

II Jornada Técnica  
sobre la

ICD-10

proceso  
de implantación  
en España



## THE ICD-10-BE IMPLEMENTATION PROJECT IN BELGIUM

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](mailto:arabella.dhave@health.belgium.be)  
[www.health.belgium.be/ICD10BE](http://www.health.belgium.be/ICD10BE)

30/05/2014

2009 - 2015



## Context and introduction

Brief overview of Belgian (demo)(geo)graphics and its health care system



# Geographical and demographic context



3

## 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 km<sup>2</sup>
- 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





# Languages in Belgium

4

- 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.

## Political context



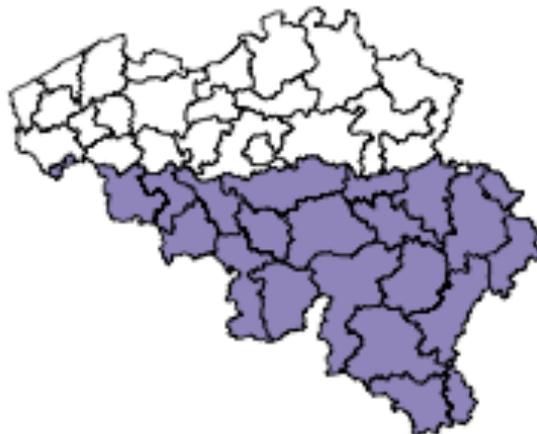
5

- 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.

The Flemish region



The Walloon region



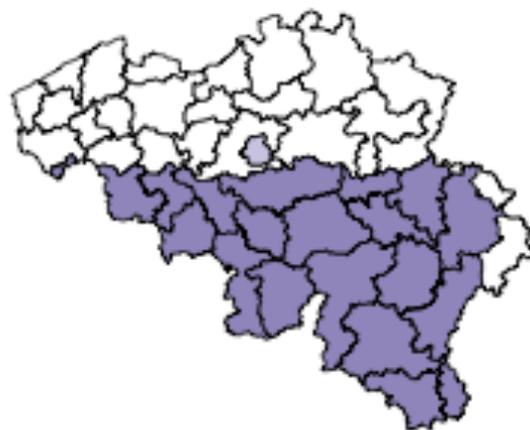
The region of Brussels-Capital



The Flemish community



The French community



The German community





# Responsibilities in health care

7

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

8

- 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



9

- 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

10

- Data on hospital structure

Domain



- Staff data

Domain



- Administrative data

Domain



- Nursing data

Domain



- Medical data

Domain



- Billing data

Domain



# Minimal Clinical 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 Minimum 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.

# Diagnosis Related Groups



12

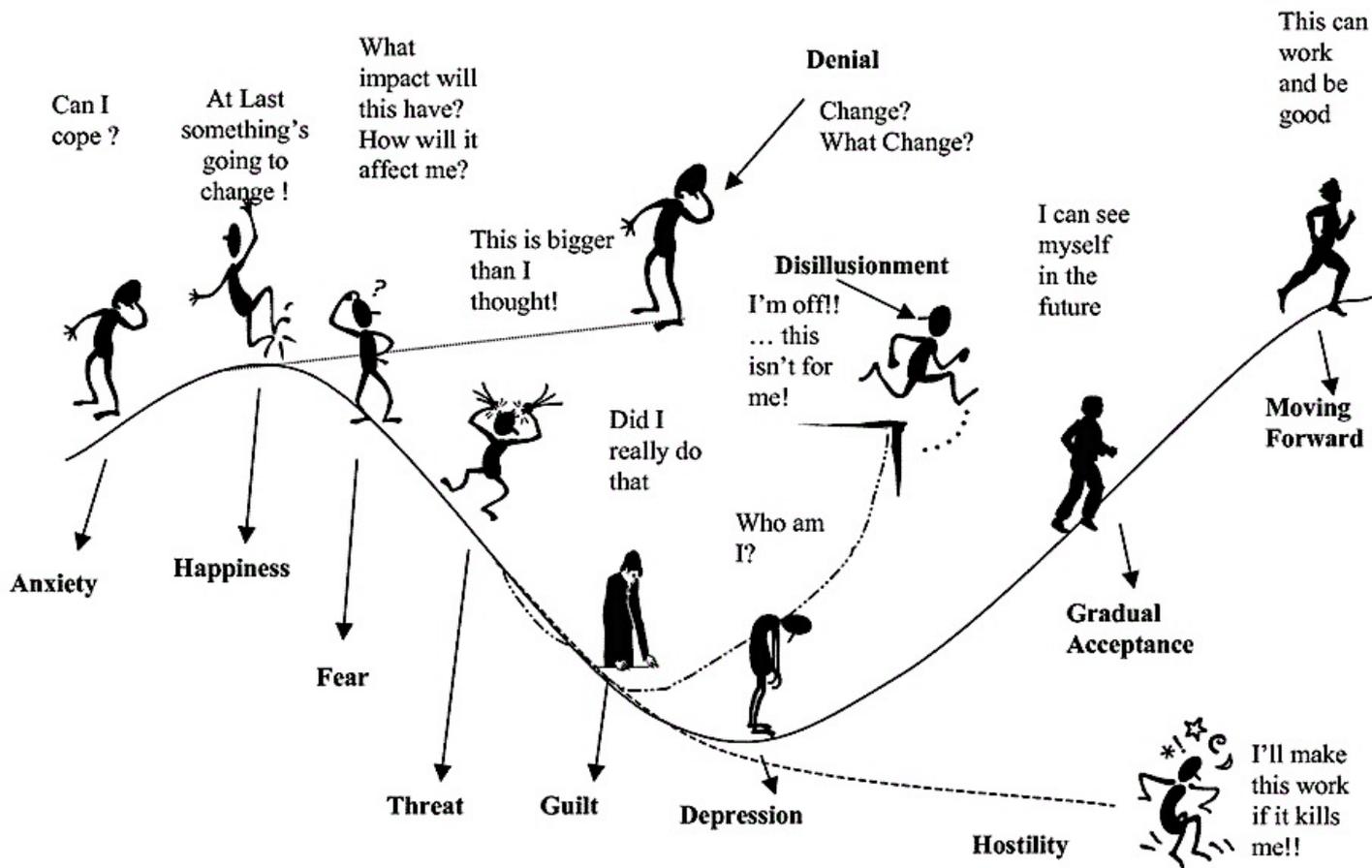
- The MD-MHD are used, amongst others, to group hospitalized patients in DRGs.
  - In 1995, All Patient Diagnosis related groups (AP-DRGs) were chosen as the grouping method to establish hospital comparisons for financial purposes.
  - In 2002, AP-DRGs were replaced by All Patient Refined DRGs (3M APR-DRGs 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 replaced 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.



**“On April 1, 2014, the Protecting Access to Medicare Act of 2014 (PAMA) (Pub. Law 113-93) was enacted, which said that the Secretary may not adopt ICD-10 prior to October 1, 2015. Accordingly, the U.S. Department of Health and Human Services expects to release an interim final rule in the near future that will include a new compliance date that would require the use of ICD-10 beginning October 1, 2015. The rule will also require HIPAA covered entities to continue to use ICD-9-CM through September 30, 2015.”**



## The transition from ICD-9-CM to ICD-10-BE

Change management



# Introduction



15

## Table of Contents

- Preparatory phase
- Project approach
- Motivation
- Alternatives studied
- Situating within major current themes
- Awareness of impact

Licensing ICD-10 WHO  
Translation ICD-10-BE codelabels  
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



17

- 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

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

20/01/2011  
24/02/2011  
preparation  
of the advice  
by a  
workgroup  
Registrations

19/05/2011  
presentation  
of of the final  
report and  
approval by  
the  
Multipartite

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  
implementa-  
tion of  
ICD-10-BE on  
January, 1st  
2015

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



- 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

20

- 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

## Terminology

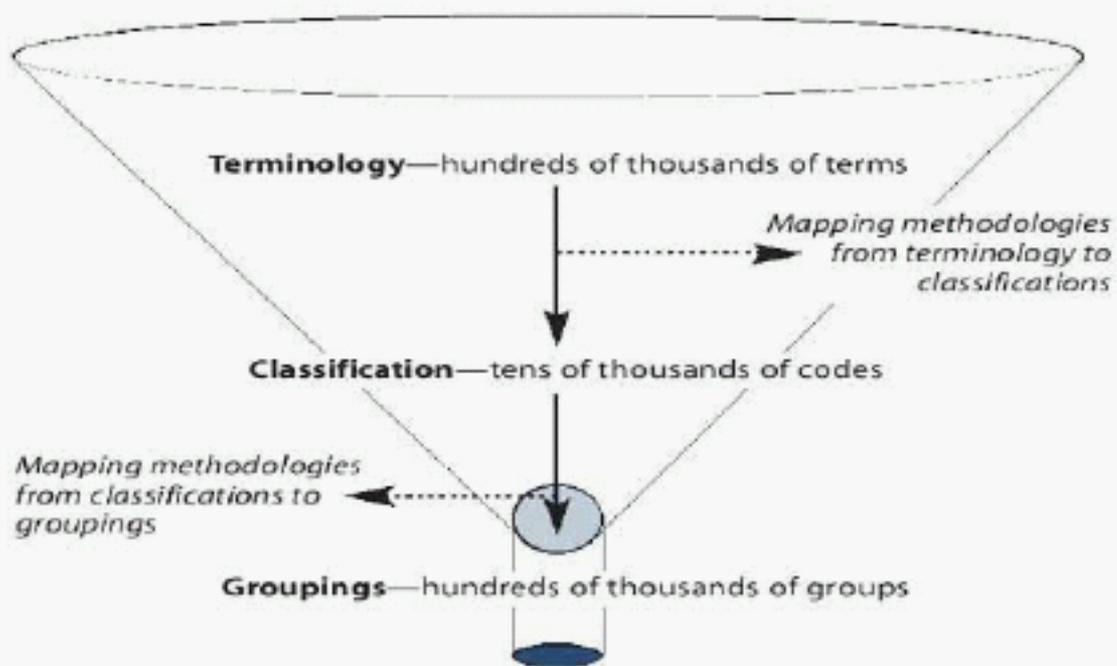
- express clinical content
- standardized clinical vocabulary
- allows « mapping » to classifications with less granularity
- polyhierarchy

## Classification

- categorization and aggregation
- subject to rules and guidelines
- statistical purposes
- grouping algorithms non existing
- monohierarchy

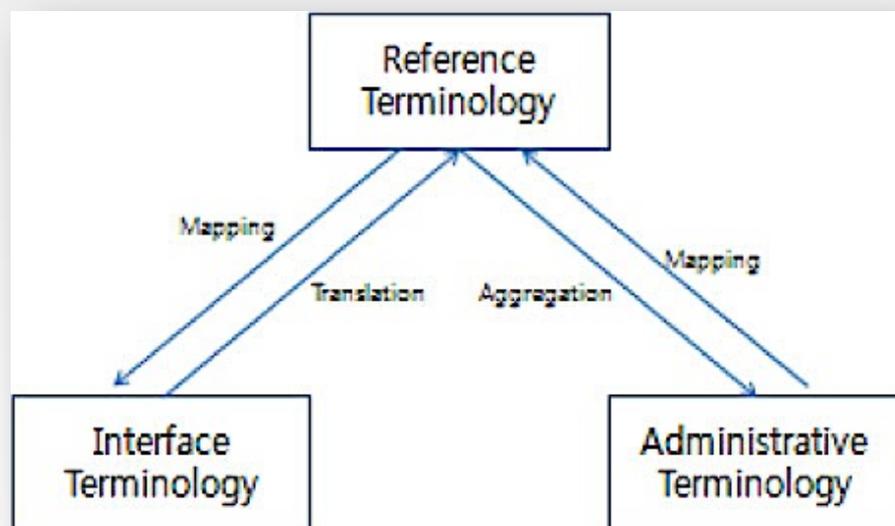
## Attachment D

# mapping methodologies



*Source: The Canadian Institute for Health Information:  
CCICD-10 Implementation Tool Kit*

Types	Definition	Examples
Reference Terminology	Set of canonical concepts, their structure, relationships, and - if present - their systematic and formal definitions. It is intended for both human and computer.	ICNP Version 1.1 SNOMED-CT
Interface terminology, (Entry Terminology, Colloquial Terminology, Presentation Terminology)	Set of designations that are mainly intended for human use, and map to concepts in a terminological system	NANDA, NIC
Administrative Classification (Statistical Classification)	A set of mutually exclusive categories to aggregate data at a pre-prescribed level of granularity for a specific purpose	ICD 10, CPT



J Korean Soc Med Inform. 2009 Mar;15(1):1-11.

<http://dx.doi.org/10.4258/jksmi.2009.15.1.1>



# Alternatives studied

24

## 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.

# Situating within major current themes



25

- Roadmap E-Health 2013 -2018 ([www.rtreh.be](http://www.rtreh.be))
  - 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, ...)

# Situating within major current themes



26

- 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](mailto:terminologie@health.belgium.be)
  - <http://www.health.belgium.be/eportal/Healthcare/index.htm>
- Related interests:
  - Mapping SNOMED CT to ICD-10-CM
  - Mapping of SNOMED CT to ICD-10-PCS

# Awareness of impact



27

- 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.





## □ 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

CATEGORIE	KLINISCHE DOCUMENTATIE
Fracture Type	Open Closed Pathologic Physeal (Growth Plate) Fractures Neoplastic disease Torus (Buckle) Fractures Green Stick Fracures Stress Fractures

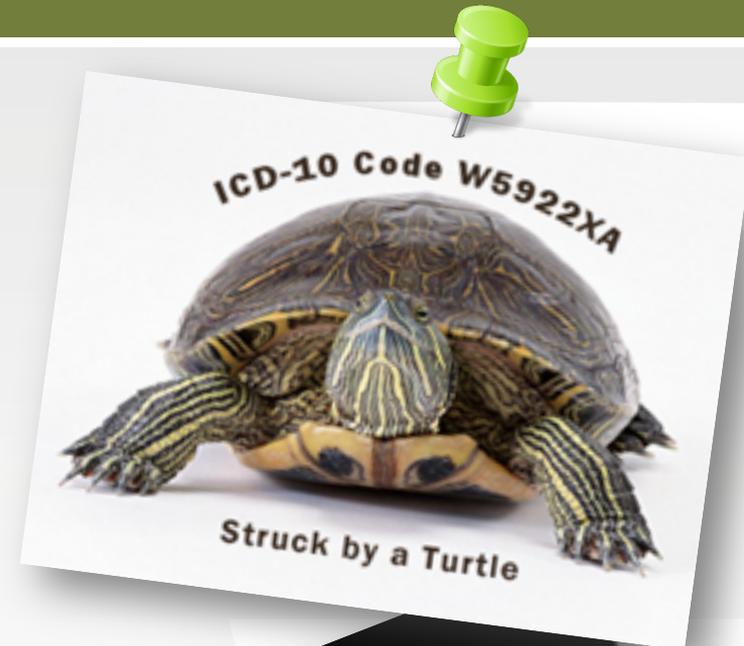
CATEGORIE	KLINISCHE DOCUMENTATIE												
Healing	<table border="1"> <thead> <tr> <th>Classification</th> <th>Gustilo Type I or II</th> <th>Gustilo Type IIIA, IIIB, or IIIC</th> </tr> </thead> <tbody> <tr> <td>           Salter Harris I            Salter Harris II            Salter Harris III            Salter Harris IV         </td> <td></td> <td></td> </tr> </tbody> </table>	Classification	Gustilo Type I or II	Gustilo Type IIIA, IIIB, or IIIC	Salter Harris I Salter Harris II Salter Harris III Salter Harris IV								
Classification	Gustilo Type I or II	Gustilo Type IIIA, IIIB, or IIIC											
Salter Harris I Salter Harris II Salter Harris III Salter Harris IV													
Localization	<table border="1"> <thead> <tr> <th>Laterality</th> <th>Unilateral</th> <th>Bilateral</th> </tr> </thead> <tbody> <tr> <td>           Right            Left            Unspecified Side         </td> <td></td> <td></td> </tr> </tbody> </table>	Laterality	Unilateral	Bilateral	Right Left Unspecified Side								
Laterality	Unilateral	Bilateral											
Right Left Unspecified Side													
Displacement	<table border="1"> <thead> <tr> <th>Joint Involvement</th> <th>Intra-articular</th> <th>Extra-articular</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Joint Involvement	Intra-articular	Extra-articular									
Joint Involvement	Intra-articular	Extra-articular											
	<table border="1"> <thead> <tr> <th>Fracture Pattern</th> <th>Transverse</th> <th>Oblique</th> <th>Spiral</th> <th>Comminuted (many pieces)</th> <th>Segmental</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Fracture Pattern	Transverse	Oblique	Spiral	Comminuted (many pieces)	Segmental						
Fracture Pattern	Transverse	Oblique	Spiral	Comminuted (many pieces)	Segmental								
	<table border="1"> <thead> <tr> <th>Named Fractures</th> <th>Colles', Galleazzi's, Barton's, Smith's</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Named Fractures	Colles', Galleazzi's, Barton's, Smith's										
Named Fractures	Colles', Galleazzi's, Barton's, Smith's												

# Awareness of the impact



31

- Put the impact into perspective
  - ▣ certain codes will never be used
  - ▣ procedure coding system
    - Approx 72.000 codes
    - Approx 1300 concepts



# Awareness of the impact



32

- 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

33

## Table of Contents

- 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 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

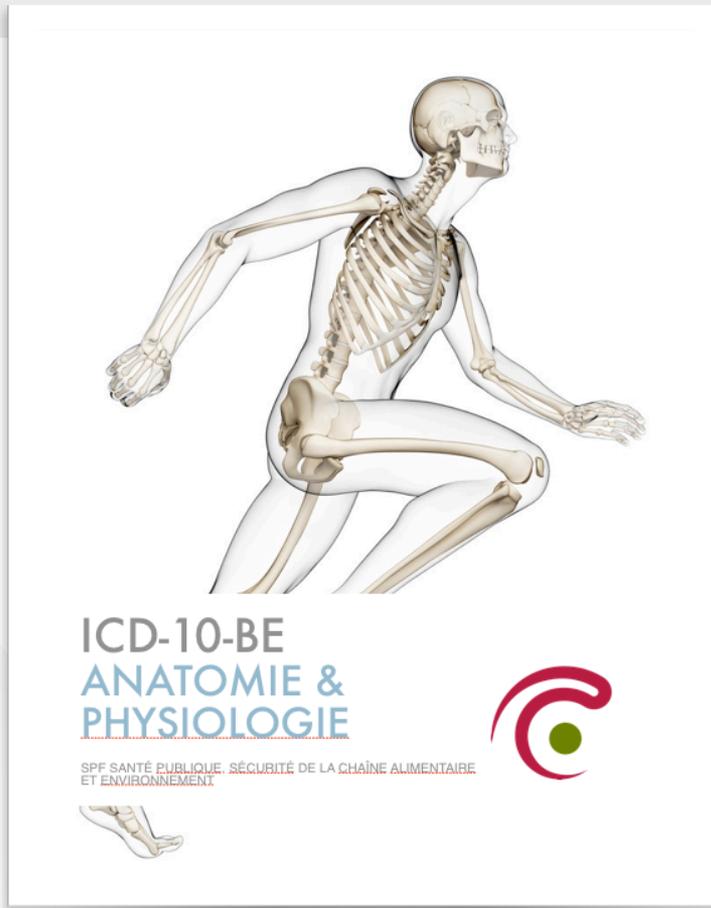
# Training and education



38

- Manual explaining coding guidelines in Dutch and French
- Other references:
  - <https://www.cms.gov/Medicare/Coding/ICD10/2014-ICD-10-PCS.html>
  - <https://www.cms.gov/Medicare/Coding/ICD10/2014-ICD-10-CM-and-GEMs.html>
  - Leon-Chisen, N. (2013). ICD-10-CM and ICD-10-PCS 2014 Coding Handbook: With Answers. American Hospital Association Press
  - Papazian-Boyce L. (2012). ICD-10-CM/PCS Coding: A Map for Success. Pearson





- Handbook Anatomy and physiology in Dutch and French
- Other references:
  - Harrington, J. (2013). Comprehensive Anatomy and Physiology for ICD-10-CM and PCS Coding 2014. OptumInsight

# Training and education



40

- [www.ahima.org/education/onlineed/Programs/ICD10/acutecare](http://www.ahima.org/education/onlineed/Programs/ICD10/acutecare)
- 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

41

- 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

- ⊕ Syllabus
- ⊖ Coursework
  - ⊖ Lesson
    - Organization
    - Organization (cont.)
    - Important Notes
    - Activity 1
    - Activity 2
    - Important Notes
    - Activity 3
    - Neoplasm Table
    - Activity 4
    - Guidelines
    - Guidelines (continued)
    - Activity 5
  - Lesson Quiz
- ⊕ Coding Cases
- Final Assessment
- Status Page

## 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.

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

# Training and education



Niveau 1 : OPEN CAMPUS OFOIFA

HAPPY  
LEARNING!

Français

Login

Passes

Mon compte

Activation par OFOIFA Code  
Perdu mot de passe

Général

Accueil  
Qu'est-ce que l'IFA ?  
Equipe de projet  
Philosophie du campus  
Catalogue  
Comment s'inscrire ?  
Open Learning Center  
Downloads  
FAQ  
Aide  
Aide en ligne  
OPEN CAMPUS - Cours libres  
d'accès

Informations sur l'IFA ?  
Inlichtingen over OFO ?  
info@ofolfa.fgov.be



federale overheidsdienst

VOLKSGEZONDHEID, VEILIGHEID VAN DE VOEDSELKETEN EN LEEFMILIEU





## Training and education

44

- 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



45

- 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

# Training and education



46

- **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



- Website
  - ▣ [www.health.belgium.be/ICD10BE](http://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



49

- 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,...?



## □ Allowing

- Completion of registration in ICD-9-CM

- Practicing real-time, actual coding case

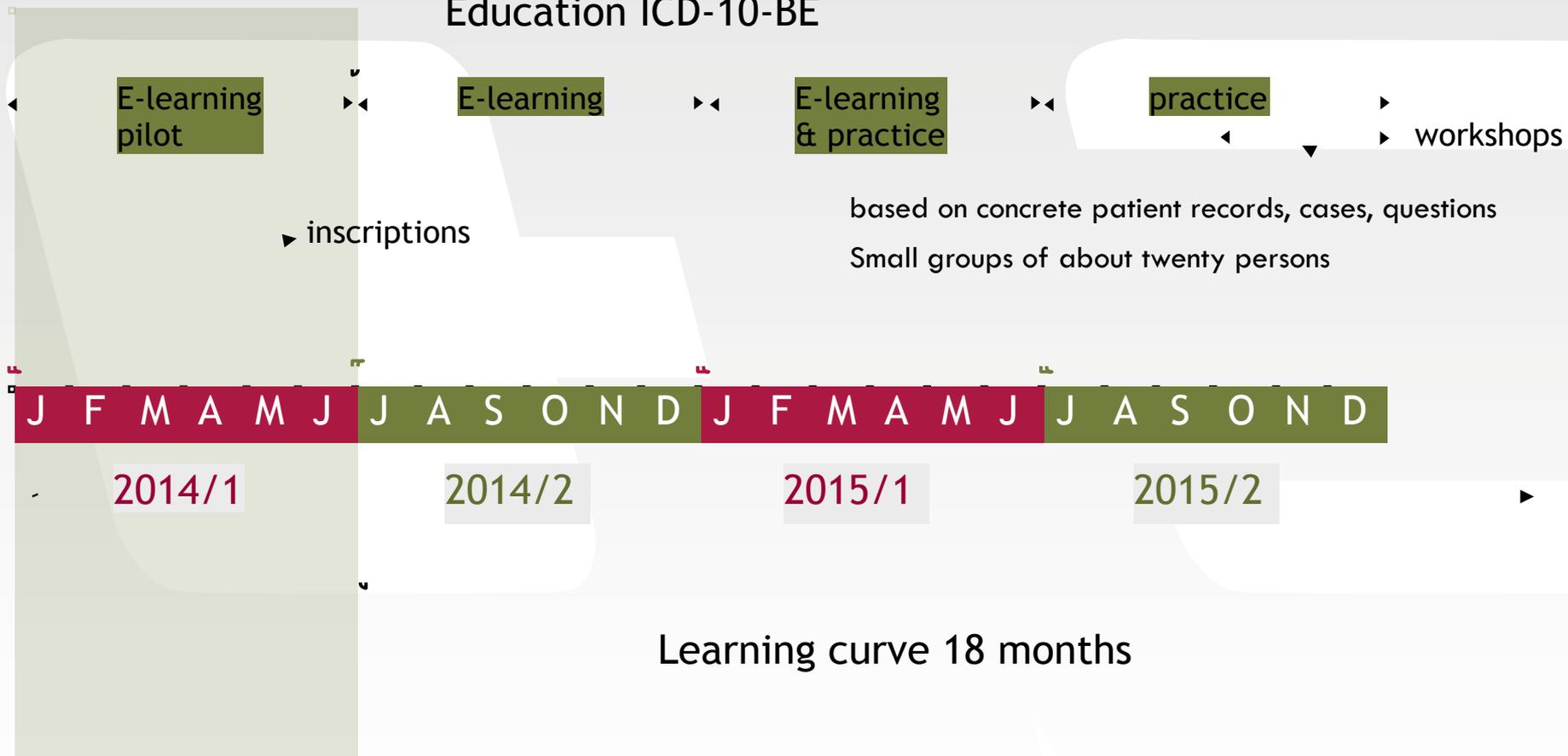
- For example by

- 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



Learning curve 18 months

# Thank you

