

AMERICAN ACADEMY OF PEDIATRICS

Committee on Injury and Poison Prevention

The Hospital Record of the Injured Child and the Need for External Cause-of-Injury Codes

ABSTRACT. Proper record-keeping of emergency department visits and hospitalizations of injured children is vital for appropriate patient management. Determination and documentation of the circumstances surrounding the injury event are essential. This information not only is the basis for preventive counseling, but also provides clues about how similar injuries in other youth can be avoided. The hospital records have an important secondary purpose; namely, if sufficient information about the cause and mechanism of injury is documented, it can be subsequently coded, electronically compiled, and retrieved later to provide an epidemiologic profile of the injury, the first step in prevention at the population level. To be of greatest use, hospital records should indicate the "who, what, when, where, why, and how" of the injury occurrence and whether protective equipment (eg, a seat belt) was used. The pediatrician has two important roles in this area: to document fully the injury event and to advocate the use of standardized external cause-of-injury codes, which allow such data to be compiled and analyzed.

OVERVIEW

In 1996, injuries accounted for 64% of deaths in children and teenagers 1 to 19 years of age.¹ The National Center for Health Statistics estimates that for every injury death occurring in the United States, about 18 hospitalizations and 250 emergency department visits occur for people of all ages.² Information about the external cause of injury fatalities, in general, is more accurate and precise than is information about the external cause of nonfatal injuries.

Several problems exist with nonfatal injury data. First, national morbidity estimates are based on a representative statistical sample of the US population. The data cannot be disaggregated to the state or local level. Second, national estimates of morbidity data are not always reported in a timely manner. Third, not all states have statewide hospital discharge data systems that actively gather information concerning the specific external cause of injury. In communities without ready access to local cause-specific injury data that are coded, hospital administrators, public health officials, and safety advocates are impeded in their attempts to prioritize and plan appropriate services for their communities, such as emergency medical services, acute and rehabilitative inpatient and outpatient services, and primary pre-

vention activities. Lack of local data makes it difficult to identify high-risk groups and environmental hazards that are specific to a given community. This in turn impedes efforts to develop and implement targeted, population-specific prevention programs.

The first logical step for local injury programs should be a review of local morbidity data. Ideally these data should be available in a readily accessible and electronic form. Data must be of high quality, with ascertainment of all cases or a statistically representative sample of all cases.

INJURY SURVEILLANCE SYSTEMS

Three types of ongoing injury surveillance systems are 1) the national vital statistics registry, 2) hospital discharge data systems, and 3) local emergency department data systems. The national mortality reporting system (vital statistics) serves as a model because data collection, coding, compilation, and reporting have been in use longer and are more refined than are morbidity-based systems. Vital records are collected by each county and state health department by compiling data from death certificates. The underlying and contributing causes of death, as certified by the physician, are coded (as of January 1, 1999) using the *International Classification of Diseases*, 10th revision (*ICD-10*).³ Under this system (and its predecessor, *ICD-9*),⁴ fatal injuries can receive two types of codes: an external cause-of-injury code and one or more diagnosis codes. The external cause-of-injury code specifies both the mechanism (eg, motor vehicle, fire, fall) and the intent (unintentional, suicide, homicide, or undetermined). The diagnosis code specifies the anatomic site and nature of the injury; for example, a skull fracture or an open wound of the chest.

In *ICD-9* (effective 1979–1998), the codes for external causes of injury are referred to as E-codes. The nature of injury codes were often referred to as "N-codes." With *ICD-10*, however, the use of the term "E-code" should be replaced with "external cause-of-injury" code because the referent chapters now are prefaced with the letters "V," "W," "X," and "Y" and the codes range from V01 to Y89. Similarly in *ICD-10*, the nature of injury codes are prefaced with the letters "S" and "T" and codes range from S00 to T98.

A comparable classification system exists for coding nonfatal injuries, known as the *Clinical Modification of the ICD (ICD CM)*.⁵ Currently, the 9th revision is in effect. *ICD-10 CM* will most likely become effective after October 1, 2001. *ICD-10 CM* will likely have twice the number of external cause-of-injury

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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codes as the *ICD-9 CM*, allowing for more precise and specific codes.

The combined use of diagnosis and external cause-of-injury codes is a highly specific way to classify injuries. For example, a facial fracture resulting from a bicycle injury can be distinguished from a similar fracture resulting from a fight. Information about the diagnosis, cause, and place of occurrence is needed to plan effective injury-prevention programs.

PROBLEMS WITH CURRENT MORBIDITY-REPORTING SYSTEMS

Two major problems exist with current morbidity-reporting systems. First, documentation of the injury event in the hospital record often is incomplete or even absent. For example, physicians and nurses treating a patient in the emergency department or hospital may note that a playground injury occurred but neglect to define the particular circumstances of the injury, eg, whether the injury was sustained because the child fell from a height, the distance of the fall, the type of equipment involved, the surface on to which the child fell, whether anyone else was present or involved in the occurrence, and whether the playground was in a schoolyard, at a private residence, or in a public recreation area. The record does not indicate the "who, what, when, where, why, and how" of the injury occurrence, probably because the caregivers focus their efforts on the immediate treatment of the injury. The hospital record should document key patient identification data such as the child's name, date of birth, sex, race, ethnicity, address, and telephone number. To maximize the use of hospital records, physicians, nurses, and other health care professionals should record the time, place, nature, and mechanism of injury; whether the injury was inflicted intentionally; contributing risk factors (eg, the use of alcohol or other drugs); whether protective equipment was used; whether any other persons were injured in the event; and whether the injury was work-related. If the primary (intake) record does not include such information, reconstructing the event later is difficult, even by direct interview.

The second problem is that medical records department personnel may not assign the hospital record an external cause-of-injury code. As of October 1997, 42 states had statewide hospital discharge data systems, but only 23 had mandatory external cause-of-injury code reporting for injury-related hospital discharges.⁶ Based on a 1996 national survey of emergency department visits by patients of all ages, it is estimated that >34 million injury-related visits were made that year.⁷ However, only nine states currently have mandates that require the reporting of external cause-of-injury codes for injury-related emergency department visits.⁶ Voluntary reporting by external cause-of-injury code is incomplete and possibly biased by the number of diagnostic codes assigned; patient characteristics (eg, age, sex, or race); the nature and severity of the injury; and the type of hospital (eg, size, location).⁸ As a result, compilations based on voluntary external cause-of-injury coding may not reflect all injuries accurately. Man-

datory reporting of external cause-of-injury codes would improve the quality of the estimates of external causes of injury morbidity in the United States.

BENEFITS TO BE GAINED

Administrators of hospitals and managed care organizations can expect to gain several direct benefits from universal reporting of injuries by external cause-of-injury code. The improvement in population-based case ascertainment and accuracy if reporting is implemented by *all* hospitals would allow for planning, implementation, and evaluation of acute care and rehabilitation services (eg, bed, staffing, and emergency department needs) and would provide data needed to assess the financial effect of different types of injuries. Public health officials would have the necessary data to identify risk factors and high-risk populations to target primary prevention programs and to provide improved prehospital care. Pediatricians and other advocates would learn which injury issues warrant the most attention in their community. For example, the Indian Health Service, which has included external cause-of-injury codes in its hospital discharge data for >20 years, combined such information with police reports to identify a narrow stretch of roadway in Cherokee, NC, where motor vehicle-pedestrian collisions were occurring at a high rate. The roadway was modified, thereby virtually eliminating the problem.⁹ Improved external cause-of-injury code data would help state and federal injury experts track national and state objectives for injury prevention according to goals established by *Healthy People 2000*.¹⁰ Policy-makers could study more readily the effects of local and state injury-prevention legislation, such as laws mandating the installation of residential smoke detectors, use of safety belts and motorcycle helmets, and the rescision of the 55-mph speed limit. Mandatory reporting of external cause-of-injury codes for hospital discharge data has been endorsed by the Council of State and Territorial Epidemiologists, the American Public Health Association, the American College of Emergency Medicine, the National Center for Health Statistics, the National Center for Injury Prevention and Control of the Centers for Disease Control and Prevention,¹¹ and the American Academy of Pediatrics,¹² as well as many state and local health departments.

The administrative costs associated with the external cause-of-injury coding of inpatient hospital records are relatively small.¹³ It takes ≤ 3 minutes to assign an external cause-of-injury code to each injury record and, because only 9% of hospital discharges are injury-related,¹⁴ most inpatient records would not require external cause-of-injury coding. Also, because many large hospitals already assign external cause-of-injury codes (by mandate or voluntarily) to the hospital admission records, the additional cost of external cause-of-injury coding all hospital discharge records may not be excessive.

RECOMMENDATIONS

Proper coding of injuries is critical for establishing priorities for child and adolescent injury-prevention programs. Pediatricians can serve their patients and communities well by documenting the injury event

thoroughly in the hospital record and by encouraging the expanded reporting of external cause-of-injury codes. The American Academy of Pediatrics recommends the following specific steps:

1. Pediatricians and other health care professionals who treat injured children and adolescents should obtain a thorough history of the cause of injury and document it in the hospital record. Appropriate documentation should include the who, what, when, where, why, and how of each injury event. Medical school and residency training should teach these history-taking skills, as well as the importance of standardized classification systems for injuries and diseases.
2. External cause-of-injury codes should be recorded in the hospital record for each hospital admission and emergency department visit in which an injury is the principal diagnosis or is related directly to the principal diagnosis.
3. Pediatricians should support state legislation or regulation to mandate the use of external cause-of-injury codes (as well as diagnostic codes) in hospital discharge data systems. External cause-of-injury codes should not replace other required data and should have designated separate fields in discharge databases.
4. Pediatricians should work with other medical and public health professionals to expand efforts to improve documentation, coding, collection, monitoring, and dissemination of injury data. Managed care organizations and other health insurance companies also may be interested in cost-of-injury data.
5. Pediatricians, other health care professionals, and injury-control researchers should work with hospital records personnel to become familiar with standardized uniform coding procedures, definitions, and guidelines for external cause-of-injury coding.

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