INJURY PREVENTION AND CONTROL RESEARCH AND TRAINING IN ACCREDITED SCHOOLS OF PUBLIC HEALTH: A CDC/ASPH ASSESSMENT

David Hemenway, PhD
Geraldine S. Aglipay, BS
Karen L. Helsing, MHS
Gary E. Raskob, PhD

"*Injury is probably the most under recognized major public health problem facing the nation today.*"
Institute of Medicine, National Academy of Sciences

Injury is the leading killer of children and young adults in the first four decades of life.[1] According to the Centers for Disease Control and Prevention (CDC), injuries send one person in 10 to emergency departments each year[2] and cost the nation close to $300 billion annually.[3] Unintentional injuries (e.g., fires or motor vehicle injuries) and intentional injuries (i.e., violence) are largely preventable.

The Institute of Medicine (IOM) has raised concerns about the lack of support to advance injury prevention and control research,[4] (pages 11, 186) and whether the U.S. can develop demonstrable programs in reducing injuries as outlined in *Healthy People 2010*. The 1999 report by the Institute of Medicine (IOM), *Reducing the Burden of Injury*, notes that injury prevention is the only major field of public health where sustained training programs do not exist.[4] (page 104) In 2001, the CDC's National Center for Injury Prevention and Control (CDC Injury Center) asked the Association of Schools of Public Health (ASPH) to determine the extent to which schools of public health are currently providing and supporting injury research and training. ASPH conducted a baseline assessment on the extent of injury research, faculty expertise, curricula, and training in schools of public health.

After the survey was completed, an ASPH/CDC Injury Advisory Workgroup met in February 2003 to discuss recommendations for how schools of public health can augment injury research training. The 12-member workgroup represented the institutional diversity of schools of public health—large and small, public and private, established and newly accredited, and those with high levels of injury research and training activity vs. those with little or none. The intent of the assessment and the workgroup activities was to assist ASPH and CDC's Injury Center in identifying needs and opportunities to expand existing resources for injury prevention.

ASSESSMENT METHODS

Injury prevention was defined as activities to prevent, ameliorate, treat, and/or reduce injury-related disability and death. The definition of injury covered two general categories: general injuries—unintentional (including poisoning, spinal cord and traumatic brain injuries, motor vehicle injuries, falls, fires, pedestrian-related injuries, water-related injuries, and natural disasters), and violence (child maltreatment, intimate partner violence, sexual violence, suicide, youth violence, and terrorism). The assessment excluded injuries that occur within occupational and/or industrial environments. ASPH queried all department chairs and each dean of academic affairs at the 33 accredited schools of public health in 2002–2003. Overall, 30 of the 33 member schools (93%) responded. Two different surveys were administered to provide information on the breadth and scope of injury activity.

The first survey queried each department chair; ASPH received a 50% response rate (93 out of 184 departments). The survey instrument helped ASPH capture information on the array of agencies and organizations that provided funding support for injury-related research from 1999–2003, allowing us to identify the types of institutions interested in funding injury research.

The second survey queried the deans of academic affairs; a 63% response rate was received (21 out of 33 deans responded). The survey asked about the availability of special academic tracks/concentrations in injury, formal mentoring and training programs, and specific injury courses (e.g., "Injury Epidemiology and Prevention," "Preventing Intimate Partner Violence," or "Ergonomics Safety"). In our compilation, courses were excluded if injury was not the central topic of the course (e.g., "Introduction to Maternal and Child Health" or "Reproductive Health").

RESULTS

Thirteen schools of public health operate a total of 17 formal injury structures, such as a center, institute, office, or division. In addition, four schools' injury

Articles for *From the Schools of Public Health* highlight practice-based activities at the schools. To submit an article, faculty should send a short abstract (50–100 words) via e-mail to Allison Foster, ASPH Deputy Executive Director, at afoster@asph.org.

structures are based at another university body (e.g., a medical school), with the school of public health as an active partner.

Of the 163 courses identified, only 35 (21%) have injury or violence prevention as the primary focus. Such courses are primarily offered through the departments of health behavior/health education (28%) and epidemiology (25%). Three schools require an injury course for injury-related doctoral programs. No school required an injury course for any master's degree.

Respondents noted the top three needs of schools of public health to better prepare students and current practitioners as: (*1*) recruitment of faculty with injury expertise; (*2*) student training funds; and (*3*) faculty development funds. Further, the top three barriers to better promoting the principles of injury prevention and control mirrored the top three needs: (*1*) insufficient faculty, (*2*) limited courses, and (*3*) lack of student training funds.

The main types of funders for injury research in schools of public health are federal agencies and foundations. Three federal agencies—the CDC, the National Institutes of Health (NIH), and the National Highway and Traffic Safety Administration (NHTSA)—provided the most ongoing support to two or more schools of public health between January 1999 and July 2002 (30%). Two foundations, the MacArthur Foundation and the David & Lucille Packard Foundation, provided support to two or more schools of public health between January 1999 and July 2002.

ASSESSMENT LIMITATIONS

The assessment had some limitations. Although the sources of funding support were determined, data were not gathered on the dollar amounts of funding from each source or in the aggregate. There was no attempt to compare levels of support among school departments or between injury prevention and other important public health problems. Although course titles were identified, information was not obtained on course accessibility (i.e., ongoing semester, annual, or as needed), or on the average enrollment for each course. While the assessment hoped to determine the number of faculty engaged in injury research, most respondents did not provide this information. And finally, the exact requirements for the three schools of public health that offer a doctoral concentration in injury prevention were not obtained.

DISCUSSION

Although injury research and training programs operate in several schools of public health, in general schools of public health have limited capacity to conduct training on injury prevention and control. Most injury courses are taught in the departments of epidemiology and health behavior/health education. Additional injury research by faculty in these departments could provide benefits.

Twenty-four schools of public health listed a formal contact person for injury training and/or research. Such a list was previously not available, and provides a valuable tool to enhance information sharing and augment collaborative relationships to strengthen the nation's injury research and training infrastructure.

The survey lends support to the recommendation from both the IOM[4] (page 16) and the ASPH/CDC Injury Advisory Workgroup[5] to expand funded training opportunities for early career professionals. According to the IOM, increased funding for long-term, extramural grants will help sustain a "critical mass of injury prevention investigators and attract researchers"[4] (page 244); such an expansion of training and interdisciplinary research is essential to public health[4] (page 7). For instance, schools of public health can work more with federal agencies that have interests in issues that cross-cut injury concerns. An example of this is the ASPH/NHTSA Emergency Medical Services (EMS) Fellowship, in which a fellow conducts research and policy analysis to substantiate the need for, and effectiveness of, EMS and public health integration.

Also, examination is needed into how well injury is currently integrated, taught, and learned within the five core areas of study for the master's degree program (health behavior/health education, epidemiology, biostatistics, health administration/policy, and environmental health science). For doctoral degrees, an analysis of the core requirements is also important; the assessment found that only three of the 33 schools surveyed required an injury course for any doctoral degree program. Given that doctoral degrees are the career pipeline for faculty recruitment, and since recruiting faculty with injury expertise was one of the top three injury needs for schools of public health, focus on expanding doctoral training seems essential[4] (page 248).

Schools of public health that have a funded CDC injury or youth violence prevention center are most likely to offer comprehensive injury training for professionals; of the 13 schools of public health with formal injury structures, six had a CDC-funded center. Schools that receive such a steady stream of funding have the capacity to support injury research, faculty

development, and graduate professional training opportunities. One advantage of a CDC-funded injury center is that all syllabi and research are summarized through the Society for the Advancement of Violence and Injury Research, a membership association of CDC-funded injury control research centers.

Given the findings of the assessment, in 2003 the ASPH/CDC Injury Advisory Workgroup recommended six action areas for ASPH to advance injury research and training:[5]

- Improve and expand curricula;
- Strengthen faculty capacity for teaching and research;
- Increase student field practicums for career development;
- Expand injury awareness ;
- Build leadership capacity and organizational infrastructure; and
- Advocate for policies that increase support funding for research, teaching, and training.

To reach demonstrable achievements in injury prevention and control, as outlined in *Healthy People 2010*,[6] increased federal and philanthropic resources must be dedicated toward injury research, teaching, and training. One mechanism that enhances federal agency and foundation relationships with public health academia is the cooperative agreement. Schools of public health could develop or expand existing cooperative agreements with government agencies such as CDC, NIH, and NHTSA to reinforce research, teaching, and training in injury and violence prevention. ASPH experiences with cooperative agreements have helped build a bridge between the research and training capability of the schools of public health and the sponsoring agency. This collaborative effort helps to develop a skilled workforce and improve the interaction between public health academicians and practitioners. Case studies and tools developed from ASPH-funded cooperative agreement projects are often incorporated into the curriculum of schools of public health. Additional cooperative agreements with federal agencies and foundations could not only enrich student curriculum by providing needed internship and fellowship opportunities, but could also enhance the efficacy of injury prevention research methods and outcomes by leveraging resources.

Although some progress has been made since the 1985 IOM report *Injury in America: A Continuing Public Health Problem*,[7] injury remains one of the most underrecognized and under-funded major public health problems facing the nation today. The results of this first ASPH/CDC injury assessment can serve as a baseline for future assessments, helping to strengthen the capacity of schools of public health to conduct injury prevention research and to train injury prevention professionals.

David Hemenway is Director of the Harvard Injury Control Research Center at Harvard University's School of Public Health. Geraldine S. Aglipay is Manager, Practice & Workforce Development, for the Association of Schools of Public Health. Karen Helsing is Director, Education and Research for ASPH. Gary E. Raskob is Dean of the College of Public Health, University of Oklahoma Health Sciences Center.

ASPH would like to especially acknowledge Lynda Doll, ScD, Associate Director of Science at the CDC's National Center for Injury Prevention and Control, for her efforts to advance an injury and violence prevention agenda across accredited schools of public health. In addition, the authors thank the ASPH Injury Advisory Workgroup for their recommendations on improving injury in schools of public health: David Hemenway (chair), Harvard University School of Public Health; Ronda Zakocs (representing Jonathan Howland), Boston University School of Public Health; Andrea C. Gielen, Johns Hopkins University Bloomberg School of Public Health; Katherine Hunting, George Washington University School of Public Health and Health Services; Ann C. Anderson, Tulane University School of Public Health and Tropical Medicine; Carol Runyon, University of North Carolina at Chapel Hill School of Public Health; Corinne Peek-Asa, University of Iowa College of Public Health; Melbourne Hovell, San Diego State University Graduate School of Public Health; David Ragland, University of California, Berkeley, School of Public Health; Susan Morrel-Samuels, University of Michigan School of Public Health; Edward N. Brandt, University of Oklahoma College of Public Health; and Benjamin C. Amick III, University of Texas at Houston School of Public Health.

REFERENCES

1. Centers for Disease Control and Prevention (US), National Center for Injury Prevention and Control. 10 leading causes of death, United States, 2002, all races, both sexes [cited 2006 Jan 23]. Available from: URL: http://webapp.cdc.gov/cgi-bin/broker.exe
2. Centers for Disease Control and Prevention (US), National Center for Injury Prevention and Control. Injury research agenda. Atlanta: CDC, NCIPC; 2002 Jun. Also available from: URL: http://www.cdc.gov/ncipc/pub-res/research_agenda/agenda.htm [cited 2006 Jan 5].
3. Medical expenditures attributable to injuries. MMWR Morb Mortal Wkly Rep 2004;53(1):1-4.
4. Institute of Medicine. Reducing the burden of injury: advancing prevention and treatment. Washington: National Academies Press; 1999.
5. Association of Schools of Public Health, in collaboration with the Centers for Disease Control and Prevention (US), National Center for Injury Prevention and Control. ASPH Injury Advisory Workgroup recommendations. Washington: ASPH; 2003 Mar. Also available from: URL: http://www.asph.org/document.cfm?page=828 [cited 2006 Jan 23].
6. Department of Health and Human Services (US), Office of Disease Prevention and Health Promotion. Healthy People 2010. 2nd ed. With understanding and improving health and objectives for improving health. 2 vols. Washington: Government Printing Office; 2000 Nov. Also available from: URL: http://www.healthypeople.gov/ [cited 2006 Jan 5].
7. Institute of Medicine. Injury in America: a continuing public health problem. Washington: National Academies Press; 1985.