State of Connecticut
GENERAL ASSEMBLY

Commission on Children

Traumatic Brain Injury in Children
Connecticut's Silent Epidemic

June 22, 2010



Traumatic brain injury (TBI) is a major health problem that disproportionately affects young people. It is the leading cause of death for children. TBI is often referred to as the "silent epidemic" because the complications, such as changes affecting thinking, language or emotions, may not be readily apparent.

The "silent epidemic" slogan is particularly apt in Connecticut, where inadequate resources, awareness and identification of TBI lead to preventable injury and suffering to children and their families.

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"If some infectious disease came along that affected children in the proportion that injuries do, there would be a huge public outcry and we would be told to spare no expense to find a cure and be quick about it."

Surgeon General C. Everett Koop before a U.S. Senate committee, 1989

18-20 Trinity St. Hartford, CT 06106 Phone: (860) 240-0290 Fax: (860) 240-0248 Website: cga.ct.gov/coc

Introduction

On June 10, 2010, state and community leaders met at the Connecticut State Capitol complex to assess the incidence of traumatic brain injury (TBI) among children and propose solutions. They heard about the "silent epidemic" of TBI – how children are the age group most affected by TBI but that many children with TBI are unidentified and underserved. Parents and professionals – like the general public – often lack awareness of the impact of TBI.

Forum participants included parents, legislators and representatives from the fields of social services, education, health and child welfare.[1] They examined screening and treatment of childhood TBI, pediatric and school practices, sports and child abuse-related injuries, family support and financing strategies.[2]

Speakers at the forum expressed a commitment to work together in a new state-level effort to strengthen Connecticut's response to TBI in children – from prevention to identification to treatment.

This paper provides a brief overview of the prevalence of TBI, identifies strategic issues considered at the forum, and proposes next steps for the new state-level effort. It is not an action plan, but rather an intermediate summary of areas of concern that the planned working group described later in this document may wish to explore further as it determines specific actions.

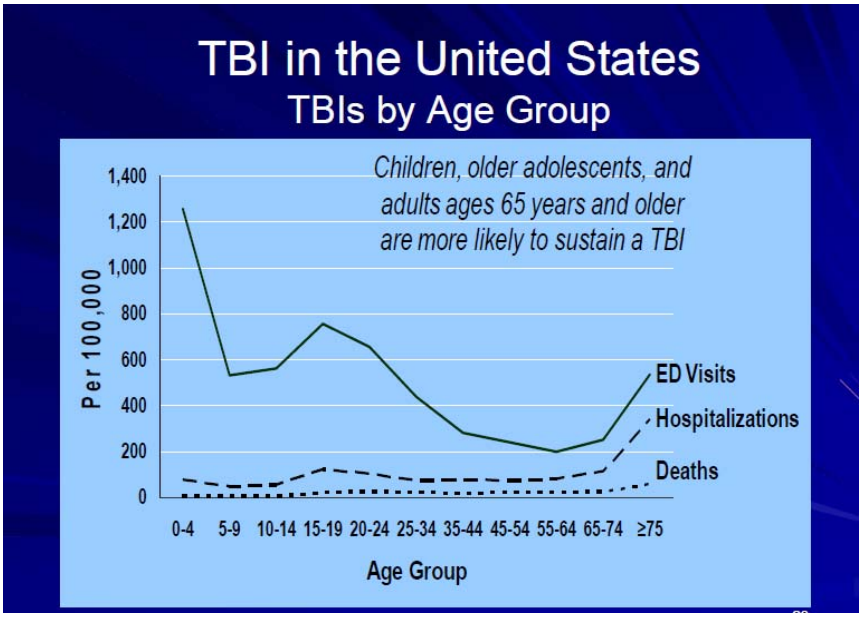
TBI in Children: A Statistical Portrait

Traumatic brain injury (TBI) is a form of acquired brain injury that occurs when a sudden trauma causes damage to the brain. It can result when the head suddenly and violently hits an object, or when an object pierces the skull and enters brain tissue.[3] TBI is a biological event within the brain that may be characterized by tissue damage, bleeding, swelling, diffuse axonal injury, cytotoxic cascade and neurotransmitter disturbances.[4] A large majority of TBIs are classified as mild (85%). Even a mild TBI can produce severe disability, though it can be difficult to diagnose. It is common for neuroimaging not to reveal evidence of the injury.[5]

[1] See Appendix for a list of participants in the June 10, 2010 forum.
[2] The forum can be viewed and related materials are available at http://www.cga.ct.gov/coc/tbi.htm.
[3] National Institute of Neurological Disorders and Stroke of National Institutes of Health www.ninds.nih.gov/disorders/tbi/tbi.htm (as of June 10, 2010).
[4] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[5] National Academy of Neuropsychology, *Archives of Clinical Neuropsychology* 24, 3-10, 2009; Wood, 2004. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.

TBI plays a significant role in many injuries. It is the leading cause of death for children[6] and is a contributing factor to a third (30.5 percent) of all injury-related deaths in the United States.[7] Each year, more than half a million U.S. children (0-14 years) – and nearly 9000 Connecticut children under age 20 – experience a TBI that results in an emergency room visit, hospitalization or death.[8] Over a recent three-year period (2005-2007), Connecticut children experienced 88 deaths, 1,445 inpatient hospitalizations and 24,472 emergency department visits related to traumatic brain injuries.[9]

Children are at particularly high risk of a traumatic brain injury. Very young children (0-4 years) had the highest U.S. rate of TBI-related emergency department visits of any age group in 2002-2006, followed by older adolescents (15-19).[10] Connecticut children under 1 year of age had the highest rate of emergency department visits in 2005-2007 of any age group; Connecticut children in general had a significantly higher rate than adults under 80 years.[11]



Source: Cantor, J.B. *Challenges of Addressing TBI in Children*, 2010.[12]

Although complete injury data are not yet available from the Department of Public Health for 2005-2007,[13] a review of 2000-2004 data indicates that the highest rates of TBI-related injuries

[6] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[7] Faul M, Xu L, Wald MM, Coronado VG. *Traumatic Brain Injury in the United States: Emergency Department Visits, Hospitalizations and Deaths 2002-2006*, 7. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2010.
[8] Faul et al., 15.
[9] Connecticut Department of Public Health, Injury Prevention Program. *Traumatic Brain Injury: Deaths, Hospitalizations and Emergency Department Visits, Connecticut Residents, 2005-2007* (Word document); June 10, 2010.
[10] Faul et al., 15.
[11] Connecticut Department of Public Health, Injury Prevention Program. *Traumatic Brain Injury: Deaths, Hospitalizations and Emergency Department Visits, Connecticut Residents, 2005-2007* (PowerPoint), 12; undated.
[12] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[13] E-mail from Connecticut Department of Public Health staff to Connecticut Commission on Children, June 2010, indicating that Excel table data for 2005-2007 were not yet available.

across all age categories were among toddlers <1 year (1,331.6 per 100,000 population), followed by children 1 – 4 years (1,087.7 per 100,000 population).[14]

The Connecticut Department of Public Health prepared a special report on TBI data in 2005-2007 for the June 10 forum. Each year, on average, 29 Connecticut children and adolescents (birth to 19 years) die from a TBI. There are approximately 480 hospitalizations and 8,100 emergency department (ED) visits due to TBI among the birth -19 age group.[15]

According to the table below, the rates for Connecticut children under age 5 – and particularly for toddlers under age 1 – were much higher than other children in all three categories of deaths, hospitalizations and emergency department visits for the period of 2005-2007. However, there is a dramatic increase in each category as children become teenagers: the death rate for 15-19 year-olds (7.6 per 100,000) – primarily from motor vehicle crashes – approaches but does not equal the infant death rate (8.4 per 100,000).

Connecticut TBI Deaths, Hospitalizations and Emergency Department visits by Age Group, 2005-2007

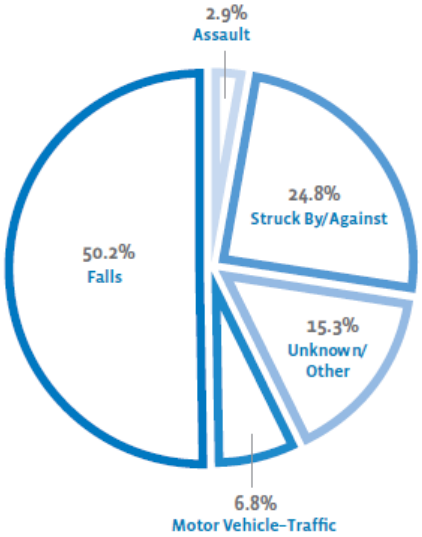
Age Group	# TBI Deaths	Rate*	# TBI Hospitalizations	Rate*	# ED Visits	Rate*
< 1 year	10	8.4	175	146.7	2056	1723.7
1-4 yrs	12	2.4	181	35.8	6379	1261.7
5-9 yrs	3	0.5	153	23.0	3901	585.6
10-14 yrs	6	0.8	275	37.9	5028	692.1
15-19 yrs	57	7.6	661	88.3	7108	949.7
All Ages	1,081	10.3	7,956	75.6	56,548	537.7

* Age Specific Rate per 100,000 population
Source: Connecticut Department of Public Health, June 10, 2010[16]

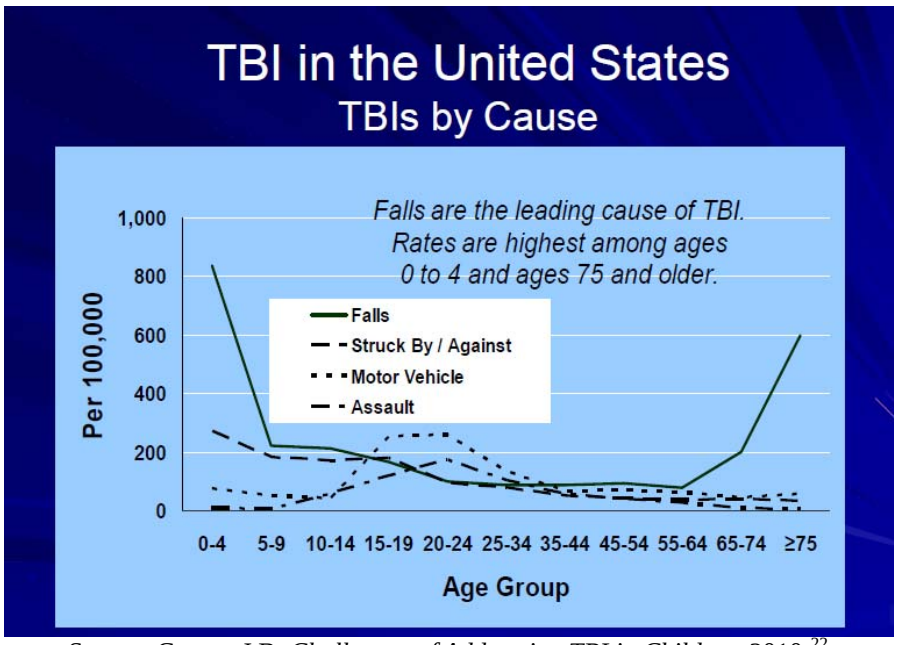
As notable as these data are, statistics underestimate the enormity of the TBI problem.[17] They include only those children who die, are hospitalized or who receive care in an emergency room.[18] An unknown number are not included in TBI statistics because they are not treated in hospitals, if they receive treatment at all.[19]

[14] Connecticut Department of Public Health, Injury Prevention Program. *Injury-related emergency department visits in Connecticut: Connecticut residents, 2000-2004*, 42; 2008. Online at http://www.ct.gov/dph/lib/dph/hems/injury/ed_databook/final_ed_databook_051508.pdf as of June 20, 2010.
[15] Connecticut Department of Public Health, Injury Prevention Program. *Traumatic Brain Injury: Deaths, Hospitalizations and Emergency Department Visits, Connecticut Residents, 2005-2007* (Word document); June 10, 2010.
[16] Connecticut Department of Public Health, Injury Prevention Program. *Traumatic Brain Injury: Deaths, Hospitalizations and Emergency Department Visits, Connecticut Residents, 2005-2007* (Word document); June 10, 2010.
[17] National Center for Injury Prevention and Control, 2003. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[18] Langlois, 2001. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[19] Bryan, 1995; Carney & Schoebrodt, 1994. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.

Diverse causes are involved in a TBI: falls account for half (50.2 percent) of TBIs among U.S. children under age 15, followed by being struck (e.g. colliding with a moving or stationary object) (24.8 percent), unknown/other (15.3 percent), motor vehicle/traffic (6.8 percent) and assault (2.9 percent).[20]



Estimated Average Percentage of Annual Traumatic Brain Injury-Combined Emergency Department Visits, Hospitalizations, and Deaths Among Children 0 to 14 Years, by External Cause, United States, 2002-2006[21]

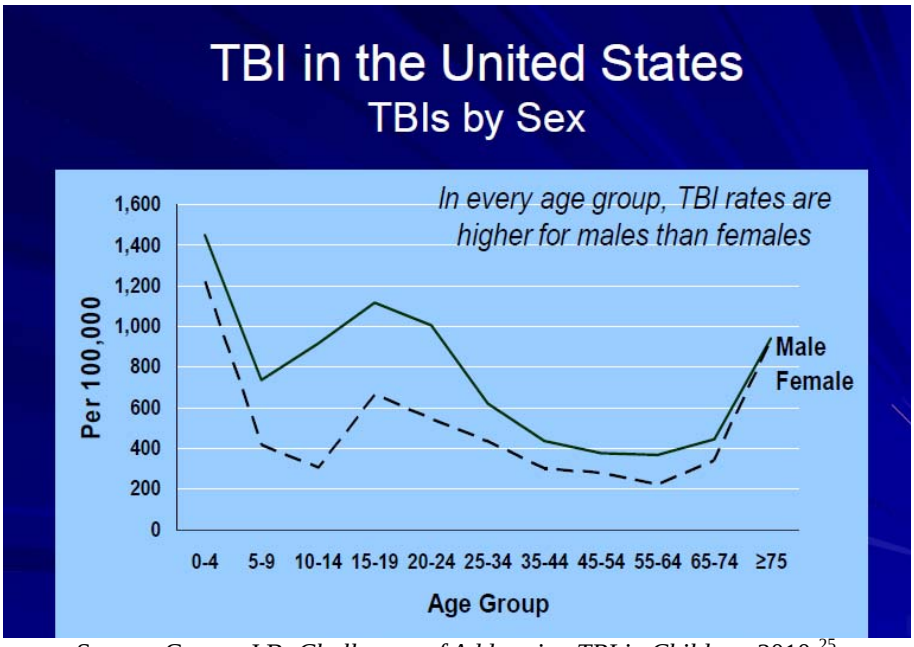


Source: Cantor, J.B. *Challenges of Addressing TBI in Children*, 2010.[22]

Causes vary by age. In Connecticut, the leading cause of TBI-related deaths for children under the age of 5 years is homicide (41 percent); but the leading cause among children aged 5-19 years is motor vehicle crashes (53 percent). Falls cause the majority (60 percent) of hospitalizations among Connecticut children age 10 years and younger. Motor vehicle crashes (43 percent) are the leading cause for TBI hospitalizations among 10-19 year-olds in the state (2005-2007 data).[23]

[20] Faul et al., 19.
[21] Faul et al., 19.
[22] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[23] Connecticut Department of Public Health, Injury Prevention Program. *Traumatic Brain Injury: Deaths, Hospitalizations and Emergency Department Visits, Connecticut Residents, 2005-2007* (Word document); June 10, 2010.

The impact of TBIs varies by gender. Among 15-19 year olds in Connecticut, males are four times more likely to die from a TBI than females. Among children and adolescents from birth to age 19, males are more likely to be hospitalized than females.[24]



Source: Cantor, J.B. *Challenges of Addressing TBI in Children*, 2010.[25]

Connecticut persons of Hispanic background have the highest TBI death and hospitalization rates. TBI also affects Non-Hispanic Whites and Non-Hispanic Blacks at a fairly comparable level, while those of Asian background experience TBI at a much less frequent rate. Hispanics in Connecticut have the highest TBI-related death rate (9.9/100,000) followed by Non-Hispanic Whites (9.3), Non-Hispanic Blacks (9.2) and Asian/Pacific Islanders (3.5). Hispanics have the highest rate of TBI-related Hospitalization in the state (81.2/100,000) followed by Non-Hispanic Blacks (80.9), Non-Hispanic Whites (65.4) and Asian/Pacific Islanders (21.2). [26] As observed at the June 10 forum by Rasy Mar of the University of Connecticut Health Center, Connecticut policymakers need more data broken down by race and ethnicity, in order to better understand the impact of TBI on various groups.

Childhood TBI threatens children's academic performance, social and emotional development, identity formation, and the chance of being a happy, productive member of society.[27] With injuries earlier in life, the prognosis is worse and recovery is slower.[28]

[24] Connecticut Department of Public Health, Injury Prevention Program. *Traumatic Brain Injury: Deaths, Hospitalizations and Emergency Department Visits, Connecticut Residents, 2005-2007* (Word document); June 10, 2010.
[25] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[26] Connecticut Department of Public Health, Injury Prevention Program. *Traumatic Brain Injury: Deaths, Hospitalizations and Emergency Department Visits, Connecticut Residents, 2005-2007* (Word document); June 10, 2010.
[27] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[28] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.

Brain injuries carry significant personal and societal costs. Survivors of TBI are often left with significant cognitive, behavioral, and communicative disabilities, and some patients develop long-term medical complications, such as epilepsy.[29] At least 5.3 million Americans have a long-term or lifelong need for help to perform activities of daily living as a result of a TBI. According to one study, about 40 percent of those hospitalized with a TBI had at least one unmet need for services – such as improving memory or problem solving – one year after their injury.[30]

Traumatic brain injuries result in an estimated $60 billion annual loss in the U.S. in direct medical costs and indirect costs such as lost productivity.[31] Those TBIs that require hospitalization cost the U.S. over $56 billion each year in decreased tax revenues and increased welfare costs when injured persons or their caregivers are unable to return to work.[32]

Connecticut hospitalization charges related to TBI for all ages totaled $312.9 million in 2000-2004.[33] Direct inpatient TBI-related hospital charges for children under age 20 in Connecticut exceeded $46 million during this five-year period.[34]

[29] National Institute of Neurological Disorders and Stroke of the National Institutes of Health, *NINDS Traumatic Brain Injury Information Page*, http://www.ninds.nih.gov/disorders/tbi/tbi.htm.
[30] Brain Injury Association of Colorado. *Brain Injury Fact & Figures.* Online at www.biacolorado.org/education/facts (as of June 10 2010).
[31] Finkelstein E, Corso P, Miller T, et al. *The Incidence and Economic Burden of Injuries in the United States.* New York, NY: Oxford University Press; 2006.
[32] Centers for Disease Control and Prevention, 2001. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[33] Connecticut Department of Public Health. Online at www.ct.gov/dph/lib/dph/hems/injury/databook/tbi_hospi.pdf (as of June 10, 2010).
[34] This figure does not include physician fees, rehabilitation or long-term care costs. Connecticut Department of Public Health, Injury Prevention Program. *Traumatic Brain Injury: Deaths, Hospitalizations and Emergency Department Visits, Connecticut Residents, 2005-2007* (Word document); June 10, 2010.

Leading Causes of TBI and Numbers of Deaths, Hospitalizations and ED Visits by Age Group, 2005 – 2007[35]

Age Group	Deaths	Hospitalizations	ED Visits
<1 year	Homicide 5	Falls 133	Falls 1,735
	Other/unspecified 3	Other/Unspecified 25	Struck By/against* 223
	MV Traffic and Transport/Other 1 each	MV Traffic 7	Other/unspecified 52
	Total = 10 deaths	Total = 175 hospital visits	Total = 2,056 ED visits
1-4 years	Homicide 4	Falls 108	Falls 4,548
	MV Traffic 4	MV Traffic 27	Struck by/against* 1,379
	Transport/other * and Falls 1 each	Struck by/against* 24	MV Traffic 159
	Total = 12 deaths	Total = 181 hospital visits	Total =6,379 ED visits
5-9 years	MV Traffic 2	Falls 64	Falls 1,884
	Falls 1	MV Traffic 40	Struck by/against * 1,310
		Struck by/against* 21	Transport + Cyclist * 274
	Total = 3 deaths	Total = 153 hospital visits	Total = 3,901 ED visits
10-14 years	MV Traffic 3	MV Traffic 76	Struck by/against * 2,140
	Homicide, Suicide, and Transport/Other* 1 each	Falls 75	Falls 1,619
		Transport +cyclist * 65	Transport + Cyclist * 471
	Total = 6 deaths	Total = 275 hospital visits	Total = 5,028 ED visits
15-19 years	MV Traffic 30	MV Traffic 329	Struck by/against* 2,412
	Homicide 13	Assault/ Suicide Attempt 87	Falls 1,493
	Suicide 6	Falls 81	MV Traffic 1,489
	Total = 57 deaths	Total = 661 hospital visits	Total = 7,108 ED visits
All Ages	Falls 374	Falls 3,558	Falls 28,894
	Suicide 230	Motor Vehicle 2,156	Struck by/against* 12,191
	Motor Vehicle 200	Missing E-codes 859	Motor Vehicle Traffic 8,056
	Total = 1,081 deaths	Total = 7,956 hospital visits	Total = 56,5548 ED visits

* Struck by/against = unintentional striking by or against an object or person, includes sports and recreational injuries. The categories "Transport/Other" and "Transport + Cyclist" include pedestrians hit by a MV off road (i.e. in parking lots and driveways), MV crashes occurring off roadways and bicycle injuries not involving a motor vehicle.

[35] Connecticut Department of Public Health, Injury Prevention Program. *Traumatic Brain Injury: Deaths, Hospitalizations and Emergency Department Visits, Connecticut Residents, 2005-2007* (Word document); June 10, 2010.

Issues for Consideration

At the forum held June 10, 2010, Elaine Zimmerman, executive director of the Connecticut Commission on Children, announced plans to continue the work of forum participants in a working group to meet later in 2010. State and community leaders will be invited to address TBI issues identified at the forum and implement strategies to improve Connecticut's response to Traumatic Brain Injury in children.

This discussion profiles issues identified at the forum: it probes some of the challenges, resources and opportunities for consideration by the working group.

Issues for the working group to consider include the following:

- *public awareness*
- *prevention*
- *identification & underreporting*
- *advocacy and planning for students*
- *professional development*
- *young children*
- *family support*
- *health insurance & pediatric care*
- *student athletes and sports-related injuries*
- *coordination*
- *results based accountability*
- *financing*

One valuable resource to the working group will be the *Connecticut Statewide TBI Action Plan*. Although the action plan does not focus on children to any great extent, it offers a introductory roadmap for Connecticut to create an integrated coordinated system of TBI services and implement improvements in TBI policies and programs. It also offers a useful summary of needs and resource assessment, a provider questionnaire, an individual needs assessment, and a brain injury screening questionnaire. The working group should review the statewide TBI action plan and the state's progress toward achieving its goals as it identifies next steps on the specific issue of TBI in children. Efforts undertaken on TBI in children should be coordinated with the overall plan.

This paper began by citing an oft-told slogan, that TBI is a "silent epidemic". Many people do not know the TBI signs to look for when a child is injured or what steps to take.

The State of Connecticut has taken many steps to get the word out about TBI, but it has not led a comprehensive public awareness campaign on the topic. Such a campaign should deliver a consistent broad-based message to the public that cuts across causes and makes TBI injuries visible – from accidental falls to motor vehicle crashes to Shaken Baby incidents – in order to emphasize the risk of brain injury in a growing brain and the need to protect children from harm.

In addition to educating families, a statewide public awareness campaign would draw professional attention to the issue. This could have a positive impact on how education and health providers prioritize the issue.

Prevention

From increasing public awareness to working with families at risk of child abuse and teens about to drive for the first time, prevention is the preeminent strategy to reduce the incidence and cost of TBI. The question is what steps are the most cost-effective prevention measures to take.

Unlike most neurological disorders, head injuries can be prevented. The Centers for Disease Control and Prevention (CDC) have issued safety tips for reducing the risk of suffering a TBI. Examples include: [36]

- Wear a seatbelt every time you drive or ride in a car.
- Buckle your child into a child safety seat, booster seat, or seatbelt (depending on the child's age) every time the child rides in a car.
- Wear a helmet and make sure your children wear helmets during appropriate activities.
    - riding a bike or motorcycle;
    - playing a contact sport such as football or ice hockey;
    - using in-line skates or riding a skateboard;
    - batting and running bases in baseball or softball;
    - riding a horse;
    - skiing or snowboarding.
- Keep firearms and bullets stored in a locked cabinet when not in use.
- Avoid falls by
    - using a step-stool with a grab bar to reach objects on high shelves;
    - installing handrails on stairways;
    - installing window guards to keep young children from falling out of open windows;
    - using safety gates at the top and bottom of stairs when young children are around.
    - Make sure the surface on your child's playground is made of shock-absorbing material (e.g., hardwood mulch, sand).

In addition to focusing on primary prevention to reduce occurrence of TBIs, there is also a medical component to prevention. When a TBI occurs, immediate medical attention is especially critical: little can be done to reverse the initial brain damage caused by trauma, so medical personnel attempt to stabilize an individual with TBI and focus on preventing further injury.[37]

[36] National Institute of Neurological Disorders and Stroke of the National Institutes of Health, *Traumatic Brain Injury: Hope Through Research*, www.ninds.nih.gov/disorders/tbi/detail_tbi.htm.
[37] National Institute of Neurological Disorders and Stroke of National Institutes of Health www.ninds.nih.gov/disorders/tbi/tbi.htm (as of June 10, 2010).

Screening for TBIs has an important preventive value, and it is important to maximize Connecticut's performance in screening childhood TBIs. In other words, inadequate efforts to identify and treat TBIs in children fail to prevent further injury and the developmental problems that can plague children with unidentified TBIs.

Prevention also involves legislative opportunities to regulate a range of child safety issues – playgrounds, window guards, bicycle helmets, sports equipment and rules and others. Some of this can be classified as environmental modification – passive intervention that requires no conscious behavioral changes on the part of the child.

Identification & underreporting

At the June 10 forum, a parent told a story of her daughter's brain injury. The girl was hit by a falling tree in her backyard at age three. Because of a general lack of awareness of TBI on the part of the mother, and due to a somewhat different diagnosis by doctors, the mother only became aware one year later that her daughter has suffered a TBI when she attended a forum on the topic. Five years after the accident, the child's school refuses to classify the injury as a TBI. The child receives no formal accommodations or modifications to the regular education program; because she achieves within the "average range" for her age group, none of the tutors or other private services she relies on are officially supported or recognized by the school.

This story raises the possibility that schools and health providers underreport the number of TBIs. Statistical evidence suggests that many more children may have a TBI than have been reported in the statistics listed above. Inadequate screening and widespread misidentification of TBIs could mean that thousands of Connecticut schoolchildren are having trouble in school due to a TBI, but are not receiving the medical care and educational assistance that they need.

Many TBIs in children have not been identified or assessed or have been misclassified, and are not receiving appropriate educational services.[38] At the June 10 forum, Dr. Joshua Cantor of the Mount Sinai School of Medicine called this a "huge" national issue. He said that the nation needs "to do a better job of identifying" TBI.

One sign of underreporting of TBIs is that statistics strongly suggest that many more children's TBIs should have been identified. Each year in the United States, 630,000 brain injuries occur in children under 20 years of age.[39] Assuming that approximately 7 percent of these children have a long-term disability, then approximately 44,000 children in the U.S. – including 500 children in Connecticut – likely

[38] Brain Injury Association of America. A call to action for children and adolescents with traumatic brain injuries. *The Challenge* (Winter 2008).
[39] Centers for Disease Control and Prevention data, 2010. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.

become disabled by TBI every year.[40] However, only 24,446 children are classified with TBI under the Individuals with Disabilities Education Act (IDEA), and this number includes all children served at a point in time, not just those who had been classified in one particular year.[41]

Based on the IDEA data, it would appear that thousands of Connecticut students are disabled by a TBI. In late June 2010, the State Department of Education will report the number of students statewide who have a TBI. A report from a previous year pegged the statewide number at 122.[42]

Another approach to estimating TBI prevalence also suggests that Connecticut may be underreporting the number of TBIs among children. According to the Centers for Disease Control and Prevention, at least two percent of the U.S. population has a TBI-related disability.[43] Considering that approximately 570,000 students attend Connecticut public schools,[44] applying the national estimate of TBI-related disabilities to our state should bring the number Connecticut schoolchildren with a TBI-related disability closer to 11,400 (which equals two percent of student enrollment) rather than only 122. Older persons are more likely to have a TBI-related disability because they have lived more years and the injury may have occurred at any point during their lives, so our rough estimate of 11,400 may need to be lowered a bit. Even if only 5000 Connecticut schoolchildren have a TBI-related disability, the 122 figure reported by the State Department of Education appears to be surprisingly low, raising the possibility that Connecticut health providers and schools are unaware of thousands of schoolchildren with a TBI and that their educational needs may not be properly addressed.

Children who have experienced a traumatic brain injury cannot be properly helped unless the TBI has been identified. Children with TBI who remain unidentified or misidentified are likely to fail or fall behind in school.[45] A lack of identification may lead to misdiagnosis, inappropriate treatment, a mismatch between treatment and cognitive impairment, academic and vocational failure, increased psychopathology and reduced quality of life.[46] Children with TBI benefit from interventions and instructional practices designed for them or adapted for them.[47]

Identification of TBI in children is falling short for several reasons, according to leading researchers: (1) poor transition services between hospitals and schools; (2) ignorance among health providers, social workers, educators and school psychologists about the potential consequences of TBI and how to manage them; (3) lack of communication between service providers; (4) reliance on the family to report brain injury to the school, physician and other

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[40] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010. This data projection relies on Centers for Disease Control and Prevention data as shown on slide 24 of Dr. Cantor's presentation.

[41] Data Accountability Center, Fall 2006 data. Online at http://www.ideadata.org/arc_toc8.asp#partbCC (as of June 10, 2010).

[42] Data provided by Bureau of Special Education, State Department of Education to Sylvia Gafford-Alexander of Connecticut Department of Social Services.

[43] Centers for Disease Control and Prevention, 2010. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.

[44] State Department of Education. *Connecticut public school enrollment data, 2007-08.* Online at http://www.csde.state.ct.us/public/cedar/edfacts/enrollment/public.htm (as of June 18, 2010).

[45] D'Amato & Rothlisberg, 1996. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.

[46] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.

[47] Braga et al., 2005; Feeney & Ylvisaker, 2003; Glang et al., 2008; Mastropieri , 1988; Ylvisaker et al., 2005; Ylvisaker & Feeney, 2009. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.

relevant parties; and (5) delayed presentation of problems, which can take years to become evident.[48]

One positive development in Connecticut is that TBI-related questions are now included on the State Department of Education's Health Assessment Record (HAR) that pediatricians fill out at least three times during the educational career of Connecticut students (http://www.sde.ct.gov/sde/lib/sde/PDF/deps/student/health/HAR.pdf). Parents are asked to report whether a child has had a concussion or has experienced fainting or blacking out. Pediatricians are prompted to report whether the student's neurologic health is normal or abnormal.

The working group should consider whether the HAR questions are sufficient to obtain a picture of TBI among Connecticut's children, and to ensure that schools and pediatricians respond appropriately to a history of brain injury.

Advocacy and planning for students

For schoolchildren who have been identified as having a TBI – and for those who have an unidentified TBI – the resultant problems with thinking may affect their attention, concentration, memory, executive functioning, judgment and processing speed. TBI also may result in emotional and behavioral problems, including impulsivity and poor self-control, agitation, apathy, depression, anxiety and isolation. Finally, TBI may cause physical problems such as pain, sleep disorders, fatigue, dizziness and seizures. All of these problems may affect students' ability to succeed in school and cause other functional problems in their lives. [49]

Effective advocacy and planning can help ensure that their education needs are met. It is important to examine the roles of school nurses, special education providers, and family support advocates in addressing students' needs.

According to the State Department of Education, the current Connecticut school response to TBI centers initially around a determination as to whether a student needs a plan developed. Collaboration and communication by school district personnel focus on needed accommodations and modifications to the student's school life. If those targeted interventions do not work, some students may be eligible for special education, with TBI being one of the eligible categories under IDEA. Special education is only available for private school students for limited services and depending upon individual circumstances.[50]

The Centers for Disease Control and Prevention make available useful materials for teachers, counselors, school nurses and parents on concussions and other TBI-related issues. The working group may wish to assess how these CDC materials are being used, or could be used, in Connecticut.[51]

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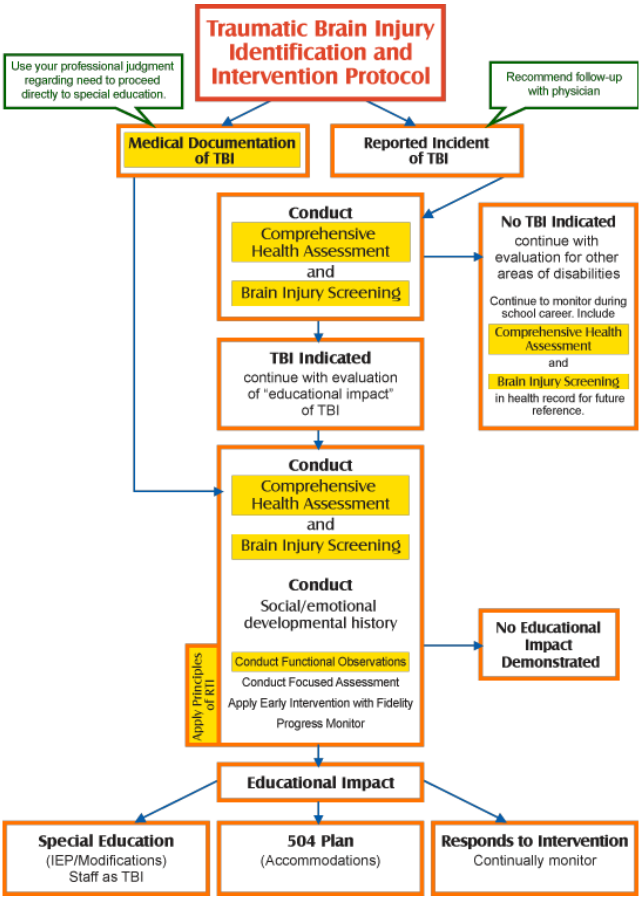
[48] Glang et al., 2008. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[49] Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[50] Harvey. S. Connecticut State Department of Education. Remarks during State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[51] Centers for Disease Control. Online at http://www.cdc.gov/concussion/HeadsUp/schools.html (as of June 20, 2010).

Well-regarded Colorado initiatives, *BrainSTARS* and *TBI Action Teams*, offer promising programmatic options for Connecticut. BrainSTARS is a program that provides education, information and consultation related to brain injury (traumatic and acquired) for families and school personnel. The BrainSTARS Manual offers a practical guide to interventions and accommodations for learning and behavior challenges children can display following acquired brain injury. On-site consultation and work with parent-school teams can also be provided.[52]

Through TBI Action Teams, schools have a team in place for each child with a TBI. The team includes special education staff, a social worker, a family member, and a speech pathologist. One option would be to require schools to formalize a similar approach in our state.

In Colorado, schools use a very structured protocol to identify and intervene in each potential case of TBI.[53] The working group should compare Colorado and Connecticut's protocols to determine if the Colorado model offers an opportunity to strengthen school response.



Professional development

A key strategy to address TBI is ongoing education of professionals – from doctors and other health care providers to school nurses, teachers, athletic coaches and others who interact with children. The low level of awareness about TBI is not limited to parents. Professionals sometimes are poorly informed about the signs of TBI and the appropriate steps to take.

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[52] The Children's Hospital. *BrainSTARS: strategies for teams and re-education for students with acquired brain injury*. Aurora, CO. Online at http://www.thechildrenshospital.org/conditions/rehab/camps/brainstars.aspx as of June 20, 2010.

[53] Neighbor, J. & McAvoy, K. *TBI and RTI: traumatic brain injury meets response to intervention*, undated. Colorado Traumatic Brain Injury Trust Fund.

Intensive professional development can address this gap and should cover all types of TBI, intentional and unintentional.

Because TBI is not particularly well understood not only by parents but also by professionals, Connecticut needs an educational process and materials. The BrainSTARS manual helps to meet this need in Colorado and would be a strong model for Connecticut. The BrainSTARS manual:

- includes background information about brain injury, child and adolescent development, ways to create positive change, a comprehensive list of problems associated with brain injury, recommended interventions and worksheets;
- reviewed by an advisory board of parents, school personnel and students with brain injury, as well as by a group of national experts; and
- extensively field-tested with parents and school teams and revised to represent current best practices in the education and development of students who have acquired brain injuries.[54]

Through BrainSTARS, Colorado has provided training events and workshops for school personnel, therapists, medical professionals, family members and other members of the community. In-depth training included consultation with school personnel by telephone helpline, classroom observation, telephone conferences, records review and interpretation, Individualized Education Program (IEP) consultation and ongoing in-school consultation.[55]

Tying skills and knowledge regarding TBI to professional licenses – including teachers' and pediatricians' licenses – is an important strategy. In many cases, professionals are already being trained on various issues related to TBI – from Shaken Baby to motor vehicle risks -- but they benefit from learning specific information about TBI.

Tailored education and training efforts on TBI need to be provided to those educators and caregivers who serve young children. Specific audiences such as child care providers, as well as kith and kin providers, must have the tools needed to prevent and respond to TBI in young children.

Young children

The cause of TBI in young children varies from accidental injuries such as the tree falling on the three-year-old girl to motor vehicle crashes to intentional injuries. Connecticut statistics cited above reveal that the leading cause of TBI-related deaths for children under the age of 5 years is homicide.

Regardless of the TBI cause, what is consistent from birth through 5 years of age is that an injury to the brain may significantly impact how the child learns core academic skills, interacts with peers, expresses wishes, wants and emotions, and may shape the child's role in the family.[56]

Because young children may not be able to tell an adult how they feel, parents and caretakers can inspect the child for signs of TBI – ranging from swelling of the scalp or soft spot to excessive

[54] Dise-Lewis et al., 2007. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[55] The Children's Hospital. *BrainSTARS: strategies for teams and re-education for students with acquired brain injury*. Aurora, CO. Online at http://www.thechildrenshospital.org/conditions/rehab/camps/brainstars.aspx as of June 20, 2010.
[56] Wetherington, C., & Hooper, S. Preschool traumatic brain injury. *Exceptionality* 14:3, 2006.

crying.[57] Parents should be provided written information about TBI from day care providers, pediatricians or other community sources. Questionnaires can also help teach the parent or caregiver what to look for in terms of signs of a TBI.

Due to the relative prevalence of child abuse and neglect, addressing TBI in young children needs to include intensive work to prevent Shaken Baby incidents. Not all forms of TBI can be prevented, but Shaken Baby is fully preventable. It takes three seconds to kill or disable a child by shaking him or her; twenty-five percent of Shaken Babies die.

The number of diagnosed Shaken Baby cases is quite small. According to Karen Foley-Schain of the Children's Trust Fund, there may be as many as 200 children in hospitals who are Shaken Babies but do have full-blown symptoms of Shaken Baby.[58] It is important to expand efforts to convince parents to "take 5" when babies cry. Prevention strategies are inexpensive; they include two-dollar videotapes on Shaken Baby that parents can watch; research indicates that they do watch the tape and share the information.[59]

Connecticut has two Shaken Baby initiatives, one coordinated by the Children's Trust Fund and the other by the Department of Children and Families. It may be advisable to determine whether those initiatives should be consolidated or better coordinated. Perhaps even more important is whether they are reaching the full spectrum of families with effective preventive messages and assistance.

In addition, the Connecticut Fatherhood Initiative has taken an active interest in delivering TBI-relevant information to fathers, concerning both unintentional and intentional injuries resulting in TBI. It is important for all messages, including Shaken Baby messages, to be delivered consistently across programs and disciplines. To that end, the Shaken Baby initiatives each report that they are working with the Connecticut Fatherhood Initiative.[60]. It is important to expand these efforts and look for new partners, such as law enforcement and sports gyms, to help get the message to as many parents as possible.

Family support

TBI is not just a medical issue – it affects every aspect of a person's life, so systems need to provide family-centered services and supports. For children, a TBI will impact their school life but also their life at home and in the community. Service systems need to be flexible enough to meet the unique needs of each child and family.[61]

Providing support to families of children with a TBI is an important element in the response to TBI in children. Often the goal is to ensure a coordinated home and community-based services, as well as to provide ongoing education to parents so they can be effective advocates. The

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[57] Center for Pediatric Rehabilitation, Gillette Children's Specialty Healthcare. *Understanding mild to moderate traumatic brain injuries*, 2008.
[58] Foley-Schain, K. Children's Trust Fund, Connecticut Department of Social Services. Remarks during State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[59] Foley-Schain, K. Children's Trust Fund, Connecticut Department of Social Services. Remarks during State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[60] Foley-Schain, K (Children's Trust Fund, Connecticut Department of Social Services), & Kwalwasser, W. (Connecticut Department of Children and Families). Remarks during State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[61] Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services. *Traumatic brain injury (TBI) program*. Online at http://mchb.hrsa.gov/programs/tbi.htm (as of June 20, 2010).

Connecticut Family Support Council has expertise concerning what families need to support children with disabilities through a complicated system of medical and education services and funding resources. The Connecticut Fatherhood Initiative provides education and support to fathers.

The *TBI Action Team* approach, described above, would involve a family member on a school-based team. However, such parents may need additional help from sources such as the Office of Protection and Advocacy for Persons with Disabilities. Particularly when school staff offer a different view than a parent, that parent may need a family support team in the background to help them advocate effectively at school for their child.

At the June 10 forum, Billye Simmers of the Connecticut Department of Mental Health and Addiction Services shared information about a national model in resource facilitation in Iowa that helps families navigate those systems. The Iowa Brain Injury Resource Network (IBIRN) is an information and support system created to begin meeting the needs of Iowa families experiencing brain injury and the providers that assist them. The IBIRN offers multiple supports to individuals and families experiencing brain injury. These include local support groups, a peer-to-peer mentor program called the Iowa Brain Injury Support Network, and a professional support program called Neuro-Resource Facilitation.

An initiative to address children with TBI in New South Wales, Australia features referral networks, problem-solving consultation and case management for schools and families implemented in school and home settings, occasional direct therapy services, sibling support, "Fact Packs" – resources given to families, schools and other stakeholders – and other program features. These services are provided free to families.[62]

The working group may consider how elements of the Iowa model and the New South Wales kids team could be incorporated into the Connecticut family support and school systems.

As of June 22, 2010, the Connecticut Family Support Council is finalizing a brochure to reach out to families of children with disabilities to educate them on TBI. The draft brochure informs families that children with special health care needs or disabilities may be at greater risk for traumatic brain injuries because (1) they are at increased risk for falls, (2) they are at greater risk of physical abuse, and (3) they may be victims of bullying and physical assault more often than other children.[63] When the final version of the brochure is distributed, it will be a valuable tool to reach out to that particular segment of parents.

Family support for children with TBI is more important than ever, because medical advances in the past 25 years mean that many children with serious brain injuries are able to live.[64]

Health insurance & pediatric care

Many families lack health insurance that covers needed services for children with a TBI. It is vitally important that health insurance plans cover TBI, given the cost that may occur if a brain injury is not immediately treated, and that all families have access to this health insurance

[62] Ylvisaker et al., 2005. Cited in Cantor, J.B., *Challenges of addressing TBI in children*, 24. Presentation at State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.
[63] Connecticut Family Support Council. *Traumatic brain injury (TBI) in children with disabilities and children with special health care needs*, draft version of June 20, 2010.
[64] Brain Injury Association of America. A call to action for children and adolescents with traumatic brain injuries. *The Challenge* (Winter 2008).

coverage. It is also important for the State to assist families facing TBI-related insurance issues – through the Office of the Healthcare Advocate and other resources. The working group should seek to ensure that ensure that emerging policies such as the SustiNet plan address TBI.

The average pediatric visit is scheduled for 17.5 minutes. According to Dr. Paul Dworkin, Physician-in-Chief of the Connecticut Children's Medical Center, pediatricians face a lengthening list of screening tests and issues to include in each child's visit.[65] One challenge for TBI is to find time to screen the child and educate the parent effectively for this health condition that may not be tied to a recent injury – a TBI can take months or years to become apparent. Educating health care providers in how to accomplish these tasks, as well as providing them with background knowledge of TBI, is another strategy. Tying these skills and knowledge to health providers' licenses would be an important element of this approach.

Student athletes and sports-related injuries

In 2010, Connecticut enacted a new law concerning student athletes and sports-related head injuries. Rep. Matthew J. Conway, Jr. (D-61st Assembly District) gave an overview of the legislation at the June 10 forum.

An Act Concerning Student Athletes and Concussions (Public Act 10-62) requires anyone who has a coaching permit issued by the State Board of Education (SBE) and who coaches intramural or interscholastic athletics to be periodically trained in how to recognize and respond to head injuries and concussions. It also requires such a coach to take a student athlete out of any interscholastic or intramural game or practice if the athlete (1) shows signs of having suffered a concussion after an observed or suspected blow to the head or body or (2) is diagnosed with concussion. The coach must keep the athlete out of any game or practice until the athlete has received written clearance to return to the game or practice from a licensed medical professional.

SBE must develop or approve initial and refresher concussion training courses and annually review materials in consultation with (1) the governing authority for intramural and interscholastic athletics, which is the Connecticut Interscholastic Athletic Conference (CIAC), and (2) organizations representing licensed athletic trainers and county medical associations. SBE must develop or approve the initial course by July 1, 2010, the review materials annually starting by July 1, 2011, and the refresher course by January 1, 2014.

Under the act, SBE may revoke the coaching permit of any coach who violates its requirements.

The working group may wish to address issues related to P.A. 10-62 and what next steps can strengthen its impact. For example, it could address these issues:

- *re-entry into school and supportive services* – The new law focuses primarily on the role of coaches and when a student athlete can return to the playing field after a head injury. A possible next step is to ensure that coaches and school officials coordinate adequately

[65] Dworkin, P.H., University of Connecticut School of Medicine & Connecticut Children's Medical Center. Remarks during State of Connecticut forum on 'Traumatic Brain Injury in Children', Hartford, CT, June 10, 2010.

regarding re-entry into the classroom and services that may need to be provided to the student.

- *private school coaches & town sports programs* – The law applies to all coaches who are licensed through SBE; this includes all public school coaches and only those private school coaches who choose to, or are required by their school or CIAC to, be licensed by SBE. The law does not apply to any non-scholastic sports programs, such as town sports programs. The working group may wish to consider whether this law should be broadened beyond SBE-licensed coaches.

Coordination

The State of Connecticut has several initiatives related to traumatic brain injury. They include, but are not limited to, a Medicaid brain waiver, two Shaken Baby initiatives, family support networks, a state fatherhood initiative, special education services through school systems and the State Department of Education, a TBI advisory board coordinated by the Department of Social Services, and a fund for TBI services through fines levied upon motorists.

As in other states, some of these initiatives are not focused primarily on children. There is also a need for better coordination across agencies and disciplines, both at the state and local levels and between those levels.

Beyond the planned working group described in this paper, the State may wish to create a more lasting coordinating entity on TBI policy. The Connecticut Department of Social Services coordinates a traumatic brain injury advisory committee that has broad executive branch and community representation, but it lacks statutory authority and legislative mandate.[66]

This year, the Connecticut General Assembly considered but did not pass two bills to establish a statutory entity on TBI, though not specifically on children. House Bill 5353 would have established a task force on traumatic brain injury that would have included a focus on the "unique needs of…veterans with traumatic brain injury".

Senate Bill 189 would have established an advisory council on services for persons with traumatic brain injury. The council would have included members with diverse experience, including one expert "in the area of children's services". Although the council would not have focused on children's issues, it would have been charged with "developing a comprehensive plan to address the needs of persons with traumatic brain injury" and "improving the coordination of services".

The TBI-related needs of children are unique – and touch on school and child welfare issues separate from issues faced by TBIs of adults. Therefore, it may make sense either for a coordinating entity that focuses on TBI and children, or for a council such as the one proposed in Senate Bill 189 to have specific mandates related to TBI-related issues facing children and their families.

On the heels of the legislative victory of P.A. 10-62 concerning student athletes and head injuries, passage of state legislation in 2011 to formalize a TBI coordinating entity with a strong focus on children would be highly advisable.

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[66] Connecticut Department of Social Services, *The Connecticut Traumatic Brain Injury Advisory Committee* Handbook, undated. Online at http://www.ct.gov/dss/lib/dss/pdfs/advisorycommitteehandbook2.withcoverpdf.pdf (as of June 18, 2010).

Results based accountability

Results based accountability (RBA) is a disciplined way of thinking and acting that works to set results for programs, evaluate programs according to those results and use that evaluation when determining which programs will receive funding and which will be cut. Relying on RBA to determine goals and strategies to achieve them is an important early step for Connecticut's work on TBI and children.

Financing

At the heart of Connecticut's effort to address children and TBI will be its ability to fund the components of a comprehensive plan such as a public awareness campaign, as well as improved identification and family support services.

The challenge will be to identify funds that are available – whether state, federal or private – to support an expansion of TBI-related activities focused on children, and to succeed in accessing those funds. Success in obtaining competitive funds often involves demonstrating a statewide comprehensive plan and programmatic coordination. Several of the other recommendations in this paper can support applications for such funds by producing action on those planning and programmatic steps.

It is also important to ensure a reliable source of state funds for this purpose. At the June 10 forum, participants learned about Massachusetts' trust fund that supports TBI services. Debra Kamen of the Massachusetts Office of Health and Human Services indicated that her state's TBI funds have declined, because they come from speeding, DUI and driving to endanger citations and the revenue from those sources has tailed off. Kamen recommended considering sources that are more stable, such as motorist license and registration fees.

The working group may wish to conduct a detailed study of how Connecticut derives and spends its current TBI funds from motorist citations – including what portion are spent on children and how those funds are spent – and compare that to other states.

Next Steps

For Connecticut's children with traumatic brain injury, the cost of unmet needs demands action. The State of Connecticut should prioritize the best possible prevention efforts, screening, public awareness and professional education, integrated services and family support, communication between service providers and families, and formalized teams to advocate for children with TBI.

It is important that promising and proven practices not be limited to pilot projects. An "optimal default" policy approach is worthy of consideration: this means that a certain course of action shall be taken unless an exception occurs. For example, following the Colorado model of *TBI Action Teams*, Connecticut could amend the education statutes to establish an "optimal default" guaranteeing that each child with a TBI has an action team in place.

This paper identifies several strategic priorities that should be implemented to respond to traumatic brain injury in children. A state working group can serve as an effective first place to ground this work, but a statutorily authorized entity with legislative mandates would serve a more effective long-term purpose.

In the end, using results-based accountability to set state goals to address children and TBI – and then implementing strategies and measuring indicators to achieve those goals – is the soundest approach to reduce the incidence, improve identification and ensure that children with TBI are served well.

APPENDIX: JUNE 10 FORUM AGENDA

Connecticut Department of Social Services ◆ Connecticut Commission on Children
Connecticut Family Support Council ◆ Connecticut Fatherhood Initiative

Traumatic Brain Injury in Children

Preventing Harm, Promoting Awareness, Supporting Services from Infancy Through High School

Thursday, June 10, 2010
10:00 a.m. to 12:30 p.m.
Room 1-C, Legislative Office Building

Agenda

Welcoming Remarks
Claudette J. Beaulieu, Deputy Commissioner, Connecticut Department of Social Services

Elaine Zimmerman, Executive Director, Connecticut Commission on Children – moderator

Traumatic Brain Injury in Children: Causes, Prevalence and Solutions
Joshua B. Cantor, Ph.D., Co-Director of the Brain Injury Research Center and Assistant Professor of Rehabilitation Medicine, Mount Sinai School of Medicine, New York, NY

Connecticut's Children and TBI: The State Picture
Marian Storch, Unintentional Injury Prevention Coordinator, Injury Prevention Program, Connecticut Department of Public Health

Margie Hudson, Intentional Injury Prevention Coordinator, Injury Prevention Program, Connecticut Department of Public Health

Rasy Mar, Community-Based Education Specialist, School of Medicine, University of Connecticut Health Center

Student Athletes and Concussions: Connecticut's New Law
Rep. Matthew J. Conway, Jr. (D-61st Assembly District)

The School Response to Traumatic Brain Injury: From Screening to Re-Entry
Sarah E. Harvey, Education Consultant, Bureau of Special Education, Connecticut State Department of Education

Stephanie Knutson, School Health Consultant, Bureau of Health/Nutrition, Family Services and Adult Education, Connecticut State Department of Education

Parent Perspectives: My Child's Traumatic Brain Injury
Liane Gilman-Wegener, parent, Fairfield County

Billye Simmers, parent, Southington & Director, Acquired Brain Injury Services, Connecticut Department of Mental Health and Addiction Services

Child Abuse, Neglect & Shaken Baby
Karen Foley-Schain, Executive Director, Children's Trust Fund, Connecticut Department of Social Services

Wendy Kwalwasser, Ph.D., Prevention Services Coordinator, Connecticut Department of Children and Families

Family Support: Information & Resources for Parents
Heriberto (Eddie) Cajigas, Program Manager, Fathers for Life, Career Resources, Bridgeport, CT, representing the Connecticut Fatherhood Initiative

Gabriel Fonseca, Program Manager, Fatherhood Initiative Program, Madonna Place, Norwich, CT, representing the Connecticut Fatherhood Initiative

Robyn Trowbridge, Co-Chair, Connecticut Family Support Council

Health Providers: Screening and Treatment of Childhood TBI
Paul H. Dworkin, M.D., Professor and Chair of Pediatrics, University of Connecticut School of Medicine & Physician-in-Chief, Connecticut Children's Medical Center, Hartford, CT

State Trust Fund for Brain Injury Programs: The Massachusetts Model
Debra Kamen, Director, Brain Injury and Specialized Community Services, Massachusetts Office of Health and Human Services

Roundtable Dialogue

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