THE ICD-10-BE IMPLEMENTATION PROJECT IN BELGIUM

2009 - 2015

Federal Public Service of Health, Food Chain Safety and Environment
Directorate-General Health Care
Department Datamanagement
Arabella D’Havé, chief of
Terminology, Classification, Grouping & Audit
arabella.dhave@health.belgium.be
www.health.belgium.be/ICD10BE

30/05/2014
Brief overview of Belgian (demo)(geo)graphics and its health care system
Geographical and demographic context

Belgium

- situated in the west of Europe
  - shares borders with the Netherlands, Luxembourg and Germany;
  - one of the highest population densities in Europe;
  - over 10 million inhabitants on a total land area of 30,528 km²

- city of Brussels
  - around 1 million inhabitants
  - capital of Belgium
  - capital of Europe
  - headquarters of the European Commission, of the Council of Ministers and the European Parliament
Belgium has three official languages:

- Dutch: spoken by around 59% of the population
- French: spoken by around 40% of the population
- German: spoken by by less than 1%

The country is divided into Dutch-speaking Flanders in the north and French-speaking Wallonia in the south. Brussels is bilingual, but its dominant language is French. German is spoken in nine communities close to Germany.
Belgium is a federal parliamentary democracy under a constitutional monarch.

At the federated level, Belgium is divided into three regions (based on territory) and three communities (based on language and culture)

- The three regions are the Flemish region, the Walloon region and the region of Brussels-Capital
- The three communities are the Flemish community, the French community and the German community.
Responsibilities in health care

The federal level is responsible for:

- regulation and financing of compulsory health insurance;
- determination of accreditation criteria (that is, minimum standards for the running of hospital services);
- the financing of hospital budgets and heavy medical equipment (e.g. CT and MRI scanners);
- legislation covering different professional qualifications;
- the registration of pharmaceuticals and their price control.

The federated entities (regions and communities) are responsible for:

- health promotion and prevention;
- maternity and child health services;
- different aspects of elderly care, home care, coordination and collaboration in primary health care and palliative care;
- implementation of accreditation standards and the determination of additional accreditation criteria;
- financing of hospital investment.
Authorities for health care

- Numerous public authorities are responsible for the funding of health care and the oversight of its organization.
  - Federal Authorities
    - amongst others: Federal Public Service of Health, Food Chain Safety and Environment
  - Federated Authorities
  - Intergovernmental bodies
  - Nongovernmental bodies
Hospital Data Sets

- The FPS Health, Food Chain Safety and Environment collects, reports and analyses data provided by hospitals.
- The most important data sets developed for hospital policy since the 1980s are:
  - Minimal Clinical Data (MCD-MKG-RCM);
  - Minimal Nursing Data (MND-MVG-RIM);
  - Minimal Psychiatric Data (MPD-MPG-RPM);
  - Hospital Billing Data (HBD-SHA-AZV);
  - Mobile Urgency Group Data (MUG-SMUR).
- In 2007, an integrated system for data collection, the Minimum Hospital Data Set (MHD-MZG-RHM) was launched, covering the MCD, MND and MUG data.
- It is mandatory for all hospitals to provide data for these data sets.
Minimum Hospital Data Set

- Data on hospital structure
- Staff data
- Administrative data
- Nursing data
- Medical data
- Billing data
MCD registration for hospitalized patients was developed in the 1980s and recording this data for all patients became compulsory in 1990.

The information in the MCD included relevant clinical data (e.g. primary and secondary diagnosis) and demographic characteristics of patients.

MCD were integrated within the Minimun Hospital Data Set as the MD-MHD (Medical Data of the MHD)

Records are pseudonymized, thus patients cannot be directly identified in the data set.
The MD-MHD are used, amongst others, to group hospitalized patients in DRGs.

- In 1995, All Patient Diagnosis related groups (AP-DRGs) were chosen as the grouping method to establish hospital comparisons for financial purposes.
- In 2002, AP-DRGs were replaced by All Patient Refined DRGs (3M APR-DRGs version 15.0) in order to pay more attention to the severity of illness.
- In 2014, 3M APR-DRGs version 15.0 were replaced by 3M APR-DRGs version 28.0.
- After 2015, 3M APR-DRGs version 28.0 will be replace by 3M APR-DRG version 3X.0.
- Diagnostic and procedure information in the MHD are currently coded with ICD-9-CM.
- From January 1, 2015 diagnostic and procedure information in the MHD are coded with ICD-10-CM and ICD-10-PCS.
The transition from ICD-9-CM to ICD-10-BE

Change management
Introduction

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Manual v1.0
Manual Anatomy & Physiologie
Manual Coding exercises
Coding Tool
E-learning

ICT impact analysis
Adaptation legislation
Financial impact analysis
Conversion tables I9-I10
SNOMED CT - mapping

Preliminary study

2009

2010

2011

2012

2013

2014

2015

30-06-2012: Completion preliminary study
18-11-2010: Request for advice by Minister

20-01-2011: Workgroup Registrations
24-01-2011: Workgroup Registrations
19-05-2011: Approved by Multipartite and presentation of final report to Minister

Preparation transition Training
Preparatory phase

- Belgium: 2009 - 2015 (6 years)
  - Report “Draaiboek implementatie van de overgang van ICD-9-CM naar ICD-10-CM (30 juni 2010)”.
    - [Roadmap for the implementation when transitioning from ICD-9-CM to ICD-10-CM (June, 30th 2010)]
  - Implementation date 01/01/2015

- United States: 2009 - 2015 (6 years)

- Australia: 1994 - 1998 (4 years)

- Canada: 1995 - 1999 - 2001 (6 years - 2 years)

- Spain - Portugal
Project approach

18/11/2010 request for advice by the Minister of Health to the Multipartite consultation structure for hospital policy regarding the replacement of ICD-9-CM

18/11/2010

19/01/2011 presentation of the final report to the Minister of Health

20/01/2011

20/02/2011 preparation of the advice by a workgroup

24/02/2011

Registrations

19/05/2011

20/07/2011 transfer of the final report to the Minister of Health

03/08/2011 announcement on the website of the Federal Public Service of the implementation of ICD-10-BE on January, 1st 2015

19/08/2011 confirmation of the transition to all hospitals by a circular letter
Project approach

- Project approach
  - 24/07/2011: Installation of a steering Committee ICD-10-BE
    - Mr Christiaan Decoster (FPS), Dr I. Mertens (FPS), Mrs A. D’Havé (FPS), Mme C. Fontaine (Multipartite & National Council for Hospital Facilities), Dr E. Baert (University hospital Gent), Dr C. Beguin (University Hospital Saint- Luc, Brussels ), Prof Dr Koen Vandewoude (Cabinet), Mr A. Antoine (Cabinet), Mr M. Daubie (NIHDI), Prof. Dr. Pierre Gillet (University Hospital Liège), Prof Dr F. Rademakers (University Hospitals Leuven)

- Project Teams (PT):
  - PT E-Learning, PT Coding Tool, PT Coding Guidelines, PT IC(D)T, PT Legislation, PT APR-DRG, PT Translation, PT Mapping
Alternatives studied

- Join another country (Australia, Germany, Scandinavia, ...)
  - loss of knowledge and experience built up
  - additional costs

- Development of a Belgian classification
  - additional costs for development and maintenance
  - development and maintenance for coding of procedures
  - development of proper grouping algorithms

- Await the development of ICD-11-CM (and ICD-11-PCS?)
  - ICD-11: implementation in 2017 at the earliest (delay)
  - ICD-11-CM: development and implementation in 2039
  - ICD-9-CM: >30 years old, not maintained since 2013
  - Transition to ICD-11-CM/PCS easier through ICD-10-BE
### Alternatives studied

- What about SNOMED CT
  - terminologie ≠ classification

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>express clinical content</td>
<td>categorization and aggregation</td>
</tr>
<tr>
<td>standardized clinical vocabulary</td>
<td>subject to rules and guidelines</td>
</tr>
<tr>
<td>allows « mapping » to classifications with less granularity</td>
<td>statistical purposes</td>
</tr>
<tr>
<td>polyhierarchy</td>
<td>grouping algorithms non existing</td>
</tr>
<tr>
<td></td>
<td>monohierarchy</td>
</tr>
</tbody>
</table>
Attachment D

mapping methodologies

Terminology—hundreds of thousands of terms

Mapping methodologies from terminology to classifications

Classification—tens of thousands of codes

Mapping methodologies from classifications to groupings

Groupings—hundreds of thousands of groups

Source: The Canadian Institute for Health Information: CCICD-10 Implementation Tool Kit
<table>
<thead>
<tr>
<th>Types</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Terminology</td>
<td>Set of canonical concepts, their structure, relationships, and - if present - their systematic and formal definitions. It is intended for both human and computer.</td>
<td>ICNP Version 1.1, SNOMED-CT</td>
</tr>
<tr>
<td>Interface terminology,</td>
<td>Set of designations that are mainly intended for human use, and map to concepts in a terminological system</td>
<td>NANDA, NIC</td>
</tr>
<tr>
<td>(Entry Terminology, Colloquial Terminology,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation Terminology)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative Classification,</td>
<td>A set of mutually exclusive categories to aggregate data at a pre-prescribed level of granularity for a specific purpose</td>
<td>ICD 10, CPT</td>
</tr>
<tr>
<td>(Statistical Classification)</td>
<td></td>
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</tbody>
</table>

http://dx.doi.org/10.4258/jksmi.2009.15.1.1
Alternatives studied

Logical successor

- ICD-10-CM and ICD-10-PCS developed by the U.S.
  - Development, updates and maintenance by the U.S.
  - Multiple benefits

  - Collection of more detailed and accurate information on diagnoses and procedures;
  - More accurate and equitable allocation of financial resources to hospitals
  - International comparison of diagnostic information and statistics with most of the industrialized countries;
  - Allows the necessary updates with regards to medical technology and medicine in general;
  - Allows working towards an administrative simplification for health care providers because of mapping with SNOMED CT, which allows
    - Reuse of data or secondary data use
    - Semi-automatic coding through rule based mapping.
Situation within major current themes

  - Action point 13
    - Development of a national policy on terminology;
    - Semantic interoperability;
    - Conversions («mapping»);
    - Administrative simplification.

- **Budgetary and financial restraints**
  - No direct financial support through hospital budget
    - Indirect financial support (training, handbooks, tools, transitional measures, …)
Belgium has joined the International Health Terminology Standards Development Organization in September 2013. The Federal Public Service of Health, Food Chain Safety and Environment is the representative for Belgium with IHTSDO, thus demonstrating the Terminologie Center (National Release Center)

- terminologie@health.belgium.be

Related interests:
- Mapping SNOMED CT to ICD-10-CM
- Mapping of SNOMED CT to ICD-10-PCS
Awareness of impact

- Temporary decrease in coding productivity
  - learning curve;
  - resistance to change;
  - increase of the number of valid codes;
  - change of code structure;
  - increase of survey of physicians with regards to clinical documentation;
  - a completely new procedure coding system;
  - changes in coding guidelines and conventions.
Awareness of the impact

- Putting the impact into perspective
  - recurring patterns
    - difference in terms of one parameter
      - 25% of the codes only differ in terms of laterality
      - 25% of the codes only differ in terms of periodicity
      - others: obstetric codes differing in terms of the sequence number of the fetus or trimester of the pregnancy, codes differing on the base of sex,...
  - limited number of concepts
    - Fracture of radius
      - approx. 1800 codes
      - approx. 50 unieke concepten
<table>
<thead>
<tr>
<th>CATEGORIE</th>
<th>KLINISCHE DOCUMENTATIE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fracture Type</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td>Closed</td>
</tr>
<tr>
<td></td>
<td>Pathologic</td>
</tr>
<tr>
<td></td>
<td>Physeal (Growth Plate) Fractures</td>
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<tr>
<td></td>
<td>Neoplastic disease</td>
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<tr>
<td></td>
<td>Torus (Buckle) Fractures</td>
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<td></td>
<td>Green Stick Fractures</td>
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<tr>
<td></td>
<td>Stress Fractures</td>
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<tr>
<td>Healing</td>
<td>Salter Harris I</td>
</tr>
<tr>
<td></td>
<td>Salter Harris II</td>
</tr>
<tr>
<td></td>
<td>Salter Harris III</td>
</tr>
<tr>
<td></td>
<td>Salter Harris IV</td>
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<tr>
<td>Localization</td>
<td>Gustilo Type I or II</td>
</tr>
<tr>
<td></td>
<td>Gustilo Type IIIA, IIIB, or IIIC</td>
</tr>
<tr>
<td>Displacement</td>
<td>Right</td>
</tr>
<tr>
<td></td>
<td>Left</td>
</tr>
<tr>
<td></td>
<td>Unspecified Side</td>
</tr>
<tr>
<td>Laterality</td>
<td>Unilateral</td>
</tr>
<tr>
<td></td>
<td>Bilateral</td>
</tr>
<tr>
<td>Joint Involvement</td>
<td>Intra-articular</td>
</tr>
<tr>
<td></td>
<td>Extra-articular</td>
</tr>
<tr>
<td>Fracture Pattern</td>
<td>Transverse</td>
</tr>
<tr>
<td></td>
<td>Oblique</td>
</tr>
<tr>
<td></td>
<td>Spiral</td>
</tr>
<tr>
<td>Named Fractures</td>
<td>Comminuted (many pieces)</td>
</tr>
<tr>
<td></td>
<td>Segmental</td>
</tr>
<tr>
<td></td>
<td>Colles’, Galleazzi’s, Barton’s, Smith’s</td>
</tr>
</tbody>
</table>
Awareness of the impact

- Put the impact into perspective
  - certain codes will never be used
  - procedure coding system
    - Approx 72,000 codes
    - Approx 1,300 concepts
Awareness of the impact

- clinical documentation
  - medical concepts in ICD-10-BE
    - essential to adequately assess and manage patient information
    - indication of good practice
  - caveat: existing problems with clinical documentation when coding ICD-9-CM, will remain an issue with ICD-10-BE
    - position: clinical documentation improvement may be needed, but transitioning to ICD-10-BE is not the underlying reason
  - root operation definitions will not always match up with the terms that the physician uses to describe the procedure in the operative report
    - position: physicians are not expected to change the names of their operations or the terms that they use. It will be up to the coder to interpret and translate the physician documentation into the terms necessary for ICD-10-PCS coding.
Appropriate initiatives

- licensing
- translation
- training and education
- tooling
- communication
- sensibilisation
- transitional measures
Licence for ICD-10 with the World Health Organisation (WHO)

Agreement with the U.S. Centers for Disease Control and Prevention (CDC) for ICD-10-CM

Adoption of ICD-10-PCS, which is developed by the U.S. Centers of Medicare and Medicaid Services (CMS) and is in the public domain

Agreement with CDC to refer to ICD-10-CM and ICD-10-PCS as ICD-10-BE
Translation

- Translation to Dutch and French
  - Dutch translation of ICD-10 is owned by the Netherlands (WHO-FIC)
  - French translation of ICD-10 is owned by Switzerland
  - WHO allows only one official translation per language
    - Agreement with WHO
      - translation limited to codelabels
      - unofficial translation
      - all codes will stay in English in all our official sources
      - translated codes will only be used for feedback and educational purposes
    - This does not apply to ICD-10-PCS
- Approach translation
  ICD-10-CM
  - Machine translation based on existing official translations
  - Review by specialists
  - Contracts with hospital which employs specialist

- Approach translation
  ICD-10-PCS
  - Breakdown to concepts
  - Concept translation
  - Translation of definitions of root procedures
Training and education

Overview

- Manuals
- E-learning
  - pilot project in English
  - education in Dutch and French
  - free and ongoing access
  - AHIMA
- Coding workshops
- Project with schools for coders
Training and education

- Manual explaining coding guidelines in Dutch and French
- Other references:
Training and education

- Handbook Anatomy and physiology in Dutch and French
- Other references:
Training and education

- [www.ahima.org/education/onlineed/Programs/ICD10/acute care](www.ahima.org/education/onlineed/Programs/ICD10/acute care)

- **Awareness, Assessments, Foundation Training**
  - Recommended training: 3-6 hours
  - ICD-10 Awareness Training
  - Readiness assessments
  - Foundation training courses

- **ICD-10-CM coding course collection**
  - Recommended training: 28 hours
  - Provides introduction to coding system
  - Delivers comprehensive CM coding instruction
  - 23-course bundle
Training and education

- ICD-10-PCS coding course collection
  - Recommended training: 27 hours
  - Provides introduction to coding system
  - Delivers comprehensive PCS coding instruction
  - 12-course bundle

- ICD-10-CM and -PCS Practice Exercises
  - Recommended training: 4 – 8 hours
  - 4-course bundle
# Organization of Chapter 2

Chapter 2 in ICD-10-CM classifies neoplasms. This chapter includes categories C00 through D49 arranged in the following blocks or sections.

<table>
<thead>
<tr>
<th>Section</th>
<th>Section Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>C00–C14</td>
<td>Malignant neoplasms of lip, oral cavity and pharynx</td>
</tr>
<tr>
<td>C15–C26</td>
<td>Malignant neoplasms of digestive organs</td>
</tr>
<tr>
<td>C30–C39</td>
<td>Malignant neoplasms of respiratory and intrathoracic organs</td>
</tr>
<tr>
<td>C40–C41</td>
<td>Malignant neoplasms of bone and articular cartilage</td>
</tr>
<tr>
<td>C43–C44</td>
<td>Melanoma and other malignant neoplasms of skin</td>
</tr>
<tr>
<td>C45–C49</td>
<td>Malignant neoplasms of mesothelial and soft tissue</td>
</tr>
<tr>
<td>C50</td>
<td>Malignant neoplasms of breast</td>
</tr>
<tr>
<td>C51–C58</td>
<td>Malignant neoplasms of female genital organs</td>
</tr>
<tr>
<td>C60–C63</td>
<td>Malignant neoplasms of male genital organs</td>
</tr>
<tr>
<td>C64–C68</td>
<td>Malignant neoplasms of urinary tract</td>
</tr>
<tr>
<td>C69–C72</td>
<td>Malignant neoplasms of eye, brain and other parts of central nervous system</td>
</tr>
<tr>
<td>C73–C75</td>
<td>Malignant neoplasms of thyroid and other endocrine glands</td>
</tr>
<tr>
<td>C7A</td>
<td>Malignant neuroendocrine tumors</td>
</tr>
<tr>
<td>C7B</td>
<td>Secondary neuroendocrine tumors</td>
</tr>
<tr>
<td>C76–C80</td>
<td>Malignant neoplasms of ill-defined, other secondary and unspecified sites</td>
</tr>
<tr>
<td>C81–C96</td>
<td>Malignant neoplasms of lymphoid, hematopoietic and related tissue</td>
</tr>
<tr>
<td>D00–D09</td>
<td>In situ neoplasms</td>
</tr>
</tbody>
</table>
Training and education
Training and education

- Pilot test: December 2013 – June 2014
  - Voluntary basis
  - Modules in English

- Go live: July 1, 2014
  - Modules in Dutch and French
  - Voluntary basis
  - Free and ongoing access for coders in hospitals
Training and education

- Coding workshops
  - Based on practical, real-world coding experience
  - Based on actual coding cases
  - Face-to-face, small groups, accompanied by our own medical experts
Pilot project

Problem statement
- Lack of coders on the job market
- In-house training of coder takes 1 year

Objective:
- Training prior to recruitment of coder
- Increase the availability of trained coders on the market

Design:
- Provide an identical training through schools
- Pilotproject “Hogeschool Universiteit Brussel”
- 26 candidates
- Start April 2014
- Evaluation of project
- [ ] **http://icd10be.health.belgium.be/**

- Supports correct coding process

- Additional functionalities
  - Conversion between ICD-9-CM<>ICD-10-BE
  - Create PCS codetable from scratch
  - Searches can be conducted for CM and PCS
  - Free access
  - Free distribution to hospitals and vendors

- Crossmap tables
Communication

- Website
  - www.health.belgium.be/ICD10BE
- Electronic newsletter
- Communication by letter
- Information sessions
  - Different audiences
    - Hospital board members
    - Coders
    - Vendors
    - Students
    - Hospital organizations
    - Advisory bodies
Sensibilisation of medical staff

- Project in preparation for 2015
- Problem statement
  - existing problems with clinical documentation when coding ICD-9-CM will remain an issue with ICD-10-BE
- Objective
  - to prepare medical staff for questions they might receive with regards to clinical documentation;
  - increase of survey of physicians with regards to clinical documentation.
- Design
  - Look for proper channels: e-learning, teleconferencing, webinars,...?
Transitional measures

- Allowing
  - Completion of registration in ICD-9-CM
  - Practicing real-time, actual coding case
    - For example by
      - Allowing a free degree of registration of ICD-10-BE for the first semester of 2015
      - Setting a fixed degree (80%) of registration of ICD-10-BE for the second semester of 2015
      - Not using the data of 2015 for hospital financing
      - …
Transitional measures

Education ICD-10-BE

- E-learning pilot
- Inscriptions
- E-learning
- E-learning & practice
- Practice
- Workshops

Based on concrete patient records, cases, questions
Small groups of about twenty persons

Learning curve 18 months

Timeline:
- 2014/1
- 2014/2
- 2015/1
- 2015/2
Thank you