



European Network of Cancer Registries

Data Sources in Surgery
Classifications and Terminology

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Granada, Nov. 13, 2023

Belgian Cancer Registry



Classification - Definition

- A **classification** entails:
 - the **systematic arrangement** of
 - **items**
 - into **groups** or **classes**
 - according to certain **criteria**



OUTPUT

History of International Procedure Classifications

International Classification of Procedures in Medicine

Volume 1

1. Procedures for Medical Diagnosis
2. Laboratory Procedures
4. Preventive Procedures
5. Surgical Procedures
8. Other Therapeutic Procedures
9. Ancillary Procedures

Published for trial purposes in accordance with resolution WHA29.35 of the Twenty-ninth World Health Assembly, May 1976



WORLD HEALTH ORGANIZATION
GENEVA
1976



WHO:

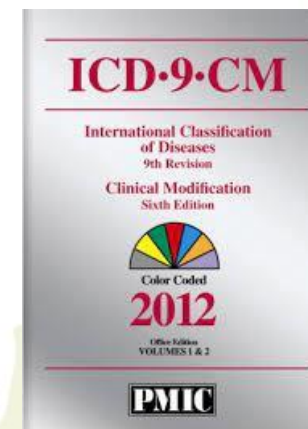
- International Classification of Diseases-9th Ed (ICD-9) - 1977
- International Classification of Procedures in Medicine (ICPM) - 1978

Medicare:

International Classification of Diseases-9th Ed-Clinical Modification (ICD-9-**CM**) - 1979

Vol. 1 & 2 Diseases

Vol. 3 Procedures



Italy, Poland

Belgian Cancer Registry



3

National Classifications



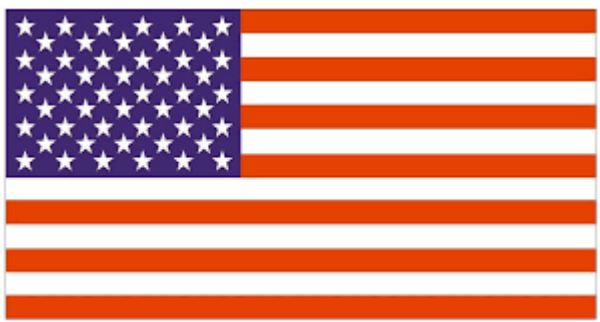
CCI



CCAM



OPS



ICD-10-PCS/ CPT®



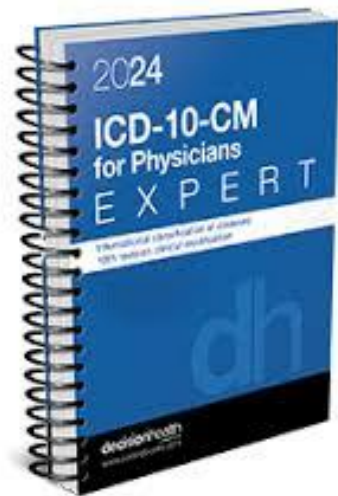
CHOP



OPCS-4-UK

ICD-10 (WHO)

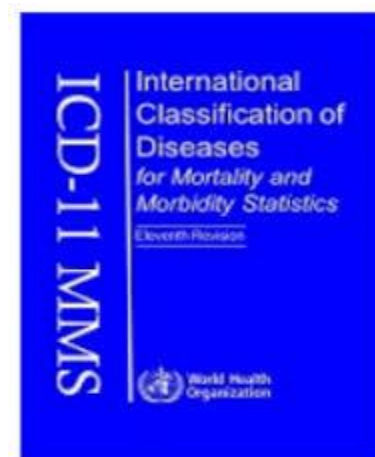
- ICD-10-CM (Medicare)
- ICD-10-Procedure Coding System (ICD-10-PCS) (**3M** → Medicare)



Belgium, Spain, Portugal

International Procedure Classifications (WHO)

- ICD-9 and International Classification of Procedures in Medicine (ICPM-WHO) - 1978
- International Classification of Diseases-9th Ed-Clinical Modification (ICD-9-CM - USA); Vol. 3 Procedures
- International Classification of Diseases-11th Ed and International Classification of Health Interventions (ICHI)



3 Key elements for surgical procedure registration (e.g. Laparoscopic Right Hemicolectomy)

1. Body System (Digestive System)
2. Malignancy (Adenocarcinoma – M8140)
3. Body Part (Right Hemicolon - Topography)
4. Surgical Action (Resection) ←
5. Approach (Laparoscopic)
6. Device (Stapler)

ICHI-browser

<http://id.who.int/icd/entity/1544468586>

International Classification of Health Interventions (ICHI)

Search

[Advanced Search]

Home

Foundation

Coding Tool

Proposals

Info

KBP.JJ.AB Laparoscopic partial excision of colon

KBP.JK.AA Total colectomy

KBP.JK.AB Laparoscopic total colectomy

KBP.KA.AD Endoscopic replacement of colonic device

KBP.LA.AD Endoscopic control of colonic bleeding

KBP.LA.AF Transcatheter embolisation for colonic bleeding

KBP.LB.AA Anastomosis of colon

KBP.LB.AB Laparoscopic anastomosis of colon

KBP.LD.AA Intra-abdominal manipulation of colon

KBP.LD.AB Laparoscopic intra-abdominal manipulation of colon

KBP.LD.AC Reduction of colon by enema

Foundation [URI : http://id.who.int/icd/entity/1544468586](http://id.who.int/icd/entity/1544468586)

KBP.JJ.AB Laparoscopic partial excision of colon

Parent

[Interventions on gastrointestinal tract](#)

Inclusions

- Laparoscopic partial excision of colon with intraoperative colonic lavage ⇒
- Laparoscopic extended right hemicolectomy ⇒
- Laparoscopic left hemicolectomy ⇒
- Laparoscopic right hemicolectomy ⇒
- Laparoscopic resection of transverse colon ⇒

Exclusions

- Laparoscopic sigmoidectomy (KBU.JK.AB)

<http://id.who.int/icd/entity/373894437>

KBP.JJ.AB Laparoscopic partial excision of colon

Exclusions

- Laparoscopic sigmoidectomy (KBU.JK.AB)

All Index Terms

- Laparoscopic partial excision of colon
- Laparoscopic partial excision of colon with intraoperative colonic lavage ⇒
- Laparoscopic extended right hemicolectomy ⇒
- Laparoscopic left hemicolectomy ⇒
- Laparoscopic right hemicolectomy ⇒
- Laparoscopic resection of transverse colon ⇒

Coding Note

Code also, if performed: any anastomosis or stoma formation

ICHI Axes

Target: KBP Colon

Action: JJ Excision, partial

Means: AB Percutaneous endoscopic

Action Definitions

- JK Excision, total:
removing a complete body part
- JI Excision, local:
excision of tissue limited to the lesion in question

Action Includes

- Curettage →
JJ Excision, partial
- Polypectomy →
JI Excision, local
- Lumpectomy →
JJ Excision, partial
- Ablation →
GA Destruction

International Classification of Health Interventions (WHO)

- For countries that do not have a procedure classification system:
 - Direct use of ICHI
 - Develop a national system based on ICHI
- For countries that already have a procedure classification system:
 - Extend the system: incorporate ICHI's broader range of interventions
 - Map to ICHI → enable comparison with other countries

Map Radiotherapy to ICHI

I9	Therapeutic Radiology And Nuclear Medicine
92.20	Infusion Of Liquid Brachytherapy Radioisotope
92.21	Superficial Radiation
92.22	Orthovoltage Radiation
92.23	Radioisotopic Teleradiotherapy
92.24	Teleradiotherapy Using Photons
92.25	Teleradiotherapy Using Electrons
92.26	Teleradiotherapy Of Other Particulate Radiati

rch tele

- LZZ.GA.BA Destruction of lesion or tissue of skin a
Teleradiotherapy of skin, NOS
- LCA.GA.BA Destruction of lesion or tissue of breast
Teleradiotherapy to breast
- EBA.GA.BA Destruction of lesion or tissue of throi
Teleradiotherapy to thyroid gland
- EBC.GA.BA Destruction of lesion or tissue of adren
Teleradiotherapy to adrenal gland
- DFM.GA.BA Destruction of lesion or tissue of ingui
Teleradiotherapy to inguinal lymph node
- DFA.GA.BA Destruction of lesion or tissue of other
Teleradiotherapy to lymph node, NEC
- DFB.GA.BA Destruction of lesion or tissue of cervic
Teleradiotherapy to cervical lymph node

earch radiat

- UBR **Radiation**
- _NOCODEASSIGNED **Radiate** ligament
- BB **Radiation** with contrast medium
- UBR.TA.ZZ Advocacy in relation to **radiation**
- UBR.TB.ZZ Planning in relation to **radiation**
- _NOCODEASSIGNED **Radiate** sternocostal ligament
- BA **Radiation**, not otherwise specified
- KAL.GA.BA Destruction of lesion or tissue of parotid gland by radiot
Radiation to parotid gland
- LCA.GA.BA Destruction of lesion or tissue of breast by radiotherapy
Radiation therapy to breast
- LZZ.GA.BA Destruction of lesion or tissue of skin and subcutaneous
Radiation therapy of skin, NOS
- UBR.AA.ZZ Assessment of the impact of **radiation**
- UBR.TD.ZZ Collaboration relating to **radiation**
- AAA.GA.BA Destruction of lesion or tissue of brain by radiotherapy
Radiation therapy of brain
- UBR.PN.ZZ Advising about **radiation**
- UBR.VF.ZZ Alert concerning **radiation**

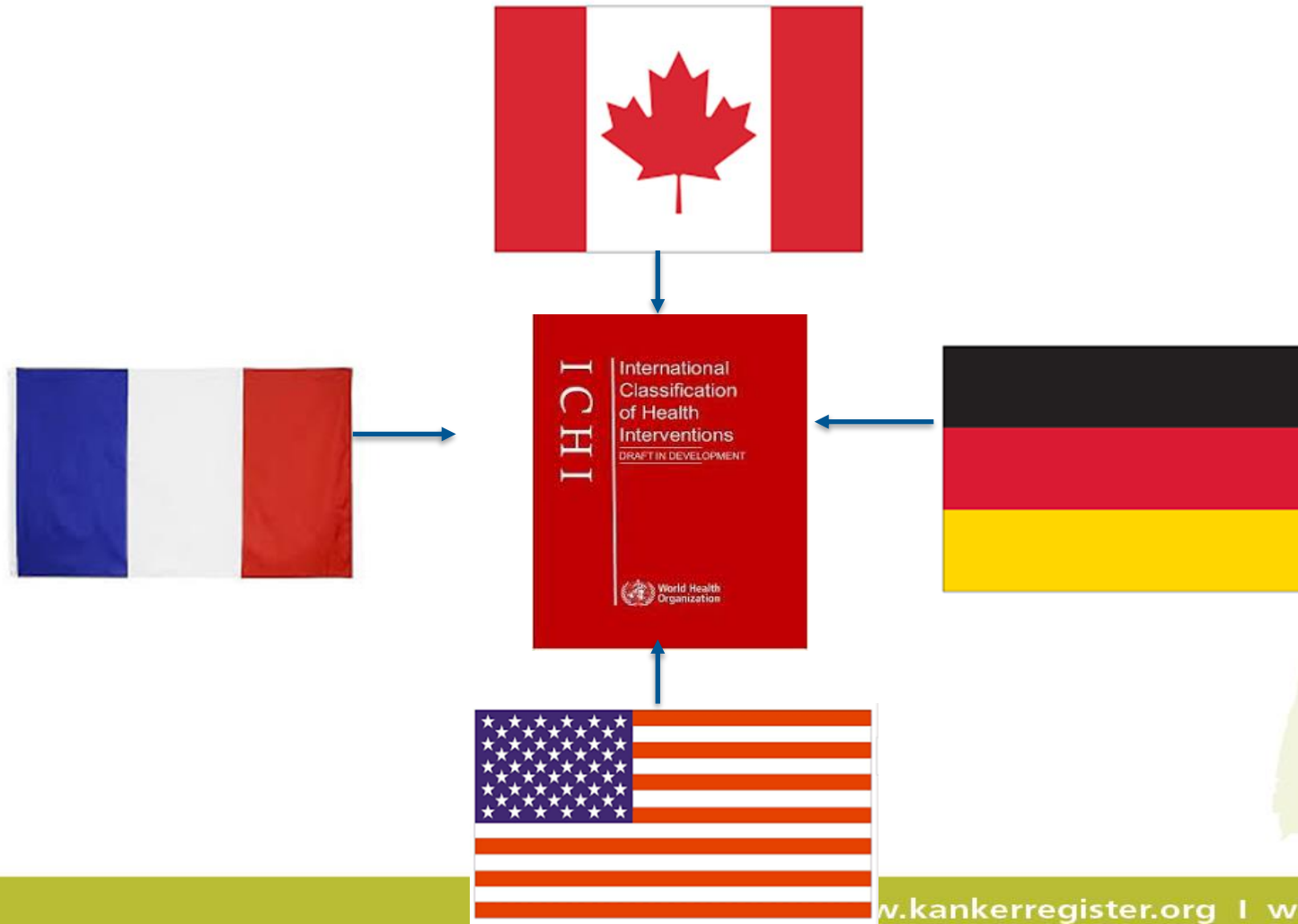
International Classification of Hea

Search radioth

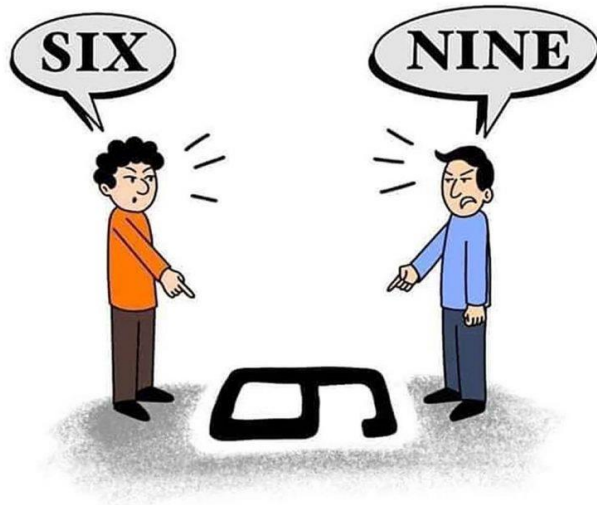
- GA Destruction
Radiotherapy
- Interr
- Interv
- NAI.GA.BA Destruction of lesion or tissue of bladder
- IC BA Radiation, not otherwise specified
- IC External beam **radiotherapy**
- AAN.GA.BA Destruction of cranial nerve by radiation
Radiotherapy to cranial nerve
- PZA.GA.BA Total body irradiation
Radiotherapy to whole body
- BE Ionising agents, open, not otherwise specified
Radiation **therapy** with open **radionuclides**
- AAA.GA.BA Destruction of lesion or tissue of brain by
- NGA.GA.BA Destruction of lesion or tissue of the pro
- NMF.GA.BA Destruction of lesion or tissue of cervix b
- NME.GA.BA Destruction of lesion or tissue of uterus
- BAA.GA.BA Destruction of lesion or tissue of eyelid b
- BCC.GA.BA Destruction of lesion or tissue of retina b
- LCA.GA.BA Destruction of lesion or tissue of breast b



Map national procedure classifications to ICHI



Standard Terminology – Definition



1. Collection of medical terms
2. Systematically organized
3. Computer-processable

Providing:

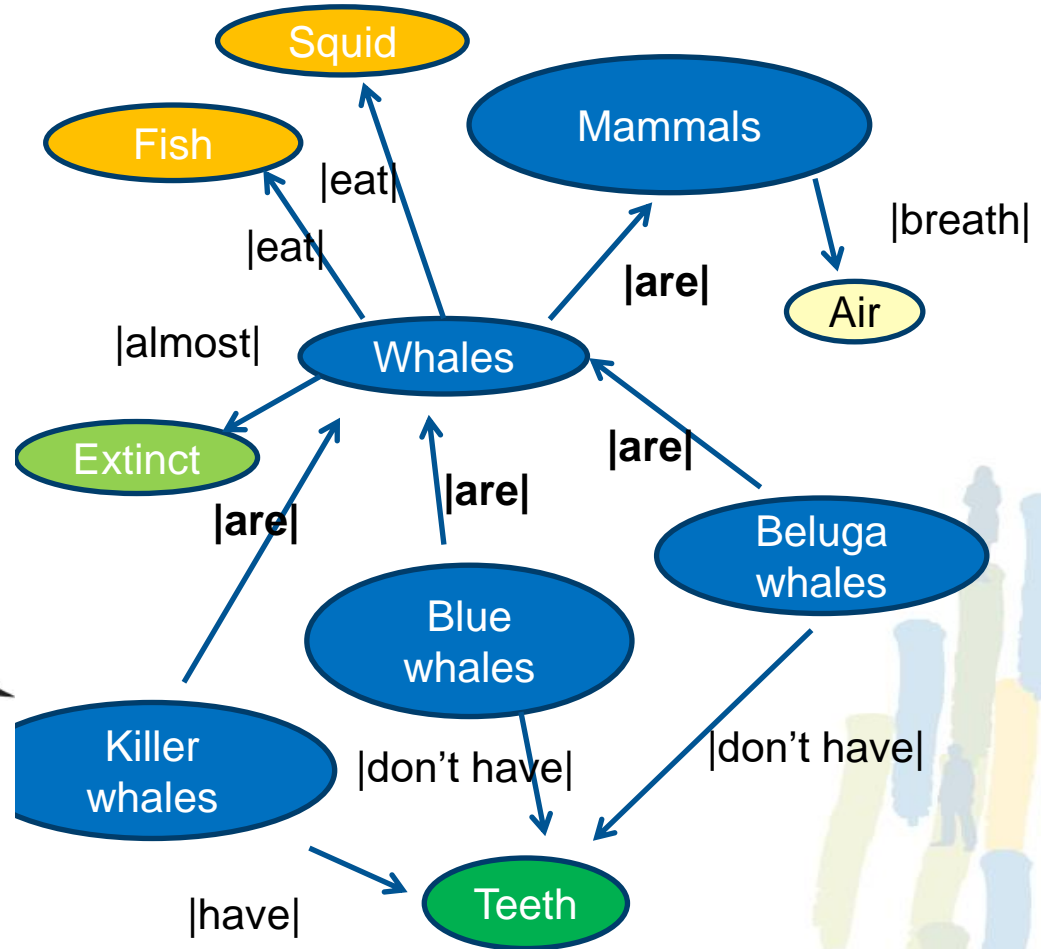
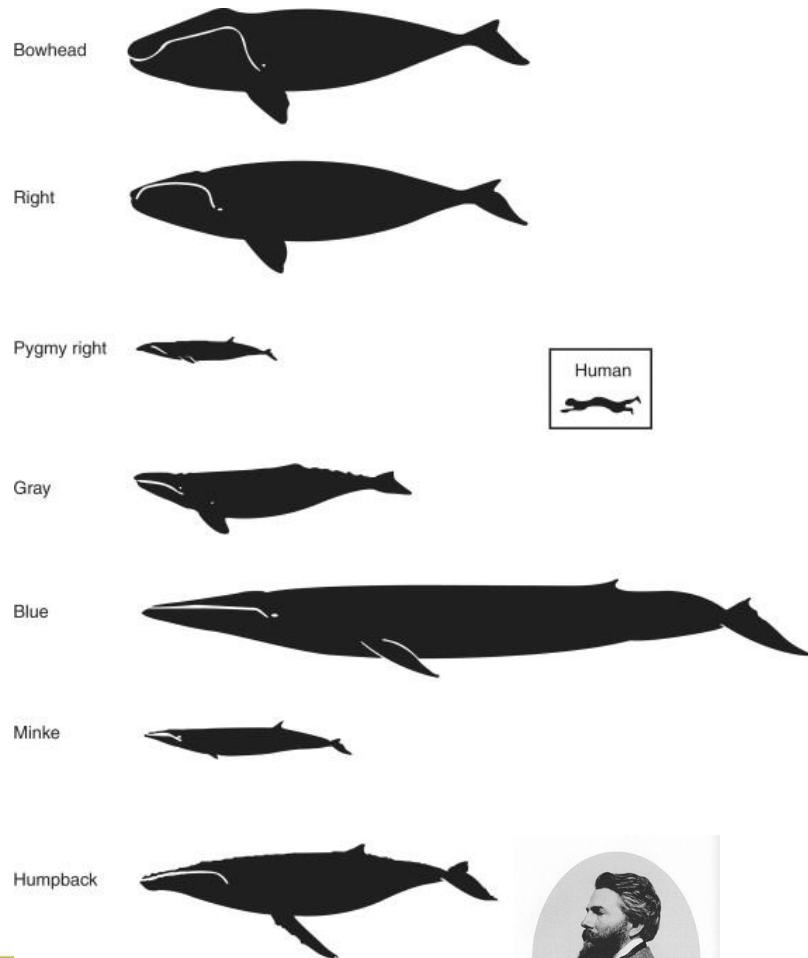
- Codes
- Synonyms
- Definitions

Used in EPR for:

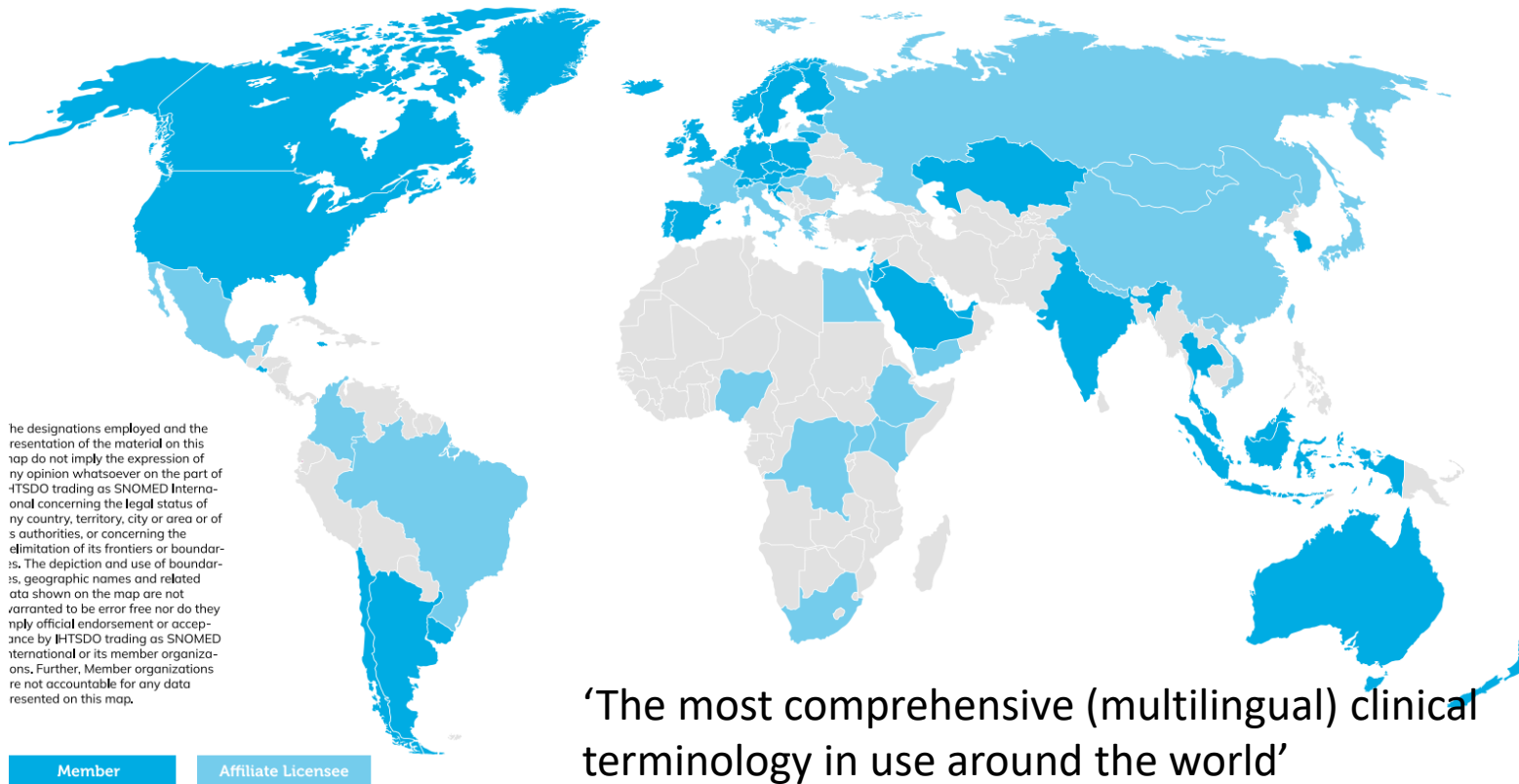
- Clinical documentation
- Reporting

Language – INPUT

Classification – Terminology



Systematized Nomenclature of MEDicine – Clinical Terms (SNoMED-CT)



‘The most comprehensive (multilingual) clinical terminology in use around the world’

Clinical Terms – Electronic Patient Record



61968008 |Syringe, device
(physical object)|

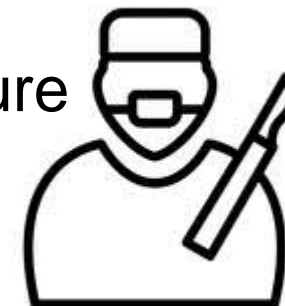


EPR Data lake

387713003 |Surgical procedure
(procedure)|



386661006 |Fever (finding)|



Snomed-CT browser

Type at least 3 characters ✓ Example: *shou fra*

right hemicolectomy

16 matches found in 0.432 seconds.

Right hemicolectomy	Right colectomy (procedure)
Right hemicolectomy sample	Specimen from colon obtained by right hemicolectomy (specimen)
Extended right hemicolectomy	Extended right hemicolectomy (procedure)
Right hemicolectomy with stoma	Right colectomy with stoma (procedure)
Laparoscopic right hemicolectomy	Laparoscopic-assisted right colectomy (procedure)
Right hemicolectomy and ileostomy	Right hemicolectomy and ileostomy (procedure)
Extended right hemicolectomy and ileostomy	Extended right hemicolectomy and ileostomy (procedure)
Laparoscopic hand assisted right hemicolectomy	Hand assisted laparoscopic right colectomy (procedure)
Right hemicolectomy and	Right hemicolectomy and anastomosis of

Summary Details Diagram Expression Refsets Members History References

Parents

- Partial resection of colon (procedure)

Right colectomy (procedure)
SCTID: 359571009
359571009 | Right colectomy (procedure) |

- en Right colectomy (procedure)
- en Right colectomy
- en Resection of ascending colon, caecum and terminal ileum
- en Right hemicolectomy
- en Resection of ascending colon, caecum and terminal ileum

Method → Excision - action
Procedure site - Direct → Right colon structure

Children (4)

- Extended right hemicolectomy (procedure)
- Laparoscopic-assisted right colectomy (procedure)
- Right colectomy with stoma (procedure)
- Right hemicolectomy and anastomosis of ileum to colon (procedure)

| is a | Relationships - Synonyms

Hierarchy

Parents

- Partial resection of colon (procedure)

Right colectomy (procedure) ☆ 📄

SCTID: 359571009

359571009 | Right colectomy (procedure) |

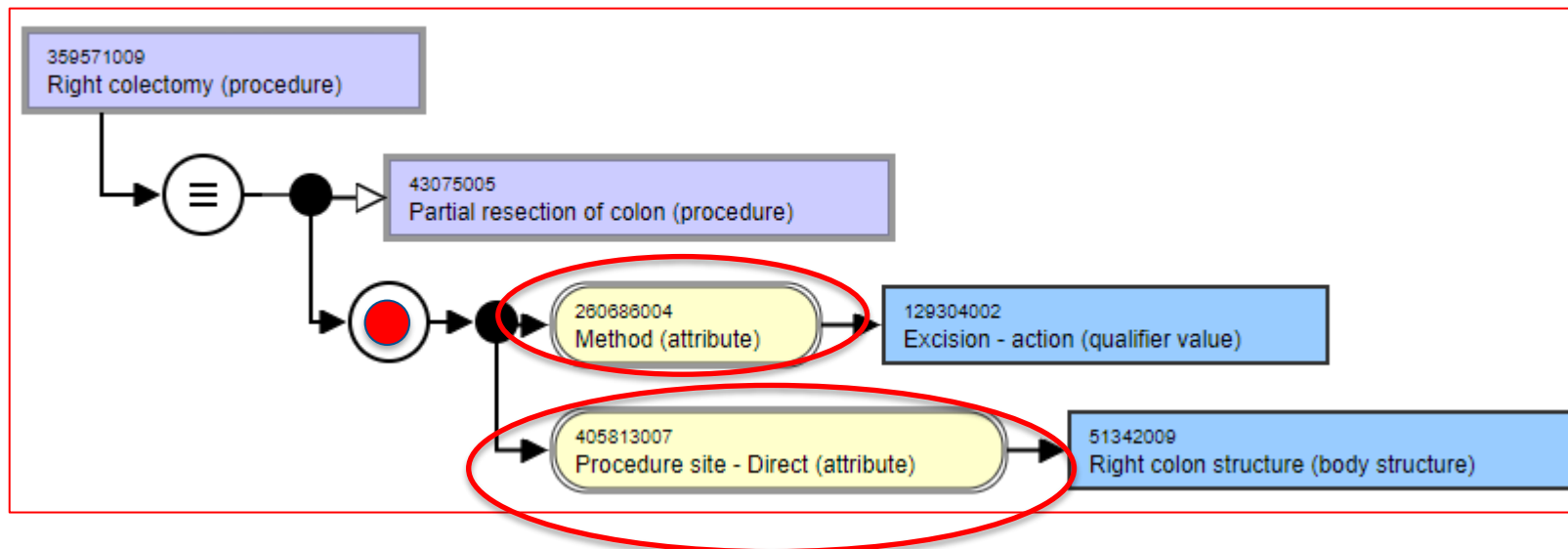
- en* Right colectomy (procedure)
- en* Right colectomy
- en* Resection of ascending colon, cecum and terminal ileum
- en* **Right hemicolectomy**
- en* Resection of ascending colon, caecum and terminal ileum

Children (4)

- Extended right hemicolectomy (procedure)
- Laparoscopic-assisted right colectomy (procedure)
- Right colectomy with stoma (procedure)
- Right hemicolectomy and anastomosis of ileum to colon (procedure)

Synonyms

Method – Procedure Site Attributes



=== 43075005 | Partial resection of colon (procedure) | : { 260686004 | Method (attribute) | = 129304002 | Excision - action (qualifier value) |, 405813007 | Procedure site - Direct (attribute) | = 51342009 | Right colon structure (body structure) | }

Multilingual

- 359571009 | Colectomía derecha|
- 359571009 |Højresidig kolektomi|
- 359571009 |Hémicolectomie droite|
- 359571009 |Hemicolectomie rechts|



 cõlon

 colon

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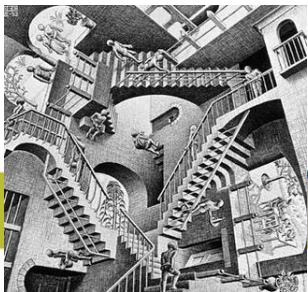
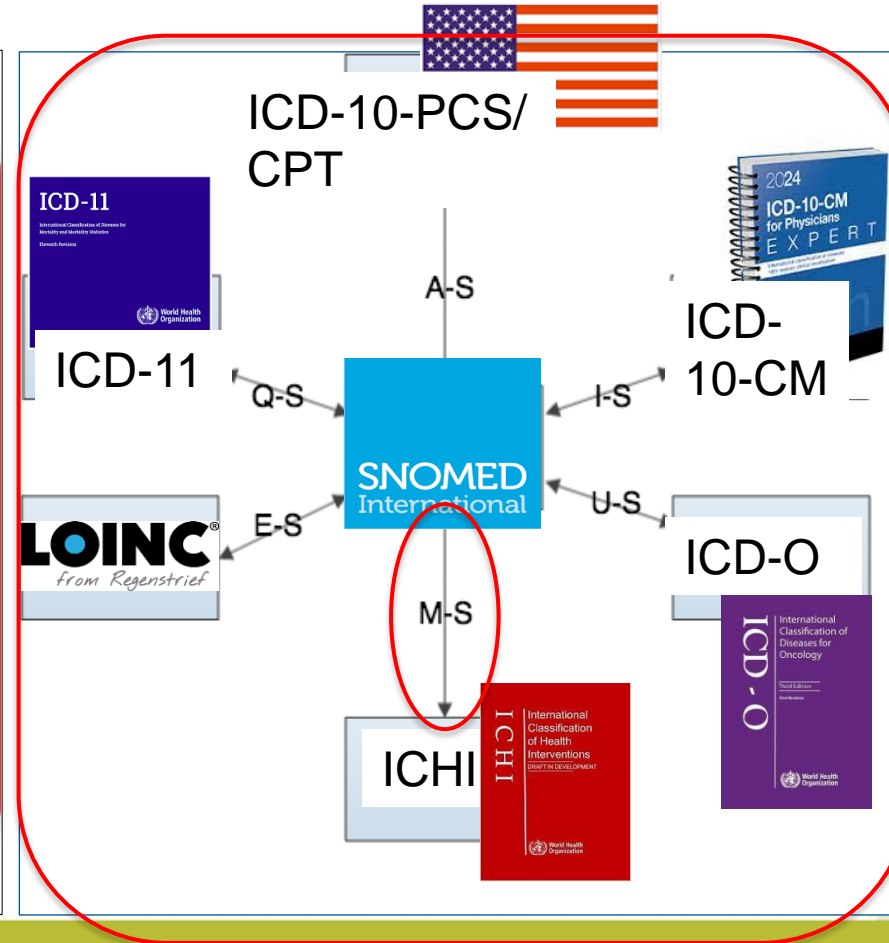
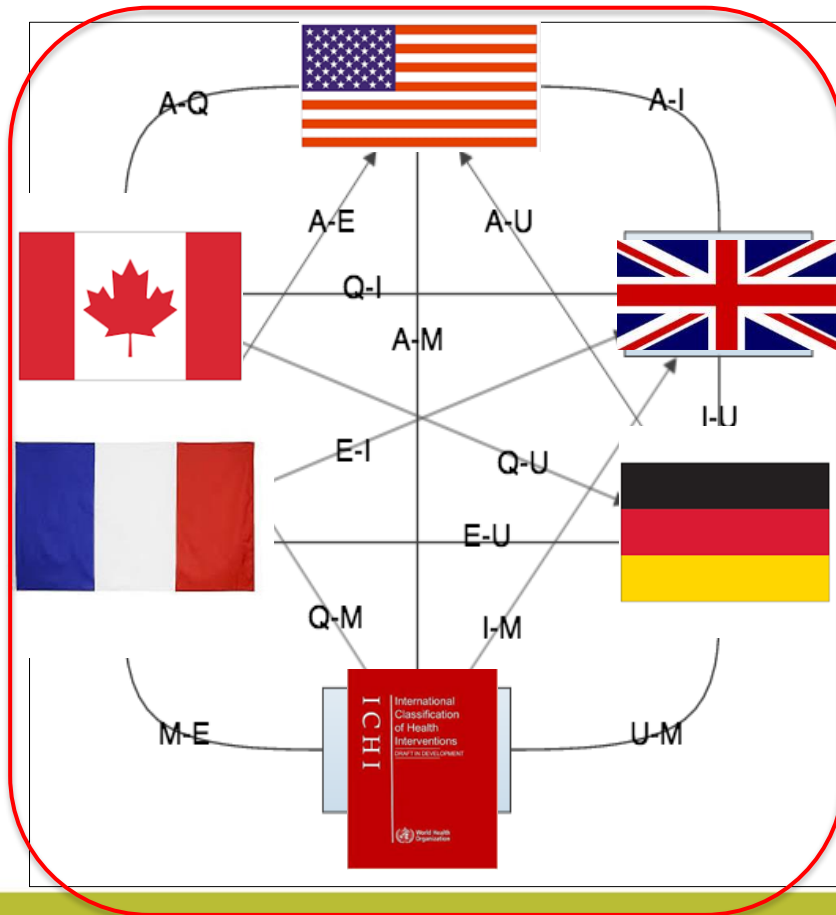
 colon

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 colon

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Mapping - Interoperability



Snomed-CT to ICD-9-CM map → algorithm

Step 1

Procedure Name

Name a procedure:

excision remaining thyroid tissue

Step 2

SNOMED CT

Choose the applicable SNOMED CT procedure, or "None of These".

- (None of These)
- Thyroidectomy of remaining tissue (79185005)
- Excision of sublingual thyroid tissue (171977001)
- Substernal thyroidectomy (52826006)
- Excision of aberrant thyroid tissue (274005006)
- Total thyroidectomy (24443003)
- Transplantation of thyroid tissue (37025006)
- Autotransplantation of thyroid tissue (112891005)

- ▶ Searches of ICD-9-CM and ICD-10-PCS are augmented with the selected SNOMED CT term and 4 UMLS synonyms.

Step 3

ICD-9-CM

Affirm or decline the ICD-9-CM coding.

- Use the following ICD-9-CM based on the SNOMED CT code:
 - Complete thyroidectomy (06.4)

Take-home messages

1. Implement ICHI for Classification of Surgical (and other) Procedures
2. Consider using Snomed-CT for the Electronic Patient Record



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