Part 2:
An Infrastructure for Injury Control

Organizational Structure and Coordination

Where We Are

Need for a National Lead Agency

If injury mortality and morbidity are to be reduced, lead agencies, with the responsibility, authority, and ability to conduct or support injury surveillance and injury control programs, must be established at the national, state, and local levels. Until these agencies are created, progress to reduce the overall injury toll will be limited.

Without lead agencies to provide coordinated focuses of activity, efforts by individuals, professionals, and government agencies remain scattered. Available resources are not maximized, efforts are unnecessarily duplicated, and time, energy, and funds are expended on isolated programs and research efforts that do not reduce injury mortality and morbidity. Effective lead agencies provide the leadership and vision to mobilize and guide the nation at the national, state, and local levels, helping organizations to achieve their injury control goals.

In 1966, the National Academy of Sciences in its classic "white" paper, *Accidental Death and Disability: The Neglected Disease of Modern Society*, recognized this need for leadership (73). The academy recommended a national council "for coordination of information and advice on implementation of measures and regulations now vested in scattered private, industrial, and federal agencies, and for research, public education, and development of improved standards" (73).

Almost 20 years later, in 1985, the National Academy of Sciences again published findings and recommendations on the injury problem in *Injury in America* (74). The key findings were as follows:

- No central agency is responsible for reducing the incidence of injuries.
- Reducing injuries requires coordinated effort among specialists in epidemiology, prevention, biomechanics, treatment, and rehabilitation; the number of specialists now trained in these areas is inadequate.
- The result of the above inadequacies is that research efforts in injury are unfocused, lack continuity, and are undersupported. Many gaps exist in efforts to prevent and treat injury and deal with its aftermath.

The key recommendations called for the following:

- Establishment of a federal center for injury control within CDC to provide a single coordinated focus of activity that would give visibility to the importance of injuries as a public health issue and permit an organized program of effective action to address the problem.
- Establishment of a level of funding for research on injury that is sufficient to meet the magnitude of the problem.

This report led to the creation in 1986 of the Division of Injury Epidemiology and Control (now the Division of Injury Control) within CDC's National Center for Environmental Health and Injury Control.

In 1988, the National Academy of Sciences was asked to review the division's progress and concluded that the "full intent of *Injury in America* cannot be fully realized unless organizational and program corrections are made" (75). The report added that "careful thought must be given to the mixture of skills of staff members and the balance between in-house activities and the extramural program.... There is a need for a national program plan." This analysis set the stage for the division to become the designated lead agency for injury control. To date, the division has fulfilled many but not all of the functions of a national lead agency. Much remains to be done, but with appropriate resource allocation and setting of priorities, the division can continue to move forward.

Other Public and Private Organizations in Injury Control

Numerous private organizations are involved in various aspects of injury control, but they operate independently, often duplicating efforts and not coordinating their efforts to meet common national goals. The CDC should identify these organizations and their roles.

Public agencies and private safety organizations differ markedly in their objectives, range of activities, scope and manner of influence, and means of support. These variables directly influence every phase of injury control, including data collection and interpretation, the selection of intervention strategies, and overall program evaluation. These organization-related differences are further compounded by frequent disagreements between researchers and practitioners about priorities and intervention strategies. The CDC, using its leadership capabilities, must balance these perspectives and integrate them in the overall national strategic plan.

Public Agencies

Administrative and legislative agencies have interest in and responsibility for injury control at the federal, state, and local levels. Some discretionary funds exist, but most funding for injury control requires budgeting and appropriation authority that is approved by both the legislative and executive branches. Federal and state agencies set the overall direction and provide grants to local public and private agencies. These local public health and safety

agencies, often working collaboratively, provide direct services to the public. At present, limitations on funding hinder the activities of public health and safety agencies in injury control.

- Strengths: Federal, state, and local government agencies often have resources, autonomy, influence, and visibility not available to private safety organizations. They have a relatively high degree of flexibility in setting priorities, and they can gain access to injury data that are not available to some private groups. Through their funding and compliance programs, they can markedly affect the direction and amount of injury control activity within the private sector. In particular, government regulation at any level can produce advances in injury control that private efforts could never achieve through voluntary conformity.
- Limitations: Budget cuts, administration changes, or the necessity to show tangible and immediate results can undermine a program's continuity and effectiveness, and make long-range planning difficult. Nongovernmental agencies funded by public funds usually cease activity when government support is no longer present. Public agencies frequently lack the broad-based network necessary to reach private sector groups that communicate directly with at-risk target groups. The regulatory status of some public agencies impairs their perceived acceptability as advisors and educators. Safety regulations must be enforced on a continuing basis or compliance will decline.

Private Agencies

To maintain financial self-sufficiency, agencies are motivated to have a close and responsive relationship with their constituencies, enabling them to develop injury control programs and materials that satisfy user needs. Private safety organizations operate as intermediaries between government and the general public, including business and industry. Their organizational objectives, means of support, and constituencies differ from those of the public sector and among themselves. Some organizations concentrate their efforts in a specific problem area, such as occupational safety and health or fires and burns; others, such as the National Safety Council and its chapters, address the entire range of problems associated with unintentional injury control.

- Strengths: Private safety organizations can influence and support public policy and public agency programs in a nonpartisan fashion. They can marshall local support for injury control programs and, over time, create a social climate that facilitates the success of interventions. Historically, some private agencies have demonstrated more staying power or continuity of program effort than those in the public sector.
- Limitations: Private safety organizations have trouble reaching certain at-risk target groups, particularly those at low socioeconomic levels. Program planning and development is frequently less than optimal because of inadequate data on injury priorities and a lack of contact with professionals with expertise in the interpretation of data. The need to maintain fiscal self-sufficiency can seriously limit private sector organizations' range of activities and overall effectiveness. Because of the voluntary nature of private sector support for injury control, injury control programs often must be designed to correspond

with the interests and activities of cooperating nonsafety organizations, which may frequently change and often do not encompass injury control objectives.

Universities

Universities play an important role in injury control, a role that has not as yet been clearly defined by either the academic world or CDC. The traditional functions of universities — research, teaching, and service — all have the potential to significantly affect injury control in this country. For many years, universities have served as the major focus for biomedical research in trauma care funded by the National Institutes of Health; more recently, some have been the major grantees of CDC's extramural research program. Eight Injury Control Research Centers (ICRCs) have been funded to establish multidisciplinary regional centers that integrate research and training in acute care, trauma care systems development, rehabilitation, and prevention, but they have only begun to function in this capacity and have yet to realize their full potential.

Injury control professionals and specialists need to be trained by universities, that work with state and local health departments. The disciplines of medicine, public health, health sciences, nursing, emergency medical services, engineering, and architecture should be applied to the injury field.

Universities also serve the communities, states, and regions in which they function. Few are now assisting in the development and evaluation of model injury control programs for specific target groups in their communities.

Where We Want To Be

To serve as a national lead agency, CDC's Division of Injury Control should be authorized to carry out the following functions:

- Define the national injury problem for Congress and the nation.
- Monitor the national incidence and distribution of injuries.
- Collaborate with other agencies to determine national injury priorities and implement the research and intervention plan developed from this national agenda to address both injury and system problems.
- Develop a national strategy for establishing a lead agency for injury control within each state and U.S. territory. This strategy should call for the division to (a) provide guidance, resources, and training to help each state and territory form its lead agency and (b) phase in grant support for each state and territory to devise its own injury control plans, to develop local lead agencies, to evaluate its efforts, and to disseminate the results of that evaluation.

- Develop a national strategy to fund and utilize designated ICRCs and injury scholars in an effort to expand the research agenda to include national injury control priorities. The overall research strategy should include a plan for disseminating research data and for translating research into injury control interventions. Consideration should be given to funding the development of new technology to prevent known injury hazards.
- Coordinate the deployment of existing national resources for injury prevention among federal agencies, state agencies, private safety organizations, corporations, and universities.
- Develop model legislation based on the results of national and state injury control data and program evaluation.
- Monitor federal, state, local, and private organizations' progress in meeting national goals and revise national strategies accordingly.
- Monitor what is being done nationally and internationally in the field of injury control and serve as a clearinghouse of information to states, universities, and public and private agencies.
- Maintain the public and political visibility of injury control as a public health priority.

How We Get There

Federal Government

Congress should —

- Establish a national Center for Injury Control. The center should serve as the nation's lead agency for injury control.
- Appropriate adequate funding, at least $100 to $200 million, for the center to carry out a national injury control initiative.

The CDC should —

- Staff the Center for Injury Control with professionals who have expertise in injury epidemiology, surveillance, research, program and system development, and evaluation.
- Establish a national strategic plan that describes the activities of the center and sets the priorities of the grants program so that they will meet the national agenda.
- Provide technical assistance, resources, and funding to states to create lead agencies that can carry out injury control programs at the state and local levels. Provide expert on-site technical assistance to assist states in surveillance, program development, and evaluation.
- Develop a national strategy to incorporate training in injury control within the disciplines of medicine, public health, nursing, health education, engineering, emergency medical services, public safety, social work, law, and business management.

- Develop mechanisms to translate injury research into injury control interventions.
- Establish lead agencies with the responsibility, authority, and capability of conducting or supporting injury surveillance and injury control programs at the national, state, and local levels.
- At the national level, CDC, as the lead agency, should define the national injury problem for the nation, determine national injury priorities, and use national expertise to create a national injury control plan. The CDC should develop a national strategy to carry out the plan by establishing state and local lead agencies; coordinating federal and state agencies, private safety organizations, corporations, and universities; and supporting research in injury and its control.

State Government

Many state laws authorizing state and local health departments have not been revised for more than half a century. The authority and responsibilities assigned to health agencies often do not reflect current mortality and morbidity patterns. State legislatures should revise public health laws so that the priorities of state and local health departments correlate with the severity of particular injury problems.

Training and Research

Where We Are

Injury in America states that a major impediment to injury control is a shortage of health professionals and other scientists with relevant training in injury control: "without knowledgeable and interested persons trained in the sciences relevant to research and programmatic efforts, the injury toll from local, regional, and national conditions will continue" (74).

There is an extraordinary need to train existing and future injury control personnel in public and private agencies at every level — federal, state, and local. The results of a recent survey of training needs of public health and traffic safety professionals indicate that the training needs are extensive and that the opportunities for meeting those needs are few. Nearly 100% of public health professionals reported that they needed additional training. In addition to learning about specific injuries and the science of injury control, both public health and traffic safety professionals wanted training in "long-range planning, using data for planning, and advocating legislation and regulations" (76).

The need for training has also been documented elsewhere. The Year 2000 Objectives for the Nation recommend that schools of public health include injury control in their curricula and increase faculty development and fellowships (25). Results of a survey conducted by the Education Development Center in 1989 (76) showed, however, that although nearly half of the schools of public health that responded now offer an elective course devoted to a particular cause of injury, "few provide overview courses on injury epidemiology and prevention." Most importantly, injury control is not integrated into traditional course offerings. Reported barriers were lack of faculty expertise and interest, lack of training materials, lack of resources, competing priorities, and lack of student demand.

The CDC now funds eight ICRCs in universities throughout the country. These centers educate graduate students in injury control research. Courses in injury prevention are often conducted for Master of Public Health (MPH) students. Two ICRCs at The Johns Hopkins University School of Public Health and Hygiene and the University of Alabama at Birmingham (UAB) conduct a training course every year for professionals of any discipline who are working to improve their knowledge and skills in injury control. In addition, the University of Alabama at Birmingham has a unique minority training program financed in part by the Nationwide Insurance Company. This program focuses on research techniques related to minority injury issues and provides summer training sabbaticals for minority faculty members and their students from historically black colleges and universities.

In addition, the University of Michigan School of Public Health conducts a summer course in injury epidemiology and control, and the Public Health Service's Indian Health Service has begun an injury control specialist fellowship that includes a week at The Johns Hopkins University, the 3-week course at the University of Michigan, and a week of field training in surveillance and the choice of countermeasures. In addition, several of the 15 CDC-funded state and community-based capacity-building grantees have conducted a variety of injury control training programs for local public health professionals. Additionally, the Education Development Center has developed a curriculum accompanied by slides, called "Educating Professionals in Injury Control," which universities, health departments, and other agencies may purchase and use to educate students and staff. State and local governments can play an important role in both training and research.

The CDC's Role in Training: In 1984, at the Association of Schools of Public Health CDC conference on injury control training, participants agreed that because training funds are limited, practitioners should receive first priority. Conference participants concluded that the most appropriate role for CDC in injury control training is curriculum development, resource identification, and technical assistance.

Epidemiology: Epidemiology is a key component of injury control. Epidemiologists study the characteristics of individuals, the environment, and exposure to injury agents that increase the risk for injury; conduct surveillance; and evaluate the effectiveness of prevention programs. Epidemiologists have powerful analytic and experimental tools to apply to the field of injury control. These tools, applied by injury epidemiologists, will enable the injury control movement to progress beyond merely describing problems.

Engineering: Engineers design the products and processes involved in most injuries. Yet in many engineering schools, product and process safety is not integrated into the curriculum.

Ergonomics: The basic premise of ergonomics, which includes human factors, in the realm of injury control is that the human-made environment should be arranged or designed for human use. A number of factors are considered in the design process, including (a) human characteristics, (b) human expectations, (c) human behaviors, and (d) the environment in which humans live and work. A number of universities offer graduate programs for educating students about the knowledge base and methodologies for fitting the environment to the human rather than forcing the human to conform to the environment. The most common titles for these programs are ergonomics, human factors engineering, human engineering, human factors psychology, industrial hygiene, safety, and work or exercise physiology.

Architecture: The environment is recognized as an important contributor to the risk of injury, particularly injury occurring in the home and workplace. Considerable progress in injury prevention could be achieved by improving structural design standards, individual practices, and urban planning. For example, housing should be designed to minimize the risk of injury due to fires and falls, and community designs can promote child safety at road intersections.

Health Communication: Professionals trained in the principles and techniques of health education and risk communication are needed to convey clear and accurate information on hazards, risks, and preventive options. Populations at risk and those who represent them — risk managers, policy makers, and the general public — need such information. Enhanced communication among appropriate or participating sectors of society in an increasingly risk-literate population will make it possible to change attitudes and perceptions about the value of measures to control and prevent injury hazards.

School Health: There has been some discussion about using school health education to promote injury control among school-aged children. Some school health education programs have been shown to be effective in addressing some health problems (e.g., teenage pregnancy), but none has been proven to be effective for injury control. If school health education in injury control is attempted, it is important that such education be rigorously evaluated by injury control professionals.

Where We Want To Be

In each of these disciplines, financial support is needed to improve curricula on injury control and to begin integrating more injury control material into undergraduate and graduate training programs. The development of a trained cadre of injury control investigators and practitioners requires investment in curricula development and education.

Once a cadre of individuals has been developed, adequate support must be given to their research and intervention programs. This support should be at many levels: research to identify risk factors and injury hazards, development of safer products and environments, implementation of prevention programs, and evaluation of their effectiveness. Funding should be undertaken with the understanding that not all programs will succeed; however, advances in the field will be made only through supporting new, innovative ideas for injury prevention and control.

During the next decade, advances in injury control will require adequate resources to accomplish the tasks we have outlined. Money alone, however, is not enough to accomplish the national goals of injury reduction. The critical factor is having knowledgeable and skilled

leaders who understand the science of injury control, program planning, and evaluation. A substantial cadre of professional people with expertise in injury control can be created by building on injury specialties within established disciplines, such as epidemiology, engineering, ergonomics, behavioral sciences, architecture, and health communication.

How We Get There

Federal Government

Training

- The CDC should develop and implement a strategic plan for national training based on the national injury control strategy and sound educational principles. The plan should also be based on workforce needs, the roles and responsibilities of injury control professionals and the tasks they perform, existing training resources, faculty and learning materials, and training gaps and needs. The plan's goals should be to target specific audiences, establish learning objectives, develop model curricula, integrate injury control training into ongoing professional education, and establish evaluation criteria.

To accomplish this, CDC should —

- Convene a group with appropriate expertise to work with CDC to devise a national injury control training plan.
- Hire staff with expertise in educational technology to administer the development and implementation of the plan.
- Provide a program to make grants for the development of components of the training plan.
- Work with federal agencies that fund related professional training to require that such training include an injury control component or module (e.g., maternal and child health, preventive medicine, nursing, epidemiology, rehabilitation, trauma, and occupational health training programs).
- Work with existing injury control training programs to help fill identified training gaps.
- Create incentives for faculty and students, such as scholarships and fellowships in epidemiology, engineering, architecture, ergonomics, behavioral sciences, and health communications.
- Appropriate sufficient funds to increase coordinated injury-related research and training within other relevant federal agencies. The goal is to integrate injury research and training with other priority issues such as child health, aging, and alcohol and drug use.

- Require and fund ICRCs to train their state and local health department staff as injury control professionals, and faculties at medical, public health and related professional schools.
- Require and fund training of program staff as a component of state capacity-building grants.
- Designate and fund a resource center that would collect and disseminate injury control curricula, learning materials, and aids and that would serve as a technical resource.
- Support the development of model curricula, instructor training manuals, and learning materials and disseminate these nationally.

Research

- Injury control research priority projects — both intramural and extramural — must undergo scientific peer review to assure the strongest scientific base possible, laying the foundation for sound public health decision making.
- The research agenda for the various federal agencies supporting research on injuries should be coordinated. As the lead agency for injury control in the federal government, CDC should collect information on the programs of other agencies and keep each agency abreast of what the others are doing and of the gaps identified in this report. The CDC's Advisory Committee for Injury Prevention and Control should review the various research programs at least annually and recommend the following year's program emphasis for research proposals. Research into the effectiveness and costs of injury control interventions and problems associated with their implementation should be given top priority.
- Federal resources should be invested in established programs and other communication channels to maximize national awareness about known injury risks and effective interventions. Communication specialists should be encouraged to emphasize the importance of injury relative to other public health problems afflicting society and to publicize available approaches to reduce the injury toll. The goal is to ensure that adequate resources are allocated and applied to injury control.

Academic and Research Institutions

- Educational institutions with injury epidemiology and control specialties and curricula should be granted the resources to expand such programs; those without such programs should be offered financial incentives to start them.
- Engineering schools with existing injury prevention specialties, such as safety, should be provided the resources needed to expand; those without such programs should be given financial incentives to start them. The potential role of products and processes in injury control should be integrated into engineering curricula.

- Ergonomics programs should be funded to strengthen their research and course work in the area of injury prevention, and stipends for students interested in emphasizing injury prevention in their studies should be established. Ergonomics should be integrated into machine-design courses in engineering schools.
- Architectural design schools with programs emphasizing human factors and injury prevention should be provided the resources needed to expand; those without such programs should be given financial incentives to start them.
- Schools should provide stipends for graduate students in the injury control field. At first, these efforts should provide support for postgraduate and fellowship training in injury epidemiology, safety engineering, ergonomics, architecture, health communication, and safety management.

Surveillance

Where We Are

Surveillance has been defined as "the ongoing and systematic collection, analysis, and interpretation of health data in the process of describing and monitoring a health event" (76). In injury control, these data are useful to a broader community than that typically concerned with health data. For example, manufacturers and builders need to know what modifications in their products and structures could reduce injuries. Farmers, industries, and small businesses need to know how injuries to their families or employees can be reduced. Insurance companies need to know how to use rates as incentives for risk reduction and what technical assistance to provide to their policyholders to reduce their losses. Regulatory agencies need to know about patterns of injuries so that they can identify any gaps in regulatory responsibility or action. State governments need to know about the injuries that cluster by location and about certain population characteristics so that they can identify state and local agencies (private and public) that need technical and other support. Local governments need the same information within their jurisdictions. Hospital, health, and other professional groups, nonprofit associations and foundations, and advocacy groups need to know how they can contribute to injury reductions. Researchers need to direct their investigations to priority areas as resources diminish.

To monitor trends in injuries and identify those associated with particular populations, products, or locations, people in the injury field have developed various injury surveillance systems. The extent of data collected on injuries in these systems varies by type of injury, severity of injury, and the agency collecting the data. The National Highway Traffic Safety Administration collects detailed data on drivers, passengers, vehicles, and environmental conditions related to fatal injuries on public roads. The National Transportation Safety Board collects similar data on fatal aircraft injuries. No detailed data on other fatal injuries are collected at the national level, but the National Center for Health Statistics tabulates incidence and demographic characteristics from death certificate files, and several agencies use these data to monitor trends. The CPSC uses the National Electronic Injury Surveillance System (NEISS) to collect data on product-related injuries to persons treated in the emergency departments of a national sample of hospitals. The CPSC and other federal, state, and local government agencies periodically conduct special in-depth investigations of injuries associated with particular products. Several product modifications or bans have resulted from the identification of hazards through the use of NEISS. Some states are also examining the use of trauma registries in monitoring injuries. In addition, numerous state and local police and highway departments identify high-risk motor-vehicle crash locations that need to be made safer, but they rarely identify sites where severe injuries, rather than clusters of property damage, occurred.

In most hospital records, injuries to persons requiring hospitalization are coded according to diagnosis (N-code) but rarely by external cause (E-code), except in a few states or agencies (such as the Indian Health Service) where E-codes are required. A sample of hospitals' data is compiled in the National Hospital Discharge Data system.

Occasionally, a federal agency, private organization, corporation, or trade association uses injury rates from surveillance data to imply that the risk of a given product or process is acceptable because the injury rate is similar to, or lower than, that of some other tacitly accepted product or process. Decisions on risk should not be based on these data. The decision to modify a product or process to reduce injury should be based on its effect on injury reduction and the feasibility of the modification, in view of the public's willingness to pay for it.

Current surveillance systems are limited because we have no national standards for injury surveillance and no national guidelines for E-coding, trauma care data systems, and other registries. Instead, each state surveillance system is evolving separately and diversely. If data are to be useful, we must collect them by using case criteria and minimum data sets with defined, uniform elements.

Where We Want To Be

The Indian Health Service, a few state governments, and some local agencies and hospitals are beginning to collect more detailed data to identify where, to whom, and how injuries occur at local levels. The power of these systems for injury control has been demonstrated. The Indian Health Service system includes as a part of its surveillance a list of simple steps that can be taken to prevent or reduce the severity of injuries (77). We know that clusters of injuries can be reduced by employing inexpensive countermeasures identified through surveillance. For example, in a 2-year period, a 2-mile stretch of road on the White River Apache Reservation had 37 pedestrian injuries at night. In the next 2 years, after lights were installed (at a cost of about $39,000), only two such injuries occurred. In 7 years, on the Blackfeet Reservation in Montana, 59 severe motor vehicle injuries, including 19 deaths, occurred at night on a 2-mile stretch of road. In the 2 years after lights and limited access curbing were installed at locations pinpointed by the surveillance (at a cost of $6,500), only two severe crashes occurred (77).

Similarly, on the basis of the surveillance of children falling out of windows, the New York City Health Department targeted high-rise residential buildings for the installation of window barriers. Deaths dropped from 30 to 50 per year in the 1960s to about four per year in the 1980s. In addition, traffic engineers in New York City identified a section of Queens Boulevard that had a concentration of elderly pedestrian deaths and achieved reductions by making modest changes in signs and striping and by educating elderly persons in the community (77).

These different approaches to surveillance lead us to ask this question: What are the most efficient and effective ways to investigate injuries in sufficient detail so that we can choose which ones to target and which countermeasures to employ? One approach is to gather data on whom, how, and where all severe injuries (e.g., fatal and hospitalizations) occur, paying particular attention to sites (e.g., road sections and locations of falls in houses) and populations. Such an approach is based on the known clustering of motor vehicle-, fall-, and fire-related injuries by location and the need to choose among specific countermeasures, depending on the circumstances. For example, there is no need to launch a program to encourage people to place skid strips in bathtubs if most severe falls in households in a given community occur on poorly lighted basement stairs or icy sidewalks. Another approach is to gather minimal data, such as E-codes in fatal and hospital data sets, and then target only the most frequent types of injuries for detailed studies.

At the very least, data on fatal injuries not associated with motor vehicle crashes should be assembled in a uniform manner by state, as in the Fatal Accident Reporting System for motor vehicle crashes. The data are usually available in coroner files but are not coded systematically. States should track data on environmental circumstances, type of energy involved, and medium by which the energy was conveyed. This tracking system should include specific identifications and descriptions (e.g., make, model, serial number, dimensions) for items such as guns, ignition sources in fires, stairs in falls, and pools in drownings, as well as data on the characteristics and activities of the persons killed. National surveillance standards for injury control are direly needed.

How We Get There

Federal Government

- E-codes can be included inexpensively in hospital discharge records and should be required for reimbursement by federal and private health insurance systems. Two separate fields for E-codes should be required — for cause and place of occurrence. CDC should study the extent and use of these data at state and local levels.
- The CDC should support research on the cost-effectiveness of competing surveillance systems, including choice of countermeasures, prevention strategies, injury reduction, and levels of severity. This could be done by conducting comparative studies employing different surveillance approaches used by health departments and other agencies.
- Congress should fund CDC, perhaps through the National Center for Health Statistics, to contract with the states to collect data on fatal injuries that do not involve motor vehicle injuries equivalent to the data collected in the Fatal Accident Reporting System (FARS) for on-road motor vehicles. The CDC also needs funds for disseminating this information through an annual report and purchasable computer files. Data better than those in FARS should be developed on the mechanisms of injuries and the part(s) of the body injured.

- Congress should direct regulatory agencies to use cost-effectiveness in deciding whether a product or process should be regulated. Decisions to regulate should be based on studies of the specific effects of injury reduction efforts, not relative risk, and on the public's willingness to pay for the reduced risk.

State Governments

- State legislatures should mandate the use of a common identifier, such as a social security number, in data files on injuries collected by police, coroners, medical examiners, hospital staffs, and fire fighters.
- Health departments should produce biannual or annual reports of deaths and hospital discharge data, cross-tabulated by N-codes and E-codes for counties and cities to bring attention to the extent and location of specific problems and missing E-code information.

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Appendix:
Healthy People 2000:
Health Objectives for the Nation
Unintentional Injuries

Appendix: Healthy People 2000 Health Objectives for the Nation

Unintentional Injuries

9.1	Reduce deaths caused by unintentional injuries to no more than 29.3 per 100,000 people. (Age-adjusted baseline: 34.5 per 100,000 in 1987)
9.2	Reduce nonfatal unintentional injuries so that hospitalizations for this condition are no more than 754 per 100,000 people. (Baseline: 887 per 100,000 in 1988)
9.4	Reduce deaths from falls and fall-related injuries to no more than 2.3 per 100,000. (Age-adjusted baseline: 2.7 per 100,000 in 1987)
9.5	Reduce drowning deaths to no more than 1.3 per 100,000 people. (Age-adjusted baseline: 2.1 per 100,000 in 1987)
9.6	Reduce residential fire deaths to no more than 1.2 per 100,000 people. (Age-adjusted baseline: 1.5 per 100,000 in 1987)
9.7	Reduce hip fractures among people aged 65 and older so that hospitalizations for this condition are no more than 620 per 100,000 people. (Baseline: 714 per 100,000 in 1988)
9.8	Reduce nonfatal poisoning to no more than 88 emergency department treatments per 100,000 people. (Baseline: 103 per 100,000 in 1986)
9.9	Reduce nonfatal head injuries so that hospitalizations for this condition are no more than 106 per 100,000 people. (Baseline: 125 per 100,000 in 1988)
9.10	Reduce nonfatal spinal cord injuries so that hospitalizations for this condition are no more than 4.5 per 100,000 people. (Baseline: 5.3 per 100,000 in 1988)
9.11	Reduce the incidence of secondary disabilities associated with injuries of the head and spinal cord to no more than 16 and 2.6 per 100,000 people, respectively. (Baseline: 20 per 100,000 for serious head injuries and 3.2 per 100,000 for spinal cord injuries in 1986)
9.15	Enact in 50 States laws requiring that new handguns be designed to minimize the likelihood of discharge by children. (Baseline: 0 States in 1989)
9.16	Extend to 2,000 jurisdictions the number whose codes address the installation of fire suppression sprinkler systems in those residences at highest risk for fires. (Baseline data available in 1991)
9.17	Increase the presence of functional smoke detectors to at least one on each habitable floor of all inhabited residential dwellings. (Baseline: 81 percent in 1989)
9.18	Provide academic instruction on injury prevention and control, preferably as part of quality school health education, in at least 50 percent of public school systems (grades K through 12). (Baseline data available in 1991)

9.21	Increase to at least 50 percent the proportion of primary care providers who routinely provide age appropriate counseling on safety precautions to prevent unintentional injury. (Baseline data available in 1991)
9.22	Extend to 50 states emergency medical services and trauma systems linking prehospital, hospital, and rehabilitation services in order to prevent trauma deaths and long-term disability. (Baseline: 2 States in 1987)