Injury Surveillance Workgroup (ISW)

Summary of 1999 – 2000 Meetings

Prepared for:

Injury Surveillance Workgroup (ISW) Meeting Participants

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Introduction

Meeting Purpose

The Injury Surveillance Workgroup (ISW), made up of representatives of federal and state agencies involved in injury prevention and control, met in New Orleans, Louisiana on June 17, 2000. This meeting was the last in a series of three meetings designed to reach consensus about injury data collection priorities and to discuss optimal methods for collecting these data.

The group's recent focus on survey-based data collection builds on a previous set of meetings held during 1998 and 1999. The report from these meetings, *Consensus Recommendations for Injury Surveillance in State Health Departments*, recommended a set of state surveillance capacities for injury prevention program (depending on their level of development), 14 specific injury and injury risk factor surveillance topics, and 11 data sets to monitor them.

In that report, two survey methods -- the Behavioral Risk Factor Surveillance System (BRFSS) and Youth Risk Behavior Surveillance System (YRBSS) -- were noted as data sources for injury topics (self-reported seat belt and safety seat use, suicide attempts, and smoke alarm use). However, because the group's emphasis was on overall capacity and standardization of state injury surveillance systems, its members did not make more specific recommendations about survey-based data collection, nor did they have an opportunity to discuss the challenges unique to survey data collection methods in greater depth.

These topics became the subject of the meetings held between November 1999 and June 2000 and are summarized in this report.

Injury Surveillance Workgroup Members

The meeting participants included representatives from the following organizations:

- National Center for Injury Prevention and Control (NCIPC), Centers for Disease Control and Prevention (CDC)
- Council of State and Territorial Epidemiologists (CSTE)
- State and Territorial Injury Prevention Directors' Association (STIPDA)
- National Association of Injury Control Research Centers (NAICRC)
- Behavioral Risk Factor Surveillance System (BRFSS).

A complete list of workgroup members is provided in Appendix A.

ISW Activities

During its three meetings and between meetings (via e-mail and conference calls), the group prepared an initial proposal to BRFSS, created a template for state injury indicators, discussed data collection options, and created a list of injury surveillance priorities. Each is discussed below.

BRFSS Proposal

At its first meeting in November 1999, the group was faced with an immediate challenge: to prepare a proposal for submission to the BRFSS, which was planning revisions to its core set of questions.

Unlike hospital discharge data and other systems on which injury surveillance currently relies, the BRFSS and other surveys offer opportunities to explore the circumstances and behaviors that lead to injuries. Instead of tracking fatalities, hospitalizations, and other severe injuries, surveys represent opportunities to track self-reported behaviors and attitudes. However, the opportunity to explore injury topics through the BRFSS is limited because so few questions can be devoted to any one topic. In practice, this meant that the group had to choose between gaining some limited information on several different injury topics, versus exploring one topic in greater depth (with, for example, 4 or 5 follow-up questions.

As a first step toward reaching consensus on what to propose to BRFSS, the group identified a pool of injury surveillance topics that would be winnowed down further throughout the series of meetings. The group then discussed various criteria that could be applied to this list to select a limited number of topics for submission to BRFSS. The criteria included those used by the BRFSS Working Group as it considers new items for inclusion in the questionnaire:

Public health impact (public health burden; established risk factors that are preventable and occur at the individual level)

Scientific validity (adequate sample size; validity of self-reported data)

Data utility (NPHSS or Healthy People 2010 leading indicator; current and future use of data by states and by CDC, changing prevalence trends)

Implementation criteria (number of questions, financial support, wording and cognitive testing, and inter-relationship of topics)

Through a voting process near the end of the first meeting, the group agreed that five violence topics warranted further exploration through BRFSS:

- presence of a firearm in the home
- incidence of suicide attempts during the past year

- incidence of physical assault by a partner during the past year
- lifetime prevalence of child abuse (retrospectively reported by adult respondents)
- lifetime prevalence of witnessing intimate partner violence (retrospectively reported by adult respondents).

The group agreed that each of these topics was important in its own right and could benefit from multiple questions for each topic. To make optimal use of the limited survey space, however, the group identified individual questions to serve as markers of risk factors for injury and measure the occurrence of key violent injury outcomes. These were included in a proposal to BRFSS, prepared in January 2000.

The BRFSS Working Group expressed interest in including questions about the presence of firearms in the home and about suicide attempts. However, the Working Group members concluded that the questions about assault, child abuse, and witnessing violence at home – while addressing important issues – required additional testing before being included.

NPHSS

The group's first meeting also launched a series of activities related to the National Public Health Surveillance System (NPHSS). The NPHSS is a joint undertaking by CSTE and CDC to reach consensus about the diseases, injuries, risk factors, services, and outcomes that should be monitored through an integrated surveillance system. The NPHSS effort is designed to set common standards for collecting, analyzing, and managing surveillance data. Ideally, these standards would be viable in most or all states, allowing state-to-state comparisons.

ISW members from nine states tested the viability of collecting data on 20 different indicators by filling out the template below. In addition to the indicators, the table shows the percentage of hospital discharge data records that are e-coded, as well as whether or not these records are de-duplicated. (A completed table showing preliminary results from this effort is provided in Appendix B; guidance for state injury prevention staff interested in completing their own templates is provided in Appendix C.)

NPHSS Injury Indicators		
Indicator	**Number**	**Rate**
Fatal TBI		
Hospitalizations for TBI		
Fatal fire-related injuries		
Hospitalizations for fire-related injuries		
Smoke alarm prevalence		
Drowning		
Hospitalizations for near drowning		
Fatal firearm injuries		
Hospitalizations for firearm injuries		
Homicide		
Suicide		
Hospitalizations for suicide attempts		
Percentage of high school youth reporting a suicide attempt in the last year		
Fatal motor vehicle injuries		
Percentage of adults reporting always using safety belts		
Percentage of adults with children reporting always using child restraints		
Percentage of adults reporting driving after having drunk too much in last 30 days		
Alcohol-involved motor vehicle deaths		
Percentage of HDD injury records e-coded		
HDD records de-duplicated		
Population used for calculation of rates		

Generating the data for this table raised a number of issues for ISW members. These revolved around the completeness and validity of available data, and included:

- variations in the percentage of state Hospital Discharge Data (HDD) that are e-coded (and difficulties determining the percentage)
- variations in the number of e-code fields recorded and whether or not the first listed code represents the underlying cause of the injury
- de-duplication of multiple injury-related hospital discharges for the same injury.

To address these issues, state-to-state variations in e-coding rates and de-duplication of records are noted on the template.

As the completed template in Appendix B demonstrates, data on most of these indicators are available, even though the quality of the data may be far from ideal. Nevertheless, participants noted that other data sets with longer histories – such as those used to monitor infectious diseases – have been used despite similar limitations. The goal for the NPHSS injury indicators is to become more informed about injury incidence and, at the same time, identify gaps or problems in state data sets so that these ultimately can be addressed and improved.

CSTE (in conjunction with CDC and the Association of State and Territorial Chronic Disease Program Directors) recently prepared a compilation of recommended indicators for chronic disease surveillance. ISW members agreed that this could serve as a model for a similar effort describing injury-related numerators and denominators, the rationale for collecting information on a particular indicator, limitations (if any), data sources, and related indicators.

The group also discussed options for displaying these types of data once they are available for more states. These included tables along with graphs and maps, where relevant. Possible options include publishing results in the *MMWR* or other journals.

Data Collection Options

Although the BRFSS was a strong and compelling catalyst for the group's discussions, ISW members recognized at the outset that BRFSS alone could never provide the scope and depth of information required by state and federal injury programs. As noted above, the BRFSS tries to capture data on a variety of topics. In practice, this means that that the slots allotted to injury questions (or any other specific topic) are very limited and there are few opportunities for follow-up questions to explore additional nuances. Another limitation is that the BRFSS focuses on behaviors (rather than attitudes) and may not be the most appropriate vehicle for understanding new or emerging issues, especially for events that are relatively rare.

The Injury Control and Risk Survey (ICARIS), a telephone survey devoted exclusively to injury risk factors and injuries, was conducted in 1994 and will be repeated again this year. Although ICARIS has yielded useful data, its national scope makes it less useful than BRFSS for *state-level* monitoring of trends, intervention design, and evaluation.

Some other survey efforts – such as the national Crime Victimization Survey – have potential for addressing issues of interest to injury prevention staff at both the state and national levels.

Despite these opportunities, ISW members generally agreed that there were few options available to them for collecting data on injuries at the state level. As some participants noted, the systems that are currently available tend to focus on the medical treatment end of the spectrum (as with hospital discharge and emergency department data). Others options, while helpful, are sponsored by non-public health agencies (such as the crime victimization survey by criminal justice, or motor vehicle observation studies by NHTSA) with less emphasis on prevention.

The group agreed that CDC leadership in the injury field could make an important contribution by expanding the options for risk factor and survey-based data collection. In some cases, this might involve new data collection mechanisms, yet to be designed and funded. In other cases, this might require stronger coordination with other agencies interested in injury (such as criminal justice and motor vehicle safety groups), even if their interest stems from a different perspective than that of public health and prevention.

In anticipation of a broader range of surveys and other data collection mechanisms becoming available to the injury community, the group identified a set of priority topics, discussed below.

Injury Surveillance Priorities

The group identified a set of priority injury surveillance topics about which more information is needed. The list includes nine items:

- Suicide attempts
- Firearm/handgun presence in and around the home
- Falls
- Drinking and driving
- Water activities (swimming and/or boating) and alcohol use
- Smoke detectors
- Sports injuries
- Cell phone use (while driving)
- Child restraints

The group identified the first four of these – suicide attempts, the presence of firearms in or around the home, falls, and drinking and driving – as candidates for inclusion in BRFSS. These would be the first topics to undergo further refinement of questions and possibly pilot testing, as needed. The other items, as discussed below, should also be developed

further and would be candidates for state or regional pilot studies or other cognitive testing, in anticipation of their inclusion in existing or future surveys. With combined CDC, state, and CSTE support, these topics could be explored consistently across the states, yielding new or more in-depth information than is currently available.

The group's discussions on each topic are summarized below.

Suicide attempts

In 1997, 30,535 Americans took their own lives. Suicide is the ninth leading cause of death overall, and the third leading cause of death for young people between the ages of 15 and 24. Although age-adjusted rates have remained constant for decades, rates have increased among 10- to 19-year-olds, among young black males (whose rates more than doubled in 1980), and among elderly males. Between 1979 and 1992, suicide rates for Native Americans were 1.5 times the national rates, with males between the ages of 15 and 24 accounting for 64% of all suicides among this population.

Although some emergency department surveillance captures suicide attempts, these data are not available in many states. Moreover, it is not clear how comprehensive emergency department data are, even when they are available. State-by-state data on suicide attempts could provide useful information to describe the problem (including geographic and/or demographic variations) and support the development of public health solutions. In addition, self-reported survey data could be compared to emergency department surveillance to help determine whether there are gaps and how extensive these are.

Possible Suicide Attempt Question:

Introduction: This question deals with the topic of suicide. Many people feel this subject is highly personal, but we would appreciate it if you would try to answer this to the best of your ability.

During the past 12 months (that is, since XX date 1999) how many times have you attempted to take your own life?

Firearms in and around the home

Firearms account for nearly a quarter of all injury deaths in the United States, taking the lives of 35,000 people and taking a particularly high toll among the young. Firearms are the second leading cause of injury death, following motor vehicles. Firearm death rates in the United States, especially for males aged 15-24, are many times higher than the rates in other developed countries. For example, the firearm death rate in the United States, 14.24 per 100,000, is eight times the pooled rate for other high income countries.

In addition to their role in 70% of homicides, firearms are used in 60% of the nation's 30,000 suicides.

The group discussed options for questions about firearms in and around the home extensively. Of all the proposed topics, the firearm issue seemed the most unwieldy if it had to be contained within one question. For example, ISW members saw value in understanding more about the distinction between handgun ownership and ownership of

other types of firearms. However, getting at this information would require at least two questions: whether or not there is a firearm in or near the home, and then a follow-up question about what type of firearm it is.

If a follow-up question is permissible in the BRFSS or in other formats, the group's strong preference is to ask about the generic category of firearms and then about the type of gun(s). Another option, endorsed by most of the group, would be to rotate questions about firearms and handguns in the BRFSS module. Because gun membership may not change significantly from one year to the next, this strategy might still yield information on both handguns and other types of guns. A third option would be to ask only about handguns.

Possible Firearms Question:

"Are any firearms now kept in or around your home? Include those kept in a garage, outdoor storage area, car, truck, or other motor vehicle."

"Are any of the firearms handguns, such as pistols or revolvers?"

"Are any of the firearms long guns, such as rifles or shotguns?"

Falls

Among people 65 and older, falls are the leading cause of injury deaths. They are also the most common cause of nonfatal injuries and of trauma-related hospital admissions. Both moderate and severe injuries reduce the mobility and independence of older people, drastically affecting their quality of life.

Possible Falls Question:

"In the past 12 months, have you fallen to the ground?"

Drinking and driving

Thirty-nine percent of the 41,967 traffic fatalities in 1997 involved alcohol use by the driver or by the pedestrian or bicyclist hit by a car. Although alcohol-related traffic fatalities have been reduced by 32% between 1987 and 1997, this remains a serious and costly problem.

The BRFSS currently includes a question about drinking and driving; the ISW members believe this should continue to be asked as part of the BRFSS set of four injury questions.

Alcohol use during water activities

Alcohol is a factor in up to half of adolescent and adult deaths associated with swimming and boating.

Smoke detectors

The overall fire death rate in the United States is the highest among all industrialized countries, with residential fires the most significant cause. In 1997, 406,500 residential fires led to 3,360 fatalities and 17,775 injuries. Although working smoke detectors can reduce the chance of dying in a residential fire by half, nearly 25% of U.S. homes do not have a working smoke detector.

The ISW members once again struggled to capture all the relevant information in one question, since the effectiveness of smoke detectors depends on their correct placement as well as a working battery.

> Possible Smoke Detector Question
>
> "Is there a working smoke detector in your home?"

Sports related injuries

One unintended byproduct of calls for greater physical activity is an increased incidence of "weekend warrior" sports injuries and injuries among young athletes. Since these might be serious enough to cause missed school and work days, but not serious enough to require medical attention, their extent and impact are unknown.

Cell phones

Cell phone use is growing rapidly, especially among young people – and therefore especially among young drivers. The ISW members discussed different ways to capture exposure to potentially risky driving while using a cell phone. Some participants felt that the duration of calls would be a better indicator of risk than the incidence of cell phone use while driving. (For example, a quick call to say "I'm picking up milk on my way home" represents a different level of distraction from driving tasks than someone who frequently has long business or personal conversations while driving.)

Child safety seats

Child safety seats are an extremely effective intervention that unfortunately are often misused. A properly used safety seat reduces the risk of fatal injury for infants under a year old by 69%, and for children between the ages of 1 and 4 by 47%. One survey of 6,000 children riding in child safety seats found that only 21% were properly restrained.

The *proper* use of child safety seats cannot be determined accurately by typical observation studies used to gauge seat belt use. Because of this, self-reported practices reported through surveys are an important source of information for targeted prevention messages and programs, and for evaluating the success of these messages and interventions.

Next Steps

The ISW members accomplished many of their goals by demonstrating that many data on injury indicators may be available and comparable across states and by identifying a set of priority topics for additional survey-based data collection.

The next steps identified by the group include the following:

- Disseminate guidelines similar to those in Appendix C to help state injury prevention professionals standardize a set of injury indicators, as was done for the nine states represented among ISW members.

- Update the injury indicator tables annually and publish the results.

- Create a fuller set of injury indicators that follows the model established by CSTE and its partners for chronic disease surveillance. (CSTE has offered assistance with this process; STIPDA has applied for funding for a technical assistance position that would be devoted to surveillance issues and could also contribute to completing and maintaining such a project.)

- Submit a revised proposal to the BRFSS Working Group for four injury core questions on suicide attempts, the presence of firearms in and around the home, falls, and drinking and driving. CDC staff will generate the initial draft of questions for review by ISW members.

- Develop an agenda for injury risk factor surveillance that treats BRFSS as one of several viable options and proposes other mechanisms for collecting data on the priority items identified by the ISW members. This document would also include an inventory of other mechanisms – such as ICARIS and the national crime victimization survey – to assess their potential and limitations.

- CDC, STIPDA, and CSTE will jointly approach other agencies (particularly NHTSA and the Department of Justice) to gauge their interest in jointly pursuing (and funding) state-based surveys on injury topics.

- Continue to address injury surveillance issues as they arise, relying on e-mail and conference calls among the current ISW members as well as one face-to-face meeting during the next year.

Appendix A:

Injury Surveillance Workgroup (ISW) Members

Appendix B:

Injury Indicators for Nine States

Appendix C:

Injury Indicators Definitions and Guidance