

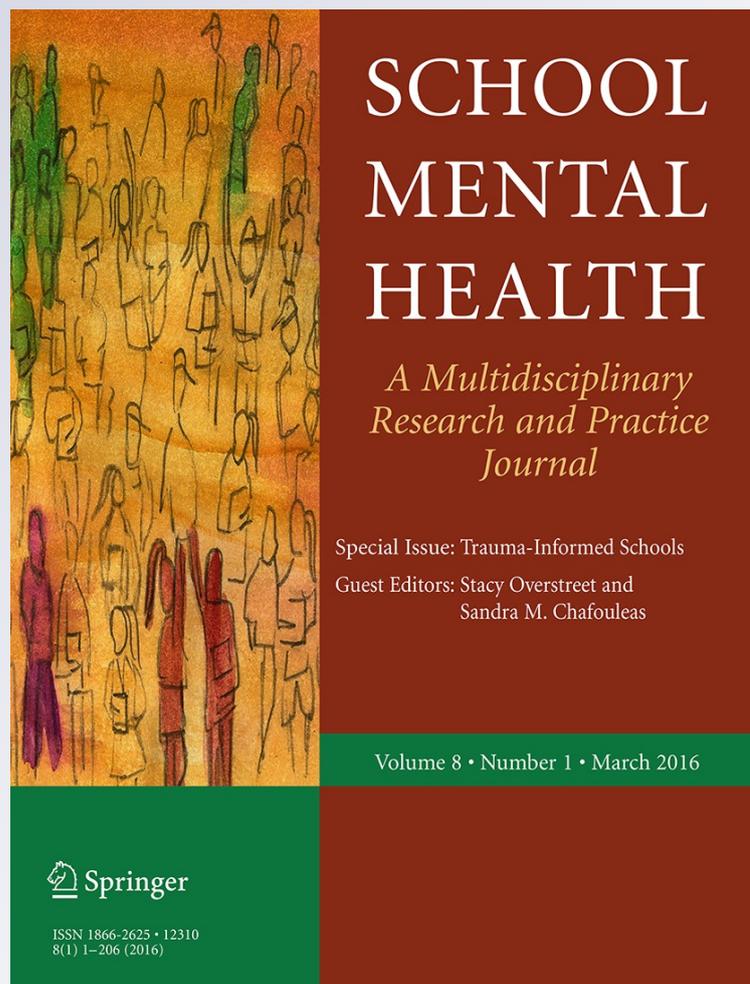
Toward a Blueprint for Trauma-Informed Service Delivery in Schools

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Toward a Blueprint for Trauma-Informed Service Delivery in Schools

Sandra M. Chafouleas¹ · Austin H. Johnson² · Stacy Overstreet³ · Natascha M. Santos⁴

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Abstract Recognition of the benefits to trauma-informed approaches is expanding, along with commensurate interest in extending delivery within school systems. Although information about trauma-informed approaches has quickly burgeoned, systematic attention to integration within multitiered service delivery frameworks has not occurred yet is essential to accurate, durable, and scalable implementation. In addition, there is a critical need to concurrently build a strong evidence base regarding trauma-informed service delivery in schools. In this paper, the literatures on trauma-informed approaches and multitiered frameworks for school-based service delivery are connected with the goal to provide suggestions toward building blueprints for trauma-informed service delivery in schools. Drawing from the literature on implementation blueprints for school-wide positive behavior supports, sections are organized around current knowledge about trauma-informed approaches with regard to blueprints for (a) implementation, (b) professional development, and (c) evaluation. Critical issues, strategy recommendations, and directions for research are discussed.

Keywords Trauma-informed · Response to intervention · Chronic stress · Multitiered frameworks

Recognition of the benefits to trauma-informed approaches is expanding (see Overstreet & Chafouleas, 2016), along with commensurate interest in extending delivery within school systems. Schools represent an opportune system for prevention and early intervention across domains related to child success. Historically, school-based outcomes have focused heavily on academic domains, yet there has been increasing acceptance and attention to the connection among social, emotional, behavioral, and mental health outcomes as facilitators or impediments to overall success in school (National Research Council and Institute of Medicine, 2009). Acknowledgment of this connection coupled with the push for service delivery frameworks using multitiered prevention logic has created a unique space to integrate trauma-informed approaches into school-based service delivery. Multitiered frameworks of service delivery are built on foundations involving early identification of risk, varied levels of intervention support designed to teach skills and prevent more serious problems, and continual data-driven evaluation of response. This logic fits well with the burgeoning and diverse body of recommendations regarding a trauma-informed approach [see Substance Abuse and Mental Health Services Administration (SAMHSA), 2014]. However, in order for a trauma-informed initiative in school-based service delivery to be successful, comprehensive blueprints for implementation, professional development, and evaluation are needed. Unlike academic issues in which identification of need and provision of assistance is relatively focused and non-controversial, a host of layered complexities (e.g., involvement of multiple systems of care, family privacy,

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school resource capacity) surround trauma-informed service delivery in schools. Thus, successful implementation of a trauma-informed approach to school-based service delivery is dependent on identification of these complexities and alignment with careful planning and decision making.

The purpose of this paper is to connect the literatures on trauma-informed approaches and multitiered frameworks for school-based service delivery, particularly School-Wide Positive Behavior Interventions and Supports (SWPBIS: www.pbis.org), in order to facilitate an understanding of these connections toward building blueprints for a trauma-informed approach to school-based service delivery. The following sections elaborate upon critical issues, strategy recommendations, and directions for research. First, a brief history of multitiered prevention and intervention for emotional and behavioral outcomes is presented, setting the background for adding trauma-informed outcomes within these frameworks. Next, key considerations in building blueprints for trauma-informed service delivery in schools are presented. Structures for organizing content are heavily drawn from SWPBIS, a nationally used framework for multitiered service delivery for behavior in schools. Although other theoretical and empirical work in the area of scale-up of evidence-based preventive interventions (e.g., Communities that Care: <http://www.communitiesthatcare.net/>) is acknowledged, we have chosen to use SWPBIS to illustrate our suggestions for trauma-informed delivery in schools given both the detailed framing within multitiered models and the widespread familiarity among educators. A tremendous volume of SWPBIS resources exists at national, state, and local levels, with the guiding blueprints offered by the OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports providing a template to draw upon. Current knowledge about trauma-informed approaches is organized around each of the SWPBIS blueprints (implementation, professional development, evaluation). Throughout the sections, focused content addresses why it matters, what is known, and what needs to be done. Finally, concluding comments are provided to stimulate future discussions for research and practice agendas.

Multitiered Prevention and Intervention for Emotional and Behavioral Outcomes

Services for students with academic and behavioral challenges have historically been driven by a “refer-test-place” approach, wherein students who already exhibit challenges are “referred” for support of some type, “tested” for special education eligibility if that support does not result in improved outcomes, and, if deemed eligible, “placed” in

special education to provide access to more intensive supports (Gresham, 2007). Contemporary school-based efforts have moved away from these reactive approaches toward prevention-oriented models such as response to intervention (RTI) and SWPBIS in which data are routinely used to identify problems early and monitor response to increasingly intensive services to address needs. Such models may generally be referred to as “multitiered systems of support” or “multitiered prevention frameworks,” with six core defining features: (a) the use of evidence-based practice when providing support to students, (b) tiered organization of supports with increasing intensity, (c) use of a data-based problem-solving framework for support decisions, (d) decision rules for evaluating student response to support and subsequent modifications, (e) measuring and maintaining treatment fidelity, and (f) identifying students who need support early (Sugai & Horner, 2009). Models for multitiered prevention frameworks commonly share a three-tiered “triangle” approach, with Tiers 1, 2, and 3 referring to assessment and intervention for students provided at low, moderate, and high intensity, respectively, and with data-based decision making occurring at each tier.

Developments in prevention-focused services for children have spanned the last five decades. Although initially more widely researched and pushed in education settings around academic domains and intervention supports, application of prevention-based logic to social, emotional, and behavioral domains was concurrently advocated (e.g., Walker et al., 1996). Related, it is likely a relevant reminder that the tenets of multitiered prevention frameworks began with focus on mental health domains (see Caplan, 1964). Recently, a joint report by the National Research Council and the Institute of Medicine provided a robust summary and extension of prevention-based logic for behavior and schools within an integrated model for the prevention and intervention of mental, emotional, and behavioral disorders (2009). In addition, frameworks like SWPBIS and the interconnected system frameworks have described critical roles for school-based systems in the prevention and intervention of mental, emotional, and behavioral-related challenges (Barrett, Eber, & Weist, 2013). Despite each of these advances, considerations around incorporating school mental health, specifically trauma and traumatic stress, have yet to be fully and systematically developed for multitiered prevention systems.

As the prevalence and impact of trauma and traumatic stress become increasingly understood (e.g., Felitti et al., 1998), the push for schools to provide trauma-informed interventions and services has correspondingly increased (SAMHSA, 2014). This demand is in part driven by burgeoning evidence demonstrating positive outcomes for school-based trauma-specific interventions on reduction in

traumatic stress reactions (Rolfesnes & Idsoe, 2011). An additional driver may be the increased accessibility of social, emotional, and behavioral supports offered in schools. In general, referrals for school-based mental health services have been shown to be more successful than referrals to community agencies (Evans & Weist, 2004), and this trend appears to extend to trauma-specific interventions (Jaycox et al., 2010).

Despite their promise, isolated interventions and programs are difficult to sustain, even with high-quality, evidence-based programs (Cole, Eisner, Gregory, & Ristuccia, 2013; Domitrovich et al., 2010; Flay et al., 2005). Interventions delivered in isolation of relevant systems may lack sufficient buy-in, and without a shared understanding of the problem being targeted, tensions can arise when schools attempt to integrate mental health programs into the educational environment (Cole et al., 2013; Evans, Stephan, & Sugai, 2014). Therefore, framing trauma-informed service delivery within a multitiered framework of school-based service delivery may be critical to success, yet requires attention to key considerations in building a blueprint to facilitate accuracy (use as expected), durability (maintained use), and scalability (expanded use as intended). To begin this work, current knowledge about trauma-informed approaches is reviewed while drawing on the organizational structures of the three SWPBIS blueprints involving (a) implementation, (b) professional development, and (c) evaluation.

Trauma-Informed Implementation Blueprint

An implementation blueprint provides general guidelines regarding content knowledge, implementation features, and action planning (Technical Assistance Center on Positive Behavioral Interventions and Supports, 2010). Application of this blueprint to trauma-informed service delivery in schools is complicated because the description of trauma-informed care varies across the emerging literature generated from diverse child-serving systems, including human services, health care, child welfare, early childhood education settings, the foster care system, residential treatment settings, and the juvenile justice system (Baker, Brown, Wilcox, Overstreet, & Arora, 2016). For example, Baker et al. (2016) identified 19 recent publications outlining trauma-informed frameworks, each emphasizing a range of essential content knowledge, implementation features, and action planning. Fortunately, a recent publication through SAMHSA's Trauma and Justice Strategic Initiative synthesized these disparate sources of information into a content knowledge framework defining trauma and the key components of a trauma-informed approach (SAMHSA, 2014). In addition to establishing defining features and

components of a trauma-informed approach, a second yet equally relevant focus for an implementation blueprint attends to the systems-level components of implementation with accuracy, durability, and scalability (Technical Assistance Center on Positive Behavioral Interventions and Supports, 2010). As discussed later, and as applied to a trauma-informed approach to service delivery in schools, concerted focus is needed around implementation considerations given greater complications associated with the multiple systems of care and stakeholders involved. Next, we review work by SAMHSA and integrate with other content knowledge to establish consensus around key features of trauma and trauma-informed care.

Content Knowledge: Establishing Consensus Around Core Features

Establishing content knowledge about core features of trauma and trauma-informed care serves as an important initial step and is often focused on information such as the prevalence and impact of trauma on student development and school functioning as well as developing an appreciation of the complexity of trauma exposure. In our review, trauma is often associated with the term "stress" along with related combinations including "toxic," "chronic," and "adverse." Regardless of the specific term, the features are consistent. SAMHSA's concept of trauma is defined as follows:

Individual trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individuals' functioning and mental, physical, social, emotional, or spiritual well-being (p. 7, 2014).

Note the defining focus on the individual and consequences for the individual as a result of experiences. The individual serves as the central focus given recognition of the wide range of individual responses to potentially traumatic events. The SAMHSA document (2014) goes further, expanding upon the definition through use of the three "E's" of trauma: event, experience, and effect. First, the event occurs, which may be a single occurrence or be repeated over time and may include actual or extreme threat of harm. However, it is the experience of the event by the individual that determines whether it is a traumatic event. Experience is defined by the individual and varies widely. Many possible internal and external influences on the individual's experience exist, such as cultural beliefs, available social supports, and individual predispositions. In addition, characteristics of the event can influence the experience, including predictability, duration, consequences, and intensity (Brock et al., 2009). The

individual's experience then influences the effect of the event, over the short to long term. Most typically, effects are described as occurring for the individual and involve self-regulation, or the ability to manage emotions, impulses, and behavior (Hamoudi, Murray, Serensen, & Fontaine, 2015). Examples of individual effects include hypervigilance, inability to cope with daily life, and disrupted cognitive functioning. Neurobiological explanations of adverse effects have been documented, and further information continues to emerge, supporting theoretical bases for trauma within ecological, developmental, and biological perspectives (Hamoudi et al., 2015). In summary, although an event may be objectively measured within an individual's environment, the interpretation of the event is subjective based on an array of interacting ecological, developmental, and neurobiological factors, which produce changes in individual behavior and neurobiology that can persist over time.

Following understanding about defining features of trauma and the rationale for a trauma-informed approach, content knowledge about the key principles to a trauma-informed approach is needed. See Table 1 for the key principles as defined by SAMHSA (2014). As discussed in the sections on implementation features and on building a professional development blueprint, connecting the key principles to specific skills in identification of trauma and choosing appropriate strategies for supporting all students frame a next essential piece to content knowledge about trauma-informed service delivery in schools.

To close this section on content knowledge through establishing consensus around core features, we conclude with brief comments regarding connections between the defining features of trauma-informed services and SWPBIS

characteristics (preventive, instructionally oriented, culturally responsive, evidence based, function based, systems-implementation focused). The comparison provides opportunity to identify similarities across initiatives as well as gaps in knowledge, which informs both practice in relation to common language and understanding of initiatives as well as possibilities for further research. Comparisons of the core features draw many similarities, including goals to prevent the problem and engage cultural awareness, all of which is wrapped in a focus on the positive rather than the negative or reactive. The core features of SWPBIS are most heavily based within a behavioral theoretical framework, and thus, individual behavior is explained and modified primarily through external systems or environmental manipulations (e.g., teaching expected behavior, reinforcing displays of expected behavior, antecedent manipulations). In contrast, emphasis of prevention within a trauma-informed approach is more strongly described with an intraindividual lens. That is, building self-regulation (resilience, coping) within the individual is emphasized, with external supports focused on creating safe environments and building positive connections and trusting relationships. A noted strength of SWPBIS is specific attention directed toward building capacity for systems implementation within schools. In contrast, a trauma-informed approach acknowledges the need for cross-systems collaboration, but core features provide less specificity as to how to accomplish implementation. Thus, one possible need related to a trauma-informed initiative is to attend to careful planning around the system implementation. In the next section, we expand on implementation features, particularly as centered within a multitiered framework for school-based service delivery.

Table 1 SAMHSA's six key principles of a trauma-informed approach

Principle	Brief definition
Safety	Promoting a sense of physical and psychological safety throughout the organization, including understanding how safety is defined by those served
Trustworthiness and transparency	Operations and decisions are transparent toward building and maintain trust within the organization and those served
Peer support	Key supports in trauma recovery and healing include those individuals who have experienced traumatic events
Collaboration and mutuality	Relationships across all parties (e.g., staff to staff, client to staff) that are collaborative and meaningfully share power and decision making
Empowerment, voice and choice	Understanding history of diminished voice and eliminating power differentials toward supporting choice in goal-setting and cultivating self-advocacy skills
Cultural, historical, and gender issues	Organization actively rejects cultural stereotypes and biases, and works to leverage access to appropriate connections as being responsive to the racial, ethnic, and cultural needs of those served

Adapted from: Substance Abuse and Mental Health Services Administration (2014). SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach. HHS Publication No. (SMA) 14-4884. Rockville, MD: Substance Abuse and Mental Health Services Administration

Implementation Features Within a Multitiered Framework

Effective implementation is described as including four foundations that interact to enable ongoing monitoring, data-based decision making, and self-enhancement (Technical Assistance Center on Positive Behavioral Interventions and Supports, 2010). These four elements include: outcomes, practices, data, and systems. The elements work together to inform decisions within a multitiered framework of service delivery designed to meet the needs of all students.

Outcomes

As previously described, foundations for the defining features of trauma can be found in perspectives offered by Gerald Caplan in advocating for population-oriented prevention during the post-World War II period. Caplan (1964) stated that “every crisis presents both an opportunity for psychological growth and the danger of psychological deterioration” (p. 53). Thus, the strategies associated with defining crisis as an opportunity for psychological growth need to span a continuum of prevention through intensive intervention and must include a multi-pronged approach in which every person has access to both the internal and external resources necessary to both reduce stressors and facilitate coping when experiencing stressors. Given these considerations, the intended outcomes of a trauma-informed approach can be defined as fourfold: (a) prevent adverse events and experiences from occurring, (b) build self-regulation capacity in individuals, (c) assist individuals exhibiting adverse effects in returning to prior functioning, and (d) avoid re-traumatizing individuals who have experienced adverse events (SAMHSA, 2014). These outcomes align with a multitiered framework in that the overall goal is universal (Tier 1), or supporting all students through fostering a positive environment (point a above) and skill building (point b) while acknowledging some students (Tiers 2 and 3) will experience challenges and need more intensive supports (points c and d). Similar to SWPBIS, implementation efforts to attain these outcomes must focus not only on supporting student needs but perhaps even more importantly on supporting adult behavior, with the overarching goal to ensure safe and supportive environments for all students. We expand on implementation features within a multitiered framework with regard to practices, data, and systems next.

Practices

Like multitiered service delivery, the practices associated with a trauma-specific approach to service delivery are

varied across the continuum of prevention through intervention, yet the structure embedded across all practices should be grounded in what has been termed the four “R’s” (SAMHSA, 2014). The four “R’s” include (a) *realization* about trauma and its effects, (b) *recognition* of the signs of trauma, (c) *response* that appropriately embraces trauma understanding across tiers of service delivery, and (d) *resist* practices that could inadvertently re-traumatize. As shown in Fig. 1, the four “R’s” fit well within a multitiered framework to school-based service delivery. Within the green circle (representing universal or all students), the six principles to a trauma-informed approach encompass all practices directed toward creating a positive environment and promoting individual competence for each student—this represents the first “R,” that is, realization about trauma and its effects. The principles then continue to envelop practices focused on recognition of those individuals at risk of (representing targeted or some students) or already experiencing trauma and its effects (representing select or few students). This identification subsequently provides an opportunity for planning around appropriate levels of tiered service (*response*) for reducing the potential effect of experiences or remediating existing effects and also includes both short- and long-term decision making to avoid re-traumatization (*resist*).

As previously stated, the four “R’s” connect well with a multitiered framework to school-based service delivery given acknowledgment of a continuum of least to most intensive supports, which are identified through assessment practices allowing for early identification and ongoing

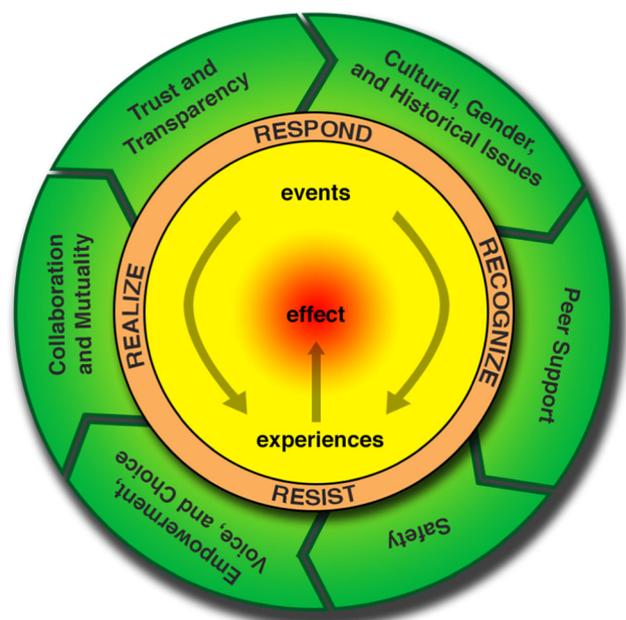


Fig. 1 Multitiered framework for trauma-informed approach to school-based service delivery

monitoring. The continuum of least to most intensive supports represents practices that provide a positive environment (modifications that reduce adversity) and promote individual competence in self-regulation. In Fig. 2, a multitiered service delivery framework is provided to represent trauma-informed practices that might be delivered universally to all students at Tier 1, targeted to at-risk students at Tier 2, and selected for those few students demonstrating most intensive needs at Tier 3. As depicted, practices have been grouped into general categories across tiers ranging from those applicable to all students (i.e., strategies to build positive adaptive skills) to those practices specifically addressing the range of needs presented by students exposed to trauma (i.e., psychoeducation through cognitive behavioral therapies).

For universal (Tier 1) practices designed to build positive adaptive skills for all students, a number of strategies may be considered for adoption, including (a) the promotion of a positive educational climate and reduction in adverse environments, as emphasized within SWPBIS, and (b) the development of social problem-solving and coping skills as elaborated in social-emotional learning curricula. In connecting supports for positive climate promotion with specific SWPBIS components, school-wide expectations and systems for reinforcing behaviors consistent with those expectations might be explicitly incorporated into social-emotional learning curricula. At Tier 2, strategies to consider for at-risk students may include psychoeducation on recognition of trauma signs and impact, as well as specifically targeting the promotion of students' social support systems and the strengthening of self-regulation skills.

Moving toward more intensive practices at Tier 3, interventions that utilize cognitive behavioral therapy (CBT) have generally been described as the gold standard

of evidence-based treatment for trauma-related stress. The goal of CBT is to change thoughts and behaviors with the goal of ameliorating negative psychological symptoms. Cognitive behavioral interventions can be advantageous for school-based delivery given that they are often time-limited, focus on teaching skills, are in part behaviorally oriented, and are adaptable to groups. Further, school-based intervention programs that utilize CBT methods have demonstrated medium to large effect sizes in relation to ameliorating symptoms of PTSD (Rolfesnes & Idsoe, 2011). See Table 2 for a summary of CBT-based options. Additionally, practices serving intensive needs likely will require extensive connections with community partners to build capacity given limitations in scope and intensity of services that might be delivered through school providers alone, particularly in the event of a large-scale adverse event or chronic risk factors in the community or familial contexts.

Schools should be encouraged to build interconnected service delivery systems as part of a comprehensive service delivery plan, with the importance of such connections particularly emphasized for students with the highest level of need (i.e., Tier 3). For example, although over 10 years old, data from a 2002–2003 study (Foster et al., 2005) suggest that only 49 % of school districts had formal contracts or agreements with community mental health providers for the provision of student services. Whichever practices best fit the contextual needs of the school and community setting, it is an important reminder that practices must be anchored within an evidence base. Furthermore, the selection of practices alone is insufficient as use must be supported by data to inform decisions about effectiveness as well as systems to support successful implementation.

Fig. 2 A multitiered service delivery framework representing trauma-informed practices in schools

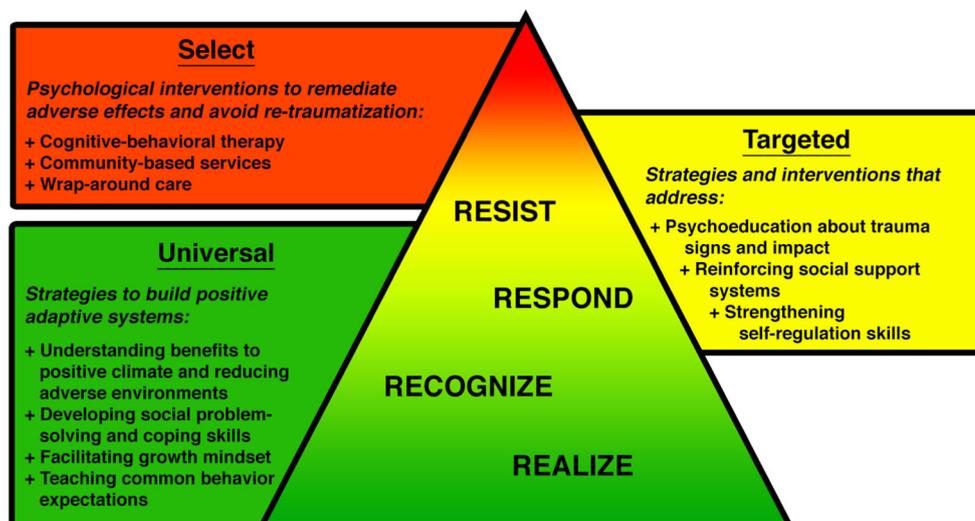


Table 2 Example cognitive behavioral interventions with trauma focus

Intervention and source	Brief description (intervention components, structure and delivery, targeted population)	Summary of evidence
Trauma-Focused Cognitive Behavioral Therapy (TF-CBT; Cohen et al., 2006)	<p>Description: A structured parent and child intervention which aims to teach youth skills on how to manage stress triggered by traumatic memories. Intervention is divided into three phases: (1) coping skills, (2) trauma narrative, and (3) parent/child sessions to share narrative and develop safety plan</p> <p>Intervention components: Youth are taught skills that are summarized by the acronym PRACTICE: psychoeducation and parenting skills, relaxation skills, affective regulation and expression, cognitive coping skills, trauma narrative development, in vivo gradual exposure, conjoint parent/child session, and enhancing safety/future development</p> <p>Structure: Program consists of 8–20 individual sessions with the child or non-offending caregiver along with joint sessions</p> <p>Population: Developed for children ages 3–18</p>	<p>Efficacy of TF-CBT has been demonstrated in several randomized controlled clinical trials with youth exposed to sexual violence (Cohen et al., 2006; Cohen, Mannarino, & Iyengar, 2011; Cohen, Mannarino, & Murray, 2011)</p> <p>A systematic review of TF-CBT for children and youth has supported its ability to reduce symptoms of PTSD immediately and 12 months after termination of treatment (Cary & McMillen, 2012). Determined to be an effective therapeutic technique for many different forms of trauma (Little, Akin-Little, & Gutierrez, 2009)</p>
Cognitive Behavioral Intervention for Trauma in Schools (CBITS) Program	<p>Description: School-based group and individual intervention whose goals are threefold: (1) reduce symptoms related to trauma exposure, (2) teach and build skills to manage trauma-related stress, and (3) build caregiver and peer support</p> <p>Intervention components: Intervention incorporates six essential cognitive behavioral elements: (1) psychoeducation on how trauma affects students, (2) relaxation strategies, (3) cognitive restructuring, (4) graduated in vivo exposure, (5) trauma exposure, and (6) social problem solving</p> <p>Structure: The program consists of 10 group sessions for children, 1–3 individual sessions for children, 2 group educational sessions for parents, and 1 educational session for teachers</p> <p>Population: students 5th through 12th grade. CBITS has been adapted for Spanish-speaking populations, low-literacy groups, and children in foster care. CBITS has also been implemented in mental health clinics</p>	<p>Randomized clinical trials of youth exposed to violence who were assigned to the CBITS intervention demonstrated significantly lower scores on measures of PTSD, depression, and psychosocial functioning than waitlist and control groups (Stein et al., 2003)</p> <p>CBITS has also been shown to be effective for reducing PTSD-related symptoms in Latino immigrant students exposed to community violence (Kataoka et al., 2003)</p> <p>CBITS has been shown to be just as effective as TF-CBT for symptom reduction in PTSD in youth post-Hurricane Katrina with more participants joining CBITS intervention than TF-CBT administered in clinics (Jaycox et al., 2010)</p>
Grief and Trauma Intervention (GTI) for Children	<p>Description: This intervention combines techniques from cognitive behavioral therapy (CBT) and narrative therapy to address children's symptoms of trauma and loss. The three main goals of the intervention are to help children (1) learn more about grief and traumatic reactions (education), (2) express their thoughts and feelings about what happened (trauma narrative), and (3) reduce symptoms of posttraumatic stress, depression, and traumatic grief</p> <p>Intervention components: GTI is comprised of three overlapping phases: (1) resilience and safety (Sessions 1–5), (2) restorative retelling (Sessions 6–9), and (3) reconnecting (Sessions 8–10)</p> <p>Structure: The program consists of 10 sessions and a parent meeting. It can be conducted in a group or individual format. When conducted with groups, each child also receives an individual “pullout” session</p> <p>Population: children ages 7–12</p>	<p>GTI has been shown to be effective in decreasing PTSD, depressive symptoms, traumatic grief, and global distress from pretreatment to posttreatment with symptom reduction maintained at both 3 and 12 months after the intervention ended (Salloum & Overstreet, 2008). Additionally, both the group and the individual formats of GTI have been found to be equally effective (Salloum & Overstreet, 2008)</p>

Table 2 continued

Intervention and source	Brief description (intervention components, structure and delivery, targeted population)	Summary of evidence
Multimodal Trauma Treatment (MMTT) aka Trauma-Focused Coping in Schools	<p>Description: School-based group intervention that is skills-oriented and a peer-mediating group treatment for youth exposed to single-incident trauma</p> <p>Intervention components: Intervention components are delivered per session as follows: (1) psychoeducation, (2) anxiety management, (3–4) anxiety management and cognitive training, (5a, 5b) anger coping and grief management, (6) individual pullout session for narrative exposure, (7) developing stimulus hierarchy, (8–10) group narrative exposure, (11) worst moment cognitive and affective processing, (12, 13) relapse prevention, and (14) graduation</p> <p>Structure: The program is delivered as a 14-session group therapy during one class period per week. Additionally, there is one individual pullout session midway through the intervention to work on the narrative exposure</p> <p>Population: children and adolescents ages 9–18 or grades 4 through 12</p>	<p>MMTT has several advantages such as being tailored for adolescents with a wide range of traumas, its group format allows the treatment of many individuals simultaneously, and it is flexible so that it can be trauma-specific (Amaya-Jackson et al., 2003)</p> <p>MMTT resulted in reduction in PTSD, anxiety, depression, and anger symptoms in youth as well as a shift from an external to an internal locus of control (March, Amaya-Jackson, Murray, & Schulte, 1998)</p>

Data

Without good data, decisions about practices and systems are not likely to successfully produce intended outcomes. As previously discussed under the second “R” of recognize, a key assessment strategy involves identification and progress monitoring of those students who have been exposed to adverse events and may be at risk of or are already exhibiting effects of those experiences. Common universally collected school-based indicators (e.g., attendance, disciplinary data, grades) are important in an overall assessment system that is trauma-informed, with these data examined through a trauma-informed lens (e.g., consideration of causes of attendance patterns, ecological influences upon behavior and grades). In addition, trauma-specific assessments may provide critical data needed in certain situations, representing targeted and select tiers and decisions surrounding those services. Trauma-specific assessments often evaluate either or both of two major components of trauma: (a) exposure to traumatic events or (b) response to traumatic events (e.g., traumatic stress; Strand, Sarmiento, & Pasquale, 2005). Next, we briefly review examples of measures that assess each component. To date, it is unknown as to what constitutes best practices for assessment within different tiers and measurement questions (e.g., screening, progress monitoring). However, individuals interested in learning more about options in trauma-related assessment and screening tools that may be considered for adoption in school settings are directed to systematic reviews of these instruments (e.g., Hawkins & Radcliff, 2005; Ohan, Myers, & Collett, 2002; Strand,

Sarmiento, & Pasquale, 2005), as well as the National Child Traumatic Stress Network’s Measures Review (<http://nctsn.org/resources/online-research/measures-review/overview>).

Trauma Exposure

Perhaps the most well-known measure of trauma exposure is the ACE Questionnaire, a retrospective survey initially designed for adults (Felitti et al., 1998). Child and adolescent-focused, rating-scale-based screeners for trauma exposure that may be amenable to school-based administration include the brief screening adaptation of the Childhood Trauma Questionnaire for adolescents and adults (CTQ; Bernstein et al., 2003), as well as novel screening procedures (see Gonzalez, Monzon, Solis, Jaycox, & Langley, 2016). The Traumatic Events Screening Inventory for Children (TESI-C; National Center for PTSD, 2011) is an interview-based screener for traumatic exposure in children; although its administration format and requirements (i.e., relevant mental health licensure) may limit its efficient use with large populations of students in school settings, gated screening procedures (e.g., those starting with adult nomination) may make this instrument more amenable to school-based use.

Response to Traumatic Events

One example of a child- and trauma-specific measure that assesses response to traumatic events is the UCLA PTSD Reaction Index (PTSD-RI: DSM V version), a 27-item

self-report measure for school-age students (Steinberg & Beyerlein, 2013). The PTSD-RI is based upon the Child Posttraumatic Stress Disorder Reaction Index (Pynoos et al., 1987), which was indicated as the most frequently used measure of PTSD and posttraumatic stress symptoms across a review of five journals in a nearly 10-year period (Hawkins & Radcliffe, 2005). The PTSD-RI is a well-researched measure which may be amenable for use as a measure in school-based settings due to efficient administration (e.g., use of rating-scale format rather than interviews), brief completion time, and published psychometric properties. Responses are provided on a five-point Likert-type scale, indicating the degree to which symptoms of PTSD have been present over the past month. The symptom scale consists of a total score and four subscales aligning to DSM V criteria for intrusion, avoidance, negative cognitions/mood, and arousal/reactivity. Large-scale analyses of data collected from 6291 children ages 7–18 using the DSM IV version of the instrument revealed adequate to good evidence for the reliability and validity of resulting data (Steinberg et al., 2013). In support of its specific use in screening, increases in PTSD-RI total scores have been associated with significant increases in the probability of endorsing other academic, social, emotional, and behavioral problems, including suicidality, self-injurious behavior, and alcohol and other substance use (Steinberg et al., 2013).

Although an emphasis on PTSD-based measurement may permit a more focused investigation and response, limiting data collection for screening or progress monitoring to strictly PTSD-based symptomology may restrict an understanding of trauma as a complex and ongoing process with ramifications across social, emotional, and behavioral domains (Fallot & Harris, 2001). One method for moving away from a deficiency-based approach and toward a resilience-based approach might involve measuring characteristics of resiliency. In one study of Israeli adolescents (99 % of whom had experienced at least one war-related traumatic event), students completed measures of three protective factors: self-efficacy, coping style relating to cognitive/emotional regulation, and flexibility to respond to trauma by focusing on both the event and current and future plans (Pat-Horenczyk, Kenan, Achituv, & Bachar, 2014). Results indicated a significant negative relationship between two protective factors (i.e., self-efficacy, flexibility) and severity of posttraumatic symptoms ($r = -.27$ and $-.23$, respectively). Additionally, all three protective factors were significantly and negatively correlated with the degree of functional impairment experienced by students.

Decisions regarding the best options for foci and specific measures will be highly based on contextual need and individual measurement questions of interest. For example,

in a recent study examining school- and classroom-based supports following the 2013 Boston Marathon bombing, teacher perceptions of student exposure were measured via a researcher-created assessment using indicators specific to the attack and manhunt, whereas a combination of a researcher-created measure and a modified version of the Strengths and Difficulties Questionnaire was used to measure psychosocial functioning (Green et al., 2015). Irrespective of the particular context, it is important to remember that chosen assessments should be (a) appropriate for their intended use, (b) capable of producing psychometrically defensible data, and (c) usable by their intended stakeholders (Glover & Albers, 2007). For instance, screening procedures in a trauma-informed system may focus on the identification of risk through trauma exposure (e.g., CTQ) or related responses (e.g., PTSD-RI). If those identified students are provided with a Tier 2 intervention focusing on building resilience, measures such as those utilized by Pat-Horenczyk et al. (2014) or more global measures of success (e.g., SDQ) may be used for progress monitoring, pending evaluation of these measures for use in this context.

In addition, it is highly relevant to remember that experiences of trauma and symptoms of trauma-related stress can be extremely sensitive issues in any context, and particularly for schools given the complex and ultimately political contexts within which schools operate (Burke & Stephan, 2008; Chafouleas, Kilgus, & Wallach, 2010). With these considerations in mind, we next consider issues related to the implementation of trauma-informed systems in schools.

Systems

The identification of practices for assessment and intervention at each tier is critical to the development of multitiered frameworks; however, the determination of norms and practices that span tiers and inform how the overall system will function is equally critical. An effective overall systems approach for SWPBIS is defined by three basic features that include common language, common experience, and common vision (Technical Assistance Center on Positive Behavioral Interventions and Supports, 2010). To actualize these features for a trauma-informed approach requires substantial efforts given the multiple systems and stakeholders outside of the school context, yet all must interact toward facilitating clear messages for policy and practice. The need for a multipronged, multiagency public health approach to addressing trauma has been acknowledged (SAMHSA, 2014), with the organizing document on the concept of trauma and a trauma-informed approach providing the initiative toward common language (e.g., four “R’s”). However, accurate and durable trauma-

informed school systems will require more than common language across agencies. Champions within the school in the form of a leadership team capable of engaging in team-based strategic action planning are necessary to coordinate across agencies and, perhaps most importantly, engage in efforts to facilitate buy-in within the school system. A primary challenge that may be faced relates to the existing organizational culture of schools, in which a “that’s not the way we do things here” perspective could be a barrier to incorporating a trauma-informed approach. Perhaps most importantly, adhering to the six key principles of a trauma-informed approach emphasizes the necessity of the family as a critical stakeholder. As previously noted under the data section, ethical concerns with respect to trauma-related screenings may arise around sensitive issues (e.g., family privacy) and must be addressed during planning, and certainly prior to attempts at implementation. Substantial efforts to engage different stakeholders may be a necessary initial step to laying the foundation for the implementation of trauma-informed multitiered systems.

In addition, the implementation of a systems-level trauma-informed approach means that community and school partnerships are critical. Cross-systems partnerships are collaborative relationships between school stakeholders and the surrounding community including organizations, clinicians, researchers, and school personnel. The Cognitive Behavioral Intervention for Trauma in Schools Program (CBITS) is one such example and was developed out of a community-partnered participation research model proposed by Wells et al. (2006) for the mental health field. In brief, cross-systems partnerships start with joint negotiation of health improvement across relevant partners and then match community needs and resources with evidence-based interventions. In the example of CBITS, partnerships with community agencies were an important macro-level factor for the intervention’s successful implementation (Nadeem, Jaycox, Kataoka, Langley, & Stein, 2011).

Actualization of the systems needed for effective data and practice implementation in a trauma-informed approach will require action planning that embraces the reality that efforts occur in stages and that continuous self-assessment will be needed to support sustainable implementation. We review self-assessment later under the evaluation blueprint, but turn now to summarizing issues around action planning to implementation.

Action Planning to Implementation

Developing an organizational trauma-informed approach requires action planning to address change across multiple levels, with suggested domains of organizational change relevant to a trauma-informed approach identified including: (a) governance and leadership, (b) policy, (c) physical

environment, (d) engagement and involvement, (e) cross-sector collaboration, (f) screening, assessment, and treatment services, (g) training and workforce development, (h) progress monitoring and quality assurance, (i) financing, and (j) evaluation (SAMHSA, 2014). These implementation domains are recognized as relevant to organizational change as a whole and, in fact, closely model the features described within the SWPBIS implementation blueprint. Their uniqueness relates to the combination of key principles to a trauma-informed approach and trauma-specific content (SAMHSA, 2014).

With regard to basic action planning around these domains, guidance is provided within the SWPBIS implementation blueprint as including the following steps: align with district goals, focus on measurable outcomes, make decisions based on data and local context characteristics, prioritize evidence-based practices, invest in building sustainable implementation supports, and formally assess implementation integrity. In general, specific action planning appears to represent the least developed area for a trauma-informed blueprint, yet is likely a critical contributor to the success of trauma-informed multitiered system implementation. One example of a closely articulated action planning process for the initial creation of a trauma-sensitive school is available for download through the Trauma and Learning Policy Initiative (www.traumasensitiveschools.org). In their second volume, a process involving four questions and supporting activities is provided. The questions include: (a) Why do we feel an urgency to become a trauma-sensitive school? (b) How do we know we are ready to create a trauma-sensitive school? (c) What actions will address staff priorities and help us become a trauma-sensitive school? and (d) How do we know we are becoming a trauma-sensitive school? (Cole et al., 2013). A flexible framework around action planning is recommended, in which the local context drives decisions and actions. This flexible framework coupled with questions and supporting activities provides good parallels across SWPBIS and SAMHSA action planning as a starting point to implementation guidelines. However, expansion to consider planning to build internal capacity (local expertise, coaching) as well as processes for continuous regeneration and fit within other related initiatives would further strengthen an implementation blueprint.

Summary and Considerations: Implementation Blueprint

Substantial work is needed to move trauma-informed approaches forward for sustainable implementation in schools. The key implementation domains available within the SAMHSA (Substance Abuse and Mental Health Services Administration 2014) document must be fully

developed within a blueprint that guides efforts within school contexts. For example, although training and workforce development may be relatively easy to accomplish in the short-term, sustainability will require, among other features, commitment to cross-sector collaboration, building coaching capacity, and engagement of key stakeholders willing to embrace a trauma-informed approach and negotiate to find appropriate fit for the context. Guiding questions borrowed from implementation science and adapted to support an interconnected systems framework for mental health and SWPBIS may assist in furthering a trauma-informed implementation blueprint, asking if (a) needed and intended outcomes are specified, (b) appropriate evidence-based practices are selected, (c) practices are adaptable to local context and culture, (d) support for local implementation exists, and (e) system-level progress monitoring and planning procedures are in place (Sugai & Stephan, 2013).

Some evidence of willingness to embrace a trauma-informed approach in schools has begun to appear at larger scale through legislative actions to shift state funds and leadership support toward related school-based practices. In West Virginia, the State Attorney's office has initiated the Defending Childhood Initiative, which promotes increased connections between law enforcement and schools (Speciale, 2015). Additionally, Iowa's Senate Education Subcommittee recently passed a \$2.5 million proposal to provide resources toward school-based mental health screening and counseling, as well as support for referrals to community supports (Phillips, 2015). Future research will be needed to evaluate the extent to which district and school administrators, support staff, teachers, parents, and students consider trauma a relevant, durable, and sustainable direction for school-based service delivery.

Trauma-Informed Professional Development Blueprint

SWPBIS emphasizes that the key elements of capacity building necessary to achieve effective, school-wide implementation include training, coaching, and behavioral expertise. These components are even more important for trauma-informed service delivery models because most educators and school-based mental health professionals have not received training in trauma or trauma-informed approaches (Splett, Fowler, Weist, McDaniel, & Dvorsky, 2013; U.S. Attorney General, 2012). Adoption of universal (Tier 1) approaches to trauma requires an educational workforce that is knowledgeable about trauma and its impact on development, and can employ skills and strategies that prevent, reduce, and ameliorate its effect on children. Without such knowledge and training, school

personnel may not identify or understand the connection between a child's presentation, behaviors, and symptoms and exposure to trauma. For example, school staff may misunderstand trauma-related behavioral reactions as oppositional or defiant behavior, inadvertently use discipline strategies that can serve as triggers for traumatized students, and miss opportunities to support social, emotional, and academic growth. In addition, the ability of schools to provide more intensive (Tier 2 and 3) interventions requires a mental health workforce with the expertise to provide such services to children exposed to trauma. In this section, we review current knowledge and provide recommendations for future directions regarding a professional development blueprint to trauma-informed service delivery in schools.

Professional Development for Educational Staff

Professional development is an important foundational component of trauma-informed schools because it can help build consensus for and competence in trauma-informed approaches. Findings from the field of implementation science indicate that there must be consensus within the school in order to successfully adopt and implement innovative models of practice, such as trauma-informed approaches (Metz, Naoom, Halle, & Bartley, 2015). Thus, an important foundational component of trauma-informed schools is professional development training, which ensures that all school personnel realize the impact of trauma, recognize the need for trauma-informed care, and develop the skills to create an environment that is responsive to the needs of trauma-exposed students. This type of trauma-focused professional development training has been demonstrated to build knowledge, change attitudes, and develop practices favorable to trauma-informed approaches when delivered to service providers in clinical settings (Brown, Baker, & Wilcox, 2011; Green et al., 2015). When delivered in school settings, teachers report an increase in their knowledge about trauma and trauma-sensitive practices as well as their understanding of how to help trauma-exposed students in schools following trauma-focused professional development (Dorado, Martinez, McArthur, & Liebovitz, 2015). However, longitudinal studies are needed to demonstrate whether trauma-focused training truly builds consensus for and competence in trauma-informed care in educational environments.

Many resources exist to help develop content critical to professional development training in trauma and trauma-informed care (see Table 3). As highlighted by two articles in this issue (Dorado et al., 2015; Perry, Daniels, Scery, & Filipi, 2016), core areas of content tend to include the basics of trauma prevalence and impact, with a focus on the neurobiological impact of chronic trauma exposure (often

Table 3 Resources for professional development on trauma-informed approaches in schools

Program/source	Brief description	Key features
National Childhood Traumatic Stress Network (http://www.nctsn.org)	Provides information and resources for improving access to care, treatment, and services for trauma-exposed children and youth across types of trauma and care settings	The Learning Center for Child and Adolescent Trauma (http://learn.nctsn.org/) contains comprehensive collection of presentations, podcasts, and documents related to trauma, including complex trauma, culture and trauma, creating trauma-informed systems, building resiliency, and schools and trauma The Resources for School Personnel (http://www.nctsn.org/resources/audiences/school-personnel) contains resources specifically developed for schools, including a toolkit for educators and resources for school personnel
Trauma and Learning Policy Initiative (http://traumasensitiveschools.org)	A collaborative effort of Massachusetts' Advocates for Children and Harvard Law School that establishes the six elements of a school-wide process to create a trauma-sensitive ecology	Provides two downloadable publications that detail the prevalence of traumatic experiences, the impact of trauma on learning and behavior, the principles of a whole-school trauma-informed approach, and specific skills and techniques
Treatment and Services Adaptation Center: Resiliency, Hope, and Wellness in Schools (https://traumaawareschools.org)	Promotes the development of trauma-informed school systems through prevention and early intervention strategies	Includes information on components of a trauma-informed school and provides online resources for trauma-focused approaches, including Psychological First Aid, Supporting Students Exposed to Trauma, and Cognitive Behavioral Intervention for Trauma in Schools
State of Washington Office of Superintendent of Public Instruction (http://www.k12.wa.us/compassionateschools/)	Provides training, guidance, and technical assistance for the Compassionate Schools approach, which focuses on students chronically exposed to stress and trauma	Includes a downloadable handbook and PowerPoint presentations to aid in the training for and implementation of trauma-informed schools
Wisconsin Department of Public Instruction (http://sppw.dpi.wi.gov/sppw_mhtrauma)	Provides a collection of resources to help schools support students affected by trauma	Includes webcasts, videos, and online articles related to professional development and capacity building for trauma-informed schools. Also provides checklists to monitor progress toward the implementation of trauma-informed approaches

referred to as “Trauma 101”), de-escalation strategies to avoid re-traumatization of students, and staff self-care, with a focus on vicarious traumatization. This foundational training in trauma and trauma-informed care is designed to build the knowledge, skills, and motivation required for the adoption of trauma-informed approaches. Although necessary, this training alone is not sufficient to ensure effective and efficient implementation of trauma-informed approaches (Dorado et al., 2015; Metz et al., 2015).

To be effective, the foundational training must be augmented and deepened through more intensive trainings that focus on specific trauma-informed classroom strategies and through coaching of teachers to increase their capacity to use trauma-informed skills and strategies (Dorado et al., 2015; Fixsen, Blase, Naom, & Wallace, 2009; Metz et al., 2015). Specific competencies considered central to most models of trauma-informed care include establishing safe environments that foster connected relationships in which

the teacher knows how to prevent and respond to student triggers that can lead to behavioral escalation and re-victimization (e.g., Cole et al., 2013; Multiplying Connections Initiative, 2008; Wolpov, Johnson, Hertel, & Kincaid, 2011). Such trainings should be paired with teacher coaching as a way to increase the effectiveness and sustainability of the training (Fixsen et al., 2009; Garet, Porter, Desimone, Birman, & Yoon, 2001) and teachers' use of specific skills in their classrooms (Hershfeldt, Pell, Sechrist, Pas, & Bradshaw, 2012; Noell et al., 2005). Coaching is particularly effective when the target skills involve relational behavior (Stormont, Reinke, Newcomer, Marchese, & Lewis, 2015) and positive classroom management techniques (Hershfeldt et al., 2012).

Professional development and coaching for teachers build individual-level competencies in trauma-informed care. However, organizational competencies and supporting infrastructure must also be built if school-wide trauma-

informed approaches are to be adopted and implemented effectively (Metz et al., 2015). Creating a capable and committed context is critical in order for systems to adopt an innovation and implement it efficiently and effectively (Fixsen et al., 2009; Nutt, 2001). School administrators and leaders may require technical support to provide the structure and tools for school-wide thinking and planning and engage in data-based decision making for the system-wide adoption and monitoring of trauma-informed approaches. Several resources for such technical support are described in Table 3.

Training for Mental Health Service Providers

The U.S. Attorney General's National Task Force on Children Exposed to Violence noted that the greatest challenge to trauma-informed service delivery models is the lack of professionals who have the expertise to provide trauma-specific treatment services to children exposed to trauma (2012). School mental health professionals, in particular, often lack expertise in evidence-based trauma treatments (Jaycox et al., 2010; Splett et al., 2013). However, they can begin to develop their expertise by accessing several high-quality training resources developed specifically to enhance the competencies of mental health service providers in trauma-informed care. For example, as part of the National Child Traumatic Stress Network Center (NCTSN), the Learning Center for Child and Adolescent Trauma offers free Web-based continuing education and access to online webinars with trauma experts (see Table 3). In addition, SAMHSA has funded the development of online training modules in several evidence-based trauma interventions, including Cognitive Behavioral Intervention for Trauma in Schools (<https://cbitsprogram.org/>), Support for Students Exposed to Trauma (<http://ssetprogram.org/>), and Trauma-Focused Cognitive Behavioral Therapy (<http://tfcbt.musc.edu/credits.php>). For mental health professionals with no prior training in trauma or trauma treatments, such online training should be supplemented with consultation and supervision by colleagues with expertise in trauma. More intensive support for professionals and school systems may also be obtained through the NCTSN's Training and Implementation Program, which provides linkages to experts, consultation on training and implementation initiatives, and training resources on child trauma.

Despite the strength of training resources to develop and enhance the competencies of the existing workforce in trauma-informed care, many argue that such training needs to begin earlier. The U.S. Attorney General (2012) and others (Courtois & Gold, 2009; Layne et al., 2011; Little & Akin-Little, 2013) have identified preservice training of mental health professionals as a critical need and have

lobbied for the inclusion of required courses in trauma-informed approaches and trauma-specific treatments for all programs and all students in mental health disciplines. Layne et al. (2011) noted that standard graduate training in mental health disciplines does not prepare students to work effectively with youth experiencing complex trauma reactions. However, positive developments in this direction have been noted by Division 56 of the American Psychological Association, which reported an increase in opportunities in psychology curricula for specialized trauma training (2007). In addition, the National Child Traumatic Stress Network has developed the Core Curriculum on Childhood Trauma (CCCT) to “promote the development of a trauma-informed mental health workforce by providing a sound foundational understanding of psychological trauma” (Layne et al., 2011, p. 244). In a pilot study of the CCCT as a preservice training tool for graduate students in social work, Layne et al. (2011) found that the CCCT increased their self-efficacy for working with trauma-exposed youth.

Foundational courses and training experiences in the core concepts related to trauma present major advances toward creating a trauma-informed workforce. However, these training experiences are not typically part of a more comprehensive core curriculum that is necessary to prepare future professionals to effectively and fully address the needs of trauma-exposed youth (Layne et al., 2011; Little & Akin-Little, 2013). Within the field of school psychology, only one APA-accredited doctoral program offers a subspecialization in trauma-focused school psychology (i.e., Tulane University; Little & Akin-Little, 2013). The movement toward specifying core competencies for trauma-related psychological practice (Cook & Newman, 2014) will undoubtedly continue to advance our efforts to create training programs to produce a workforce ready to implement trauma-informed approaches and treatments.

Summary and Considerations: Professional Development Blueprint

There has been tremendous growth in the resources available to train educational and school mental health personnel in trauma-informed care, including tool kits, training curricula, service delivery models, and trauma-specific treatments (see Table 3). However, rigorous evaluation of these strategies as effective tools to build individual- and organizational-level capacity for the implementation of trauma-informed schools does not exist (Baker et al., 2016; Layne et al., 2011). Progress has been limited by (a) a lack of specificity in learning objectives, (b) a lack of measurement techniques which produce psychometrically sound data to evaluate the process and outcomes of training experiences, and (c) little attention

regarding the transfer of knowledge to day-to-day practice in school settings. The development and adoption of trauma competencies alongside the larger competency movement in psychology hold great potential to advance our ability to identify and systematically assess core competency benchmarks in trauma-focused practice (Cook & Newman, 2014). Similarly, the growing movement in education toward the provision of learning supports to create safe and supportive schools (Cowan, Vaillancourt, Rossen, & Pollitt, 2013) may also serve as an impetus to develop preservice training programs for teachers in trauma-informed approaches.

Trauma-Informed Evaluation Blueprint

As trauma-informed systems of service delivery are planned, implemented, and integrated into educational practice, data should be collected to inform if and how processes and outcomes are changing as intended. The larger trauma-informed care movement has demonstrated some success—clients in trauma-informed systems have been shown to have greater symptom reduction, reduced time in treatment prior to discharge, and improved rates of discharge to a lower level of care (Greenwald et al., 2012; Hodgdon, Kenniburgh, Gabowitz, Blaustein, & Spinazzola, 2013). In one controlled study examining trauma-informed care approaches with youth, implementation of the Sanctuary Model in residential treatment settings was associated with more autonomous, supportive, and safe treatment and greater client gains in coping skills and feelings of control, in comparison with treatment as usual (Rivard, Bloom, McCorkle, & Abramovitz, 2005).

These positive findings from a non-educational setting have been bolstered by findings from uncontrolled program evaluations of trauma-informed schools. For example, following implementation of trauma-informed approaches, schools have reported 30–90 % reductions in suspensions (Stevens, 2012, 2013a) and between 20 and 44 % reductions in office referrals (Stevens, 2013a, b). Dorado et al. (2015) reported a 32 % decrease in total office disciplinary referrals and a 42.5 % decrease in referrals involving physical aggression after 1 year of implementing trauma-informed approaches in five schools in the San Francisco area. Although initial findings are promising, the validation of educational innovations and the selection of educational practices demand decision making grounded in rigorous and comprehensive data (Coalition for Evidence-Based Policy, 2003).

Advance planning for evaluation can address this need, with logic models providing one option for structuring and visualizing planning (W. K. Kellogg Foundation, 2004). Rigorous program evaluation first involves determining

what form indicators of both procedural and outcome-based success may take (e.g., impact of professional development, lower symptoms of trauma-related stress, increased school safety). With respect to multitiered systems of support, data may be collected pertaining to four major characteristics (Algozzine et al., 2010). These four indicator types may be subsequently categorized into two major types: those associated with the processes needed to implement trauma-informed systems (*context*, *input*, and *fidelity*), and those associated with the outcomes targeted for prevention and intervention (*impact*).

Context

First, indicators should be identified regarding the *context* within which trauma-informed services are delivered. These indicators pertain to identifying (a) the goals and objectives of the trauma-informed system, as well as who will (b) provide and (c) receive implementation support (Algozzine et al., 2010). In one conceptualization, the goals and objectives of a trauma-informed educational system may be derived from staff survey results and/or whole-school discussion following a faculty meeting or professional development on issues in trauma and traumatic stress (Cole, Eisner, Gregory, & Ristuccia, 2013). These goals and objectives should be written with an eye toward developing measurable and obtainable *outcomes* later in evaluation planning (e.g., “SMART” goals).

Individual and organizational resources for support should also be identified, along with the individuals and organizations who will receive support (Algozzine et al., 2010). The provision and reception of implementation support will likely depend not only on the perceived support required, but the alignment of this need with the resources available to the educational system and the partnerships established with local and national service providers, as discussed earlier in this article. If initial evaluation planning reveals a gap between resources needed to sustain implementation and those that are available, it may be critical to evaluate the feasibility of the implementation plan, given research suggesting general trends toward decreasing implementation after initial training (e.g., Noell et al., 2005).

Inputs

Many implementation plans will likely include initial professional development and coaching, as well as ongoing coaching to support implementation. As a result, indicators related to the *inputs* needed for system implementation should be identified, specifically (a) what professional development will occur, (b) who participated, and (c) associated outcomes with participation (Algozzine et al.,

2010). When developing indicators for system implementation inputs, varying methods of evaluation should be considered based on their relative efficiency and whether the data collected require high or low amounts of inference to their target construct. For instance, although attendance at workshops may be simple to record and interpret (e.g., 82 % of staff attended the professional development presentation), data regarding knowledge gained during that workshop in the form of a pre/posttest or measurement of the ongoing use of this information (e.g., through a quarterly online survey) may provide more actionable information.

Fidelity

Ongoing measurement of trauma-informed system *fidelity* is a critical component of evaluation, especially when considering assessment and intervention practices implemented across tiers. Numerous methods for measuring the fidelity of SWPBIS implementation have been developed, like the School-wide Evaluation Tool (SET; Horner et al., 2004). Given the lack of standard implementation guidelines for trauma-informed education systems (and corresponding preconstructed measures of implementation integrity), fidelity measures for trauma-informed systems will likely be constructed ad hoc and in response to the specific assessment and intervention practices within each system. Although general guidelines exist for the construction of treatment integrity measures (e.g., Sanetti, Fallon, & Collier-Meek, 2011), some components of a trauma-informed system such as the CBITS program may have preexisting fidelity measures and recommendations.

Similar to the multitrait, multimethod, multisetting, and multisource assessment strategies suggested for use in student evaluations, fidelity assessment plans may similarly require multiple sources of data in order to collect usable and meaningful information for subsequent decision making. Multiple traits or dimensions of fidelity should be considered; for instance, if Tier 1 practices include regular staff communication with community supports, yearly student screening and subsequent referral to a support team, and student participation in resiliency training, then fidelity measures may be developed, administered, and evaluated for each of these program components. Following the logic of multitiered systems of support, in the absence of implementation of these components with fidelity, the identification of students who are not responding to intervention and require additional supports may be erroneous and result in inefficient and unnecessary service delivery (Jimerson, Burns, & VanDerHeyden, 2007). Multiple methods of fidelity assessment for trauma-informed systems may include checklists of implementation, interviews, and observations, which could be

completed by multiple informants such as teachers, students, and external personnel.

Outcomes

Finally, evaluation plans for *outcomes* should also be made. Resources for measures of trauma exposure and symptomology have been reviewed in this article for use across tiers. However, some system-wide intervention programming (e.g., CBITS) may include recommended assessments. Furthermore, whether outcomes are proximal or distal (or short, medium, or long term) may be considered when evaluating system effectiveness. For instance, if short-term decreases in trauma-related symptomology are expected to result in improved attendance and reduced office discipline referrals, data regarding these distal outcomes should be evaluated along with their proximal precursors. Construction of a logic model for system implementation may facilitate the identification of these outcomes (W. K. Kellogg Foundation, 2004).

Summary and Considerations: Evaluation Blueprint

With increased recognition of the critical role treatment integrity plays in the implementation of systems and interventions, it is critical to consider this component in the context of trauma-informed systems. Although general recommendations from SWPBIS closely fit trauma-informed systems, as described above, additional research is required in order to evaluate which and how components of intervention at each tier should be measured. This may be facilitated by consideration of interventions with accompanying treatment integrity measures, such as CBITS, as well as the use of logic models to explicitly delineate expected outcomes.

Considerations and Directions for Research and Practice Agendas

Schools across the country are working to integrate trauma-informed approaches as part of initiatives that promote safe and supportive environments for all students. The success of trauma-informed approaches may be enhanced when incorporated into a multitiered framework of effective practices, interventions, and systems-change strategies focused on building a school culture and learning environment that is responsive to the needs of trauma-exposed students while at the same time benefiting all students (Cole et al., 2013). However, additional work is needed to provide guidance regarding this integration, including multiple demonstrations that model adoption and scale up to sustained implementation. Because this process is

complex and likely to occur in stages across multiple years (Metz et al., 2015), guiding blueprints may be valuable to monitor progress toward goals and to assess overall impact on intended outcomes. In addition, guiding blueprints can assist in setting the agendas for future research as there are many unanswered questions with regard to trauma-informed service delivery in schools.

Early stages of implementation involve building consensus for trauma-informed approaches, developing staff competencies in trauma-informed care, and establishing organizational capacity and commitment. However, controlled studies have not yet demonstrated whether professional development and training and organizational support build consensus or competence in trauma-informed approaches. Future research is needed to develop psychometrically sound tools to evaluate whether training and support increase staff understanding of trauma-informed approaches, foster positive attitudes toward trauma-informed approaches, result in the use of explicit trauma-informed strategies that facilitate student engagement and classroom management, and bolster organizational capacity to implement trauma-informed approaches. And more information is needed to understand how trauma-informed approaches framed within a multitiered model may differ by context, such as developmental stages or socio-geographical-cultural settings.

Throughout installation stages of implementation, outcomes- and process-based data collection is critical. Although the construction of treatment integrity measures for trauma-informed systems is dependent on first identifying the shape and scope of these systems, initial work toward understanding system readiness (Trauma Informed Care Project, n.d.) and implementation of specific system components (e.g., CBITS) is already underway. Future research should consider multiple formats for collecting data on all relevant components of a trauma-informed system of care, and the actions that will most effectively support implementation as a result of those data. Data collection instruments for screening and progress monitoring also exist, yet must be clearly mapped to align with outcomes of interest to school settings and within a multitiered framework to assist in decision making. Most often, utilized measures have exclusively focus on psychopathological symptomology. As noted previously, there is also need to develop better understanding of screening systems that fit varied contexts (see, for example, papers addressing developmental contexts: Woodbridge et al., 2016; Gonzalez et al., 2016).

During the initial and full implementation stages, it will be essential to evaluate the impact of trauma-informed approaches on a range of student and school outcomes, including student behavioral and mental health functioning and school climate and safety. Current knowledge

regarding the impact of trauma-informed approaches is limited to uncontrolled demonstration projects and program evaluations and may be primarily focused on intensive tiers within a multitiered framework. Although randomized controlled trials are considered the gold standard to provide evidence of an intervention's effectiveness (Coalition for Evidence-Based Policy, 2003), one potentially beneficial experimental approach worth exploring may be through single-subject methodology, such as multiple baseline designs (MBD). MBDs are particularly appropriate for initial evaluations of school-based interventions given their capacity to provide strong control over extraneous variables and demonstrate the extent to which intervention effects can be replicated across multiple schools (Biglan, Ary, & Wagenaar, 2000; Farrell, Henry, Bradshaw, & Reischl, in press). Future research is encouraged to consider multiple approaches to establishing an evidence base behind trauma-informed service delivery in schools.

In summary, there is strong potential for a trauma-informed approach to contribute to actualizing safe and supportive environments for all students. However, this potential will only be realized through thoughtful efforts that create research and practice agendas to support accurate, durable, and scalable implementation in schools. As supported through this paper, a viable option for moving forward these agendas is through building blueprints for a trauma-informed approach to school-based service delivery that address implementation, professional development, and evaluation.

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