

## STATEMENT OF POLICY

### Traumatic Brain Injury Prevention

#### Policy

The National Association of County and City Health Officials (NACCHO) supports legislation, research, surveillance, and strategies that prevent traumatic brain injury (TBI), minimize the effects of TBI, and improve the long-term management of TBI. NACCHO recognizes that TBI is a public health issue and draws attention to the critical role local health departments play in protecting and improving community health and safety in coordination and collaboration with local, state, and national efforts.

NACCHO urges local, state, and federal governments to support the following strategies to address the prevention, treatment, and management of TBI:

- Development of a standard definition for TBI.<sup>1</sup>
- Bolster research for TBI, by increasing funding for the Traumatic Brain Injury Model Systems (TBIMS) National Database (NDB), which includes longitudinal data on TBI across the lifespan.<sup>1</sup>
  - Improve the quality of the data, increase surveillance, visibility, and usability of the data.
- Allocation of sufficient funding and resources to support TBI prevention, treatment, and management efforts at the local level.<sup>1</sup>
- Adaptation, implementation, evaluation, translation, and dissemination of practice and evidence based TBI intervention strategies, especially for high-risk populations.
  - Implementation of evidence-based strategies to prevent leading causes of TBI, including older adult falls, motor vehicle crashes, and intentional self-harm.<sup>2</sup>
- Development of local, regional, and state trauma systems that are sufficiently integrated with public health systems to effectively provide the best level of care based on current evidence.
  - Increase access to patient-centered rehabilitation services delivered in residential or transitional treatment programs, and community-based outpatient clinics.<sup>4</sup>
- Encourage the safe operation of electric scooters (e-scooters) by requiring all e-scooter riders to wear a helmet and abide by traffic laws.<sup>3</sup>
- Implementation of TBI education for first responders, including the development of crisis intervention protocols related to interacting with persons with TBI.<sup>4</sup>
- Comprehensive, integrated, and effective community strategies that ensure that TBI survivors minimize risk of further damage or re-injury and are appropriately supported in their efforts to regain and maintain health and function.<sup>1</sup>



- Collaboration among federal agencies, state and local health departments, national and community-based organizations that serve at-risk populations, and the health care community (e.g., insurers, local trauma systems, and emergency medical services).<sup>1</sup>

### **Justification**

Traumatic Brain Injury is considered a major cause of death and disability in our nation,<sup>5</sup> with an estimated 1.7 million people in the United States sustaining a TBI each year.<sup>6</sup> In 2014, there were approximately 288,000 TBI-related hospitalizations, and over 56,000 deaths that occurred in the United States.<sup>6</sup> The estimated economic costs of TBI morbidity and mortality in 2010 was \$76.3 billion, with \$11.5 billion attributed to medical costs and \$64.8 billion attributed to indirect costs of TBI, such as lost productivity.<sup>1</sup> From 2006 to 2014, TBI-related ED visits have increased by 54%, while TBI-related hospitalizations and death rates decreased by 8% and 6%, respectively.<sup>6</sup> Although these statistics show a significant increase in TBI-related ED visits,<sup>5</sup> they may still underestimate the true occurrence of TBIs when considering the number of people receiving care outside of ED and hospital facilities, or receiving no medical care.<sup>6</sup>

Survivors of TBI, especially those with more severe injuries, are often left with significant cognitive, behavioral, and communication disabilities.<sup>7</sup> Many survivors of TBI develop post-concussion syndrome, symptoms of which include headache, dizziness, vertigo, memory problems, trouble concentrating, sleeping problems, restlessness, irritability, apathy, depression, and anxiety.<sup>8</sup> Permanent or persistent cognitive deficits, such as becoming easily confused or distracted and having problems with concentration and attention, are more likely to result from moderate and severe TBI than mild TBI; however, temporary cognitive deficits are common for mild TBI and a series of mild TBIs may have an additive effect, causing cognitive deficits equivalent to those caused by moderate or severe TBI.<sup>8</sup>

According to the Centers for Disease Control and Prevention, the leading causes of TBI are falls (48%), struck by or against events (17%), motor vehicle-traffic crashes (20%), and intentional self-harm (33%).<sup>6</sup> TBI can affect all population groups, from infants and young athletes to military personnel and older adults,<sup>7</sup> however some groups are at increased risk. Among non-fatal TBI related injuries for 2006-2010, males had higher rates of TBI hospitalizations and ED visits than women.<sup>5</sup> Men were also 3 times as likely to die as a result of a TBI related injury during the same period.<sup>5</sup> Furthermore, the prevalence of TBI varies across the lifespan. In 2013, rates of TBI related ED visits were highest for older adults, those 75 years of age and older, and children, between 0 to 4 years of age.<sup>6</sup> Older adults also had the highest rates of hospitalization and death, in the same year.<sup>6</sup> Compared to younger people, older adults are at greater risk of TBI with increased severity and prolonged recovery.<sup>3</sup> Between 2010 and 2016, TBIs sustained in contact sports and recreation-related activities accounted for approximately 45 percent of TBI related ED visits.<sup>9</sup> Evidence-informed and evidence-based interventions must be tailored for each at-risk population.

Local health departments play an important role in the prevention of TBI by providing essential public health services such as assessment, policy development, and assurance. Surveillance and community assessment efforts can inform the development of policies and plans that include evidence-based strategies for primary, secondary, and tertiary prevention of TBI.<sup>1</sup>

The evidence base for primary prevention is well established for some causes of TBI. Falls—the leading cause—can be prevented through efforts such as exercise, maintaining a safe home and surroundings, and regular check-ups with a doctor.<sup>10</sup> Motor vehicle-related TBI can be prevented through the use of safety restraints (see NACCHO’s Policy Statement [96-01 Motor Vehicle Safety Belts](#)) and child passenger safety devices, improvements to vehicle safety technology, graduated driver licensing (GDL) laws (see NACCHO’s Policy Statement Graduated Driver Licensing), and reductions in impaired driving.<sup>11</sup>

The recent use of electric scooters (e-scooters) in cities and towns across the US has been associated with a high rate of injury, specifically head injuries.<sup>3</sup> A recent study examining e-scooter injuries among 249 patients in two California EDs found that 49% of injuries were head injuries and less than 1% of riders reported helmet use.<sup>3</sup> Laws governing helmet use for e-scooter riders, vary from state to state, with many states only requiring helmet use for riders under 18 years of age or not requiring helmet use at all.<sup>12</sup> Improving helmet law regulations for e-scooter riders and similar recreational activities is vital to preventing further head injuries and reducing the risk of TBI.

Individuals with TBI may have symptoms from their injuries that prevent them from understanding, following directions, or communicating clearly with first responders.<sup>4</sup> Training and educating first responders on TBI and the resulting cognitive and behavioral effects can allow for the development of tailored crisis intervention strategies and protocols to be used when interacting with persons with TBI.<sup>4</sup>

While early identification and transport of injured patients to the highest level of care within a trauma system is important, 45 million U.S. residents are not within one hour of a trauma center.<sup>1</sup> Access to local, community-based rehabilitation clinics to address the long-term effects of TBI is critical, as emergency medical treatment and hospital-based acute care are only the first step towards recovery.<sup>4</sup>

Local health departments play a critical role in convening key stakeholders, such as federal agencies, state health departments, national and community organizations, and the medical community, to develop comprehensive strategies that ensure survivors of TBI receive the best level of care and support required for them to regain and maintain health and function.

## **References**

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### **Record of Action**

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