



**MEETING OF WHO COLLABORATING CENTRES
FOR THE FAMILY OF INTERNATIONAL CLASSIFICATIONS**

Cologne, Germany
19-25 October 2003

**Title: International Collaborative Effort on Automating
Mortality Statistics: Report of the Third Plenary
Meeting**

Authors: R N Anderson, F C Notzon, K D Kochanek, A M Miniño
National Center for Health Statistics
Centers for Disease Control and Prevention
Hyattsville, Maryland, USA

WHO Collaborating Center for the Family of International
Classifications for North America

Purpose: For information

Recommendations: (None)

Abstract: (no more than 200 words)

The purpose of the International Collaborative Effort (ICE) on Automating Mortality Statistics is (1) to share knowledge and experience of automated systems for coding mortality information, (2) to develop and improve existing automated systems through international collaboration, (3) to facilitate the transition to ICD-10 for mortality, and (4) to establish mechanisms for technical support of automated systems. Following major meetings in 1996 and 1999, the ICE held its third plenary meeting on April 7-10, 2003 in Washington, D.C. The meeting brought together seventy participants from twenty-seven countries to discuss these issues. Supplementary financing from foundations, international organizations and various ICE member countries made it possible to include representatives from countries of central and eastern Europe as well as several developing countries. This report summarizes the results of the meeting and plans for future activities of the ICE on Automation.

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Introduction

The purpose of the International Collaborative Effort (ICE) on Automating Mortality Statistics is to share knowledge and experience of automated systems for coding mortality information, to develop and improve existing automated systems through international collaboration, to facilitate the transition to ICD-10 for mortality, and to establish mechanisms for technical support of automated systems. The ICE on Automating Mortality Statistics has held three plenary meetings since 1996. The first plenary meeting of the ICE was held in Washington, D.C., November 12-15, 1996, and was attended by representatives from 19 countries, the World Health Organization (WHO), the Pan American Health Organization, the International Institute for Vital Registration, the National Cancer Institute, and the National Center for Health Statistics (NCHS). Results of the meeting are described in the report *Proceedings of the International Collaborative Effort on Automating Mortality Statistics, Volume I* (National Center for Health Statistics, Hyattsville, Maryland, July 1999). The report is available at <http://www.cdc.gov/nchs/about/otheract/ice/automort/automort.htm>. The second meeting of the ICE was held in Bethesda, Maryland, September 7-10, 1999. Results of the meeting are described in the report *Proceedings of the International Collaborative Effort on Automating Mortality Statistics, Volume II* (National Center for Health Statistics, Hyattsville, Maryland, September 2001). The report is available <http://www.cdc.gov/nchs/about/otheract/ice/automort/automort.htm>. The third meeting of the ICE was held April 7-10, 2003 in Washington, DC and attended by representatives of 27 countries. This report summarizes the sessions of the third meeting and plans for future activities of the ICE on Automation.

Summary of the Third Plenary Meeting of the ICE on Automation

A brief summary of each session of the Third ICE meeting is presented below. The final program of the meeting is shown in Appendix 1. A more detailed report of the proceedings of the meeting will be published by NCHS in 2004.

Session 1 – Overview of automated coding systems (ACs) – This session involved a description of ACs in use or being developed in the US, Sweden, France, Brazil, Japan, Mexico and South Africa. Countries with well-established ACs continued to fine-tune their existing systems, especially regarding data entry of medical terms. The Swedish MIKADO system, for example, has adopted optical recognition methods to input medical data from their death certificates. In France, the STYX system has opted for voice recognition technology to achieve this goal. All of the systems that were described, however, use the ACME decision tables (or variations of it) for selection of the underlying cause of death. The Brazilian SCB system has been re-done to accommodate ICD-10 and is expected to be used nationally late this year. The South Africans are making progress in electronically archiving and indexing death certificates, but full automation is yet to come in the near future. Likewise, in Mexico, the government has experimented with adapting the U.S.'s system for their needs, but adding Spanish terms to the SuperMICAR dictionary has proved challenging. Also discussed were future directions for the U.S. Mortality Medical Data System (MMDS) software suite.

Session 2 – Multiple cause coding and analysis – In this session, representatives from the Brazilian Center spoke about the issues of coding multiple causes of death, and of the need for more definitions and standards that are internationally agreed upon. A comparative analysis of Diabetes mellitus as a non-underlying (“associated”) cause of death was presented showing data for Brazil, Australia, Britain and the U.S. Also presented were results on the patterns of multiple-cause data at advanced ages in the United States.

Session 3 – Electronic death registration – This session involved presentations describing systems in use or in development in England and Wales, Australia and the US. Also discussed were challenges in developing such systems.

Session 4 – Language issues – This session involved discussion of and lessons learned in developing language databases for input to ACME. Coding of medical terms is a language-dependent function and, as such, the language used will have an effect on the codes selected which, in turn, may affect selection of underlying causes. There was discussion regarding what steps would be needed in order to adapt use of the U.S. MMDS system to another non-English language and the challenges in converting the Italian dictionary (translated from English) to ICD-10. The Swedish system (MIKADO) uses language standardization techniques and is unique in that it does not use entity reference numbers (ERNs) to link medical vocabulary to corresponding ICD-10 codes. Presentations were also given by Japanese and Brazilian representatives.

Session 5 – Electronic tools – This session addressed issues in the electronic maintenance of the ICD and related classifications. Presentations were made regarding the various clinical modifications being administered by Australia (ICD-10-AM), the US (ICD-10-CM) and Canada (ICD-10-CA). The idea of an ICD-10 thesaurus was introduced by Germany as an alternative that would bridge the gap between alphabetical indexes for manual coders and computer dictionaries for automated coding.

Session 6 – Training – This session included a summary of the activities of the WHO training and credentialing group and a discussion and demonstration of training materials for coding and death certification. The demonstrations included an electronic interactive training program for multiple cause coding being developed by the US and a demonstration of INTERCOD, a training package developed by PAHO.

Session 7 – Comparability studies – This session focused on issues related to the conversion to ICD-10 and measurement of statistical discontinuities resulting from the conversion. Plans for and results from comparability studies were presented by the US, Australia, Canada and England and Wales.

Session 8 – Data quality – This session included presentations on a European project to improve data quality and comparability, cause-of-death querying systems in Scotland and the US, a Swedish study comparing hospital data to death certificate data, and an evaluation of classification procedures for cancer of the prostate in Norway.

Session 9 – Special topics – This session addressed special topics not covered elsewhere in the meeting. A presentation of a French study on the quality of that country’s suicide mortality data was followed by a panel discussion on topics including: improving manual coding for accidents and violent deaths, improving cause-of-death certification

and registration, and use of the special WHO perinatal death certificate, among other topics.

Session 10 – Knowledge and data dissemination – This session focused on efforts and systems designed to disseminate mortality data and information about automated systems. The initial focus was on the Australian Bureau of Statistics (ABS) internet bulletin board that serves as an international forum for sharing information on the issue of automating mortality statistics. Concern was expressed about the under-utilization of this resource. Also discussed and demonstrated were systems designed to produce tabulations of mortality data, including Australia’s “supercube,” France’s use of SAS statistical software to produce tabulations and data queries over a web server, the US use of “Beyond 20/20” software for the purpose of data warehousing, and Canada’s in-house IRMA software designed to access and tabulate Canadian health statistics.

Future Activities

The final session of the meeting was a panel discussion addressing prospects for the future of the ICE. Speaking in this session were representatives from the UN Statistics Division and WHO and two members of the ICE planning committee.

Recommendations regarding the future role of the ICE included:

1. International ownership of the automated systems is important and was one of the original recommendations coming out of the 1996 ICE meeting. This will involve a shared responsibility for validating and testing before new versions of the automated systems are released.
2. Support from the ICE for developing countries is very important and should be a higher priority. There is a serious information gap between developed and developing countries. The statement was made in this session that much of human mortality occurs in Africa and yet, data on mortality is most lacking from this continent. Support to developing countries should include better access to information and training for automated coding systems and perhaps the development of a “tool box” that would facilitate the implementation of automated systems. In addition, assistance in the development and improvement of vital registration would also be helpful.
3. International comparability of mortality data is the ultimate goal of the ICE. Shared ownership of the automated systems and support for developing countries and countries without automated systems will help to achieve this goal.
4. The ICE is a model of international collaboration and should continue, although its goals should be flexible, and it should be willing to address new needs and challenges.

Conclusion

The ICE on Automating Mortality Statistics provides an excellent example of the benefits of international collaboration and communication on a topic of mutual interest. Through the annual meetings of the Planning Group, the ICE on Automation serves as a user's group for all of the nations employing automated systems for coding mortality data. In addition, the plenary meetings provide an opportunity for other nations to learn about automation and the steps required to implement an automated system.

The third ICE symposium marked a turning point for this collaboration for several reasons. First, previous major meetings had focused on whether or not countries should adopt automated coding systems, while in the third meeting a consensus emerged that all countries should move toward developing automated systems. Another change for the ICE on Automation was a shift from the previous concentration on major industrialized countries to a broader focus, embracing the countries of central and eastern Europe and the developing world. Finally, the growing international interest in automated coding systems has underlined the need for a language independent automated system. Rapid diffusion of automated coding to additional countries will depend in large part on the development of a language independent system.

The ICE planning committee will continue to meet on a regular basis to coordinate ICE activities and to address the recommendations made in the meeting (planning committee members will meet in October 2003 at the WHO Centre Heads meeting in Cologne, Germany). Tentative plans are to hold another plenary meeting perhaps in 2007.

Appendices

Appendix 1: Final Program of the Third Meeting of the International Collaborative Effort on Automating Mortality Statistics

AGENDA

MONDAY, APRIL 7

8:30-9:30 Registration

9:00-9:30 Welcome

Speakers: Robert Anderson
James Weed
Edward Sondik

9:30-10:00 **Logistics and purpose of the meeting**

Speaker: Sam Notzon

10:00-12:00 **Session 1: Overview of automated coding systems**

Organizer: Donna Glenn

- Presenters:
1. *Use of automation in Sweden*
Lars Age Johansson
 2. *Use of automation in France*
Gerard Pavillon
 3. *Brazilian Diagnosis Coding System*
Ruy Laurenti and Cassia Maria Buchalla
Ruy Laurenti and Cassia Maria Buchalla
 4. *Use of automation in Japan*
Moriyo Kimura
 5. *Automation of cause of death coding in Mexico*
Juan Antonio Ortega
 6. *Maximizing the use of South African Administrative Information System in coding causes of death*
Sulaiman Bah
 7. *Future Directions of the NCHS MMDS Software Suite*
Edward Elliot

12:00-1:30 LUNCH

1:30-1:45 Welcome William Steiger Welcome William S

1:45-3:15 **Session 2: Multiple Cause**

Organizer: Cleo Rooney

- Presenters:
1. *Multiple cause mortality coding*
Roberto Becker
 2. *Multiple cause of death: Definitions and coding rules*
Ruy Laurenti
 3. *Disease patterns in multiple cause of death data at advanced ages: United States 1980-1998*
Eric Stallard
 4. *Diabetes mellitus: Differential multiple causes of death mortality among the states of Rio De Janeiro and Sao Paulo (Brazil), Australia, England and Wales, Scotland and the United States of America*
Augusto Hasiak Santo

3:15-3:45 BREAK

3:45-5:15 **Session 3: Electronic Death Registration**

Organizer: Mary Anne Freedman

1. *Electronic death registration in England and Wales*
Lois Cook
2. *Advances in electronic registration: New South Wales*
Michael Coghlan
3. *Development of model requirements for an electronic death registration system for use by registration areas in the US and implications for New York City*
Steven Schwartz

TUESDAY, APRIL 8 **TUESDAY, APRIL 11**

8:30-10:00 **Session 4: Language**

Organizer: Gerard Pavillon

- Presenters:
1. *Introduction*
Gerard Pavillon
 2. *MICAR and SuperMICAR*
Donna Glenn
 3. *The Italian approach*
Monica Pace
 4. *Building the Swedish dictionary - The importance of language standardisation and experiences of using ERN's with a non-English language*
Lars Age Johansson
 5. *The Japanese diagnosis coding system*
Moriyo Kimura
 6. *The Brazilian diagnosis coding system*
Ruy Laurenti

10:00-10:30 BREAK

10:30-12:30 **Session 5: Electronic Tools**

Organizer: Michael Schopen

1. *The Electronic Tools Committee of the WHO Collaborating Centers for the International Family of Classifications*
Michael Schopen
2. *ICD-10-AM in a database*
Sue Walker
3. *The development of a database version of ICD-10-CM*
David Berglund
4. *ICD-10-CA the XML way. The Canadian approach to ICD electronic publishing*
Karen Horne
5. *ICD-10 Thesaurus – An alternative to the ICD-10 alphabetical index?*
Michael Schopen

6. *Mortality data in the German health monitoring system*
Christiane Rosenow

12:30-2:00 LUNCH

2:00-3:30 **Session 6: Training**

Organizer: Ron Casey

- Presenters:
1. *Update of WHO training and credentialing group*
Marjorie Greenberg
 2. *Preparation of EU training package on certification of causes of death*
Monica Pace
 3. *Demonstration of INTERCOD*
Roberto Becker
 4. *How to become a multiple cause coder*
Tyringa Ambrose, Julia Raynor and Greg Adas

3:30-4:00 BREAK

4:00-5:00 **Poster session and Demonstrations**

Organizer: Ken Kochanek

- Posters:
1. *ACS in Italy: Transition to ICD X revision*
Stefano Marchetti, Monica Pace, Stefania Macchia, and Luisa Frova
 2. *Automation of mortality systems in the Caribbean*
Beverly Andrews and Angela Hinds
 3. *Comparative study of the multiple cause-of-death mortality related to HIV disease in Brazil (2000) and United States of America (1999)*
Augusto Hasiak Santo, Donna Hoyert, and Celso Escobar Pinheiro

WEDNESDAY, APRIL 9 {tc "WEDNESDAY, APRIL 9" \1 4}

8:30-10:00 Session 7: Comparability Studies

Organizer: Leslie Geran

- Presenters:
1. *Measuring comparability between ICD-9 and ICD-10 in the United States*
Arialdi Minino and Robert Anderson
 2. *Introduction of ACS and ICD-10: The Australian experience*
Ron Casey
 3. *Canadian comparability study design and preliminary results*
Leslie Geran
 4. *Results of the ICD-10 bridge coding study England and Wales*
Cleo Rooney, Clare Griffiths, and Lois Cook

10:00-10:30 BREAK

10:30-12:30 Session 8: Data Quality

Organizer: Lars Age Johansson

- Presenters:
1. *The European study of quality and comparability*
Eric Jouglu
 2. *Queries in the Scottish coding system*
Graham Jackson
 3. *Querying in the United States*
Donna Hoyert
 4. *Comparing death certificates and hospital discharge diagnoses - can the differences be explained?*
Lars Age Johansson
 5. *High mortality of prostate cancer in Norway: Information and codification bias?*
Finn Gjertsen

12:30-2:00 LUNCH

2:00-3:30 **Session 9: Special Topics**

Organizer: Cleo Rooney

- Presenters:
1. *The quality of suicide mortality data*
Eric Jouglà
 2. *Automated coding and problems achieving comparability between countries for certain types of death*
Cleo Rooney

Panel Discussion:

Panelists: Gerard Pavillon
Harry Rosenberg
Donna Glenn
Lars Age Johansson
Cleo Rooney

3:30-4:00 BREAK

4:00-5:00 **Poster session and Demonstrations**

Organizer: Ken Kochanek

- Posters
1. *Diabetes mellitus: Differential multiple causes of death mortality among the states of Rio de Janeiro and Sao Paulo (Brazil), Australia, England and Wales, Scotland and United States of America*
Augusto Hasiak Santo, Anne Wellington, Graham Jackson, Donna Hoyert, Margarete Silva Jordani, and Celso Escobar Pinheiro
 2. *Examining ACME's decision table on 'mechanism of death': Diabetes as an example*
Tsung-Hsueh Lu
 3. *An automated system for coding Industry and Occupation*
Suzanne M. Marsh

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9:00-10:30 **Session 10: Knowledge and Data Dissemination**

Organizer: Graham Jackson

- Presenters:
1. *Introduction*
Graham Jackson
 2. *Automating Mortality Statistics Bulletin Board*
Ron Casey
 3. *The Supercube data analysis tool – Australian experience*
Ron Casey
 4. *Using SAS to analyse French mortality data – a web server based approach*
Gerard Pavillon
 5. *Data warehousing using Beyond 20/20*
Yelena Gorina
 6. *Statistics Canada: Using IRMA to access Canadian health statistics*
John Menic

10:30-11:00 BREAK

11:00-12:00 **Session 11: Panel Session - Prospects for the Future**

Organizer: Sam Notzon

Panelists: Bedirhan Ustun
Grace Bediako
Ron Casey
Gerard Pavillon

12:00-12:30 **Concluding Remarks**

Speakers: Edward Sondik
Robert Anderson
Sam Notzon

Appendix 2: ICE Planning Committee

Ron Casey, Australian Bureau of Statistics

Leslie Geran, Statistics Canada

Graham Jackson, General Register Office of Scotland

Lars Age Johansson, Statistics Sweden

Gerard Pavillon, INSERM, France

Cleone Rooney, Office of National Statistics, Great Britain

Michael Schopen, DIMDI, Germany

Robert Anderson, National Center for Health Statistics, USA

Donna Glenn, National Center for Health Statistics, USA

Kenneth Kochanek, National Center for Health Statistics, USA

Sam Notzon, National Center for Health Statistics, USA