

Application of the New Diagnostic Dictionary (AIS 2005) for Traffic Accident Research

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Introduction

Each year the traffic accident research teams in Dresden and Hanover provide an in depth investigation of approximately two thousand accidents, aggregated in the GIDAS database. To accomplish a comprehensive review of each traffic accident recorded, a sensible and thorough encoding of suffered injuries is indispensable. The Abbreviated Injury Scale by AAAM offers a valuable and handy solution to achieve this goal. However, there were a few difficulties in the use of the AIS that came up in the past, which led to necessary improvements for the utilization of the AIS 2005 for GIDAS.

Information about single injuries in GIDAS

In GIDAS every single injury is coded in detail. The exact definition is given in the notation and the AIS code of the injury as well as the classification of the kind of injury. The location is specified regarding the body part, the exact part of an organ or tissue and the side. Whenever possible medical classifications such as the AO classification or classifications according Aitken, Weber or LeFort are given. Furthermore the extent or size of the trauma is indicated. Since the investigation teams also keep track of the patients in hospital or during therapy, there is detailed information given about the immediate treatment, the hospital management and any follow-up therapy as well as possible complications. To establish the connection to the technical data of the accident the interdisciplinary team also “decides” about the injury causing vehicle parts, the location, possible correlations of injuries and damages and influences of intrusion.

Previous Difficulties

During the last years of using the AIS to specify the injuries in the GIDAS database there were repeating difficulties. Codes of not existing AIS specifications that resulted from typing errors were frequently found and injury specifications were often not consistent with the AIS code. This led to difficulties in data analysis and statistical use of the data that resulted in necessary reviews of the encoded data and additional effort for corrections. Furthermore an ingenious encoding of partly “unknown” injuries was almost impossible and required a sensible standardization.

New Diagnose List

The new AIS 2005 dictionary offered by AAAM was an attractive opportunity to approach the previous difficulties. After translating the AIS 2005 into German and digitalizing it in a database a specific ID number was assigned to each injury. Also injury details like the location or the kind of injury mentioned above that were precisely mentioned in the AIS injury description and concordant to the GIDAS variables were assigned in the diagnose list. Thus only the ID from the list has to be coded in the database and all other information can be filled in automatically, excluding typing errors immediately. If for example a whiplash injury has to be coded, it can be filtered easily in Unidato, using a hierarchical structure. Now the AIS code 2005 (640278.1) is assigned automatically, the location is set “cervical spine”, the characteristics describe “distortion – soft tissue or muscle”, and the injury causation is set to “body movement” – without human intervention and human typing errors.

Since there were also codes necessary for unknown injuries to provide the information that there were more injuries than exactly given new codes were added for these traumas with limited information. The four codes added allow the encoding of unknown fatal injuries when the patient was killed, unknown severe injuries for inpatients and unknown slight injuries for outpatients. Furthermore a code for an unknown injury that is not further specified at all was added. Thus the information is now harmonized and easy to filter.

Perspective

To further develop and improve the encoding of single injuries in GIDAS there are still several goals set. Therefore the definition of all explicit information for each injury including extent, size and maybe therapy has to be provided. More and more information has to be coded in the database using the automatic filter. Finally more exact and accurate information in the database and fewer mistakes will allow consistent filter possibilities for data analysis and yet higher data quality for traffic accident research with GIDAS.