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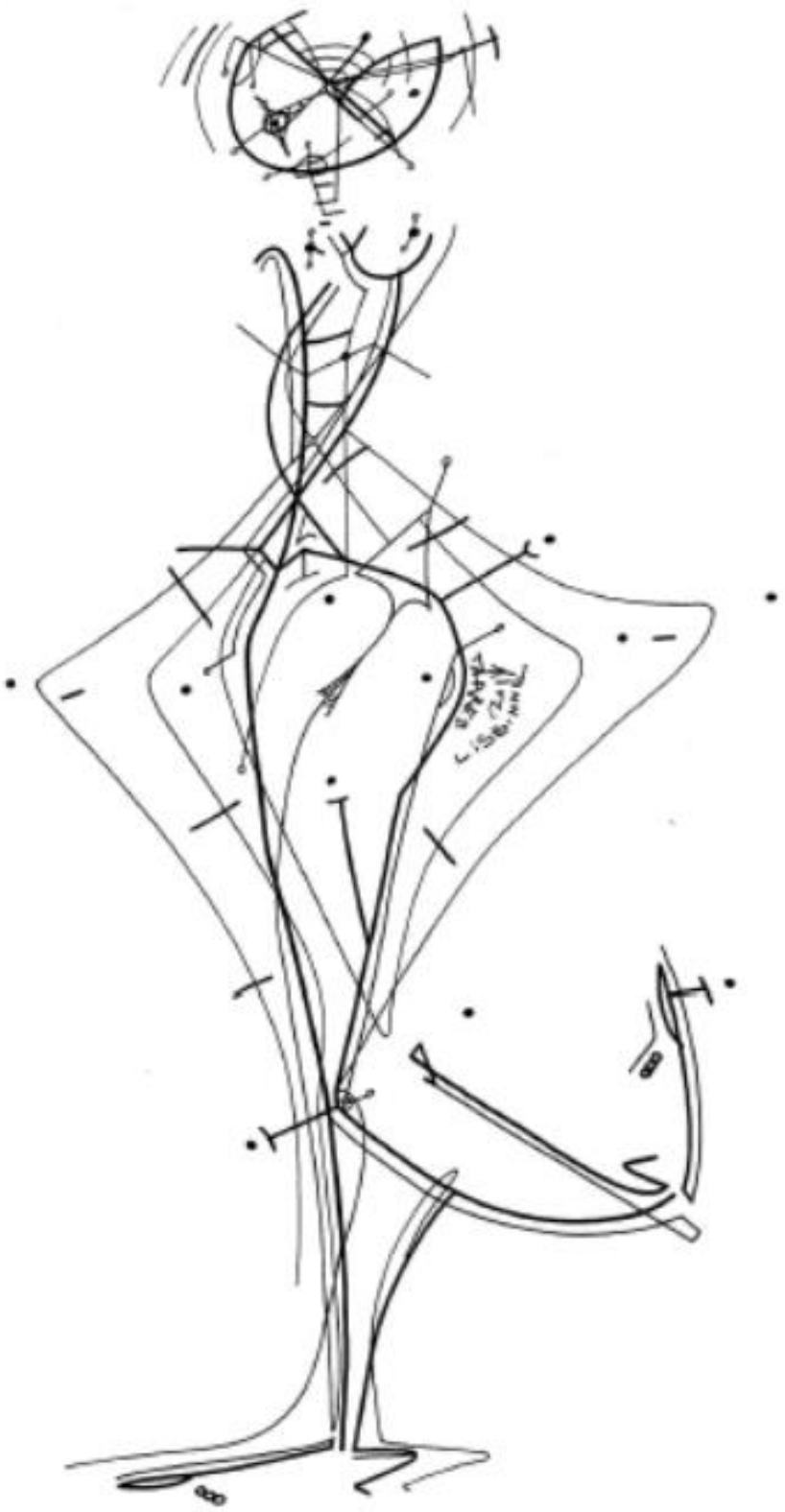
FMKM

Family Medicine
Knowledge management

Towards a system of concepts in General Practice / Family Medicine



Part 1 Towards a specific indexation system in GP/FM

Document prepared for the first meeting of the members of the board of the thesis of Marc Jamoulle, Family doctor
September 9, 2014 by teleconference Lisbon/Brussels/ Calabria

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This document is a preliminary draft
Various paragraphs have to be developed further
This part expected to be ready end of 2014
Some text are still in French. Translation ongoing

Front page

"CODES", Pen drawing by Jose Tavares, Lisboa, 2014

EXECUTIVE SUMMARY

Towards a system of concept on general practice / family medicine

Part 1 Towards a specific indexation system in GP/FM

Status of this document ; preliminary draft, not for diffusion

Intended audience : Members of the board of the PhD thesis of Marc Jamoulle, department of general practice, Liege University and experts in the field contacted by the author

Background :Thousands of general practitioners/ family doctors are gathering each year in local, national or international congresses. They are exchanging thoughts, researches and methods through thousands of communications in various formats; posters, oral communications, workshops and so on. Although this huge collection of bottom-up knowledge is sometimes available through Internet sites, there is no specific indexation system allowing a real knowledge management of the exposed works. Consequently the information could not be reached, which don't favor the exchange between researchers. The absence of a common indexation system is also a problem to organize the congresses and the participants have always difficulties to find communications relevant of their interest.

The technology of semantic web and Linked data have emerged as a future solution to exchange data distributed in many languages between so many providers, the family physicians, spread around the globe. The considerable development of medical ontologies demonstrates the vitality of this field of discovery.

Aim of the thesis; To find the best way to identify the main concepts effectively used by practicing GPs by the development of a system of classification embedded in the International classification of Primary Care aiming at retrieval of clinical and non-clinical issues addressed by the authors in their communications

To propose a mapped terminology to this classification systems, in other words an ontology of GP/FM, to participle to a linked data based automatic or semi-automatic indexation of knowledge in GP/FM and its implementation in the realm of the semantic web.

Content of the part 1 : the first steps towards a global classification system in GP/FM are related as well as previous experiences and difficulties with usual coding systems.

The new information technology tools for information management are concisely described which permit the understanding of their importance in future research networks of knowledge in G/FM

A comparison of the coding process and results of 6 congress of GP/FM in several countries and 4 languages has been performed to examine the internal reproducibility of the classifying system proposed.

Next steps of the thesis are discussed of which first of them would be the constitution of an International research group.

Budget :

Content

List of the tables

List of the figures

TOWARDS A SYSTEM OF CONCEPT IN GP/FM / RESEARCH QUESTIONS

GP field is global,

- includes not only bio-social-psycho-social but also ethical, moral, legal aspects
- Share a common ground with specialized doctors but also a specific knowledge

Most efforts to formalize and represent medical knowledge to date confined to specialized medicine

- Gave rise to ontologies such as MeSH

GP/FM has developed clinical classifications like ICPC for use in clinical settings and epidemiology of primary care

- Similar efforts to formalize, represent GM /FM knowledge has been lacking
- The following considerations are at the core of the proposed work
  - It is in the interest of family medicine to develop a specific tool for indexing their communications at their congress. The techniques used to date, including the authors key words or the MeSH are not sufficiently adapted to the specificities of family medicine.
  - An existing classification, ICPC, International Classification of Primary Care, could be satisfactory to index the clinical items addressed in these communications.
  - It is necessary to develop a complementary tool to ICPC, to index the non-clinical topics addressed by physicians in their communications. This tool is called 3CGP.
  - A comprehensive tool that combines ICPC and 3CGP can organize a congress of family medicine and allows participants to the congress to choose their program and makes it easier to develop networks of research on these topics
  - The use of semantic editing tools on the Internet allows the networking of different sites of publications of abstracts by various national and international organizations of family medicine, regardless of language

Thus the aim of this thesis is to find the best way to identify the main concepts effectively used by practicing GPs, propose a mapped terminology to those concepts aiming to participle to an automatic or semi-automatic indexation of knowledge in GP/FM and its implementation in the realm of the semantic web.

The key research questions that we address are :

- Are existing ontologies like MesH and ICPC adequate to encode and represent the vast and diverse GP /FM knowledge?
- What are the GP/F M concepts and terms (both medical and non-medical) that are not to be found in MeSH, in ICPC ?
- Can an ontology for GP /FM be devised based on these terms and concepts and possibly integrating MeSH and other knowledge sources
- Can the detection of these medicals and non-medical terms from GP/FM be automated ?
- Can the classification of these medicals and non-medical terms into concepts from GP/FM be implemented with semantic web technologies ?

The various steps of the work will be

- Part 1 : to develop the classification 3CGP by using empirical and purposive sampling methods together with collaboration with experts in the domain (Delphi)
- Part 2 : to develop a mapped web based GP/FM ontology by reuse of existing terminologies, by natural language processing techniques and careful verifications
- Part 3 ; to show the operationallity of such an indexing system and its implementation to admit the production of GPs in the world of linked data

1. Introduction

- General practice / family medicine knowledge is growing.
- Internet based changes. Social networking changes. Information is up to Family medicine what technology is to specialized medicine (to be developed further)

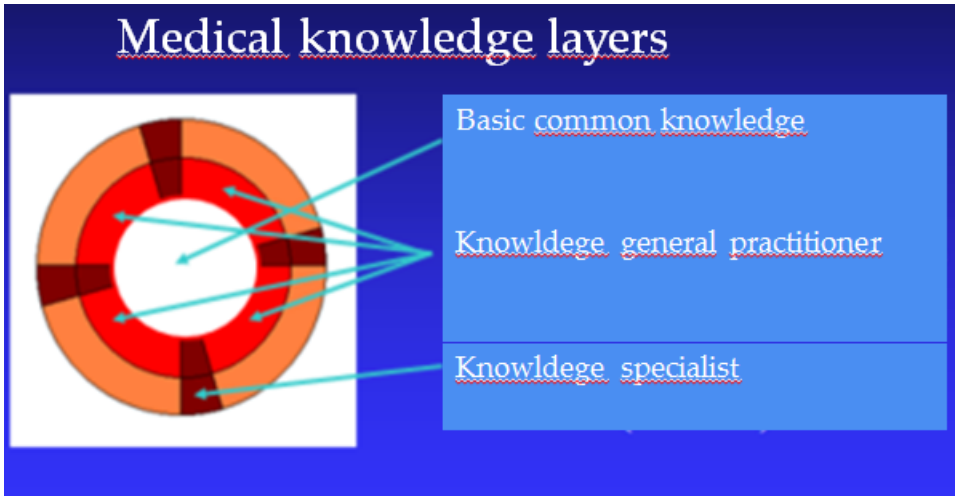


Figure 1 Medical knowledge layers (source Michel Roland)

1.1. Accumulated knowledge in GP/FM is not shared effectively or disappears

Specific knowledge in GP/FM , PBM (Patient Based) or EBM (Evidence based meddecine), can be found in three main sources : the communications of GPs during the congresses, the published papers/gray literature and the books of Family medicine

1.1.1. Textbooks of Family Medicine

The profession of family doctor has a very elaborated definition { Wonca 2011} but its exact content is left to the discretion of each medical school settings. If we review some Textbooks of Family Medicine, we see that the tables of contents are really diverse.

Analysis of the table of contents of some of the most important of them is appealing in this regard. Whatever the arrangement of the chapters, one can see a general division into three main themes; specific process in family medicine, main areas of knowledge and thirdly mastering the specific clinical approaches as the symptoms and diseases usually seen by general practitioners { McWhinney 1997, Taylor 2003, Druais 2009, Kochen 2012, Murtagh 2011, Casado 2012} for quoting only some.

One of those book {Gusso 2012} is more structured since it takes over the grid of the chapters of ICPC as a table of contents of the conditions and symptoms in addition to addressing the procedures and specific knowledge areas.

But this is a view from above (Top-bottom) that does not prejudge the real interests of family physicians in activity hic et nunc.

1.1.2. Publications of the GPS during congresses

The work of family physicians shared in congresses are often of high quality. They are most often subject to assessment process before being accepted and represent a significant investment of energy and time. Each GP/FM congress organization publishes the abstracts of their participating members. The summaries of the conference participants are not always available. Despite the fact that a lot of work is available in medical journals, more than half of the researches done by GPS and presented in congress will not more be available easily. Often more than 50% of them are not subject to publication { 55% VanRoyen 2010, 48% Hummers-Pradier 2007, 65% Post 2013}. Abstracts which are not reaching publication are in an analog range in specialized congress {65% Ylmaz 2013, 63% Dahllöf 2008, 65% Nasir 2013 }

Dr. Carl Steylaert has initiated a remarkable effort by editing the abstracts of Wonca Europe conferences since 1995 to date on the Wonca Europe website. There is no indexing system except author's keywords.

Congress	URL	Abstracts available
Wonca World Prague 2013	*http://www.globalfamilydoctor.com/*	no
Wonca Europe	*http://www.woncaeurope.org/library/abstracts*	yes
Wonca rural 2014	*http://www.cmfc.org.br/sul/index*	yes
Portugal APMFG	*http://www.cnmgf.com/pt/conteudo/programa/18-cnmgf/programa-completo/programa-final.html*	no
France CNGE	*http://www.imagilles.com/cnge2013/accueil/index.html*	yes
Switzerland SwissFamilyDocs	*http://fr.swissfamilydocs.ch/2014/programm/abstracts-speakers/index/fc#2014-08-28*	yes

Table 1 Availability of abstracts of some GP/FM congresses with corresponding Congresses URLs

There have been at least two isolated attempts of organizing conference around ICPC (Wonca Europe 2007 conference and CNGE Conference Lille 2014) (fig 11 and 25).

Thus, considerable efforts of family physicians often disappear. It is regrettable that these efforts are not more valued. With the development of Internet and the social networking, interest groups could gather which share the same concerns. One might think it would be useful to keep the works done, and that conservation would facilitate exchanges and the feeling of belonging to a productive community. A common and consistent indexing system could help to strengthen ties between the various actors of GP/FM. This could represent bottom-up views of the content of GP/FM. MeSH are usually recommended for the indexing of abstracts. We will examine this issue more deeply

2. The worlds of reference in medicine (to be developed further)

- World of reference of GP/FM are quite different form the world of National Library of Medicine, of IHTSDO SNOMED-CT terminology of from ICD related nomenclatures.
- Each corporate organization has its own world of reference, often unconsciously expressed and diffused in a subliminal way

❖ Related publication annexed : Jamoulle M, Vander Stichele RH, Cardillo E, Roumier J, Warnier M. Mapping French terms in a Belgian guideline on heart failure to international classifications and nomenclatures: the devil is in the detail. Inform Prim Care. 2014;(accepted) *http://hdl.handle.net/2268/171599*

3. Ethical foundation of the analysis (to be developed further)

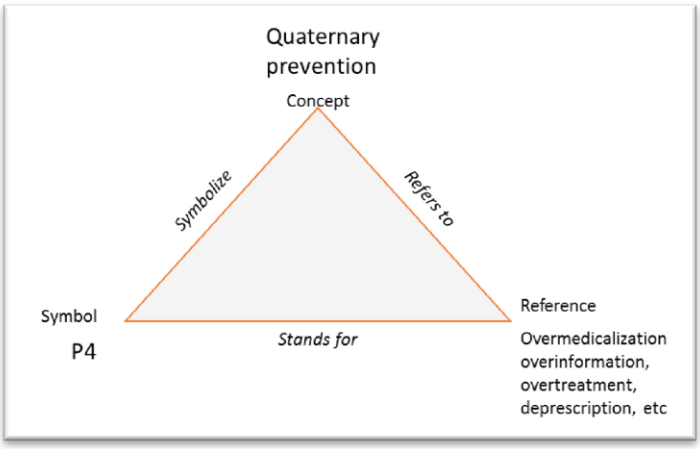


Figure 2 The concept Quaternary Prevention through the Ogden & Richards triangle (see § 4.2)

- The world of reference of the family doctor is a conscious world based on the human being, his/her environment and the patient doctor relationship developed along the time line.
- About the need to take sides and the non-neutrality of classifications and standards
- About the patient-centered medicine and conflicts of interest
- The concept of quaternary prevention becomes central to the methodological analysis in GP/FM

❖ Related publication annexed : Jamoulle M. The four duties of family doctors: quaternary prevention - first, do no harm. Hong Kong Pract. 2014;36(june). *http://hdl.handle.net/2268/170670*

4. Need for a mixed system to index clinical and non-clinical items

4.1. General practice indexation systems

Management of specific knowledge to the business of general practitioner is a difficult question. The fields of general medicine, family medicine is extremely broad with unclear boundaries.

The clinics or all elements related to the clinical contact with the patient, is central to the practice of family medicine but conditions of the realization of the work represent a different content of information with respect to the clinic. In a first time we have (maybe wrongly) used the term meta-information to describe all non-clinical information related to the core business of a GP. That's why the reader will find in the text the prefix meta. This name has been replaced, as we shall develop it further, by the acronym 3CGP, standing for core content classification of General Practice and aiming at defining the non-clinical elements of the business of a GP which are often heavily exchanged upon in G/P conferences.

The articulation of the GP/FM discipline to community health is expanding its scope from individual to the community. A nice way to represent such a large and complex fields has been described by Monique Van Dormael, a Belgian medical sociologist {Van Dormael 2001} . By crossing the dimensions of doing and being with that of the individual and the community, it shows both the extent and complexity of the working field.

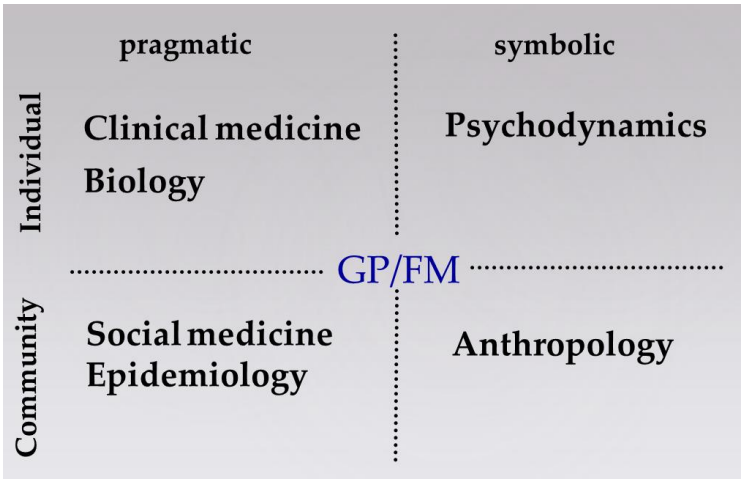


Figure 3 Four fields of knowledge in GP/FM (Van Dormael 2001)

Although the general training of doctors is usually confined within the how and the individual, i.e. biology and biosciences, there is a thorough consideration of the human being and psychological and psychiatric training of student has been expanding in recent 30 years. But epidemiology, meeting of to do and the collective aspects is still the poor field of basic training. For saying nothing of medical anthropology which is hardly teach. However, there are strong trends and the teaching type Problem based learning {Bestetti 2014} is a leader in this field while medical anthropology has lost recently one of its preeminent researcher [Helman 1981]

Yet every family doctor knows intuitively or due to personal training that he works on these four fields, although the available economic resources are mostly concentrated on the first one, biology and biosciences approaches. And each of those theme are discussed when doctors are gathering. A health information system dedicated to describe the fields of interest in GP/FM has to take on board this extensive view.

4.2. Medical subject heading

4.2.1. MeSH; basic and specificities (to be developed further)

Basic description of the 25.000 MESH and their difficult use in GP/FM indexing

Including the current move to automatic natural language processing (NLP) based indexation

Including discussion about discrepancies between MeSH and GP/FM like in the following concepts: shared decision making, quaternary prevention, overmedicalisation, overscrening, déprescription, overtreatment etc (ongoing work)

4.2.2. Pre-test with MeSH on metaclinical classification. 2007

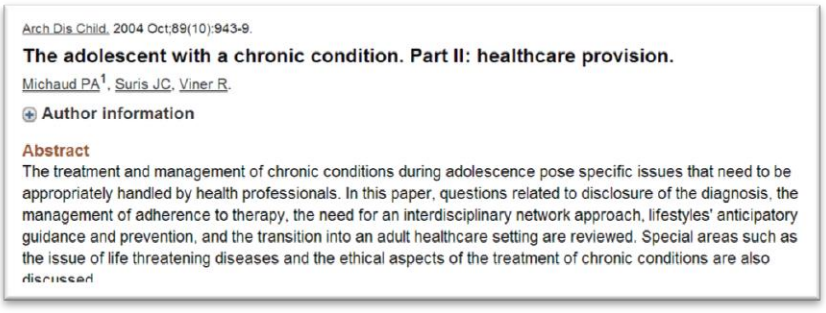
Aim: pre-test, to compare content of Medline abstracts related to GP/FM with the concepts of the metaclinical classification version 0.2

Methods:Choice of Medline abstracts: one descriptor with several limits to get a little number of abstracts to analyse

"family practice"[MeSH Terms]
Limits: only items with links to full text, only items with abstracts,
English, published in the last 3 years, Humans, Core clinical journals, Review

Each content of abstract is mapped to the metaclinical classification and correspondences are searched. Codes are numeric or alphanumeric.

Results: 39 abstracts from Medline (full data available on *http://docpatient.net/class/meta.html*)


Arch Dis Child. 2004 Oct;89(10):943-9.

The adolescent with a chronic condition. Part II: healthcare provision.

Michaud PA[1], Suris JC, Viner R.

Author information

Abstract

The treatment and management of chronic conditions during adolescence pose specific issues that need to be appropriately handled by health professionals. In this paper, questions related to disclosure of the diagnosis, the management of adherence to therapy, the need for an interdisciplinary network approach, lifestyles' anticipatory guidance and prevention, and the transition into an adult healthcare setting are reviewed. Special areas such as the issue of life threatening diseases and the ethical aspects of the treatment of chronic conditions are also discussed

Figure 4 Example of a Medlin abstract to be coded with metaclinical classification (2007)

Example (fig 4); “Treatment and management of chronic conditions” is coded here by QD31 Case management (this term being replaced further by Health issue management in 3CGP). “Adolescence” is coded by QC13 Category of patient adolescent.

Table 2 Coding of 39 Medline abstracts

num	n°medline	icpc	meta	meta alpha	Remarques
1	17349440	T92	2.2.8 case management	QD 2.8	disease management?
2	17210873	no	missing		outcome of care in cat 2.2?
					Not relevant?
3	17087427	K	2.2.2 prevention	QD 2.2	
			4.3.2. Women’s health	QC 3.2	
4	17002031	T89	2.2.2 prevention	QD 2.2	
		T34	2.2.7. Risk management	QD 2.7	
			2.1.3 Counselling	QD 1.3	
5	16883928	B78	2.2.8 case management	QD 2.8	disease management?
6	16770982	L16, L17	2.2.8 case management	QD 2.8	disease management?
7	16595759	D87	2.2.8 case management	QD 2.8	not relevant? comparison
			7.2. EBM	QT 2	GP/Gastro
8	16570737	P24?, P28	2.4. Medico legal issues	QD 4	
			4.4 Ageing	QC 4	
9	16510055	P79	2.2.8 case management	QD 2.8	bad abstract
10	16483865	U04	2.2.8 case management	QD 2.8	
11	16445273	B90	2.2.2 prevention	QD 2.2	
			2.2.8 case management	QD 2.8	
12	16388764	P76	1.1.1. Availability of	QP 1.1	missing
			diagnostic process	QC ?	ethnical subgroup
			4 patient's category		
13	16370404	U70	2.2.8 case management	QD 2.8	
			4.1 infants and children	QC 1	
14	16342851	no	1.3.2.2 cultural accessibility	QP 3.2.2	missing
			4 patient's category	QC ?	ethnical subgroup
15	16342832	S19	2.2.8 case management	QD 2.8	body piercing A29?
35	16300037	L11	2.2.8 case management	QD 2.8	
36	16300034	U88,U99	2.2.8 case management	QD 2.8	
37	16050454	A78	2.2.8 case management	QD 2.8	
38	15939004	N94	2.2.8 case management	QD 2.8	CRPS --> unknown
					syndrome in EU
39	15939000	K77	2.2.8 case management	QD 2.8	
40	15906748	D	2.2.8 case management	QD 2.8	
41	15793019	no	4.2 Adolescents	QC 2	chronic illness
			2.2.8 case management	QD 2.8	
42	15617297	Y76,,X91	2.2.8 case management	QD 2.8	genital warts
43	15617296	A88	2.2.8 case management	QD 2.8	hypothermia
44	15617295	W81	2.2.8 case management	QD 2.8	preeclampsia
45	15617293	NO1	2.2.8 case management	QD 2.8	headaches

46	15606064	K77	2.2.8 case management	QD 2.8	heart failure
47	15606063	K77	2.2.8 case management	QD 2.8	heart failure
48	15606061	X84, X71,X84	2.2.8 case management	QD 2.8	genital warts
49	15606059	D19	2.2.2 prevention	QD 2.2	oral health
50	15595338	N	2.2.8 case management	QD 2.8	neuropathic pain
51	15561920	T89	2.2.8 case management	QD 2.8	type 2 diabete
52	15508543	L76	2.2.8 case management	QD 2.8	nasal fractures
53	15383439	no	4.2 Adolescents	QD 2.8	chronic condition
			2.2.8 case management		
54	15368728	R96	2.2.8 case management	QD 2.8	asthma
55	15291088	B90	2.2.2 prevention	QD 2	HIV
			8.2 epidemiology	QR 2	
56	15277128	no	7.5 training	QT 5	communication skills
			2.1 communication	QD 1	
57	15274289	F83,T89,T90	2.2.8 case management		retinipathie diabetique
58	15145910	K74,K75,K76	2.2.2 prevention	QD 2	secondary used for tertiairy

Analysis

The careful reading of those abstracts show a lot of description of diseases or conditions and few specific activities related to family practice. The number of "case management" is wondering 29/39. The term "case management "(replaced further by Health issue management in 3CGP) describes abstracts which are dealing with usual description of disease, here in the context of GP/FM

The descriptors "**review**" and "**family practice**" quote 10 abstracts which are not dealing with this kind of disease description. This could indicate that the complexity of themes encountered in GP/FM are poorly identified.

It has to be said that the coding process is addressing the research question of the author or the main question described in the abstract and is not considering the results expressed. Usually the title, the introduction and the methods are enough to get the relevant code, at least if the author has understood the difference between methods and results.

This pre-test raises some suggestions for 3CGP next version:

- **outcome of care** to be considered in category 2.2 (from second Medline abstract)
- **practice management** is quoted twice in metaclinical → skip
- Suggestion to shift from **case management** to **health issue management** in ver 0.3
- Patient's Categories: **ethnic subgroup → to be added in metaclinical ver 0.3**
- A new pre-test has to be performed with different more complex Medline descriptors.

4.3. FAMLI 1980 – 1992

The 70s saw the birth of groups and organizations that would determine the future of general practice. The European research workgroup (EGPRW) and the European Academy of Teachers in GP/FM (EURACT) take flight in this decade. Wonca is founded in 1972. Leuwenhorst Group {Leeuwenhorst 1980} would be decisive in this adventure. General practice / family doctor claims its place as a separate discipline. "*General practice is a scientific discipline within medicine and has a specific place in a comprehensive health care system*" {EGPRW 1982} The field of classifications is also very well studied {Bentsen 1976, Braun 1979} and 1976 saw the first publication of the International classification of health problems in primary care. {JRCGP 1976}

At the same time a significant movement appears in the treatment of the specific literature in GP/FM. FAMLI {Fitzgerald1980}, an index for indexing the literature specific to family medicine system, is edited in Canada. As pointed by D. Fitzgerald: « *Family physicians cannot always rely entirely on Index Medicus and Medline to provide the information they require. A number of family medicine journals, including Canadian Family Physician, are not indexed by these major sources*." {Fitzgerald1980a}

This statement is emphasized by Lynn Dunikowski, Director of Library Services of the College of Family Physicians of Canada and second editor of FAMLI who notes : "*Because MeSH originally was intended for use with clinical documents, the problem has always been how to adapt it to cover the range of a family physician's non-clinical activities*"(personal communication Aug 2014)

E. Challis, Chairman of the Teachers of Family Medicine, College of Family Physicians of Canada underlines the role of Wonca ; "*Dr. Ian R. McWhinney, the chairman of the WONCA Bibliography Committee who was also instrumental in the development of this informative reference*".{Challis1981} D. Fitzgerald gives more precision "*Each annual cumulation of FAMLI includes a five-year cumulative list of books written by or for family physicians; this is a comprehensive, rather than a recommended, listing*". Moreover, the FAMLI index is edited under the name of Wonca {WONCA 1980} which shows the importance given to this area by the organization of family doctors at this moment.

The specific GP/FM literature is booming and lists of publications are regularly made available. {Dunikowski1986, Dunikowski1984, Weston1992a, Verhoeven1995}

In September 1992 is edited the last issue of the serie FAMLI {Dunikowsky 1992} in which L. Dunikowsky publishes a set of keywords specific to GP/FM under the title "KeyWords in Family Medicine (A Thesaurus)".

Precisions she brings on the approach deserves mention because she already fully notes some discrepancies between the MeSH and the world of family medicine:

> "*Some terms commonly used in the field of family medicine do not appear in Medical Subject Headings (MeSH). The thesaurus bas been designed to act as a bridge between these terms and the MeSH headings used in FAMLI. Family medicine terms appear in the thesaurus with the nearest equivalent MeSH term (or terms) used in FAMLI printed in bold-face type. The thesaurus also provides brief explanations of selected MeSH terms, to help in choosing the term that most closely corresponds to a selected topic. Some*

MeSH terms are listed together with closely related MeSH terms, to suggest ways of broadening a search." {Dunikowsky1992}

➔ The collection of terms quoted in FAMLI will be studied carefully. We will examine the congruence with the clinical and meta-clinical classification developed to index the abstract of family physicians. (to be developed further)

4.4. The Wonca dictionary

Source for the world of reference of general practice and Family medicine. (To be developed further)

"*The main purpose of this dictionary is to act as a reference for GPs/FPs throughout the world, so that they can communicate meaningfully about general/family practice now and in the near future. The Dictionary's ambition is to cover general terms regarding the organization and the work in general/family practice, research, classification, and epidemiology."* {Bentzen 2003}

Publications annexed :

Contributor in Bentzen, N, ed. Wonca Dictionary of General/Family Practice. Wonca International Classification Committee: Copenhagen, 2003. See www.ph3c.org rubric Wonca dictionary

4.5. ICPC genesis and description (to be developed further)

If one want to manage a clinical information system in family medicine, we have a tool already used extensively in clinical work in GP/FM for almost 25 years {Lamberts & Wood 1987} which has become a de facto standard. Internationally known by its acronym, ICPC is available in nearly 30 languages and available also in French as the CISP (Classification Internationale des Soins Primaires) {Jamoulle 2000}. Treatment of clinical information i.e. reasons for encounter, symptoms and diagnoses and of clinical procedures they perform is doable using ICPC.

ICPC genesis and description (to be developed further)

ICPC international de facto standard for clinical data in GP/FM

ICPC terminology availability : The Nl Thesaurus / ICPC Plus

Publications annexed :

- Okkes I, Jamoulle M, Lamberts H, Bentzen N. ICPC-2-E: the electronic version of ICPC-2. Differences from the printed version and the consequences. Fam Pract. 2000;17(2):101–7. Available at: *http://www.ncbi.nlm.nih.gov/pubmed/10758069* *http://hdl.handle.net/2268/171600*
- Wonca International Classification Committtee. ICPC-2 – French, desk-copy, translated by Marc Jamoulle & Michel Roland 2000. Available at: *http://www.kith.no/upload/2705/ICPC-2-French.pdf*
- Wonca International Classification Committtee. ICPC-2 – English, desk-copy, (co-author) 2005. Available at: *http://www.kith.no/upload/2705/ICPC-2-French.pdf*

4.6. Core Content Classification in General Practice (3CGP)

4.6.1. The Q-codes. Lamberts 1987

At the Department of General Practice, University of Amsterdam, in the 80', the burden of reading medical journals specific to general practice was devoted to teachers and assistants in the department. Articles relevant to the profession were indexed by ICPC and non-clinical subjects were by Q-Codes. Using the letter Q, available in ICPC, the late Professor Henk Lamberts had opened this new category. This was before the Internet, even before Medline becomes available on CD Rom. To my knowledge this list of Q-Codes has never been published but a copy taken on the tables of the library of the department in 1987 has been preserved. We see in Figure 5 the list of Q-Codes proposed by Professor Lamberts, also linchpin of development of ICPC in the Wonca International Classification Committee, the Wonca working group in classification field.

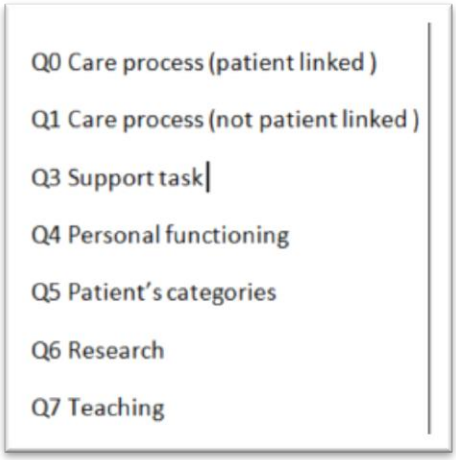


Figure 5 Q-CODES Amsterdam (+/- 1987)
Dep of gen practice. Prof Lamberts

From this list proposed by Professor Lamberts, we have conserved the seminal idea and only 3 domains : Category of patient, Teaching and Research(fig 6). In fact Teaching has been extended to Training and Teaching and more generally to Knowledge management, using the letter T added to Q to build the acronym QT. Development has been added to Research, using the letter R added to Q to build the acronym QR standing for the domain QR Research & Development. Out of the Q-Codes, Q0, Q1, Q3 for Care Process & part of Support task was already included in the Process codes of ICPC.

We have chosen to develop progressively the other categories: QS for Structure of practice, QE for Ethical questions, QH for Hazard, i.e. environmental issues, QD for issues related to the activities of the doctor, QP for the patient's views and QO for Other has been chosen as main domains. The QO Other was initially chosen as a rag bag but it prove to be interesting also to determine some lack of or imprecise information in the abstracts(fig 37)

4.6.2. From Q-codes to 3CGP

In 2007, the annual conference of Wonca Europe is held in Paris. French colleagues of the CNGE allowed me to have access to abstracts of the conference before it takes place.

The reading of 998 abstracts has permitted to empirically identify major themes presented by participants from many countries and cultures. The clinical one have been easily cached up by ICPC. For the non-clinical items a new tool became necessary. The structure of what might be called an authority list for non-clinical items took shape slowly. An authority list is a controlled list of terms, names, phrases or similar entries relative to a specific domain or scope {Wason ND} As the tool should be combined with the ICPC classification, a hierarchical structure has been chosen. Taking the Q-Codes of Lamberts as a basis, gradually the 8 areas plus a rag bag appeared to be necessary and sufficient to introduce the major concepts encountered in the texts analyzed.

This empirical method of choice based on the experience of the researcher is described in the Sage dictionary of social research method as 'Purposive sampling' {Jupp 206};

> *"A form of non-probability sampling in which decisions concerning the individuals to be included in the sample are taken by the researcher, based upon a variety of criteria which may include specialist knowledge of the research issue, or capacity and willingness to participate in the research. Some types of research design necessitate researchers taking a decision about the individual participants who would be most likely to contribute appropriate data, both in terms of relevance and depth."*

In our case the "individual to be included" is the concept identified as significant by the researcher specialized in the discipline he observes.

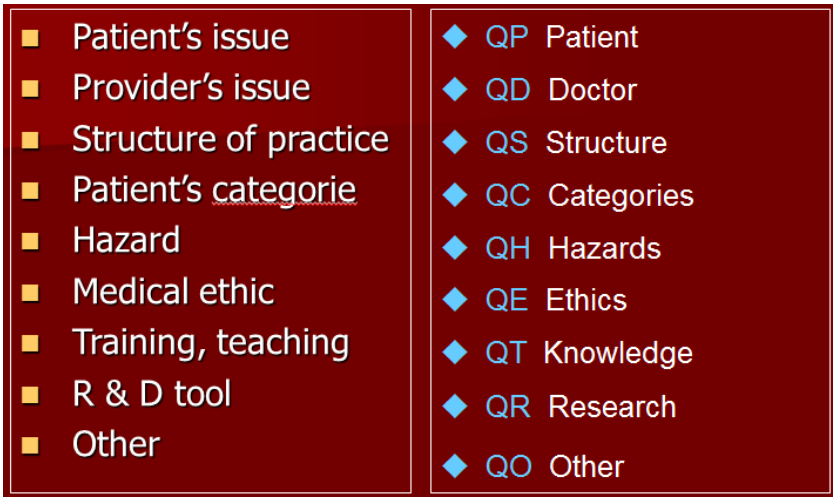


Figure 6 The 8 knowledge domains in GP/FM and one rag-bag (QO Other)

Information about the themes identified can be considered as meta-information. The name chosen for the tool storage was first "meta-classification". This use of the meta prefix was confusing. The need to show we were at the heart of the business of GP/FM has given rise to a change in naming and meta-classification becomes the **Core Content Classification in General Practice / Family Medicine** whose acronym is **3CGP**.

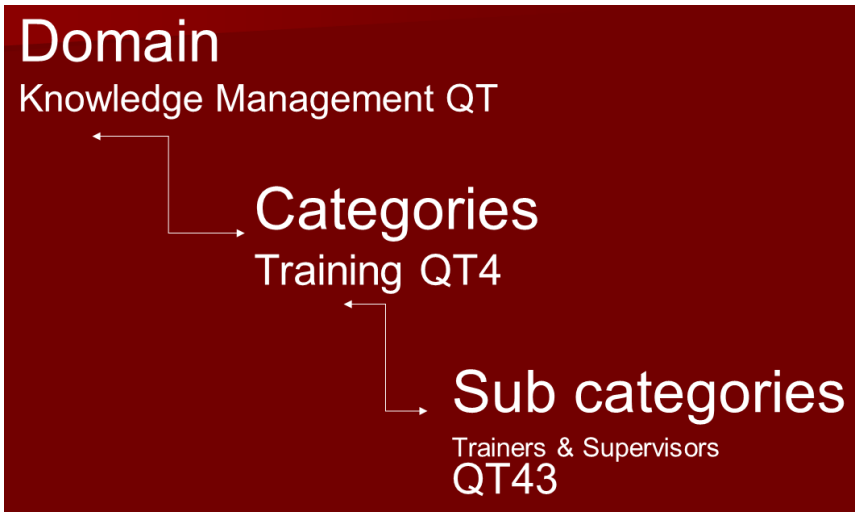


Figure 7 Opening of 3CGP domain (here QT4 Training)

3CGP has a hierarchical structure. The 8 domains denoted each by their first letter are open into categories, open itself into subcategories and if necessary in basic headings. It does not list all the areas of interest of family doctors but those encountered by indexing till now. They can be grouped conceptually according to the logic of the semantic triangle of Ogden and Richard {Richard and Ogden 1923 & 1989}

Ogden & Richards have introduced the words Thought of Reference to connect Symbol and Referent in their famous triangle. In the fig 8, QT42 is the symbol of Vocational Training which is presented not only as a term but as a thought of reference referring to a content such as Vocational Training, Apprenticeship, Trainee and their definitions, exclusion, inclusion criteria and so on. We could also give the example of P4, symbolizing Quaternary prevention, referring to a range of concept like overmedicalization, overtreatment, overscreening, deprescription etc.(fig 2)

It is observed that this procedure about the knowledge exhibited by physicians in the field is a bottom-up approach as opposed to the knowledge accumulated in the textbooks we have mentioned above which can be seen as a top-bottom knowledge. In our case, the experts are the general practitioners. They talk about their concerns. In textbooks, experts are interpreters of what they think is reality. Both methods have their value and are probably complementary but to get an intimate knowledge of family medicine, it is interesting to collate what is expressed in the field.

« What are they talking about?»

This is the question that is usually asked by readers of communications. Thus the project goes much beyond keywords or descriptors. The project is to identify the categories of concepts in GP/FM. When themes and major categories are emerging, one must tackle the thorny issue of subcategories and to give them a name. There is the dilemma of any classifier, namely the difficult combination of inclusivity and exclusivity and to find the most adequate term to give a name to the domain or the category.. A section must be exhaustive and contain all the topics concerned with the exclusion of those who do not apply. That's the unresolvable question whether you put the watermelon with fruits or vegetables. It is

easy to separate the nails & screws but where does ne may put screws that can be nailed? We have chosen to follow a method similar to the development of ICPC. A classification of usual theme, acting as container for subset. This is well shown in the fig 2. The concept quaternary prevention covers a set of important issues, heavily discussed in congresses as overmedicalisation, overscreening, overtreatment, déprescription etc. In fig 8 the concept vocational training encompass, as stated in the Wonca dictionary, Vocational training, apprenticeship, Trainee etc.

Anyway we tried to resolve these issues with the greatest possible precision, without, in 2007, to have time to look up the definitions, inclusions and exclusions that would probably refine the tool and report use the most fluid insuring also the link with huge nomenclature like MeSH. . This task is at the forefront of work to be undertaken. Computer techniques have recently made great strides, we try to incorporate this approach to knowledge in the movement of distributed data and the Semantic Web.

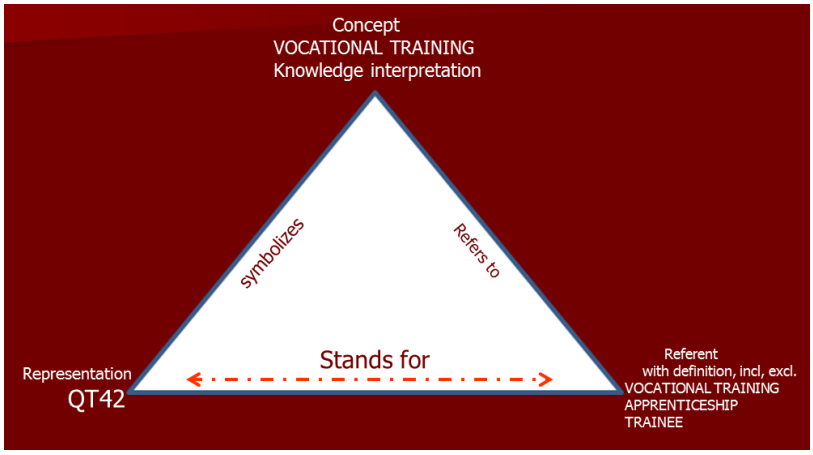


Figure 8 Conceptualization of the themes of communications (here Vocational training) following the semantic triangle

But the first step is to continue the slow discovery of the universe of GP/FM.

After Wonca 2007 and a 6 years latency period, we have had the chance to assist to the 2013 Portuguese congress of family medicine in Covilha, then to analyze the French CNGE 2013 congress in Clermont, followed by the SwissFamilyDocs congress , Zurich, 2014, the Belgian congress of GP/FM in Brussels 2014 and last one the LILLE CNGE Congress 2014.

We will present here the methods and the results of those analyzes of nearly 1400 communications of our colleagues.

5. Evolution of the method

The methods used have been influenced by the time elapsed since the beginning of the research. While ICPC was born before the blow up of laptop and Internet era, it has proven to be very well adaptable to electronic data base and researchers have worked with Dbase, Excel, Access and SQL for its development and related studies.

So the first step in developing 3CGP have been also those traditional methods. Computer content assisted analysis software is a tool used in qualitative research but is also quite performant to identify knowledge in GPS texts. Since this year the analysis of the abstracts have been done with the software Atlas.ti.

In the meantime the huge influence of semantic web technology was growing and ontologies are taking precedence on terminology for managing knowledge in the new era of distributed data. This particular field has been explored in depth and is exposed below. Participation in MERITERM group allowed to enter this area (www.meriterm.org)

5.1. Spreadsheet and database data on Internet

In the first time the development was marked by the use of information management method used in the 80'- 90'. We used a spreadsheet (Excel) and for abstracts Wonca 2007 a SQL database published online with the help computer scientists, thanks to a small grant received from the Wonca International Classification Committee.

At the annual conference of GPs and Portuguese family in Covilha, Portugal in 2013, it seemed interesting to go back to the research and to analyze the abstracts of this meeting. Then, the French National College of Teachers in General Practice (CNGE) hosts an annual conference that brings together GPs teachers and researchers in Lille this year 2014. Professor Berkhout, chairman of the scientific committee, has suggested to use the 3CGP/ICPC indexing system to index the abstracts submitted to the conference CNGE 2014 .The purpose is twofold. First, show the focus of the meeting to all abstracts presented. Second, by indexing before the review process, one could examine the contents of abstracts rejected compared to accepted. This comparison would inform the conference organizers and participants themselves .

It becomes therefore a process of operational research in quality of communications. This approach would complement the usual evaluation methods of quality of summaries. To be aware of the interests of members of CNGE and test the operational capability of ICPC and 3CGP, it was proposed by Prof. Laurent Letrilliard, Lyon, to code summaries of the previous congress held in CNGE Clermont Ferrand in 2013.

5.2. 2014 Use of a Computer-assisted qualitative data analysis software

The analysis of the 205 abstracts of Clermont 2013 was conducted using a Computer-assisted qualitative data analysis software (CAQDAS). Indeed our work could be assimilated to a qualitative research and "*content analysis as the use of replicable and valid method for making specific inferences from text to other states or properties of its source*" {Krippendorff 1969 quoted by Mairing 2000}

We have a large set of previously gathered codes as ICPC contains just a little bit less than 700 codes, and 3CGP version 0.2 show 153 codes. Coding means "*to bring similar data according to themes, concepts, etc.. Generate code from the data level (inductively) or according to existing ideas (deductively) as necessary*" {Silver & Lewins 2014 } . This implies we are using more inductive capabilities (linking strings of text to existing codes) than deductive ones (looking for missing concepts in texts and attributing new code).

After a review of the available products, and due to its user-friendly interface and its low cost for academic purpose the software ATLAS.ti has been chosen.

The work was completed by the analysis of 45 abstracts of SwissFamilyDocs 2014 and 37 abstracts of the Belgian research congress in general practice in 2014

A reporting structure has been developed to analyze abstracts of CNGE Lille in 2014 just after the submission process and blinded towards the reviewers. Computer-assisted qualitative data analysis software will be used to code the Lille abstracts as soon as they will be available.

One will find on the following pages the analysis of these six Congress followed by a comparison between them and a discussion of the strengths and limitations of the method.

The ICPC classification is available on the website *www.ph3c.org* in many languages.

The classification 3CGP version 0.2 is available on my personal website website *http://docpatient.net/mj/wonca2007/3CGPFMdeskcopy.pdf* . The Version 0.3.1 of 3CGP, current result of the work described above is available in annex.

5.3. Exploring semantic web

New tools in information management

Since the seminal proposal of Tim Berners Lee to turn the Internet of documents into an Internet of data {Berners-Lee 2001}, giant steps have been made by numerous researchers. At the same time the power of the laptops has grown exponentially. Gradually the health knowledge management field becomes a multidisciplinary case involving both domain specialists, terminologists, taxonomists computer scientists and computational linguists.

The semantic web, sometimes referred to Web 3.0 {Giustini 2007} and the huge possibility of distributed data have exploded in fields as varied as clinical guidelines{Kumar2004b}, information resources for consumer health{Smith2004}, mappings between medical classification systems{Cardillo 2008a}, Linked data{Bizer 2009}, ICD-11 development {Tudorache 2010b}, adverse events{Ceusters 2011b}, medical education {Blaum 2013}, terminological resources and Natural Language Processing {Neveol 2013}, NLP and ontology {Liu 2011}, biomedical data integration {Smith 2007}, interoperability {Qamar2008}

Semantic web and linked data

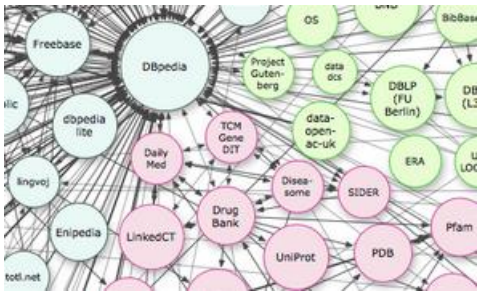


Figure 9 Linked data cloud (see *http://lod-cloud.net*)

The technology of semantic web and Linked data have emerged as a future solution to exchange data distributed between so many providers, the family physicians, spread around the globe. The considerable development of medical ontologies demonstrates the vitality of this field of discovery.

It became increasingly clear that advances in information technology, or ontologies, new languages such RDF { Allemang 2008} or SPARQL {Salvadores 2012}, transforming the Internet

into a huge distributed data base, associated with Natural Language processing techniques { Ittoo 2013} would allow strides in information management in general and, it is hoped, in information management of family medicine. The realization of the prediction that information is up to general practice what technology is up to specialized medicine { Van Dormael 2001} may finally be within reach.

This area will be developed later, but the interested reader can find more information on the website of the group is MERITERM *www.meriterm.org* and will find a training in ontologies (in French) at *http://docpatient.net/onto/formol.html*

Ontology, what's for a name ?

Understanding of computer scientist and computational linguist world of reference is not that easy. When dealing with the term "ontology", mainly all the fundamental papers in the field are referring to the seminal paper of Gruber in which he gives the following definition "Ontology is a formal specification of a conceptualization" {Gruber 1993} This not enlightening for a practicing doctor. Here, the term Ontology, although coming from the field of philosophy is not referring to the study of being or existence. The term ontology is used in the world of Artificial Intelligence and refers to an huge Internet based collection of interlinked terms describing the whole content of a domain in a dedicated machine readable format.

Indeed the second term to understand is the term formal. Formal could have many perceived meanings and one thinks directly to the form in the sense of shape, to formal in its legal sense as rules or to some kind of standard with specific format. In fact computer scientists are using formal in its mathematical sense i.e. a set of symbols understandable by machines. The problem is that the collection of term has to be read and understood by human beings also. Ontologies are not for human use but for machine use in a sequence; human to machine to machine to human. So one can say that ontologies are an arrangement of written human knowledge ready to be used by machines.

What about conceptualisation?

We remain with two terms to define ; specification and conceptualisation. Conceptualisation has already be addressed in this text in the above triangle of Ogben & Richard. Historically, the concepts, defined as mental representations or written form of an idea, are usually categorised and defined in written dictionary in an onomasiological way (list of words like an index) or semasiological way (list of senses of words like a thesaurus).

Ontologies are the machine based semasiological expression of all the possible occurrences of meanings and links of a word in a defined domain (i.e. all terms of sailing ships or all terms related to EKG) and this whatsoever the language used by humans. This possible multilingualism is due to the fact that the word representing the concept is related not to its lexical representation but to the concept it represents which could be expressed in various linguistic format. Usually the ontologies are in English working language but the specifications allows this miracle of interoperability of language. See for further insight the website *www.babelnet.org*

You says specification?

This introduces the last term of the definition proposed by Gruber "Ontology as a formal specification of a conceptualization" Specification refers to all the information technology tools patiently elaborated by hundreds of computer scientists and computational linguists since the 2000. First of all has been the URI (Unique Resource Identifier), proposed by Tim Berners Lee {Berners Lee 2002}. We know all the URL which is now for us the Internet address of a specific document. The URI is the specific address of a data, i.e. by example that you exist as a person (first data) and that your weight is 80kg (second data linked to the first). The second most important proposal is RDF (Resource Description Framework) {W3C 1999} and its relatives {W3C 2004} We understand very well HTML, this language which allows us to link a document to another. RDF is the name of that language which allows the link of a data with another data. There exist much more specifications and new languages, all derived from the work in Artificial intelligence but with those two you can understand the phenomenon of Linked data {Bizer 2009}

```
<!-- http://purl.obolibrary.org/obo/MFOEM_000080->
<owl:Class rdf:about="&obo;MFOEM_000080">
<rdfs:label>feeling tired</rdfs:label>
<rdfs:subClassOf rdf:resource="&obo;MFOEM_000006"/>
<obo:MFOEM_000165>tired</obo:MFOEM_000165>
<obo:IAO_0000115>The subjective emotional feeling
of tiredness, needing sleep.</obo:IAO_0000115>
</owl:Class>
```

Figure 10 The concept « feeling tired » in the Ontology of emotion in RDF (Obofundry)

Linked data and Dereferenced data

Examining the cloud of linked data on linkeddata.org you can see that billions of data are now interlinked by RDF and submitted to queries by dedicated robots. Whatsoever the activity, business, cars selling, books selling, civil affairs management or health care they are a lot of sites already managing linked data. The difference with the Internet of document is striking. If you question the linked data web site of the BBC asking information about an artist will not receive a link to a prepared page, but rather it will be created instantly to match the query. The screen you see is prepared at the very second. this is achieved by copying data from the relevant cloud. The computer scientist don't say copied, the use the strange term dereferencing data.

This allows the retrieval of all the knowledge needed on a subject while the data are not gathered in a database but dereferenced at a glance. The data is reachable through the Internet. Internet is now the database and this is the explanation of the word "distributed data".

The future of health care information systems

The next EHR

Now imagine that the data of your patients are not sent by mail to your electronic medical record anymore but that, with the due authorizations, you are allowed to dereference the data you need in all the hospitals or primary care settings which store information about your patient in the correct format. You will reconstitute in seconds and only for the time needed, the current record of your patient. Health-Data becomes Linked-Data {Dowling 2013}. As stated by Pierce and all " *Semantic Web*

technologies offer the potential to revolutionize management of health care data by increasing interoperability and reusability while reducing the need for redundant data collection and storage"{Pierce 2014}. This is the future of health care information system and of electronic health record (HER). This is behind our door {Fernández-Breis 2013} That's why scientists are working so hard to develop medical ontologies like Open Biomedical Ontologies consortium (OBO) {Smith 2007}, National Center for Biomedical Ontology { Musen 2011} or Linking Open Drug Data (LODD) for pharmaceutical research {Samwald 2011}

Interlinked publications

In the same way, the abstracts presented by doctors in congress, or the gray literature could be tagged by semantic web specifications, stay in their place into the local database of congress organizers or local organizations and a semantic web robot could traverse these sites, dereferencing the asked information through a common indexation system. One hopes to apply such techniques to indexation system for communications of family doctors, interlink them through the use of dedicated ontology in a semantic web GP/FM universe.

Related publications annexed :

- Roumier J, Jamoulle M, Vander Stichele R, Romary L, Cardillo E, Stichele R Vander. Towards a terminologies support system in Primary Care (Letter to the editor). *Inform Prim Care*. 2011;19:257–258. *http://hdl.handle.net/2268/171544*

- Cardillo E, Warnier M, Roumier J, Jamoulle M, Vander Stichele RH. Using ISO and Semantic Web standards for creating a Multilingual Medical Interface Terminology : A use case for Hearth Failure. In: *1Oth International conference on Terminology and Artificial Intelligence, Paris Oct 28-30, 2013*.; 2013:1–11. ***http://hdl.handle.net/2268/171534***

6. Comparative study of 6 congresses in GP/FM

6.1. Wonca Europe congres 2007

6.1.1. Introduction

As stated above, French colleagues gave me access to abstracts before the congress and I have been able to code all of them (998) and to manage an online database with a query module online before the congress.

It's worth to mention that the scientific committee lead by Bernard Gay has already chosen ICPC as an indexation tool for the management of the abstracts. One can see in the following figure this opening but also that the question of non-clinical themes of abstracts has been solved by opening the chapter A of ICPC

Figure 11 Wonca 2007. Indexation by ICPC (left) and opening of the Chapter A for non-clinical issues (right)

6.1.2. Method

With the help of Niels Bentsen, at this moment Chair of the Wonca International Classification Committee I have been able to found some budget to pay the development of an online database on a dedicated website. I had the access on line to the screen of the reviewers of the submissions to the congress. All 998 abstracts have been introduced one by one by hand in an Excel spreadsheet. I have read carefully all the abstracts, looking for main theme with in mind the distribution of Q-codes of Henk Lamberts described above. Gradually, days after days and weeks after weeks, I have identified more themes dealing with the core job of the family doctors and 3CGP version 0.2 has emerged . All the codes have been reported in the spreadsheet as shown in the following table 3. At this moment I was still using the name “meta-classification”. That’s why in the figure one finds the acronym META as column entries. I have tried to give maximum 3 codes of each classification, ICPC and metaclassification. In the figure, chosen example have max 3 codes META and 2 codes ICPC (ICPC1 and 2).

As an example for people not ICPC minded, the abstract n° 15 in the figure, titled “Audit of use of periconception folate in prevention of neural tube defects in Singapore” is coded with 3CGP codes QD31 which was used for Primary Prevention and QR21 used for field research, while ICPC codes W78 for pregnancy and W50 for treatment during pregnancy.

	1015 Abstracts of the Wonca Europe congress 2007, Paris, oct 2007	http://www.woncaeurope2007.org/				
abstra	ABSTRACT TITLE	META1	META2	META3	ICPC 1	ICPC 2
2	Are routine coagulation tests necessary in management of the epistaxis in the emergency department?	QD32	QD27		R06	B34
3	Awareness of Doctors in Primary Care Setting towards	QD31			D84	
8	Written Modular Examinations for Performance Assessment of Family Medicine Residents: A Pilot Study	QT11	QT42			
10	Yes, research in general practise does exist !	QR4			A99	
11	Standardized tool for the assessment of scientific articles expected to be published for GP.	QR4	QT61			
12	Influence of Berlithion upon the symptoms improvement in diabetic polyneurophaty	QD32			T89/T90	N94
15	Audit of Use of Periconceptional Folate in Prevention of Neural Tube Defects in Singapore	QD31	QR21		W78	W50
19	Assessment of Benzodiazepines' Usage in Family Medicine	QD33			P18	
20	Psychological Effect of Biopsy at the Endoscopy for the Early Detection of Gastric Cancer 0	QP24	QD42	QD44	D84	D37
21	Prevalence of abdominal obesity in primary care in France: results of ORNICAR transversal study	QD33	QD31		T82/T83	
22	Incidence of symptomatic thromboembolism and description of thromboprophylaxis practices	QD31	QD43		K94	
23	Six self administered questions in the waiting room: an help to explain uncontrolled hypertension in high risk patients seen in	QD33	QR6		K86/K87	
25	Sexual activity during pregnancy	QP52			W78	
27	Knowledge, opinions and expectations of CME among Polish general practitioners	QT43	QT14			
28	Dermatological presentations of infections caused by Mycoplasma	QD33			R99	S06

Table 3 Extract of the 2007 spreadsheet showing the title of the abstracts with corresponding codes

6.1.3. Results

Online database with query module

All the data gathered in the spreadsheet have been introduced by the team of computer scientists in an online database as shown in the following figure 12 which is a copy taken form a power point saved from destruction of my computer. Indeed a computer crash has provoked the loss of mainly all data and the web domain was too costly to maintain. So all this experience has disappeared.

A query module allowed the search of specific abstracts by using the indexation tools as retrieval units. One can see in the figure all the abstracts associated with the code QD8 : health provider personal life. Unsurprisingly, the correspondent abstracts dealt with burnout and or work satisfaction.

The system has been presented in a workshop held in the Paris conference. This workshop didn't attract a lot of people. Critics by some Wonca executives have been disappointing. There general comments was

that there was no need for a new indexation system in GP/FM and that the MeSH could fit with the GP/FM publications. No funds was available for an abstract database.

Figure 12 Copy of a power point. 2007 The online database with all the 998 abstract of Paris 2007. Here the query system shows the QD8 related abstracts

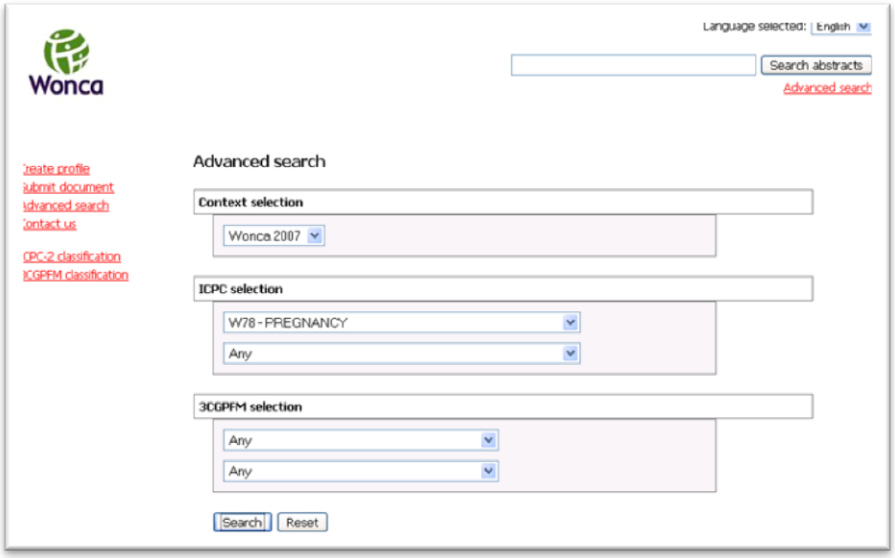


Figure 13 Copy of a power point. 2007 The online database. Query window

Meta-clinical (3CGP) content

The analyse of the non-clinical codes of the Paris congress is nevertheless interesting. 1999 non-clinical codes and 970 ICPC-2 codes have been used to code 998 abstracts.

The distribution of the non-clinical codes, let's use the acronym 3CGP now, shows that the majority of coding is in the QD Doctor's issue domain (Fig 14). Indeed the main used code into the QD domain was QD31 Health issue management (description of disease and its management) which implies that young participating doctors like to show their ability to describe disease process and management. At this moment the cow milk of drug therapy i.e. Diabetes, Lipid issues and so called Metabolic syndrome was very attractive. This is quite evident in the distribution of the chapters of ICPC-2 with the prevailing chapter T (which, for non ICPC minded readers, contains all those problems)(fig 15)

Wonca is an association of academics and teachers in GP/FM and this appears very well in the 405 codes used for teaching and learning (3CGP QT) and 434 codes Research & development (3CGP QR) (fig 14)

It's appealing that the domain of medical ethics(QE) has attracted only 10 participations while virtually nothing for Hazards (QH) which encompasses the environment issues. Structure of practice (QS) like settings, manpower, organisation of Primary care etc. and Patient's issue (QP) (like accessibility, acceptability, security etc. was no as attractive as research and teaching.

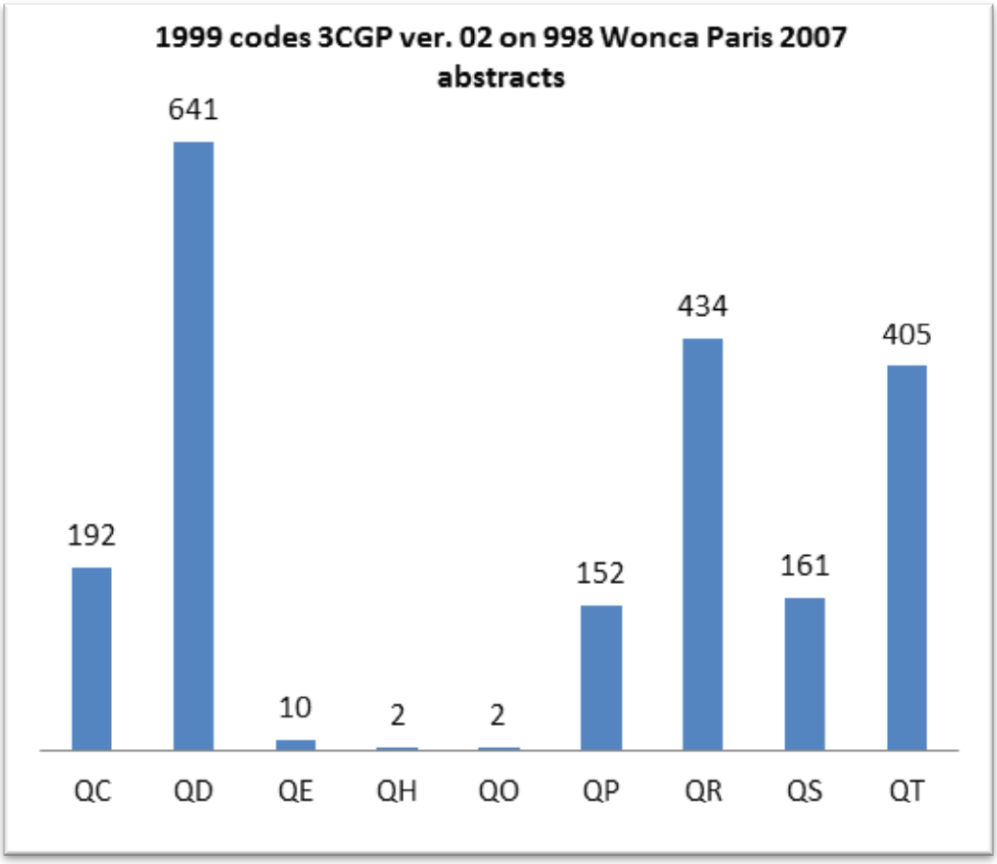


Figure 14 Wonca Paris 2007. Distribution of 3CGP main domains. On 998 abstracts

Clinical content through ICPC coding

For people used to see ICPC distribution through bar histograms, the Paris 2007 ICPC distribution is unusual. The distribution here don't follow what we are used to see in clinical settings when using ICPC to code clinical problems like reason for encounters or diagnosis.

Only the proportion of T (metabolic and endocrine), K (circulatory) are at the same level as in usual daily clinical data. The usual clinical based diagram shows much more item in the R chapter (Respiratory) and certainly not so much in the P chapter (Psychological) and Z one (social problems)

This could raise an interesting research question. Why the GPs don't point out the P & Z problems in clinical settings and discuss a lot about it during congresses?

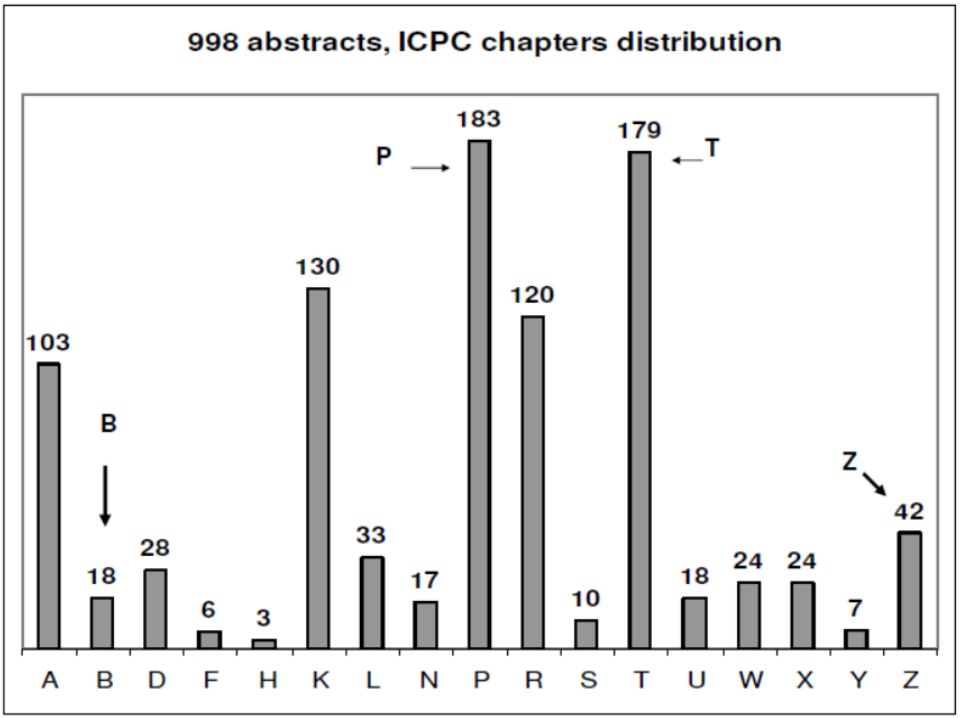


Figure 15 Wonca Paris 2007. Distribution of ICPC-2 chapters. On 998 abstracts

Through ICPC-2 indexing, (from a clinical perspective) it is evident that European researchers in GP/FM are confronted with and addressing a large amount of psychosocial problems, mainly depression and addiction (nicotine and alcohol)

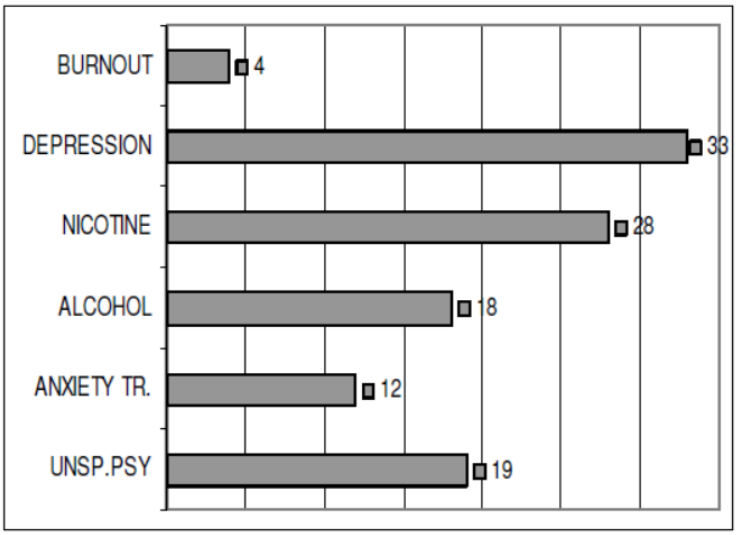


Figure 16 Wonca Paris 2007. Opening of P chapter

The distribution of process show that GPs like to speak about treatments and mainly about drug therapy (item 50). The second position is for immunisations (item 44) while all the others are really rarely discussed.

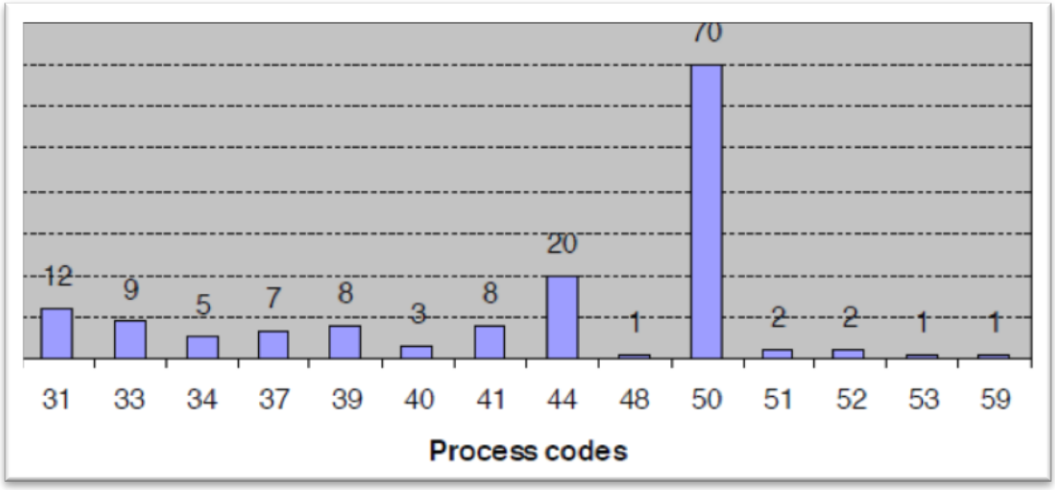


Figure 17 Wonca Paris 2007. Distribution of ICPC-2 process codes. On 998 abstracts

The cross between the various items of 3CGP and ICPC could give interesting pictures as in the following figure 18 which shows the non-clinical problems associated with the patient category Migrants (QC32) The interested readers could have a look at the power point still available on my personal website *http://docpatient.net/mj/wonca2007/243.htm*

Figure 18 Wonca Paris 2007. Crossing between 3CGP items . Here the category Migrants and its related discussed problems coded also in 3CGP.

In the above figure, one can see that the migrant issue was discussed in 4 abstracts with acceptability of health care, in two abstracts dealing with nutrition , in 2 dealing with accident and emergency issues (A&E) etc.

This could give an idea of the expected query for an item in an application prepared for a congress if the corresponding indexation systems are used during the submission of the congress. A participant to a congress, interested in the issue Migrant, and introducing this item in the query module, could receive all the related communications. The precise indications like authors & mail, title and content of abstract, place and time could be easily introduced in the system. Naturally, the two classifications ICPC-2 and 3CGP could be crossed.

This kind of tool could favour a quick communication between authors and attendees and will favour also, it's hoped, the development of social networking between researchers.

Moreover, as we will try to experiment, the RDF tagging (see 5.2 above) of the metadata of abstracts, the abstracts themselves and related indexation could open the door to a semantic web of knowledge between family practitioners by introducing it in the world of semantic web.

6.2. APMGF Covilha 2013 Annual Conference

Attending the Portuguese Association of General and Family Medicine 2013 Annual Conference (APMGF – Associação Portuguesa de Medicina Geral e Familiar) in Covilha was an opportunity to witness the youth and enthusiasm of attendees, as wells as the great quality of their work. The 128 submitted abstracts were peer-reviewed by the conference's organizers who expressed desire to include them in their association's journal.

Down below is a text summary of this work. Codification was done according to the ICPC-2 structure as well as the 3CGP system, validated six years earlier in Paris at the WONCA 2007 conference (ICPC-2 &

3CGP version 0.2, see Appendix).

Using the International Classification for Primary Care (ICPC) and the Core Content Classification for General Practice (3CGP) to classify conference résumés

Family medicine is like the Danaïd's barrel, a bottomless pit of knowledge. Each year, thousands of GPs work hard to construct hypothesis, develop research, gather data, elaborate reports and present their work. All this knowledge will be lost or remain hidden. Only few works will be published in a medical journal.[i] Books of résumés are not readily accessible or, if published as journal supplements, very difficult to search through. The Wonca Europe web site gathers résumés from 1995 to present but there is no indexation system to retrieve specified general practice (GP) / family medicine (FM) subjects.

As far as I can remember, there have been several attempts to index the Wonca Europe and World conferences résumés with the International Classification of Primary Care (ICPC). This was not working. ICPC address only clinical situations and is unfit for the non-clinical ones.

In the 80s, the late professor H. Lamberts from Amsterdam University had developed a classification called Q codes (as Q is not used in ICPC) to index, jointly with ICPC, the main publications of medical journals available in his department. In 2006, reusing the Q codes, I have developed a classification of non-clinical issues addressed by GPs called 3CGP[ii] allowing indexation of Wonca congress communications. 3CGP stands for Core Content Classification in GP/FM and is divided in 8 domains, subdivided in categories and subcategories containing currently 164 rubrics. To develop it, I have read and indexed personally the 1000 résumés of the Paris congress in 2007 and presented my wor during this conference.[iii] This work has laid dormant during 6 years and opened one eye in June 2013 in Belém, Brazil, during the last SBMFC conference. Indeed the organizers of the 2016 Wonca world conference in Rio de Janeiro are looking for an résumé indexation system and have expressed interest in 3CGP.

In the mountains of Portugal the idea woke up for good. When in Covilhã, invited by APMGF to the Portuguese 18th national conference of family medicine, Sept 28, 2013, I have read with interest the ''Livro de Resumos''. The 128 résumés of very interesting work done by so many young and enthusiastic GPs have been indexed with 3CGP and ICPC. I present here the main results (full data available on request)

203 ICPC codes were used to classify 119 résumés, 9 were not codable at all by ICPC. 36 codes are in component 1 (Symptoms – Complains), 123 in component 7 (diagnoses) and 44 process codes, of which 30 are related to drug prescription (-50) and only one about referral (-67). One sees on the figure the overrepresentation of P, T, W and Z chapters.

There are 8 communications about depression (P76), 4 for dementia (P70) and five for tobacco issues (P17). The overwhelming domination of T chapter is due to the combination of diabetes, obesity and lipid issues, always attractive for young doctors. Less expected are the 8 communications about pregnancy and the 7 addressing social issues.

With the 3CGP eye one sees 36 communications describing disease (QD32 ; health issue management), 6 concerning children (QC11), 8 about aged people (QC14), 6 about relationships with secondary care (QS2). The palm goes to Teaching (39 Critical reading QT53) and Research (25 QR2 Epidemiology) . 4 are dealing with primary prevention (QD41),

12 with secondary (QD42), 4 with tertiary (QD43) and 8 with quaternary prevention (QD44). Only one addresses an ethical issue.

The two tools show that communicating GPs in Covilhã prefer diseases (QD32 and component 7), looking for them (QD42), drugs (-50) and the so-called metabolic syndrome (diabetes + weight + lipid) but with deep interested in mental health and social problems and pregnancy. The influence of the teachers and vocational training is evident with many communications about epidemiological researches (QR2) and critical reading (QT53).

Much remains to do before 3CGP becomes a professional tool allowing participants to search their preferred domain in a conference program but yet one can have a look at résumés with a different angle and at least, just like this communication which shows the interest of "quebra-cabeça" to prevent dementia[iv], 3CGP allows me to activate my neurons by following the interests of a young generation of dedicated doctors.

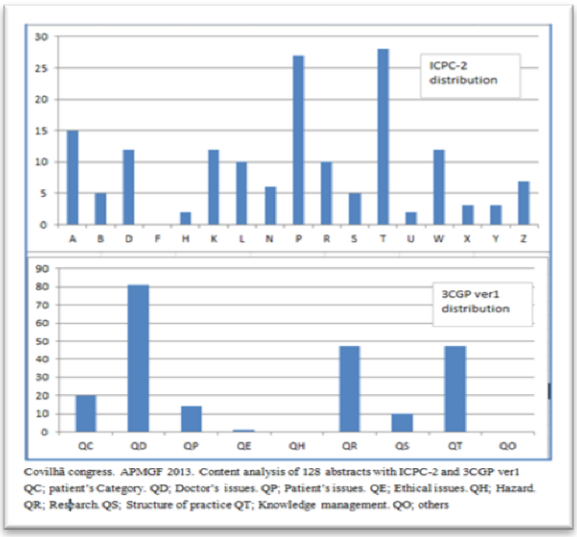


Figure 19 Main data, APMGF Covilha congress 2013

[i] Hummers-pradier E, Stöcker J, Fischer T. Which Résumés Do Get Published? – Output Of German Gp Research 1999-2003 [Internet]. WONCA Europe Conference; 2007 Oct; Paris, France. Available from: http://www.woncaeurope.org/content/which-résumés-do-get-published-%E2%80%93-output-german-gp-research-1999-2003

[ii] Jamoulle M. Core Content Classification of General Practice / Family Medicine (3CGP) ver 0.2 Oct 2007 [Internet]. Available from:http://docpatient.net/mj/wonca2007/3CGPFMdeskcopy.pdf

[iii] Jamoulle M, Hullers-Pradier E, Duhot D, Letrilliart L, Gay B. Towards an e-archive for Wonca documents. Workshop. Wonca Europe Conference; 2007 Oct. Paris, France. Available from: http://docpatient.net/mj/wonca2007/243.htm

[iv] Maltez R., Sá MJ., Gonçalves R. Terceira ronda: a idade em que os quebra-cabeças, quebram demência? Livro de resumos. C0353. 18° Congr. Nac. Med. Geral e Fam. 2013. (Quebra cabeças ; casse tête)

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Some more about Portuguese GPs.

In the P chapter (fig 20), Portuguese GPs are using Symptoms and Complaints component in P while not in T chapter

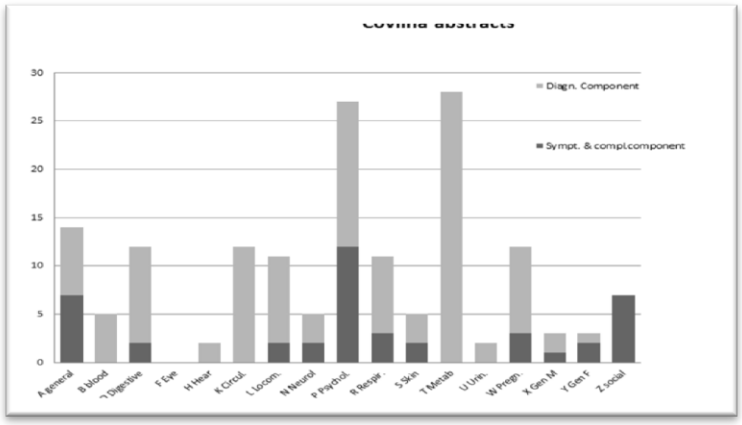

Figure 20 Sympt.&Complaint component (dark) and diagnostic component (grey) ICPC in Covilha

They like to discuss drug and treatment as shown in the distribution of the process codes (fig 21)

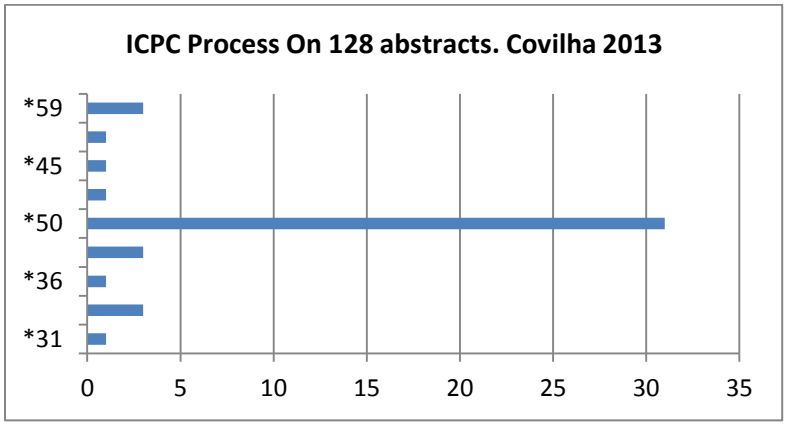

Figure 21 Covilha . Distribution of ICPC Process codes

When addressing P problems, Alzheimer, tobacco and depression have been preferred issues to discuss about (fig 22)

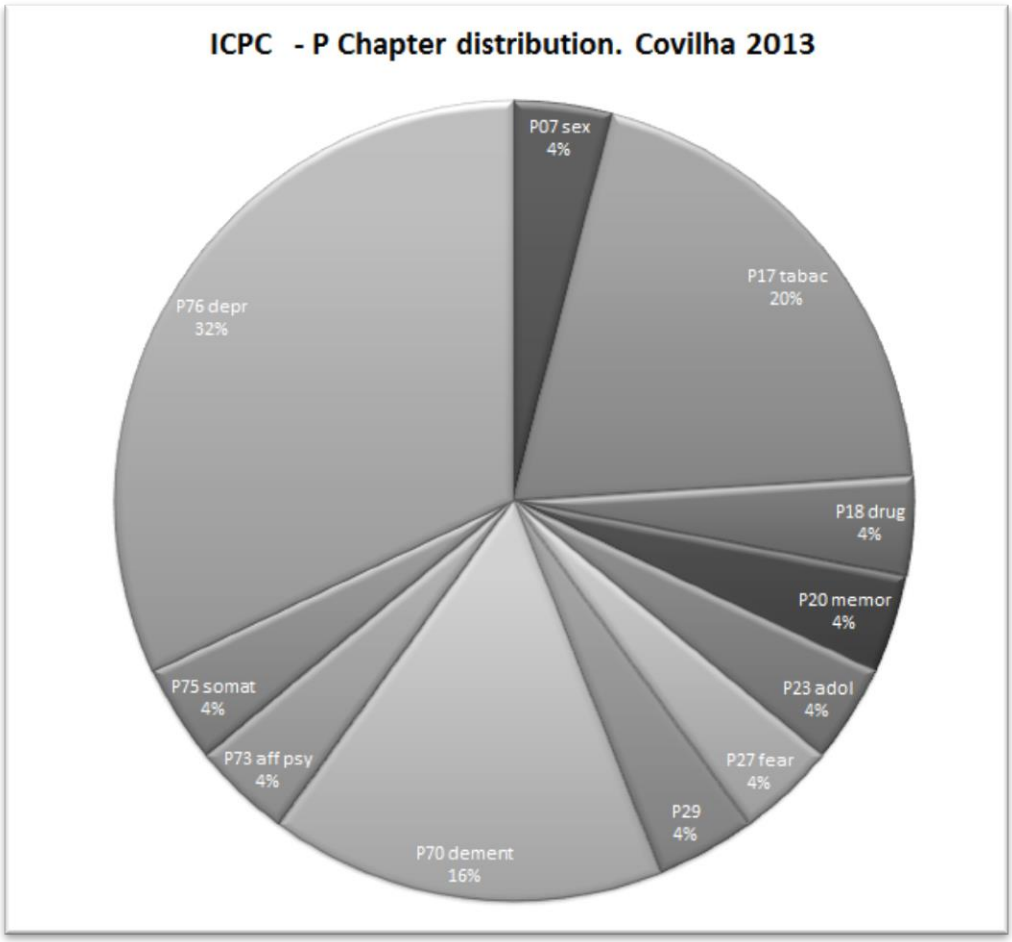

Figure 22 Distribution of 25 P problems on 128 communications in Covilha

Related publication annexed:

Jamoulle M. Using the International Classification for Primary Care (ICPC) and the Core Content Classification for General Practice (3CGP) to classify conference abstracts. Letter. The Portuguese Journal of General Practice (RPCG) n° 29 issue 5. p 66-67 Nov 2013
http://dazbook.com/euromedice/rpmgf-setout-2013/#/66 *http://hdl.handle.net/2268/171601*

6.3. CNGE Clermont congres 2013

6.3.1. Introduction

The College of General Medicine Professors (*Collège national des généralistes enseignants – CNGE*)[1] organize a yearly conference gathering general medicine teachers and researchers. In 2014, the conference will be held in Lille. The scientific committee's president is Christophe Berkhout and is vice-president was Marc Vanmeerbeek, general medicine professor in Liège.

The CNGE Conferences

A classification tool designed to enable general practitioners (GPs) to codify non-clinical terms was presented during the 2013 Family Medicine Conference in Paris. This tool is named Core Content Classification of General/Family Practice (3CGP).

This, alongside other tools such as the International Classification of Primary Care (ICPC), enables GPs to index their scientific endeavours during conferences. Adding to these tools was the inclusion of the term « Quaternary Prevention » (P4) and its implications, which helps to build an ethical and philosophical framework to guide GPs in their activities.

Online abstract classification of the Lille 2014 Conference

Professor Berkhout suggested re-examining the abstracts submitted to the CNGE 2014 conference using these classification tools. This was done to 1) highlight the key interests of the attendees and 2) to distinguish the contents of the accepted abstracts from the rejected. This comparison would in turn inform the conference organizers and participants on the most popular topics that year.

This was to be done in addition to the regular peer-reviewed process of abstract submissions. Professor Laurent Letrilliard suggested to do this classification exercise with previously-submitted abstracts (the 2013 Clermont Ferrand CNGE conference) conference to understand last year's topics of interests and validate such methods.

6.3.2. Methods

Clermont Ferrand 2013 abstract analysis using Atlas.ti software

The two first experience Paris and Covilha have been analysed with the now traditional method of copy and paste and Excel spreadsheet. The next congress are analysed with a qualitative research tool. The 205 abstracts were extracted from Clermont Ferrand's database. We retained the ID / Title / Body data which were analysed qualitatively with qui ATLAS.ti[2] . Keywords were manually analyzed.

[1] Collège national des enseignants en médecine générale' www.cnge.fr
[2] ATLAS.ti Scientific Software Development GmbH, Berlin. http://www.atlasti.com/

Preliminary analysis of abstract presentation

The English language was frequently used. This was not a problem since it is common place in information technology and is written without diacritics. However, some keywords were not possible to translate from English to French (for instance, “Gut feeling” in Abstract 33 for which there was no direct translation).

Capitalization, letter cases and word genders may have an impact on keywords. In French lemmatisation[3], the employment of the singular masculine gender of the words, as well as the use of lower cases whenever possible, is standard. Proper nouns need to retain their capitalization (Alzheimer’s disease, for instance). Keywords should also abstain from being shortened by initials and/or acronyms, unless the abbreviation refers to a well-defined and commonly understood aspect of the literature (e.g. COPD).

The lack of standardization of the keywords testifies that authors seem to refer to a common realm of practice, which is also known as a « world of reference » or, in the field of logics, « the discourse universe ».[4] It is a spontaneous collection of terms that CNGE’s members consider to be belonging to their practice.

Keyword analysis

261 keywords were extracted from the database. Concepts that pertained to general and family medicine were further scrutinized. Keywords were not standardized according to any given structure. Some keywords were found to be intuitive but operationally challenging. For instance, an abstract entitled “Barriers of the use of emergency contraceptives by women aged 18-24” defined the keywords as “Barriers”, “Women”, “18-24”, “age”, “contraception” and “emergency”. In spite of re-wording the keywords (in French) in the following order: “Barriers”, “Women aged 18-24” and “Emergency contraceptives”, the semantics of the term “Barriers” was not fully grasped.

Keywords – Frequency distribution

The simple extraction of keywords yielded 658 entries which needed to be cleared from hyphens, discourse connectives and other conjunctions. After removal of abbreviations, double entries and terms deemed « too general », 261 keywords were usable. The following table shows the words that appeared at least three times. CNGE members will easily interpret these results.

We were surprised by the occurrence of the terms « General Medicine » from which we can further extract three mentions of « GM », twelve mentions of the word « General » and twelve mentions of the word « Medicine ». We sense a desire from these authors to reaffirm their specialty via a surprising repetition of these terms. It would be rather unusual to read abstracts submitted to a cardiology conference in which professionals would feel the need to repeat their specialty as a keyword in so many instances. We suggest that such repetition is used as a means to convey identity and reassurance to the authors.

[3] In morphology and lexicography, a lemma is the canonical form, dictionary form, or citation form of a set of words (wikipédia)

[4] Umberto Eco. Dire presque la même chose. Grasset & Fasquelle. 460p. 2007

activité physique	3
atelier	3
benzodiazépine	3
cancer	3
certification	3
des	3
déterminants	3
généraliste	3
installation	3
maladie d'Alzheimer	3
MG	3
MSU	3
patient	3
primaires	3
recherche	3
recrutement	3

situation	3
tutorat	3
adolescent	4
apprentissage	4
contraception	4
essai clinique randomisé	4
relation médecin malade	4
communication	5
diabète	5
formation	5
social	5
soins	5
soins primaires	5
vaccinale	5
dépistage	6

éducation	6
pédagogie	6
portfolio	6
prescription	6
prévalence	6
recherche qualitative	6
représentation	7
évaluation	8
thèse	8
interne	10
générale	11
enseignement	12
médecine	12
stage	12
compétence	13
médecine générale	27

Table 4 Keywords detected in at least three abstracts with number of abstracts CNGE Clermont 2013

Preliminary analysis of 25 abstracts of the 2013 conference

At first, we used ICPC and 3CGP classification tools with 25 abstracts in order to validate our method. We performed an analysis of all difficulties encountered in the process. The process was found to be promising and doable, with potential immediate consequences for the 2014 conference organiers.

Content analysis of the 2013 abstracts via software ATLAS.ti

The 2007 Paris and 2013 Covilha abstracts were analyzed using MS Excel. This did not allow for a rigorous content analysis and halted contents export to other software.

Following a suggestion from Dr. Frederic Ketterer, sociologist at the Liège University Department of General Medicine, we used a qualitative analysis software (ATLAS.ti[5]) because it enabled us to carry the required analyses at a relatively low cost.

ATLAS.ti enabled to map specific words to already-defined CISP and 3CGP terms. Furthermore, the classification process enabled the discovery of new themes. The same theme could not reappear in the same abstract more than once, and (generally) no more than six themes were identified in each abstract.

Figure 23 shows a print screen of the codification using ATLAS.ti which shows a CNGE 2013 abstract and the identified themes.

[5] ATLAS.ti Scientific Software Development GmbH, Berlin. http://www.atlasti.com/

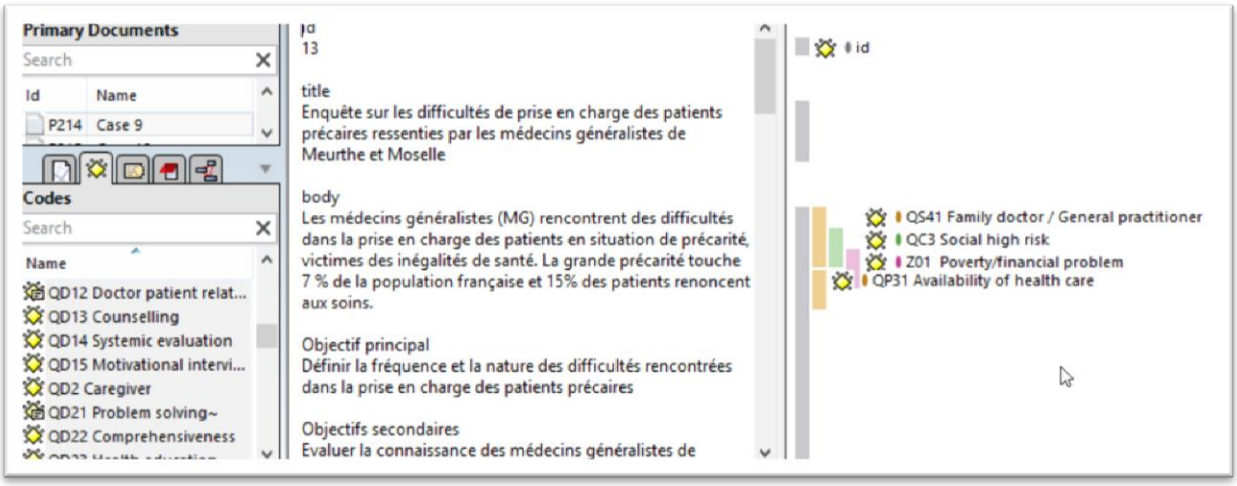

Figure 23 ATLAS.it Sotware – After being scanned, coded themes appear on the right column: 3CGP codes (QS41, QC3, QP31) and one ICPC code (Z01). Here, the theme identified is the offer of family medicine services in vulnerable populations

6.3.3. Results

6.3.3.1. **Preliminary recommendations to Lille 2014 Scientific Committee**

- **Abreviations & acronyms:** Halt external readers' comprehension
- **Title** : A good title should be able to provide (almost) all keywords to code an abstract's theme
- **Structure** : A good structure (Objective / Methods / Results) guarantees a good mapping of the abstract to its core themes. Concepts absent from the title should be identified in the objective or the methods sections. In regards to keywords

A standard categorisation of keywords according to MeSH terms as defined by INSERM[6] should be expected from authors and would enable an easier classification process. However, this may induce further limitations as discussed above. However, we recommend the following:

- **Format**
  - ✓ Use words in the simplest singular and masculine forms, without capitalization (except for proper nouns).
  - ✓ Avoid using the English language in keywords.
  - ✓ Avoid abbreviations and initials unless referring a well-defined and understood acronym (e.g. COPD, HTA).
  - ✓ Hyphens should be used to decipher concepts and ideas, but not words.
  - ✓ Do not restrain from using syntagma (e.g. family medicine, patient participation).
- **Contents**
  - ✓ Title should encompass most key concepts. Otherwise, these concepts should be found in the Objectives and/or Methods sections of the abstract.

[6] Le MeSH bilingue anglais – français http://mesh.inserm.fr/mesh/

- ✓ Ensure a well-defined structure with Objectives, Methods and Results. The most common mistake was to include results in the Objectives section.
- ✓ Choose keywords wisely. Those terms should highlight the core contents of the abstract.
- ✓ Remember that the keyword is meant to be understood by external readers. For instance, use the terms « student training » as opposed to « training », « professional liability » as opposed to « liability". Keywords should thereby be descriptive enough for an external reader to understand it within their own realm of study.
- ✓ If time allows it, consider using the INSERM website as a means to find a corresponding MeSH term. An interesting case would be not to find an appropriate MeSH. Clearly indicating not having found it would enable the reader to understand the specificity of the proposed contents.
- ✓ Ensure general readability. The abstract should be proofread by an outsider to verify whether they have understood the contents.

Lille 2014, ensuing consequences of the recommendations

The Lille 2014 conference organizers have adopted most of the recommendations we made and have transformed the submission platform. The new structure is more organized than previously (Figure 24).

It is now suggested to choose from the ICPC chapters to classify the abstract if its contents is applicable (Figure 25).

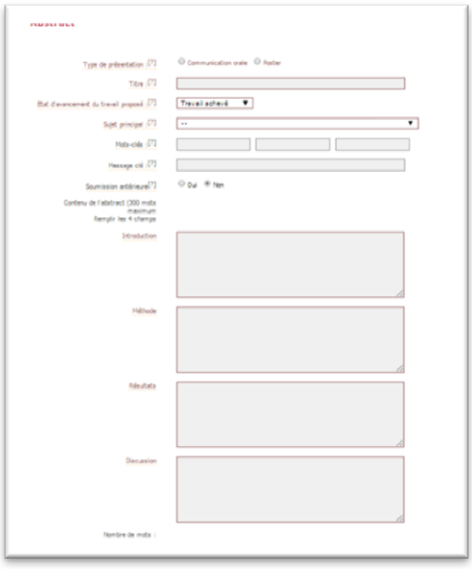

Figure 24 CNGE Lille 2014 New online submission form.

6.3.3.2. Results; 205 abstracts from Clermont Ferrand 2013 using ATLAS.ti

717 codes were used to map the abstract to their respective themes (one reviewer). ICPC-2[7] allowed to codify clinical items and (104 codes used). 3CGP 0.2[8] was used 613 times in the 205 abstracts. There was between 3 and 4 codes per abstracts (717 codes/205 abstract) and on average one 3CGP 0.2 per abstract (717/104).

Distribution of ICPC codes Clermont 2013

We sought to identify the major themes emerging from our classification. No abstract dealt with urological problems (fig 26). It is important to note that contraception is placed in Chapter W of the ICPC alongside pregnancy and family planning.

Medical acts were indicated with –proc (for process) (fig 27). Therapeutic interventions were the most frequently cited (17 citations / 26, coders starting by « 5 » in Figure 6). Sixteen mentions pertained to psychology (“P”) and 14 for social issues (“Z”). This high proportion of Z interventions or pathologies merits attention, as most doctors who used ICPC typically do not refer to the P section, and almost never to the Z section which rarely is quoted in more than 2% of entries. An interesting question thus surfaces: Why do doctors do use few Z coding in clinical practice but use it more frequently for conferences?

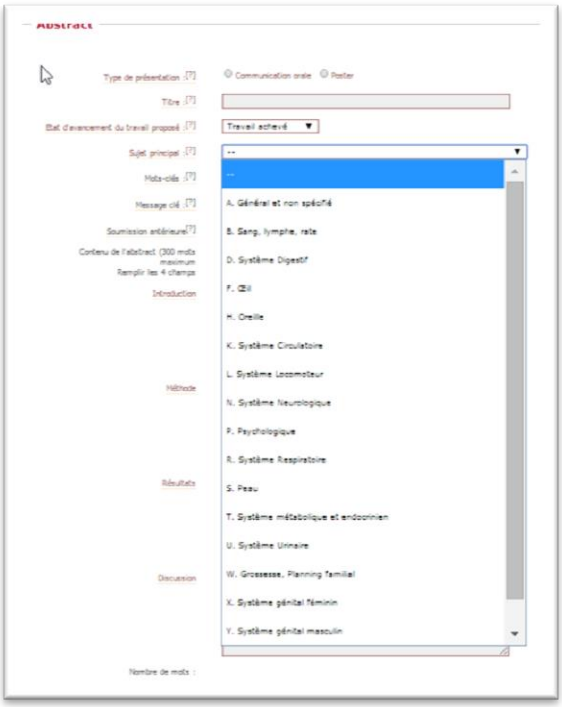

Figure 25 CNGE Lille 2014 online submission form. ICPC grid

[7] ICPC copy desk available on http://www.kith.no/upload/2705/ICPC-2-French.pdf
[8] 3CGP version 0.2 (2007) available on http://docpatient.net/mj/wonca2007/3CGPFMdeskcopy.pdf

The relatively low proportion of ICPC (104 codes for 717 total codes) implies that authors rarely refer to their clinical work. This can be explained by the nature of submitters and their preferred research objectives, which revolves around teaching.

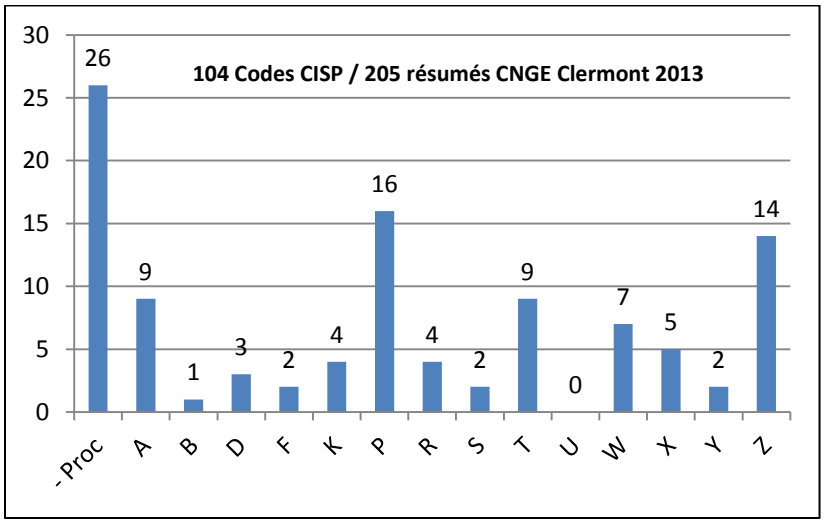

Figure 26 Clermont 2013. ICPC Chapters (A – Z) and Process (-proc).

-30 Medical Exam/Eval-Complete	1
-31 Medical Examination/Health Evaluati...	1
-36 Faeces Test	2
-37 Histological/Exfoliative Cytology	1
-43 Other Diagnostic Procedures	1
-44 Preventive Immunizations/Medications	3
-49 Other Preventive Procedures	1
-50 Medicat-Script/Request/Renew/Inject	9
-53 Instrument/Catheter/Intubate/Dilate	1
-55 Local Injection/Infiltration	1
-57 Physical Medicine/Rehabilitation	3
-58 Therapeutic Counselling/Listening	2
-59 Other Therapeutic Procedure NEC	1
-62 Administrative Procedure	1

Figure 27 Process codes. Coding of 205 abstracts Clermont 2013

Figure 28 Social problems. Coding of 205 abstracts Clermont 2013

Figure 29 Psychological problems Coding of 205 abstracts Clermont 2013

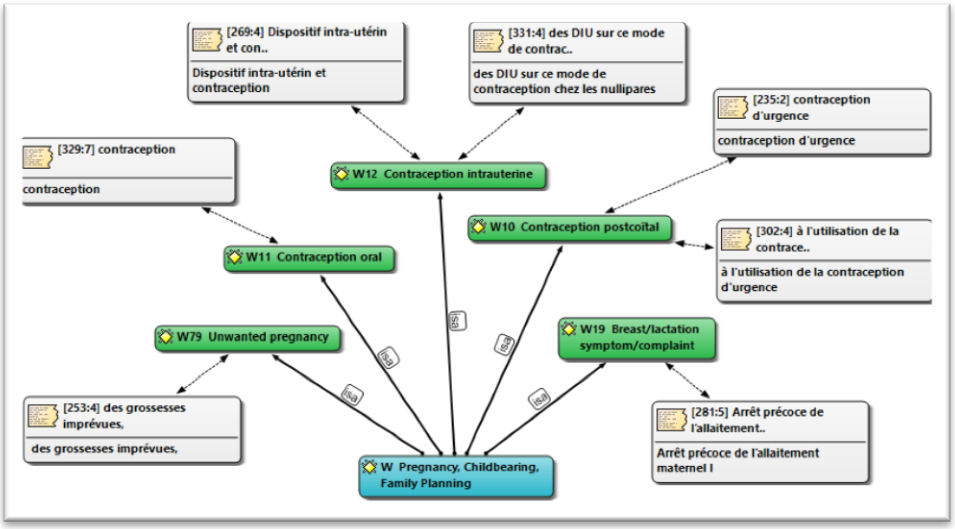

Figure 30 Coding of 205 abstracts Clermont 2013. 7 Chapter W(pregnancy) coded verbatim

A closer look at the 14 Z codes (fig 28), the subcode Z01 (poverty) emerged 5 times, for which the terms « great precarity » reappeared most often. Work-related problems come second with 3 occurrences. The 16 P codes are shown in figure 29. Substance abuse recurred frequently.

In order to convey effectively the mapping classification process, Figure 9 shows 7 W codes as detected in the abstracts

Distribution of 3CGP codes Clermont 2013

Non-clinical items were coded according to 3CGP and was mapped 613 times among the 205 abstracts. 3CGP (Core Content Classification in General Practice/Family Medicine) includes 9 categories including "other" (QO) (fig 31)

The letter Q is used because it is not in the ICPC and to honor Professor Henk Lamberts (University of Amsterdam) who first suggesting incorporating Q-Codes linked with ICPC to index his family medicine journals in his department (1987).

Q-Codes do not encompass all knowledge in primary care but were still the most precise method to classify more than 1400 conference abstracts.

A careful examination of the abstracts allows to realize missing themes. When analyzing French abstracts, the QR section (for Research and Development) has considerably grown (See Appendix for the current 3CGP codes version 0.3).

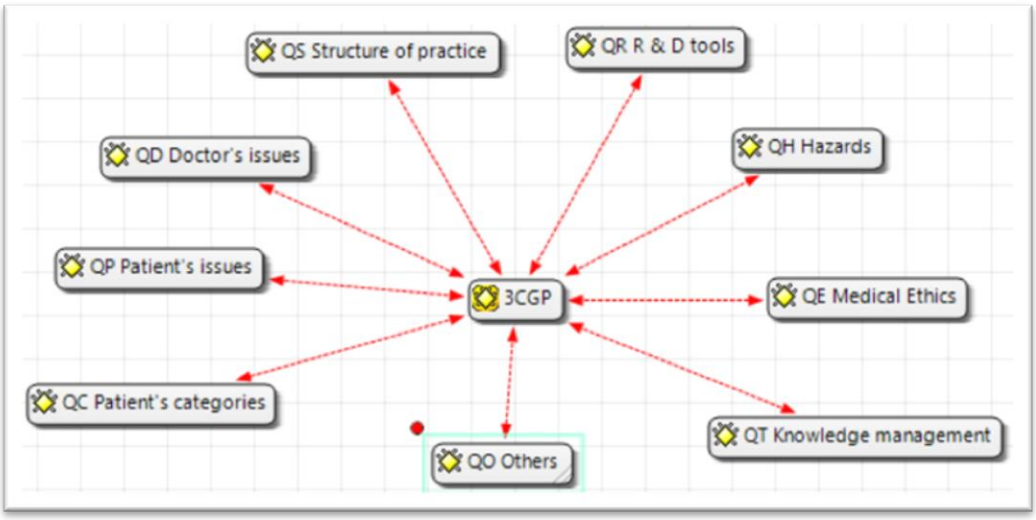

Figure 31 3CGP domains including QD0 for 'Other'

Figure 32 presents the distribution of 3CGP codes as mapped after careful reading of the 205 abstracts. It is not surprising to realize the important frequency of the QT and QR domains (Knowledge Management and Research and Development respectively) since the CNGE conference is primarily aimed at researchers in the field of pedagogy. Patient perspective (QP) and physician-specific characteristics (QD) are poorly represented.

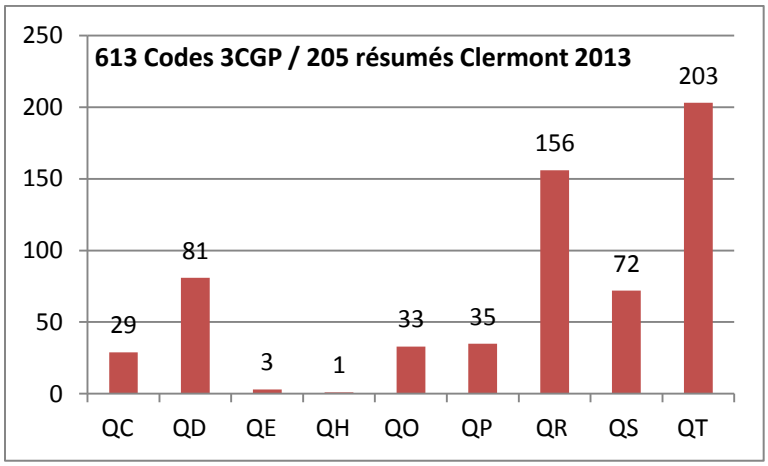

Figure 32 Distribution of 3CGP codes. Clermont 2013

The QT domain (fig 34) allows us to appreciate the current performance of 3CGP in regards to training and teaching. We should not that this appraisal was not standardized and carried by only one reviewer. Further collaborative studies will strengthen this proposal.

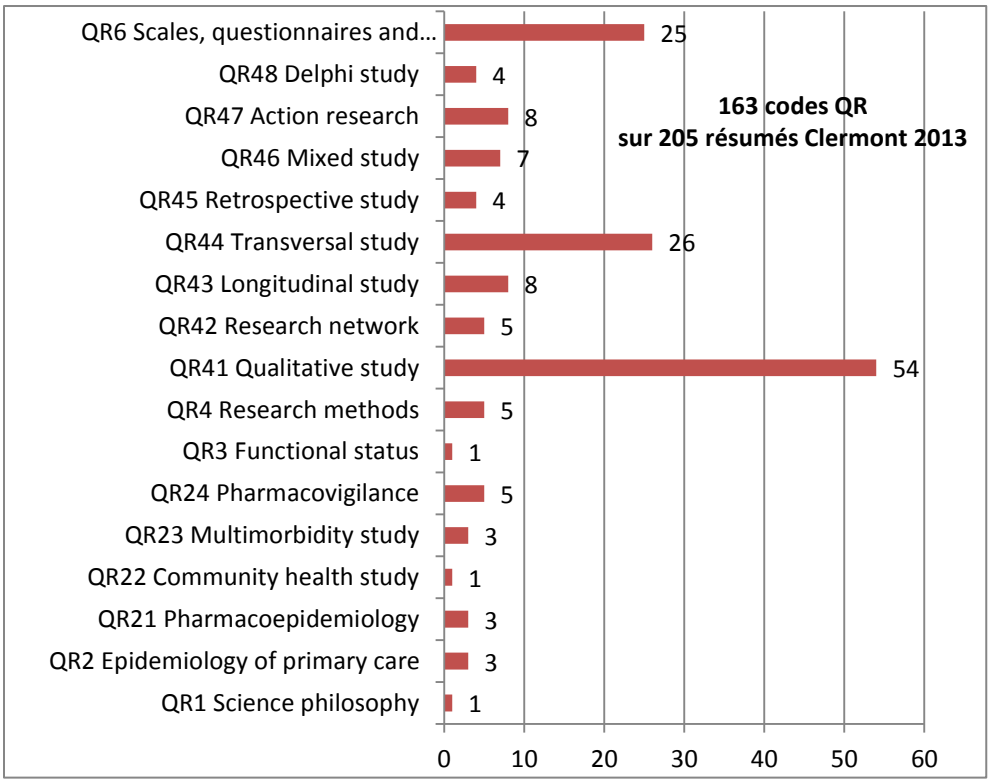

Figure 33 QR codes distribution (Research and Development)

Figure 33 highlights the high frequency of qualitative studies in the QR codes distribution. Twenty-five abstracts mention using scales, questionnaires or vignettes. Our small sample size limits our interpretation and appreciation of code reoccurrence. However, our preliminary analysis shows that qualitative studies are focused on QT42 (Vocational training, or interns), on QT46 (Academics,

identification of training programs) on QT13 (Teaching & training evaluation) and QT11 (Pedagogical methods) (Figure 13).

Literature reviews were also mentioned 15 times (QT53 Critical reading & review).(fig 34)

QT62 (Online editing) is interesting(fig 35) This deals with the use of the Internet in knowledge dissemination, including international journals and online training programs. We will discuss a little bit later

The mapped verbatims (Figure 36) will be used in a later analysis to inform the conceptualization of of the Natural Language Processing Language, a semi-automatic coding system.

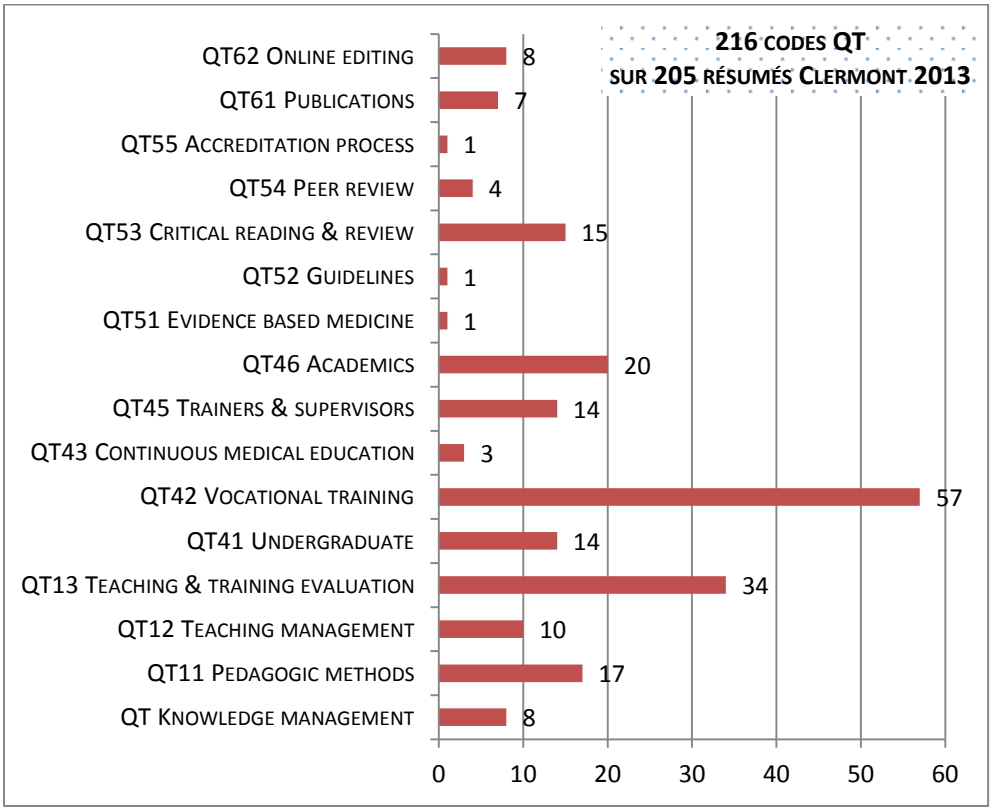

Figure 34 QT codes distribution (teaching and training)

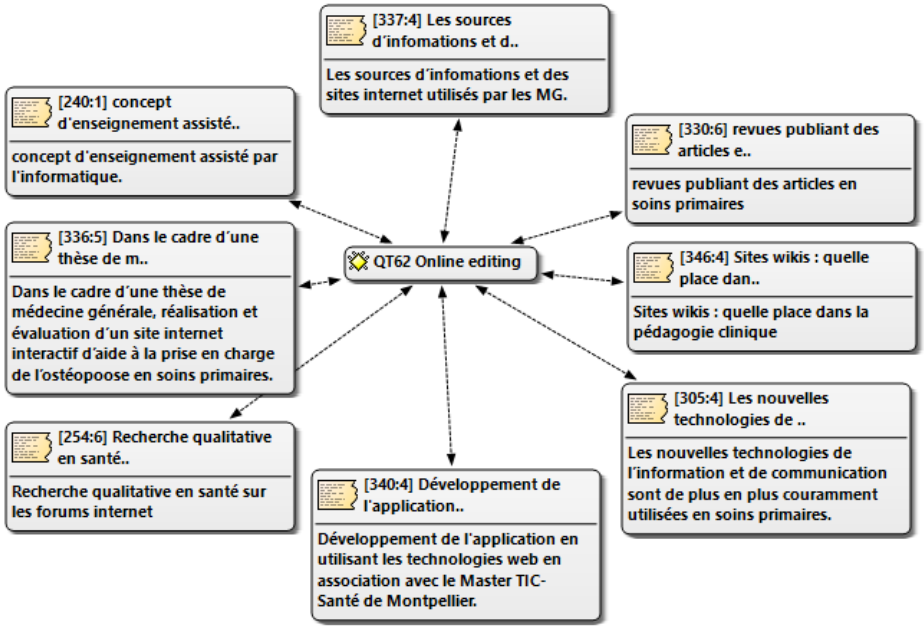

Figure 35 QT62 (online editing) and their verbatim. 205 abstracts Clermont 2013

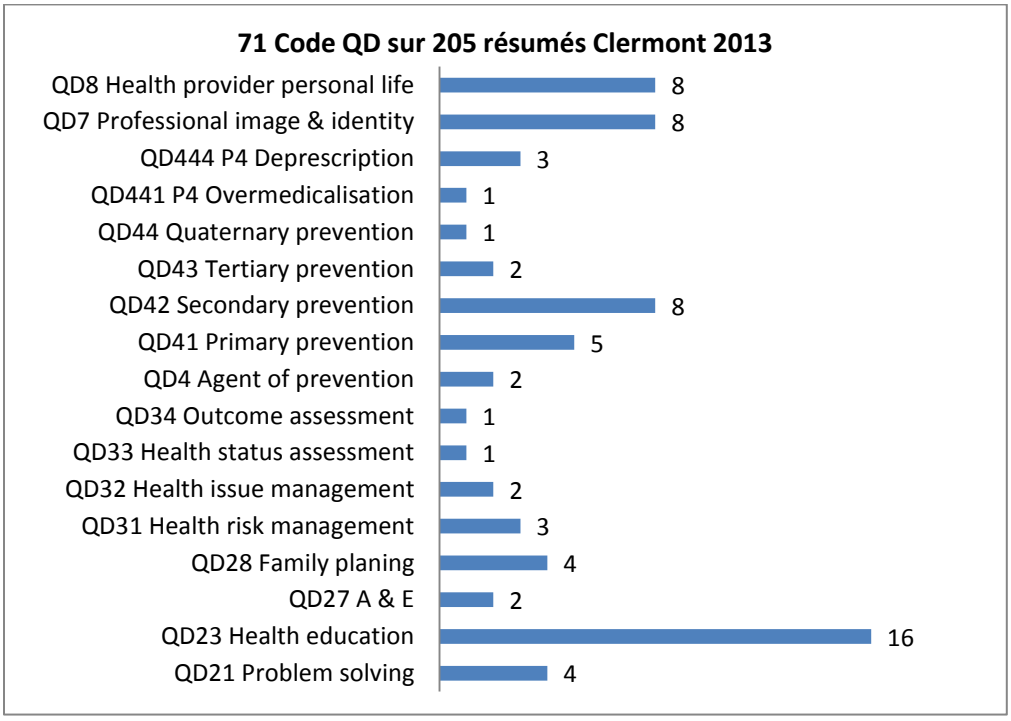

Figure 36 QD distribution (Doctor's issue)

The re-occurrence of physician-specific codes highlights the participant's desire to further investigate issue that pertain on the professional and personal lives of physicians (QD7 & QD8 in fig 36). The preventive domain (QD4) was mapped 22 times. Quaternary prevention (Knock's Effect) was mentioned 5 times whereas there were 3 mentions of De-prescription, a relatively new field in family medicine. Not

unlike other conferences, ethical and environmental issues (QE and QH, respectively) are seldom mentioned.

We shall now deal with the « other » category. This theme was originally proposed to capture potentially missing categories in 3CGP, but was broadened to include arising linguistics issues and resding difficulties.

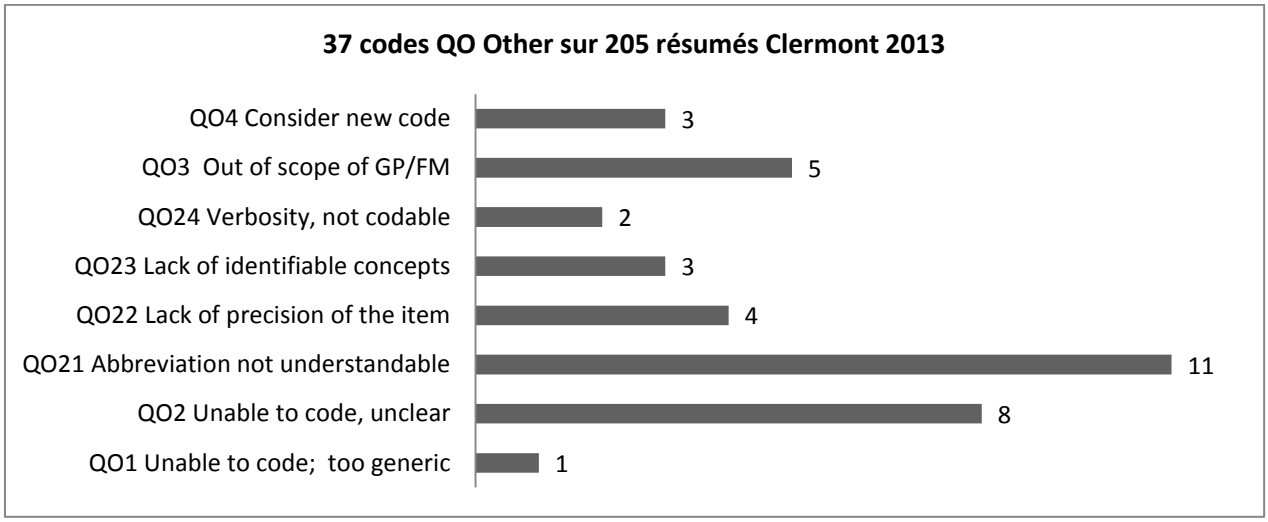

Figure 37 Les codes QO dans les 205 résumés CNGE 2013

Three Q04-coded abstracts (Fig 37) suggest missing categories in 3CGP. Two pertain to randomized controlled trials, which is worthy of its own category in the QR domain. The third deals with cancer patients, which has no category of its own in ICPC (no term as generic as “cancer”). Similarly, there is no category for “infectious disease”. These two generic terms, however, are categorised in the International Statistical Classification of Diseases and Related Health Problems. Such broad terms are however typically reserved to non-scientific literature.

CNGE Clermont 2013 Acronymes et communication

SASPAS et **ETP**

Introduction : **L'ETP** fait partie intégrante de la loi **HPST**. Nous proposons déjà, aux **IMG**, des ateliers sur la posture éducative et les programmes **d'ETP**. Comment aller plus loin ?
Méthode : Une association médicale pluridisciplinaire (**AFRET**) s'est proposée pour être lieu de **SASPAS**. **L'AFRET** réalise des programmes **ETP** validés par **l'ARS** pour des patients atteints de : **DT2**, **HTA** et **BPCO**. **L'AFRET** est composée de **MSU**, maîtres de stages hospitaliers, **IDE** libérales et hospitalières, pharmaciens d'officine et hospitalier, kinésithérapeutes libéraux, diététiciennes libérales et hospitalières, psychologue, professeur en spot adapté. Tous ont reçu, ensemble, la formation initiale de 40h en **ETP**. Actuellement sont en cours des programmes **DT2** et dès septembre 2013 **BPCO**. Ce lieu de formation a été agréé par **l'ARS**. Les internes en **SASPAS** y effectueront un tiers temps et interviendront, du diagnostic éducatif aux ateliers **ETP**, jusqu'à la synthèse finale. Ils participeront à l'élaboration, la mise en place et la finalisation des programmes. Tous les 2 mois un étudiant en pharmacie sera présent au cours de ce stage, en accord avec la faculté de pharmacie.
Résultat escompté : découverte et création de programmes **ETP**, participation active aux ateliers, acquisition des compétences avec rétroaction par les **MSU**. Stimulation pour la formation initiale en **ETP** (40h).
Discussion : la formation en **ETP** au cours d'un **SASPAS** entre-t' elle dans les acquisitions d'un **IMG** ? Oui car l'approche centrée sur le patient, la relation et communication, l'éducation en santé sont 3 des compétences à acquérir. De plus la situation autour de patient chronique et la polymorbidité à forte prévalence (**DT2**, **HTA**, **BPCO**) font partie des grandes familles de situations cliniques.
Conclusion : Un stage **d'ETP** est essentiel pour acquérir cette compétence professionnelle. Cela se réalisera en **SASPAS** en pluridisciplinarité avec respect de l'autonomie de **l'IMG**.

Figure 38 An abstract from Clermont 2013 coded QO21 not understandable abreviation

QO3 Out of scope is reserved to themes that are not typically considered as family medicine (mostly secondary or tertiary levels of care).

Eleven abstracts were coded with QO21 because of the use of unintelligible abbreviations. We have already made the recommendation to avoid abbreviations in a scientific abstract, as using such abbreviations implies that the research community has auto-defined itself which could, in turn, push away non-initiated readers. Figure 17 illustrates this idea.

Added codes after Clermont 2013 analyze

The initial code list is the one developed in Paris in 2007 at the WONCA international conference. This list was not exhaustive but shed light on professionally relevant terms. Every new conference bring its load of new concepts and aspects of our field.

In table 5 are shown new codes added to 3CGP after the 2007 Clermont Ferrand Conference. QD28 (Family planning) is somewhat redundant with the W Chapter of ICPC (pregnancy, reproduction and family planning). We see the emergence of new aspects relating to Quaternary Prevention. However, the Clermont Ferrand conference principally allowed to develop the QO code and identify more precisely the limits of codification.

- QC15 Adults /
- QD28 Family planning /
- QD441 P4 Overmedicalisation/ QD444 P4 Deprescription/
- QO1 Unable to code; too generic / QO2 Unable to code, unclear / QO21 Abbreviation not understandable / QO22 Lack of precision of the item / QO23 Lack of identifiable concepts / QO24 Verbosity, not codable / QO3 Out of scope of GP/FM / QO4 Consider new code /
- QP61 Social networking /
- QR23 Multimorbidity study /
- QR41 Qualitative study / QR46 Mixed study / QR47 Action research / QR48 Delphi study /
- QS46 Midwife/

Table 5 Code added to 3CGP after Clermont analysis

6.3.3.3. Upcoming guidelines to lay a new strategy to analyse the 2014 Lille online abstract submission

As mentioned in the introduction, we plan on analyzing the abstracts submitted to the 2014 CNGE 2014 Conference. Ideally, the classification should be done as abstracts are submitted on the online platform. Abstracts should be sent to the reviewer before the peer-review process, without knowing the acceptance status of the abstract. We hope to be able to highlight the differences between the accepted and rejected abstracts submitted for the Lille 2014 conference in November 2014. .

6.4. Congrès SwissFamilyDocs Zurich 2014

6.4.1. Introduction

Primary Care, the Swiss journal of first line physicians[9], has recently published the conference proceedings of the SwissFamilyDocs Conference[10] which was held in Zurich in August 2014[11]. The publication enabled us to examine the 45 abstracts which were presented at the conference. We sought to estimate the applicability of 3CGP in another context.

6.4.2. Methods

The submitted abstracts were very well structured and evidently met standardized presentation criteria. The abstracts were presented in three languages, namely English, German and French. For German abstracts, we used Google Translate which enabled us to the major themes. We collaborated with a colleague (Daniel Widmer) to validate our comprehension.

Abstracts were transcribed in an Excel spreadsheet, easily recognized by Atlas.ti which we had used in our Clermont Ferrand 2013 Conference abstract analysis (using the ICPC version 2 and 3CPG version 2.1 (Appendix)).

6.4.3. Results

6.4.3.1. SwissFamilyDocs 2014 through the lens of the ICPC

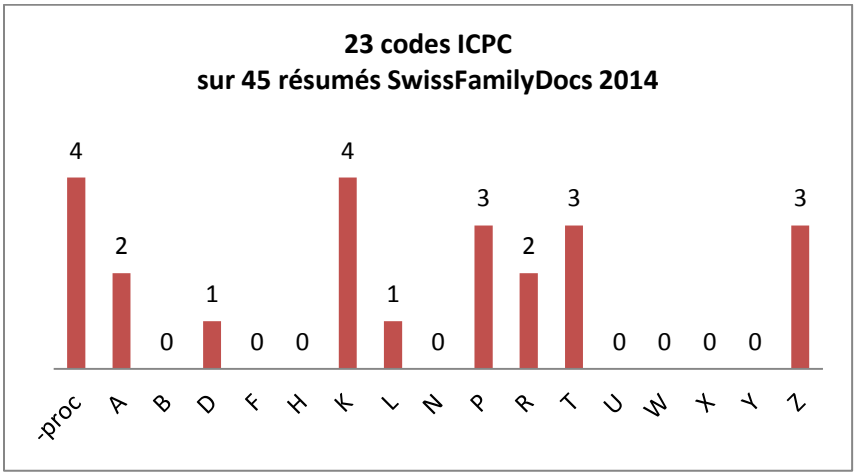

Figure 39 SFD Zurich 2014. Chapter (A-Z) and Process (-proc) ICPC-2

This was a small sample size. However, we note 1.9 ICPC codes per abstract (fig 39 & 40).

[9] Primary Care, Le journal suisse des médecins de premier recours http://www.primary-care.ch

[10] Résumés SwissFamilyDocs Conference 2014. Prim Care [Internet]. 2014;(August):221–38. Available from: http://www.primary-care.ch/docs/primarycare/2014/14/fr/pc-f-00596.pdf

[11] SwissFamilyDocs conférence 2014 http://fr.swissfamilydocs.ch/2014/

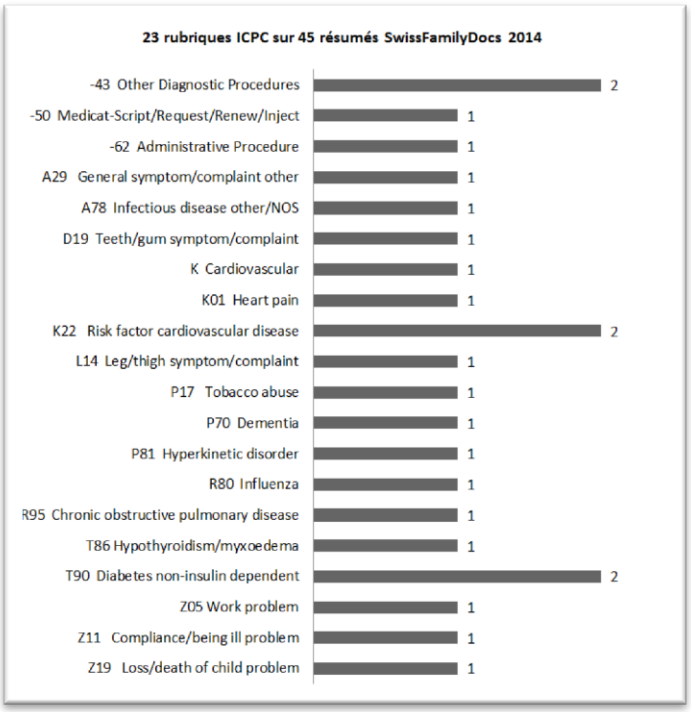

Figure 40 SFD Zurich 2014. Detail of the 23 codes ICPC-2

The P chapter of the ICPC is typically less well represented than the R (respiratory) and L (locomotion) chapters. The Z chapter is usually very low.

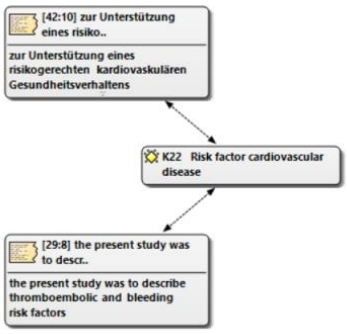

Figure 41 Two abstract about Cardiovascular risks (ICPC K22)

We observed a weak frequency of the conference organizers' mention of clinical situations. Figure 40 shows an abstract coded only at the level of the chapter K cardiovascular chapter of ICPC. This particularly abstract deals with acute coronary diseases, which is usually coded with three ICPC codes. We therefore chose to codify the abstract under the chapter as opposed to ICPC rubrics. Figure 41 shows abstract excerpts coded by class "K22" of the ICPC.

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6.4.3.2. SwissFamilyDocs 2014 through the lens of 3CGP

The abstract analysis (Figure 42) yielded 148 3CGP codes and therefore highlight the importance of clinical items (as opposed to non-clinical items) since there was only 23 identified ICPC codes. Research codes (QR) appeared 42 times and Teaching (QT) appeared 26 times. We observed 34 occurrences of the physician-specific domain (QD) and 15 occurrences of the patient-specific domain (QP). The practice-specific domain (QS) was mentioned 16 times. QO (others) was used 5 times. No

abstract dealt with environmental health (QH). Seven abstracts referred to patient categories (QC) and 3 deal with ethical questions (fig 43).

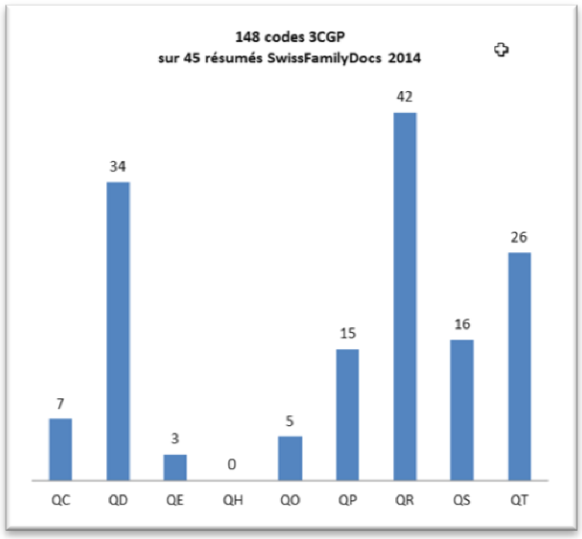

Figure 42 SFD Zurich 2014. 3CGP distribution

QC12 Children	1
QC13 Adolescents	1
QC16 Ageing	2
QC23 Sex difference	2
QC32 Migrants & refugees	1

QE Medical Ethics	1
QE31 Euthanasia	1
QE41 Confidentiality	1

QD1 Communicator	1
QD12 Doctor patient relationship~	2
QD26 Palliative care	3
QD31 Health risk management	3
QD32 Health issue management	4
QD41 P1 Primary prevention	3
QD42 P2 Secondary prevention	3
QD43 P3 Tertiary prevention	1
QD441 P4 Overmedicalisation	2
QD5 Complementary medicine	4
QD51 Homeopathy	4
QD7 Professional image & identity~	1
QD8 Health provider personal satisfaction	3

QP2 Therapeutic process	4
QP23 Comfort of therapeutic process	1
QP24 Safety of therapeutic process	2
QP31 Availability of health care	1
QP41 Patient appraisal	2
QP42 Patient satisfaction	1
QP43 Patient knowledge	1
QP53 Self-care & hygiene	1
QP61 Social networking	1

Figure 43 SFD 2014 3CGP (QC patient's categories, QE Ethics , QD doctor's issues, QP patient's view)

Complementary and alternative medicine was well represented (6 abstract mentions). Figure 44 shows the references to abstracts dealing with homeopathy (QD51) and complementary medicine (QD5). Two abstract were coded with both codes. None of these abstracts was in French.

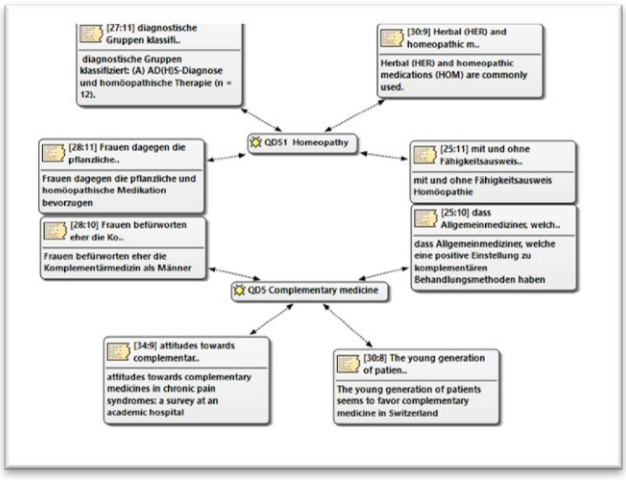

Figure 44 SFD 2014. 6 verbatim about complementary medicine and homeopathy

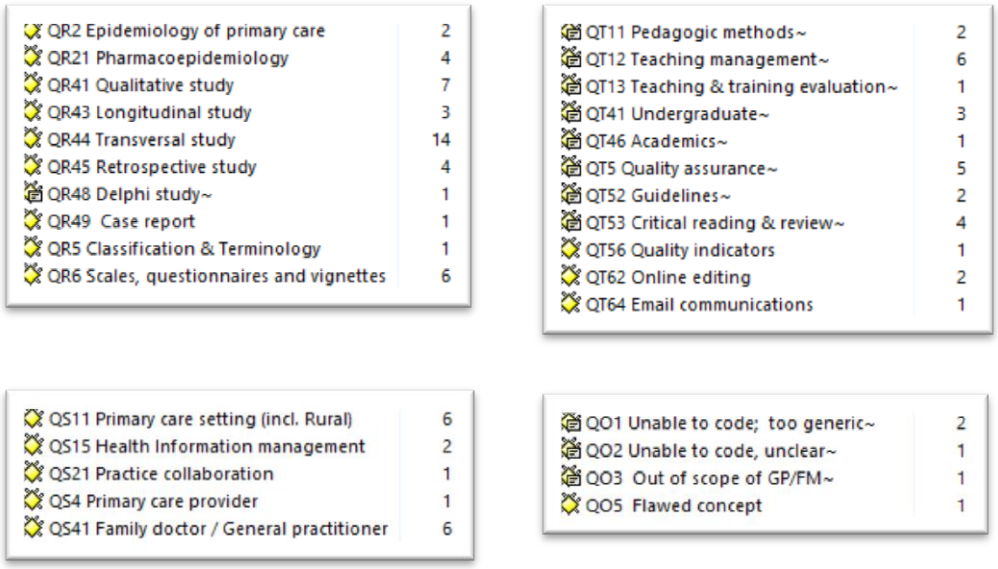

Figure 45 congrès SFD 2014
3CGP distribution (QR research and development , QT teaching and training, QS structure of practice, QO other)

6.4.3.3. SBF 2014 QO codes

QO3 Out of scope of GP/FM) was applied to an abstract dealing with « paramedic care, licensure of paramedics and paramedical training» The Swiss Association is a group of first-line physicians which enables us to understand why it was submitted. However, these are non primary care-related fields which explains why there was no mapping possible using 3CGP.

QO2 (Unable to code/unclear) was applied to an abstract on « methodological approach to the specific work practices(nach dem methodischen Zugang zu den spezifischen Arbeitsweisen)" for which the clinical context is hard to identify.

QO1 (too generic) was used for an abstract dealing with « chronic pain syndromes: a survey at an academic hospital » 'Chronic pain syndromes' was too generic to be categorised using ICPC. Furthermore, it was an

inpatient study which was not relevant to general medicine and code QO3 could have been applied as well.
QO5 (Flawed concept) was suggested because of the flawed position of an author who used specialized vocabulary and erroneously used the term « primary prevention » to define what would be more accurately described as secondary prevention. Such mismatch sometimes happens in cardiology when referring to prevention care. In the excerpt: « *primary prevention of cardiovascular disease (CVD) are based on the identification of high-risk patients who are most likely to benefit from medications such as aspirin and statin*" primary prevention is not defined according to the concept of family medicine[12], as the patient does not feel ill but was qualified as "at risk" by the physician. The physician then observes risk factors for which they prescribe aspirin and statins (a prime example of secondary prevention). Since the concept was misused, we applied the code QO5 (Flawed concept).

6.4.3.4. SwissFamilyDocs enables the addition of new terms to 3CGP

Reading the SFD abstracts has enabled us to identify new terms to add to the current structure of 3CGP.
These codes are : QC23 Sex difference / QD51 Homeopathy / QO5 Flawed concept / QP43 Patient knowledge / QR49 Case report / QT64 Email communications
The definite designation of these new codes will be attributed to usage, repetition and shared observations.

The 2014 Call for Abstracts for the SFD conference enabled us to realize the applicability of 3CGP and ICPC in most cases. In spite of cultural and interest differences, the current state of classification seems to be applicable to our Swiss colleagues. We shall investigate this further upon the comparison of all five conferences.

[12] Bentzen N. Wonca Dictionary of General/Family Practice. Maanedsskr. Copenhagen; 2003.

6.5. The Belgian congres Brussels 2014

The first « Symposium de Recherche en médecine générale » has been held in Brussels on the tenth of May 2014. There has been 37 communications of which 19 posters. The abstracts are not available online but will be published in the Medline indexed Revue Medicale de Bruxelles.

The codes 3CGP and ICPC used in the analysis of the Swiss abstracts have been imported for the analysis of the Belgian abstracts in a new analysis unit of the software ATLAS.ti together with the 37 Belgian abstracts. The analysis of content of the Belgian meeting is not so fruitful as there are too few abstracts. Nevertheless some interesting observation arose.

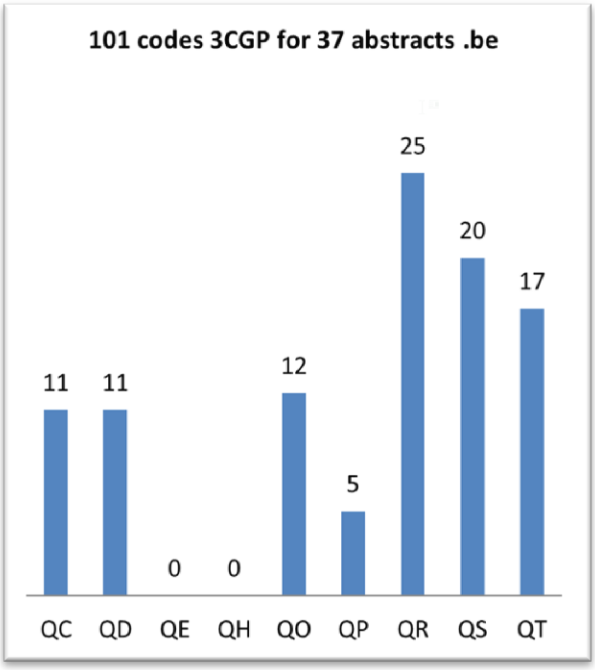

Figure 46 3CGP domains in the 37 Belgian abstracts

In the above figure, one see the distribution of 3CG domains throughout the 37 abstracts. Recall ; QC category of patient, QD doctor's issue, QE Ethics, QH Hazard, QO other, QP Patient's issue, QT Research, QS structure of Practice, QT teaching and training.

Unsurprisingly, as it was a "research" congress, the abstracts coded with QR Research are the largest group and in good association with the QT teaching and training which both content are open in the fig 46 and 47. The codes QS structure of practice are proportionally more numerous than in the Swiss ones and five abstracts are addressing the question of coordination between GP and specialists (fig 47). As expected QE Ethics and QH are not attractive domains.

The 12 QO codes distribution (fig 42) shows 9 abstracts with readability problem. 1 out of scope was addressing a subject far from GP/FM, 4 had no structure at all, 2 was using not understandable abbreviations and two dealt with theme so generic that there was no way to codes it in ICPC (as the cancers "les cancers" or the anaemia "les anémies".

3 abstracts have given the opportunity to consider new codes as “ethnological research”, “health data management” and “informal caregivers” to input in 3CGP (fig 48).

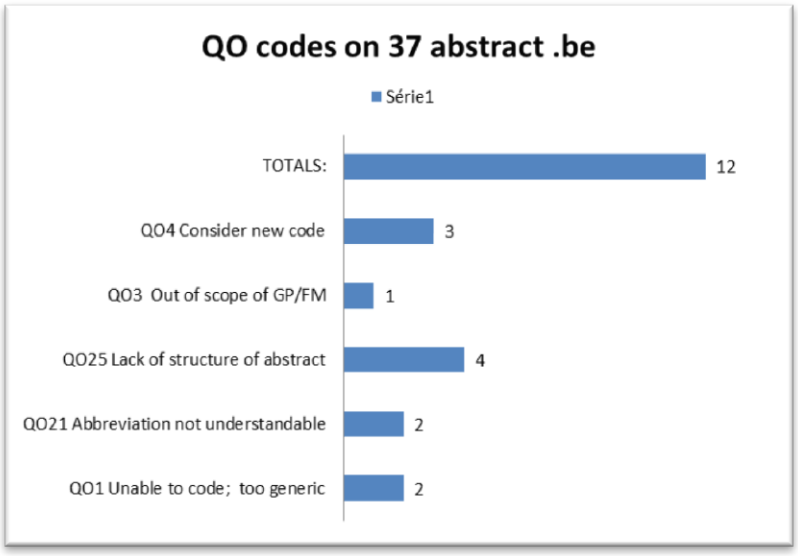

Figure 47 Distribution of QO in 37 Belgian abstracts

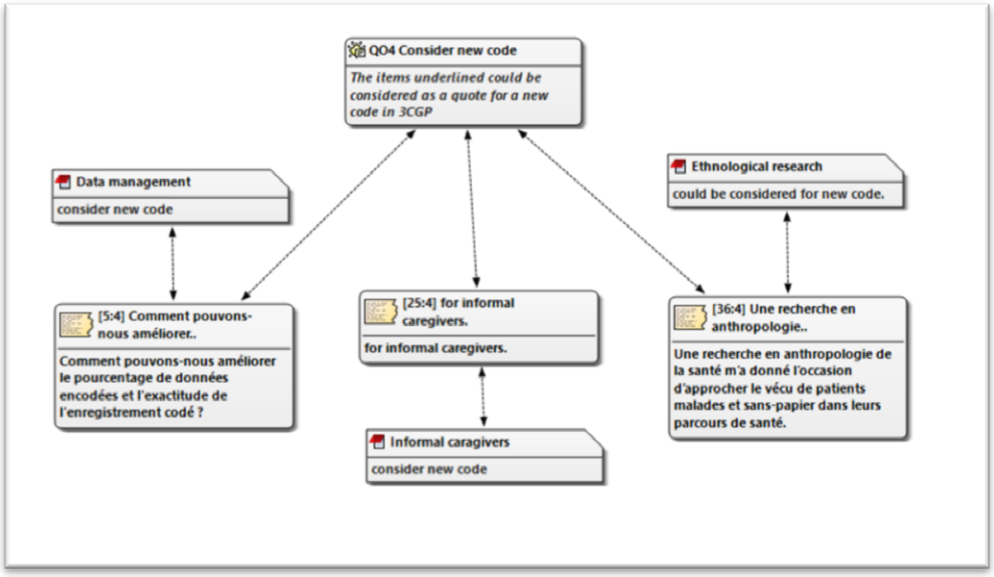

Figure 48 The study of the Belgian abstracts induces the suggestion of new codes

They have been very few use of ICPC for coding the Belgian abstracts. One has been used for coding not the patient but the doctors themselves. An astonishing study on 555 doctors in Brussels show that 15% could be considered as alcoholic!.

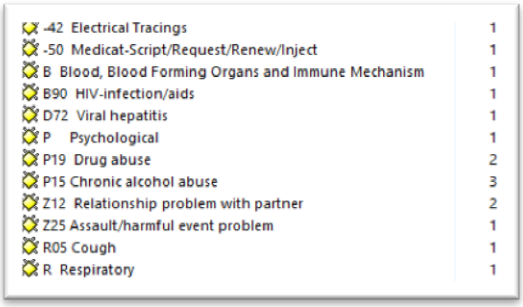

Figure 49 15 codes ICPC in the 37 Belgian abstracts

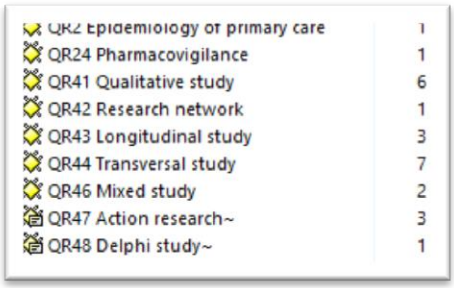

Figure 50 Distribution of QR in the 37 Belgian abstracts

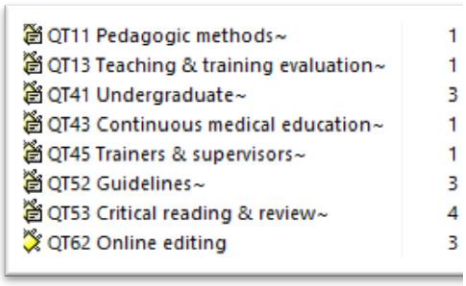

Figure 51 Distribution of QT in the 37 Belgian abstracts

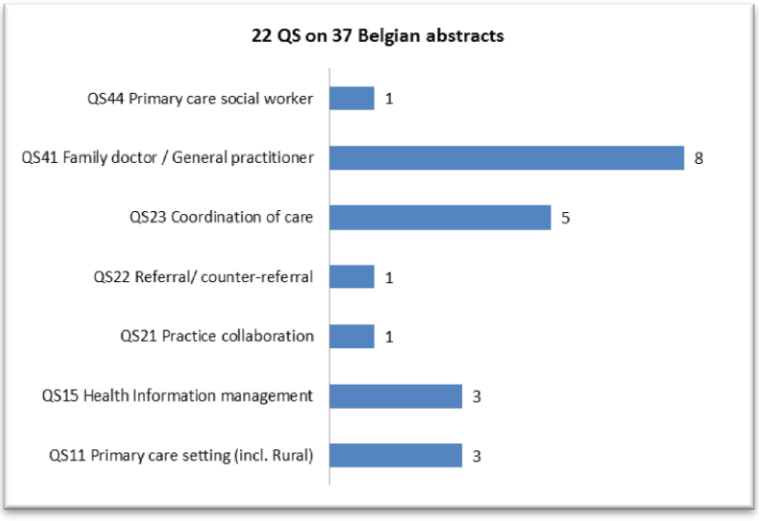

Figure 52 Opening of QS in 37 Belgian abstracts

6.6. The CNGE Lille congress 2014

As soon as the access to the abstracts will be granted.

All the abstracts will be analysed before to be reviewed

A comparison between accepted and refused abstract is projected (if enough)

6.7. Comparisons between some congresses

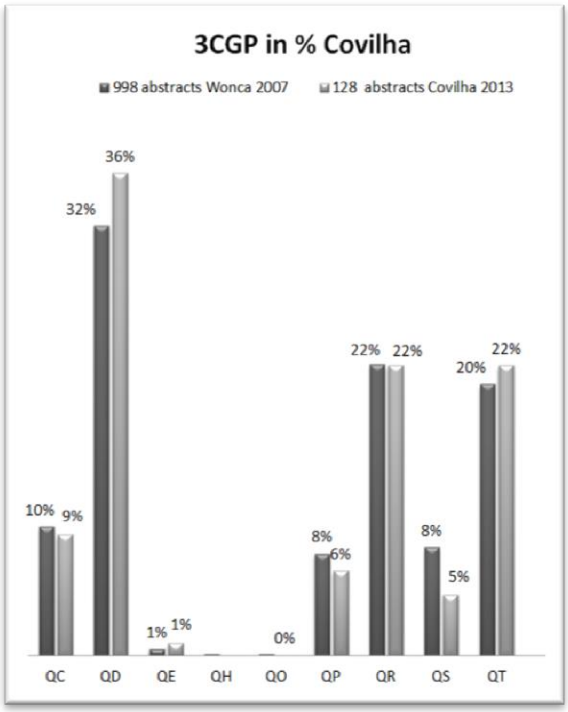

Figure 53 Manual coding
Wonca 2007(998 abstracts) versus Covilha 2013 (128 abstracts)

The comparison between the content of the Wonca Europe Congress Paris 2007 and the Congress of the Portuguese association of GPs in Covilha 2013 have been done more for the exercise than for the analysis. Indeed the first meeting was gathering thousands of GP and 998 abstracts have been analysed. The Portuguese meeting was gathering three hundred Portuguese GPs presenting 128 communications. The method is the same , manual coding with the same codes and spreadsheet. The observer is the same. But the second coding was unexpected and not planned. 6 years are separating the two experiments.

Nevertheless, it's strange to see the same percentage of QR (communications dealing with research) or QT (dealing with teaching and training) and the quasi absence of ethical subjects nor environmental ones. We have to assume that this is a coincidence and repeat the experiment is a necessity.

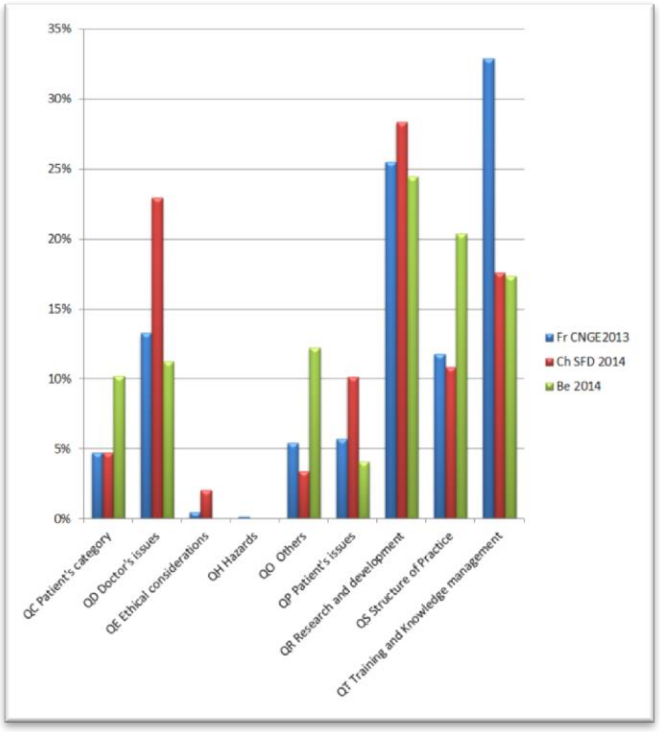

Figure 54 ATLAS.ti 3CGP coding (%): 3 congresses (205 abstracts Fr - 45 Ch - 37 Be)

The Fig 50 shows the distribution of percentage of 3CGP codes between the French CNGE congress in Clermont 2013 (205 abstracts), the SwissFamilyDoctors congress in Zurich 2014 (45 abstracts) and the Belgian one, 2014 (37 abstracts).

Despite the difference in number of communications, the similarity of the subject about Research (QR) in the 3 congress is attractive. The number of communications of the French dealing with Teaching and training is twice the number of Swiss and Belgians. This could be explained by the fact that CNGE is first of all a society of teachers in Family Medicine.

The use of QO Other is more important in the Belgian communications. The change in use of QO could explain it. The codes has been used in the Belgians to highlight the fact that numerous abstracts was not easy to understand, due to abbreviation, lack of structure or verbosity.

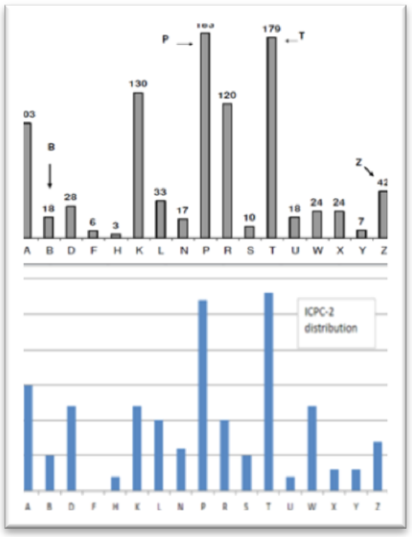

Figure 55 Manual coding on ICPC Wonca 2007 versus Covilha 2013. Absolute number

The figure 56 shows the comparison of the use of ICPC codes between the two congress Wonca 2007 and Covilha 2013. We are obliged to assume that the similarity is a coincidence .Nevertheless it is strange to look at the distribution of the two chapters P & Z.

Indeed the proportion of P and Z in the two cases is not at all what is expected when coding reason for encounter or diagnose in clinical settings.

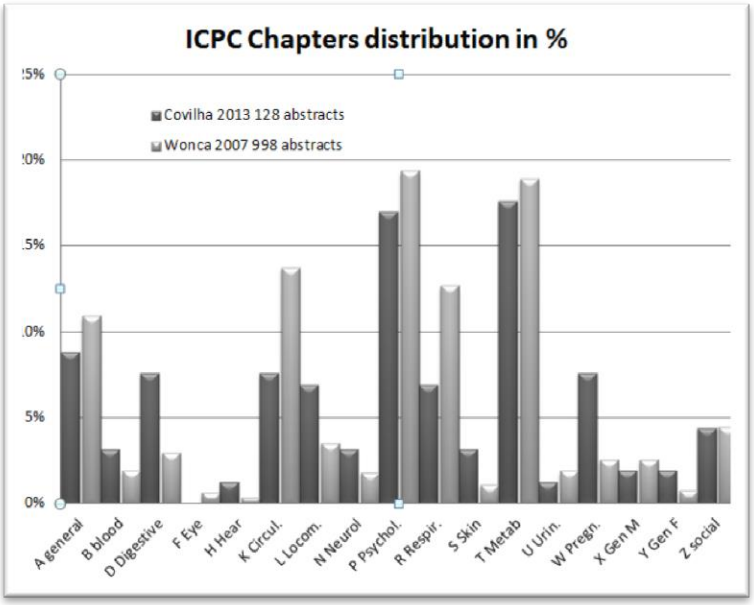

Figure 56 Wonca versus Covilha in %

Above, in percentage between Wonca 2007 and Covilha 2013. Interesting similarities in P, T and Z. T is mainly diabetes, lipid and “metabolic syndrome”. Depression, Alzheimer and tobacco in P.

7. Discussion

Within a general framework of complexity, and parallel to the use of ICPC, I have try to describe GP/FM by developing a simple classification system to represent the main concepts forming the core content of our specialty. While exploring the core content of GP/FM is not a new idea, as shown by the study of FAMLI, as far as the author could discern, this is the first attempt to systematize those concepts into a classification.

During the conceptualisation and first stages of the research, the direct indexing of Wonca congress presentations using a spreadsheet based methodology induced better insight into the main research interests of European GPs. Moreover, indexing abstracts through an interactive web-based database permitted to congress participants to retrieve preferred presentation abstracts. One could imagine the whole organisation of a GP/FM congress based on abstract indexing through ICPC and 3CGP.

The subsequent analysis of several European congress in France, Switzerland and Belgium, using a content analysis system has suggested an internal reproducibility of the method, at least with one unique observer. The CAQDAS methodology has also induced a better description of the content. It has been shown easy to compare entries and to propose new codes. The data remain available easily for future comparison and could be exported in xml format for further analysis. The method is also convenient for multiuser experimentation and scientific networking. QDA Miner, another CAQDAS will be considered for further work as it is more oriented towards linguistic and terminological analysis.

This project has several limitations. First of all, it is the work of one person and although it has demonstrated a certain utility, one could hardly say that it represents a reproducible approach to the core content of GP/FM. This has to be evaluated by inter-observer trials and extensive practice and research use before being able to consider it a valid construct.

One could argue that Medline indexing is quite sufficient, and that GP/FM does not need such an additional set of descriptors. However, Medline indexing is not easy, the terms and themes are not specifically designed for GP/FM, and its usage is far from simple. As shown, the universe of the corporate bodies owners of classifications and terminologies could be rather different. Retrieving specific GP/FM publications is quite difficult. Moreover, Medline indexation is a post-hoc task. In this proposal, one can imagine that authors will be asked to choose ICPC & 3CGP items to describe their abstract, and that reviewers would be tasked with verifying the codes.

Analyses of this kind could support discussion on how research in GP/FM should be oriented. This also gives an idea about how diverse and difficult the GP's job is. The use of 3CGP could lead to better organisation of congresses trough the distribution of information along the two classifications.

Naturally, 3CGP/ ICPC indexing is complementary to Medline, while serving a different purpose.
From a taxonomic point of view, several problems have to be addressed. They are specific classification problems: comprehensiveness (a place for each concept) and exclusivity (only one class by concept) and each have to be studied carefully for each item. The addition of definitions and inclusion and exclusion criteria are also required, and this will require extensive work. Some terms, not indexed in Medline, will be subject to careful search in the literature to define and link them to specific GPs knowledge. However this is necessary in order to avoid as far as possible heterogeneity and overlap of the classes. It will be necessary to continue to develop new categories and subcategories to cover the entire field of knowledge as GP/FM is a dynamic enterprise encompassing each year new fields or new interpretations. Thus 3CGP/FM is an ongoing and dynamic product.

3CGP/FM has not been endorsed by the Wonca International Classification Committee, but some members have accepted the idea of launching an international trial to develop and validate the proposed tool. The development of the on-line data base is a condition to continue this experiment. Such an interactive tool will permit retrieving and editing, but also facilitate statistical analysis of data produced by the indexing process.

To be continued

8. Next steps

8.1. Classification field

8.1.1. Looking for a consensus about 3CGP content

Internal and external validity of the tools

Organising a Delphi about the structure, the domains etc

➔ To build a international team of colleagues

Identification of concepts specific to GP/FM, specific definitions and bibliography

➔ To build a team of dedicated GPs

8.1.2. Building and field testing 3CGP and ICPC

Developing classification by analyzing ongoing congress

Considering to develop an application test for smartphone

Considering preparation of Rio 2016 interface for coding by congress participant/ Suggestion to congress organizers to use ICPC and 3CGP as indexing tool

8.2. Ontological field

8.2.1. Building a reference terminology mapped to 3CGP

NLP and semantic tools.
Text database of Wonca Europe abstracts available (6.000 pages) (Carl Steylaert)
Term identification by NLP (Ashwin Ittoo ULg?) Termlist (V. Hoste Leuven?)
Mapping concepts to terms?

8.2.2. Preparing semantic tools

Building 3CGP OWL on Protégé: Definition inclusion exclusion mapping MeSH, Hetop.eu Babelnet.org, other existing ontologies
Mapping ICPC OWL and Dutch thesaurus?
Proposal for a semantisation of abstracts

9. A multidisciplinary team is a necessity

9.1. Members of the board

- Prof Marc Van Meerbeeck and Didier Giet. Professors of General practice. ULg
- Prof Dr. Aswin Ittoo, Management Information Systems, HEC-ULg
- Ms Elena Cardillo , PhD, Linguist, computer scientist, Information technology specialist, University of Calabria, Italia cardillo.elena@gmail.com
- Prof Dr Robert Vander Stichele, MD, PhD, family doctor and professor of pharmacology, University of Ghent, Belgium Robert.VanderStichele@UGent.be
- Prof Dr Gustavo Gusso, MD, PhD, Head of the department of Primary Care, University of Sao Paulo, Brazil gustavo.gusso@usp.br
- Prof Dr Laurent Letrilliart, MD, PhD, family doctor and epidemiologist, Dep. of general practice, University of Lyon, France laurent.letrilliart@wanadoo.fr
- Prof Dr Michel Roland, MD, PhD, family doctor and professor of general practice, ULB, Brussels michel.roland@ulb.ac.be
- Prof Dr Kees van Boven, MD, PhD, senior researcher, Radboud University Nijmegen, Department of Primary and Community Care, Nijmegen, Netherlands cvboven@hetnet.nl
- Mss Anne-Françoise Donneau, health statistician. Department of public health sciences, ULg. afdonneau@ulg.ac.be

9.2. People recently contacted and interested by the project

1. Terminologie, mapping, semantisation

- Mr Julien Grosjean, Ingénieur de recherche et doctorant, Equipe CISMeF, CHU de Rouen http://www.hetop.eu/hetop/
- Dr Stephan Darmoni, Coordonnateur du projet CISMeF, Professeur d'informatique médicale, Faculté de médecine de Rouen, Chef du Service Informatique Biomédicale (SIBM) du CHU de Rouen http://www.cismef.org/
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Annex I Codes introduced so far in the content analysis software (August 2014)

ICPC Process full / used ICPC rubrics / full 3CGP

HU: abstract_be_2014
File: [C:\Users\marc\Documents\Scientific Software\ATLASti\TextBank\abstract_be_2014.hpr7]
Edited by:Super
Date/Time: 2014-08-26 18:28:08

-30 Medical Exam/Eval-Complete
-31 Medical Examination/Health Evaluation- Partial/Pre-op check
-32 Sensitivity Test
-33 Microbiological/Immunological Test
-34 Blood Test
-35 Urine Test
-36 Faeces Test
-37 Histological/Exfoliative Cytology
-38 Other Laboratory Test NEC
-39 Physical Function Test
-40 Diagnostic Endoscopy
-42 Electrical Tracings
-43 Other Diagnostic Procedures
-44 Preventive Immunizations/Medications
-45 Observe/Educate/Advice/Diet
-46 Consult with Primary Care Provider
-47 Consultation with Specialist
-48 Clarification/Discuss Patient's RFE
-49 Other Preventive Procedures
-50 Medicat-Script/Request/Renew/Inject
-51 Incise/Drain/Flush/Aspirate
-52 Excise/Remove/Biopsy/Destruction/ Debride
-53 Instrument/Catheter/Intubate/Dilate
-54 Repair/Fixate-Suture/Cast/Prosthetic
-55 Local Injection/Infiltration
-56 Dress/Press/Compress/Tamponade
-57 Physical Medicine/Rehabilitation
-58 Therapeutic Counselling/Listening
-59 Other Therapeutic Procedure NEC
-60 Results Tests/Procedures
-61 Results Exam/Test/Record
-62 Administrative Procedure
-63 Follow-up Encounter Unspecified
-64 Encounter Initiated by Provider
-65 Encounter Initiated third person
-66 Refer to Other Provider (EXCL. M.D.)
-67 Referral to Physician/Specialist/ Clinic/Hospital
-68 Other Referrals NEC
-69 Other Reason for Encounter NEC
-Process
A General and Unspecified
A23 Risk factor NOS
A28 Limited function/disability NOS
A29 General symptom/complaint other
A78 Infectious disease other/NOS
A87 Complication of medical treatment
B Blood, Blood Forming Organs and Immune Mechanism
B90 HIV-infection/aids
D Digestive
D19 Teeth/gum symptom/complaint
D72 Viral hepatitis
D75 Malignant neoplasm colon/rectum
D94 Chronic enteritis/ulcerative colitis
F Eye
F83 Retinopathy
H Ear
K Cardiovascular
K01 Heart pain
K22 Risk factor cardiovascular disease
K77 Heart failure
K86 Hypertension uncomplicated
L Musculoskeletal
L03 Low back symptom/complaint
L14 Leg/thigh symptom/complaint
L95 Osteoporosis
N Neurological
P Psychological
P06 Sleep disturbance
P15 Chronic alcohol abuse
P17 Tobacco abuse
P18 Medication abuse
P19 Drug abuse
P20 Memory disturbance
P70 Dementia
P74 Anxiety disorder/anxiety state
P76 Depressive disorder
P81 Hyperkinetic disorder
QC Patient's categories
QC1 Age groups
QC11 Infants
QC12 Children
QC13 Adolescents
QC15 Adults

QC16 Ageing
QC2 Gender issues
QC21 Men's health
QC22 Women's health
QC23 Sex difference
QC3 Social high risk
QC31 Ethnic subgroups
QC32 Migrants & refugees
QC33 Homeless
QC34 Prisoners
QC4 Addiction
QC41 Legal products
QC42 Street drugs
QC43 Gaming
QC5 Assault
QC51 Battered women
QC52 Victims of abuses
QC53 Torture
QC54 Ritual mutilations
QD Doctor's issues
QD1 Communicator
QD11 Encounter management
QD12 Doctor patient relationship
QD13 Counselling
QD14 Systemic evaluation
QD15 Motivational interviewing
QD2 Caregiver
QD21 Problem solving
QD22 Comprehensiveness
QD23 Health education
QD24 Clinical skills
QD25 Continuity of care
QD26 Palliative care
QD27 A & E
QD28 Family planing
QD3 Care manager
QD31 Health risk management
QD32 Health issue management
QD33 Health status assessment
QD34 Outcome assessment
QD35 Genetic issues
QD4 Agent of prevention
QD41 P1 Primary prevention
QD42 P2 Secondary prevention
QD43 P3 Tertiary prevention
QD44 P4 Quaternary prevention
QD441 P4 Overmedicalisation
QD443 P4 Deprescription
QD5 Complementary medicine
QD51 Homeopathy
QD6 Medico legal issues
QD7 Professional image & identity
QD8 Health provider personal satisfaction
QE Medical Ethics
QE1 Personal views
QE2 Professional ethics
QE3 Bioethics
QE31 Euthanasia
QE4 Infoethics
QE41 Confidentiality
QE42 Informed consent
QH Hazards
QH1 Environmental hazard
QH11 Indoor pollution
QH12 Outdoor pollution
QH2 Biological hazard
QH3 Nuclear hazard
QO Others
QO1 Unable to code; too generic
QO2 Unable to code, unclear
QO21 Abbreviation not understandable
QO22 Lack of precision of the item
QO23 Lack of identifiable concepts
QO24 Verbosity, not codable
QO25 Lack of structure of abstract
QO3 Out of scope of GP/FM
QO4 Consider new code
QO5 Flawed concept
QP Patient issues
QP1 Diagnostic process
QP11 Availability of diagnostic process
QP12 Safety of diagnostic process
QP2 Therapeutic process
QP21 Availability of therapeutic process
QP22 OTC
QP23 Comfort of therapeutic process
QP24 Safety of therapeutic process
QP3 Practice & health care organization
QP31 Availability of health care
QP32 Accessibility of health care
QP33 Acceptability of health care
QP34 Safety of health care
QP37 Quality of health care
QP4 Patient views
QP41 Patient appraisal
QP42 Patient satisfaction
QP43 Patient knowledge
QP44 Patient autonomy/dependency
QP45 Patient cultural background
QP46 Patient expenses
QP5 Patient health habits
QP51 Patient nutrition
QP52 Patient's sexuality
QP53 Self-care & hygiene
QP6 Patient's participation
QP61 Social networking
QR R & D tools
QR1 Science philosophy
QR2 Epidemiology of primary care
QR21 Pharmacoepidemiology
QR22 Community health study
QR23 Multimorbidity study
QR24 Pharmacovigilance
QR3 Functional status
QR4 Research methods
QR41 Qualitative study

QR42 Research network
QR43 Longitudinal study
QR44 Transversal study
QR45 Retrospective study
QR46 Mixed study
QR47 Action research
QR48 Delphi study
QR49 Case report
QR5 Classification & Terminology
QR6 Scales, questionnaires and vignettes
QR7 Health economy
QR8 PHC planning & organization
QS Structure of practice
QS1 Infrastructure of practice
QS11 Primary care setting (incl. Rural)
QS12 Economy of practice
QS15 Health Information management
QS16 Practice equipment
QS17 Practice security
QS2 Practice relationship
QS21 Practice collaboration
QS22 Referral/ counter-referral
QS23 Coordination of care
QS24 Transdisciplinarity
QS3 Professional bodies
QS4 Primary care provider
QS41 Family doctor / General practitioner
QS42 Nurse practitioner
QS43 Primaty Care physiothrapist
QS44 Primary care social worker
QS45 Primary care psychologist
QS46 Midwife
QT Knowledge management
QT1 Teaching
QT11 Pedagogic methods
QT12 Teaching management
QT13 Teaching & training evaluation
QT4 Training
QT41 Undergraduate
QT42 Vocational training
QT43 Continuous medical education
QT44 Supervision & Balint
QT45 Trainers & supervisors
QT46 Academics
QT5 Quality assurance
QT51 Evidence based medicine
QT52 Guidelines
QT53 Critical reading & review
QT54 Peer review
QT55 Accreditation process
QT56 Quality indicators
QT6 Editing
QT61 Publications
QT62 Online editing
QT63 Digital libraries
QT64 Email communications
QT7 Reporting
QT71 Sentinel network
QT72 Drug reporting
QT73 Events reporting
R Respiratory
R05 Cough
R80 Influenza
R95 Chronic obstructive pulmonary disease
R96 Asthma
S Skin
S18 Laceration/cut
S97 Chronic ulcer skin
T Endocrine/Metabolic and Nutritional
T82 Obesity
T83 Overweight
T86 Hypothyroidism/myxoedema
T90 Diabetes non-insulin dependent
Title
U Urological
W Pregnancy, Childbearing, Family Planning
W10 Contraception postcoïtal
W11 Contraception oral
W12 Contraception intrauterine
W19 Breast/lactation symptom/complaint
W79 Unwanted pregnancy
X Female genital
X75 Malignant neoplasm cervix
X76 Malignant neoplasm breast female
Y Male Genital
Y07 Impotence NOS
Y08 Sexual function sympt./complt.(m)
Z Social Problems
Z01 Poverty/financial problem
Z05 Work problem
Z08 Social welfare problem
Z10 Health care system problem
Z11 Compliance/being ill problem
Z12 Relationship problem with partner
Z18 Illness problem with a child
Z19 Loss/death of child problem
Z22 Illness problem parent/family
Z25 Assault/harmful event problem

Annex II Some figures about codes and their use in abstracts analysis

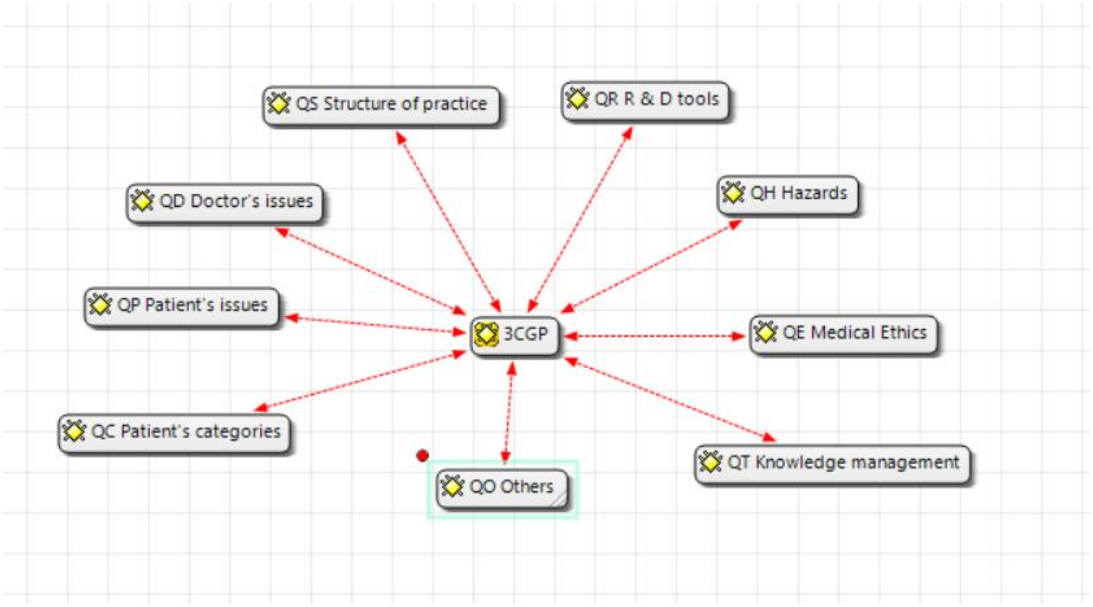


Figure 57 Structure of 3CGP; 9 domains

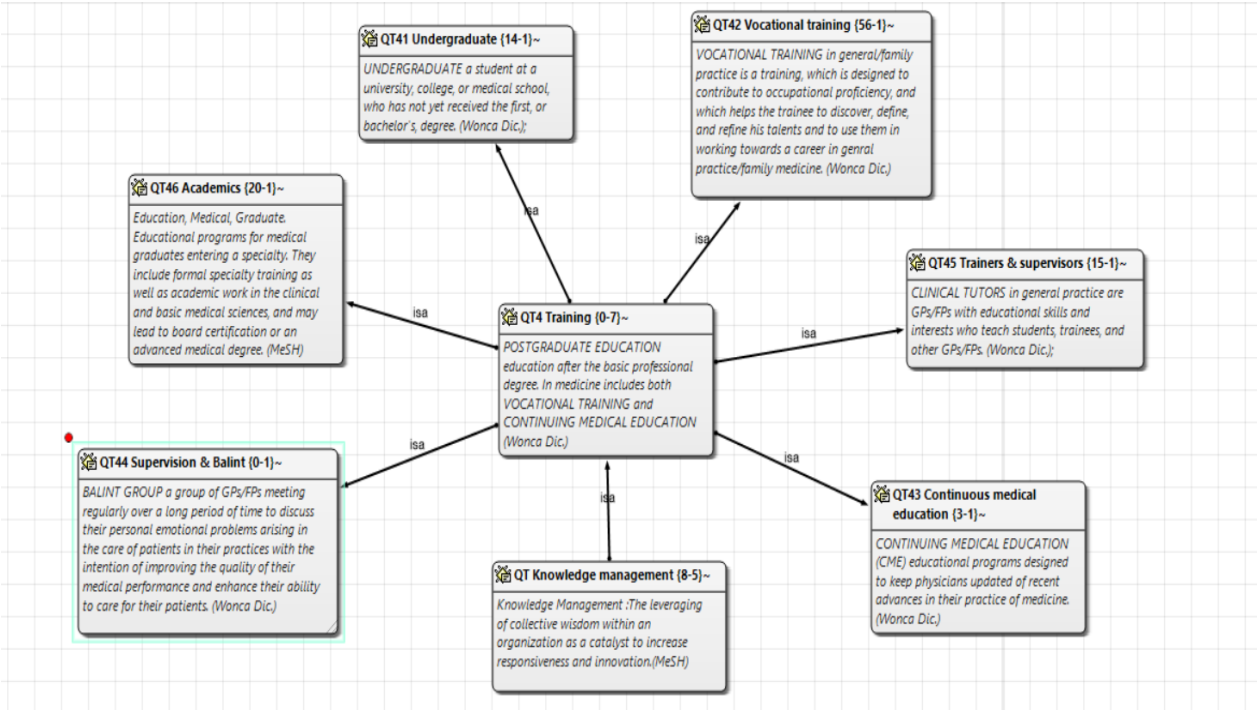


Figure 58Some 3CGP codes of the QT domain and study of their definitions with sources

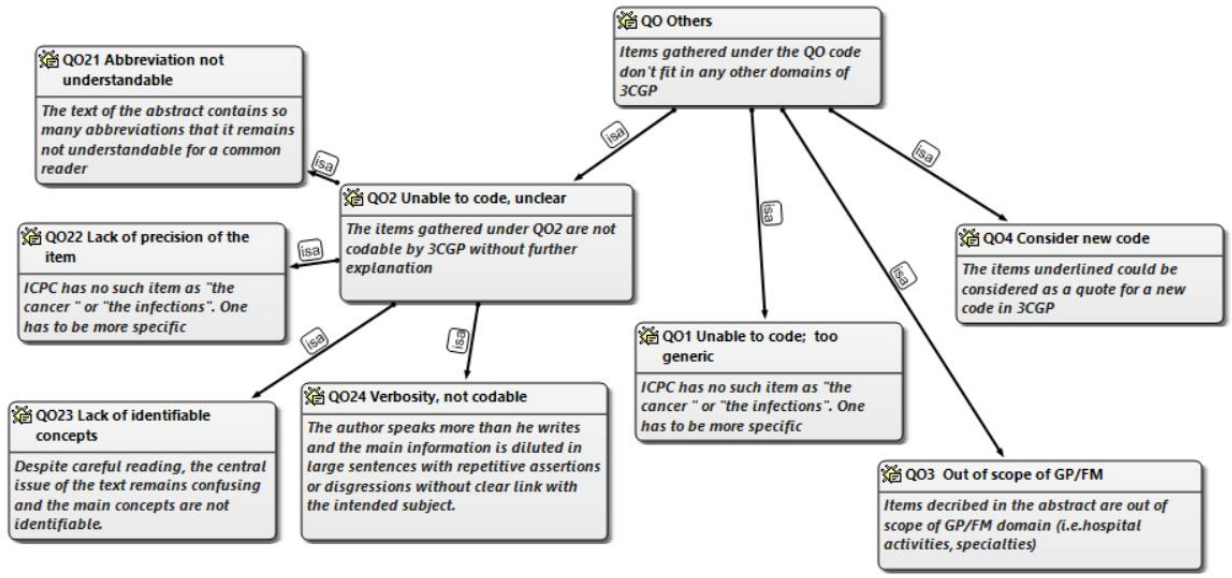


Figure 59QO Others domains opening after abstracts analysis

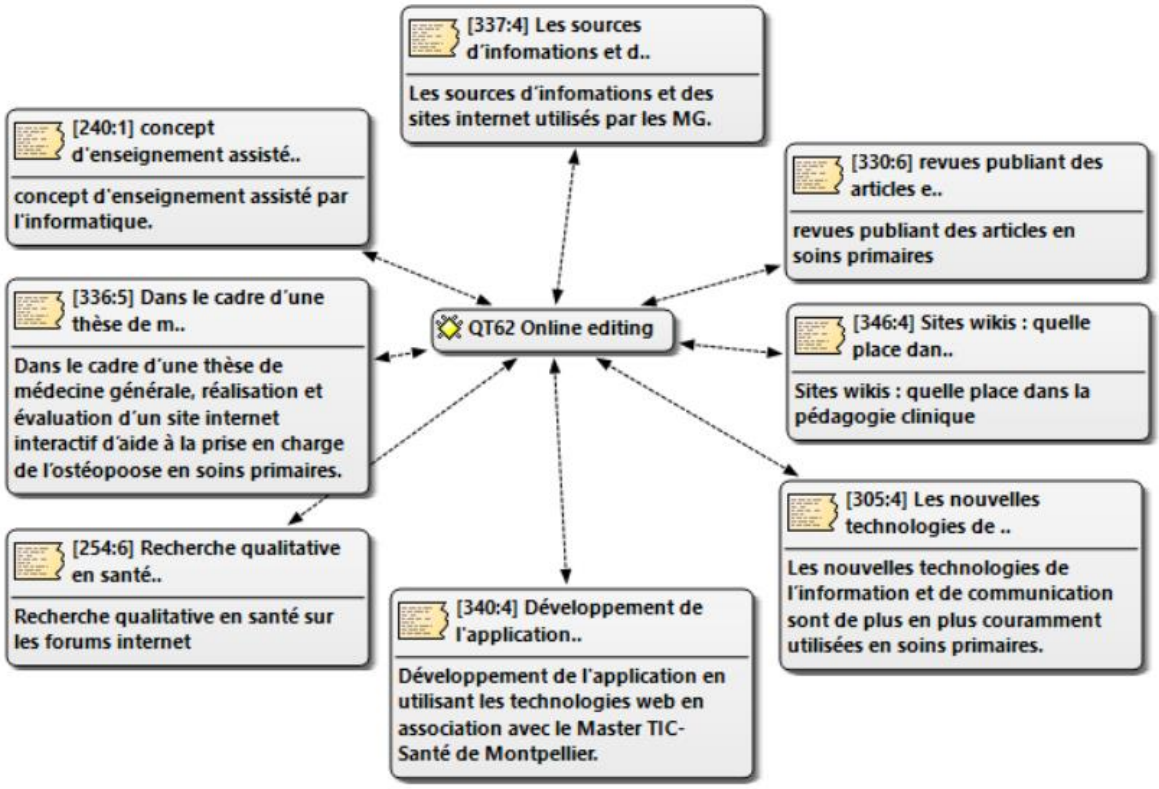


Figure 60 Example of quotes linked to QT62 in CNGE Clermont 2013

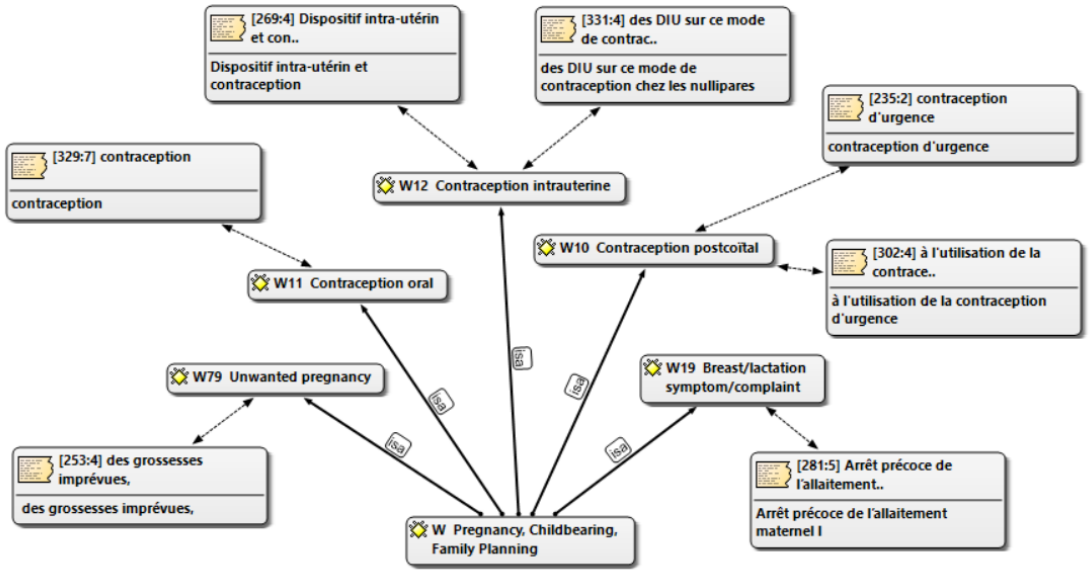


Figure 61 The chapter W Pregnancy of ICPC as found in CNGE Clermont 2013 abstracts

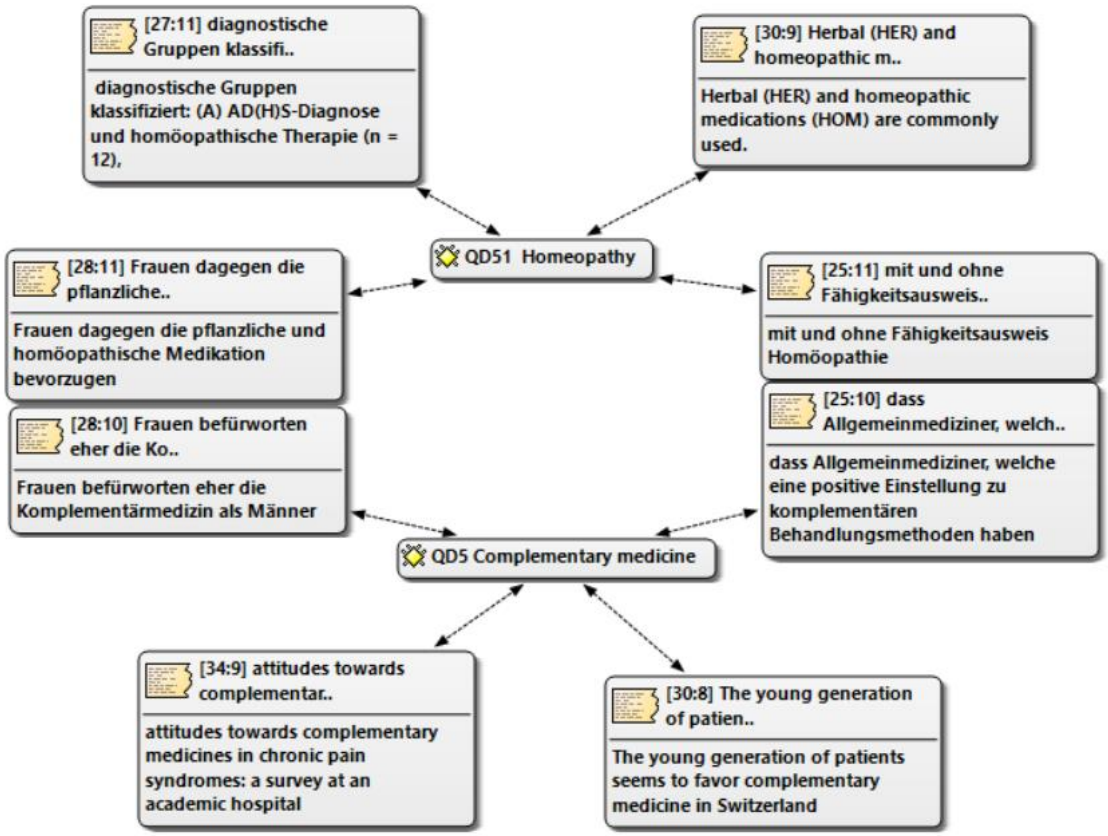


Figure 62 Use of 3CGP QD51 Homeopathy and QD5 Complementary medicine in SwissFamilyDocs abstracts

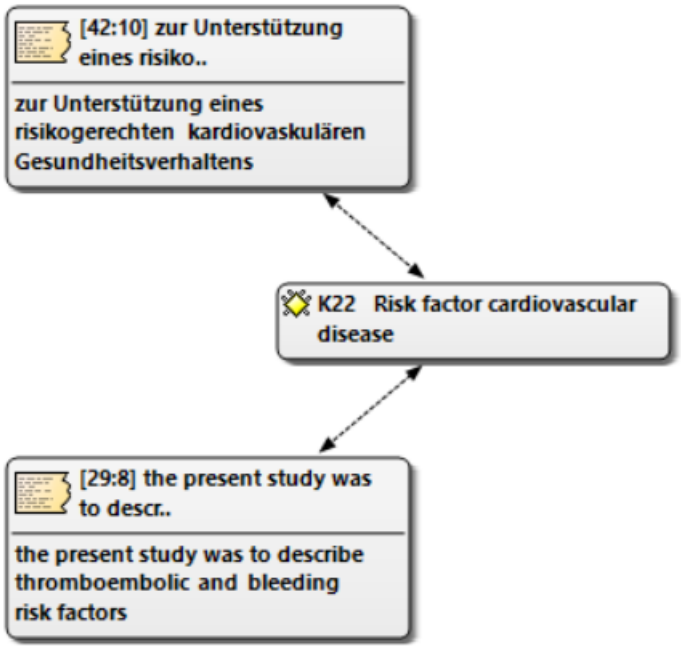


Figure 63 use of ICPC K22 in SwissFamilyDocs abstracts

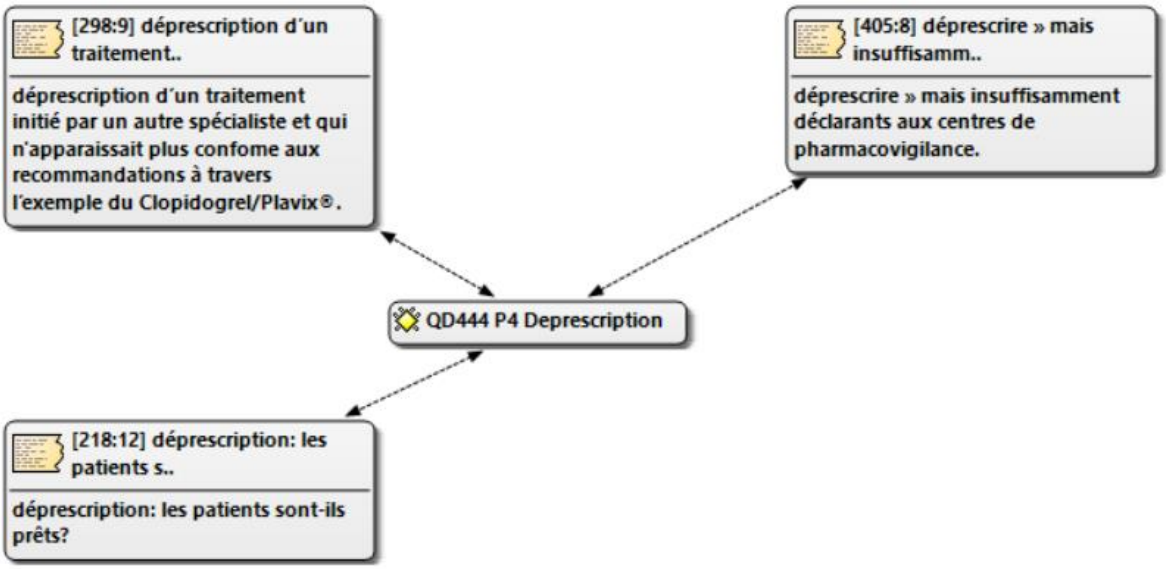
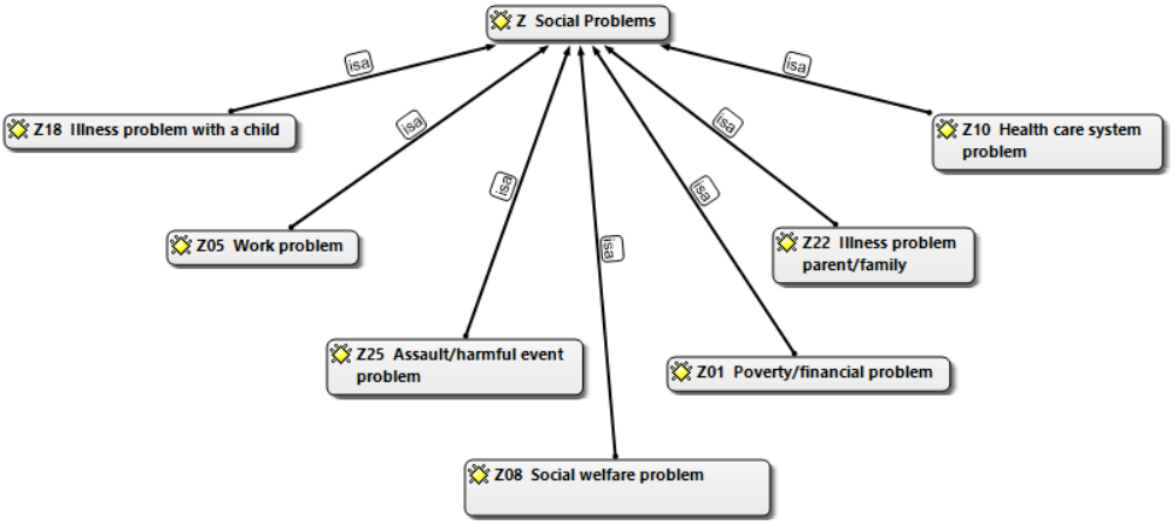


Figure 64The 3CGP codes QD44 P4 deprescription in the CNGE CLermont abstracts


Z Social Problems
isa
Z18 Illness problem with a child
isa
Z05 Work problem
isa
Z25 Assault/harmful event problem
isa
Z08 Social welfare problem
isa
Z01 Poverty/financial problem
isa
Z22 Illness problem parent/family
isa
Z10 Health care system problem

Annex III Personal publications related to the content of this report

Available through ORBI, the online system of the Liege University (http://hdl.handle.net)

- Jamoulle M. The four duties of family doctors: quaternary prevention - first, do no harm. Hong Kong Pract. 2014;36(june). http://hdl.handle.net/2268/170670

- Jamoulle M, Vander Stichele RH, Cardillo E, Roumier J, Warnier M. Mapping French terms in a Belgian guideline on heart failure to international classifications and nomenclatures: the devil is in the detail. Inform Prim Care. 2014;(accepted) http://hdl.handle.net/2268/171599

- Okkes I, Jamoulle M, Lamberts H, Bentzen N. ICPC-2-E: the electronic version of ICPC-2. Differences from the printed version and the consequences. Fam Pract. 2000;17(2):101–7. Available at: http://www.ncbi.nlm.nih.gov/pubmed/10758069 http://hdl.handle.net/2268/171600

- Wonca International Classification Committtee. ICPC-2 – French, desk-copy, translated by Marc Jamoulle & Michel Roland 2000. Available at: http://www.kith.no/upload/2705/ICPC-2-French.pdf

- Wonca International Classification Committtee. ICPC-2 – English, desk-copy, co-author. 2005. Available at: http://www.kith.no/upload/2705/ICPC-2-French.pdf

- Contributor in Bentzen, N, ed. Wonca Dictionary of General/Family Practice. Wonca International Classification Committee: Copenhagen, 2003. See www.ph3c.org rubric Wonca dictionary

- Roumier J, Jamoulle M, Vander Stichele R, Romary L, Cardillo E, Stichele R Vander. Towards a terminologies support system in Primary Care (Letter to the editor). *Inform Prim Care*. 2011;19:257–258. http://hdl.handle.net/2268/171544

- Cardillo E, Warnier M, Roumier J, Jamoulle M, Vander Stichele RH. Using ISO and Semantic Web standards for creating a Multilingual Medical Interface Terminology : A use case for Hearth Failure. In: *1Oth International conference on Terminology and Artificial Intelligence, Paris Oct 28-30, 2013*.; 2013:1–11. **http://hdl.handle.net/2268/171534**

- Jamoulle M. Using the International Classification for Primary Care (ICPC) and the Core Content Classification for General Practice (3CGP) to classify conference abstracts. Letter. *The Portuguese Journal of General Practice* (*RPCG*) n° 29 issue 5. p 66-67 Nov 2013
http://dazbook.com/euromedice/rpmgf-setout-2013/#/66
http://hdl.handle.net/2268/171601

Annex IV : The 3CGP classification 2007 version as available on
http://docpatient.net/mj/wonca2007/3CGPFMdeskcopy.pdf

Domain name
Category name
Sub-category name Code

C Patient's categories	QC
Age groups	QC1
Infants	QC11
Children	QC12
Adolescents	QC13
Ageing	QC14
Gender issues	QC2
Men's health	QC21
Women's health	QC22
Social high risk	QC3
Ethnic subgroups	QC31
Migrants & refugees	QC32
Homeless	QC33
In jail	QC34
Addiction	QC4
legal products	QC41
street drugs	QC42
gaming	QC43
Assault	QC5
battered women	QC51
victims of abuses	QC52
torture	QC53
ritual mutilations	QC54
D Provider (Doctor) issues	QD
Communicator	QD1
Encounter management	QD11
Doctor patient relationship	QD12
Counselling	QD13
Systemic	QD14
Caregiver	QD2
Problem solving	QD21
Comprehensiveness	QD22
Health education	QD23
Clinical skills	QD24
Continuity of care	QD25
Palliative care	QD26
A & E	QD27
Care manager	QD3
Health risk management	QD31
Health issue management	QD32
Health status assessment	QD33
Outcome assessment	QD34
Genetic issues	QD35
Agent of prevention	QD4
Primairy prevention	QD41
Secondairy prevention	QD42
Tertiairy prevention	QD43
Quaternairy prevention	QD44
Complementary medicine	QD5
Medico legal issues	QD6
Professional image & identity	QD7
Health provider personal life	QD8
E Ethics	QE
Personal views	QE1
Professional ethics	QE2
Bioethics	QE3
Euthanasia	QE31
Infoethics	QE4
Confidentiality	QE41
Informed consent	QE42
H Hazards	QH
Environmental	QH1
Indoor pollution	QH11
Outdoor pollution	QH12
Biological	QH2
Nuclear	QH3
P Patient issues	QP
Diagnostic process	QP1
Availability diag. process	QP11
Safety diagnostic process	QP12
Therapeutic process	QP2
Availability of ther. proces	QP21
Over The Counter	QP22
Comfort ther. process	QP23
Safety of ther. process	QP24
Practice & health care organisation	QP3
Availability of health care	QP31
Accessibility of health care	QP32
Acceptability health care	QP33
Safety of health care org.	QP34
Participation	QP36
Patient's views	QP4
Patient demand	QP40
Patient appraisal	QP41
Patient satisfaction	QP42
Patient knowledge	QP43
Patient autonomy/depend	QP44
Patient cultural backgr.	QP45
Patient expenses	QP46
Patient health habits	QP5
Nutrition	QP51
Sexuality	QP52
Self care & hygiene	QP53
Travel	QP54
R R & D tools	QR
Science philosophy	QR1
Epidemiology	QR2
Pharmacoepidemiology	QR21
Community health	QR22
Functional status	QR3
Research methods	QR4
Qualitative study	QR41
Research network	QR42
Classification	QR5
Scales & Questionnaires	QR6
Health economy	QR7
PHC planification & organisation	QR8
S Structure of practice	QS
Infrastructure	QS1
Setting (incl. rural)	QS11
Economy of practice	QS12
Practice management	QS13
Manpower	QS14
Health Inform. Manag.	QS15
Practice equipment	QS16
Security	QS17
Relationship	QS2
Collaboration	QS21
Referral/ countereferral	QS22
Coordination of care	QS23
Transdisciplinarity	QS24
Professional bodies	QS3

T	**Training & Knowledge management**	QT
	Teaching	QT1
	Teaching methods	QT11
	Teaching curriculum	QT12
	Teaching program	QT13
	Training & knowl. Eval.	QT14
	Training	QT4
	Undergrad. or basic educ.	QT41
	Post graduate education	QT42
	Continuing medical educ.	QT43
	Supervision methods	QT44
	Trainers & Supervisors	QT45
	Academics	QT46
	Quality assurance	QT5
	Theory & principles	QT50
	Evidence based medicine	QT51
	Guidelines	QT52
	Critical reading & review	QT53
	Peer review	QT54
	Accreditation process	QT55
	Practice assesment	QT56
	Health device assesment	QT57
	Editing	QT6
	Printed	QT61
	On line Information	QT62
	Digital libraries	QT63
	Reporting	QT7
	Sentinel network	QT71
	Drug reporting	QT72
	Events reporting	QT73
O	**Others**	QO

This authority list, adapted from an orginal work of Prof. Dr. Henk Lamberts about Q codes in 1987, has to be completed by further analysis of publications in General Practice and Family Medicine.

Careful analysis of the definitions, inclusion and exclusion criteria is now necessary in order to avoid as far as possible the heterogeneity and the overlap of the classes.

This tool is complementary to ICPC and is designed to describe the metaclinical concepts refering to GP/FM. The letter Q is not used in ICPC and has been chosen to make the link with this clinical tool.

This tool is not validated nor is it endorsed by WICC.

As such it's a proposal for a future work proposed to WICC members during the Dunedin (NZ) meeting in 2007.

Please do refer to marc@jamoulle.com for any questions.

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WICC member
Researcher, Departm.of General Practice, UCL, Brussels.

Citation

Jamoulle M, Core content Classification of GP/FM, ver 0.2, desk copy, 2007. Available on http://docpatient.net/mj/wonca2007

ICPC-2 – English

International Classification of Primary Care – 2nd Edition

Wonca International Classification Committee (WICC)

Process codes

-30	Medical Exam/Eval-Complete
-31	Medical Examination/Health Evaluation-Partial/Pre-op check
-32	Sensitivity Test
-33	Microbiological/Immunological Test
-34	Blood Test
-35	Urine Test
-36	Faeces Test
-37	Histological/Exfoliative Cytology
-38	Other Laboratory Test NEC
-39	Physical Function Test
-40	Diagnostic Endoscopy
-41	Diagnostic Radiology/Imaging
-42	Electrical Tracings
-43	Other Diagnostic Procedures
-44	Preventive Imunisations/Medications
-45	Observe/Educate/Advice/Diet
-46	Consult with Primary Care Provider
-47	Consultation with Specialist
-48	Clarification/Discuss Patient's RFE
-49	Other Preventive Procedures
-50	Medicat-Script/Reqst/Renew/Inject
-51	Incise/Drain/Flush/Aspirate
-52	Excise/Remove/Biopsy/Destruction/Debride
-53	Instrument/Catheter/Intubate/Dilate
-54	Repair/Fixate-Suture/Cast/Prosthetic
-55	Local Injection/Infiltration
-56	Dress/Press/Compress/Tamponade
-57	Physical Medicine/Rehabilitation
-58	Therapeutic Counselling/Listening
-59	Other Therapeutic Procedure NEC
-60	Results Tests/Procedures
-61	Results Exam/Test/Record
-62	Administrative Procedure
-63	Follow-up Encounter Unspecified
-64	Encounter Initiated by Provider
-65	Encounter Initiated third person
-66	Refer to Other Provider (EXCL. M.D.)
-67	Referral to Physician/Specialist/Clinic/Hospital
-68	Other Referrals NEC
-69	Other Reason for Encounter NEC

General and Unspecified A

A01	Pain general/multiple sites
A02	Chills
A03	Fever
A04	Weakness/tiredness general
A05	Feeling ill
A06	Fainting/syncope
A07	Coma
A08	Swelling
A09	Sweating problem
A10	Bleeding/haemorrhage NOS
A11	Chest pain NOS
A13	Concern/fear medical treatment
A16	Irritable infant
A18	Concern about appearance
A20	Euthanasia request/discussion
A21	Risk factor for malignancy
A23	Risk factor NOS
A25	Fear of death/dying
A26	Fear of cancer NOS
A27	Fear of other disease NOS
A28	Limited function/disability NOS
A29	General symptom/complaint other
A70	Tuberculosis
A71	Measles
A72	Chickenpox
A73	Malaria
A74	Rubella
A75	Infectious mononucleosis
A76	Viral exanthem other
A77	Viral disease other/NOS
A78	Infectious disease other/NOS
A79	Malignancy NOS
A80	Trauma/injury NOS
A81	Multiple trauma/injuries
A82	Secondary effect of trauma
A84	Poisoning by medical agent
A85	Adverse effect medical agent
A86	Toxic effect non-medicinal substance
A87	Complication of medical treatment
A88	Adverse effect physical factor
A89	Effect prosthetic device
A90	Congenital anomaly OS/multiple
A91	Abnormal result investigation NOS
A92	Allergy/allergic reaction NOS
A93	Premature newborn
A94	Perinatal morbidity other
A95	Perinatal mortality
A96	Death
A97	No disease
A98	Health maintenance/prevention
A99	General disease NOS

Blood, Blood Forming Organs and Immune Mechanism B

B02	Lymph gland(s) enlarged/painful
B04	Blood symptom/complaint
B25	Fear of aids/HIV
B26	Fear cancer blood/lymph
B27	Fear blood/lymph disease other
B28	Limited function/disability
B29	Sympt/complt lymph/immune other
B70	Lymphadenitis acute
B71	Lymphadenitis non-specific
B72	Hodgkin's disease/lymphoma
B73	Leukaemia
B74	Malignant neoplasm blood other
B75	Benign/unspecified neoplasm blood
B76	Ruptured spleen traumatic
B77	Injury blood/lymph/spleen other
B78	Hereditary haemolytic anaemia
B79	Congen.anom. blood/lymph other
B80	Iron deficiency anaemia
B81	Anaemia, Vitamin B12/folate def.
B82	Anaemia other/unspecified
B83	Purpura/coagulation defect
B84	Unexplained abnormal white cells
B87	Splenomegaly
B90	HIV-infection/aids
B99	Blood/lymph/spleen disease other

PROCESS CODES

SYMPTOMS/COMPLAINTS

INFECTIONS

NEOPLASMS

INJURIES

CONGENITAL ANOMALIES

OTHER DIAGNOSES

Digestive D

D01	Abdominal pain/cramps general
D02	Abdominal pain epigastric
D03	Heartburn
D04	Rectal/anal pain
D05	Perianal itching
D06	Abdominal pain localized other
D07	Dyspepsia/indigestion
D08	Flatulence/gas/belching
D09	Nausea
D10	Vomiting
D11	Diarrhoea
D12	Constipation
D13	Jaundice
D14	Haematemesis/vomiting blood
D15	Melaena
D16	Rectal bleeding
D17	Incontinence of bowel
D18	Change faeces/bowel movements
D19	Teeth/gum symptom/complaint
D20	Mouth/tongue/lip symptom/complt.
D21	Swallowing problem
D23	Hepatomegaly
D24	Abdominal mass NOS
D25	Abdominal distension
D26	Fear of cancer of digestive system
D27	Fear of digestive disease other
D28	Limited function/disability (d)
D29	Digestive symptom/complaint other
D70	Gastrointestinal infection
D71	Mumps
D72	Viral hepatitis
D73	Gastroenteritis presumed infection
D74	Malignant neoplasm stomach
D75	Malignant neoplasm colon/rectum
D76	Malignant neoplasm pancreas
D77	Malig. neoplasm digest other/NOS
D78	Neoplasm digest benign/uncertain
D79	Foreign body digestive system
D80	Injury digestive system other
D81	Congen. anomaly digestive system
D82	Teeth/gum disease
D83	Mouth/tongue/lip disease
D84	Oesophagus disease
D85	Duodenal ulcer
D86	Peptic ulcer other
D87	Stomach function disorder
D88	Appendicitis
D89	Inguinal hernia
D90	Hiatus hernia
D91	Abdominal hernia other
D92	Diverticular disease
D93	Irritable bowel syndrome
D94	Chronic enteritis/ulcerative colitis
D95	Anal fissure/perianal abscess
D96	Worms/other parasites
D97	Liver disease NOS
D98	Cholecystitis/cholelithiasis
D99	Disease digestive system, other

Eye F

F01	Eye pain
F02	Red eye
F03	Eye discharge
F04	Visual floaters/spots
F05	Visual disturbance other
F13	Eye sensation abnormal
F14	Eye movements abnormal
F15	Eye appearance abnormal
F16	Eyelid symptom/complaint
F17	Glasses symptom/complaint
F18	Contact lens symptom/complaint
F27	Fear of eye disease
F28	Limited function/disability (f)
F29	Eye symptom/complaint other
F70	Conjunctivitis infectious
F71	Conjunctivitis allergic
F72	Blepharitis/stye/chalazion
F73	Eye infection/inflammation other
F74	Neoplasm of eye/adnexa
F75	Contusion/haemorrhage eye
F76	Foreign body in eye
F79	Injury eye other
F80	Blocked lacrimal duct of infant
F81	Congenital anomaly eye other
F82	Detached retina
F83	Retinopathy
F84	Macular degeneration
F85	Corneal ulcer
F86	Trachoma
F91	Refractive error
F92	Cataract
F93	Glaucoma
F94	Blindness
F95	Strabismus
F99	Eye/adnexa disease, other

Ear H

H01	Ear pain/earache
H02	Hearing complaint
H03	Tinnitus, ringing/buzzing ear
H04	Ear discharge
H05	Bleeding ear
H13	Plugged feeling ear
H15	Concern with appearance of ears
H27	Fear of ear disease
H28	Limited function/disability ear
H29	Ear symptom/complaint other
H70	Otitis externa
H71	Acute otitis media/myringitis
H72	Serous otitis media
H73	Eustachian salpingitis
H74	Chronic otitis media
H75	Neoplasm of ear
H76	Foreign body in ear
H77	Perforation ear drum
H78	Superficial injury of ear
H79	Ear injury other
H80	Congenital anomaly of ear
H81	Excessive ear wax
H82	Vertiginous syndrome
H83	Otosclerosis
H84	Presbyacusis
H85	Acoustic trauma
H86	Deafness
H99	Ear/mastoid disease, other

Cardiovascular K

K01	Heart pain
K02	Pressure/tightness of heart
K03	Cardiovascular pain NOS
K04	Palpitations/awareness of heart
K05	Irregular heartbeat other
K06	Prominent veins
K07	Swollen ankles/oedema
K22	Risk factor cardiovascular disease
K24	Fear of heart disease
K25	Fear of hypertension
K27	Fear cardiovascular disease other
K28	Limited function/disability (k)
K29	Cardiovascular sympt./complt. other
K70	Infection of circulatory system
K71	Rheumatic fever/heart disease
K72	Neoplasm cardiovascular
K73	Congenital anomaly cardiovascular
K74	Ischaemic heart disease w. angina
K75	Acute myocardial infarction
K76	Ischaemic heart disease w/o angina
K77	Heart failure
K78	Atrial fibrillation/flutter
K79	Paroxysmal tachycardia
K80	Cardiac arrhythmia NOS
K81	Heart/arterial murmur NOS
K82	Pulmonary heart disease
K83	Heart valve disease NOS
K84	Heart disease other
K85	Elevated blood pressure
K86	Hypertension uncomplicated
K87	Hypertension complicated
K88	Postural hypotension
K89	Transient cerebral ischaemia
K90	Stroke/cerebrovascular accident
K91	Cerebrovascular disease
K92	Atherosclerosis/PVD
K93	Pulmonary embolism
K94	Phlebitis/thrombophlebitis
K95	Varicose veins of leg
K96	Haemorrhoids
K99	Cardiovascular disease other

Musculoskeletal L

L01	Neck symptom/complain
L02	Back symptom/complaint
L03	Low back symptom/complaint
L04	Chest symptom/complaint
L05	Flank/axilla symptom/complaint
L07	Jaw symptom/complaint
L08	Shoulder symptom/complaint
L09	Arm symptom/complaint
L10	Elbow symptom/complaint
L11	Wrist symptom/complaint
L12	Hand/finger symptom/complaint
L13	Hip symptom/complaint
L14	Leg/thigh symptom/complaint
L15	Knee symptom/complaint
L16	Ankle symptom/complaint
L17	Foot/toe symptom/complaint
L18	Muscle pain
L19	Muscle symptom/complaint NOS
L20	Joint symptom/complaint NOS
L26	Fear of cancer musculoskeletal
L27	Fear musculoskeletal disease other
L28	Limited function/disability (l)
L29	Sympt/complt. Musculoskeletal other
L70	Infections musculoskeletal system
L71	Malignant neoplasm musculoskeletal
L72	Fracture: radius/ulna
L73	Fracture: tibia/fibula
L74	Fracture: hand/foot bone
L75	Fracture: femur
L76	Fracture: other
L77	Sprain/strain of ankle
L78	Sprain/strain of knee
L79	Sprain/strain of joint NOS
L80	Dislocation/subluxation
L81	Injury musculoskeletal NOS
L82	Congenital anomaly musculoskeletal
L83	Neck syndrome
L84	Back syndrome w/o radiating pain
L85	Acquired deformity of spine
L86	Back syndrome with radiating pain
L87	Bursitis/tendinitis/synovitis NOS
L88	Rheumatoid/seropositive arthritis
L89	Osteoarthrosis of hip
L90	Osteoarthrosis of knee
L91	Osteoarthrosis other
L92	Shoulder syndrome
L93	Tennis elbow
L94	Osteochondrosis
L95	Osteoporosis
L96	Acute internal damage knee
L97	Neoplasm benign/unspec musculo.
L98	Acquired deformity of limb
L99	Musculoskeletal disease, other

Neurological N

N01	Headache
N03	Pain face
N04	Restless legs
N05	Tingling fingers/feet/toes
N06	Sensation disturbance other
N07	Convulsion/seizure
N08	Abnormal involuntary movements
N16	Disturbance of smell/taste
N17	Vertigo/dizziness
N18	Paralysis/weakness
N19	Speech disorder
N26	Fear cancer neurological system
N27	Fear of neurological disease other
N28	Limited function/disability (n)
N29	Neurological symptom/complt. other
N70	Poliomyelitis
N71	Meningitis/encephalitis
N72	Tetanus
N73	Neurological infection other
N74	Malignant neoplasm nervous system
N75	Benign neoplasm nervous system
N76	Neoplasm nervous system unspec.
N79	Concussion
N80	Head injury other
N81	Injury nervous system other
N85	Congenital anomaly neurological
N86	Multiple sclerosis
N87	Parkinsonism
N88	Epilepsy
N89	Migraine
N90	Cluster headache
N91	Facial paralysis/bell's palsy
N92	Trigeminal neuralgia
N93	Carpal tunnel syndrome
N94	Peripheral neuritis/neuropathy
N95	Tension headache
N99	Neurological disease, other

Psychological P

P01 Feeling anxious/nervous/tense
P02 Acute stress reaction
P03 Feeling depressed
P04 Feeling/behaving irritable/angry
P05 Senility, feeling/behaving old
P06 Sleep disturbance
P07 Sexual desire reduced
P08 Sexual fulfilment reduced
P09 Sexual preference concern
P10 Stammering/stuttering/tic
P11 Eating problem in child
P12 Bedwetting/enuresis
P13 Encopresis/bowel training problem
P15 Chronic alcohol abuse
P16 Acute alcohol abuse
P17 Tobacco abuse
P18 Medication abuse
P19 Drug abuse
P20 Memory disturbance
P22 Child behaviour symptom/complaint
P23 Adolescent behav. Symptom/complt.
P24 Specific learning problem
P25 Phase of life problem adult
P27 Fear of mental disorder
P28 Limited function/disability (p)
P29 Psychological symptom/complt other
P70 Dementia
P71 Organic psychosis other
P72 Schizophrenia
P73 Affective psychosis
P74 Anxiety disorder/anxiety state
P75 Somatization disorder
P76 Depressive disorder
P77 Suicide/suicide attempt
P78 Neuraesthenia/surmenage
P79 Phobia/compulsive disorder
P80 Personality disorder
P81 Hyperkinetic disorder
P82 Post-traumatic stress disorder
P85 Mental retardation
P86 Anorexia nervosa/bulimia
P98 Psychosis NOS/other
P99 Psychological disorders, other

Respiratory R

R01 Pain respiratory system
R02 Shortness of breath/dyspnoea
R03 Wheezing
R04 Breathing problem, other
R05 Cough
R06 Nose bleed/epistaxis
R07 Sneezing/nasal congestion
R08 Nose symptom/complaint other
R09 Sinus symptom/complaint
R21 Throat symptom/complaint
R23 Voice symptom/complaint
R24 Haemoptysis
R25 Sputum/phlegm abnormal
R26 Fear of cancer respiratory system
R27 Fear of respiratory disease, other
R28 Limited function/disability (r)
R29 Respiratory symptom/complaint oth.
R71 Whooping cough
R72 Strep throat
R73 Boil/abscess nose
R74 Upper respiratory infection acute
R75 Sinusitis acute/chronic
R76 Tonsillitis acute
R77 Laryngitis/tracheitis acute
R78 Acute bronchitis/bronchiolitis
R79 Chronic bronchitis
R80 Influenza
R81 Pneumonia
R82 Pleurisy/pleural effusion
R83 Respiratory infection other
R84 Malignant neoplasm bronchus/lung
R85 Malinant neoplasm respiratory, other
R86 Benign neoplasm respiratory
R87 Foreign body nose/larynx/bronch
R88 Injury respiratory other
R89 Congenital anomaly respiratory
R90 Hypertrophy tonsils/adenoids
R92 Neoplasm respiratory unspecified
R95 Chronic obstructive pulmonary dis
R96 Asthma
R97 Allergic rhinitis
R98 Hyperventilation syndrome
R99 Respiratory disease other

PROCESS CODES
SYMPTOMS/COMPLAINTS
INFECTIONS
NEOPLASMS
INJURIES
CONGENITAL ANOMALIES
OTHER DIAGNOSES

Skin S

S01 Pain/tenderness of skin
S02 Pruritus
S03 Warts
S04 Lump/swelling localized
S05 Lumps/swellings generalized
S06 Rash localized
S07 Rash generalized
S08 Skin colour change
S09 Infected finger/toe
S10 Boil/carbuncle
S11 Skin infection post-traumatic
S12 Insect bite/sting
S13 Animal/human bite
S14 Burn/scald
S15 Foreign body in skin
S16 Bruise/contusion
S17 Abrasion/scratch/blister
S18 Laceration/cut
S19 Skin injury other
S20 Corn/callosity
S21 Skin texture symptom/complaint
S22 Nail symptom/complaint
S23 Hair loss/baldness
S24 Hair/scalp symptom/complaint
S26 Fear of cancer of skin
S27 Fear of skin disease other
S28 Limited function/disability (s)
S29 Skin symptom/complaint other
S70 Herpes zoster
S71 Herpes simplex
S72 Scabies/other acariasis
S73 Pediculosis/skin infestation other
S74 Dermatophytosis
S75 Moniliasis/candidiasis skin
S76 Skin infection other
S77 Malignant neoplasm of skin
S78 Lipoma
S79 Neoplasm skin benign/unspecified
S80 Solar keratosis/sunburn
S81 Haemangioma/lymphangioma
S82 Naevus/mole
S83 Congenital skin anomaly other
S84 Impetigo
S85 Pilonidal cyst/fistula
S86 Dermatitis seborrhoeic
S87 Dermatitis/atopic eczema
S88 Dermatitis contact/allergic
S89 Diaper rash
S90 Pityriasis rosea
S91 Psoriasis
S92 Sweat gland disease
S93 Sebaceous cyst
S94 Ingrowing nail
S95 Molluscum contagiosum
S96 Acne
S97 Chronic ulcer skin
S98 Urticaria
S99 Skin disease, other

Endocrine/Metabolic and Nutritional T

T01 Excessive thirst
T02 Excessive appetite
T03 Loss of appetite
T04 Feeding problem of infant/child
T05 Feeding problem of adult
T07 Weight gain
T08 Weight loss
T10 Growth delay
T11 Dehydration
T26 Fear of cancer of endocrine system
T27 Fear endocrine/metabolic dis other
T28 Limited function/disability (t)
T29 Endocrine/met./sympt/complt other
T70 Endocrine infection
T71 Malignant neoplasm thyroid
T72 Benign neoplasm thyroid
T73 Neoplasm endocrine oth/unspecified
T78 Thyroglossal duct/cyst
T80 Congenital anom endocrine/metab.
T81 Goitre
T82 Obesity
T83 Overweight
T85 Hyperthyroidism/thyrotoxicosis
T86 Hypothyroidism/myxoedema
T87 Hypoglycaemia
T89 Diabetes insulin dependent
T90 Diabetes non-insulin dependent
T91 Vitamin/nutritional deficiency
T92 Gout
T93 Lipid disorder
T99 Endocrine/metab/nutrit. dis. other

Urological U

U01 Dysuria/painful urination
U02 Urinary frequency/urgency
U04 Incontinence urine
U05 Urination problems other
U06 Haematuria
U07 Urine symptom/complaint other
U08 Urinary retention
U13 Bladder symptom/complaint other
U14 Kidney symptom/complaint
U26 Fear of cancer of urinary system
U27 Fear of urinary disease other
U28 Limited function/disability urinary
U29 Urinary symptom/complaint other
U70 Pyelonephritis/pyelitis
U71 Cystitis/urinary infection other
U72 Urethritis
U75 Malignant neoplasm of kidney
U76 Malignant neoplasm of bladder
U77 Malignant neoplasm urinary other
U78 Benign neoplasm urinary tract
U79 Neoplasm urinary tract NOS
U80 Injury urinary tract
U85 Congenital anomaly urinary tract
U88 Glomerulonephritis/nephrosis
U90 Orthostatic albumin./proteinuria
U95 Urinary calculus
U98 Abnormal urine test NOS
U99 Urinary disease, other

Pregnancy, Childbearing, Family Planning W

W01 Question of pregnancy
W02 Fear of pregnancy
W03 Antepartum bleeding
W05 Pregnancy vomiting/nausea
W10 Contraception postcoital
W11 Contraception oral
W12 Contraception intrauterine
W13 Sterilization
W14 Contraception other
W15 Infertility/subfertility
W17 Post-partum bleeding
W18 Post-partum symptom/complaint oth.
W19 Breast/lactation symptom/complaint
W21 Concern body image in pregnancy
W27 Fear complications of pregnancy
W28 Limited function/disability (w)
W29 Pregnancy symptom/complaint other
W70 Puerperal infection/sepsis
W71 Infection complicating pregnancy
W72 Malignant neoplasm relate to preg.
W73 Benign/unspec. neoplasm/pregnancy
W75 Injury complicating pregnancy
W76 Congenital anomaly complicate preg.
W78 Pregnancy
W79 Unwanted pregnancy
W80 Ectopic pregnancy
W81 Toxaemia of pregnancy
W82 Abortion spontaneous
W83 Abortion induced
W84 Pregnancy high risk
W85 Gestational diabetes
W90 Uncomplicate labour/delivery live
W91 Uncomplicate labour/delivery still
W92 Complicate labour/ delivery livebirth
W93 Complicate labour/delivery stillbirth
W94 Puerperal mastitis
W95 Breast disorder in pregnancy other
W96 Complications of puerperium other
W99 Disorder pregnancy/delivery, other

Female Genital X

X01 Genital pain female
X02 Menstrual pain
X03 Intermenstrual pain
X04 Painful intercourse female
X05 Menstruation absent/scanty
X06 Menstruation excessive
X07 Menstruation irregular/frequent
X08 Intermenstrual bleeding
X09 Premenstrual symptom/complaint
X10 Postponement of menstruation
X11 Menopausal symptom/complaint
X12 Postmenopausal bleeding
X13 Postcoital bleeding
X14 Vaginal discharge
X15 Vaginal symptom/complaint other
X16 Vulval symptom/complaint
X17 Pelvis symptom/complaint female
X18 Breast pain female
X19 Breast lump/mass female
X20 Nipple symptom/complaint female
X21 Breast symptom/complt. female other
X22 Concern breast appearance female
X23 Fear sexually transmitted disease (f)
X24 Fear of sexual dysfunction female
X25 Fear of genital cancer female
X26 Fear of breast cancer female
X27 Fear genital/breast disease other (f)
X28 Limited function/disability (x)
X29 Genital symptom/complt female oth.
X70 Syphilis female
X71 Gonorrhoea female
X72 Genital candidiasis female
X73 Genital trichomoniasis female
X74 Pelvic inflammatory disease
X75 Malignant neoplasm cervix
X76 Malignant neoplasm breast female
X77 Malignant neoplasm genital other (f)
X78 Fibromyoma uterus
X79 Benign neoplasm breast female
X80 Benign neoplasm female genital
X81 Genital neoplasm oth/unspecied (f)
X82 Injury genital female
X83 Congenital anomaly genital female
X84 Vaginitis/vulvitis NOS
X85 Cervical disease NOS
X86 Abnormal cervix smear
X87 Uterovaginal prolapse
X88 Fibrocystic disease breast
X89 Premenstrual tension syndrome
X90 Genital herpes female
X91 Condylomata acuminata female
X92 Chlamydia infection genital (f)
X99 Genital disease female, other

Male Genital Y

Y01 Pain in penis
Y02 Pain in testis/scrotum
Y03 Urethral discharge
Y04 Penis symptom/complaint other
Y05 Scrotum/testis sympt/complt. other
Y06 Prostate symptom/complaint
Y07 Impotence NOS
Y08 Sexual function sympt./complt.(m)
Y10 Infertility/subfertility male
Y13 Sterilization male
Y14 Family planning male other
Y16 Breast symptom/complaint male
Y24 Fear of sexual dysfunction male
Y25 Fear sexually transmitted dis. male
Y26 Fear of genital cancer male
Y27 Fear of genital disease male other
Y28 Limited function/disability (y)
Y29 Genital sympt./complt.male other
Y70 Syphilis male
Y71 Gonorrhoea male
Y72 Genital herpes male
Y73 Prostatitis/seminal vesiculitis
Y74 Orchitis/epididymitis
Y75 Balanitis
Y76 Condylomata acuminata male
Y77 Malignant neoplasm prostate
Y78 Malign neoplasm male genital other
Y79 Benign/unspec. neoplasm gen. (m)
Y80 Injury male genital
Y81 Phimosis/redundant prepuce
Y82 Hypospadias
Y83 Undescended testicle
Y84 Congenital genl anomaly (m) other
Y85 Benign prostatic hypertrophy
Y86 Hydrocoele
Y99 Genital disease male, other

Social Problems Z

Z01 Poverty/financial problem
Z02 Food/water problem
Z03 Housing/neighbourhood problem
Z04 Social cultural problem
Z05 Work problem
Z06 Unemployment problem
Z07 Education problem
Z08 Social welfare problem
Z09 Legal problem
Z10 Health care system problem
Z11 Compliance/being ill problem
Z12 Relationship problem with partner
Z13 Partner's behaviour problem
Z14 Partner illness problem
Z15 Loss/death of partner problem
Z16 Relationship problem with child
Z18 Illness problem with child
Z19 Loss/death of child problem
Z20 Relationship prob. parent/family
Z21 Behaviour problem parent/family
Z22 Illness problem parent/family
Z23 Loss/death parent/family member
Z24 Relationship problem friend
Z25 Assault/harmful event problem
Z27 Fear of a social problem
Z28 Limited function/disability (z)
Z29 Social problem NOS

Abbreviations

Anom	anomaly
behav.	behaviour
bronch.	bronchus
complicat.	complication
congen.	congenital
dis.	disease
eval.	evaluation
exam.	examination
gen.	genital
malig.	malignant
metab.	metabolic
musculo.	musculoskeletal
NEC	not elsewhere classified
NOS	not otherwise specified
nutrit.	nutrition
oth	other
preg.	pregnancy
prob.	problem
RFE	reason for encounter
sympt.	symptom
unspec.	unspecified
w	with
w/o	without