Maryland Traumatic Brain Injury Advisory Board

2008 Annual Report

December 23, 2008

c/o Maryland Department of Disabilities
217 East Redwood Street
Suite 1300
Baltimore, Maryland 21202

The Honorable Martin O'Malley, Governor
State House - 100 State Circle
Annapolis, Maryland 21401 - 1925

Thomas V. Mike Miller, Jr., President of Senate
State House, H-107
Annapolis, Maryland 21401 - 1991

Michael Erin Busch, Speaker of House of Delegates
State House, H-101
Annapolis, Maryland 21401 – 1991

Dear Governor O'Malley, Senator Miller, and Delegate Busch:

The Maryland State Traumatic Brain Injury Advisory Board is required to issue an annual report to the Governor and the General Assembly by §13-2105(6) of the Health General Article in accordance with § 2-1246 of the State Government Article. The enclosed report summarizes the actions of the Advisory Board and contains recommendations pertaining to needs of individuals with traumatic brain injury and appropriate services to meet those needs.

The report contains eight recommendations which the Board believes represent the most critical needs of individuals with brain injuries and their families, significant others, employees and employers living in the state of Maryland. This year, the Board has streamlined the way information is presented in the report to focus clearly on the current status of the Board's activities, progress, and plans for the coming year related to the key recommendations.

If you have any questions or require additional information, please contact me through James Reinsel, Director of Health and Behavioral Health Policy, Maryland Department of Disabilities and staff to the Board at (410) 767-3635, or by email to jmreinsel@mdod.state.md.us.

Sincerely,

Martin Kerrigan, Chair

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Executive Summary

The Maryland Traumatic Brain Injury Advisory Board was established in 2005 by House Bill 309 (Article Health General Section 13-2101 through 13-21-06) and was given the charge of advising the state legislature and the governor on the impact of brain injury on the state of Maryland as well as writing an annual report with recommendations regarding needed services and supports for individuals with TBI and prevention efforts. The board consists of experts in the field of brain injury as well as professionals who work with individuals with brain injuries, representatives from state agencies, advocacy organizations, individuals with brain injury and family members or caregivers of individuals with brain injuries. Based on assessment of the individual and community impact of brain injury, the Advisory Board developed the eight recommendations contained in this report. A list of Advisory Board members is attached as Appendix A. These recommendations represent the most critical needs of individuals with brain injuries and their families living in the state of Maryland. This report focuses on the current status of the Board's activities, progress, and plans for the coming year related to each recommendation.

Individual Impact

There are currently 5.3 million Americans living with a disability as a result of a Traumatic Brain Injury (TBI). Appendix B contains additional national data. In Maryland, an estimated 112,315 individuals, or 2% of the state's population, are living with a disability as a result of a brain injury. In Maryland, from 2002 to 2004, there were 63,589 TBI emergency department visits, 15,857 TBI hospitalizations, and 1,969 TBI deaths. (See Appendix for more detailed Maryland data. In addition to the survivor, the lives of family members, friends, and significant others are forever changed. According to TBI Surveillance data (CDC funded grant for data collection conducted by DHMH), increasing numbers of Marylanders sustain a TBI each year. Many are uninsured or exhaust private resources early on in the recovery process. There is no coordinated system of brain injury services in Maryland. Individuals with TBI may receive and/or be eligible for services within many different service delivery systems within Maryland. The entry point to needed services and supports may vary depending on factors such as the individual's needs and goals, natural supports, county of residence, age at injury, co-occurring conditions, and financial eligibility. Maryland, through 58 different agencies, spends in excess of $2.6 billion on services to people with disabilities. This conservative figure represents almost 12 % of Maryland's total state budget. Since there are so many potential entry points to services and eligibility and access varies for each, it is challenging for individuals with brain injury to find the needed services and supports.

Individuals who are not able to access services and supports experience poorer rehabilitation outcomes than those who do receive appropriate services. Researchers are beginning to look at the correlation between what is referred to as "hidden" brain injury and "social and vocational failure" (Gordon 2008). Researchers at New York University conducted interviews with 5,000 individuals in New Haven Connecticut. Of those, 7.2% reported a blow to the head accompanied by unconsciousness or a period(s) of confusion. Further testing found these individuals experienced twice the rate of depression, alcohol and drug abuse, and higher rates of panic disorder, obsessive-compulsive disorder and suicide attempts

than in individuals who have not sustained a brain injury. High rates of "hidden" brain injuries are also noted in the homeless population (as reported in the Wall Street Journal 1.12.08).

There are currently very few options for individuals with brain injury once they exit Shock Trauma and/or are released from the hospital. Some have no alternative but to live in long-term care nursing facilities because of the lack of community supports, care coordination, housing, attendant care, and funding. For those who are discharged home with inadequate support services, family members may be faced with the decision to forego or modify employment to provide care. Many individuals with brain injury could return to the community and lead productive lives if they had access to appropriate services. Brain injury survivors do not seek to be merely resource users; rather they want the opportunity to recover in their own communities, to learn to live with their abilities and disabilities and contribute to their families, communities and society. Currently, the majority of Marylanders with brain injuries do not have these opportunities.

Community Impact

Every 21 seconds in the United States a brain injury occurs. Brain injury does not discriminate among race, age, gender, or socio-economic status. Though certain activities and/or demographic groups (e.g., athletes, active military personnel, young children, and the elderly) may pose a higher risk of sustaining a brain injury, brain injury can affect anyone at any time (e.g. falls, motor vehicle crashes). The lack of a comprehensive brain injury continuum of care to support individuals from the initial injury through community re-integration means that Maryland is failing to meet the needs of its citizens with brain injury.

Thirty years ago, 50% of all people who sustained a brain injury died from their injuries. That number has now been reduced to 22%. Trauma centers continue to save more individuals with brain injury, and advances in emergency medicine and improvements in diagnostic procedures, monitoring devices, and treatment methods have increased the survival rates from catastrophic injuries including brain injuries. While Maryland's trauma systems are often used as a model throughout the country, the state often fails to provide the post acute and specialty services necessary to improve long-term outcomes for individuals with brain injury which ultimately increases the costs associated with this disability. Hospital stays continue to be shortened and insurance companies are limiting or denying rehabilitation service options. In the public sector, very few specialized services and programs exist in Maryland. Lacking a broad continuum of supports, individuals with brain injuries overtax emergency departments and have long and unnecessary hospital stays. Maryland has resorted to sending its citizens with brain injury out of State to receive critical services and must take steps towards improving the continuum of care available to brain injury survivors and decreasing the out-of-state costs associated with this type of disability.

Recommendations

1. Establish the State of Maryland Brain Injury Dedicated Trust Fund,
2. Expand the Home and Community-Based Services Waiver for Adults with Traumatic Brain Injury,
3. Coordinate and enhance brain injury data,
4. Expand and fully fund brain injury resource coordination services statewide
5. Expand the Governor's Employment Initiative for persons with acquired brain injuries
6. Identify students with brain injuries in local school systems and educate school personnel
7. Perform a market conduct analysis of brain injury benefits and payments, and
8. Maintain Maryland's current motorcycle helmet law

Basis for Recommendations

Community-based services and supports such as resource coordination, housing, day habilitation, employment, neuropsychological evaluations, school re-entry, caregiver respite, and other assistance and accommodations are critical to avoid unnecessary placement in long-term care settings, maximize independence, ease stress on peer and family relationships, and enhance performance in school and at work **(Recommendation 1, 2).**

Though the State of Maryland has had several long-term care initiatives in recent years these initiatives continue to lack the full continuum of care needed to assist people with brain injury. Maryland must continue to include the needs of individuals with brain injury in future initiatives and programs especially as the State explores long-term care reform (**Recommendations 1 & 2**).

Maryland's existing community service system is complex and difficult to navigate**.** People with brain injuries may receive services from programs designed for other targeted populations with limited to no specialized services for their particular injury and resulting disability. Resource Coordination is critical to linking people with brain injury to available local, State, and community services and supports (**Recommendation 1 & 4**).

Maryland lacks adequate data necessary to provide a comprehensive assessment of the number of individuals with brain injury currently served by providers, state agencies, hospitals, and school systems, their service utilization and related costs to the State of Maryland. Maryland state agencies providing services to individuals with disabilities do not currently disaggregate data to track individuals with brain injury, making it difficult to measure the effectiveness of the programs for this population or to plan for its growing needs. The lack of data in our school systems impacts Maryland's ability to provide the necessary service and supports to maximize the success of our students. Data reported by hospitals regarding children with a traumatic brain injury does not match data from local school systems for students with brain injuries (**Recommendations 3 & 6**).

Many individuals can return to work after a brain injury if provided appropriate rehabilitation, access to funding and knowledgeable professionals with training in cognitive rehabilitation and brain injury, time to acknowledge their deficits and build compensatory

strategies, and longer term supportive employment services. Initiated last year, the Governor's Employment Initiative for People with Acquired Brain Injuries has been extremely effective in producing employment outcomes. The employment rate of individuals served by the initiative is 83.3 percent. This employment program is an essential component of the care continuum **(Recommendation 5)**.

One of the most frequent concerns of individuals with brain injury is the lack of insurance coverage for medical and rehabilitation services. While both the private and public sectors finance acute care services to people with brain injury, federal and state governments fund the majority of post-acute services. Private insurance generally limits post-acute medical and rehabilitative services and does not pay for long-term care, the cost of which can exhaust an individual's personal resources. When the private sector arbitrarily denies benefits to patients who have paid into their healthcare coverage, patients lose the opportunity to continue their recovery, gain independence, and acquire functional skills. Consequently, the State of Maryland prematurely takes on the financial burden of providing the supports and services needed. With a Medicaid program already overburdened, the State should require private insurance companies to uphold their financial and legal obligations to their customers **(Recommendation 7)**.

Though it is difficult to prevent a brain injury, there are several ways to minimize the impact or severity of a brain injury including using seat belts, helmets, and improvement in concussion management for sports programs. According to the National Highway Traffic Safety Administration (NHTSA), in states that either reinstated or enacted universal motorcycle helmet laws, helmet use increased dramatically, and motorcyclist deaths and injuries decreased. In states that repealed or weakened their universal helmet laws, helmet use declined sharply, and motorcyclist deaths and injuries rose. Maryland must maintain the motorcycle helmet law, which is challenged each year in the legislature. In addition, several counties require children to wear helmets while riding a bicycle or scooter, skateboarding, etc. These best practices should be applied to all jurisdictions and local recreation programs **(Recommendation 8)**.

As a collective unit the advisory board feels that these recommendations are essential to improve the lives of individuals with brain injuries and their families living in the state of Maryland, can lead to better outcomes for individuals with brain injuries, and can ultimately save the state of Maryland money in the long run. Please consider these recommendations so that Maryland can recognize the breadth and scope of brain injury within the state, identify specific areas requiring immediate as well as long term attention, and implement the recommendations which in turn will lead to an improvement in the quality of life for our significant and growing population of Marylanders living with brain injuries and their families, friends, co workers, employees, employers, communities,.

Survivors and Families Empowered

The Board has established one standing committee, the SAFE. Because individuals with brain injury and families make up such a significant proportion of voting members, it was clear that as a united group, they have a great deal of voting power. Recognizing this potential, the SAFE (Survivors and Families Empowered) was created as a standing committee and serves as a place for the members of the Maryland Traumatic Brain Injury

Advisory Board who are living with a brain injury or who are family members of individuals with brain injuries, to feel support and to foster a sense of unity in board matters.

Prior to each Advisory Board, the SAFE Committee meets for an hour to review issues and allows survivors and family members to work together to be able to "speak" for individuals and families living with brain injury. One of the main goals of the committee is to ensure that individuals with brain injury and family members are active participants in Advisory Board meetings and activities. The "meetings before the meeting" allow members to clarify any misunderstandings as well as provide members the opportunity to join together and to discuss issues with which they are living as survivors of brain injury and as family members. It is this sense of camaraderie that is one of the most valued aspects of the SAFE subcommittee.

Recommendations

RECOMMENDATION # 1

Establish the State of Maryland Dedicated Brain Injury Trust Fund

Current Status

Creation of Dedicated Trust Fund is the advisory board's top recommendation at this time. It would create a revenue source for the services and supports that are needed for the increasing number of Marylanders who sustain a TBI each year.

The TBI Advisory Board created a subcommittee to review and summarize a document "A Look at Trust Funds," created by the Brain Injury Association of America. The document presents data from the twenty-one states that currently have a version of a Dedicated Brain Injury Trust Fund. The states are listed in Appendix D.

Based on review of other states, the Trust Fund subcommittee developed recommendations related to the process for creating the trust fund, administration of the fund, revenue projections, eligibility criteria, benefit caps, and services and supports that would be created with the trust fund revenue. Of the 21 State TBI Trust Funds reviewed, some of the most requested services/supports reported are: transitional home and community support training, community reintegration training, employment assistance, personal care attendants, respite care, housing, transportation, inpatient rehabilitation, counseling, support groups, cognitive therapy and/or life skills training, post acute rehabilitation, vehicle modification, medications and/or medical supplies.

The Trust Fund subcommittee also reviewed past Maryland legislative history, including judicial objections. Revenue source appears to be the most critical political consideration. It is critical to explore all potential revenue sources. The review of other states indicates the need for a grass-roots approach for support, as well as lobbying and education of the public and legislature. A strong supportive coalition will be necessary to ensure establishment of the Fund.

2009 Plans

- The Board will develop a plan for educating Legislators, Executive Branch officials, Judicial Branch officials, community partners and the public to build a strong coalition in support of the Recommendation.
- Board members will schedule personal face-to-face meetings with legislators and officials from the judicial and executive branches of government to illustrate the urgent need for the Fund.

RECOMMENDATION # 2

Expand the Home and Community-Based Waiver for Individuals with Traumatic Brain Injury

Current Status

The Medicaid Home and community Based Services Waiver for Adults with Traumatic Brain Injury (TBI Waiver) was established in July of 2003 and renewed by the Center for Medicare and Medicaid Services (CMS) for an additional 5 years in July of 2006. There are thirty approved slots in the TBI Waiver. The waiver program reached capacity, that is, filled all approved slots in June 2007. A registry (waitlist) was maintained by the administering state agency for one year.

Through the Money Follows the Individual policy instituted by DHMH, the TBI waiver was expanded in August of 2008. In accordance with this policy, individuals with brain injury who are in chronic hospitals or state owned and operated nursing facilities are once again being enrolled into the TBI Waiver program. However, the TBI waiver remains closed to individuals in private nursing facilities, where, according to preliminary results from a study conducted by UMBC's Hilltop Institute, over 2000 Marylanders with TBI currently reside and receive long term care services. Individuals with TBI are in Maryland nursing facilities and the service utilization and costs for portions of this population exceed average nursing facility costs in Maryland.

TBI Advisory board members are participating in the Money Follows the Person Demonstration Project (MFP) steering committee. The purpose of the MFP project is to rebalance Medicaid's long- term care system to increase community based long term care options and reduce use of institutional services.

2009 Plans

- Continued expansion of the TBI waiver program is recommended to better meet the needs of Marylanders with TBI in a way that is in line with Maryland rebalancing initiatives and is more cost effective to the state. The Advisory Board specifically recommends expansion of the TBI waiver to private nursing home residents who have a history of TBI and are need of the services offered through the TBI waiver.
- TBI Advisory Board members will remain active participants in the MFP project, review the final results of the Hilltop TBI study and continue to advocate for expansion of this much needed resource.

RECOMMENDATION # 3

Coordinate and Enhance Brain Injury Data

Current Status

In Maryland there is limited brain injury-related data. Incidence data, prevalence data, cost and service utilization data are needed. Potential sources of this data include the Maryland Health Services Cost Review Commission hospital discharge data, the Maryland Health Services Cost Review Commission ambulatory care data, the DHMH's Disabled Individuals Reporting System, the Maryland Trauma Registry, Maryland Medicaid Information System, and various state agencies providing services to individuals with brain injury. These sources can provide an estimate of the number of hospital discharges, emergency department visits and trauma visits for brain injury related injuries. Prevalence data is the exact number of Maryland residents who have been medically treated for a brain injury and/or have disabilities as a result of their brain injury and are in need of supports and services. These data are needed in order to plan for the long term needs of this population and to measure the impact these needs will have on the public health system.

Members of the Advisory Board have been working with State initiatives to identify the number of individuals with brain injury within state-funded services:

- DHMH Center for Preventative Health Services
- DHMH's Money Follows the Person Demonstration Grant
- DHMH's Home and Community-based Waivers
- MHA's Traumatic Brain Injury Implementation Grant
- DORS' Governor's Employment Initiative for Person's with Acquired Brain Injuries
- MSDE's reporting on the number of children with a brain injury diagnosis within the public school system who are receiving supports and services

2009 Plans

The Advisory Board will:

- Review the strengths and weakness of the current brain injury data reporting systems, and work with the medical and disability sectors to properly identify individuals with brain injury.
- Ask State agencies to report to the Advisory Board the number of Marylanders with brain injury who are utilizing state-funded services within their respective organizations.
- Review and report on the study conducted by the Hilltop Institute that analyzed nursing facility costs and selected non-nursing facility Medicaid costs during FYs 2004, 2005, and 2006 for individuals with a brain injury diagnosis.
- Request data from Lt. Governor Anthony Brown's Commitment to Veterans Behavioral Health Initiative regarding the number of veterans who have sustained a TBI who access the program and the needs and gaps in services that are identified for that veteran population.

RECOMMENDATION # 4

Expand and Fully Fund Brain Injury Resource Coordination Services Statewide

Current Status

Individuals who sustain a brain injury are often unable to navigate Maryland's complicated human service system in order to access the services and supports that they need. Brain injury resource coordination is a major area of need in Maryland. Additionally, human service professionals who come in contact with individuals with brain injury are often unaware of the complexities and subtleties of the injury and the type of support this population needs to regain functioning and have good recovery outcomes. Brain injury resource coordination services are currently available in 5 Maryland counties: Montgomery, Baltimore, Howard, Frederick, and Washington. In addition to resource coordination services provided to individuals with brain injury, training is provided to human service professionals in the participating counties so that they can better support and interact with individuals with brain injury.

The Brain Injury Resource Coordination and Training Project in Maryland has been funded with federal grants from HRSA/ MCHB and matched with state general funds by the Maryland Mental Hygiene Administration (MHA). MHA is in the process of finalizing a database that will be used to track and report demographic and outcomes data for consumers served through the Brain Injury Resource Coordination Project. Additionally, MHA has applied for additional federal funding that, if approved, will be awarded in April of 2009. A small increase in federal funding will support expansion into three additional counties: Harford, Anne Arundel, and Prince George's. Sustainability of the project and expansion of the services statewide remains of high priority to the Advisory Board and to MHA. Without this federal funding, which is becoming increasingly competitive to obtain, the system of brain injury resource coordination services in Maryland will be jeopardized. Additional sources of funding are necessary in order to support the existing Brain Injury Resource Coordination Project and to expand it statewide.

2009 Plans

- MHA will be informed in March 2009 whether federal funds have been awarded that will support and expand the existing Brain Injury Resource Coordination and Training Project If awarded the project will expand to three additional Maryland counties, Anne Arundel Prince George's and Harford, in July 2009.
- MHA will report program outcomes to TBI Advisory Board in 2009.
- Additional funding is needed to expand the project statewide.

RECOMMENDATION # 5

Expand the Governor's Employment Initiative for Person's with Acquired Brain Injuries

Current Status

The Governor's Employment Initiative, administered by the Division of Rehabilitation Services (DORS), provides intensive brain injury rehabilitation and employment services to individuals with a history of brain injury and provides an ongoing format via the Consortium to ensure communication and continuing education for community providers, DORS counselors and administrators.

The Initiative continues to enroll eligible consumers with brain injury whose rehabilitation services are directed by DORS counselors with expertise in Brain Injury located in field offices around the state. In the last year, two additional DORS counselors were added in Carroll and Harford counties. According to the University of Maryland, the data indicated the following outcomes thus far:

- 121 participants in database; 33 cases closed; 29 closed successfully
- 28 of working participants have transitioned to employment with long term supports
- 8 additional individuals are in employment status
- 69 participants are receiving services that should lead to employment
- 2 participants are in delayed status, 4 in eligibility status
- 8 participants were closed without a rehabilitation outcome, 6 after services were provided and 2 before services were provided
- The employment rate of individuals served by the Initiative is 83.3%.

In FY 2008, the Consortium of Practitioners and Service Providers met six times. The three-hour meetings consist of a business meeting to review progress and updates followed by trainings on brain injury related topics. Topics discussed during FY 2008 included; Medication and Brain Injury, Compensatory Strategies, Veteran's with Brain Injury and Employment and a panel of Community Employment Specialists sharing tips and strategies for successful placement and job retention. The Consortium trainings draw upon experts in brain injury from around the state.

Supporting and monitoring the ABI Initiative is the Steering Committee, consisting of DORS administrators, advocates and community providers who met 3 times during FY 2008.

2009 Plans

- The Consortium will meet up to 4 times during FY 2009
- The Steering Committee will meet up to 2 times during FY 2009
- The ABI Initiative anticipates enrolling 50 new consumers during FY 2010 if additional funding is secured. With an increase of $850,000 in State General Funds, DORS would contribute up to $300,000 in federal funds to provide these services.

RECOMMENDATION # 6

Identify Students with Acquired Brain Injuries in Local School Systems and Educate School Personnel

Current Status

The Maryland Traumatic Brain Injury Advisory Board continues to work with school officials at both the local and state level to try to educate school personnel about brain injury, its frequency, and its impact on students. Several trainings and models have been created and last year a record number of educators and school personnel attended the Brain Injury Association of Maryland's (BIAM) Annual Conference. These individuals were able to attend the conference as the result of scholarships that were the result of collaboration between the BIAM and the Maryland State Department of Education (MSDE).

2009 Plans

- The MSDE subcommittee of the Maryland Traumatic Brain Injury Advisory Board hopes to hold a meeting with all the local school systems (LSS) to educate them on the prevalence of brain injury.
- The Advisory Board will improve dissemination of the concussion awareness trainings to school athletic departments and coaches.
- The Advisory Board will develop specific recommendations for LSSs regarding the identification of students with brain injuries.

RECOMMENDATION # 7

Perform a Market Conduct Analysis of Brain Injury Benefits and Payments

Current Status

The Insurance subcommittee of the Maryland TBI Advisory Board examined the issue of private insurance coverage denials for individuals with brain injury. Several Subcommittee members met with Delegate Kumar Barve (D-Montgomery County) on July 1, 2008. Delegate Barve agreed to contact the Maryland Insurance Administration Commissioner and request a cost market analysis of insurance claims denied for individuals with brain injury. The Maryland Insurance Commission's Report should be completed by mid-December.

2009 Plans

- The TBI Advisory Board and the Insurance subcommittee will review the response from the Maryland Insurance Commission and create recommendations for the commission regarding ways to obtain additional information from insurance carriers and ways to rectify any identified problems.

RECOMMENDATION # 8

Maintain Maryland's Current Motorcycle Helmet Law

Current Status

The Maryland State Traumatic Brain Injury Advisory Board recommends that the state maintain its mandatory helmet law for anyone operating or riding on a motorcycle.

This past March a contingency from the Brain Injury Association of Maryland and the Maryland State Traumatic Brain Injury Advisory Board went to Annapolis and successfully lobbied for the state to keep its current helmet law. According to the National Highway Traffic Safety Administration (NHTSA), in states that either reinstated or enacted universal motorcycle helmet laws, helmet use increased dramatically, and motorcyclist deaths and injuries decreased. In states that repealed or weakened their universal helmet laws, helmet use declined sharply, and motorcyclist deaths and injuries rose.

According to the NHTSA in 2006, every study conducted over the past 20 years shows that when helmet laws are repealed, the number of fatal accidents increases. Further, the government studies show helmets reduce the likelihood of a crash by 37 percent. Helmets saved 16,000 motorcyclists lives in 20 years. Another 10,800 lives could have been saved if helmet laws were mandated nationally.

Additionally, a University of Pittsburgh study published in 2008 found serious head injuries have increased in Pennsylvania since the state repealed its motorcycle helmet law in 2005. Researchers said they found the number of motorcyclists hospitalized with head injuries requiring further care at facilities specializing in rehabilitation and long-term care jumped 87 percent after the helmet law was changed. Total acute care hospital charges stemming from motorcycle-related head injuries rose 132 percent. Acute care hospital charges totaled $53.5 million in 2001 and 2002, compared to $124.2 million for 2004 and 2005.

2009 Plans

- The Advisory Board continues to support the existing motorcycle helmet law that prevents countless brain injuries every year.

APPENDIX A

State Traumatic Brain Injury Advisory Board Members

Stefani O'Dea
Department of Health and Mental Hygiene
Mental Hygiene Administration
Catonsville, Maryland

Greg Ayotte
Brain Injury Association of Maryland
Towson, Maryland

Janice Barrett
Statewide Independent Living Council
Silver Spring, Maryland

Mary Beachley
Maryland Institute for Emergency Medicaid Services Systems
Baltimore, Maryland

Diane Bolger
Department of Health and Mental Hygiene
Developmental Disabilities Administration
Baltimore, Maryland

Teresa Ingle
Representing Individuals with Brain Injury
Annapolis, Maryland

Peter Cohen
Department of Health and Mental Hygiene
Alcohol and Drug Abuse Administration
Catonsville, Maryland

Mary Lou Coppinger
Representing Families/Caregivers of Individuals with Brain Injury
Baltimore, Maryland

Debra Fulton- Clark
Representing Professionals Working with Individuals with Brain Injury
Columbia, Maryland

Sandy Davis
Brain Injury Association of Maryland
Owings Mills, Maryland

Sue Ferris
Representing Individuals with Brain Injury
Annapolis, Maryland

Nathaniel Fick
Brain Injury Association of Maryland
Fick & Petty
Towson, Maryland

Gayle Hafner
Maryland Disability Law Center
Baltimore, Maryland

Paul Hartman
Representing Individuals with Brain Injury
Frederick, Maryland

Martin Kerrigan
Representing Individuals with Brain Injury
Columbia, Maryland

Vassilis Koliatsos, MD
Representing Professionals Working with Individuals with Brain Injury
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Yvette McEarchern
Department of Health and Mental Hygiene
Maternal and Child Health Program
Baltimore, Maryland

Karen McQuillan
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R Adams Cowley Shock Trauma Center
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Lee Murphy
Maryland State Department of Education
Baltimore, Maryland

Lt. William Powell
Representing Local Police Enforcement
Annapolis City Police
Annapolis, Maryland

Laurie Elinoff
Representing Individuals with Brain Injury
Germantown, Maryland

Sherria Owens
Representing Families/Caregivers of
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Skyesville, Maryland

Sharon Sauls
Representing Professionals Working with
Individuals with Brain Injury
SKY Neuro Rehab
Laurel, Maryland

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Mary Stapleton
Maryland State Department of Education
Baltimore, Maryland

Diane Triplett
Brain Injury Association of Maryland
Baltimore, Maryland

Robert Vacin
Representing Families & Caregivers
LaPlata, Maryland

Cari Watrous
Maryland Department of Disabilities
Baltimore, Maryland

Michael Weinrick, PhD
National Institute of Health
Bethesda, Maryland

Denise White
Department of Health and Mental Hygiene
Baltimore, Maryland

Sean Westley
Representing Families/Caregivers of
Individuals with Brain Injury
Baltimore, Maryland

Richard Zeidman
Representing Families/Caregivers of
Individuals with Brain Injury
Rockville, Maryland

Staff To The Board
Nikisha Marion
Department of Health and Mental Hygiene
Mental Hygiene Administration
Catonsville, Maryland

James Reinsel
Maryland Department of Disabilities
Baltimore, Maryland

APPENDIX B (1)

National Data

"According to the Centers for Disease Control and Prevention (CDC), *at least* 5.3 million individuals in the United States have a permanent disability as a result of traumatic brain injury. [1] Advances in emergency medicine, faster response time from the scene of injury to the emergency department, and highly trained and skilled responders have all contributed to increased survival rates for individuals who are severely injured. As an increasing number of individuals with traumatic brain injuries survive severe injuries, families and other advocates look to the state and federal government for assistance with the medical, rehabilitation, long-term care, and other needs associated with brain injury.

According to the CDC, **each year an estimated 1.4 million individuals in the United States sustain a traumatic brain injury**. As shown in the chart on the next page, the incidence of traumatic brain injury is about six times that of Breast Cancer, Spinal Cord Injury, HIV/AIDS, and Multiple Sclerosis combined. Of those sustaining a traumatic brain injury, 1.1 million have injuries serious enough to require treatment in hospital emergency departments. Annually, more than 235,000 people are hospitalized and 50,000 people die as a result of their injuries. An estimated 80-90,000 Americans with traumatic brain injuries experience permanent disabilities that impair their physical, cognitive, and psychosocial functioning which in turn impacts their ability to return to home, school, and work.

Approximately 475,000 children ages birth to 14 receive a traumatic brain injury with emergency department visits counting for more than 90 % of the traumatic brain injuries in this age group. The risk for incurring a traumatic brain injury is highest among adolescents, young adults, and persons over the age of 75, with the risk among males twice the risk among females. African Americans have the highest death and hospitalization rates from traumatic brain injuries.[2] The reasons for these disparities are not well known. Transportation incidents, primarily **motor vehicle crashes, are the leading cause of traumatic brain injury-related hospitalizations**, whereas **falls are the leading cause of all traumatic brain injuries**. The injury rates for falls are highest among children ages birth to four years and adults age 75 or older. The injury rates for both motor vehicle and assault-related traumatic brain injuries are highest among adolescents ages 15 to 19. [2,3]

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[1] Norvell, D.C. and Cummings, P. 2002. Association of Helmet Use with Death in Motorcycle Crashes: A Matched-Pair Cohort Study. *American Journal of Epidemiology* 156:483-87.

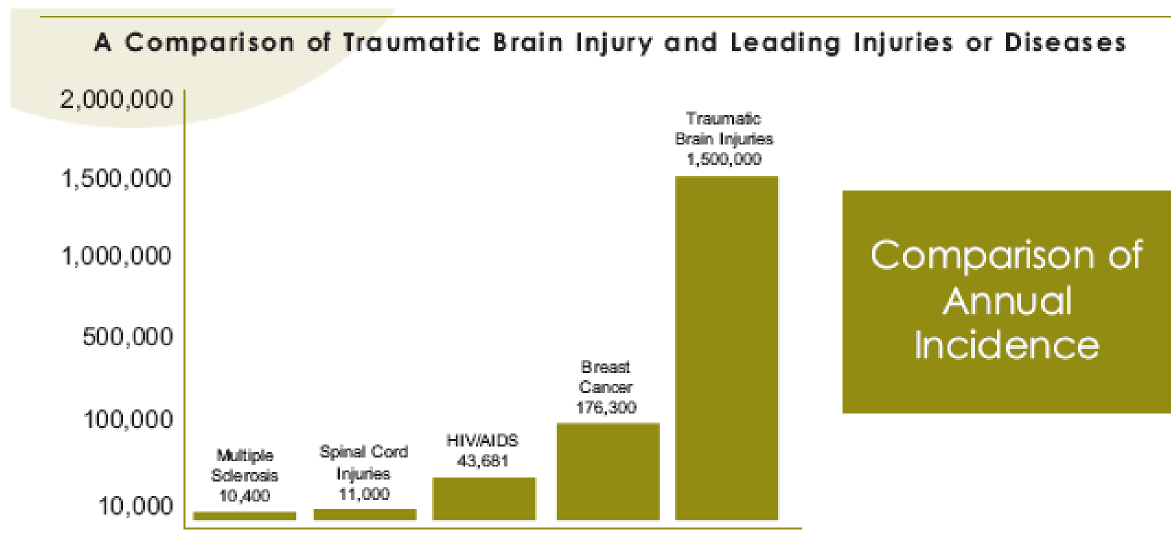
[2] Goldstein, J.P. 1986. The Effect of Motorcycle Helmet Use on the Probability of Fatality and the Severity of Head and Neck Injuries: A Latent Variable Framework. *Evaluation Review* 10:355-75.

Drug and alcohol abuse also has been associated with traumatic brain injuries as both a contributing factor to the injury and as a complicating factor in rehabilitation.[3] Individuals who sustain one concussion or mild brain injury are more apt to experience additional concussions, and the cumulative effect of repeated concussions, as is frequently seen in sports-related traumatic brain injuries, increases the likelihood of long-term neurological damage and learning disability.[4]

Whether the injury is the result of a car crash, a slip and fall, assault, or sports activity, the economic consequences of traumatic brain injuries can be enormous. **In the United States, the average lifetime cost of care for a person with a severe injury ranges from $600,000 to $1,875,000**.[5] This does not include lost earnings of the injured person or family caregivers. The total cost of traumatic brain injuries to the nation is estimated at $56.3 billion annually.[6]

Brain Injury Association of America – TBI Incidence

(Source: Adapted from "TBI Incidence Fact Sheet"- http://www.biausa.org/elements/aboutbi/factsheets/TBIincidence.pdf)



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[5] National Highway Traffic Safety Administration. 2005. Without Motorcycle Helmets, We All Pay the Price. Washington, DC: US Department of Transportation.

[6] Ulmer, R.G. and Northrup, V.S. 2005. Evaluation of the Repeal of the All-Rider Motorcycle Helmet Law in Florida. Report no. DOT HS-809-849. Washington, DC: National Highway Traffic Safety Administration.

APPENDIX B (2)

Facts About Traumatic Brain Injury

(Source: Adapted from "Facts About Traumatic Brain Injury" Fact Sheet-http://www.biausa.org/elements/aboutbi/factsheets/factsaboutbi_2008.pdf)

What is a traumatic brain injury?

A traumatic brain injury (TBI) is defined as a blow or jolt to the head or a penetrating head injury that disrupts the function of the brain. Not all blows or jolts to the head result in a TBI. The severity of such an injury may range from "mild," i.e., a brief change in mental status or consciousness to "severe," i.e., an extended period of unconsciousness or amnesia after the injury. A TBI can result in short or long-term problems with independent function.

How many people have TBI?

Of the 1.4 million who sustain a TBI each year in the United States:

- 50,000 die;
- 235,000 are hospitalized; and
- 1.1 million are treated and released from an emergency department.[1]

The number of people with TBI who are not seen in an emergency department or who receive no care is unknown.

What causes TBI?

The leading causes of TBI are:

- Falls (28%);
- Motor vehicle-traffic crashes (20%);
- Struck by/against (19%); and
- Assaults (11%).[1]

Blasts are a leading cause of TBI for active duty military personnel in war zones.[2]

Who is at highest risk for TBI?

- Males are about 1.5 times as likely as females to sustain a TBI.[1]
- The two age groups at highest risk for TBI are 0 to 4 year olds and 15 to 19 year olds.[1]
- Certain military duties (e.g., paratrooper) increase the risk of sustaining a TBI.[3]
- African Americans have the highest death rate from TBI.[1]

What are the costs of TBI?

Direct medical costs and indirect costs such as lost productivity of TBI totaled an estimated $56.3 billion in the United States in 1995.[4]

What are the long-term consequences of TBI?

The Centers for Disease Control and Prevention estimates that at least 5.3 million Americans currently have a long-term or lifelong need for help to perform activities of daily living as a result of a TBI.[5]

According to one study, about 40% of those hospitalized with a TBI had at least one unmet need for services one year after their injury. The most frequent unmet needs were:

- Improving memory and problem solving;
- Managing stress and emotional upsets;
- Controlling one's temper; and
- Improving one's job skills.[6]

TBI can cause a wide range of functional changes affecting thinking, sensation, language, and/or emotions. It can also cause epilepsy and increase the risk for conditions such as Alzheimer's disease, Parkinson's disease, and other brain disorders that become more prevalent with age.[7]

APPENDIX C (page 1)

Maryland Data

Traumatic Brain Injury Emergency Department Visits - Center for Preventive Health Services - DHMH

NUMBER OF INJURY-RELATED ED VISITS FOR TBI BY YEAR, AGE, GENDER, AND CAUSE OF INJURY, MARYLAND 2002-04

		YEARS		
	TOTAL 2002-04	2002	2003	2004
TOTAL	63,589	**19,967**	**21,252**	**22,370**
AGE				
0-4 YRS	9,895	3,192	3,196	3,507
5-14 YRS	**11,558**	3,719	3,819	4,020
15-24 YRS	13,207	4,160	4,401	4,646
25-34 YRS	**7,122**	2,346	2,378	2,398
35-44 YRS	6,997	2,258	2,356	2,383
45-54 YRS	**5,068**	1,514	1,787	1,767
55-64 YRS	2,895	798	1,017	1,080
65-74 YRS	**2,121**	605	704	812
75-84 YRS	2,793	826	936	1,031
85+ YRS	1,933	549	658	726
GENDER				
MALE	35,865	11,388	11,985	12,492
FEMALE	**27,718**	8,578	9,263	9,877
UNKNOWN	6	#	#	#
RACE				
WHITE	40,333	12,747	13,491	14,095
AFRICAN AMERICAN	**18,639**	5,880	6,211	6,548
ASIAN/PACIFIC ISLANDERS	1,033	312	344	377
AMERICAN INDIAN/ESKIMO/ ALEUT	**122**	38	44	40
OTHER	3,279	935	1,088	1,256
UNKNOWN	**183**	55	74	54
CAUSE				
CUT/PIERCE	324	106	108	110
DROWNING	**18**	7	#	8
FALL	25,279	7,565	8,489	9,225
FIRE/BURN	**21**	6	10	#
FIREARM	68	23	19	26
MACHINERY	**63**	20	22	21
MOTOR VEHICLE TRAFFIC	**11,577**	3,658	3,896	4,023
NATURAL ENVIRONMENT	131	42	39	50
OTHER/UNSPECIFIED	3,719	1,096	1,295	1,328
OVEREXERTION	78	31	21	26
PEDAL CYCLIST, OTHER	1,332	441	399	492
PEDESTRIAN, OTHER	74	12	27	35
POISONING	34	8	8	18
STRUCK BY/AGAINST	18,009	5,787	5,944	6,278
SUFFOCATION	10	6	#	#
TRANSPORT, OTHER	1,006	334	301	371
MISSING/NO E-CODE	1,846	825	670	351

APPENDIX C (page 2)

Traumatic Brain Injury Hospitalizations - Center for Preventive Health Services - DHMH

NUMBER OF INJURY-RELATED HOSPITALIZATIONS FOR TBI BY YEAR, AGE, GENDER, AND CAUSE OF INJURY, MARYLAND 2002-04

		YEARS		
	TOTAL	2002	2003	2004
TOTAL	15,857	5,126	5,151	5,580
AGE				
0-4 YRS	444	154	157	133
5-14 YRS	645	223	194	228
15-24 YRS	3,552	1,173	1,115	1,264
25-34 YRS	2,135	726	680	729
35-44 YRS	2,342	791	781	770
45-54 YRS	1,900	607	600	693
55-64 YRS	1,136	319	387	430
65-74 YRS	1,092	344	359	389
75-84 YRS	1,628	483	557	588
85+ YRS	**983**	**306**	**321**	**356**
GENDER				
MALE	10,417	3,351	3,391	3,675
FEMALE	5,416	1,764	1,753	1,899
UNKNOWN	24	11	7	6
RACE				
WHITE	9,655	3,079	3,090	3,486
AFRICAN AMERICAN	4,673	1,559	1,536	1,578
ASIAN/PACIFIC ISLANDERS	248	72	86	90
AMERICAN INDIAN/ESKIMO/ ALEUT	19	#	#	10
OTHER	1,136	362	388	386
UNKNOWN	126	49	47	30
CAUSE				
CUT/PIERCE	97	33	30	34
DROWNING	#	#	#	#
FALL	5,071	1,542	1,716	1,813
FIRE/BURN	10	#	0	6
FIREARM	263	88	76	99
MACHINERY	36	13	9	14
MOTOR VEHICLE TRAFFIC	6,711	2,271	2,120	2,320
NATURAL ENVIRONMENT	40	12	16	12
OTHER/UNSPECIFIED	793	269	268	256
OVEREXERTION	#	#	#	0
PEDAL CYCLIST, OTHER	**222**	**71**	**68**	**83**
PEDESTRIAN, OTHER	24	#	10	9
POISONING	39	16	13	10
STRUCK BY/AGAINST	**1,463**	**481**	**475**	**507**
SUFFOCATION	6	#	#	#
TRANSPORT, OTHER	352	110	117	125
MISSING/NO E-CODE	722	206	227	289

APPENDIX C (page 3)

Traumatic Brain Injury Deaths - Center for Preventive Health Services - DHMH

NUMBER OF INJURY-RELATED DEATHS FOR TBI BY YEAR, AGE, GENDER, AND CAUSE OF INJURY, MARYLAND 2002-04

		YEARS		
	TOTAL	2002	2003	2004
TOTAL	1,969	610	692	667
AGE				
0-4 YRS	**24**	**9**	**11**	**4**
5-14 YRS	44	10	16	18
15-24 YRS	**327**	**117**	**107**	**103**
25-34 YRS	242	80	85	77
35-44 YRS	**249**	**74**	**81**	**94**
45-54 YRS	243	76	79	88
55-64 YRS	**167**	**45**	**60**	**62**
65-74 YRS	196	66	72	58
75-84 YRS	258	76	92	90
85+ YRS	216	57	87	72
GENDER				
MALE	1,501	473	510	518
FEMALE	**468**	**137**	**182**	**149**
UNKNOWN				
RACE				
WHITE	1,297	393	454	450
AFRICAN AMERICAN	**626**	**203**	**223**	**200**
OTHER	42	13	12	17
UNKNOWN	**4**	**1**	**3**	**0**
CAUSE				
CUT/PIERCE	9	3	4	2
DROWNING	**3**	**1**	**1**	**1**
FALL	538	147	206	185
FIREARM	**840**	**282**	**284**	**274**
MACHINERY	6	2	2	2
MV TRAFFIC	**309**	**93**	**108**	**108**
PEDAL CYCLE	2	0	2	0
PEDESTRIAN	**6**	**0**	**3**	**3**
LAND TRANSPORT	20	6	7	7
TRANSPORT, OTHER	3	1	0	2
NATURAL/ENVIRONMENT	1	0	0	1
POISONING	17	4	9	4
STRUCK BY/AGAINST	37	20	5	12
SUFFOCATION	8	1	2	5
OTHER/ UNSPECIFIED	170	50	59	61

APPENDIX D

Trust Fund Development At A Glance

"A Look at TBI Trust Fund Programs" 2006. Department of Health and Human Services Health Resource and Services Administration, Child and Health Bureau.

TRUST FUND DEVELOPMENT AT-A-GLANCE

Date Ratified	State	Revenue Sources	Estimated Revenue	Program Focus
1985	PA	All traffic violations	$3 million	Assessment, short-term community-based rehabilitation services, transition case management
1988	CA	.066 of state penalty fund	$1 million	7 regionally based projects addressing community support needs
1988	FL	DUI, BUI, moving viol, motorcycle tag, temp license tag	$17 million	Acute care, rehabilitation, community integration, nursing home transition, case management, Medicaid match, prevention, registry, special project grants
1991	MA	speeding, DUI	$6.8 million	Non-recurring, short-term community support services
1991	MN	DUI	$1 million	Registry, resource and service coordination
1991	TX	felonies and misdemeanor	$10.5 million	Inpatient, outpatient, and post-acute rehabilitation services
1992	AZ	civil & criminal	$2 million	Public information, prevention, education, community rehabilitation, transitional living, surveillance
1993	AL	DUI	$1.5 million	Registry, resource coordination
1993	LA	DUI, speeding	$1.5 million	Community-based services and supports
1993	TN	speeding, reck. op., DUI, rev. license.	$750-950,000	Registry, grants for 10 community-based projects
1996	MS	DUI moving viol.	$3.5 million	Registry, waiver match, services, transitional living, prevention, education, recreation
1997	NM	moving violations	$1.5 million	Service coordination, life skills training, crisis interim services
1997	VA	license reinst. fee	$1.2 million	Grants for community-based rehabilitation projects, applied research projects
1998	GA	DUI	$2.3 million	Community-based services and supports, support groups, AT
1998	KY	percent of court costs	$3.3 million	Community-based services and supports, surveillance registry
2002	CO	speeding DUI	$1.5 million	Care coordination, services, research, education
2002	HI	traffic offenses	$600,000	Service coordination, education, public awareness, registry
2002	MO	Cost of court	$800,000	Counseling, mentoring, education
2002	NJ	car registration	$3.8 million	Community-based services and supports, public awareness, education
2003	MT	car registration	$8,117	Advisory Council, grants for public awareness, prevention education
2004	CT	reckless driv., speeding DUI	$300,000	Undetermined – may focus on resource coordination