Improving educational services for students with TBI through statewide consulting teams

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Abstract. Since 1991, when Traumatic Brain Injury (TBI) was established as a disability category under IDEA, educators nationwide have become increasingly aware of the unique and complex challenges these students present. Yet professionals, advocates and family members share a growing concern that the instructional needs of these students are not being met. School personnel serving these students need systematic support that includes both information about specific aspects of the student’s disability and access to expert technical assistance. The goal of the TBI Team model, as developed and implemented in Iowa, Kansas, and Oregon, is to make available to schools statewide a group of well-trained peer consultants who can provide in-service training and ongoing consultation. The TBI Team model has four components: (a) needs assessment, (b) team recruitment, (c) team training, and (d) evaluation of both implementation and outcomes. Trained Team members provide in-service training, classroom consultation, and information and resources for school staff and parents. Team operations are maintained and supported through a central office at the Department of Education. Evaluation data suggest that the Team model is a cost effective and efficient approach to supporting teachers who work with students with TBI.

Keywords: Traumatic brain injury, pediatric TBI, students, training methods, teacher training, personnel training, staff development

1. Introduction

Students with traumatic brain injury (TBI) have been eligible to receive special education services under the Individuals with Disabilities Act (IDEA) since 1991. Although services and supports for students with TBI clearly lag behind those for other disabilities, federal and state efforts over the last twelve years have resulted in increased awareness of and attention to the needs of this population. In a survey conducted by the National Association of State Directors of Special Education during the 10-year anniversary of the IDEA reauthorization [36], only 3 of 40 states reported using the TBI category prior to 1991. In contrast, 24 states added the category during the 2-year phase in period (1992–93), and 10 additional states had recognized the TBI category by the year 2001.

In spite of these efforts, however, there is a growing concern among education professionals, advocates and family members that the educational needs of these students are not currently being met [1,64]. A primary factor underlying this concern is what appears to be the significant under-identification of children with TBI for special education services in our nation’s schools. (Table 1 presents the eligibility criteria for the TBI category.)

A comparison of injury rates with current TBI child count figures provides clear support for this premise. Each year, approximately 60,000 children and adolescents sustain moderate to severe brain injuries in motor vehicle crashes, falls, sports, and physical abuse; an additional 500,000 children are seen in hospital emer-
While IDEA provides broad guidelines for professional practice for identifying students across the eligibility categories (e.g., using a multi-disciplinary team; assessing all areas related to the suspected disability; ensuring assessment instruments are selected and used properly and administered by qualified professionals), the specifics of eligibility for each category, including TBI, are left to the states. As a result, eligibility criteria for TBI vary from state-to-state Oregon’s criteria are outlined below as an illustration:

(a) If a child is suspected of having a traumatic brain injury, the following evaluation shall be conducted:

(A) A medical statement or a health assessment statement indicating that an event may have resulted in a traumatic brain injury as defined in subsection (b)(A);

(B) A comprehensive psychological assessment using a battery of instruments intended to identify deficits associated with a traumatic brain injury administered by a licensed school psychologist, a psychologist licensed by a State Board of Psychological Examiners, or other individuals who have the training and experience to administer and interpret the tests within the battery;

(C) Other assessments including, but not limited to, motor assessments if the child exhibits motor impairments; communication assessments if the child exhibits communication disorders; and psychosocial assessments if the child exhibits changed behavior. These assessments must be completed by educators knowledgeable in the specific area being assessed;

(D) Other information relating to the child’s suspected disability, including pre-injury performance and a current measure of adaptive ability;

(E) An observation in the classroom and in at least one other setting:

(F) Assessments to determine the impact of the suspected disability:

(i) On the child’s educational performance for a school-age child; or

(ii) On the child’s developmental progress for a preschool child; and

(G) Additional evaluations or assessments that are necessary to identify the child’s educational needs.

(b) For a child suspected of having a traumatic brain injury, the child shall meet all of the following minimum criteria:

(A) The child has an acquired injury to the brain caused by an external physical force;

(B) The child’s condition shall be permanent or expected to last for more than 60 calendar days;

(C) The child’s injury results in an impairment of one or more of the following areas:

(i) Communication;

(ii) Behavior;

(iii) Cognition, memory, attention, abstract thinking, judgment, problem-solving, reasoning, and/or information processing;

(iv) Sensory, perceptual, motor and/or physical abilities.

For a child to be eligible for special education services as a child with a traumatic brain injury, the eligibility team shall determine that:

(A) The child’s disability has an adverse impact on the child’s educational performance; and

(B) The child needs special education services as a result of the disability.

(d) Students with brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma, are not eligible under the category of traumatic brain injury but may be eligible under a different category under this rule.

Clearly, while TBI is a high incidence medical event, it remains a low-incidence disability in the field of special education. An accurate count of students with special educational needs resulting from TBI is currently unavailable. The inaccurate and often confusing counts that are available raise serious questions about both current practices for special education identification of students with brain injuries and the appropriateness of educational programs being provided to these students [2]. The complexity of the disability, a persistent lack of information and training for educators, and the lack of state level resources for students with TBI each contribute further to this service delivery gap.

1.1. Complexity of TBI and effects on school performance

TBI impacts students’ abilities to learn and perform in cognitive, behavioral and social domains in unpredictable and often confusing ways. In many cases, student functioning is permanently altered following TBI [25,43]. Cognitive effects include problems in general intellectual function [44]; memory and attention [35]; visual-motor abilities [48]; and significant impairments in executive functions – the ability to organize, plan, and monitor behavior [62]. For students...
with moderate to severe injuries, there is often a significant decline in academic performance [13]. In the behavioral realm, many students with TBI, particularly those with pre-frontal lobe injuries, may appear angry, aggressive, disinhibited, oppositional, socially inappropriate, withdrawn or apathetic [6,14,30]. These behavior patterns can easily be misdiagnosed as learned inappropriate behavior when in fact they are a direct consequence of the injury and/or frustration associated with academic or social failure [8,61].

Perhaps most challenging from the classroom teacher’s perspective is the variability in the functioning of each individual student. The performance of a student with TBI may fluctuate widely from week to week or day to day, from morning to afternoon on any single day, and across settings or various types of tasks. Tracked over time, the student may appear to take one step forward, two back, reach a learning plateau, and then unexpectedly make a series of gains [51].

1.1.1. Post-school outcomes

Although there is little research on transition outcomes for students with TBI, a longitudinal study currently in progress indicates that significant problems persist after graduation. In a sample of 98 adolescents with TBI in Oregon and Washington, only 9% were enrolled in post-secondary education or training programs two years after completing high school, and only one third were working 20 hours or more per week [50]. Furthermore, of those who were employed, 64% were working in menial or unskilled jobs. The only other study of transition outcomes for young adults who had experienced mild to moderate brain injuries as children found that while students experienced a number of serious social adjustment challenges, neither education nor employment were adversely affected [31]. In contrast, research in Finland, Israel, and Italy suggests that outcomes for children who are more severely injured than those in the Klonoff et al. [31] study, are similar to outcomes for survivors of adult brain injury: these individuals are unable to maintain employment, do not pursue post-secondary education, and do not live independently [5,32,39].

1.1.2. Developmental overlay

The effects of brain injury in children are particularly profound because the injury occurs to a developing brain [33,53]. The child’s course of recovery is superimposed on normal developmental processes, thus having a potential impact not only on previously learned skills, but also on the development of future skills [12, 18,47]. Consequently, some students injured in early childhood may do relatively well until they reach middle and high school, when they are expected to demonstrate increasing competence and independence. The organizational and other executive functions required at this level may not develop if the relevant areas of the brain have been damaged and are not developing normally [45,61]. Likewise, psychosocial disorders may not be detected in young children immediately following an injury, but may become apparent years after the injury when the child reaches a stage of development with different social and emotional demands [40,60].

Because of the changing nature of ability and demands, students with TBI require a more comprehensive tracking system than is in place for students with other disabilities [64].

Researchers and school staff have repeatedly documented that students with TBI display learning and behavior characteristics that are significantly different from other students [42,51,53]. This does not mean that strategies that are effective in educating students with other disabilities cannot be equally effective for students with TBI. Rather, it means that the selection of interventions for these students must be grounded in a firm understanding of the specific effects of the brain injury on each student’s current level of functioning and approach to learning. At the very least, awareness of the existence of TBI presents the necessary opportunity to gather information and consider brain injury in assessment, program planning and interpretations of outcomes.

1.2. Educator’s lack of information and training on TBI

Few educators have an understanding of the complex and unique issues faced by students with TBI [3,16,23]. Most teachers do not receive pre-service training on the effects of TBI on school performance [52]. In fact, the 2001 NASDSE survey revealed that none of the responding states had a TBI certification program, and only one had a teacher endorsement in TBI [36]. Further, only ten states report the availability of pre-services courses in TBI [36], and only 8% of graduate programs in special education include TBI training [27]. Surveys of speech/language pathologists [26] and school psychologists [59] indicate that even these professionals, who are usually the school personnel most knowledgeable about neurological disorders, receive little training in assessment and intervention with students with TBI.
Although they are more knowledgeable than the general public [15], most educators demonstrate a lack of basic knowledge of the impact of TBI on school performance [16,17,23]. Educators also display more misconceptions about TBI than do rehabilitation professionals [15]. For example, teachers often think that problem behavior following TBI is intractable [10], a misconception that serves as a major barrier to seeking and implementing an appropriate behavioral intervention for the child with TBI.

The demands of working with students with TBI are added to the already challenging job facing today’s educators. Teachers, therapists and other educational support staff are being asked to serve more students with more complicated needs using fewer resources [9]. In addition, parents of children reentering school following brain injury present unique challenges for educators. In most cases, these parents have had no previous experience with the special education system and are struggling with the prospect that their child may now have a permanent disability. It can be extremely challenging for parents and educators, who are likely to have different views of the long term educational outcomes for the student, to work together to develop and continue to support an individualized educational program (IEP) [21,41].

In December of 1999, teacher training was identified as the #1 national need by a multi-agency, interdisciplinary task force of individuals with TBI, families, advocacy groups, researchers, and policy makers charged with identifying strategies for addressing the needs of children and youth with TBI [37]. It continues to be a major initiative at both state and national levels [11, 64].

1.3. Lack of state resources for students with TBI

In most states that recognize TBI as a disability category, outreach and support services to educators working with students with TBI are the responsibility of a consultant from the state department of education [36]. However, because TBI is considered a low-incidence disability and because state resources for education are shrinking, most state level TBI consultants are responsible for coordinating programs and providing consultation services for other disability groups such as students with autism, deaf-blind students, or students with health impairments. Clearly, this level of state staffing is inadequate to meet the diverse and rapidly changing needs of students returning to school following TBI. In complex cases, states often hire outside consultants to advise school staff or consider placing the student in a hospital-based setting or an out-of-state school district.

2. TBI consulting team model

Given the complex needs of students with TBI, coupled with educators’ lack of knowledge and training in TBI, education personnel serving these students need systematic support that includes both information about specific aspects of the student’s disability and access to expert technical assistance when needed. The TBI Consulting Team model, as developed and implemented in Iowa, Kansas, and Oregon, is a proven approach to providing such support for educators serving students with TBI [22,54,55]. The goal of the model is to make available to schools statewide a group of well-trained peer consultants who can provide in-service training and ongoing consultation to prevent many of the problems schools face in serving the growing population of students with TBI [4].

The TBI Consulting Team model focuses on capacity-building: facilitating the transfer of new skills learned in the training setting to the classroom. Research in the field of staff development strongly suggests that the typical “one-shot” in-service without follow-up is rarely effective in helping educators actually use the skills and knowledge gained in training [19, 46]. Teachers need on-site, situation-specific help to ensure that these skills successfully transfer to the instructional setting [20,34,63,64].

The TBI Consulting Team model has four key components: (a) needs assessment, (b) team recruitment, (c) team training, and (d) evaluation of both implementation and outcomes. While these components provide the foundation for program development efforts, the model’s flexibility permits states to implement the components in ways that best utilize available state and local resources, while taking into consideration each state’s administrative processes and cultures.

Supported initially with funds from the US Department of Education, Office of Special Education Programs, the Consulting Teams in Iowa, Kansas and Oregon are currently sustained through state education funds. Development work in Oregon is outlined below to illustrate the specifics of model implementation across the components.

2.1. Implementing the TBI consulting team model: Oregon’s experience

Oregon began its Consulting Team development work through an in-service grant from the Office of Special Education Programs (1993–1996). The models in Iowa and Kansas provided a template for the Oregon
Teams, while grant funding offered an opportunity to implement the model fully, modifying it as needed to meet the specific realities and needs of the state.

2.2. Component 1: Needs assessment

Prior to implementing the model in Oregon, two pilot surveys and a series of focus groups were conducted [23]. Results from the surveys and focus groups determined the content and the nature of training needed.

2.2.1. Parent survey

To ascertain parents’ perspectives, 31 parents of children with TBI throughout Oregon were asked about their child’s educational experiences (e.g., satisfaction with instructional programming, behavior management, staff understanding of TBI, etc.). The respondents identified lack of staff knowledge of TBI and its related effects (46%) as their primary reason for dissatisfaction with the instructional services provided to their children. In the follow-up focus groups, parents consistently reported feeling frustrated with their children’s school experiences. Although several parents made comments about a particular teacher or administrator who demonstrated a caring attitude; no parents described positive actions taken by a school staff member that resulted in more effective educational experiences for these students.

2.2.2. Educator survey

In a statewide needs assessment of 183 educators designed to ascertain educators’ knowledge about and perceptions of students with TBI [23], respondents scored moderately low (mean score = 71%). When these same educators were asked to rate how prepared they felt to meet the needs of students with TBI (e.g., How prepared do you feel to accurately assess the academic skills of students with TBI?), the average rating was between 2.6–3.4 (using a Likert scale of 1–5, 1 = not at all prepared, 5 = very prepared), or only “somewhat prepared.” Ratings were consistent across behavioral, academic, social, and cognitive domains.

2.3. Component 2: Recruitment of team members

Since its founding, the Oregon TBI Consulting Team has included individuals with TBI, parents, classroom teachers, special education teachers, speech/language specialists, school counselors, physical therapists, occupational therapists, school nurses, school psychologists, and local/regional administrators. To ensure that Team members understand and are sensitive to the realities and constraint of the educators with whom they consult, all Team members who are either educators or related service providers are based in schools rather than in rehabilitation or medical settings.

The first cohort of Team members in Oregon was recruited in consultation with the head administrator in each of the state’s eight service regions. Some regions elected to conduct open recruitments; fliers describing the project and encouraging interested individuals to apply were distributed to schools and educational service districts in the target region. Other regions specifically selected individuals based on their interest in TBI and their availability to travel throughout the region. Each potential Team member completed an application consisting of a description of work experience and training in TBI, and a statement signed by the applicant’s supervisor indicating the applicant would be released from his/her other responsibilities to attend trainings and to provide consultation on an as-needed basis to educators in his/her region.

As retirements, reassignments and/or fiscal constraints have created openings on the Team, vacancies have been filled by other educators, nominated by Team members, who already have experience working with students with TBI and have expressed interest in becoming TBI Team consultants. Over a 10 year period, a total of 125 Team members have been trained to serve students with TBI in the state. During this same time period, the Oregon census has never listed more than 316 children (ages 6–21) served in special education with TBI as the primary eligibility category. Then as now, a major focus of Team activities has been to address the clear under-identification of children with TBI by building awareness of this disability and ensuring that eligible children receive appropriate evaluation and instructional supports and services.

2.4. Component 3: Team training

To ensure content coverage, skill development and skill transfer, the Consulting Team model uses a 3-phase training approach.

2.4.1. Phase I: Initial training

The goal of the initial training phase is to provide Team members with current information about the effects of TBI and strategies for working effectively with students, families, and teachers. For the initial cohort, training occurred over approximately 10 full-day ses-
sions. A menu of training topics was drawn in advance from the literature on pediatric TBI, and the specific training content within these areas was largely determined by Team members’ interests and needs. (Table 2 presents the 8 areas offered as a menu of training topics to Team members).

Unlike traditional in-service training approaches, training for TBI Team members was an iterative, interactive process, designed to increase the knowledge, skills, and confidence of trainees over time. Reflecting the documented preference of teachers [17], workshop presenters were well-known speakers in their field of interest (e.g., special education, neuropsychology, cognitive rehabilitation). All presenters had experience working with students in schools, and most had experience in hospital and community settings. Each training session included an assignment to be completed either individually or with other Team members. Assignments were designed to encourage trainees to apply their knowledge directly with educators and students with TBI in school settings.

Since the initial training of the first cohort, ongoing training opportunities have been provided to Team members one to two times each year. Topics for these sessions are drawn from the needs and interests of the Team as well as emerging issues in the field. Past topics have included, for example, updates on medical management of TBI, and recent advances in metacognitive strategy instruction for students with TBI.

2.4.2. Phase II: Mentorship

The intent of this phase is to allow Team members to “get their feet wet” while providing the necessary support to build success. Team members frequently testify that this phase is the most critical [22]. Peer mentoring has been proven to be an effective approach to supporting teachers working in new areas [58]. Teachers who work with mentors are able to apply new skills in the classroom and retain these skills over time [28,29].

For the initial cohort, following the year-long training phase, Team members entered into a mentor relationship with an experienced TBI consultant. The mentor accompanied the Team members as they planned and conducted in-service trainings and consulted in classrooms. Mentors were available to answer questions about specific situations related to students with TBI and to refer Team members to specialized services in their regions.

For more recent additions to the Team, the start of the Mentor phase has been determined on a person-by-person basis depending on prior training and experience, as well as the overall readiness of the individual Team member.

2.4.3. Phase III: Ongoing support

Ongoing support to active cadre members is provided through a central office at the Department of Education. Support includes: technical assistance as needed (e.g., problem-solving difficult cases, reviewing medical or school records, and attending Team in-service presentations or consultation activities); receiving requests for assistance and connecting schools with Team consultants; creating and disseminating information about Team availability and services; maintaining a website (www.tr.wou.edu/tbi/TEAM/); and providing data collection and evaluation services. Ongoing trainings for Consulting Team members occur one to two times a year. This allows Team members to stay abreast of research in TBI and to maintain collegial ties.

Team members provide a variety of types of consultation and training to schools throughout Oregon. Particularly in the case of children with more severe injuries, requests for Team support may come as the student transitions back into school following injury. In other cases, however, requests come later – when academic or behavior challenges emerge and/or first become evident to school staff, and when one or more staff members recognize that the difficulties might be connected to the child’s TBI.

Often, some version of a basic overview of TBI provides the information school staff members need to begin to adapt a student’s program. Topics covered might include an overview of brain function; incidence and etiology of brain injury; effects of brain injury on social, behavioral and cognitive abilities; impact of TBI on the family; and strategies for addressing academic, behavioral and social challenges. Experience has shown that involving a Team member who is also the parent of a child with TBI is particularly effective in building staff awareness of the unique needs of these students.

Consultation services are available to school staff working with students from preschool through transition from high school, and are individually designed to address the academic, behavioral and/or social needs of the target child. When requested, TBI Team members attend IEP meetings to help the IEP team make decisions about placement and program, i.e., should a high school student continue in the academic program or begin to focus on employment and independent living skills? Should a student’s transition plan be geared toward taking courses at a community college or vocational training? Team members are also available to lead school teams, including the student with TBI, in goal setting and person-centered planning [57].

The case study in Table 3 illustrates many of the elements of a typical consultation.
### Table 2

**TBI Consulting Team Workshop Topics**

1. **Overview of traumatic brain injury**
   
   General overview of brain function, information on TBI incidence and etiology, and the effects of TBI on the school experience (including social, behavioral, and cognitive abilities); hospital-to-school transition issues.

2. **Parent-school communication strategies**
   
   Key problems in parent/professional interactions and strategies to improve these interactions; analysis of communication breakdowns; role-play using effective communication strategies.

3. **Behavioral intervention strategies**
   
   Targeting the underlying intention of the problem behavior; developing antecedent interventions and advanced organizers to address students’ cognitive challenges; promoting student control though student-based intervention planning.

4. **Facilitating social integration**
   
   Training in the Building Friendships process, a process that assesses a student’s social support needs and generates options for meeting them creatively and effectively.

5. **Promoting academic success**
   
   Strategies based on instructional research with children and youth with TBI, the literature on effective cognitive rehabilitation strategies with adults with TBI, and the large body of research on effective instructional approaches with students with disabilities; material tailored to variables present in general education classrooms (i.e., range of learner abilities, larger number of students, limited teacher knowledge of working with students with disabilities).

6. **Compensatory memory and organizational systems**
   
   Overview of systems and strategies to compensate for learning and memory deficits; practice in using a needs assessment instrument, and problem-solving of individual student needs raised by trainees.

7. **Collaborative consultation**
   
   Collaborating with teachers to enhance their repertoire of skills; practice using a student-centered, collaborative problem-solving model for consultation.

8. **Conducting an in-service training**
   
   Information and detailed outlines for in-service training; overhead transparencies and handouts for conducting in-services.

Finally, in addition to their school-based work, Team members in Oregon have provided discipline-specific training for educators and related service professionals. For example, a neuropsychologist who is an adjunct Team member has provided inservice trainings on effective assessment techniques for school psychologists and special educators. A speech language pathologist on the Team has offered regional workshops for speech therapists on designing and teaching effective organizational strategies for students with TBI.

**2.5. Component 4: Evaluate impact of the TBI consulting team model**

Evaluation data from the Oregon TBI Consulting Team, collected since 1994, suggest that the model is effective in training Team members to be consultants in childhood TBI. Evaluation activities focus on the impact of the model at 3 levels: (a) knowledge and perceived competence of Team members, (b) consumer (educators and parents) satisfaction with workshops conducted by Team members, and (c) consumer perceptions of the impact of Team consultation.

**2.5.1. Knowledge and perceived competence of team members**

The Team Effectiveness Rating was designed to assess the degree to which the staff development training offered to Team members prepared them to be “experts” in effective interventions for students with TBI. The 20-item questionnaire asks respondents to rate how pre-
Table 3

| Amber: A Case Study of Team Consultation |

Amber’s special education teacher called the Team coordinator and requested a consultation for Amber, a 7th grader, who had been injured in a motor vehicle collision one year earlier. The main concerns related to Amber’s behavior. According to her teacher, Amber didn’t “go by the rules.” Teachers were frustrated that they were getting into power struggles with Amber over issues such as her putting on make up in class and refusing to dress down for PE.

The Team coordinator referred Amber’s teacher to a TBI Team consultant near Amber’s district. Testing by the school psychologist showed that while Amber had made gains in cognitive functioning in the year since her injury (nearly to pre-injury levels as measured by an IQ test), her academic skills remain significantly impaired. Amber scored at or below the 7th percentile in reading, math, and written language.

The TBI Team consultant observed Amber in English and social studies classes and in the special education resource room, using a structured approach that focused directly on Amber’s activities and interactions in the classroom, as well as on teacher expectations and other students’ behavior. The observation revealed that although Amber appeared attentive, she spent a lot of class time doodling or visiting with other students when the teacher wasn’t looking. In English, Amber took out the assigned worksheet but did not answer any of the questions. In social studies, the class reviewed the prior day’s assignment and the majority of Amber’s responses were incorrect. In the special education ‘study hall,’ Amber worked about 50% of the time on her homework, got up several times to ask the teacher for help, and spent the rest of the period doodling.

Next the consultant conducted short interviews with each of Amber’s teachers and with her parents. Besides being concerned about Amber’s low grades (D’s and F’s), her teachers were frustrated by Amber’s classroom behavior: talking at inappropriate times, getting irritated whenever she had to explain something to her teachers, not being focused and putting in little effort. They also reported that she made poor choices in friends and often got so distracted interacting with peers that she had problems getting on the bus to leave school, even with two adults available to help her.

The consultant learned that home issues were similar. Amber was defiant and oppositional at home. The family was very concerned about her safety, reporting that she gave no thought to possible outcomes of her actions. The consultant then met with the school team to share information about Amber’s brain injury and how it might be affecting her school performance. The consultant helped the team distinguish between Amber’s problem behaviors and typical preteen distractibility and impulsivity. She provided information on how Amber’s memory issues, poor judgment, inability to organize and inattention to detail—all resulting from her injury—contribute to her difficulty meeting deadlines, dealing with transitions, and following through on assigned tasks.

The school team came up with a plan to provide more structure and reinforcement throughout Amber’s day, including a daily morning check in with the counselor to help Amber organize her day and set goals for behavior and academic tasks. The case manager and counselor created a menu of reinforcers to be used by Amber’s teachers when she met these goals. The teachers agreed to check in with Amber frequently to make sure she got started on assignments and stayed on task. They also agreed to email Amber’s parents daily to keep them informed of assignments and behaviors, and to stay aware of issues at home that might affect her school performance.

School staff requested a follow-up visit from the TBI consultant at the end of the school year for help in developing Amber’s IEP for 8th grade.

pared they feel to meet the needs of students with TBI across 4 areas (physical, social/behavioral, cognitive, and academic) using a 5-point Likert-type scale (1 = not at all prepared, 5 = very prepared). Team members complete the questionnaire prior to receiving training (pre) and at the conclusion of their year-long training (post). Results from this questionnaire are summarized below in Table 4. Statistical analyses of paired scores revealed significant increases in all 4 areas of perceived competence after Team members completed the training phase.

After completing their first two years of training and service on the Team, members of the initial cohort were asked to rate the entire Team’s effectiveness in meeting the needs of educators serving students with TBI. The questionnaire used a 5-point Likert-type scale and asked each respondent to rate how effective the Team was in providing: (a) in-service presentations in TBI, (b) written materials, (c) referrals for parents or teachers, (d) phone consultation, (e) classroom observation/problem-solving with teachers, (f) support/information for family members, and (g) assistance at IEP or other planning meeting. Mean ratings ranged between 3.68 to 4.25 (1 = not at all effective, 5 = extremely effective), indicating that Team members felt confident that their services would be helpful to school personnel receiving Team assistance.

2.5.2. Consumer satisfaction with Team-led trainings

When Team members conducted in-service trainings for educators and related-service providers, they asked participants to rate the degree to which the training accomplished its primary goal (e.g. provide an overview of TBI, present suggestions for academic or interventions, discuss effective compensatory techniques, etc.). Participants rated each workshop using a 4-point Likert-type scale (1 = not at all effective, 4 = very effective). Over the 3 school years spanning 1999–2002, 197 educators and parents attended Team-led training. Participant ratings were consistently high, with an overall participant mean of 3.46.

2.5.3. Perception of impact of Team services

Sufficient resources have not been available to conduct a systematic evaluation of the impact of Team services in the states that employ this model. However,
feedback from administrators, teachers and parents has consistently provided strong positive support for the impact of the Team on students, families and school staff.

Comments from administrators and educators receiving consultation from the Consulting Team centered on the following positive aspects of the consultation:

– Regional Team member’s expertise improves the types of educational services students with brain injury receive.
– Regional Teams provide necessary, useful and effective information about brain injury that is particularly helpful for staff when planning for students.
– Teams provide important information and support for parents.
– Teams provide important information about identification and assessment of TBI.

3. Lessons from experience

3.1. Advantages and challenges of the consulting team model

Over the last ten years, our collective experience implementing and coordinating statewide TBI educator consulting Teams has highlighted a number of advantages of this approach over other service delivery options, e.g., itinerant consultants from the Department of Education, hospital-based consultants, or out-of-district placements for students:

– **Ensures easy access to needed resources for both educators and medical personnel.** Because the TBI Team includes education professionals with expertise in a wide range of areas (e.g., special and regular education; speech, physical, and occupational therapy; school nurses) local school personnel have access to consultants with similar professional backgrounds. Similarly, medical and rehabilitation personnel can call upon colleagues who perform similar functions in schools for guidance on how to best prepare children for school reentry.
– **Provides ongoing professional development for Team members.** While Team members are initially trained to a level of proficiency in TBI, state supported Team models also provide on-going staff development, keeping the Team current with the latest research-based strategies for academic and behavioral interventions, as well as continuing to develop their consultation skills. Further, given the diversity of functional outcomes in students with TBI, Team members may, at times, require expert assistance in dealing with individual cases. Support from the Team coordinator can range from a phone call or email to discuss the specifics of a consultation, to on-site technical assistance to help a Team member with a particular case. These interactions provide additional training experiences for Team members, and are essential to the successful, long-term functioning of the Team.
– **Fosters enhanced collegiality and networking.** The “Team” aspect of the model is developed through the training and mentoring phases, and continues to be nurtured through the on-going support phase. These group trainings foster relationships that allow Team members to share materials and experiences, and to call upon one another for professional support. Team members routinely cross district boundaries to provide assistance with in-service trainings and to provide consultation in their areas of expertise. Team members have also made presentations on serving students with TBI at state and national conferences.
– **Builds statewide capacity to meet the unique need of children with TBI.** Prior to the implementation of the team model, service delivery to students with TBI in Kansas, Iowa, and Oregon was accomplished by sending one itinerant specialist from the Department of Education, if available, to consult with districts as needed. In contrast, the current team model spreads knowledge and expertise
related to TBI throughout the state. Because of their proximity, team members are able to provide more on-site consultation than itinerant consultants, thus building the capacity of other educators to implement effective educational practices with their students with TBI.

- Provides needed supports for parents. While the focus of Team activities is on building the capacity of educators working with students with TBI, the Team also offers support to the parents of these students. Parents can and do call upon Team members for information about TBI or the special education process, to attend IEP meetings, and to offer guidance with specific educational questions. Training for Team members focuses on understanding the confusion and grief experienced by the parents of these students, and on the importance of involving parents in the educational planning for their child. Further, having parents as members of the Team ensures the parent-to-parent connection that can be so helpful, particularly during difficult transition times.

- Raises awareness of TBI. The Team model more accurately reflects the incidence and impact of TBI on schools than does the previous service delivery model. Team members based in communities help create an awareness of the lasting impact of brain injuries and the number of students affected. As awareness increases, educators often identify other struggling students whose academic and/or behavioral challenges can be linked, at least in part, to documented traumatic brain injuries in their past.

- Allows for widespread dissemination of TBI materials. With the use of the Team model, a number of TBI resources (e.g., school re-entry checklists, positive behavior support protocols, manuals with suggested teaching strategies, case study videotapes) have been developed to aid school personnel in serving students with TBI. Team members regularly disseminate these materials to local school personnel serving students with TBI.

- Augments state efforts to collect accurate data on this population and its needs. Feedback from Team members around the state – for example, on the numbers of students served, their specific needs, and the challenges to providing appropriate education services – provides an effective vehicle for states to document population growth and complexity, and to guide state efforts to improve supports and services for these students and the educators who serve them.

3.2. Challenges to model implementation and effectiveness

Although state education agencies recognize the advantages of the Consulting Team model, several challenges inherent in the education system present barriers to model implementation and effectiveness:

- Systematic evaluation of Team model. Although the Team model appears to be effective in training Team members to be consultants in childhood TBI, in no state has there been a systematic evaluation of the impact of the Team model on student outcomes. This lack of empirical support limits the degree to which the model can be adopted by other states. Federal and state research and evaluation funds are needed to collect student outcome and other evaluation data in order to test the efficacy of the Team model.

- Release time for training and consultation. Team members are, in most cases, busy professionals with case-loads and class sizes that are steadily increasing as resources decline. Under these conditions, even the most supportive districts may hesitate to release Team members to consult in another district. States try to address this problem by providing sufficient resources to hire substitutes to cover Team members’ classes or, in the case of therapists and school psychologists, by compensating Team members for completing some of their work tasks outside of their regular work/contract hours. A number of districts in Oregon, recognizing the benefits to the district of having a local staff person trained and serving on the Team, have supported their staff members’ out-of-district consultation work through release time and covering travel costs.

- Wide geographic distribution of Team members. The more established Teams in Iowa and Kansas have been recruiting and training Team members for a number of years. Yet even in these states, and especially in Oregon where the model is newer, providing adequate coverage across all communities is challenging. Educators from remote areas may find it difficult to attend trainings, and bringing trained Team members into these remote communities to provide consultation and/or mentoring support requires significant additional travel costs and time. In Iowa, recent surveys suggest that providing training through the statewide telecommunication system is an appropriate alternative, as it not only reduces travel and registration costs, but
makes it more feasible for educators to attend because of the reduced amount of time involved. As technology becomes more advanced, geographic distance is likely to become less of an obstacle to effective Team operations.

- Funding on-going training for Team members.
  The effectiveness and longevity of state TBI Teams depend on on-going training and support or that is jeopardized by current state budget crises. Although the model is highly cost effective, requiring funds only for coordination, training, and release time for basic operation, sufficient funding is necessary to keep Team members’ knowledge current and to promote Team collegiality. In Kansas, Oregon and Iowa, model success has been due in large part to allocation by the respective Departments of Education of continuous funding for ongoing staff development opportunities and related support to members of the Team. Further, the State Departments of Education in both Kansas and Iowa have maintained a fulltime grant-funded position to coordinate training activities and to provide technical assistance and consultation to Team members.

4. Conclusion

Clearly, the needs of students with TBI will be addressed most effectively when pre-service training for educators includes TBI [52]. Educators who do receive training in childhood TBI are much more likely to feel prepared to deal with these students [16]. Until training in TBI is more fully integrated into university pre-service training programs, however, the provision of on-going, quality, research-based, and site-specific support and training for educators in the field is even more essential [7].

The “hands-on” approach used in this model, both in the training program for members of the Team and in the type of consultation provided by Team members, is uniquely suited to address the day-to-day challenges faced by students, teachers, and parents. Both the consultants who provide initial training for the Team and the members of the Team who ultimately consult with school personnel have extensive experience working in schools with children and teachers. This practical, on-site, problem-solving approach is of critical importance in providing support and training for educators working with students with TBI, particularly because these students often present such unique and confusing learning and behavioral profiles.

Compared with alternative service delivery models for students with TBI e.g., using a single Department of Education consultant to provide services statewide; hiring in-state or out-of-state consultants from educational or medical settings on a case-by-case basis – the TBI Team model appears to be a cost effective and efficient approach. The sensitivity and flexibility incorporated into the model make it ideally suited to outreach activities in states that have different administrative constraints, cultural norms and expectations, and are at different stages of training personnel to serve students with TBI. Oregon’s experiences provide an excellent example of how a state can adapt the components of the model to accommodate state and local school cultures. Currently, through federal support, TBI Teams are being recruited and trained in Arizona and Tennessee. These projects will provide additional information on ways to adapt and implement the Team model.

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