

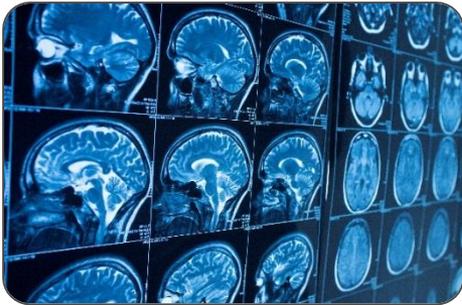


The CDC Strategic Plan for TBI:
Highlighting Work on Sports Concussion,
Return to Learn, and Return to Play



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Traumatic Brain Injury Team Lead

October 22, 2015



Overview

- ❑ Outline current CDC strategic direction
- ❑ Highlight Work on Sports Concussion Surveillance
- ❑ Highlight Work Related to Return to Play and Return to Learn

The Public Health Approach to Prevention



Strategic Directions



Four Pillars

1. Improving the understanding of the public health burden of TBI
2. Reducing the incidence of TBI through primary prevention
3. Improving the recognition and management of mild TBI
4. Improving health outcomes of persons living with TBI

Strategic Directions



Four Pillars

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SPORTS-RELATED CONCUSSIONS IN YOUTH

Improving the Science, Changing the Culture



INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES



What do we know?



ED visits:

- ❑ 450,000 in 2012;
325,000 among ages 0-19
- ❑ Highest Numbers:

Girls	Boys
Playground	Football
Bicycling	Bicycling
Soccer	Playground
Basketball	Basketball
Horseback Riding	Baseball

Source: Coronado, et al., 2015

What do we know?

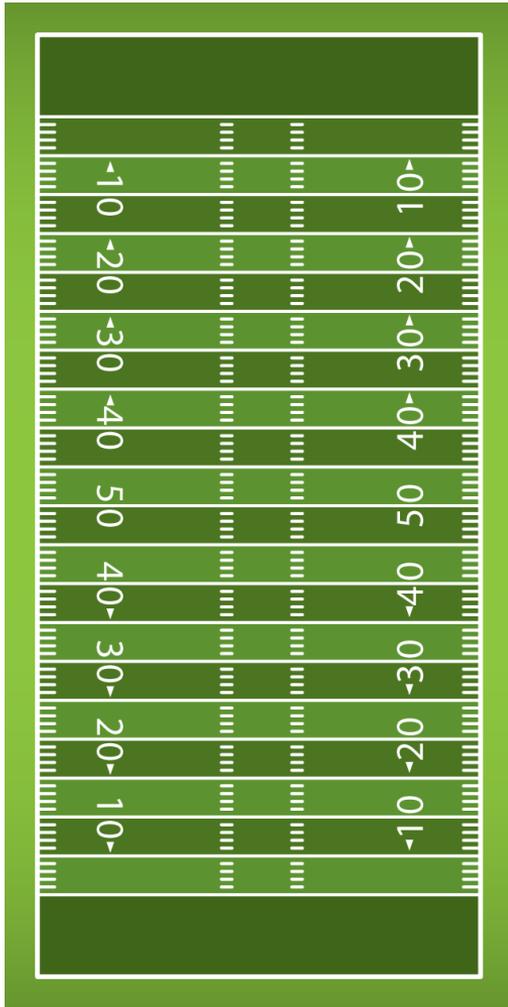
At the high school level:

- ❑ Highest Rates: Boys football, ice hockey, lacrosse
- ❑ Next: Girls lacrosse, soccer, basketball
- ❑ Higher rates for girls in gender-comparable sports
- ❑ Mechanism
- ❑ Competition vs. Practice
- ❑ Higher risk for certain positions



What is unknown?

- ❑ Overall incidence and trends
- ❑ Leading contributors
- ❑ Proportion experienced in:
 - Organized, school-based sports vs.
 - Organized, non-school-based sports vs.
 - Non-organized sports and rec activities.
- ❑ Healthcare utilization patterns

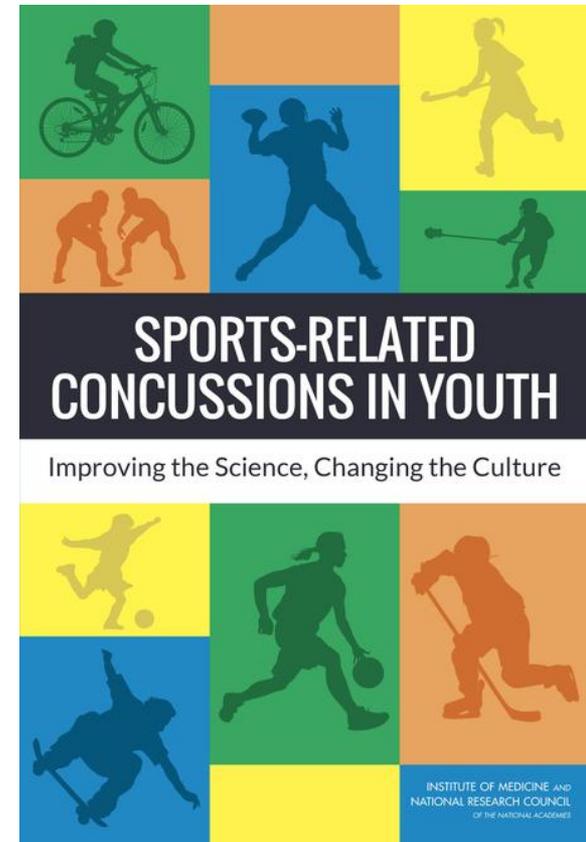


Surveillance

RECOMMENDATION 1

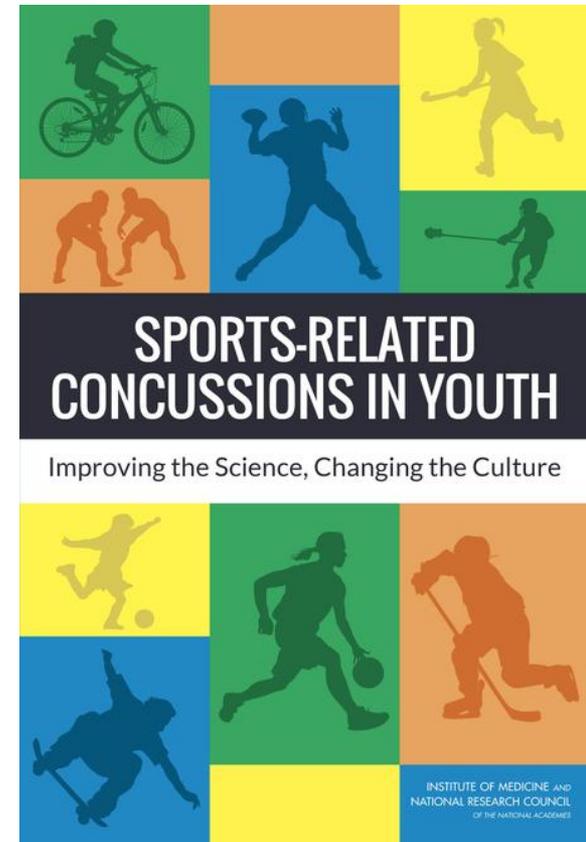
“The Centers for Disease Control and Prevention, taking account of existing surveillance systems and relevant federal data collection efforts, should establish and oversee a national surveillance system to accurately determine the incidence of sports-related concussions...”

Institute of Medicine (IOM) and National Research Council (NRC). 2014. *Sports-related concussions in youth: Improving the science, changing the culture*. Washington, DC: The National Academies Press.



Surveillance – Parameters Requested

- ❑ Ages 5 to 21
- ❑ Demographic information
- ❑ Pre-existing conditions
- ❑ Concussion history
- ❑ Use of protective equipment and impact monitoring devices
- ❑ Data on the cause, nature, and extent of the injury event



Institute of Medicine (IOM) and National Research Council (NRC). 2014. *Sports-related concussions in youth: Improving the science, changing the culture*. Washington, DC: The National Academies Press.

Evaluation Criteria

Breadth

- ❑ National level
- ❑ Representative
- ❑ Coverage of ages 5-21
- ❑ Captures concussion outside of:
 - Organized sports
 - Healthcare setting

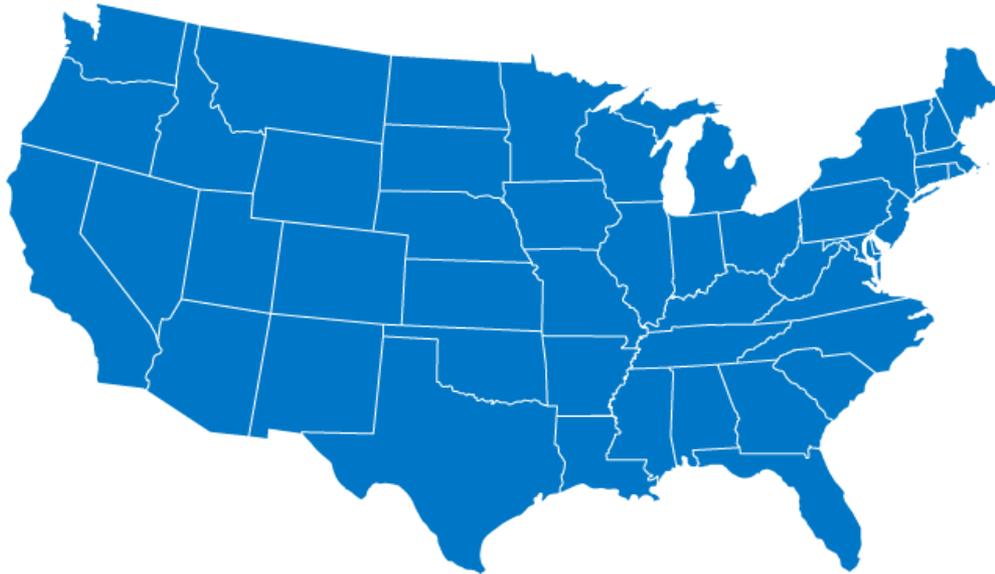
Depth

- ❑ High level of detail
 - Pre-event
 - Event
 - Post-event
 - Clinical Presentation



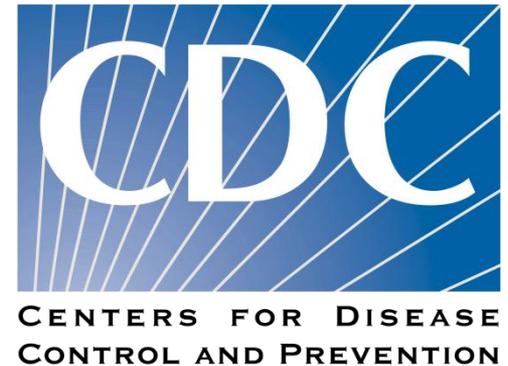
Other Criteria

- ❑ **Capture TBI more broadly**
 - Beyond sports/recreation-related concussions
 - Older age groups
- ❑ **Ability to produce state-level estimates**



Developing a Plan to Address the IOM Report Recommendation

- ❑ Met internally to evaluate current and new data systems
- ❑ Consulted with internal CDC surveillance experts
- ❑ Identified candidate methods
- ❑ Consulted with external sports concussion surveillance experts



Surveillance Landscape



NEISS



New Survey

- ❑ **Various Methodologies**
- ❑ **Advantages**
 - National, representative, ages 5 to 21
 - Capable of capturing concussions
 - Outside of healthcare setting
 - Outside of organized sports
 - Possible to get high level of detail
- ❑ **Limitations**
 - Self or Parent report
 - Declining response rates



CDC's Plan



- ❑ Development of a new telephone survey
- ❑ Survey parents/caregivers about their children's recent history of head injuries and associated symptoms
- ❑ Potentially survey adults regarding their recent TBI history



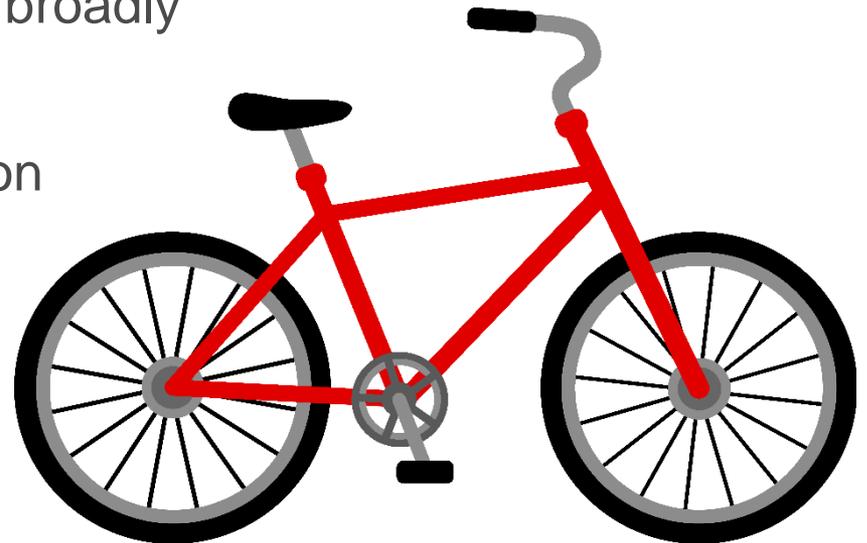
Our Plan

□ Breadth

- Full age range
- Capture concussions outside of healthcare setting
- Capture concussions outside of organized sports
- Capture recreation-related concussions
- Potential to capture TBI more broadly

□ Depth

- Can collect detailed information
- Capable of adding modules



Our Plan



- ❑ **Over the next 2 years**
 - Questionnaire development
 - Development of sampling strategy
 - Cognitive testing of questionnaires
 - Pilot study
- ❑ **After that.....**



Funding/Resources

- ❑ Ongoing nature of surveillance
- ❑ Significant Congressional interest
- ❑ \$5 million in President's FY16 budget
- ❑ Meeting with partners



Strategic Directions



Four Pillars

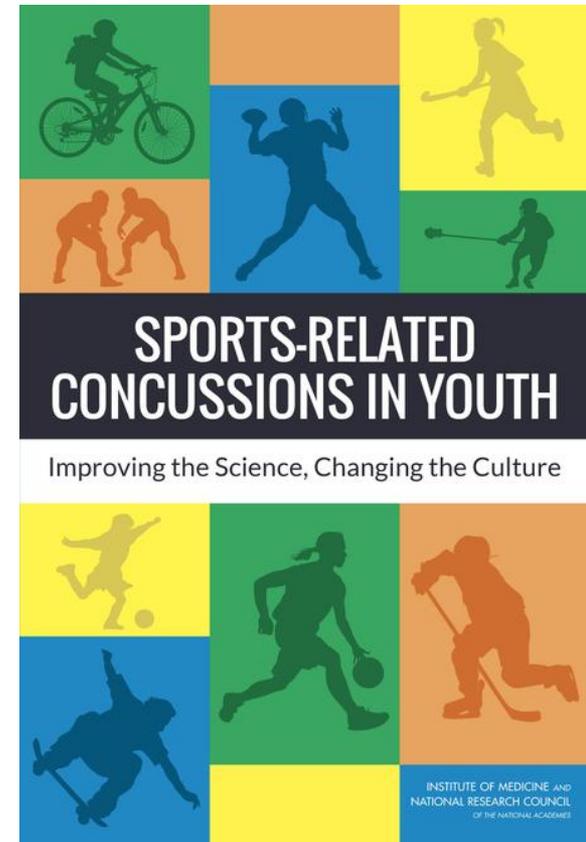
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Sports Culture

The NCAA and NFSA, in conjunction with the CDC, HRSA, NATA, and DOE should:

“develop, implement, and evaluate the effectiveness of largescale efforts to increase knowledge about concussions and change the culture (social norms, attitudes, and behaviors) surrounding concussions among elementary school through college-age youth and their parents, coaches, sports officials, educators, athletic trainers, and health care professionals.”

Institute of Medicine (IOM) and National Research Council (NRC). 2014. *Sports-related concussions in youth: Improving the science, changing the culture*. Washington, DC: The National Academies Press.



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Heads Up in 10 Years

The Anniversary Viewbook of CDC's Heads Up

Heads Up is a series of educational initiatives, developed by the Centers for Disease Control and Prevention (CDC), which share a common goal: to help protect people of all ages, especially children and teens, from concussions and other serious brain injuries and their potentially devastating effects.



Centers for Disease
Control and Prevention
National Center for Injury
Prevention and Control

Heads Up Key Accomplishments

- Developed relationships with 85+ organizations and dozens of key experts.
- Created over 50 products.
- Distributed more than 4 million print resources.
- Trained 3 million+ coaches.
- 20,000+ Facebook fans.
- 215 million+ media impressions through print media and TV PSAs.

The screenshot shows the CDC website page for Traumatic Brain Injury. The main heading is "Injury Prevention & Control: Traumatic Brain Injury". Below this, there is a section titled "Heads Up: Concussion" with a sub-heading "Each year, U.S. emergency departments (EDs) treat an estimated 173,285 sports- and recreation-related TBIs, including concussions, among children and adolescents, from birth to 19 years. (MMWR October 2011) Children and teens are more likely to get a concussion and take longer to recover than adults." Below the text, there is a link to "CDC has created free tools for youth and high school sports coaches, parents, athletes, and health care professionals that provide important information on preventing, recognizing, and responding to a concussion." The page is organized into several sections: "By Group" (Parents, Clinicians, High School Coaches, Youth Sports Coaches, School Staff), "By Resource" (Heads Up Mobile App, Facebook, Twitter, Podcasts), and "By Sport" (Youth and High School Sports: Baseball, Cheerleading, Field Hockey, Football, Ice Hockey, Lacrosse, Rugby). There is also a "Contact Us" section with the CDC's address and phone numbers. A "Heads Up" logo is visible in the bottom right corner of the screenshot.





CONCUSSION AT PLAY

Opportunities to Reshape the Culture Around Concussion



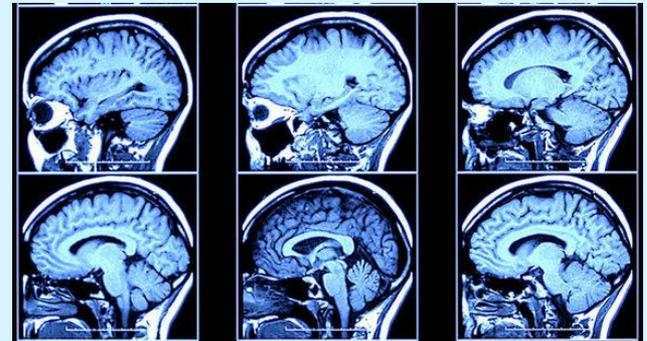
Pediatric Mild TBI Guidelines

- ❑ Importance of appropriate diagnosis of children and teens with mild TBI.
- ❑ Need for evidence-based guidelines to help U.S. clinicians treating children and teens.
- ❑ Workgroup established with over 40 experts.
- ❑ 6 clinical questions, over 12,000 abstracts and 1,700 full-text articles reviewed.
- ❑ Release expected in 2016.



Six Clinical Questions

1. Do specific tools as compared with a reference standard, accurately diagnose mild TBI?
2. How often does routine head imaging identify important intracranial injury?
3. Which features identify patients at risk for important intracranial injury?
4. What factors identify patients at increased risk for ongoing impairment, more severe-symptoms, or delayed recovery?
5. Which factors identify patients at increased risk of long-term (>1 year) sequelae?
6. For mild TBI (with ongoing symptoms) which treatments improve mild TBI-related outcomes?



Translation and Dissemination

- ❑ **Update CDC's Heads Up**
- ❑ **Development of screening tools**
- ❑ **Create clinical decision support modules**
- ❑ **Work with states to partner with large healthcare organizations**
- ❑ **Survey HCPs following release**

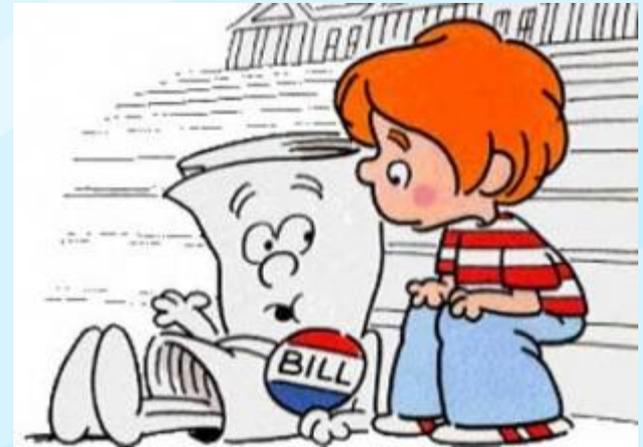
Youth Sports Concussion Legislation

- ❑ **Three common components:**
 - Education for coaches, parents, and student-athletes
 - Removal-from-Play
 - Return-to-Play



Significant Variation in Legislation

- ❑ **Coverage**
 - Public and/or private
 - Age Level of School
- ❑ **Penalties**
- ❑ **Coaches training required**
- ❑ **Return to Learn guidance**
- ❑ **Health care provider**
 - Do they specify?
 - Do they identify the need for specific training?
- ❑ **Minimum time of removal to play**
- ❑ **Who is responsible for content development?**



New RTL/RTP Policy Evaluation



- Develop a database of RTP policy elements
- Conduct an implementation evaluation of RTL requirements

Return to Play Evaluation Study

- ❑ In coordination with USYSA**
- ❑ Compare RTP policies**
- ❑ Athletes and Parents will report weekly on any concussions experienced**
- ❑ Followup regarding RTP without symptoms**

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REPORT TO CONGRESS

Traumatic Brain Injury In the United States: Epidemiology and Rehabilitation

Submitted by the Centers for Disease Control and Prevention
National Center for Injury Prevention and Control
Division of Unintentional Injury Prevention

New Report to Congress

- ❑ TBI Reauthorization Act of 2014 reauthorizes CDC's traumatic brain injury programs for years 2015-2019**
- ❑ Directs CDC to produce a Report to Congress on the management of TBI in children**
- ❑ In consultation with NIH**
- ❑ Working with 2 external authors**
- ❑ Broad group of stakeholders on external panel**
- ❑ Aim for release in late 2016**



CDC

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.