effect sizes than those targeted at high-risk populations (Calear & Christensen, 2010; Fazel et al., 2014), presumably because of "floor effects" whereby children in the sample with relatively lower depressive symptoms at the outset of the study have less capacity to show improvement. A recent meta-analysis showed that Tier 1 social and emotional learning programs resulted in improved student competencies, including social and emotional skills, attitudes, behavior, as well as an 11% increase in academic performance (Durlak et al., 2011).

Tier 2 Strategies

Tier 2 SBMH interventions typically are characterized as "selective approaches" that target students who demonstrate emergent MEB problems or risk factors for developing them. Effective programs have been developed to reduce aggressive behavior (Lochman & Wells, 2002) and substance abuse (Castellanos & Conrod, 2006). Additionally, a number of school-based programs have been shown to be effective for reducing anxiety and depression (Neil & Christensen, 2009; Calear & Christensen, 2010). The research base for Tier 2 programming, however, consists primarily of efficacy studies, and few evaluations exist of Tier 2 programming in real-world education settings.

In addition to interventions that target students with specific risk factors, there has been a longstanding movement to bring mental health practitioners into schools to provide the diverse array of

services that might be provided in less accessible settings such as clinics, and thus reduce gaps in access to care (Weist & Evans, 2005). Such SBMH services may be conceived as bridging Tiers 2 and 3, depending on the intensity of intervention provided by the SBMH practitioner. While there is much enthusiasm for SBMH's potential to improve MEB wellness of students and promote broader school goals, the literature consists primarily of program descriptions and uncontrolled outcome studies (Nabors & Reynolds, 2000; Walker et al., 2010). Reviews and meta-analyses of rigorously conducted SBMH research, moreover, typically yield few methodological rigorous studies, and the summary of these analyses often reveal null to small, and even iatrogenic, effects (Farahmand et al., 2011; Hoagwood et al., 2007; Rones & Hoagwood, 2000).

Tier 3 Strategies

At the top of the framework are individually tailored and intensive interventions. Although the literature is relatively scarce in this tier, there are empirically supported, school-specific interventions for posttraumatic stress disorder (Stein et al., 2003), depression (Calear & Christensen, 2010), and anxiety (Neil & Christensen, 2009). In addition, there is an extensive literature supporting the common Tier 3 strategy of using functional behavior assessment to inform the development of an individualized behavior intervention plan for students with serious emotional and behavioral disorders that impede their functioning in school and can disrupt the learning of other students. Finally, for youth with the most complex needs, there is an emerging literature demonstrating the potential for positive impacts of structured "Tier 3 wraparound" teams that coordinate care to address a child's needs across different areas of functioning and settings (Eber, Hyde, & Suter, 2011; Malloy, Drake, Abate, & Cormier, 2010).

Challenges and Barriers to School-Based Programming

Despite the benefits cited in the previous sections, several challenges have interfered with the goal of leveraging education-sector mental health programming to effectively address the MEB needs of youth. Consistent with academic interventions and supports, there is a significant gap between "what works" and what actually is implemented in SBMH (Forman et al., 2013). There are several explanations for this limited use of effective SBMH services.

Prioritization of Mental Health by Educators

First, the extent to which MEB problems are a priority for the leadership or staff working in schools is highly variable. Educators who endorse the importance of student emotional and behavioral competencies are more likely to be receptive to related training and administrative adoption decisions, integrate strategies to address MEB into their daily practices (Brackett, Reyes, Rivers, Elbertson, & Salovey, 2012), and carry out these strategies with integrity (Kincaid, Childs, Blase, & Wallace, 2007). Unfortunately, those who hold attitudes or beliefs that are less conducive to these programs are less likely to adopt or sustain those interventions (Cook, Lyon, Kubergovic, Browning-Wright, & Zhang, 2015).

Workforce and Resource Limitations

Workforce development to increase the capacity of schools to support student mental health is sparse and insufficiently interdisciplinary (Suldo, Gormley, DuPaul, & Anderson-Butcher, 2014). Although universal approaches such as PBIS provide an evidence-based framework for engaging multiple types of school professionals in practices designed to enhance effective discipline and improve student behavior, programs directed at students who are already experiencing mental health symptoms are generally left to dedicated health care staff, who are invariably in limited supply. Focusing resources on mental health services is a "hard sell" when basic education remains underfunded (Prodente, Sander, & Weist, 2002). For this reason, school staff often have few mental health training resources available to them (Evans & Weist, 2004).

Contextual Fit of Interventions to the School Context

Even when resources are available to support the installation of new mental health programs, the interventions identified may not have been developed or tested in schools (Wong, 2008). As a result, intervention-setting appropriateness—defined as "the perceived fit, relevance, or compatibility of the innovation or evidence-based practice for a given practice setting, provider, or consumer" (Proctor et al., 2011, p. 69)—is often suboptimal. Although there is increasing recognition that appropriateness may be a particularly salient construct when implementing evidence-based practices (EBPs) in schools (Lyon, Ludwig et al., 2014), little research has addressed this issue.

Broader Systemic Issues

Additional contextual barriers to providing timely and effective services in schools include the requirement that, to receive care, students must be actively attending school. School absences, especially among students with the greatest mental health needs, have been referenced by SBMH providers as one barrier to providing needed services (Lyon, Ludwig, Romano et al., 2013). Furthermore, students who drop out are unlikely to be able to continue to receive services. Given these issues, school mental health services need to be flexible and entail outreach to children and families in the community to facilitate access to care. Schools also reflect the larger social context, which can include various institutionalized inequalities and inadvertent staff biases. For instance, substantial racial disproportionality in staff disciplinary responses (e.g., suspensions, expulsions) to student misbehavior has been well documented across a wide range of academic settings (Balfanz, Byrnes, & Fox, 2013; Fabelo et al., 2011; Losen & Gillespie, 2012; U.S. Department of Education Office for Civil Rights, 2014).

Integrating Behavioral Health Into Schools Through a Research–Practitioner Partnership

In any systems improvement effort, applications of epistemological orientations (such as a commitment to research-based practices and/or use of data to inform programming and policy) and

conceptual frameworks (such as the public health model and/or MTSS framework) inevitably must be married to the local context to increase the likelihood of effective implementation. Thus, applications of MTSS and the public health model will likely look very different from system to system and community to community. Even when adopted with rigor, programmatic elements within these models are free to vary, including screening and assessment measures and approaches; school-wide, universal prevention programs; Tier 2 and Tier 3 interventions; process and outcome measures; and the types of practitioners who do the work.

For over 10 years, scientist-practitioners from the University of Washington School of Medicine and College of Education have collaborated with Seattle Public Schools (SPS) to attempt to bridge the "science to service" gap by (a) building a comprehensive, integrated strategy that reflects frameworks such as MTSS and (b) ensuring that each component within the overarching strategy is guided by relevant research. SPS is the largest school system in Washington State, with 95 schools serving nearly 50,000 students. The district is also highly diverse, as reflected by its racial diversity (43% of students are Caucasian, 22% Asian, 21% African American, 12% Hispanic, and 2% American Indian), socioeconomic status (41% are on free or reduced price meal programs), and languages spoken, which number over 120.

To integrate UW faculty members' projects with SPS, the SMART Center (https://education.uw.edu/smart) was founded in 2013 to bring together UW researchers and intervention specialists who are actively engaged in collaborative efforts with SPS schools, as well as schools nationally, to improve access to evidence-informed SBMH programs and mobilize the promise of both the education sector and public health model as vehicles for improving youth mental health. In the remainder of this section, we describe current and proposed projects being implemented through the SPS-SMART collaboration, to illustrate (a) examples of how challenges and barriers in implementing supports and services for students with MEB problems can be addressed across the MTSS continuum, (b) how local context influences the selection and implementation of such strategies, and (c) how academic-public collaboration can shape these efforts.

Universal Screening and Assessment

Starting in 2002, UW faculty partnered with SPS to identify students experiencing or at risk of developing depression and/or conduct problems during the transition periods from elementary to middle school and middle to high school. As a result, UW and SPS collaborated to design protocols to conduct universal emotional health screening among middle school students to identify at-risk youth and facilitate linkages to educational and mental health supports. Research on these local efforts has demonstrated that these programs are feasible, effectively increase student entry into indicated services, and are cost-effective (Kuo, Vander Stoep, McCauley, & Kernic, 2009; Vander Stoep et al., 2005). Most recently, we have used system dynamics modeling (Homer & Hirsch, 2006) to estimate the impact of a universal screening program on additional service demand and simulate the effects of implementing "compensatory approaches" (e.g., EBP implementation) designed to address anticipated increases in service need (Lyon, Maras, Pate, Igusa, & Vander Stoep, 2015).

Despite these positive outcomes, a number of concerns about school-based screening have surfaced over the last decade, including fears about unnecessary labeling of students as having mental health problems leading to stigma and referral to unwarranted treatment, and potential overuse of psychotropic medications in youth (Conservative Caucus, 2004; Eakman, 2004). There was also apprehension about identifying youth in need of services that were not available. While we documented our ability to successfully connect youth to needed services, our experiences taught us a number of lessons. These include the importance of forming a trusting working partnership with each school and making sure that the entire school staff, as well as parents and youth, are aware of the goals, objectives, and limits of the screening program well before it is initiated. This involves engagement with principals and administrative teams, active participation in PTA and "back-to-school" nights to inform parents, and informational sessions with students. Establishing this sense of trust also involves careful but practical attention to confidentiality and its limits, so that students know that their individual responses will not be shared with school personnel or parents and also that a system is in place to follow up on all reports of elevated distress and risk, which could involve communicating with parents to assure student safety. Finally, we learned that screening must be carefully organized and efficient, limiting disruption to teaching time and school schedules.

Tier 1: Addressing Disproportionality in Discipline

Consistent with national statistics, SPS currently struggles with racial disproportionality in its discipline practices, with African American high school students suspended or expelled more than three times as often as other students. Disproportionality has thus emerged as a high priority for the SPS–SMART partnership. After meetings with SPS personnel, a new partnership called the Minority Engagement and Disproportionality Reduction Collaborative has been initiated, focused on two priorities: first, to build district capacity to use state-of-the-art data analysis techniques to understand where, with whom, and why disproportionality exists; and second, to build on and extend the principles and structures of PBIS (Lewis & Sugai, 1999) to address disproportionality within select schools.

After data review, select schools will be identified to receive professional development training, coaching support, and implementation resources that are part of an empirically supported process that includes problem identification, problem analysis, development of a plan, implementation of the plan, and evaluation of the plan's effectiveness. School teams will customize an intervention plan that targets the driving forces of discipline disproportionality within their school, selecting from six interventions that align with research on core causes: modifying discipline policy (American Psychological Association Task Force on Zero Tolerance, 2008), increasing staff cultural competence (Banks, 2013; Gillette & Boyle-Baise, 1995), enhancing educator–student relationships (Yeager et al., 2014), improving proactive classroom management (Rathvon, 2008), implementing effective reactive strategies (Reinke, Lewis-Palmer, & Merrell, 2008; Pianta, La Paro, & Hamre, 2008), and screening and referral to selective interventions (Cook, Volpe, & Livanis, 2010).

Tier 2: Development of a Brief Intervention Strategy for School Clinicians

In SPS and elsewhere, mental health services available in schools are rarely based on evidence of effectiveness, and are often disconnected from the larger school context. Providers carry large caseloads, experience significant time constraints, and must serve youth with a broad array of needs (Lyon, Ludwig et al., 2013, 2014). To address these issues, SMART Center faculty have worked with SPS leaders and SBMH providers to develop a brief, evidence-based, flexible mental health intervention that fits the school context while maintaining clear intervention structure. This intervention dually emphasizes MEB and academic outcomes.

The Brief Intervention for School Clinicians (BRISC) is conceptualized as a Tier 2 strategy within MTSS and intended to emphasize both social-emotional and academic outcomes. BRISC is delivered in approximately four sessions. Clinicians using BRISC quickly assess the student's needs using a structured process and then engage the youth in problem solving around treatment goals. The student's identified goals are addressed quickly, using one or more research-based strategies (e.g., cognitive restructuring, motivation enhancement, communication skills, stress and mood management) that have been incorporated into BRISC based on their match to typical student needs. Systematic progress monitoring is an essential component, and guides clinical decisions about whether students' needs have been met and/or when students should be referred to more or less intensive or specialized services (Lyon, Bruns, Weathers et al., 2014).

Funded by a Development and Innovation grant from the Institute for Educational Sciences (2015; DOE R305A120128), early findings of the Brief Intervention for School Clinicians (BRISC) indicate that BRISC promotes students' motivation to continue counseling, increases proactive coping, and improves overall social-emotional functioning. (Bruns, Lyon, & McCauley, 2013; Lyon, Bruns, Ludwig et al., 2014). Thus, BRISC represents a good example of an effort to address several common barriers to effective SBMH through development of a defined Tier 2 strategy that mobilizes research evidence and promotes better integration with the school context and mission. BRISC's potential for positive effects, however, will not be fully established until evaluation of its effects on student academic outcomes is completed.

Tier 3: Intensive Individualized Interventions

Many of SMART Center projects focused on evaluating Tier 3 services within the SPS system have been funded and supported by a series of voter initiatives in Seattle that apply funds collected from a property tax levy to educational support services. The Families and Education Levy was first passed by Seattle voters in 1990 and has since been renewed three times. The most recently passed Levy provides approximately $254 million from 2013–2017 to fund a range of strategies intended to promote school readiness, academic achievement, and reduction of achievement gaps.

Family support program. Under the auspice of the Levy, the SMART Center evaluated and recommended improvements to a school-based Family Support Program (FSP), conceived as spanning Tiers 2 and 3 of the MTSS framework. FSP operated in 28 high-needs, mostly elementary, schools. FSP staff worked directly with families and students on nonacademic barriers to success such as transportation, poverty, clothing, medical care, and housing. FSP staff also liaison with teachers, families, child welfare, community service providers, and school administration to identify and serve students with multiple and complex needs such as extreme poverty, homelessness, past trauma, recent immigration, refugee status, mental health needs, and special education.

In 2004, the goals of Levy-supported projects shifted to academic achievement, increasing pressure on the FSP to demonstrate academic impact instead of its previous social-emotional focus, resulting in our evaluation of the program in 2013–2014. While the FSP stressed academic achievement by facilitating family involvement in education, connecting students to supplementary academic resources, and providing instrumental support to overcome barriers, our evaluation showed that many staff in the FSP felt that their training and experience had not prepared them for a role in directly improving academic functioning. Unsurprisingly, our evaluation found no evidence of a positive impact of the FSP on standardized test scores, disciplinary actions, or attendance. However, trends were found for an impact on outcomes more closely linked to the activities of FSP workers, such as student mobility and schools' connectedness to community resources (Pullmann, Weathers, Hensley, & Bruns, 2013). Though these results disappointed many in the FSP, they were used to inform refinements to staff training, student triage, and progress monitoring activities to connect them more closely to improvements in student academic functioning. FSP staff now regularly incorporate academic indicators into their monitoring of individual youth plans and progress, and staff trainings are specifically focused on methods to improve academic performance and engage parents in supporting academic success. At a deeper level, the results from this evaluation helped guide the SMART Center's focus on staying connected to the academic mission of schools (see Recommendation #3 below) and to make academic outcomes—traditionally considered distal, mediated indicators of school-based nonacademic interventions—more proximally connected to the activities of the intervention (Lyon, Borntrager, Nakamura, & Higa-McMillan, 2013; Lyon, Bruns, Ludwig, et al., 2014).

School health and mental health services. Levy funds also provide the financial support to school-based health centers (SBHCs) located in each of Seattle's 22 middle and high schools as well as eight high-need elementary schools. In secondary schools, each SBHC employs either a half-time or full-time health provider, such as a Nurse Practitioner or Physician Assistant, and mental health clinician. During the 2013–2014 school year, the Seattle SBHC program served 6,540 students, primarily racial minority (69% non-White) and low-SES (59% eligible for free/reduced lunch). Of 33,864 total student visits to SBHCs, 14,365 (42%) were for mental health services. The presence of such SBHCs, which provide mental health service to 13% of all Seattle public high school students, creates an extraordinary opportunity for SMART Center faculty and dedicated SBMH practitioners and their leaders to collaborate on quality improvement activities focused on training and implementation as well as evaluation and research.

SMART Center faculty have worked with the mental health providers working within SBHCs for over 10 years to provide training and consultation on practice models and implementation

supports with high potential for effectiveness. Most recently, this training and implementation support has focused on use of flexible, evidence-based emotional and behavioral health treatment (Lyon, Charlesworth-Attie, Vander Stoep, & McCauley, 2011) as well as assessment and progress monitoring (Lyon, Ludwig et al., 2015). Most recently, our focus on data-based decision making has taken the form of consultation with school-based providers on computerized measurement feedback systems that support mental health intervention (Lyon, Knaster Wasse et al., 2015).

UW evaluated the associations between Seattle's SBHC primary care and mental health services on student academic performance and attendance (Walker et al., 2010). A quasi-experimental statistically controlled analysis comparing SBHC users to nonusers found small but significant and positive associations between SBHC physical health service use and increased school attendance, and SBHC mental health service use and GPA. This differential finding is consistent with the argument that the impact of universally available services such as SBHCs can be best identified through subgroup analyses—for instance, chronic physical conditions that lead to high absenteeism may be addressed through the SBHC physical health service use (Geierstanger, Amaral, Mansour, & Walters, 2004). However, an additional study, also quasi-experimental and statistically controlling for service use, did not find any support for a relationship between the risk of dropout and SBHC service use (Kerns et al., 2011). Taken together, these studies illustrate the utility of school–researcher partnerships in examining the impact of school programming on student outcomes, especially given barriers related to the naturalistic, scientifically uncontrolled nature of school settings.

Intensive Tier 3 care coordination model. To address high-need middle school youth experiencing a combination of academic and behavioral health risk factors, members of the SMART Center team collaborated with SPS, an independent foundation, and a community-based mental health service organization to integrate behavioral health services into schools' existing support systems through the implementation of three levels of behavioral health service: short-term crisis intervention, assessment and referral to external mental health services, and team-based wraparound care coordination. Students were included in the intensive care coordination condition based on their high risk for disciplinary actions, academic failure, and the presence of behavioral health issues that may have been contributing to these problems. Evaluation of the intensive intervention suggested that the highest risk youth (e.g., students who had failed at least one academic course in the semester prior to the baseline assessment) were less likely to experience future severe problems, such as subsequent course failures, relative to students recruited from comparable control schools. Analyses also identified disparities in the receipt of specialty mental health sector services for children whose parents were not native English speakers (Cutler, Lyon, Thompson, Vander Stoep, & McCauley, 2012).

Discussion

Federal reports and education-focused funding agencies have encouraged researcher–practitioner partnerships as a strategy for promoting effective use of research and data-informed strategies (IES, 2015). Such collaboration organizes practitioners and researchers to investigate problems confronted in education practice, explore solutions for improving student outcomes, and address the needs of educators, policymakers, students, parents, and community members (Coburn & Turner, 2011). With respect to MEB problems experienced by students—and their impacts on academic success—research and data can be applied in a range of ways to systematically develop, select, test, analyze, and refine interventions and solutions. Moreover, they can also be organized into comprehensive strategies using overarching frameworks such as the public health model and MTSS. As described in this article, this is the agenda that has emerged from the collaboration between Seattle Public Schools and SMART Center.

At the same time, it is important to recognize that research–practitioner partnerships inevitably will be undertaken within a context that is unique to the local community, whether it is a classroom, school, district, or state. MTSS are not built de novo based on an idealized model and suite of interventions and strategies. Rather, researchers, practitioners, and community members must work to solve unique problems and priorities, leverage indigenous helpers, and take advantage of local opportunities and resources.

Recommendation 1: Attend to Context

Thus, one of the first and most obvious lessons from our collaborative effort to develop an effective continuum of behavioral health services and supports in Seattle schools is that the nature of this work will always be driven by local needs, resources, and priorities. In Seattle, for example, the Families and Education Levy—and Seattle's network of SBHCs—provides an extraordinary resource, and changes the context for implementation of MTSS and overall quality improvement agendas. The availability of SBMH clinicians means that other staff persons serving middle and high schools, such as school nurses, psychologists, and counselors, may serve different roles than in schools with no SBMH clinicians, and may benefit from different kinds of training and support. The FSW program is a unique resource that is poised to help multistressed families support their students to succeed in school, but evaluation of the program identified that FSWs could more strategically intervene in ways that use data, are based on research-based practices, and align with the MTSS model. Racial disproportionality in student discipline presents the partnership with another, very specific, "problem of practice" on which research and data now must be focused.

Recommendation 2: Organize Strategies Into a Widely Recognized Framework

In complex environments such as school systems, use of clear organizing frameworks can enhance staff understanding and buy-in to change processes and strategies, and facilitate communication about expectations and decision-making (Chorpita & Daleiden, 2010). In our work with school systems such as Seattle's, we have found MTSS—and the accompanying "triangle" depiction of universal, targeted, and intensive supports—as a useful framework and source of common terminology and one that meshes easily with the public health approach (see Figure 1). Using such a common framework that extends from a federal

mandate is extremely useful in helping diverse stakeholders understand how a school system is applying research-based strategies (as shown in Figure 2 for the SPS–SMART collaboration) and in making complex decisions, such as (a) choosing critical components of MEB support for students at each tier in the MTSS framework; (b) identifying systems changes needed to support a three-tier MTSS; and (c) developing guidelines and curricula to assist with training school and SBMH personnel on necessary skills to implement services and supports across the three-tier model.

Recommendation 3: Stay Connected to the Academic Mission of Schools

The mental health and academic scientific literature bases have largely emerged independently from one another. Indeed, even the majority of school mental health research has failed to incorporate relevant academic outcomes (Hoagwood & Johnson, 2003). Consequently, the relevance of school mental health practices to academic outcomes is not clearly understood, leaving many educators to question whether resources and time should be devoted to these practices. To better understand the merits of school mental health programs, these practices must be consistently integrated into the academic mission of schools, and clear linkages between school mental health practices and educational outcomes must be provided for stakeholders to understand that mental wellness is essential for young people to become truly college, career, and life ready.

Recommendation 4: Mobilize Knowledge From Implementation Science

Because much of our collaborative effort focuses on appropriate use of research evidence, the SMART Center endorses and actively pursues the implementation science research agenda recently articulated by Owens and colleagues (2014) surrounding professional development and coaching. For example, how much coaching is necessary following training to produce sustained practitioner behavior change? To what extent do different dimensions of integrity (e.g., model adherence, practitioner competence) differentially predict student outcomes? Given the academic calendar, what is an appropriate timeline for new practice sustainment in SBMH? Driven by mounting evidence for the importance of aspects of the organizational implementation context in the successful installation of evidence-based programs (e.g., Aarons, Ehrhart, & Farahnak, 2014) and the unique characteristics of the education sector (Owens et al., 2014), SMART Center faculty are exploring the influence of school and district climate, leadership, and school personnel characteristics on implementation success. Moreover, given resource limitations in the education sector, SMART Center researchers necessarily are focused on developing efficient implementation strategies geared toward producing "good enough" outcomes with relatively low cost (Owens et al., 2014).

Recommendation 5: Take Advantage of Opportunities to Integrate Care

In the context of recent federal policy shifts that prioritize mental and physical health parity, information sharing, and integration of services, traditional specialty mental health is likely to be de-emphasized in favor of more accessible and unified alternative service sectors (Hoagwood, 2013). Collaborative care models represent one effective approach to reorganize service systems to decrease health care costs, increase service accessibility, and improve intervention quality through the integration of mental health and primary care. A large body of research supports the effectiveness of collaborative care models for adults (e.g., Gilbody, Bower, Fletcher, Richards, & Sutton, 2006; Thota et al., 2012), and an

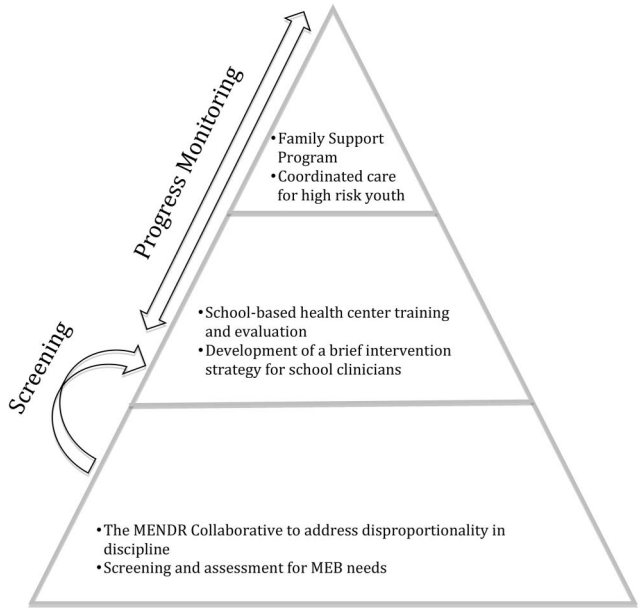

Figure 2. Summary of selected SMART center projects across the multiple tiers of school supports.

emerging literature has examined the applicability of collaborative care to youth (e.g., Kolko et al., 2014; Richardson et al., 2014). Although most of this work has focused on primary care, the education sector may be a more appropriate analog for the accessibility that primary care offers to adults. In addition, given that academic problems are likely to co-occur with both physical and mental health difficulties (McLeod, Uemura, & Rohrman, 2012), collaborative care in schools will need to attend to the additional dimension of educational health (e.g., academic engagement and performance) to be effective and contextually relevant. The SMART Center is therefore committed to advancing models that support the development, evaluation, and scale-up service integration models across the fragmented domains of physical, mental, and educational health, and adapting existing collaborative care models where necessary to meet the needs of youth, families, providers, and school systems (Eber et al., 2011).

Recommendation 6: Facilitate Communication Across Teams and Providers

New frameworks for coordinating SBMH services, such as the Interconnected Systems Framework (Barrett et al., 2013), have illuminated the necessity of educational and mental health providers to use their resources wisely and collaboratively. A recent meeting in one school illuminated how, for example, PBIS and SBMH resources were being deployed separately. While a team from the SMART Center and the school's SBMH staff met to discuss progress on a Tier 2 mental health intervention, school staff were meeting with a district administrator and PBIS intervention specialist in a separate room. With foresight and better planning, these teams could have been meeting together and more effectively communicating and coordinating efforts. As proposed by those at the National Technical Assistance Center on PBIS (2014), school and agency providers should complete an inventory of the school's committees, their intended purposes, their staffing arrangements, and resources allocated for the committees to facilitate better interaction and communication among providers and productively assign resources to integrated services, reduce redundancy in committee work, and more efficiently use staff time and expertise.

Recommendation 7: Use Indigenous Helpers

Collaboration with and appropriate referral to outside providers is a key characteristic of an effective system of school supports for students with MEB problems (Barrett et al., 2013). At the same time, numerous professionals naturally exist within schools that can be oriented to delivering mental health services in an MTSS model as a way to improve efficiency and integration into the school context. Clinicians working in SBMH clinics, school social workers, nurses, school psychologists, and school counselors all have professional training to support a range of MEB interventions and address the functioning of all students at all levels of MTSS. SMART Center faculty are working with school psychologists to streamline their assessment practices and free up their capacity to deliver intervention services and consult with other professionals working in schools. SPS administrators have now identified school counselors, social workers, and school nurses as targets of specific training (e.g., on the BRISC model) to efficiently and appropriately implement "stepped care" strategies that involve assessment, student engagement, and strategy selection, including referral to other providers within or outside the school who have expertise relevant to the student's specific MEB need. Additionally, teachers and instructional assistants can be active participants in universal programs that teach and reinforce social behavior. Counselors, teachers on special assignment, and assistant administrators are often primary deliverers of Tier 2 intervention such as Check and Connect (Cheney et al., 2009; Filter et al., 2007). With efficient modeling, coaching, and supervision of staff implementing interventions, professionals already working in schools across a full range of roles can improve the overall capacity of schools to prevent and treat students' MEB problems (Graczyk, Domitrovich, & Zins, 2003).

Recommendation 8: Build an "Evidence-Based System" of School Supports

As scientist-practitioners, faculty in the SMART Center are committed to leveraging the explosion in published literature on prevention programs, treatment models, and school-based strategies that has accompanied the EBP movement of the past two decades. The complexity of applying science to practice is persistent, however, as are barriers to implementing EBPs. To ensure that our quest to provide a range of empirically supported strategies across all tiers of support is not overwhelming, communicating a set of touchstone principles for building "evidence-based systems" (Chorpita & Daleiden, 2010) can be helpful.

An evidence-based system is one that organizes decision-making around the use of data and evidence, with the goal of improving quality and outcomes (Daleiden & Chorpita, 2005). It is committed to an *empirical epistemology* that relies on objective and verifiable evidence for making decisions, such as use of data on progress for an individual student, selection of strategies in the MTSS framework based on research, and/or commitment to evaluating novel and unique strategies (as we have done for BRISC, the SBHC initiative, and the FSW program). Second, such a system will be characterized by *parsimony and efficiency*. Examples include standardized screening and assessment tools, training practitioners on modularized and relevant applications of EBP (as in BRISC), and promoting "dashboard" views of a student's progress for supervision purposes. Finally, an evidence-based system will emphasize *transparency and visibility*, such as through manualized procedures, common organizing frameworks (such as MTSS), and agreed-upon metrics, such as discipline disproportionality. While referring to such principles will not, in and of itself, improve student outcomes, it can be a useful way to orient collaborators to the SMART Center approach and maintain focus in the face of complex systems change efforts.

Recommendation 9: Account for Diversity and Strive for Social Justice

An ideal social function of education is to serve as Horace Mann's "great equalizer," but the evidence is mixed, and schools may replicate or even magnify society's gross racial

and ethnic disproportionality. Asians and Whites consistently outperform their counterparts in standardized test scores, grades, and graduation rates, and they are far less likely to have a disciplinary action or referral to juvenile justice (Finn & Servoss, 2013; Skiba et al., 2011; Toldson, McGee, & Lemmons, 2013). Racial and ethnic minorities are also less likely than Whites to use SBMH services, with those who do beginning at a later age (Wood et al., 2005). Poverty also plays a major role in school success; our work in Seattle elementary schools revealed a nearly perfect negative relationship ($r = -.92$) between school-level percentage of children who were qualified for free or reduced meals and percentage of children who passed their standardized tests. These disparities are so great and carry such meaningful ramifications on the development and functioning of society that it is clear to us that even "objective scientists" cannot remain neutral. The SMART Center is therefore committed to understanding and addressing racial, ethnic, and social justice. This includes the analytic disaggregation of our findings by race and poverty, a focus on school programs and supports that are theoretically connected to inequities, and working with schools to consider their policies, practices, and procedures through a lens of cultural sensitivity and social justice.

Recommendation 10: Expand the Knowledge Base

Children spend much of their time in schools. Evidence is strong that school-based interventions can support positive social-emotional outcomes, which are related to academic success as well as healthy transitions to adulthood. However, the magnitude of the opportunity dwarfs the extant research base (Fazel et al., 2014). Thus, the SMART Center's partnerships with local school systems focus on both improving student outcomes at home while also filling gaps in the overall school mental health research base. Through the projects described above, we have the potential to fill a range of critical school-based research gaps, including:

- Determining the most efficient, effective, and acceptable screening and assessment strategies to promote prevention and early identification of MEB disorders;
- Effective and efficient application of community-based EBPs to the school context;
- Strategies for preparing a diverse school-based workforce to prevent and treat MEB problems in youth;
- Measuring and addressing crucial school-level organizational factors to target in implementation efforts;
- Appropriate use of indigenous helpers (e.g., teachers, nurses, school counselors, FSP workers) to screen, refer, and intervene in MEB problems in youth;
- Models for integrating the health, mental health, and education missions of schools;
- Cost-effectiveness of specific strategies and combinations of strategies; and
- Classroom-, school- and district-level strategies for reducing disproportionality in discipline.

Conclusion

If our ultimate goal is to provide all children and adolescents with access to the most effective and appropriate options for preventing and treating MEB disorders, population-based strategies in the schools may represent the best such opportunity our society has. As described in this article, there are a range of ways in which academic-school partnerships can leverage the complementary strengths of the public health model and the evidence-based practice movement in children's behavioral health to make the most of this opportunity. However, we agree with the conclusion voiced by Fazel and colleagues (2014) that public and political will are needed to ensure that the evidence base is successfully implemented. To use the phrase applied to the recent federal initiative to ensure that schools are "sanctuaries for teaching and learning," now is the time for redoubled commitment to research and action on school mental health.

Keywords: school mental health; prevention; evidence-based practice; research partnerships

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