

JEAN K SOLER

MALTA

WICC TURKU 2016

Update on the ICPC-2-ICD-10 Thesaurus, the
TRANSFoRm Project and the Archetype
(Content) Model

ICPC-ICD10 THESAURUS

Update

ICPC2-ICD10 THESAURUS

**A diagnostic Terminology for Semi-automatic Double Coding
in Electronic Patient Records**

**Henk Becker, SibO Oskam, Inge Okkes, Kees van Boven, Henk Lamberts
Academic Medical Center/University of Amsterdam
Department of Family Medicine**



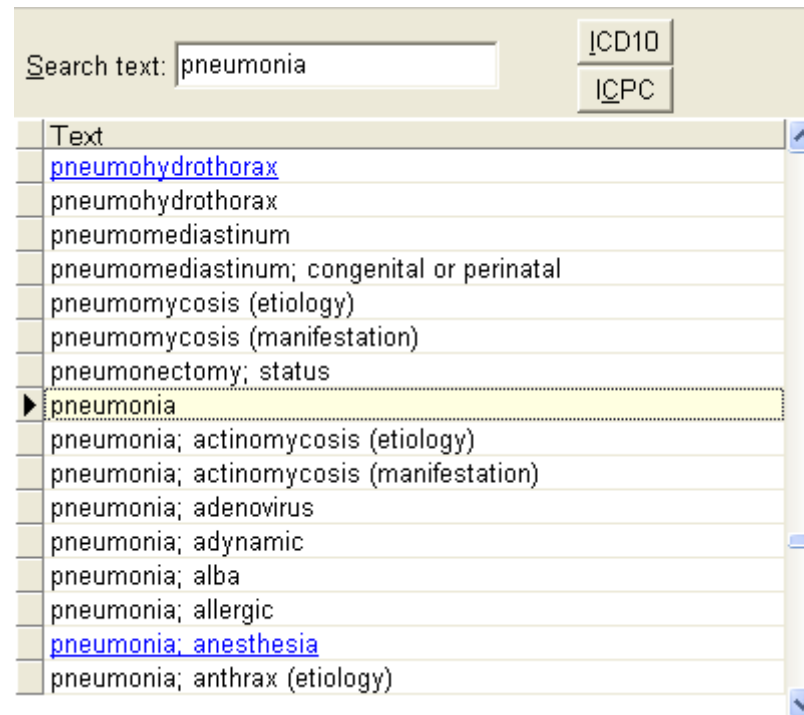
University of Amsterdam

Amsterdam, 2005



Example:

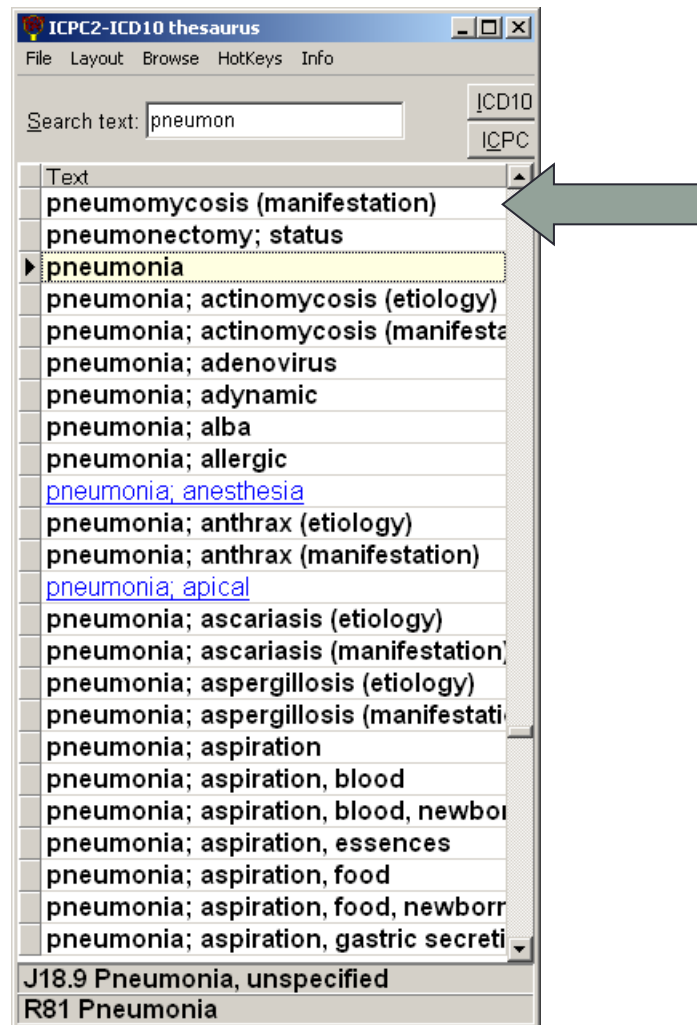
In the Search text box, you type 'pneumonia',



The screenshot shows a search interface with a text input field containing 'pneumonia'. To the right of the input field are two buttons: 'ICD10' and 'ICPC'. Below the input field is a list of search results. The first item is 'Text'. The second item is a blue hyperlink 'pneumohydrothorax'. The third item is 'pneumohydrothorax'. The fourth item is 'pneumomediastinum'. The fifth item is 'pneumomediastinum; congenital or perinatal'. The sixth item is 'pneumomycosis (etiology)'. The seventh item is 'pneumomycosis (manifestation)'. The eighth item is 'pneumonectomy; status'. The ninth item is 'pneumonia', which is highlighted in yellow and has a small black triangle to its left. The tenth item is 'pneumonia; actinomycosis (etiology)'. The eleventh item is 'pneumonia; actinomycosis (manifestation)'. The twelfth item is 'pneumonia; adenovirus'. The thirteenth item is 'pneumonia; adynamic'. The fourteenth item is 'pneumonia; alba'. The fifteenth item is 'pneumonia; allergic'. The sixteenth item is a blue hyperlink 'pneumonia; anesthesia'. The seventeenth item is 'pneumonia; anthrax (etiology)'. The interface includes a vertical scrollbar on the right side of the list.

Text
pneumohydrothorax
pneumohydrothorax
pneumomediastinum
pneumomediastinum; congenital or perinatal
pneumomycosis (etiology)
pneumomycosis (manifestation)
pneumonectomy; status
▶ pneumonia
pneumonia; actinomycosis (etiology)
pneumonia; actinomycosis (manifestation)
pneumonia; adenovirus
pneumonia; adynamic
pneumonia; alba
pneumonia; allergic
pneumonia; anesthesia
pneumonia; anthrax (etiology)

there are many types of pneumonia in ICD-10,



Say we want to select 'pneumonia; Haemophilus influenzae' (typing 'pneum;h' will do)..

ICPC2-ICD10 thesaurus

File Layout Browse HotKeys Info

Search text: pneum;h

ICD10
ICPC

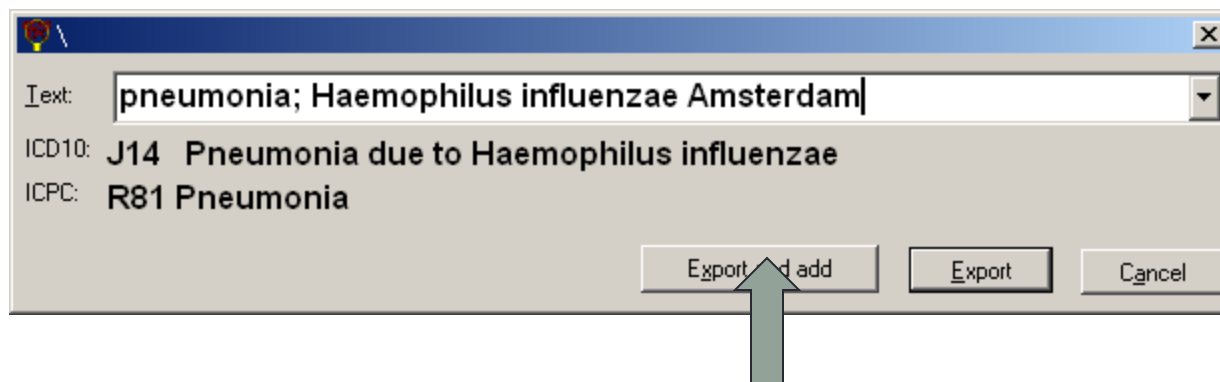
Text

- pneumonia; Enterobacter
- pneumonia; eosinophilic
- pneumonia; Escherichia coli
- [pneumonia; fibroid](#)
- pneumonia; fibroid
- pneumonia; Friedländer's bacil
- pneumonia; fumes and vapors
- pneumonia; fungus
- pneumonia; gangrenous
- pneumonia; giant cell (etiology)
- pneumonia; giant cell (manifestation)
- pneumonia; gonococcal (etiology)
- pneumonia; gonococcal (manifestation)
- pneumonia; gonorrhoea (etiology)
- pneumonia; gonorrhoea (manifestation)
- [pneumonia; grippal](#)
- ▶ **pneumonia; Haemophilus influenzae**

J14 Pneumonia due to Haemophilus influenzae
R81 Pneumonia

..double click, and the export box shows.

Suppose you want to add a new type (e.g., 'Amsterdam'). You can add that term, and also you may add this new type to your Thesaurus.. just click 'Export and add'...



Search text: ICD10
ICPC

- Text
- synovium; hypertrophy
- synovium; rupture
- synovium; syphilitic (etiology)
- synovium; syphilitic (manifestation)
- synovium; syphilitic, congenital (early) (etiology)
- synovium; syphilitic, congenital (early) (manifestation)
- syphilitic
- syphilitic; congenital
- syphilitic; newborn
- syphilitic; tubercular (etiology)
- syphilitic; tubercular (manifestation)
- syphilitic; tubercular, congenital
- ▶ syphilis
 - syphilis; , vitreous, hemorrhage (manifestation)
 - syphilis; abdomen
 - syphilis; adenopathy
 - syphilis; adrenal (etiology)
 - syphilis; adrenal (manifestation)
 - [syphilis; age under 2 years](#)
 - syphilis; age under 2 years
 - syphilis; age under 2 years, acquired
 - syphilis; alopecia (etiology)
 - syphilis; alopecia (manifestation)
 - syphilis; anemia (etiology)
 - syphilis; anemia (manifestation)

Select ICPC code:

Code	Label
▶ X70	Syphilis female
Y70	Syphilis male

OK Cancel

Mapping to ICD9:

▶ 097.9 Syphilis nos

A53.9 Syphilis, unspecified

X70 Syphilis female

TRANSFORM

Update

CREATING AND APPLYING KNOWLEDGE IN ELECTRONIC HEALTH RECORD SYSTEMS: THE EUROPEAN PERSPECTIVE

Prof Brendan Delaney
www.transformproject.eu



This project is partially funded by the [European Commission](#) under the [7th Framework Programme](#). Grant Agreement No. 247787 Translational Research and Patient Safety in Europe (TRANSFoRm)



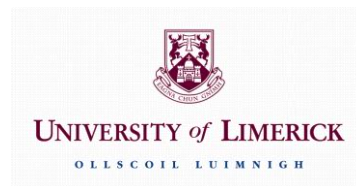
21 Partners from 10 EU Member States



University of London



UNIVERSITY OF BIRMINGHAM



University of Crete



Institut national de la santé et de la recherche médicale



Aims of TRANSFoRm

- To develop methods, models, services, validated architectures and demonstrations to support:
 - Epidemiological research using primary care records, including genotype-phenotype studies and other record linkages
 - Research workflow embedded in the EHR
 - Decision support for diagnosis

EU TRANSFoRm WT7.2

- A working terminology service is made available as a **software-based milestone**
 - A simple **web-based interface of the TRANSFoRm Integrated VS**, allowing terminology searches through the Unified Medical Language System (UMLS) to a subset of hosted vocabularies, relevant to Primary Care Research and Clinical Practice.
 - A publically* available **web service**
 - **Integration** of TRANSFoRm VS to users, such as electronic Primary Care Research Network workbench

Hosted Vocabularies

- **UMLS Metathesaurus**
- National Cancer Institute Thesaurus
- ICD-9-Clinical Modification
- ICD-10
- ICPC-2
- ICPC-2-ICD-10 Thesaurus
- Read Codes version 2

Various Languages (e.g. English, Basque, Danish, Dutch, Finnish, French, German, Hebrew, Hungarian, Italian, Norwegian, Portuguese, Spanish, Swedish)

Web Service: Example of partial output for the search of the abbreviated clinical term "GORD"

```
Console X
<terminated> VocabularyServiceClient [Java Application] C:\zhaolz\Java\jdk1.6.0_23\bin\javaw.exe (31 Mar 2011 15:54:06)

Concept:      Gastroesophageal reflux disease
UMLS CUI:     C0017168
Semantic type: Disease or Syndrome
Source concepts:
  K21          ICD10          ENG      Gastro-oesophageal reflux disease
  530.81       ICD9CM          ENG      Esophageal reflux
  MTHU030535   ICPC2ICD10ENG  ENG      gastroesophageal; reflux
  MTHU063996   ICPC2ICD10ENG  ENG      reflux; gastroesophageal
  D84004       ICPC2P          ENG      oesophageal reflux
  X3003        RCDv3          ENG      Gastro-oesophageal reflux disease
  J1011        RCDv2          ENG      Acid reflux
  J10y4        RCDv2          ENG      Gastro-oesophageal reflux
  102620007    SNOMEDCT        ENG      Gastroesophageal reflux
  155673008    SNOMEDCT        ENG      Esophageal reflux
  196600005    SNOMEDCT        ENG      Acid reflux
  196624002    SNOMEDCT        ENG      Esophageal reflux
  235595009    SNOMEDCT        ENG      Gastro-esophageal reflux
  266498005    SNOMEDCT        ENG      Esophageal reflux
  54856001     SNOMEDCT        ENG      Gastresophageal reflux disease
  K21          DMDICD10       GER      Gastroesophageale Refluxkrankheit
  K21          ICD10DUT       DUT      Aandoeningen door gastro-oesofagale reflux
  MTHU030535   ICPC2ICD10DUT  DUT      gastro-oesofagaal; reflux
  MTHU063996   ICPC2ICD10DUT  DUT      reflux; gastro-oesofagaal
  102620007    SCTSPA         SPA      reflujo gastroesofagico (hallazgo)
  196600005    SCTSPA         SPA      Acid reflux
  196624002    SCTSPA         SPA      Oesophageal reflux
  235595009    SCTSPA         SPA      reflujo acido
  54856001     SCTSPA         SPA      enfermedad por reflujo gastroesofagico

Concept:      Phylum Nematomorpha
UMLS CUI:     C0027584
Semantic type: Eukaryote|
Source concepts:
  106683009    SNOMEDCT        ENG      Phylum Nematomorpha
  112448006    SNOMEDCT        ENG      Hairworms
  54282001     SNOMEDCT        ENG      Nematomorpha
  106683009    SCTSPA         SPA      tipo Nematomorpha
  112448006    SCTSPA         SPA      nematomorfos
  54282001     SCTSPA         SPA      Nematomorpha
```

A screenshot of the TRANSFoRm EVS interface

The screenshot displays the TRANSFoRm EVS interface. A large magnifying glass is centered over a table of source vocabularies. The table has the following columns: Source, Language, Code, and Text. A language dropdown menu is open, showing a list of languages with 'English' selected.

Source	Language	Code	Text
ICD10	ENG	E11	Non-insulin-dependent diabetes mellitus
ICPC2EENG	ENG	T90	Diabetes non-insulin dependent
ICPC2ICD10ENG	ENG	MTHU003788	adult-onset; diabetes
ICPC2ICD10ENG	ENG	MTHU022755	diabetes
ICPC2ICD10ENG	ENG	MTHU022756	diabetes; adult-onset
ICPC2ICD10ENG	ENG	MTHU022795	diabetes; maturity-onset
ICPC2ICD10ENG	ENG	MTHU022815	diabetes; NIDDM
ICPC2ICD10ENG	ENG	MTHU022816	diabetes; non-insulin-dependent
ICPC2ICD10ENG	ENG	MTHU022817	diabetes; nonketotic
ICPC2ICD10ENG	ENG	MTHU022833	diabetes; type II
ICPC2ICD10ENG	ENG	MTHU047774	maturity-onset; diabetes
ICPC2ICD10ENG	ENG	MTHU052916	NIDDM; diabetes
ICPC2ICD10ENG	ENG	MTHU053298	non-insulin-dependent; diabetes
ICPC2ICD10ENG	ENG	MTHU053299	nonketotic; diabetes

The language dropdown menu is open, showing the following options: All, Basque, Czech, Danish, Dutch, English (selected), Finnish, French, German, Hebrew, Hungarian, Italian, Japanese, Korean, Latvian, Norwegian, Portuguese, Russian, Croatian, Spanish.

Use case 3: Diagnostic Decision Support

- Early diagnostic suggestions for presenting problems:
 - chest pain
 - abdominal pain
 - shortness of breath
- Clinical Prediction Rule web service (with underlying ontology)
- Prototype Decision Support System integrated with a commercial electronic health record system

Decision Support System

- Dutch and Maltese Transition Project databases incorporated into new database
- Bayesian analyses of all possible associations to define actual associations (“rules”)
- Online browser for rule selection and viewing

Diagnosis of bronchitis

- With cough present, in Dutch primary care patients...
 - Post-test probability = pre-test probability x 16.2

<i>Crosstab of diagnosis against RfE at the start of a new EoC</i>			
	With bronchitis (R78)	With any other EoC	Total
With cough (R05)	4717 (24.4%)	14578 (75.6%)	19295
With any other RfE	1899 (0.6%)	316154 (99.4%)	318053
Total	6616 (2.0%)	330732 (98.0%)	337348
LR+: 16.2	LR-: 0.3	Odds: 53.9	
C. Int.: 15.8 - 16.5	C. Int: 0.3 - 0.3	C. Int.: 51.0 - 57.0	
Sens: 0.71	PV+: 0.24	Pretest 0.02	
Spec: 0.96	PV-: 0.99	Posttest: 0.32	

RfE and episode titles

A03	Fever	R74(5.9[5.6-6.4];2.8[2.6-3.0];5.3[4.2-6.6]), R78(7.6[7.1-8.2];3.1[2.8-3.5];5.5[4.3-7.1])
		A97(0.1[0.1-0.1];-;-), A85(0.1[0.1-0.2];-;-), D73(4.3[3.8-4.9];-;-)
		R76(12.9[11.7-14.2];13.2[11.8-14.7];6.2[4.6-8.5]), R77(2.7[2.3-3.2];-;-)
		R80(33.3[30.0-36.9];6.9[6.1-7.8];-), R29(-;6.8[6.0-7.7];-)

A03 is fever

R74 is upper respiratory tract infection

R78 is acute bronchitis

R76 is tonsillitis

RfE and episode titles

Netherlands = 5.9

A03	Fever	R74(5.9[5.6-6.4];2.8[2.6-3.0];5.3[4.2-6.6]), R78(7.6[7.1-8.2];3.1[2.8-3.5];5.5[4.3-7.1])
		A97(0.1[0.1-0.1];-;-), A85(0.1[0.1-0.2];-;-), D73(4.3[3.8-4.9];-;-)
		R76(12.9[11.7-14.2];13.2[11.8-14.7];6.2[4.6-8.5]), R77(2.7[2.3-3.2];-;-)
		R80(33.3[30.0-36.9];6.9[6.1-7.8];-), R29(-;6.8[6.0-7.7];-)

A03 is fever

R74 is upper respiratory tract infection

R78 is acute bronchitis

R76 is tonsillitis

RfE and episode titles

Malta = 2.8

A03	Fever	R74(5.9[5.6-6.4];2.8[2.6-3.0];5.3[4.2-6.6]), R78(7.6[7.1-8.2];3.1[2.8-3.5];5.5[4.3-7.1])
		A97(0.1[0.1-0.1];-;-), A85(0.1[0.1-0.2];-;-), D73(4.3[3.8-4.9];-;-)
		R76(12.9[11.7-14.2];13.2[11.8-14.7];6.2[4.6-8.5]), R77(2.7[2.3-3.2];-;-)
		R80(33.3[30.0-36.9];6.9[6.1-7.8];-), R29(-;6.8[6.0-7.7];-)

A03 is fever

R74 is upper respiratory tract infection

R78 is acute bronchitis

R76 is tonsillitis

RfE and episode titles

Serbia = 5.3

A03	Fever	R74(5.9[5.6-6.4];2.8[2.6-3.0];5.3[4.2-6.6]), R78(7.6[7.1-8.2];3.1[2.8-3.5];5.5[4.3-7.1])
		A97(0.1[0.1-0.1];-;-), A85(0.1[0.1-0.2];-;-), D73(4.3[3.8-4.9];-;-)
		R76(12.9[11.7-14.2];13.2[11.8-14.7];6.2[4.6-8.5]), R77(2.7[2.3-3.2];-;-)
		R80(33.3[30.0-36.9];6.9[6.1-7.8];-), R29(-;6.8[6.0-7.7];-)

A03 is fever

R74 is upper respiratory tract infection

R78 is acute bronchitis

R76 is tonsillitis

RfE and episode titles

A03	Fever	R74(5.9[5.6-6.4];2.8[2.6-3.0];5.3[4.2-6.6]), R78(7.6[7.1-8.2];3.1[2.8-3.5];5.5[4.3-7.1])
		A97(0.1[0.1-0.1]; ;), A85(0.1[0.1-0.2];-;-), D73(4.3[3.8-4.9];-;-)
		R76(12.9[11.7-14.2];13.2[11.8-14.7];6.2[4.6-8.5]), R77(2.7[2.3-3.2];-;-)
		R80(33.3[30.0-36.9];6.9[6.1-7.8];-), R29(-;6.8[6.0-7.7];-)

A03 is fever

R74 is upper respiratory tract infection

R78 is acute bronchitis

R76 is tonsillitis

RfE and episode titles

A03	Fever	R74(5.9[5.6-6.4];2.8[2.6-3.0];5.3[4.2-6.6]) , R78(7.6[7.1-8.2];3.1[2.8-3.5];5.5[4.3-7.1])
		A97(0.1[0.1-0.1]; ;), A85(0.1[0.1-0.2];-;-), D73(4.3[3.8-4.9]; ;)
		R76(12.9[11.7-14.2];13.2[11.8-14.7];6.2[4.6-8.5]) , R77(2.7[2.3-3.2];-;-)
		R80(33.3[30.0-36.9];6.9[6.1-7.8];-), R29(-;6.8[6.0-7.7];-)

A03 is fever

R74 is upper respiratory tract infection

R78 is acute bronchitis

R76 is tonsillitis

RfE and episode titles

A03	Fever	R74(5.9[5.6-6.4];2.8[2.6-3.0];5.3[4.2-6.6]), R78(7.6[7.1-8.2];3.1[2.8-3.5];5.5[4.3-7.1])
		A97(0.1[0.1-0.1]; ;), A85(0.1[0.1-0.2]; ; -), D73(4.3[3.8-4.9]; ;)
		R76(12.9[11.7-14.2];13.2[11.8-14.7];6.2[4.6-8.5]), R77(2.7[2.3-3.2];-;-)
		R80(33.3[30.0-36.9];6.9[6.1-7.8];), R29(-;6.8[6.0-7.7];-)

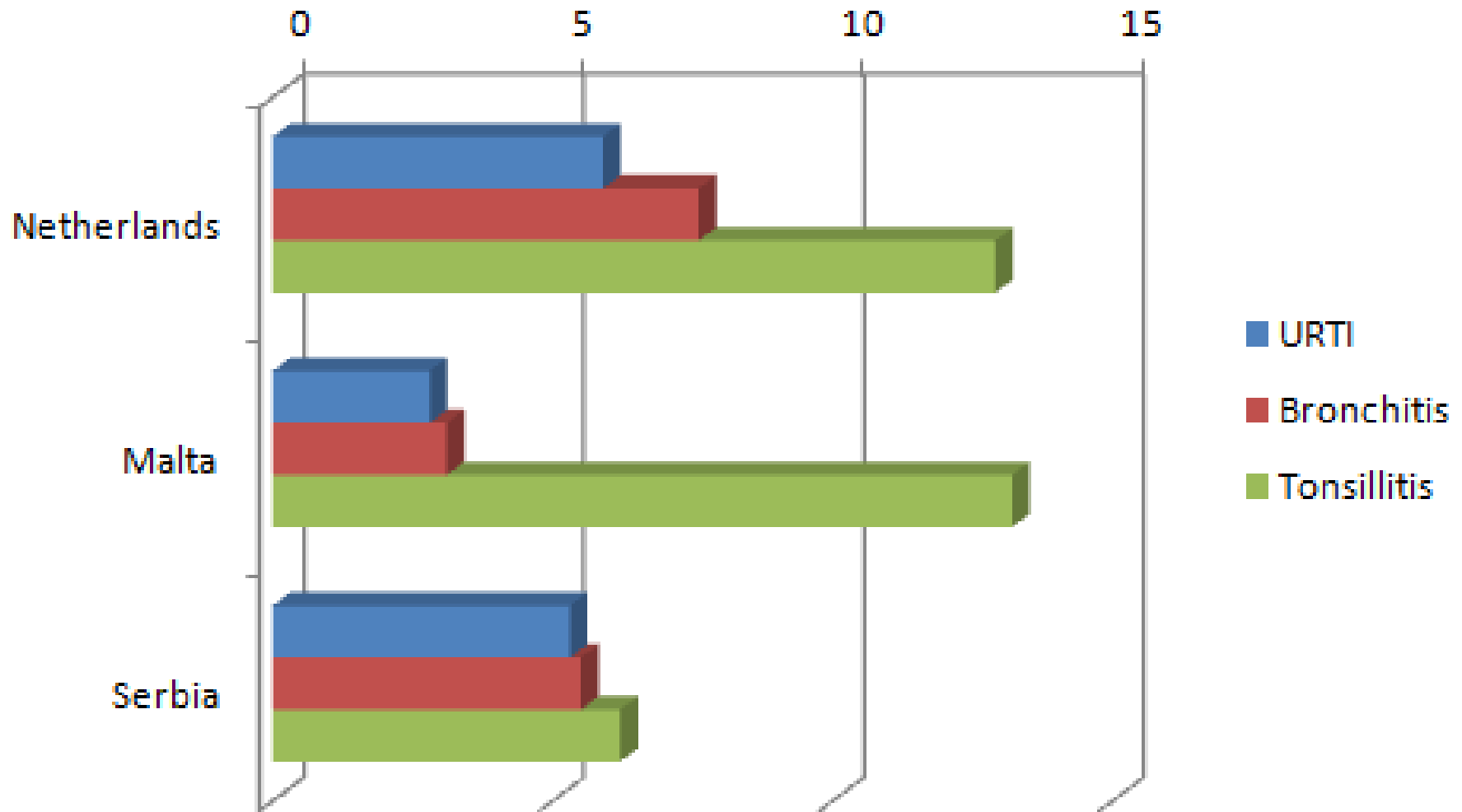
A03 is fever

R74 is upper respiratory tract infection

R78 is acute bronchitis

R76 is tonsillitis

Diagnostic odds ratios for RfE “fever” and common infections

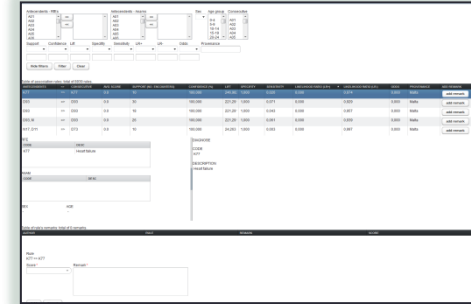


	Tonsillitis (R76)				
RfE rubric	RfE label	Nl	Mt	Sb	Jp
R21	Sympt/complt throat	181,68(164,33-200,87)	18,62(16,55-20,95)	14,92(12,85-17,33)	18,15(13,69-24,06)
A03	Fever	12,88(11,70-14,17)	13,18(11,82-14,70)	6,24(4,58-8,51)	11,30(8,54-14,96)
R05	Cough	0,59(0,47-0,74)	0,42(0,34-0,52)	0,95(0,73-1,25)	0,66(0,40-1,09)
R07	Sneezing/nasal congestion	0,20(0,05-0,79)	0,33(0,25-0,43)	0,93(0,23-3,79)	0,51(0,23-1,16)
R01	Pain attrib to respir system	0,28(0,04-2,00)	-	6,44(5,25-7,90)	-
B02	Enlarged lymph gland(s)	9,81(7,32-13,14)	6,08(4,20-8,81)	0,98(0,13-7,11)	-

		0-14	15-44	45-64	65+
RfE rubric	RfE label	Nl			
R21	Sympt/complt throat	66,89(56,96-78,56)	223,91(191,36-262,00)	410,34(278,20-605,23)	792,58(359,50-1747,36)
A03	Fever	7,77(6,69-9,02)	14,14(12,13-16,49)	12,43(8,32-18,57)	15,65(8,13-30,14)
R05	Cough	0,61(0,46-0,79)	0,27(0,16-0,45)	0,36(0,13-0,97)	0,68(0,17-2,77)
R07	Sneezing/nasal congestion	-	0,16(0,02-1,14)	-	4,81(0,66-34,80)
R01	Pain attrib to respir system	-	-	2,52(0,35-18,11)	-
B02	Enlarged lymph gland(s)	2,46(1,21-5,00)	7,55(5,21-10,93)	29,90(13,71-65,21)	117,54(35,16-392,94)
RfE rubric	RfE label	Mt			
R21	Sympt/complt throat	10,00(8,59-11,63)	37,98(29,96-48,16)	60,34(30,83-118,12)	21,26(5,68-79,67)
A03	Fever	8,60(7,38-10,02)	11,39(9,52-13,64)	21,47(13,13-35,10)	23,86(5,88-96,84)
R05	Cough	0,22(0,17-0,29)	0,53(0,37-0,75)	0,68(0,27-1,70)	-
R07	Sneezing/nasal congestion	0,20(0,14-0,28)	0,31(0,19-0,50)	0,27(0,04-1,95)	-
R01	Pain attrib to respir system	-	-	-	-
B02	Enlarged lymph gland(s)	3,64(1,91-6,96)	6,58(4,08-10,62)	15,28(3,53-66,26)	-

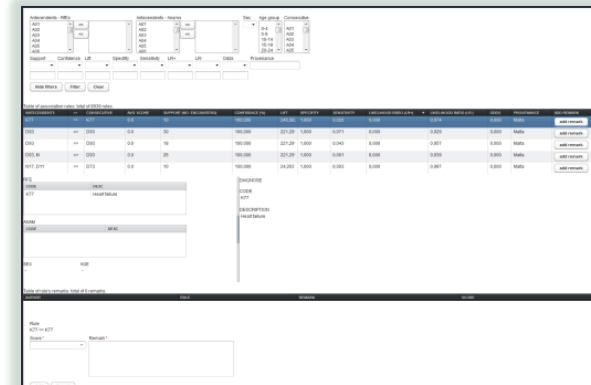
TransHIS - preliminary results 1/3

- **8,939** rules
 - 3,744 for Malta
 - 5,195 for the Netherlands
- Many rules of type **U71 => U71** (*Cystitis/urinary infection other*)
 - Refers 3,095 episodes in Holland
 - Only 28 episodes in Malta
- Pre-selection needs GP support
- Final selection of useful rules requires physician assistance – manual verification



TransHIS - preliminary results 2/3

- Rules **x** => **U71**, (Cystitis/urinary infection, other)
 - total **823 rules**
 - 188 rules for Malta
 - 635 rules for the Netherlands
- Important cues:
 - **RFE=U01** (Dysuria/painful urination)
 - **RFE=U02** (Urinary frequency/urgency)
 - **ANAM=U06** (Haematuria)
 - Various combinations of age and gender

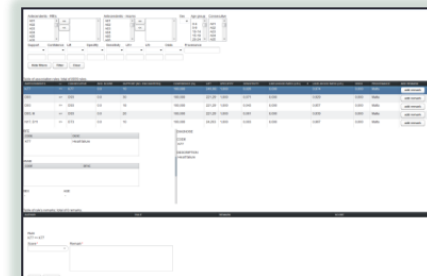


The screenshot displays a software interface with a table of data. The table has several columns, including 'ID', 'Age Group', and various numerical values. The data is organized into a grid with multiple rows and columns. The interface also includes some control elements like buttons and dropdown menus.

ID	Age Group	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7	Value 8
U01	0-10	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000
U02	11-20	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000
U03	21-30	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000
U04	31-40	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000
U05	41-50	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000
U06	51-60	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000
U07	61-70	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000
U08	71-80	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000
U09	81-90	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000
U10	91-100	0.0	10	100.00	20.00	1.000	0.000	0.000	0.000

TransHIS - preliminary results 3/3

- **x => U70** (Pyelonephritis/pyelitis) – more severe vs. U71
 - total **only 75** rules
 - only 2 rules for Malta
 - 73 rules for the Netherlands (more information)
- Important cues:
 - **RFE=A03** (Fever) + Male (Malta)
 - **RFE=A03** (Fever) + Female (Netherlands)
 - **RFE=L02** (Back symptom/complaint)
 - **RFE=L05** (Flank/axilla symptom/complaint)
 - **RFE=D06** (Abdominal pain localized, other)
 - **RFE=A10** (Bleeding/haemorrhage NOS)
 - **RFE=A02** (Chills)



Antecedents - RfEs

- D04
- D05**
- D07
- D08
- D09
- D10



D06



Antecedents - Anams

- A01
- A02
- A03
- A04
- A05
- A06



Sex



Age group

- 0-4
- 5-9
- 10-14
- 15-19
- 20-24

Consecutive

- U26
- U27
- U28
- U29
- U70
- U71**

Support Confidence Lift Specificity Sensitivity LR+ LR- Odds Score Provenance Scenario

Netherlands a_130613

Hide filters Filter Clear

Expand table

Number of rules: 43

ANTECEDENTS	=>	CONSECUTIVE	AVG SCORE	SUPPOF	CONFIDENCE (%)	LIFT	SPECIFICITY	SENSITIVITY	LR+	LR-	ODDS	PROVENANCE	SCENARIO	ADD REMARK
D06, U01	=>	U71	0.0	72	58,50	25,50	1,00	0,01	60,10	0,99	60,10	Netherlands	a_130613	add remark
D05, U01, F	=>	U71	0.0	65	62,50	27,23	1,00	0,01	70,95	0,99	70,95	Netherlands	a_130613	add remark
D06, U02	=>	U71	0.0	41	37,60	16,39	1,00	0,01	25,67	0,99	25,67	Netherlands	a_130613	add remark

RfE

ICPC2	DESC
U01	Dysuria/painful urination
D06	Abdominal pain localized, other

EPISODE DIAGNOSE

ICPC2
U71

DESCRIPTION

Cystitis/urinary infection, other

TransHIS analysis example

Rules $x \Rightarrow$ **U71**, (Cystitis/urinary infection, other)

- U01 – Dysuria
 - U02 – Urinary Frequency
 - U06 – Haematuria
 - A03 – Fever
 - D06 – Abdominal pain localised
-
- Important cues compare favourably with literature – e.g. JAMA reviews

ICPC ARCHETYPE

A vision for ICPC-3

Copyright JK Soler August 2013

ICPC archetype

- Retains all qualities of ICPC-2
 - Its purpose is to order the domain of family practice.
 - It provides a single terminology for the patient's RFE and the family doctor's diagnosis.
 - It captures the changes (transitions) in the content of episodes of care over time.
 - It follows strict taxonomic rules, and so its classes are mutually exclusive.
 - It offers—if possible—one class for common (occurring >1 per 1000 patient years) reasons for encounter and diagnoses. Less common classes are included in 'ragbags'.
 - Its biaxial structure (chapters for body systems/problem areas and components identical throughout all chapters) results in three digit mnemonic, alphanumeric codes.
 - Its reliability and validity are supported by its coding rules and a growing comparative international database.
 - In the coding process, localization takes precedence over aetiology.
 - Symptom diagnoses take precedence over disease diagnoses that are uncertain (i.e. do not fulfil the inclusion criteria).
 - It does not cater for mind-body metaphors: 'psychosomatic' and 'somatoform' disorders are not included.

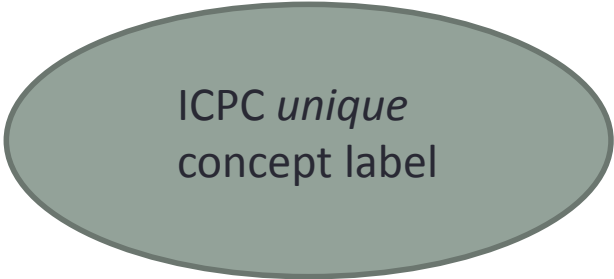
ICPC archetype

- Allows various use-cases for ICPC
 - Using ICPC codes or rubrics directly, referencing from a two-pager of codes and terms
 - Using ICPC codes or rubrics directly from a computer-based electronic medical record
 - Using terms to search for concepts in a thesaurus or terminology based on ICPC concepts
 - Coding through any international or national coding system or terminology, mapped to ICPC

ICPC archetype

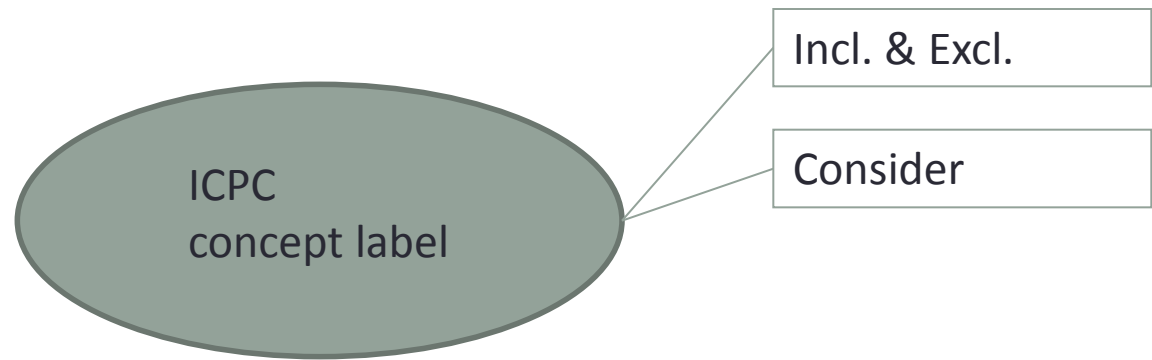
- Introduces new qualities to ICPC
 - Allows more space, without limitations in each chapter and component
 - Allows multiple attributes to be attached to each ICPC concept or rubric for grouping at higher levels
 - Risk factors
 - Preventive medicine
 - Grouping of infections, neoplasms and others
 - Symptom or disease label
 - Embeds characteristics of the rubric within the archetype structure
 - Chapter and component
 - Limitation to an age-sex group (e.g. Prostatism only in males)

ICPC archetype

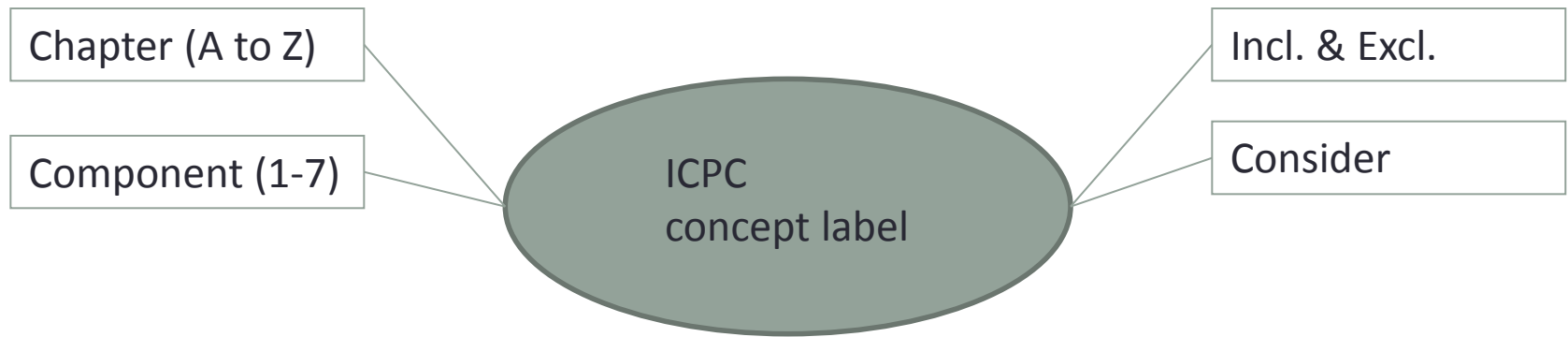


ICPC *unique*
concept label

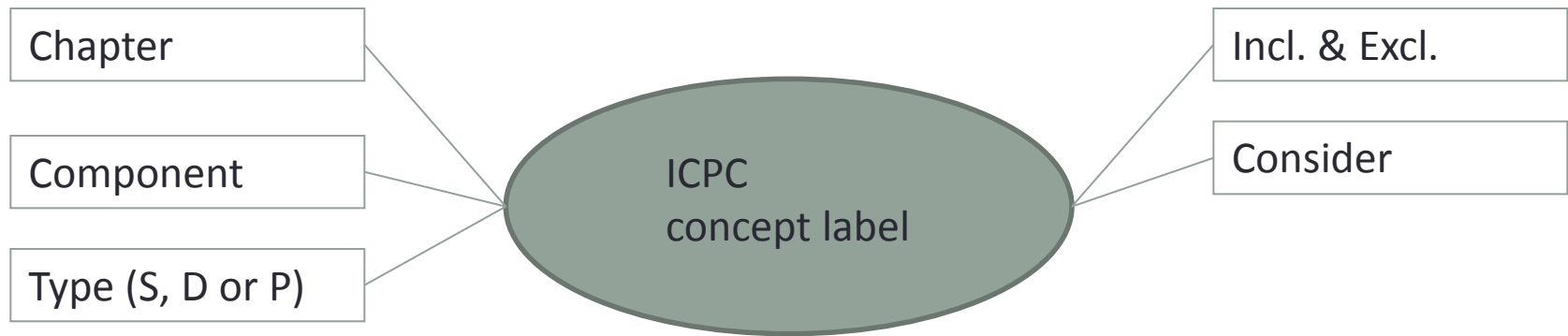
ICPC *unique* concept becomes the most important part of the rubric, NOT the code



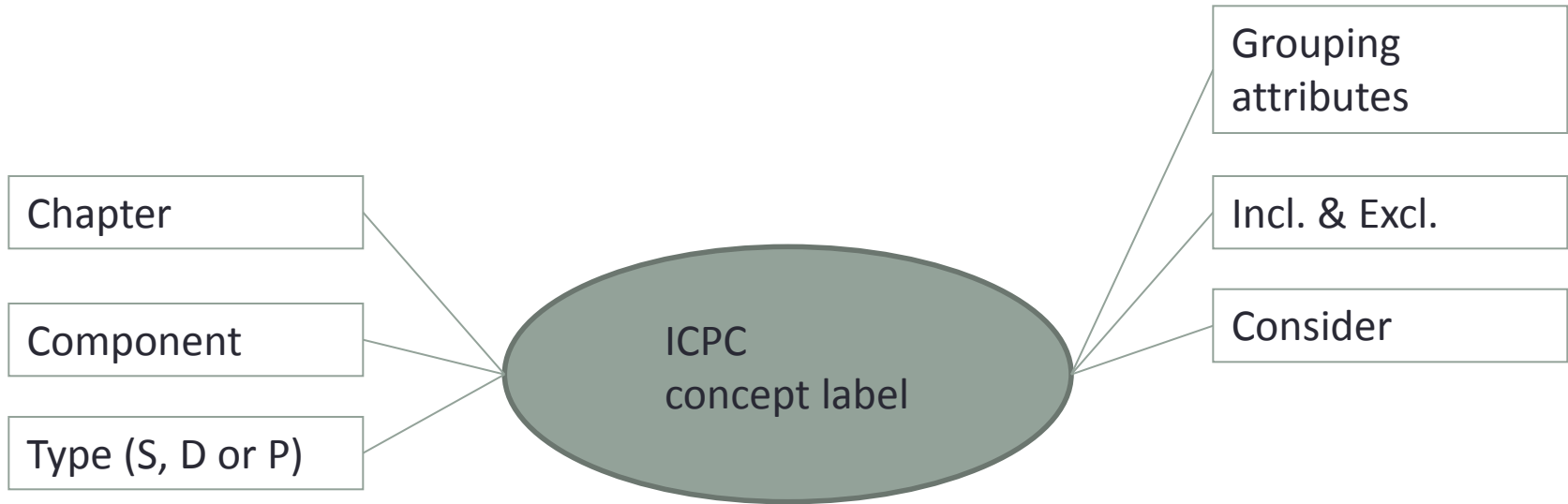
ICPC inclusion and exclusion criteria define the concept. "Consider" keeps classes clean.



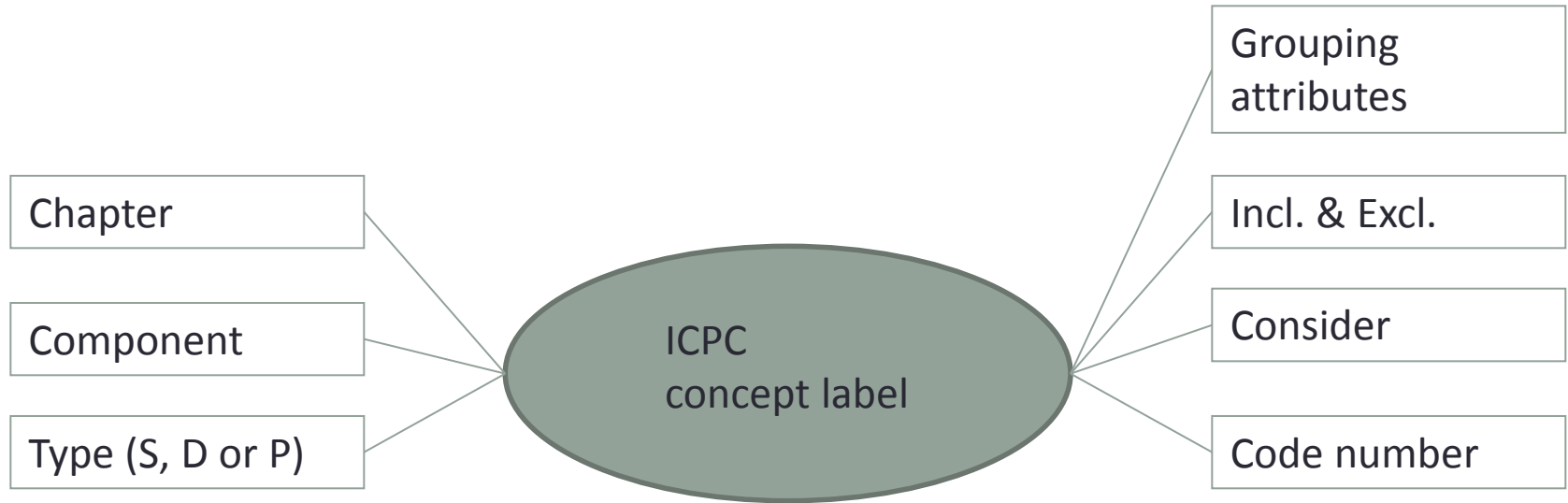
ICPC Chapter and Component are attached to each concept as appropriate



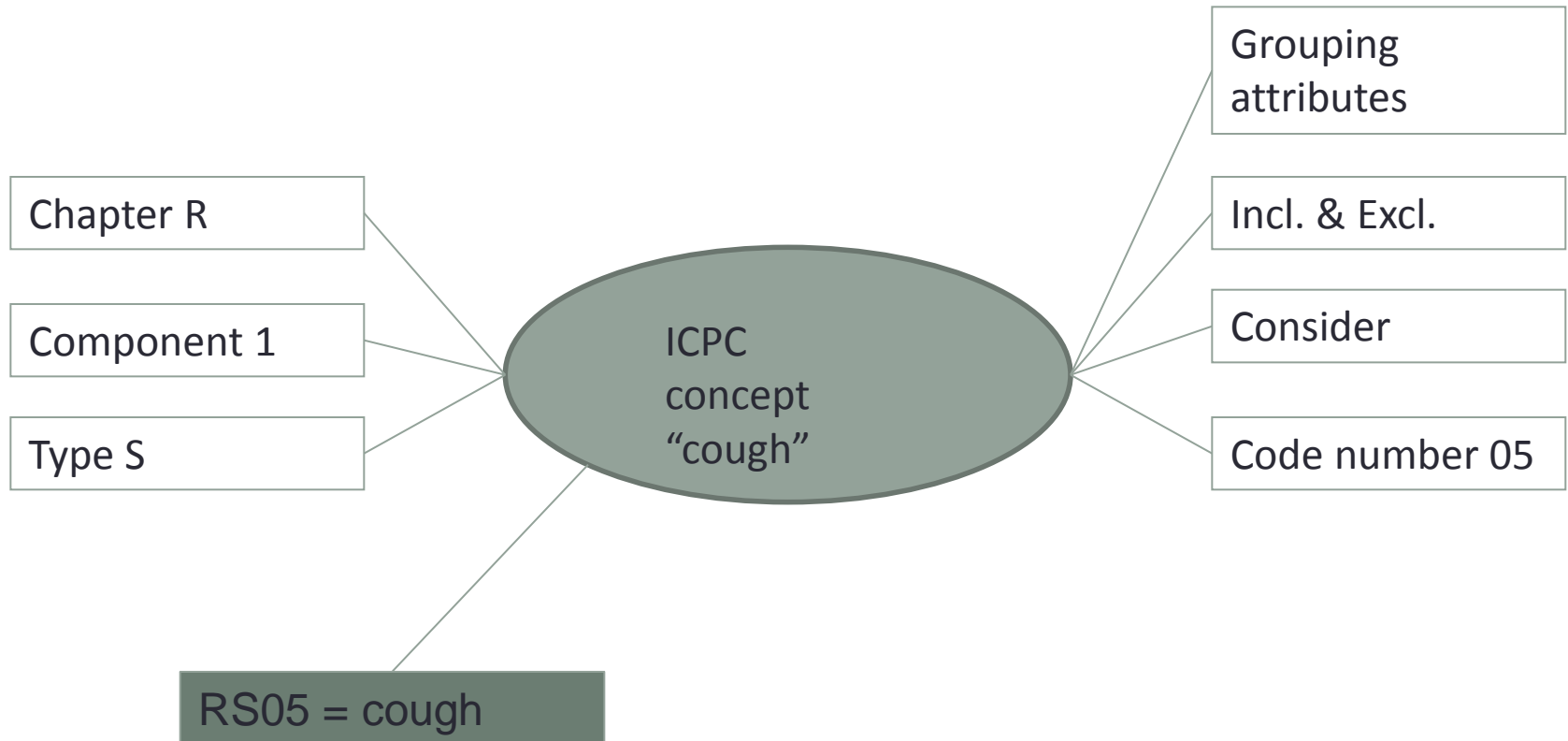
ICPC component also added as a letter to define symptoms, disease and process labels



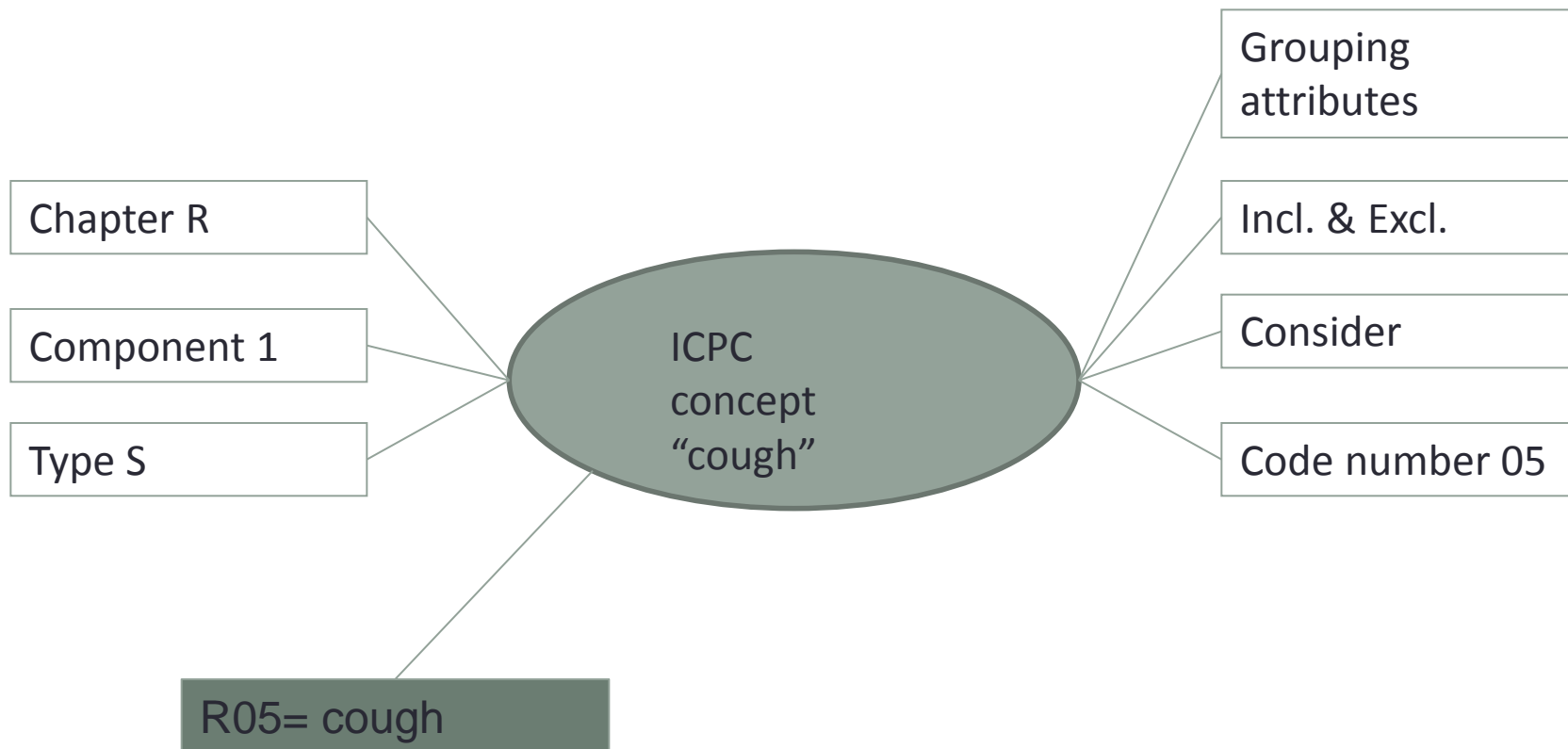
Grouping attributes such as “g” for germ or “r” for risk factor or “m” for male only



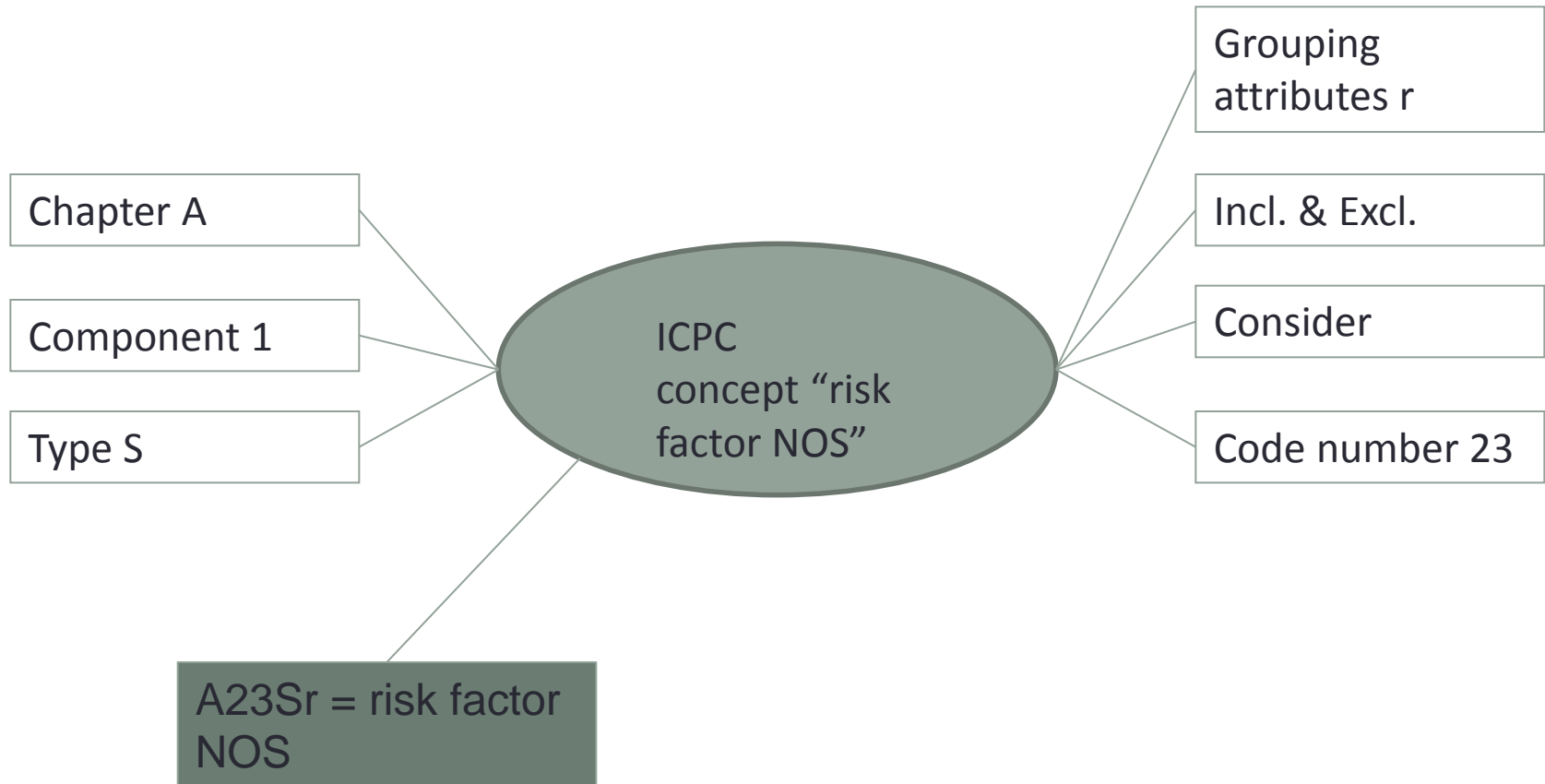
Code number is a number from 01 to 99, or 001 to 999, depending on space needed



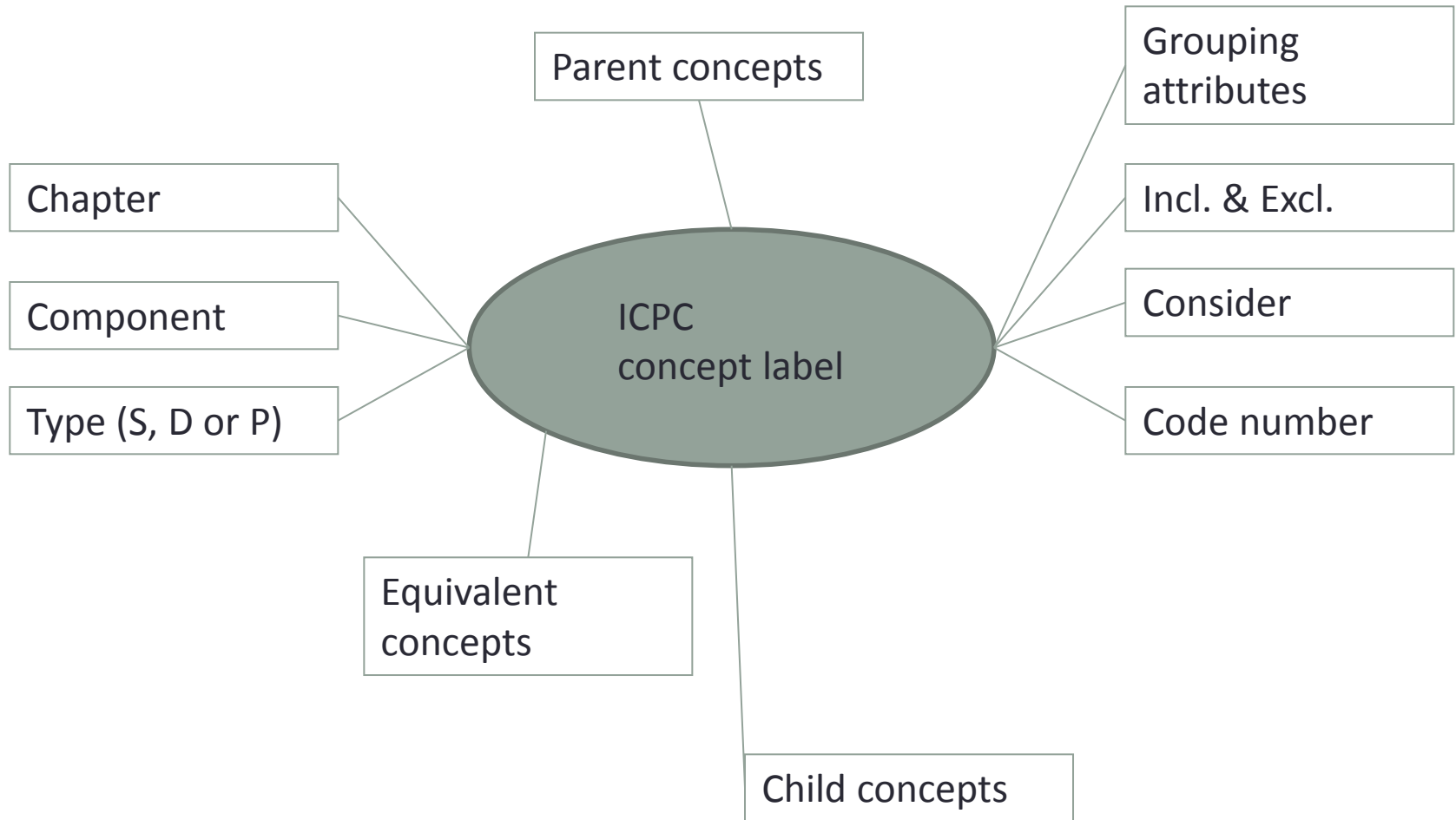
Different code views can be generated by the computer, dynamically



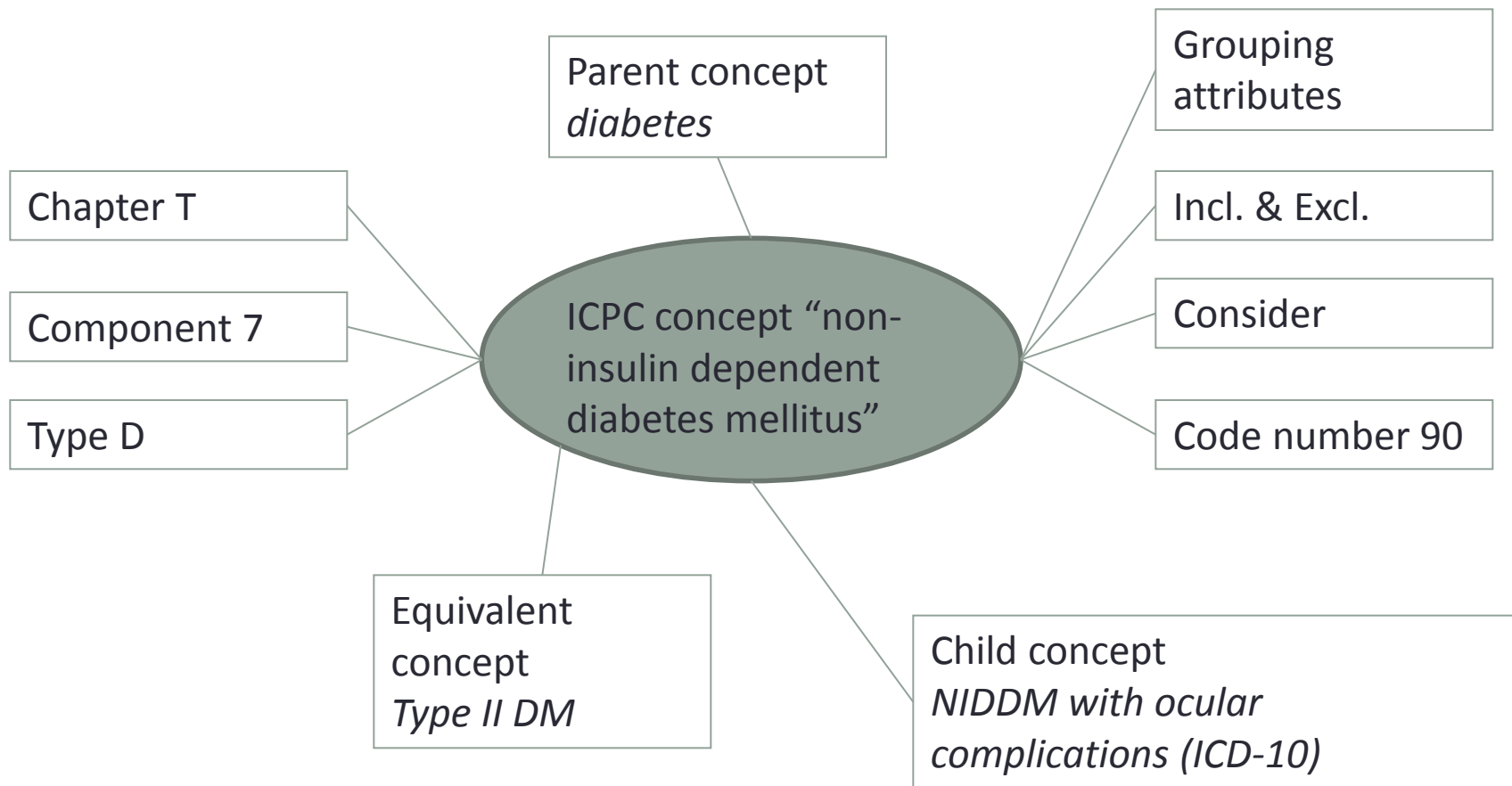
Where ICPC-2 codes are not redundant, the old code can be kept as desirable



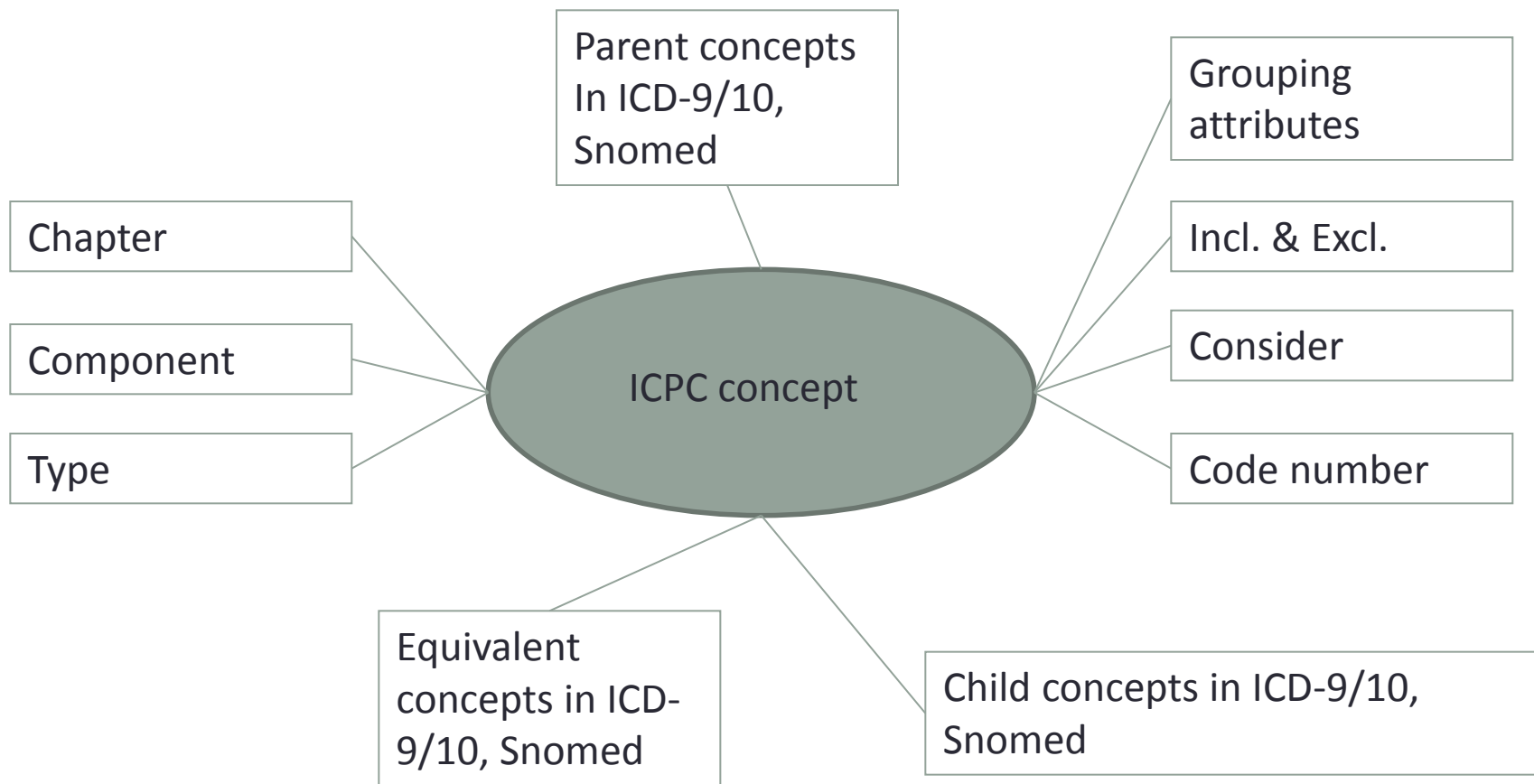
Risk factors, or even general and cardiovascular risk factors, may be grouped



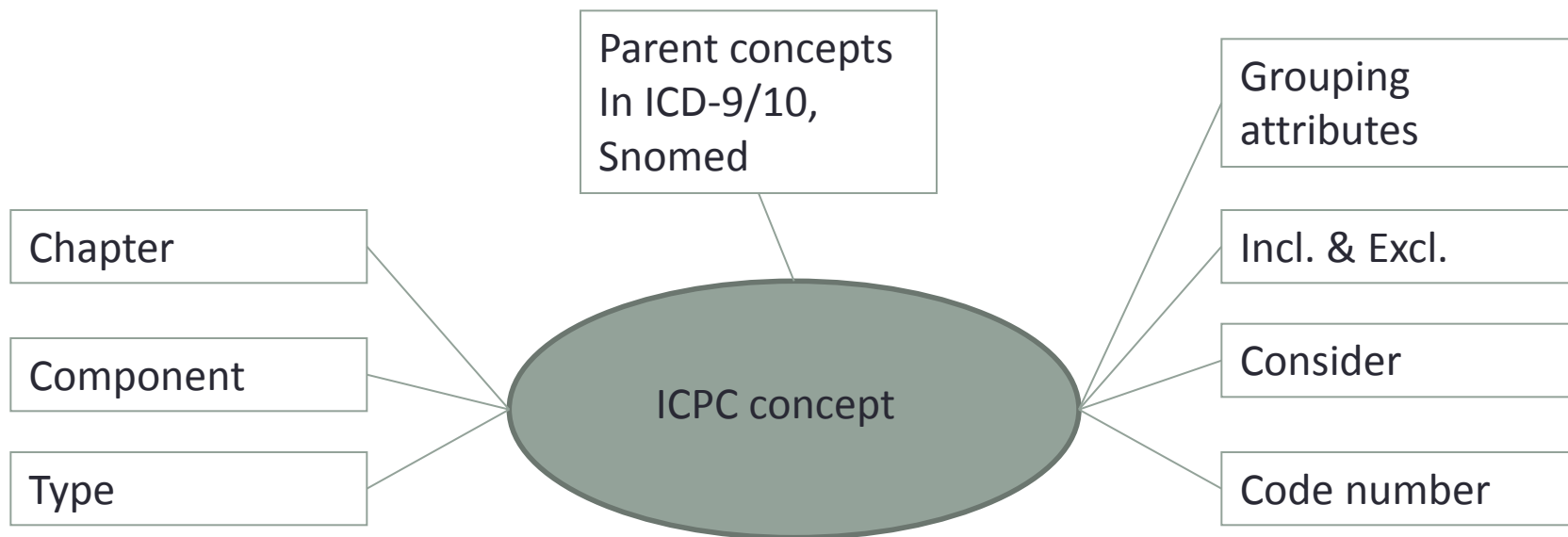
Mapping to related concepts may be much more sophisticated, and embedded in the archetype



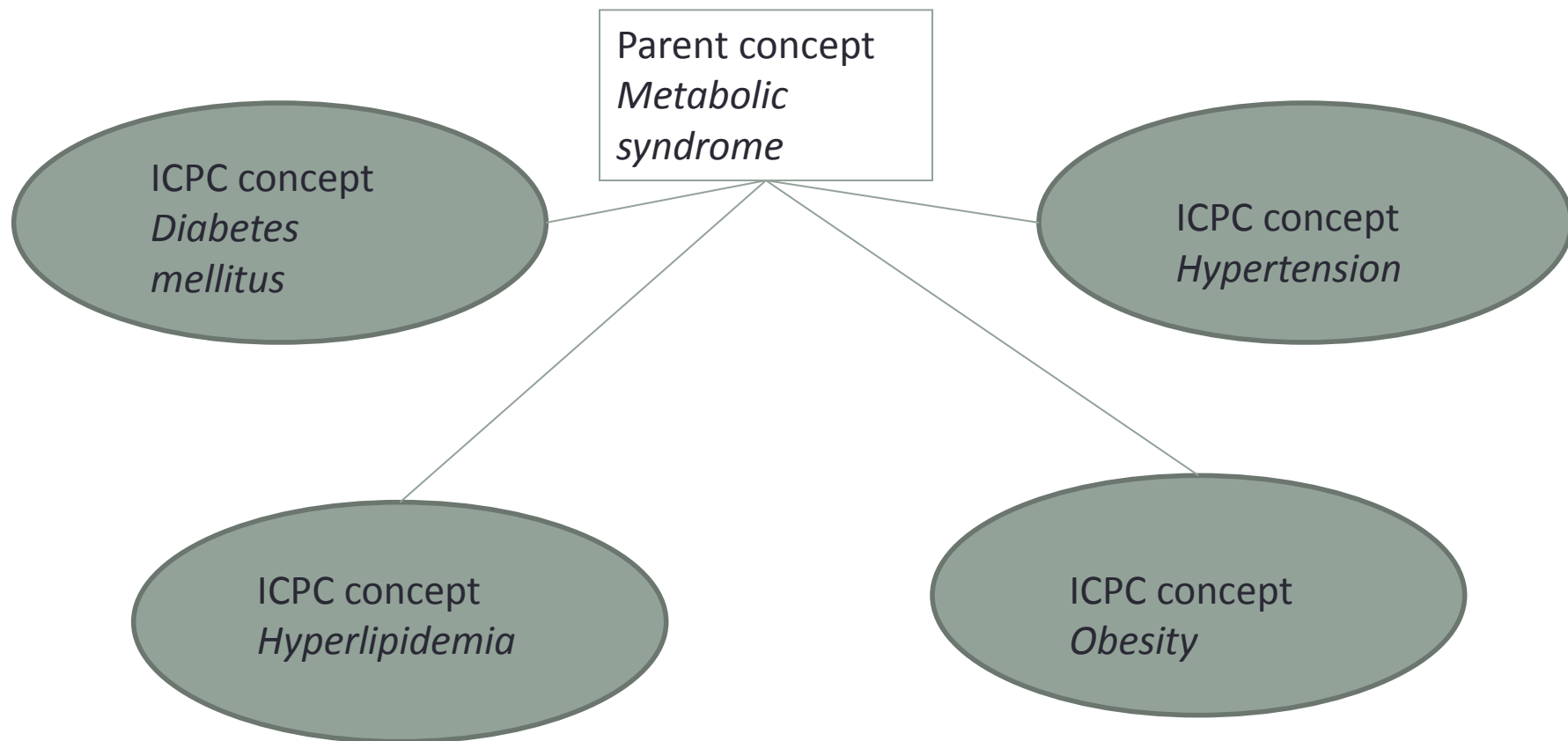
Mapping to related concepts may be much more sophisticated, and embedded in the archetype – an example



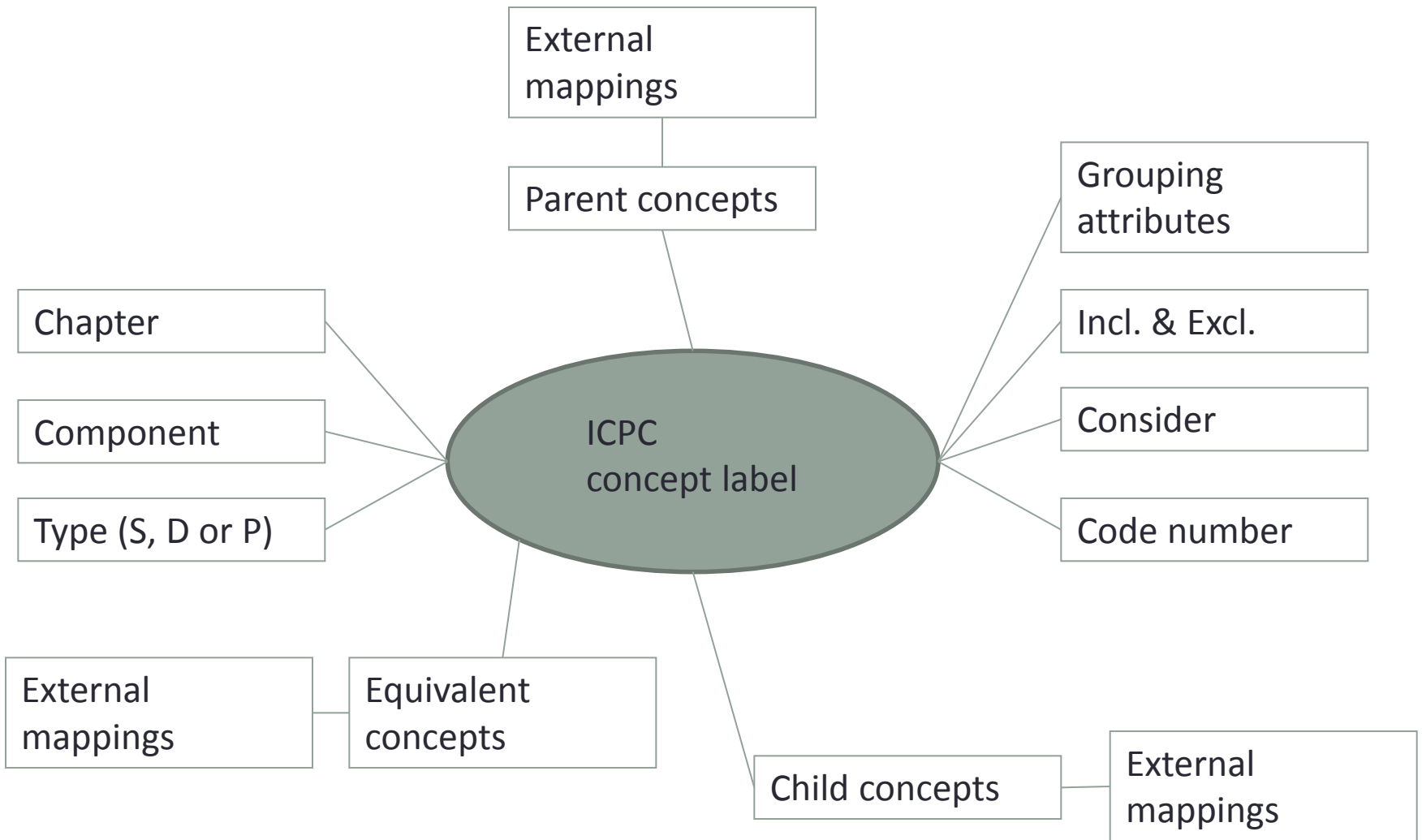
Mapping to other coding systems may be embedded in the archetype



And this will help resolve ambiguity with super-concepts such as “metabolic syndrome”



And this will help resolve ambiguity with super-concepts such as “metabolic syndrome”



The ICPC Archetype model is the perfect way to implement ICPC-3 in the information age, addressing the various use-cases for ICPC without exclusion