

Building Statewide Infrastructure for Effective Educational Services for Students With TBI: Promising Practices and Recommendations

Judy Dettmer, BSW; Deborah Ettl, PhD; Ann Glang, PhD; Karen McAvoy, PsyD

Objective: To identify promising practices in educational service delivery. **Methods:** Consensus-building process with a multidisciplinary group of researchers, policy makers, and state Department of Education personnel. **Results:** This white paper presents the group's consensus on the essential components of a statewide educational infrastructure to support students with traumatic brain injury across the spectrum of injury severity: (a) identification, screening, and assessment practices; (b) systematic communication between medical and educational systems; (c) tracking of child's progress over time; and (d) professional development for school personnel. The white paper also presents key outcomes for measuring success and provides recommendations both for policy change and for furthering research in childhood brain injury. **Key words:** education, interventions, school children, special education, traumatic brain injury

IN AUGUST 2011, the Summit on Childhood Brain Injury was held at State College, Pennsylvania, to develop recommendations for building statewide capacity to support students with brain injury in educational settings. The Health Resource Services Administration (HRSA) Traumatic Brain Injury (TBI) Program within

Author Affiliations: Brain Injury Program, Division of Vocational Rehabilitation, Colorado Department of Human Services, Denver, Colorado (Ms Dettmer); Center on Brain Injury Research and Training, University of Oregon, Eugene (Drs Ettl and Glang); Colorado Department of Education and Center for Concussion, Rocky Mountain Hospital for Children, Denver, Colorado (Dr McAvoy).

Contributing authors: Keri Bennett, Paula Denslow, Roberta DePompei, Rose Dymacek, Brenda Eagan Brown, Gerry Gioia, Amy Horn Groenendaal, Donelle McKenna, A. Cate Miller, Regina Rodriguez, Janet Sloan, Bonnie Todis, Janet Tyler, Monica Vaccaro, Shari Wade, and the National Children's Collaborative on Brain Injury.

This paper is intended to promote the exchange of ideas among researchers and policy makers. The views expressed in it are part of ongoing research and analysis and do not necessarily reflect the position of the US Department of Education. In addition, the views expressed in this publication are solely the opinions of the authors and do not necessarily reflect the official policies of the US Department of Health and Human Services or the Health Resources and Services Administration, nor does mention of the department or agency names imply endorsement by the US government.

Supplemental digital content is available for this article. Direct URL citation appears in the printed text and is provided in the HTML and PDF versions of this article on the journal's Web site (www.headtraumarehab.com).

The authors declare no conflicts of interest.

Corresponding Author: Judy Dettmer, BSW, Division of Vocational Rehabilitation, Colorado Department of Human Services, 1575 Sherman St, 4th Floor, Denver, CO 80203 (judy.dettmer@state.co.us).

DOI: 10.1097/HTR.0b013e3182a1cd68

the Department of Health and Human Services supported this meeting.

The 19 meeting participants represented 8 states (Colorado, Kansas, Maryland, Nebraska, Ohio, Oregon, Pennsylvania, and Tennessee) and the District of Columbia. Meeting participants met 1 or more of the following criteria: representative of a state Department of Education (DOE) who provides statewide leadership and coordination of services for students with brain injury ($n = 3$); HRSA TBI grant recipient who has a strong partnership with his or her DOE ($n = 10$); or researcher in the field of pediatric brain injury ($n = 3$). In addition, representatives from both the HRSA TBI Program and the National Institute of Disability Rehabilitation Research attended the meeting ($n = 3$). Of the 19 members, 1 participant was a parent of 2 young adults with TBI and 4 others were family members of individuals with TBI. This meeting resulted in a variety of initiatives, one of which was to develop a white paper outlining necessary components for serving students with brain injury effectively.

WHITE PAPER DEVELOPMENT

The development of this white paper involved several distinct phases. First, prior to the summit, participants identified key components of a statewide infrastructure to support students with brain injury in the school setting. The group focused its efforts on systemic supports for students with ongoing disability following brain

injury. (A second paper will present recommendations for systemic approaches to supporting students with mild TBI, commonly known as concussion.) The recommended promising practices fell into 5 broad categories: (1) screening, identification, and assessment; (2) hospital to school transition; (3) tracking of child's progress over time; (4) professional development for school personnel; and (5) data collection. This information was synthesized into a document for discussion. During the 2-day summit, the group refined the list of common practices across states, focusing on those with preliminary evidence of efficacy.

Next, the core authors drafted the white paper, including evidence of efficacy where available. The white paper was then reviewed both by the summit participants and by members of the National Collaborative on Children's Brain Injury, a multidisciplinary group of researchers, TBI advocacy group leaders, and governmental agency representatives focused on addressing the needs of children with brain injury (a list of Collaborative members and their affiliations is provided in the Supplemental Digital Content Table, available at: <http://links.lww.com/JHTR/A83>). The resulting white paper provides a framework for states to use when developing infrastructure to better support students who have ongoing disability in educational settings following brain injury. That framework is based on promising practices across states and emerging empirical evidence. In addition, recommendations for policy change and further research in childhood brain injury are provided.

BUILDING STATEWIDE INFRASTRUCTURE: KEY COMPONENTS

In 1990, TBI was added to federal special education law as an educational disability,¹ and reporting on TBI became mandatory in 1992 under the Individuals with Disability Education Act (IDEA). Since then, local, regional, and state DOE personnel have attempted to design services to meet these students' needs. It is important to note that when brain injury was added as a disability category under IDEA, the US DOE chose to use the more narrow definition of TBI than the broader definition of acquired brain injury. Therefore, children with non-TBI are typically served under other categories such as "other health impaired."

Screening, identification, and assessment

According to the Centers for Disease Control and Prevention, TBI is a leading cause of death and disability in children and youth; 35 136 children 0 to 14 years of age annually experience TBI significant enough to require hospitalization.² Although the Centers for Disease Control and Prevention recognizes childhood TBI as a significant public health concern, the US DOE

and most state DOEs consider TBI a "low-incidence" educational disability.

Approximately 145 000 children live with a TBI-related disability,³ but the number of students enrolled in the TBI category of special education is 24 878.⁴ The under- and misidentification of children with TBI in an educational setting present a significant obstacle to the provision of effective services.

Most states require that a student meet the following 2 criteria to qualify for TBI services under IDEA: (1) medical documentation of an event likely to have caused a TBI, and (2) assessment results that demonstrate that the student needs specially designed instruction to benefit from the educational environment. In addition, some states require that the student have a demonstrated change from preinjury performance to qualify for special education services under the category of TBI, which can pose an additional barrier, especially if the injury happened early in life.⁵ The US DOE does little to guide school systems in their efforts to identify or screen students for TBI. Similarly, little guidance is provided on how to establish eligibility for section 504 services (part of the Rehabilitation Act of 1973 that provides accommodations for students with disabilities who do not qualify for special education).⁶

Requiring medical documentation of TBI for students to be eligible for special education services or 504 plans can be a barrier to effective identification and service delivery. Students may lack documentation because they never sought medical attention following a TBI or, in the case of foster, adoptive, or migrant families, because medical documentation is unavailable.⁷ Furthermore, many children who sustain a TBI at a young age may not experience its full effects until later in their education when academic and behavioral expectations increase,^{8,9} and parents may no longer have access to medical documentation. In lieu of medical documentation, states should consider developing and implementing a screening, identification, and assessment protocol. Three critical elements of a protocol are (a) staff education, (b) screening and structured interview, and (c) focused assessments.

Staff education

School personnel responsible for screening and assessment of students should have a foundational knowledge of TBI (eg, mechanisms of injury, short- and longer-term consequences, and intervention strategies). These staff can include school nurses, psychologists, speech pathologists, occupational therapists, social workers, and educators. This recommendation is based on the assumption that knowledgeable school staff are more likely to implement effective assessment procedures. However, research regarding the efficacy of staff training is needed.

www.headtraumarehab.com

Screening and structured interview

Evidence of reliability and validity has been reported for the following screening and structured interview tools developed to assess students suspected of having had a prior brain injury: The Brain Check Survey is a free tool for use with students (K-21)¹⁰ (www.cokidswithbraininjury.com). A parent or guardian completes the survey, which has 4 sections: (a) injury or illness; (b) behaviors that can affect learning; (c) symptoms; and (d) educational services.¹⁰ The Brain Injury Screening Questionnaire is a 3-part tool that can be completed by students or their parents.¹¹⁻¹⁵ The training manual for the Brain Injury Screening Questionnaire provides the information needed to ensure its appropriate use in a variety of settings. Costs include training, the questionnaire itself, and scoring. The Ohio State University TBI Identification Method includes self-report questions and is based on the Centers for Disease Control and Prevention's framework to provide a systematic retrospective identification method. It uses a structured interview to elicit self- or proxy reports of TBI occurring over a person's lifetime.^{7,16} This tool is free, although there may be training costs. Further research is needed on screening measures' false negatives and positives, positive/negative predictive values, sensitivity, and specificity to distinguish TBI from disabilities with similar symptom profiles.

There are challenges in screening children and adolescents for TBI. First, there is considerable symptom overlap between TBI and other disabilities (eg, learning disabilities, social-emotional disabilities, executive function-related disabilities), and a screening measure may demonstrate adequate sensitivity but poor specificity with regard to TBI.¹⁷⁻¹⁹ Second, few rigorous experimental studies have examined TBI screening measures for children; most have focused on adults,⁷ substance abuse,²⁰ and combat-related injury.^{18,21} Third, a screening instrument identifies potential concerns and should not be used in isolation to determine the presence of a TBI that requires intervention. Screening should be followed by a more detailed evaluation of the student's strengths and deficits to determine whether the self-reported TBI has resulted in functional impairment with adverse educational impact.

Focused assessments

Although health screening and interview data can provide school personnel with evidence of a credible history of TBI, most states also require documentation of the educational impact of the injury. Appropriate individual assessment identifies a student's strengths and needs within the educational setting to inform instruction and school support decisions. Students with TBI have diverse and changing needs, making it critical that

the assessment plan be tailored to the individual student. A comprehensive assessment can include evaluation of cognition, language, memory and concentration, sensory recognition and perception, academic achievement, social and emotional skills, and behavior.^{22,23} Test procedures might need to be modified to accommodate potential TBI sequelae such as mental fatigue, hypersensitivity to sound and light, or difficulty with memory or attention, requiring standardized and nonstandardized administration of cognitive and achievement tests. Appropriate interpretation of assessment results requires an understanding of the potential effects of TBI on students' learning and response patterns. This will require collaboration between healthcare and school professionals who are trained in differentiating the manifestations of a variety of medical and psychological conditions. In cases where school staff have limited expertise on the effect of TBI on school performance, schools should consider integrating neuropsychological experts into the assessment team.

In addition, educators should seek information from ecologically valid sources, such as parent and teacher behavior scales and interviews, curriculum-based assessment, and permanent product (such as a term paper, mathematics assignment, spelling test) evaluation.^{22,24} Finally, because students with TBI may experience both skill recovery and skill deterioration over time, assessment should be formative, with built-in progress monitoring, so that services can be appropriately modified as the student's needs change.

Hospital to school transition

Poor or nonexistent links between treating hospitals/medical professionals and schools contribute to the underidentification of students with TBI for educational support services.²⁵⁻²⁹ Although informing educators that a student has been treated for TBI does not guarantee that appropriate services will follow, failing to inform school authorities about a TBI dramatically decreases the likelihood that educational services will be offered or tailored to a student's specific needs.³⁰ Strong collaboration among parents, healthcare providers, and educators is essential in designing effective educational programs for students with TBI. To facilitate better identification of students with TBI, linkages between school systems and primary care physicians' offices, emergency departments, inpatient hospitals, and post-acute care medical rehabilitation centers need to be strengthened.

Preliminary evaluation from a controlled trial of the Student Transition and re-Entry Program (STEP), a hospital-school transition model that targets students with moderate-severe TBI, suggests that students who receive systematic transition from hospital to school are more often identified for special education than those

who do not receive systematic transition. Furthermore, these students receive more services, and their parents report greater satisfaction with the school and find a greater number of school staff helpful than students in the control group.³¹ These linkages are critical for tracking a child's recovery and ensuring that students are seamlessly linked to appropriate support services if they experience ongoing impairment. The following steps are recommended for a seamless transition from medical to school settings: (1) medical staff obtain a release from parents and notify an identified contact at the state DOE about the child; (2) the DOE notifies the school system about the child; and (3) the identified person within the school system contacts the school and the family to offer resources and support.^{31,32} Central to all 3 linkages is the presence of school-based professionals trained in TBI who can ensure that students receive the support necessary to succeed in school.

Tracking of child's progress over time

Challenges related to a TBI can emerge over subsequent stages of brain development^{33,34}; therefore, educators who work with students with TBI must monitor student progress over time.^{35,36} Students who are identified and qualify for special education will be monitored as part of their individual education plan (IEP). However, depending on the stage of postinjury recovery, it might be necessary to review progress on IEP goals more frequently than the legally mandated annual review.^{36,37} It might also be necessary for school personnel to gather additional assessment information more frequently than the legally mandated triennial review. For students with injuries that do not initially cause significant disability but who are vulnerable to increasing disability over time, ongoing monitoring and referral for post-acute care medical rehabilitation services are critical.^{35,36} Within-district transitions (across grades, teachers, or schools) are occasions for careful monitoring, with the possibility of adding supports that were earlier judged unnecessary.³⁸ For example, students with TBI might need additional supports when they transition to middle school, even if they have adapted well to elementary classrooms where demands for self-management and independent study are minimal.

Professional development for school personnel

Lack of awareness among educators regarding the potential school-related implications of TBI continues to be a key factor contributing to underidentification and poor outcomes for students with brain injury.^{39,40} Increasing awareness on a national level will require a comprehensive effort both to improve preservice teacher training programs and to provide in-service training to teachers already in classrooms. A recent survey of state

directors of special education reported that a large proportion of current teachers felt that they had insufficient training in TBI.⁴¹ A substantial body of research on professional development in education could be used to design effective training for educators currently working with students with TBI. This research identifies recommendations for both training content and training methods.

Evidence-based training content

For many children with brain injury, cognitive interventions are routinely administered by teachers; however, the effectiveness of these interventions has not been tested using rigorous research methods.⁴² All professional development, both preservice and in-service, should include training content with demonstrated effectiveness in improving student outcomes. Although few interventions to promote positive educational outcomes have been tested specifically for children and youth with brain injury,⁴³⁻⁴⁵ evidence-based practices from research on children with other disability labels associated with similar functional challenges³⁶ can be implemented for this population with minor modifications.⁴⁶

Hands-on training

Information dissemination and indirect training involving didactic or written presentation of material and verbal discussion about new strategies can improve educator awareness but are unlikely to result in changes in classroom practice.⁴⁷⁻⁴⁹ Teachers need hands-on practice with new skills and strategies to effectively integrate them into their teaching repertoire.^{47,50,51} Directly training new skills and training strategies, such as modeling, rehearsal, and feedback, increases the likelihood of generalization.⁵² Hands-on training for current educators can come in the form of consultation in the classroom. Effective professional development models must include consultation on implementing new skills in the instructional setting.⁵³⁻⁵⁶ Consultation in the natural setting is both the most challenging training to deliver and the most important in terms of changing teacher practices.^{36,57-59} The consultation must be of sufficient duration (7-8 sessions) to produce long-term sustained use of new strategies.⁶⁰⁻⁶²

Ongoing organizational support

Developing, implementing, and maintaining new skills over time and across settings require ongoing professional development support in context.⁶³ Professional learning communities provide an opportunity for educators both to discuss and practice new skills and to consult with other practitioners. Ongoing readings and

discussion improve understanding of educators' learning and teaching. Professional learning communities offer a structure within the school for the provision of situation-specific support to ensure that newly learned skills successfully transfer to the instructional setting.

Data collection

The ultimate goal of statewide modifications in educational practices for students with TBI is improvement in student outcomes. Furthermore, the increased focus on accountability for student performance in today's schools⁶⁴ dictates that systemic changes must lead to improved student outcomes. The development of educationally focused common data elements will allow for more rigorous research initiatives to be carried out. Table 1 presents recommended core measures to examine evidence of the effectiveness of changes in a state's educational infrastructure on TBI outcomes. Grades, attendance, state achievement test scores, eligibility for special education, office discipline referrals, and accommodations/modifications can be obtained from the school records of children with TBI after ob-

taining parental consent. Student and parent satisfaction with support services could be obtained through brief student and parent surveys or interviews (eg, Glang et al³⁰). Graduation rates (indicator 1), dropout rates (indicator 2), and postsecondary student outcomes (indicator 14) could be obtained through IDEA-required Indicator databases already maintained by state DOEs: Part F §300.600, §300.604(a)(1) and (a)(3), (b)(2)(i) and (b)(2)(v), and (c)(2).¹

INFRASTRUCTURE AND POLICY CONSIDERATIONS

States that implement the systemic components outlined here will benefit from the presence of the following 4 key elements:

- Leadership within DOE on TBI initiatives.
- Identified processes for referral and collaboration between medical/rehabilitation, and school systems.
- Policies that allow for identification and eligibility for educational supports in the absence of medical documentation.

TABLE 1 *Recommended data elements*

Domain	Core measures
Proximal	
Academic and special education support services	Eligibility category for special education (IDEA) Prior special education history Individual education program Areas of specially designed instruction Related services, accommodations, and modifications Prior 504 history 504 eligibility Planned support, accommodations, and modifications (eg, functional behavior assessment/behavior intervention plan)
Academic achievement	Grade point average
Official school actions	Attendance Office discipline referrals Detentions/suspensions/expulsions (indicator 4) Manifestation determinations Dropout (indicator 2)
Educator competencies	Educator TBI knowledge, skill, self-efficacy surveys
Student and parent involvement and satisfaction	Parent involvement (indicator 8) Satisfaction with school supports Areas of concern
Distal	
Improved academic achievement	Grade point average history Attendance records history Participation and performance on statewide assessments (indicator 3)
Higher graduation rates	Graduation status (indicator 1)
Improved postsecondary outcomes	Enrollment in education/training programs Employment status Independent living status (indicator 14)

Abbreviations: IDEA, Individuals with Disability Education Act; TBI, traumatic brain injury.

- Funding and administrative support for personnel training.

Although federal funding has been dedicated to research and intervention for individuals with brain injury, most efforts have focused on adults. A Federal Interagency Committee on TBI has been formed to allow all federal agencies involved in TBI activities to work together to eliminate duplication of efforts and fill service gaps (LCDR Donelle McKenna, HRSA TBI Program Director at the National Collaborative Regarding Children's Brain Injury, Washington, DC, oral communication, March 21, 2012). The following recommendations provide a foundation for collaborative efforts to improve outcomes for children/youth with brain injury:

- In the next IDEA reauthorization, emphasize TBI eligibility determination as an *educational* process that depends on the effect of the injury on academic functioning, not on the severity of the injury or the presence of official medical documentation.
- Consider broadening the definition of brain injury to encompass both traumatic and nontraumatic causes of acquired brain injury. Acquired brain injury in children can result from a variety of causes that occur after birth (eg, TBI, infection, stroke, hypoxia). The supports required for all types of brain injury overlap considerably.⁴²
- Develop systematic tracking and follow-up mechanisms to ensure that support is available if required for students with complicated mild to severe brain injury.
- Dedicate funds to developing common data elements in both medical and school settings for use in building a national pediatric TBI database.
- Develop requirements related to the TBI Act (Implementation) that would promote the implementation of the statewide infrastructure outlined in this white paper. Specifically, all states conducting needs assessments should be required to include children/youth in the assessment; advisory boards/councils must have representation from pediatric interests and experts, including healthcare, community, and school; and if the identified lead state agency is not the DOE, the specified lead must partner with its DOE.
- Under IDEA, include requirements and funding by the federal government for technical assistance for school personnel in childhood brain injury, similar to federal legislation for students who are deaf-blind, under IDEA and other funding priorities.

RESEARCH CONSIDERATIONS

There is a lack of research related to each of the areas identified as critical components of an infrastruc-

ture for supporting students with brain injury in the educational setting: (1) screening, identification, and assessment; (2) hospital to school transition; (3) tracking of child's progress over time; (4) professional development for school personnel; and (5) data collection. For example, although it is recognized that seamless transition from hospital to school following brain injury leads to better outcomes, few measures have been developed to examine the effects of these important transitions. Similarly, there is a critical need for research on brain injury screening instruments to enhance their utility in school settings. Identification of a comprehensive research agenda regarding educational supports—with funding recommendations—for students with brain injury is a high priority of the National Collaborative on Children's Brain Injury. Possible future research questions include the following: Do children with IEPs have better academic and functional outcomes (degrees, jobs, quality of life) than children of comparable injury severity without IEPs; does having a TBI designation make a difference in terms of services and outcomes, (eg, how do IEPs using the TBI eligibility category differ from IEPs using alternative eligibility categories); what factors predict identification as TBI by the schools; and how does educator training regarding TBI relate to IEP designation and content?

Limitations

Although this white paper can provide guidance on developing a statewide infrastructure to support students with TBI, it has limitations. The recommendations are limited to educational supports and do not include models of service delivery that could be implemented in community-based programs to support children with TBI. Similarly, the recommended components do not include approaches to support families of children with TBI. Given the well-documented relationship between family stress and child outcomes,^{65,66} developing models of support for families is critical. Future efforts should also include broader representation from states, including both US DOE and state policy makers.

SUMMARY AND FUTURE DIRECTIONS

More than 10 years ago, Ylvisaker and colleagues³⁶ proposed a research and policy development agenda in the area of childhood TBI focused on improving statewide infrastructure and implementing evidence-based practices. Unfortunately, the picture has not greatly improved since then; students with TBI continue to be underserved and underidentified for educational supports.³⁰ Furthermore, school systems continue to consider TBI a "low-incidence disability," which, in turn, contributes to the chronic problem of

insufficient teacher preparation and inadequate systems of support.³⁶ An understanding of the full spectrum of TBI will require that school personnel receive training in the academic needs of and supports for these students. Given the general lack of awareness that continues to characterize the field, states need guidance and assistance to improve educational supports for students with TBI. Finally, because parent involvement in educational planning leads to more successful school experiences for students,^{67,68} parent and caregivers need information and support on being effective advocates for their children.⁶⁹

This white paper has described the issues and gaps in educational supports for students with brain injury and

highlighted key elements needed to begin to develop a statewide infrastructure to support these students. One of the primary gaps is the absence of research that identifies policies and practices that have been shown to improve outcomes for students with TBI. Since students cannot wait for this research to be conducted, we must now begin by instituting the best and most promising assessment, teacher training, and instructional practices and systematically documenting and studying their effect on student outcomes. The issues facing children with brain injury are vast and complex; therefore, the response and approach to support them need to be a comprehensive, sustained, state-by-state, and national effort.

REFERENCES

1. Individuals with Disabilities Education Act of 1990. 20 USC. §1400 et seq (1990). <http://idea.ed.gov>. Accessed July 13, 2011.
2. Faul M, Xu L, Wald MM, Coronado VG. *Traumatic Brain Injury in the United States: Emergency Department Visits, Hospitalizations and Deaths 2002-2006*. Atlanta, GA: Centers for Disease Control and Prevention; 2010.
3. Zaloshnja E, Miller T, Langlois JA, Selassie AW. Prevalence of long-term disability from traumatic brain injury in the civilian population of the United States, 2005. *J Head Trauma Rehabil*. 2008;23(6):394-400.
4. Data Accountability Center. *Number of Students Ages 6 Through 21 Served Under IDEA, Part B, by Disability Category and State: Fall 2011*. Washington, DC: US Department of Education; 2011. <https://www.ideadata.org/arc.toc13.asp#partBCC>. Accessed July 20, 2011.
5. Georgia Department of Education. Traumatic brain injury rules and regulations. <http://www.doe.k12.ga.us/Curriculum-Instruction-and-Assessment/Special-Education-Services/Pages/Traumatic-Brain-Injury.aspx>. Accessed April 29, 2013.
6. Gilchrist J, Thomas KE, Xu L, McGuire LC, Coronado VG. Non-fatal sports and recreation related traumatic brain injuries among children and adolescents treated in emergency departments in the United States, 2001-2009. *MMWR Morb Mortal Wkly Rep*. 2011;60(39):1337-1342.
7. Corrigan JD, Bogner JA. Initial reliability and validity of the OSU TBI identification method. *J Head Trauma Rehabil*. 2007;22(6):318-329.
8. Turkstra LS, Williams WH, Tonks J, Frampton I. Measuring social cognition in adolescents: implications for students with TBI returning to school. *NeuroRehabilitation*. 2008;23(6):501-509.
9. Yeates KO, Taylor HG. School-based behavior problems and their educational correlates in children with traumatic brain injury. *Exceptionality*. 2006;14:141-154.
10. Dettmer JL, Daunhauer L, Detmar-Hanna D, Sample PL. Putting brain injury on the radar: exploratory reliability and validity analyses of the screening tool for identification of acquired brain injury in school-aged children. *J Head Trauma Rehabil*. 2007;22(6):339-349.
11. Cantor J, Gordon WA, Ashman T. Screening for brain injury in school children. *J Head Trauma Rehabil*. 2006;21(5):424.
12. Cantor JB, Gordon WA, Schwartz ME, Charatz HJ, Ashman TA, Abramowitz S. Child and parent responses to a Brain Injury Screening Questionnaire. *Arch Phys Med Rehabil*. 2004;85(4) (suppl 2):S54-S60.
13. Gordon WA. The Brain Injury Screening Questionnaire: a methodology to be applied to soldiers. In: Wiederhold B, ed. *Coping With Blast-Related Traumatic Brain Injury in Returning Troops*. Amsterdam, the Netherlands: IOS Press; 2011:31-38.
14. Gordon WA, Haddad L, Brown M, Hibbard MR, Sliwinski M. The sensitivity and specificity of self-reported symptoms in individuals with traumatic brain injury. *Brain Inj*. 2000;14(1):21-33.
15. Walker R, Cole J, Logan T, Corrigan J. Screening substance abuse treatment clients for traumatic brain injury: prevalence and characteristics. *J Head Trauma Rehabil*. 2007;22(6):360-367.
16. Bogner JA, Corrigan JD. Reliability and validity of the OSU TBI identification method with prisoners. *J Head Trauma Rehabil*. 2009;24(6):279-291.
17. US Government Accountability Office. *Report to Congressional Requesters: VA Health Care-Mild Traumatic Brain Injury Screening and Evaluation Implemented for OEF/OIF Veterans, But Challenges Remain*. Washington, DC: US Government Accountability Office; 2008. GAO-08-276.
18. Iverson GL, Langlois JA, McCrea MA, Kelly JP. Challenges associated with postdeployment screening for mild traumatic brain injury in military personnel. *Clin Neuropsychol*. 2009;23(8):1299-1314.
19. Schwab KA, Ivins B, Cramer G, et al. Screening for traumatic brain injury in troops returning from deployment in Afghanistan and Iraq: initial investigation of the usefulness of a short screening tool for traumatic brain injury. *J Head Trauma Rehabil*. 2007;22(6):377-389.
20. Sacks A, Fenske C, Gordon WA, et al. Co-morbidity of substance abuse and traumatic brain injury. *J Dual Diagnosis*. 2009;5:404-417.
21. Donnelly KT, Donnelly JP, Dunnam M, et al. Reliability, sensitivity and specificity of the VA traumatic brain injury screening tool. *J Head Trauma Rehabil*. 2011;26(6):439-453. doi:10.97/HTR.0b0113e3182005de3.
22. Cleary M, Scott A. Developments in clinical neuropsychology: implications for school psychological services. *J School Health*. 2010;81:1-7.
23. Glang A, Ettl D, Tyler JS, Todis B. Educational issues and school re-entry for students with TBI. In: Zasler ND, Katz DI, Zafonte RD, eds. *Brain Injury Medicine: Principles and Practice*. 2nd ed. Demos Medical, NY; 2012:602-620.
24. Glang A, Todis B, Sublette P, Brown BE, Vaccaro M. Professional development in TBI for educators: the importance of context. *J Head Trauma Rehabil*. 2010;25(6):426-432.

25. Blosser J, Pearson S. Transition coordination for students with brain injury: a challenge schools can meet. *J Head Trauma Rehabil.* 1997;12(2):21-31.
26. DiScala C, Savage RC. Epidemiology of children hospitalized with TBI. *Brain Inj Source.* 2003;6(3):8-13.
27. DiScala C, Osberg JS, Savage RC. Children hospitalized for traumatic brain injury: transitions to postacute care. *J Head Trauma Rehabil.* 1997;12(2):1-10.
28. Hawley CA. Behaviour and school performance after brain injury. *Brain Inj.* 2004;18(7):645-659.
29. Lash M, Scarpino C. School reintegration for children with traumatic brain injuries: conflicts between medical and educational settings. *NeuroRehabilitation.* 1993;3(3):13-25.
30. Glang A, Todis B, Thomas C, Hood D, Bedell G, Cockrell J. Return to school following childhood TBI: who gets services? *NeuroRehabilitation.* 2008;23(6):477-486.
31. Glang A, Todis B, Ettl D. Empirically-based interventions to improve cognitive, behavioral, and academic outcomes following pediatric TBI. Presented at: the Federal Interagency Conference on TBI; June 13, 2011; Washington, DC.
32. McAvoy K. Return to learning: going back to school following a concussion. *Commun Online.* 2012;40(6);1:23-25. <http://www.nasponline.org/publications/cq/40/6/return-to-learning.aspx>. Accessed March 15, 2012.
33. Alden J, Taylor HG. Age-related differences in outcomes following childhood brain insults: an introduction and overview. *J Int Neuropsychol Soc.* 1997;3(6):555-567.
34. Anderson VA, Morse SA, Catroppa C, Haritou F, Rosenfeld JV. Thirty-month outcome from early childhood head injury: a prospective analysis of neurobehavioural recovery. *Brain.* 2004;127:2608-2620.
35. Savage RC, Pearson S, McDonald H, Potoczyn-Gray A, Marchese NM. After hospital: working with schools and families to support the long-term needs of children with brain injuries. *NeuroRehabilitation.* 2001;16(1):49-58.
36. Ylvisaker M, Todis B, Glang A, et al. Educating students with TBI: themes and recommendations. *J Head Trauma Rehabil.* 2001;16(1):76-93.
37. Clark E. Children and adolescents with traumatic brain injury: reintegration challenges in educational settings. *J Learn Disabil.* 1996;29(5):549-560.
38. Vaidya AA. Issues related to school re-entry following traumatic brain injury. *Int J Cognit Tech.* 2002;7(1):38-45.
39. Mohr JD, Bullock LM. Traumatic brain injury: perspectives from educational professionals. *Prev Sch Fail.* 2005;49(4):53-57.
40. Walker NW, Boling MS, Cobb H. Training of school psychologists in neuropsychology and brain injury: results of a national survey of training programs. *Child Neuropsychol.* 1999;5:137-142.
41. Ettl D, Glang A. *NASDSE TBI Survey.* Eugene, OR: Western Oregon University, Center on Brain Injury Research and Training; 2012.
42. Slomine B, Locascio G. Cognitive rehabilitation for children with acquired brain injury. *Dev Disabil Res Rev.* 2009;15:133-143.
43. Carney N, Chesnut RM, Maynard H, Mann NC, Patterson P, Helfand M. Effect of cognitive rehabilitation on outcomes for persons with traumatic brain injury: a systematic review. *J Head Trauma Rehabil.* 1999;14:277-307.
44. Laatsch L, Harrington D, Hotz G, et al. An evidence-based review of cognitive and behavioral rehabilitation treatment studies in children with acquired brain injury. *J Head Trauma Rehabil.* 2007;22:248-256.
45. Limond J, Leeke R. Practitioner review: cognitive rehabilitation for children with acquired brain injury. *J Child Psychol Psychiatry.* 2005;46(4):339-352.
46. Glang A, Ylvisaker M, Stein M, Ehlhardt L, Todis B, Tyler J. Validated instructional practices: application to students with TBI. *J Head Trauma Rehabil.* 2008;23(4):243-251.
47. Gersten RM, White WA, Falco R, Carmine D. Teaching basic discriminations to handicapped and nonhandicapped individuals through a dynamic presentation of instructional stimuli. *Anal Interv Dev Disabil.* 1982;2(4):305-317.
48. Sohlberg MM, Ehlhardt L, Kennedy M. Instructional techniques in cognitive rehabilitation: a preliminary report. *Semin Speech Lang.* 2005;26:268-279.
49. Weeks M, Gaylord-Ross R. Task difficulty and aberrant behavior in severely handicapped students. *J Appl Behav Anal.* 1981;86(4):449.
50. Darling-Hammond L, Chung Wei R, Andree A. State of the profession: study measures status of professional development. *J Staff Dev.* 2009;30(2):42-50.
51. Garet MS, Porter AC, Desimone L, Birman BF, Yoon KS. What makes professional development effective? Results from a national sample of teachers. *Am Educ Res J.* 2001;38(4):915-945. doi:10.3102/00028312038004915.
52. Stein M, Kinder D, Silbert J, Carmine DW. *Designing Effective Mathematics Instruction: A Direct Instruction Approach.* Columbus, OH: Pearson-Merrill Prentice Hall; 2006.
53. Bowen JM. Classroom interventions for students with traumatic brain injuries. *Prev Sch Fail.* 2005;49(4):34-41.
54. Fuchs LS, Fuchs D. Identifying a measure for monitoring student reading progress. *Sch Psychol Rev.* 1992;58:45-58.
55. Gersten R, Chard DJ, Jayanthi M, Baker SK, Morphy P, Flojo J. Mathematics instruction for students with learning disabilities: a meta-analysis of instructional components. *Rev Educ Res.* 2009;79(3):1202-1242.
56. Sailors M, Price LR. Professional development that supports the teaching of cognitive reading strategy instruction. *Elem Sch J.* 2010;110(3):301-322.
57. Borko H. Professional development and teacher learning: mapping the terrain. *Educ Res.* 2004;33(8):3-15.
58. Odom SL. The tie that binds: evidence-based practice, implementation science, and outcomes for children. *Top Early Child Spec.* 2009;29(1):53-61.
59. Ylvisaker M, Turkstra LS, Coelho C. Behavioral and social interventions for individuals with traumatic brain injury: a summary of the research with clinical implications. *Semin Speech Lang.* 2005;26(4):256-267.
60. Benedict E, Horner R, Squires J. Assessment and implementation of behavior support in preschools. *Top Early Child Spec.* 2007;27(3):174-192.
61. Noell GH, Witt JC, Gilbertson DN, Ranier DD, Freeland JT. Increasing teacher intervention implementation in general education settings through consultation and performance feedback. *Sch Psychol Q.* 1997;12(1):77-88.
62. Yoon KS, Duncan T, Lee SW-Y, Scarloss B, Shapley KL. *Reviewing the Evidence on How Teacher Professional Development Affects Student Achievement (Issues & Answers).* Washington, DC: US Dept of Southwest; 2007. REL 2007-No. 033. <http://ies.ed.gov/ncee/edlabs>.
63. Fixsen DL, Naoom SF, Blase KA, Friedman RM, Wallace F. *Implementation Research: A Synthesis of the Literature.* Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network; 2005. FMHI Publication No. 231.
64. US Department of Education. *No Child Left Behind.* Washington, DC: US Department of Education; 2001.
65. Taylor HG, Yeates KO, Wade SL, Drotar D, Stancin T, Burant C. Bidirectional child-family influences on outcomes of traumatic brain injury in children. *J Int Neuropsychol Soc.* 2001;7(6):755-767.

66. Taylor HG, Yeates KO, Wade SL, Drotar D, Stancin T, Minich N. A prospective study of short- and long-term outcomes after traumatic brain injury in children: behavior and achievement. *Neuropsychology*. 2002;16:15-27.
67. Fan X, Chen M. Parental involvement and students' academic achievement: a meta-analysis. *Educ Psychol Rev*. 2001;13(1):1-22.
68. Jeynes WH. A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Educ*. 2005;40:237-269.
69. Glang A, McLaughlin K, Schroeder S. Using interactive multimedia to teach parent advocacy skills: an exploratory study. *J Head Trauma Rehabil*. 2007;22(3):198-205.