

# ICD-10-SGBV and ICD-10-Diagnosenthesaurus

- Advantages and Disadvantages as well as Further Development -

Bernd Graubner

*Zentralinstitut für die kassenärztliche Versorgung in der Bundesrepublik Deutschland  
(ZI) (Central Research Institute of Ambulatory Health Care in Germany),  
Höninger Weg 115, D-50969 Köln, Germany. E-Mail: Bernd.Graubner@mail.gwdg.de*

**Abstract:** In the year 2000 ICD-10-coding of diagnoses in ambulatory and hospital health care was legally introduced in Germany. Whereas the complete ICD-10 is used for coding of mortality, physicians got the special version "ICD-10-SGBV" for coding of diagnoses of treated patients. First experience with this version shows the necessity for its further improvement. In addition, the so-called ICD-10-Diagnosenthesaurus was developed and proved to be a very useful aid for easier and better encoding of diagnoses. It is not only widely used in Germany but also in Austria and Switzerland. National and international efforts are necessary to improve ICD-10 and its utilisation.

## 1. Introduction

The International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10) [6], was approved by the World Health Organization (WHO) in 1990 and the English version was published in the years 1992–1994. Its introduction in the member countries of WHO is a very slow process. In addition, individual countries are starting to use ICD-10 in different fields at different dates. Great Britain e.g. began already in 1995, whereas the United States have not even yet decided about the introduction date of their special version ICD-10-CM (Clinical Modification), which is still under development and will replace ICD-9-CM.

In the Federal Republic of Germany ICD-10 has been in mandatory use for coding of causes of death and mortality statistics since 1998, and in voluntary use for medical documentation and morbidity statistics in ambulatory health care since 1996. Just this year ICD-10-coding was legally introduced in coding of diagnoses in ambulatory and hospital health care. In hospitals it is replacing the old-fashioned ICD-9 of 1976/79, which is not in use any more in German health care. In the next years conversion of ICD-10-codes into ICD-9-codes is still useful for comparing data collected in ICD-10 with data formerly classified by ICD-9. For this purpose the "ICD-Überleitungstabelle", developed by Dr. Albrecht Zaiß, Freiburg i.Br. [10], in consideration of WHO's Translator is useful and available from the DIMDI server.

## 2. German special editions of ICD-10: ICD-10-SGBV and ICD-10-Diagnosenthesaurus

As a result of severe criticism of ICD-10 the three partners of medical self-government (Spitzenverbände der Krankenkassen [Central Organisations of Health Insurance Compa-

nies], Deutsche Krankenhausgesellschaft [DKG] [German Hospital Association] and Kasenärztliche Bundesvereinigung [KBV] [National Association of Statutory Health Insurance Physicians]) agreed in 1996 to revise the complete official version and to develop a more simple version for use in ambulatory and hospital health care, according to special requirements of §§ 295 and 301 of Fünftes Buch Sozialgesetzbuch (SGB V). Especially the chapters “XX. External causes of morbidity and mortality” and “XXI. Factors influencing health status and contact with health services” were affected by the reduction. The number of authorised codes in these chapters has been reduced and the utilisation of many of the remaining codes has been restricted. This version is now called “*ICD-10-SGBV*” (ICD-10 for the purpose of SGB V) and came into force on January 1, 2000 (DIMDI-Version 1.3 [July 1999]) [8]. The central part of ICD-10-SGBV is the so-called “*Minimalstandard*”, a minimum set of codes that is mandatory for general practitioners, for medical specialists outside of their speciality and within the emergency medical service. However, all these physicians may use the complete code set of ICD-10-SGBV instead of this special collection of only one third of all codes. [4,5]

In 1996 the Central Research Institute of Ambulatory Health Care in Germany (ZI) called a team of scientists from different medical institutions, headed by Prof. Wolfgang Giere, Johann Wolfgang Goethe-Universität Frankfurt am Main, to develop the so-called “*ICD-10-Diagnosenthesaurus*”. The target is a validated collection of terms and expressions of diagnoses in German language with ICD-10-SGBV codes (and not a real “thesaurus”!), whereby many of them are (up to now) supplements of the official ICD-10. Approximately, one third of the ICD-10-Diagnosenthesaurus contains expressions of diagnoses which are not listed in the official ICD-10. This material enhances also the quality and usability of encoding software [9].

The ICD-10-Diagnosenthesaurus has been officially published by DIMDI (Deutsches Institut für medizinische Dokumentation und Information) and constitutes an alphabetical index that fulfils many requirements for medical practice. In this way it complements the ICD-10-SGBV. For example, the usual expression “gastric cancer” is listed in the ICD-10-Diagnosenthesaurus, but not in the ICD-10-SGBV or ICD-10. According to ICD-10 rules this diagnose is listed in the alphabetical index of ICD-10 only as “neoplasm, malignant, primary, stomach”. The version 3.0 (January 2000) contains nearly 31,000 terms (phrases) and is available in two different forms: as unformatted data base file and as print-formatted book file with an alphabetical index (more than 58,000 entries) [7]. This work is being continued and a new version for next year is under preparation.

### **3. Discussion and further development**

Experience with these coding manuals in routine work has shown that reduction of ICD-10 to ICD-10-SGBV especially in chapter XXI leads to information deficits in ambulatory health care documentation and to problems in daily work. Medical care is not only treatment of well defined diagnoses, but also of a lot of other reasons for contacting health services. Most of them are classified in chapter XXI. (Probably this is why Swiss authorities have not restricted the use of codes by introducing ICD-10 in hospital care and mortality statistics in 1998. All available codes are allowed. Similar regulations are expected in Austria [2,3], where ICD-10 will be introduced in all hospitals in the next year 2001.)

In our opinion it is essential to work out a modification of ICD-10-SGBV that fulfils the requirements of doctors in a better way and contains more of the currently cancelled or use-restricted codes. In this context the concept of a “Minimalstandard” and its utilisation

should be reconsidered. Especially the Minimalstandard is not useful in connection with computer supported documentation and encoding and interferes with a good quality of documentation. It is perhaps superfluous.

Another open question is how to solve some problems inherent to ICD-10 itself. This refers for example to the predomination of anatomical criterions of classification by simultaneously ignoring functional and course-dependent factors (see for example neoplasms and diseases of the circulatory system).

Apart from problems caused by the cancellation of certain codes, doctors as well as health insurance companies complain about the lack of information caused by the transmission of codes alone, instead of diagnoses in textual formulation. On the other hand, the perception increases that reports and analyses of the treated diagnoses, and in this way of the performance of ambulatory and hospital care, are only possible on the basis of codes. The development of corresponding instruments which provide useful information at all levels is now starting [1].

The ICD-10-Diagnosenthesaurus proved its usability and quality already in 1997, during ICD-10 testing in ambulatory health care and in 1999 in hospitals of Austrian province Carinthia [2,3]. Its further development will concentrate on including optional codes (most important the so-called "Ausrufezeichenschlüsselnummern" [exclamation mark codes] of ICD-10-SGBV chapters XX and XXI) and on use of dual coding within the dagger and asterisk system. Efforts toward textual standardization and better inclusion of clinical terminology of complete ICD-10 and of medical specialities will be continued. It is planned to label the data entries of ICD-10-Diagnosenthesaurus according to the terminology of medical specialities. Thus in the future it could be possible to extract more or less automatically special thesauri for different medical fields.

#### **4. Conclusion**

The problems presently arising in Germany when using ICD-10 will probably also appear in other countries. It is therefore essential that beside or in conjunction with the committees established by WHO, international co-operation should be intensified. For obvious reasons preference should be given to our neighbours within or without the European Union.

Last year the co-operation between the three German speaking countries Germany, Austria, and Switzerland was revived within the so-called "Dreiländergruppe". The first meeting in this new era took place in June 1999 and the next of them will be this autumn. The further co-ordinated development of ICD-10 is top of the agenda. Publishing houses work in this direction too. One result is the "Dreiländerausgabe" of ICD-10-Diagnosenthesaurus [7], which takes into consideration the special regulations of these three countries especially in the utilisation of ICD-10-chapters XX and XXI.

Some imperfections, errors, mistakes and missing diagnoses on the one hand and classifying and terminology which not always correspond with developing modern medicine on the other hand require continuous updating of ICD-10 by WHO and its special groups. This work of the WHO Collaborating Centres for Classification of Diseases is supported substantially by DIMDI, which co-ordinates the development in Germany. Further joint effort of scientists and other people working with ICD-10 is the basis to improve the usability of ICD-10.

## References

- [1] *Brenner, G., H. Koch, Hedi Kerek-Bodden and B. Graubner: The Patient Panel of the Central Research Institute of Ambulatory Health Care in the Federal Republic of Germany. Perspectives and Limitations of Patient-related Follow-up Analysis.* In: *Medical Informatics, Biostatistics and Epidemiology for Efficient Health Care and Medical Research.* Ed. by. N. Victor, M. Blettner et al. München: Urban & Vogel. 1999. pp. 295–299. [Medizinische Informatik, Biometrie und Epidemiologie. 85.]
- [2] *Diagnoseschlüssel ICD-10 BMAGS 1999.* Internationale statistische Klassifikation der Krankheiten und verwandter Gesundheitsprobleme. 10. Revision, BMAGS-Version 1999. Erarbeitet auf der Grundlage der vom DIMDI hrsg. deutschsprachigen Übersetzung in der Vers. 1.2, Stand Juli 1998. Projektleitung: G. Embacher, Erarbeitung: B. Graubner. Wien: Bundesministerium für Arbeit, Gesundheit und Soziales (BMAGS). 1999. Band I: Systematisches Verzeichnis, 792 S. Band III: Alphabetisches Verzeichnis, 840 pp. - An updated edition is under development (Bundesministerium für soziale Sicherheit und Generationen [BMSG]).
- [3] *Diagnoseschlüssel ICD-10 BMAGS 1999.* Sammlung von Krankheitsbegriffen im deutschen Sprachraum, verschlüsselt nach der ICD-10. Erarbeitet auf der Grundlage der vom DIMDI hrsg. und von einer Projektgruppe des ZI erstellten Fassung in der Vers. 2.2, Stand 11.2.1999. Projektleitung: G. Embacher, Erarbeitung: B. Graubner. Wien: BMAGS. 1999. 552 pp. - An updated edition is under development (Bundesministerium für soziale Sicherheit und Generationen [BMSG]).
- [4] *Graubner, B., and G. Brenner: German Adaptations of ICD-10.* In: *Medical Informatics Europe '99.* Ed. by P. Kokol, B. Zupan, J. Stare, M. Premik and R. Engelbrecht. Amsterdam, Berlin, Oxford etc.: IOS Press. 1999. pp. 912–917.
- [5] *Graubner, B.: ICD-10-Ergänzungswerke zur Erleichterung der Diagnosenverschlüsselung.* In: *Medical Informatics, Biostatistics and Epidemiology for Efficient Health Care and Medical Research.* Ed. by. N. Victor, M. Blettner et al. München: Urban & Vogel. 1999. pp. 295–299. [Medizinische Informatik, Biometrie und Epidemiologie. 85.]
- [6] *ICD-10.* Internationale statistische Klassifikation der Krankheiten und verwandter Gesundheitsprobleme. 10. Revision. Hrsg. vom DIMDI im Auftrage des Bundesministeriums für Gesundheit (BMG). Band I: Systematisches Verzeichnis. *Version 1.0*, Stand Aug. 1994. Band II: Regelwerk. Vers. 1.0, Stand Juni 1995. Band III: Alphabetisches Verzeichnis. Vers. 1.0, Stand Okt. 1995. – Complete editions were published 1994/96 by the following publishing houses: Bern, Göttingen etc.: Huber / München, Wien etc.: Urban & Schwarzenberg / Landsberg/Lech: ecomed. – *Version 1.3*, Stand Juli 1999, of volumes I and III was published by DIMDI in July 1999 as data files and is available from its server (<http://www.dimdi.de>). *Vol. III* was published 1999/2000 by the following publishing houses: Stuttgart: W. Kohlhammer in co-operation with Deutsche Krankenhaus Verlagsgesellschaft, Düsseldorf / Wanne-Herne: Krankenhausdrucke-Verlag Wanne-Eickel / Bern, Göttingen etc.: Hans Huber [in combination with *Vol. II*, Vers. 1.0] / München u. Jena: Urban & Fischer. *Vol. I* will be published in 2000 by Hans Huber, Bern, Göttingen etc.
- [7] *ICD-10-Diagnoseschlüssel.* Sammlung von Krankheitsbegriffen im deutschen Sprachraum, verschlüsselt nach der ICD-10-SGBV (Vers. 1.3 [Juli 1999]). *Version 3.0*, Stand Januar 2000. Hrsg. vom DIMDI im Auftrage des BMG. Erarbeitet von einer Projektgruppe des ZI unter Leitung von W. Giere. Schlußredaktion: B. Graubner. Köln: Deutscher Ärzte-Verlag. 1999. XIV, 624 pp. - Published 1999/2000 also by the following publishing houses: Stuttgart: W. Kohlhammer in co-operation with Deutsche Krankenhaus Verlagsgesellschaft, Düsseldorf [in combination with *Vol. II*, Vers. 1.0, of ICD-10] / Wanne-Herne: Krankenhausdrucke-Verlag Wanne-Eickel / München u. Jena: Urban & Fischer. – Available from the DIMDI server (<http://www.dimdi.de>) as ASCII-file for use in computer programs and as PDF-file for outprints. - A special “*Dreiländerausgabe*” for Germany, Austria, and Switzerland was edited by B. Graubner and published this year 2000 by Hans Huber, Bern, Göttingen etc.
- [8] *ICD-10-SGBV.* Internationale statistische Klassifikation der Krankheiten und verwandter Gesundheitsprobleme. 10. Revision. Ausgabe für die Zwecke des Fünften Buches Sozialgesetzbuch (SGB V). Erarbeitet von einer Expertenarbeitsgruppe unter Beteiligung der Spitzenverbände der Krankenkassen, der Kassenärztlichen Bundesvereinigung und der Deutschen Krankenhausgesellschaft. Hrsg. vom DIMDI im Auftrage des BMG. Systematisches Verzeichnis. *Version 1.3*, Stand Juli 1999. Köln: Deutscher Ärzte-Verlag. 1999. XXIX, 717 pp. - Published 1999/2000 also by the following publishing houses: Bern, Göttingen etc.: Hans Huber / Stuttgart: W. Kohlhammer in co-operation with Deutsche Krankenhaus Verlagsgesellschaft, Düsseldorf / Wanne-Herne: Krankenhausdrucke-Verlag Wanne-Eickel / München u. Jena: Urban & Fischer. – Available from the DIMDI server (<http://www.dimdi.de>) in the form of different data files.
- [9] *ICD/ICPM professional.* Verschlüsselungsprogramm für Diagnosen und Operationen (ICD-9, ICD-10 / ICD-10-SGBV und OPS-301). Hrsg.: dr. ruffing informationstechnologie gmbh. Wissenschaftliche Bearbeitung: B. Graubner. *Version 3.6*. Köln: Deutscher Ärzte-Verlag. 2000. – Full-text versions of the used classifications for utilisation in computers are available.
- [10] *Schulz, S., A. Zaiß, R. Brunner, D. Spinner and R. Klar: Conversion Problems Concerning Automated Mapping from ICD-10 to ICD-9.* *Methods of Information in Medicine.* 1998; 37: 254–259. - The “ICD-Überleitungstabelle” is available from the DIMDI server (<http://www.dimdi.de>).

**Bibliographische Angaben:**

Graubner, B.: **ICD-10-SGBV and ICD-10-Diagnosenthesaurus. Advantages and Disadvantages as well as Further Development.** In: Medical Infobahn for Europe. Proceedings of MIE2000 and GMDS2000. Amsterdam etc: IOS Press. 2000. Pages 161-164 (Studies in Health Technology and Informatics. 77.)