Gustavo Gusso MD, PhD
gusso.gustavo@gmail.com

54 – From Dictionary to Terminologies / Ontologies in General Practice/Family Medicine

Gustavo Gusso MD, PhD.
Family physician, São Paulo University, Brazil
Marc Jamoulle MD.
Liege University, Belgium

A classification, like the International Classification of Primary Care (ICPC) (1) delimits a field and must follow rules as to hold mutually exclusive categories

A dictionary is a set of definitions that supports one classification system. The future is uncertain but the definitions, like those stated in the Dictionary for General/ Family Practice (GP/FM) (2) are inescapable.

Out of the Gutenberg age, the global knowledge network implies classified, mapped and interrelated dictionary named terminologies for human reading and ontologies for machine use. (3)

Niels Bentzen, the editor of the Dictionary for GP/FM, was chair of WONCA International Classification Committee (WICC) up to 2007. To work with classification implies dealing with identification (SYMBOL), concepts (THOUGHT) and content, called definitions, scope notes or criteria (REFERENT). Identifiers, concepts and content are in interrelationship as proposed in the Richards & Ogben triangle (fig 1) (4)
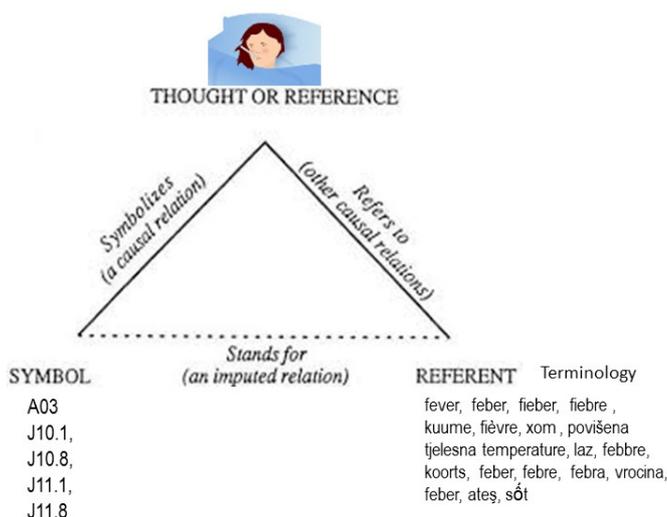

Figure 1 The concept of fever along the Ogden & Richards triangle (1923).

Symbol represented by the ID in the classification ICPC-2 & ICD-10. Entry term of ICPC in 19 languages from www.hetop.eu

One depend on another. When describing inclusion and exclusion criteria, the concepts should be very clear for those who are developing and for those who are using a classification.

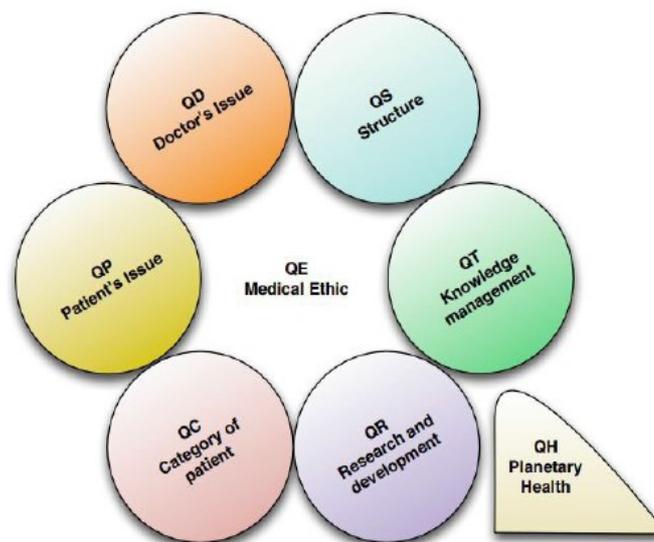A classification system must follow three basic rules (5):

1. There are consistent, unique classificatory principles in operation
2. The categories are mutually exclusive
3. The system is complete

On the other hand, a nomenclature doesn't need to follow those principles and "means an agreed-upon naming scheme" (5). Niels Bentzen wrote at the preface of the dictionary that "during the development of ICPC-2 it became apparent that there is a great need to ensure that the concepts and terms we use should be defined in the same precise way" (2). His base was other initiatives that started in the seventies (6) when general practice (which is synonymous of family medicine in the dictionary) was growing in importance but with different scope in different countries which implied a need for "standardization".

Such tools as ICPC and the Dictionary have been developed in English, as it is the working language most used in scientific meetings and texts. The availability of ICPC-2 in more than 20 languages shows the worldwide distribution of the primary care concepts. Once a concept receives a number and is translated for many languages, it tries to connect medical terminology to different languages.

On the website of the Département d'Information et d'Informatique médicale (B2IM) of the Rouen university, France, (www.hetop.eu) more than 70 interrelated terminologies are freely available. Terminologies like SNOMED-CT (7) or nomenclature like ICD10 are addressing only clinical concepts i.e. symptoms, findings, process or diagnosis. The particularity of the WONCA dictionary is to address non-clinical issues such as the definitions of usual organizational concepts like quality, accessibility or continuity as well as medical ethics, content of teaching or environmental health in primary care which represent non-clinical task or knowledge.

Figure 2 Matrix of the Q-Codes. On the left; the people related domains, Doctor's issue, Patient's issue and Category of patients.

On the right; Structure,Knowledge management including Teaching and Training as well as Research and development. On the center; joining all, Medical Ethics. Hazards are the underlying Planetary health conditions represented by the downward oblique tail stylized as a triangle but which are in reality the background of the GPs work. Note that QH locks the wheel.

Although never published, the idea of a classification of non-clinical tasks has been proposed by Henk Lamberts in the 1980ies to index medical literature in the pre-Internet age. He worked with the letter Q because it was not used by ICPC. Considering that current online terminologies are not dealing with those non-clinical terms and on the basis of the seminal idea of Henk Lamberts, we propose a new tool under the name Q-Code terminology, an online database offering a categorization of family medicine management tool with internal and external links to relevant knowledge

Q-Codes are a list of 182 concepts represented by terms and organized in 8 domains (fig 2). Each concept has its own terminological record containing definitions, conceptual content, mapping to other terminologies and to web sites such Medical Subject Headings, Babelnet.org or Dbpedia. Each concept is also highlighted by relevant open access full text bibliography and an automatic link to PubMed. The terms and definitions are already available in 8 languages (English, French, Spanish, Dutch, Portuguese, Turkish, Korean and Vietnamese) As our tool is dealing with concepts, it is language independent. Our terminology could be available in any language on the HeTOP pages.

In the future data will be linked to data, shared, processed and reused producing new data This field is known as "semantic web" and has been developed by Tim Berners-Lee who created the World Wide Web. Semantic web aims to connect all concepts in order to provide decision support, map different vocabularies and resources, allowing machines to manage the information (8).

When complex terminology is developed to allow machines to speak to machine, one speaks about ontology. It is difficult to foresee where it will go but a good identification of the concepts at stake and their definitions will always be the ground of a specific epistemology of general practice.

We hope that in a near future our terminology will be part of an ontology of GP/FM. All the work done has been on a voluntary base and we are waiting more input from colleagues of more countries to develop and show the core content of our practice.

Note

The French Society SFMG created also a clinical dictionary, in French, starting from the ideas of an Austrian general practitioner, Robert Braun. The concept is to define the cases that a GP sees in his office at least once a year, representing 97% of his clinical workload. They came up with 207 definitions and made a link with ICD (from the beginning) and with ICPC (2016). Unfortunately, only in French

Société Française de Médecine Générale. (2016). Le Dictionnaire des Résultats de consultation - DRC. Retrieved from http://www.sfmg.org/theorie_pratique/outils_de_la_demarche_medicale/le_dictionnaire_des_resultats_de_consultation_-_drc/

Take Home Message

- Dictionaries and classifications were started in the pre-computer era but gained in importance since the use of computers. Interrelated terminologies developed for machine use are called ontologies
- There are different perspectives possible of how to describe our job, how to use it for different purposes, and how to use it for better quality of care and for caring for the patient
- Dictionaries and classifications are an on-going work, since our field of work is moving, science progresses and the conscience of our profession is erupting.

About Q-Codes : http://3cgp.woncaeurope.org

Original Abstract

http://www.woncaeurope.org/content/abstract-no-983-workshop-dictionary-generalfamily-practice

References

1. World Organization of Family Doctors (WONCA): International Classification of Primary Care, ICPC-2, 2nd Edition. : Oxford University Press, 1998.
2. N. Bentzen (ed.). Wonca Dictionary of General/Family Practice. Maanedsskr. Copenhagen. 2003
3. Tao, Cui, Jyotishman Pathak, Harold R. Solbrig, Wei-Qi Wei, and Christopher G. Chute. "Terminology Representation Guidelines for Biomedical Ontologies in the Semantic Web Notations." Journal of biomedical informatics 2013. 46(1):128–38. Retrieved (http://www.ncbi.nlm.nih.gov/pubmed/23026232)
4. Ogden and Richards.The Meaning of Meaning. International library of psychology. Routledge and Kegan Paul. 1923
5. Bowker GC, Star SL. Sorting Things Out: Classification and Its Consequences. Cambridge, MA: MIT Press; 1999
6. A general practice glossary. J R Coll Gen Pract. 1973 Jun;23 Suppl 3:1-15.
7. ITHSDO. International Health Terminology Standards Development Organisation; 2016. Available from: (http://www.ihtsdo.org/snomed-ct)
8. Jamoulle M,Vander Stichele RH, Cardillo E, Roumier J, Grosjean J, Darmoni S. "Semantic Web and the Future of Health Care Data in Family Practice." Merit Research Journal of Medicine and Medical Sciences. 2015. 3(12):586–94. Retrieved (http://orbi.ulg.ac.be/handle/2268/189292).