

Standard Definitions for Injury Research

Co-Chairs: Vita Barell and Peter Scheidt, M.D., M.P.H.

The questions posed in our group related to the types of data elements which need to be standardized, how they are to be operationalized and implemented.

The methods used were round robin reporting of issues of particular concern, and an active, more focused discussion of the elements raised. We also searched for appropriate processes and strategies by which standardization of these diverse elements might best be implemented within the ICE context. We saw the ICE goal as improving comparability, quality and reliability of international statistics on injury: In addition, relevance and a preventive orientation is required.

A broad spectrum of experts from various backgrounds participated in the two workshop sessions. It was a true learning experience, and much knowledge and insight was gained. I hope the concerns of the workshop participants are fairly presented.

The two major elements discussed are: the need for a standard definition of injury and the need to clarify severity inclusions and exclusions. Definitions must be expanded to include the currently systematically under-reported rural and farm injuries.

We need to include "lost injuries." Ted Miller has estimated that there is a significant percentage of injuries outside N or E codes; for example, musculoskeletal conditions, stress fractures, low back pain, coma. It is estimated that five percent of the motor vehicle accident injuries in California, where E codes are obligatory, are below the 800 codes.

Missing injury data systems, from insurance companies, police, and the military, need to be included, and we need to find out who else is collecting injury data, and get them into the system.

There was some discussion on which injuries are to be included. What is to be done about post-traumatic stress syndrome, where the injury may have occurred to someone else, or food poisoning or stress fractures? How should these definitions be dealt with on the local level.

One of the major concerns was to reconcile the multiplicity of classification schemes, and reduce the proliferation of these systems. The standard approaches, the nature of injury and the external cause codes of ICD-9 and ICD-10, differ from the NOMESCO, NEISS, EHLASS or any number of other systems which have been presented: a frightening number, as a matter of fact. Then there is the question of standardized definitions, categorization, and collapsed coding. Everybody is collapsing their own way.

Coding of severity of injury at entry to care is another very significant issue that was raised: i.e., the appropriateness of coding schemes at different levels of the injury severity scale. ICD-9 and ICD-10 may be suitable for mortality and inpatient morbidity; NOMESCO is more appropriate for milder injury prevention. These two systems are incompatible, and a non-continuous scale has been presented.

The abbreviated injury scale, AIS, is not suitable for mild to moderate injuries. How should these be classified? The whole question of coding the severity of the clinical state at onset of care, which should be used for case-mix evaluation, functional state at outcome, long term consequences, and residual disability—all of these are severity issues.

It was suggested that the design criteria include, first and foremost, usefulness for public health purposes, and the ability to target high risk populations. The hierarchical character of recording was of concern as well as the need for simplicity. Different levels of training of those recording data make it imperative to deal with the simplest tier, yet still maintain compatibility with the major classification systems.

Of course, accuracy and consistency, flexibility and updating, as well as a mechanism for stimulating change in ICD coding practices are necessary. Many of the coding systems are not appropriate in a computer era.

Considerable time was spent considering the data source, whether survey data was being used and, if so, what are the core questions? Who is the respondent? What are the recall times?

Emergency rooms and outpatient departments may be the source of care. Their records, as well as inpatient medical records and mortality data, are post-hoc: they are collected after the event and the nature of the data collected is different.

One important issue raised was the question of gaming the reimbursement system. This may be very different in different states or countries: the way in which coding is systematically done in order to provide the maximum payment for the injured person. What information is selectively omitted from the records?

There was discussion of data elements relating to race, ethnicity and integration, and socioeconomic status. France, for example, restricts the use of race data because of confidentiality laws, and therefore, there is considerable difficulty in identifying the high risk target groups of immigrant children.

The increasing emphasis on confidentiality throughout the world shows a need for some kind of standard method for data linkage, while you strip identifiers off the record. There are a number of these methods which could be investigated.

Proxy data is needed, good proxy data, for socioeconomic status: insurance level or employment status were suggested.

Competing definitions present a problem which make it hard to identify injury types, or activity at time of event. Sports-related injuries are one example: are these sports injuries or school injuries? Occupational injuries are another example: How are motor vehicle accidents en route to work coded? Are they grouped with injuries occurring at the work site? The difficulties of coding farm injuries have already been mentioned. So there is confusion as to type of injury, place and circumstances.

It is often difficult to identify morbidity and mortality data. There are often inadequate descriptors: Army physical training, brought up by one of the session participants, is often very similar to sports activities and the injuries occurring during both are similar.

The circumstances of injury were dealt with, as well as the importance and necessity for narrative. The question remains of how to classify narrative, which is very often the only source for information on personal protective equipment and for consumer products.

The whole question of quantification of data sets might perhaps be jointly addressed by ICE members.

A very interesting point was made by Hank Weiss, and that is that there is probably a trade off somewhere along the line between comparability and information. The more comparability that you have, the more data has been reduced and, often, the less you know. So, this aspect should be dealt with in discussing international or interstate comparisons.

DR. SCHEIDT: Let me also express my thanks to the very active members of the workshop for their valuable contributions.

It is remarkable, how many similarities there are between the reports and recommendations from each of the workshops. May I conclude that great minds think alike, or perhaps it is a matter of sheep, all doing the same thing. I wonder.

In our workshop it was felt that there was a need to pull together specific recommendations that move toward addressing the issues that were outlined above. They included a relatively short list:

- To establish a clearinghouse function to coordinate and network efforts to increase comparability, as has been mentioned previously.
- To develop a mechanism to address the multiplicity of classification systems.
- To utilize consensus development techniques, to promote effective information retrieval and utilization as an ongoing process for change and sharing of information.
- To develop an international dictionary of health terms and recommendations for data guidelines.
- To expand and disseminate information on coding. This can be done through the use of ambulatory clinics as well as E-code guidelines and other recommendations.
- To initiate international, cross-country data collection efforts that use and focus on core variables, that develop and evaluate comparability and define artifacts within the various systems.
- And finally, a recommendation for a network on an international basis, through newsletters, journals, Internet, that develops, or really provides a home, or various homes, for the distribution of information on the classification issues.

Now, even this short list presents a lot to do, more than one could hope to accomplish, at least in the near future. We thought it was important to identify the highest priorities, We felt the highest priority was to create a mechanism that addresses the classification issues and the importance of standardization with at least a minimum core set of variables, such as the definition of injury itself, as the dependent variable.

We feel that the prime criteria for this is that it be international in scope, and that clearly the field of injury prevention has emerged to a new level that justifies and requires the expansion of structure and resources in order to do this. Such an organization might be, but not necessarily, the World Health Organization (WHO). Clearly, concerning the need for consistent classification of a core set of variables on an international basis, WHO is well positioned to lead the effort. And with that, I will stop, we will take questions.