



## I CONTRIBUTI

**del Centro Collaboratore italiano  
dell'Organizzazione Mondiale della Sanità  
per la Famiglia delle Classificazioni Internazionali**

**WHO-FIC Network Annual Meeting**  
世界卫生组织国际分类家族年会  
**Universal Coverage: Information and Innovation**  
全覆盖: 信息与创新  
12 to 18 October 2013 | Beijing, China  
2013年10月12-18日 中国北京





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In reply please  
refer to: WHO FIC 2013

Your reference: WHO-FIC 2013

Lucilla Frattura  
Head, WHO-FIC Collaborating Centre  
Regional Health Administration Via  
Pozzuolo, 330  
33100 Udine  
Italy

3 June 2013

Dear Dr Frattura,

**WHO Family of International Classifications Network Annual Meeting  
Beijing, People's Republic of China, 12-18 October 2013**

I take great pleasure in inviting you and your centre's delegation to the next annual meeting of the World Health Organization Family of International Classifications (WHO-FIC) Network, which will take place in Beijing, People's Republic of China, from Saturday 12 to Friday 18 October 2013.

The meeting will be hosted by the Chinese WHO Collaborating Centre for the Family of International Classifications. The Secretariat function will be carried out by WHO HQ Classifications, Terminology and Standards unit.

"Universal Health Coverage: Information and Innovation " has been identified as the main theme for this year's meeting.

Please find attached the draft provisional agenda and timetable and a tentative list of participants. These will be updated in line with comments from the Small Executive Group (SEG) and yourselves after review by the Secretariat. Updates will be posted on the WHO web site:

<http://www.who.int/classifications/network/meeting2013/en/index.html>

A meeting of the Heads of WHO Collaborating Centres will take place on Friday 11 October 2013. The purpose of this meeting is to discuss the Strategic Workplans and the work of each WHO Collaborating Centre.

The meeting venue is the Empark Grand Hotel in Beijing, People's Republic of China.

The website for the coordination of meeting registrations and accommodation reservations developed by our hosts will provide all the details regarding general orientation and meeting facilities, as well as accommodation and social program reservation forms and procedures. The website will be accessed via hyperlink from our WHO FIC website.

Registrations to the meeting are mandatory and must be made through the meeting web site.

Each WHO Collaborating Centre is to be represented by two main delegates and as many alternates as you deem appropriate. However, we would like you to restrict the size of each team to no more than 5 members, unless responsibilities for the work program warrant a higher number. Please send an updated list of your delegation with full individual details (including email address) to Eva Foust (fouste@who.int) by 31 July 2013, and complete their registration through the web site by 31 August 2013 at the latest.

As per established practice, we understand that all costs of your and your team's participation will have to be borne by yourself or your organization.

This invitation is sent to you by e-mail. Should you require a regular copy, please inform us and we will send one for you and your team members accordingly.

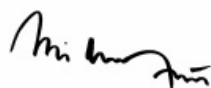
We have developed a new platform for the submission and collection of the posters for 2013. The link is available on the WHO website and on the meeting website.

We would like to request each Collaborating Centre to submit a poster presenting your centre's annual report. In addition, if you plan to submit a poster for the plenary poster session or for presentation in the committees or reference groups please use and follow the instructions in the attached poster profile form and the WHO web site.

The deadline for the submission of final posters is 31 August 2013.

If you require any further information regarding the meeting please do not hesitate to contact me and the members of the WHO-FIC Team. I am looking forward to meeting you in Beijing.

Yours sincerely,



(Electronic signature)

Dr T. Bedirhan Üstün  
Coordinator  
Classifications, Terminologies and Standards  
Department of Health Statistics and Informatics

ENCLS.  
Draft Timetable  
Draft Agenda  
Draft List of Participants

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## Composizione della delegazione 2013

### Lucilla Frattura

Italian WHO-FIC Collaborating Centre Head, Council (voting member), Update and Revision Committee (ICF voting member), Education and Implementation Committee (voting member), Family Development Committee (member), Functioning and Disability Reference Group (member)  
*Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine*

### Francesco Gongolo

Update and Revision Committee (co-chair and ICD voting member), Council (voting member), Functioning Topic Advisory Group (voting member)  
*Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine*

### Vincenzo Della Mea

Informatics and Terminology Committee (co-chair)  
*University of Udine, Dept Mathematics and Informatics*

### Andrea Martinuzzi

Functioning and Disability Reference Group (co-chair)  
*"E. Medea" Scientific Institute, Conegliano Research Centre*

### Matilde Leonardi

Education and Implementation Committee (voting member), Functioning and Disability Reference Group (member)  
*Neurological Institute Carlo Besta IRCCS Foundation - Neurology, Public Health and Disability Unit, Milan*

### Francesco Grippo

Mortality Reference Group (voting member)  
*Italian National Institute of Statistics, Rome*

### Andrea Simoncello

Informatics and Terminology Committee (voting member)  
*Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine*

### Paula Tonel

Update and Revision Committee (ICF secretariat)  
*Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine*

















# Identification and coding of the main condition using ICD: suggested workflows

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Lucilla Frattura, Francesco Gongolo, Flavia Munari  
Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine - Italy

**Abstract** This poster presents an Italian proposal for the systematization of current knowledge in identification and coding of a condition introducing as well a revised workflow for the identification of the main condition.

## Introduction

Starting from a review of the documents produced at international level (1) and taking into account the work done by the Italian WHO-FIC Collaborative Centre (CC) within an inter-regional cooperation in the field of children and youth neuropsychiatry (2), we propose a new perspective on the coding rules to assign the main condition.

## Methods & Materials

The main condition workflow produced by the Morbidity Reference Group (MbRG) in 2010 was taken as the starting point to develop three separate trees to identify the conditions, code them, and sort out the condition, recognized at the end of the episode of care, primarily responsible for the patient's need for treatment or investigation (reason for encounter vs condition generating the greater use of resources). We adopted the perspective of clinicians who, while coding, are keen to keep their diagnosis-oriented approach. We verified the logic of our proposal by testing it against the coding guidelines adopted in Australia, Canada, Germany, and US.

## Results

The materials we examined showed that the definitions adopted in the above-mentioned Countries for hospital discharges, are different, although they all are specifications of the WHO definition, which has also been largely modified and updated during the course of the years.

This lively and interesting discussion on the coding of the main condition in the hospital setting, is in contrast with the lack of any debate on main condition coding in the ambulatory setting. Our three trees (Figure 1, Figure 2, Figure 3) are a tentative systematization that takes into account both hospital and ambulatory settings and is compatible with some of the most common case-mix systems adopted in the world.

Figure 1: Decision tree 1 - identification of the condition

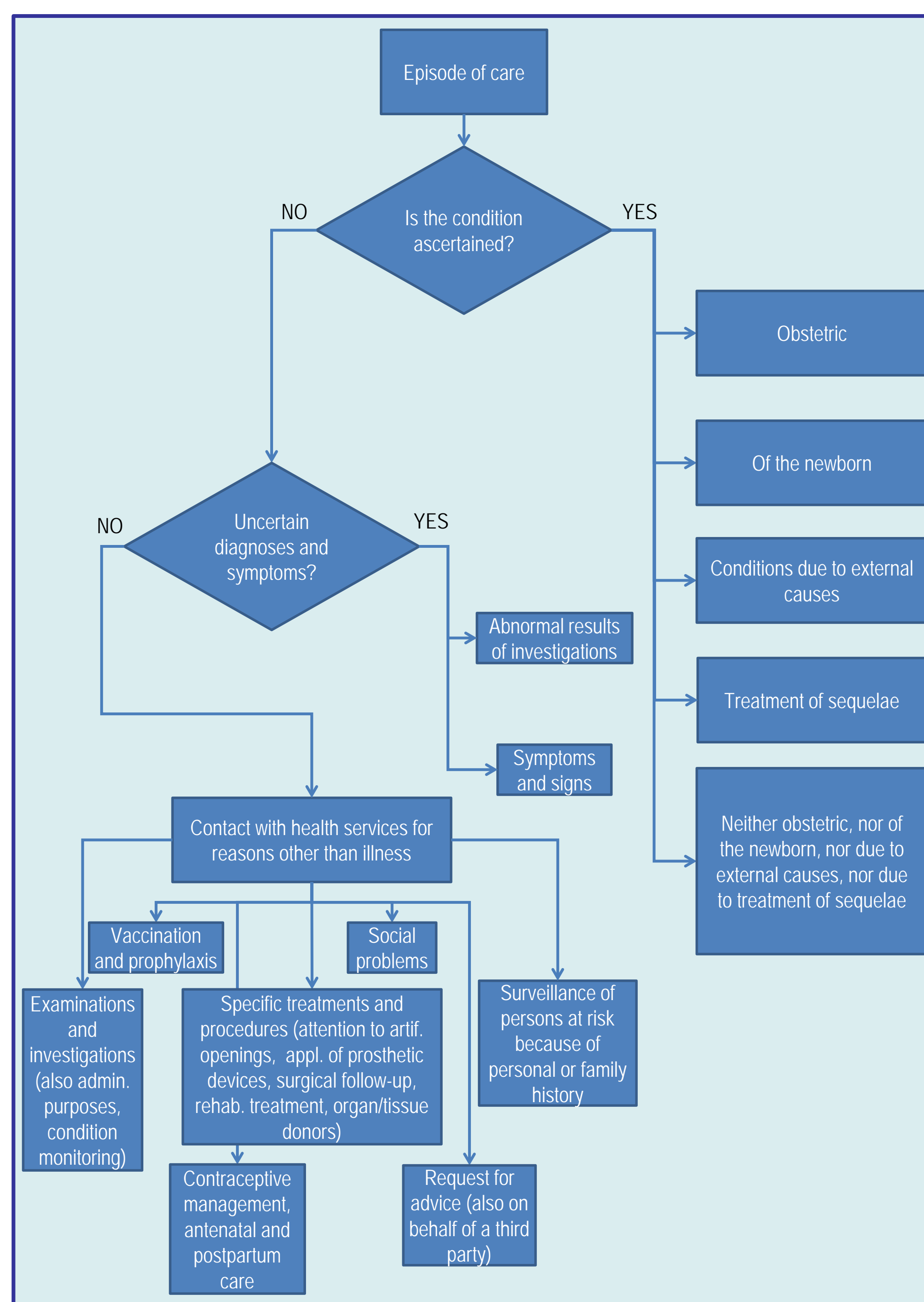


Figure 2: Decision tree 2 - coding of the condition

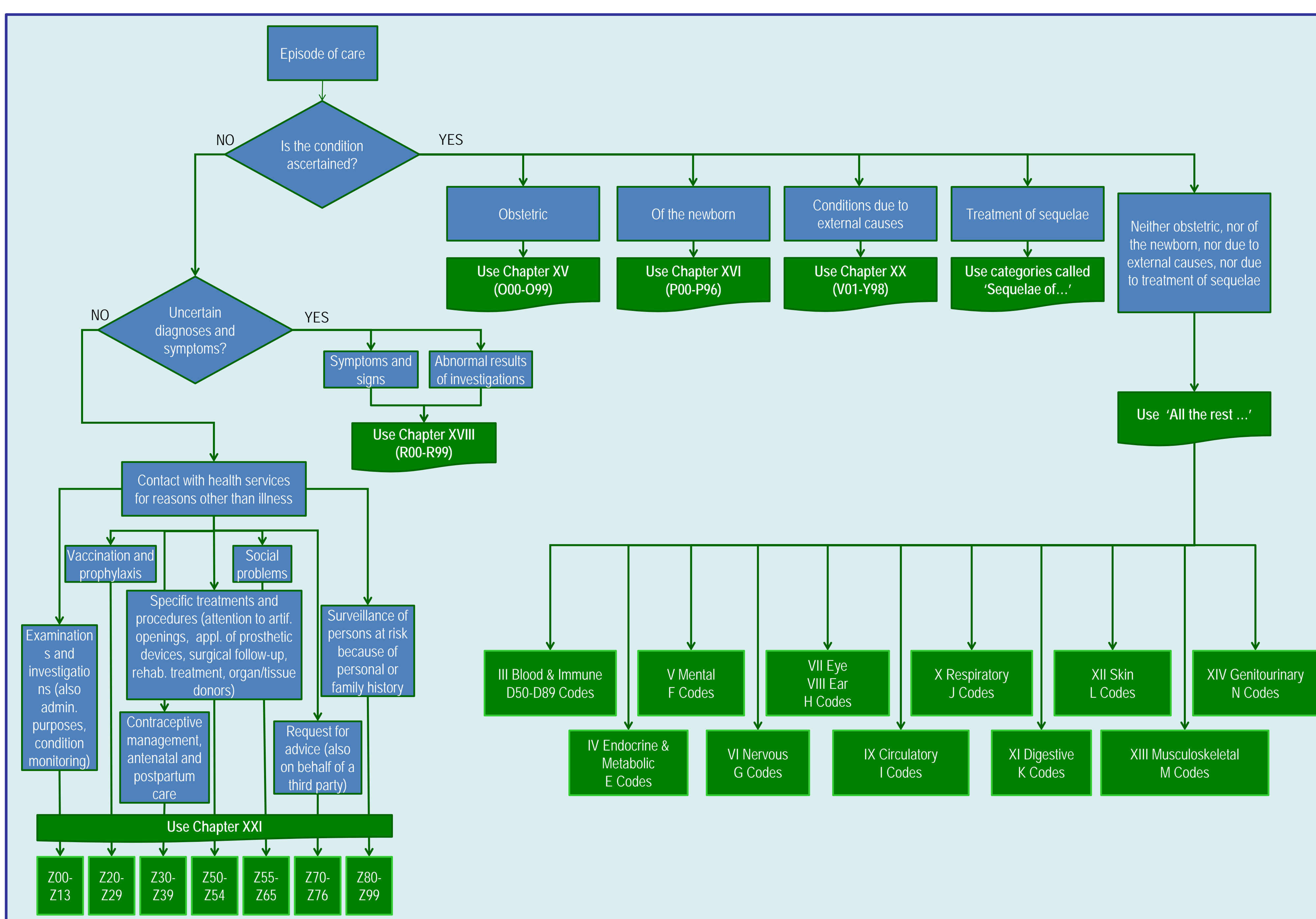
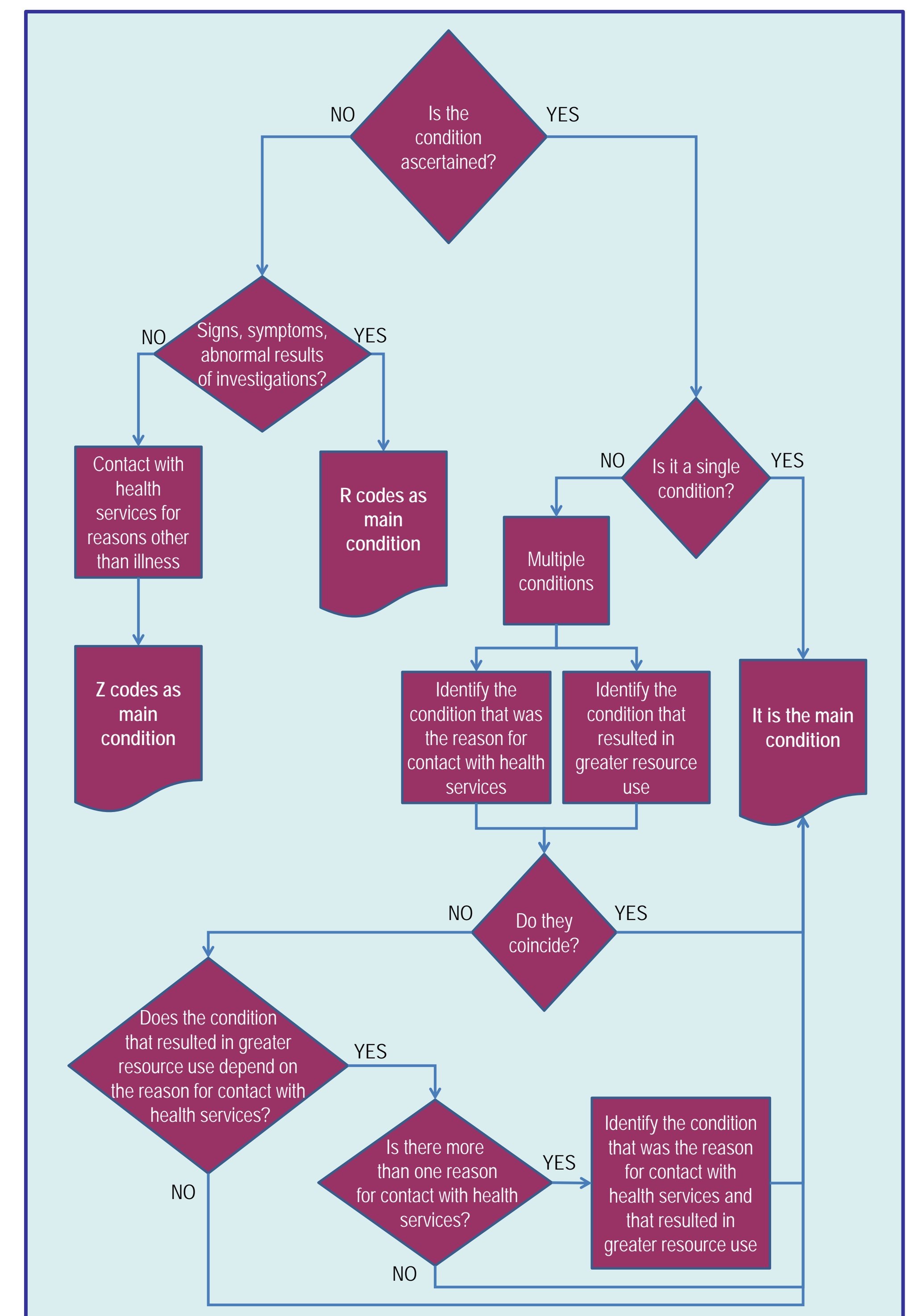


Figure 3: Decision tree 3 - identification of the main condition



The issue is relevant not only to achieve a more standardized and comparable use of ICD-10 but also to implement ICD-11 in the future, since the new revision of the International Classification of Diseases will easily allow customization for primary care settings. The end of the episode of care in the ambulatory setting is yet an open debate.

## Conclusions

We propose a systematization of the WHO indications to code the main condition. The assignment rules for the main condition should remain valid not only in hospital settings and therefore it is highly desirable the engagement of other parties in testing our solution also in primary care.

## Acknowledgements

Thanks to L. Moskal (North American WHO-FIC-CC), Dr. G. Henriksson and Dr. O. Steinum (Nordic WHO-FIC CC) for the help in recollection of background materials.

## References

- Rust J. Review of ICD-10 morbidity coding rules (WHO-FIC Network Annual Meeting, Seoul 2009 rev. Cologne 2010)
- Frattura L, Gongolo F, Munari F. ICD-10 implementation in the health information system of the Piedmont Region (Italy) to overcome WHO multiaxial classification of mental disorders of children, WHO-FIC network annual meeting, Beijing 2013

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# Modelling the “roles” of Environmental Factors on Activities and Participation domains

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Laura Rizzi<sup>1</sup>, Sara Anzilutti<sup>1</sup>, Lucilla Frattura<sup>2</sup>

<sup>1</sup> University of Udine, Department of Economics and Statistics

<sup>2</sup> Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine

**Abstract** Logit models (applied separately to the 213 sampled patients and to the subsamples) allowed to analyse the probability of specific “roles” of the more coded Environmental Factors (EF) within the Activities and Participation (AP) domains. These “roles” were based on particular conditions related to the AP qualifiers. The statistical analysis pointed out the effect of gender and group on the probability of the EF specific roles, controlling for the grouped structure of data.

## Introduction

In 2011, a field trial using a new electronic ICF-based functioning/disability assessment protocol (VILMA/FABER) was carried out in the Friuli Venezia Giulia Region. The protocol organized the collection of information useful to analyse the interaction between the person and the environment by adopting the ICF and its version for children and youth (ICF-CY). In this present study, generalized linear models were estimated to analyse different “roles” of some Environmental Factors (EF) within the Activities and Participation (AP) domains.

## Methods & Materials

The whole enrolled sample of 213 outpatients and two subsamples, the 53 patients aged less than 18 and the 51 patients in charge to mental health services (MHS), were considered separately in the analysis. After an exploratory analysis on the coded EF, generalized linear models were used to evaluate the probability of some particular “roles” for the our most coded EF. These singled out “roles”, based on specific conditions (events) related to the AP qualifiers, were: *real facilitator* (when the EF had a qualifier equal to 3 or 4), *real barrier* (when the EF had a qualifier equal to .3 or .4), *relative facilitator*, (when the performance qualifier was smaller than the capacity qualifier, given the EF coded as facilitator), *absolute facilitator* (when the performance qualifier was equal to 4 while the capacity one was larger than 0, given the EF coded as facilitator) and *not improving environmental factor* (when the performance qualifier was larger than the capacity qualifier, given the EF coded) (see Table 1).

**Table 1 – Types of EF roles, defined by conditions on qualifiers in performance and capacity items, and their frequencies by EF**

Role of EF	Condition/event	Frequency			
		e310	e110	e355	e575
Real facilitator	Only qualifiers 3 or 4	1574 (24.9%)	260 (17%)	559 (23.3%)	670 (23.8%)
Real barrier	Only qualifiers .3 or .4	54 (0.9%)	15 (1%)	1 (0.0%)	4 (0.1%)
Relative facilitator	Performance qualifier smaller than capacity qualifier, given EF cited as facilitator	2690 (42.6%)	863 (56.5%)	1272 (52.9%)	1365 (48.4%)
Absolute facilitator	Performance qualifier 0 with capacity qualifier greater than 0, given EF cited as facilitator	1427 (22.6%)	236 (15.5%)	371 (15.4%)	562 (19.9%)
Not improving environmental factor	Performance qualifier greater or equal to the capacity qualifier, given EF cited	567 (9%)	153 (10%)	201 (8.4%)	218 (7.7%)

The probability of the conditions/events described in Table 1 were studied by logit models, estimated separately for the four most cited EF and for the five coded EF roles. Logit models allowed us to analyse the effect on the probability of each role of individual characteristics such gender (male=1) and group (younger patients=1, patients in charge of mental services=2, other patients as base category). These models were estimated on single item responses as units of observation.

To consider the grouped structure of AP items inside domains and to assess the heterogeneity of the roles’ probability across them, relative dummy variables were included in the linear predictors (chapter d9 as base category), leading to the following logit models:

$$\log\left(\frac{\pi_{Ri}}{1-\pi_{Ri}}\right) = \beta_0 + \beta_1 S_i + \sum_{g=1}^2 \alpha_g G_{g,i} + \sum_{d=1}^8 \gamma_d D_{d,i} + \varepsilon_i$$

Where  $\pi_{R,i}$  was the probability of the EF role/event (R) in the item response  $i$ ,  $S_i$  was the dummy for sex,  $G_{g,i}$  were the 2 dummies for the group (with  $g=1,2$ ) and  $D_{d,i}$  were the dummies for domains (with  $d=1,\dots,8$ ). A different model was estimated for each of the five roles in Table 1.

## Results

Globally, the coded EF related to AP categories were 14,765, 4,343 for the group of patients younger than 18 and 3,387 for the group of MHS patients.

The most cited EF were: e310 immediate family (3,431), e575 general social support services, systems and policies (1,609), e355 health professionals (1,477), e340 personal care providers and personal assistants (1,395) and e110 products or substances for personal consumption (1,338). In the group of patients younger than 18 years, the most cited EF were: e310 immediate family (1,319), e575 general social support services, systems and policies (496), e355 health professionals (349), e580 health services, systems and policies (308) and e360 other professionals (250). In the group of MHS patients, the most cited EF were: e110 products or substances for personal consumption (743), e355 health professionals (702), e580 health services, systems and policies (416), e340 personal care providers and personal assistants (292) and e310 immediate family (288). The analysis of the particular roles of the most cited EF, through logit models, pointed out manifold results.

The role of real facilitator was significantly more likely covered: (a) by the e355 in both the subgroups and for the items of AP chapters d5, d6 and d8; (b) by e110 for the MHS subgroup and for items of chapter d2; (c) by e575 for the MHS subsample and for items of chapter d8.

**Table 2 – Estimated OR (odds ratios) for sex, group and AP chapter – relative facilitator**

Variables	e310	e110	e355	e575
Males	1.49***	0.99	1.29	1.78***
Younger than 18	1.20**	1.27	0.80	1.67**
MHS patients	1.07	4.79***	1.57***	2.45***
d1	0.32***	2.40**	0.76	0.70
d2	0.61**	2.04**	0.57	0.84
d3	0.32***	2.42	0.53	0.46***
d4	0.49***	3.85***	2.35**	0.79
d5	0.86	2.75**	2.24***	1.22
d6	1.00	3.59	0.52	1.84*
d7	0.47***	2.62	0.64	0.40***
d8	0.72*	2.00	1.04	1.00

The role of real barrier was significantly more likely only for two EF: (a) e310 for the MHS patients and for the items of chapters d1, d2, d3 and d7; (b) e110 in both the subsamples and for items of chapter d4. The role of relative facilitator and absolute facilitator resulted more likely for the e310 among males, while the e110 and the e355 played only the role of relative facilitator among MHS patients (see Table 2 and Table 3). No one of the four considered EF played the role of not improving EF in relation to the subgroups of younger, of MHS patients and of males (see Table 4).

**Table 3 – Estimated OR (odds ratios for sex, group and AP chapter - absolute facilitator**

Variables	e310	e110	e355	e575
Males	1.27**	1.24	1.01	0.99
Younger than 18	0.90	0.31***	0.61**	0.48***
MHS patients	0.26***	0.08	0.88	0.31***
d1	0.09***	838309	0.53**	0.13***
d2	0.28***	810758	0.64*	0.49***
d3	0.14***	4.87***	1.09	0.15***
d4	0.44***	3.43***	1.28	0.52**
d5	2.14***	4.41***	2.68***	2.73***
d6	2.37***	7.11***	1.62*	2.18***
d7	0.30***	1.56*	0.64*	0.30***
d8	1.28	605126	0.88	1.22

**Table 4 – Estimated OR (odds ratios) for sex, group and AP chapter - not improving environmental factor**

Variables	e310	e110	e355	e575
Males	0.72***	1.15	0.78	0.57***
Younger than 18	0.86	0.73	1.21	0.63**
MHS patients	0.78	0.28***	0.64**	0.39***
d1	2.02***	0.50*	1.35	1.22
d2	1.29	0.50**	1.79	1.05
d3	2.29***	0.66	1.94	1.98**
d4	1.41*	0.51*	0.45**	1.08
d5	0.76*	0.38**	0.44***	0.65*
d6	0.66*	0.38	1.96	0.49*
d7	1.55*	0.52	1.65	2.34***
d8	1.07	0.67	0.98	1.06

## Conclusions

Beyond the manifold results, our analysis mainly pointed out that the role of real facilitator was significantly more likely covered by the e355 (health professionals) within subgroups. While EF e310 (immediate family) and e110 (products or substances for personal consumption) resulted more likely real barrier, in the subgroup of the MHS patients. Finally the roles of relative facilitator and absolute facilitator resulted more likely for the e310, among males.

## References

- Frattura et al, ICF implementation in regional policies: the case of the Friuli Venezia Giulia Region, Italy, Who-FIC Network Annual Meeting, Cape Town 2011

## Acknowledgements

Thank are due to Region Friuli Venezia Giulia for funding the Italian CC project.

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# Learning how to use ICD-10 for cause of death coding

12 – 18 October 2013  
Beijing, China

Grippo F., Grande E., Simeoni S., Cinque S., Pennazza S., Rocchi P., Alicandro G., Mistretta A., Navarra S., Orsi C., Di Fraia G., Marchetti S., Pappagallo M., Frova L.  
Italian National Institute of Statistics, Rome, ITALY

Poster Number  
WHO/CTS to insert

**Abstract** Five coders, recently recruited by the Italian National Institute of Statistics were trained on the use of Icd10. After the course they coded a set of death certificates previously coded by senior coders. The agreement of new and senior coders on the underlying cause (UC) selected was used to evaluate the learning process. The study shows the effectiveness of training in increasing the reliability of UC and to correct errors in coding practices. Moreover it suggests that higher inter-coder variability is observed for certificates involving some specific coding topics.

## Introduction

In the production of causes of death (CoD) statistics, the introduction of new coders can affect data series. The impact can be limited by an appropriate training. Five research assistants, recently recruited (October 2012) by the Italian National Institute of Statistics (Istat), were trained on the use of Icd10 for CoD coding. The present investigation analyzes the effect of the training course on the reliability of underlying cause of death (UC) coding performed by the recently trained coders.

## Methods & Materials

The Icd10 course was scheduled in 13 teaching days (January-February 2013, 6 hours per day) with a following four-month period of training on the job. The course focused on the use of ICD10: rules of multiple cause (MC) modifications; selection and modification rules. Learning material was based on Icd10 volume 2, WHO training tool, USA (NCHS) training.

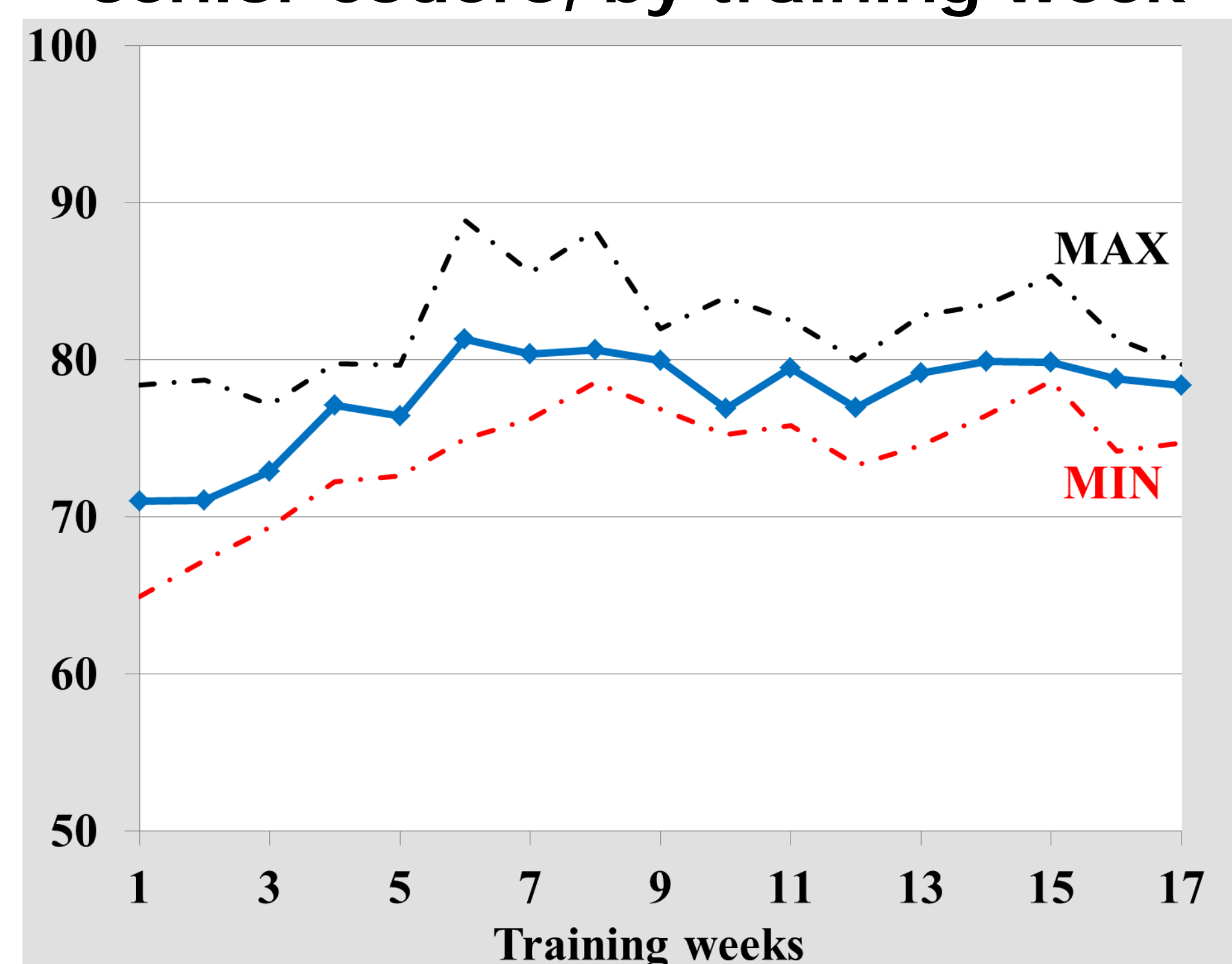
During the training on the job all students coded 4,050 death certificates rejected by the automated coding system and previously coded by senior coders. The coding was computer assisted and requested the completion of MCs. For certificates with complete MC, Acme software was used to select the UC; manual selection was performed on certificates with incomplete MC, certificates containing complications of surgery or external causes.

As indicator of the reliability of CoD coding was used the percentage of certificates in which there is an agreement on the UC between the newly trained and the senior coder.

## Results

The percentage agreement on CoD coding between the new coders and the senior coders was on average 79% at four digit level, ranging from 76% to 80% by coder (+4% at three digit level). The indicator increased over time, from 71% in the first working week to 80% at the end of training period (Figure 1).

**Figure 1. Percentage agreement on UC between new coders and senior coders, by training week**



The average number of certificates coded (Figure 2) per day by younger coders improved progressively from 17 to 138.

**Figure 2. Average daily number of certificates coded during the training on the job**



The analysis by cause of death category (Figure 3) showed the highest inter-coder agreement for certificates with congenital malformations or neoplasms as UC. Lowest agreement for infectious diseases, blood diseases, skin and musculoskeletal diseases, as well.

**Figure 3. Percentage agreement on UC with 95% confidence intervals, by group of CoD**

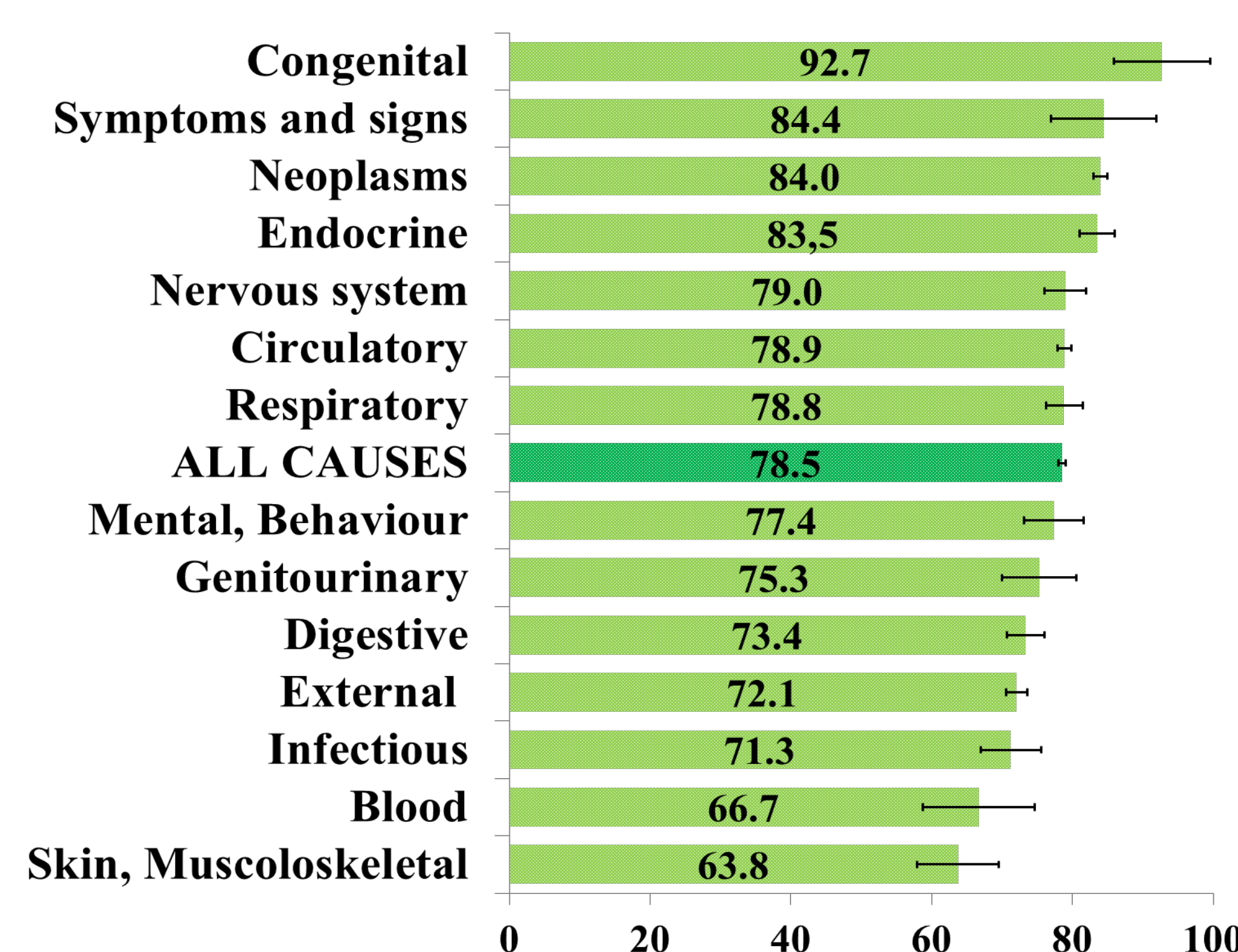
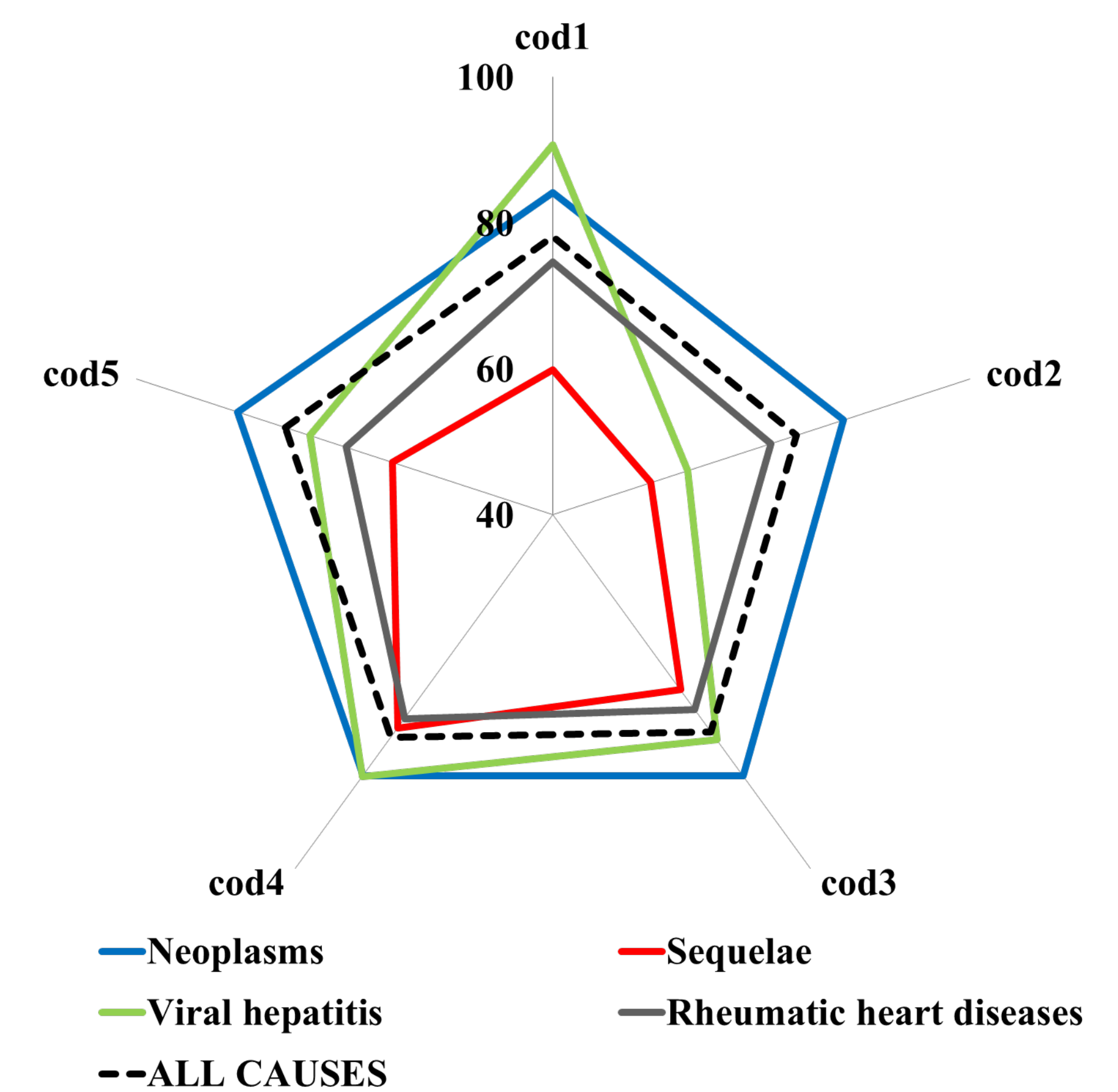


Figure 4 shows the agreement for some specific underlying causes by coder. A certain amount of variability especially for viral hepatitis and sequelae can be observed.

**Figure 4. Percentage agreement on UC by coder, selected CoD.**



## Conclusions

The study shows the effectiveness of the training on the job period in increase the agreement of UC with the standard. The analysis of the inter-coder variability on specific coding topics highlights the needs of clearer instructions on some particular fields like sequelae and viral hepatitis.

## References

- Istat. Supplementary instructions for using ICD-10 to codify causes of death. M&N N. 43/2010
- Harteloh P, de Bruim K, Kardaun J. The reliability of cause-of-death coding in The Netherlands. Eur J Epidemiol (2010) 25:531–538
- Lu TH, Lee MC, Chou MC. Accuracy of cause-of-death coding in Taiwan : types on miscoding and effects on mortality statistics. Int J Epidemiol (2000) 29 :336-343

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# Informatcs and Terminology Committee – Annual Report

12 – 18 October 2013  
Beijing, China

Poster Number  
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Karen Carvell<sup>1</sup>, Vincenzo Della Mea<sup>2</sup>

<sup>1</sup>Canadian Institute for Health Information and North-American Collaborating Center;

<sup>2</sup>University of Udine, Italy and Italian Collaborating Center

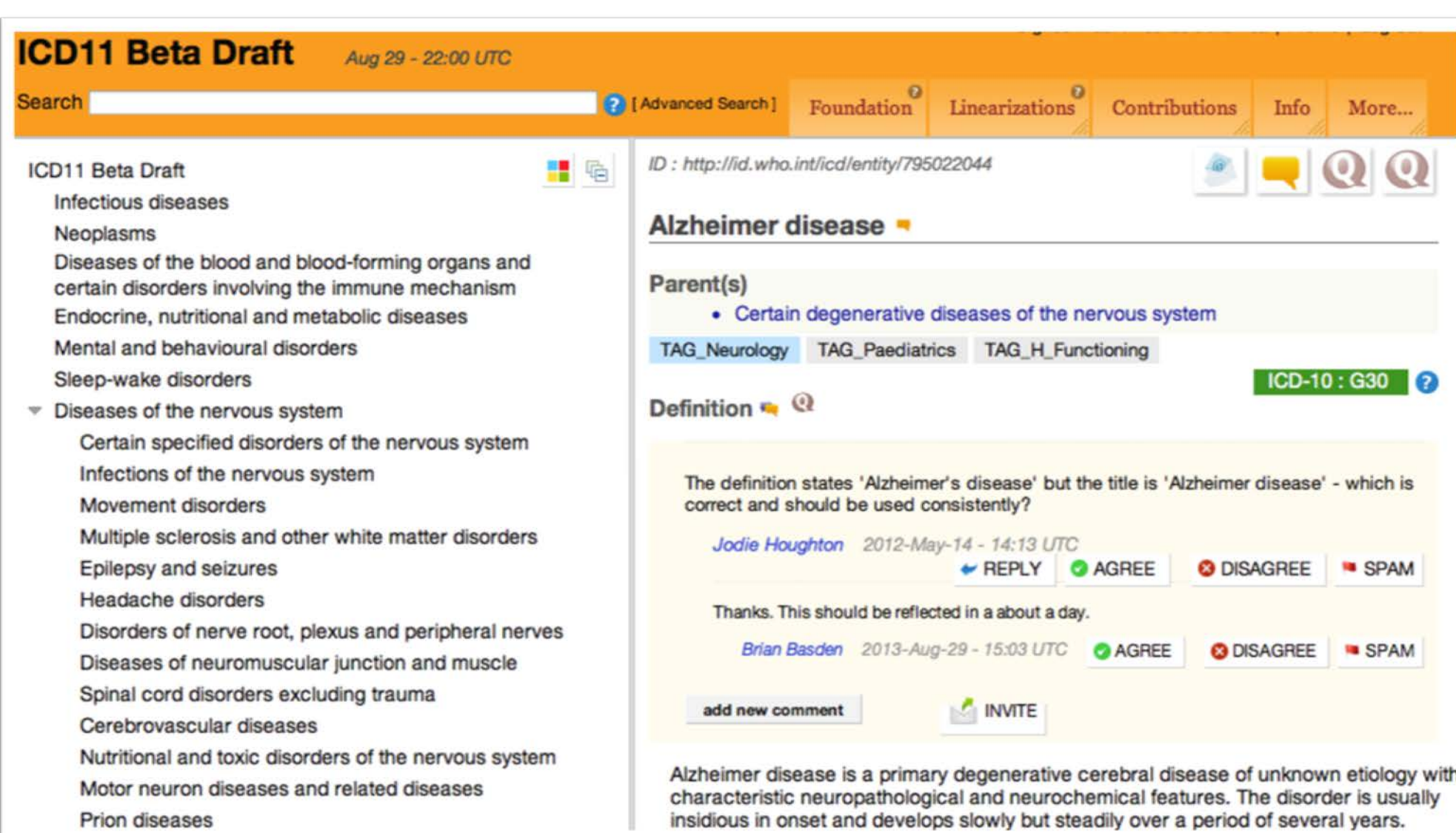
## Abstract

The purpose of the annual report is to communicate to the WHO-FIC network the key activities of the Informatcs and Terminology Committee (ITC) since the Brasilia meeting in October 2012. Activities of the ITC to be highlighted in the annual report include the administration of the committee and work completed and underway in 2012-2013.

## Administration

Two new co-chairs were elected in 2012 at the WHO-FIC Meeting in Brasilia, Karen Carvell from the North-American Collaborating Centre and Dr. Vincenzo Della Mea from the Italian Collaborating Centre. Co-chairs decided not to select a secretary for the Committee.

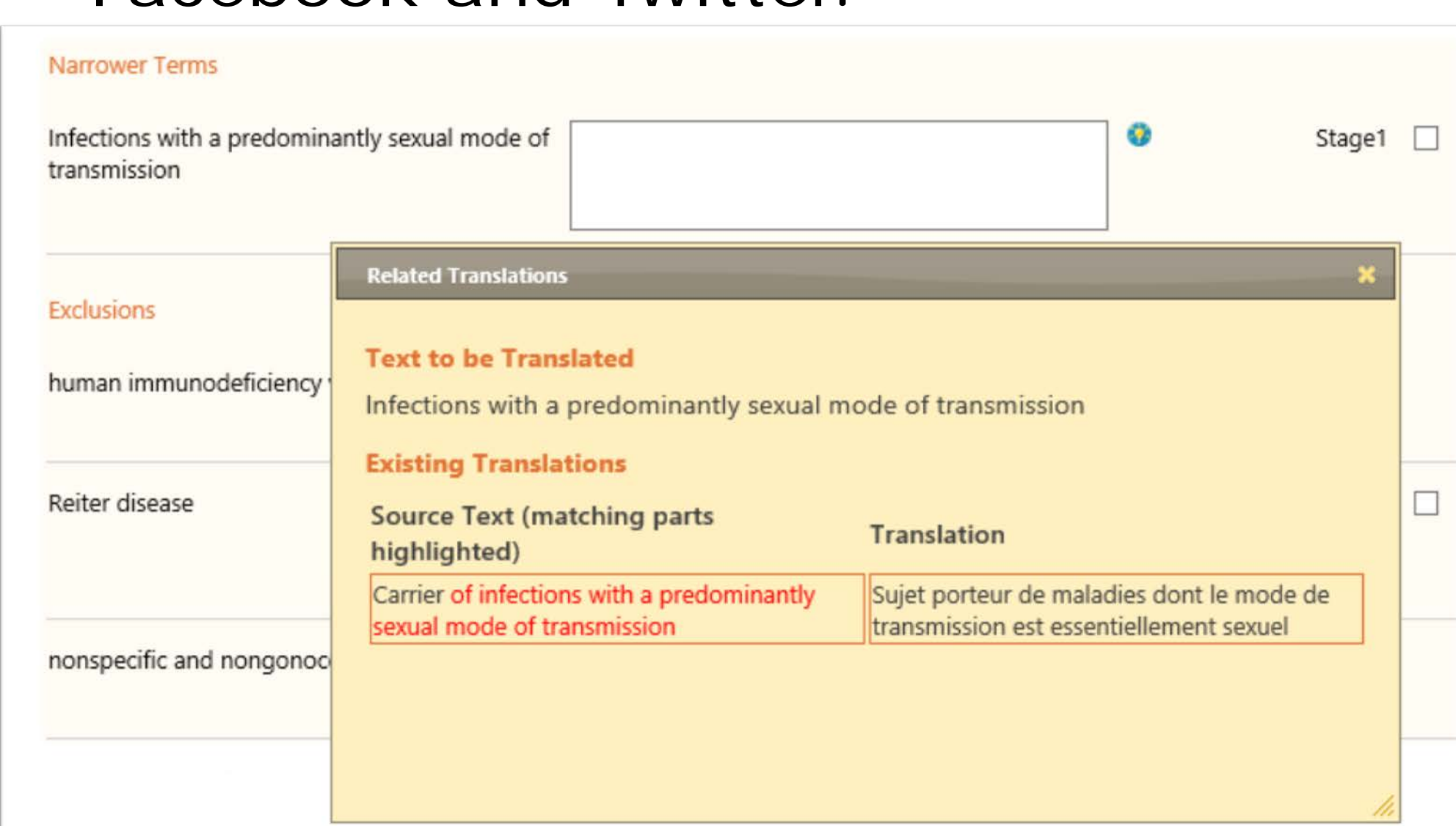
Due to the lack of resources no face-to-face mid-year meeting could be held; however, a teleconference meeting has been held with good participation by committee members. Specific work described in the next sections is grouped by the Strategic Workplan item.



## ITC-01: classifications and revision platforms

ITC-01 is the SWP item devoted to the maintenance and enhancement of browsers for WHO Classifications and the ICD revision platform. There was continued work on the **classification update platforms** and on the **ICD Revision Platform**, specifically maintaining and enhancing the browsers, plus:

- the development of the core ICD-11 authoring tool **iCat** continued in the Stanford University;
- the development of a prototype **ICHI browser** in cooperation between the Australian and Italian Collaborating Centres;
- work by the Italian Collaborating Centre to develop software and apps needed to integrate the ICD revision platform with the **social networks** Facebook and Twitter.



## ITC-02: multilingual support

ITC-02 is the SWP item devoted to the technical support to multilanguage developments of WHO classifications. Work completed includes:

- the release of a **multilingual platform** which allows collaborative translations of ICD11 in a social fashion. The platform is based on the Revision platform, and
- the Korean Collaborating Centre's continued work on the translation model.

## ITC-03: submission system

ITC-03 is a new work item introduced in Brasilia for supporting a novel way of abstract and poster submissions for WHO-FIC network meetings, to reduce the effort of both network members and WHO headquarters.

During the last year, the Italian Collaborating Centre implemented a **website for submission** of abstracts and posters. The web site, based on the open source software *OpenConf*, has been used for the Beijing meeting.



## ITC-04: standards

ITC-04 is aimed at enabling the electronic exchange of WHO classifications by providing necessary technical standards. Since last year, two paths are being followed. The German Collaborating Centre continued its work in supporting WHO by generating print formats of ICD-10, including maintaining **ClAML** and the **Classification Toolkit**. This may allow an offline, yet electronic, distribution of WHO classifications. Work is also in progress by the German Collaborating Centre to place ICDO-3 stylesheets into ClAML.

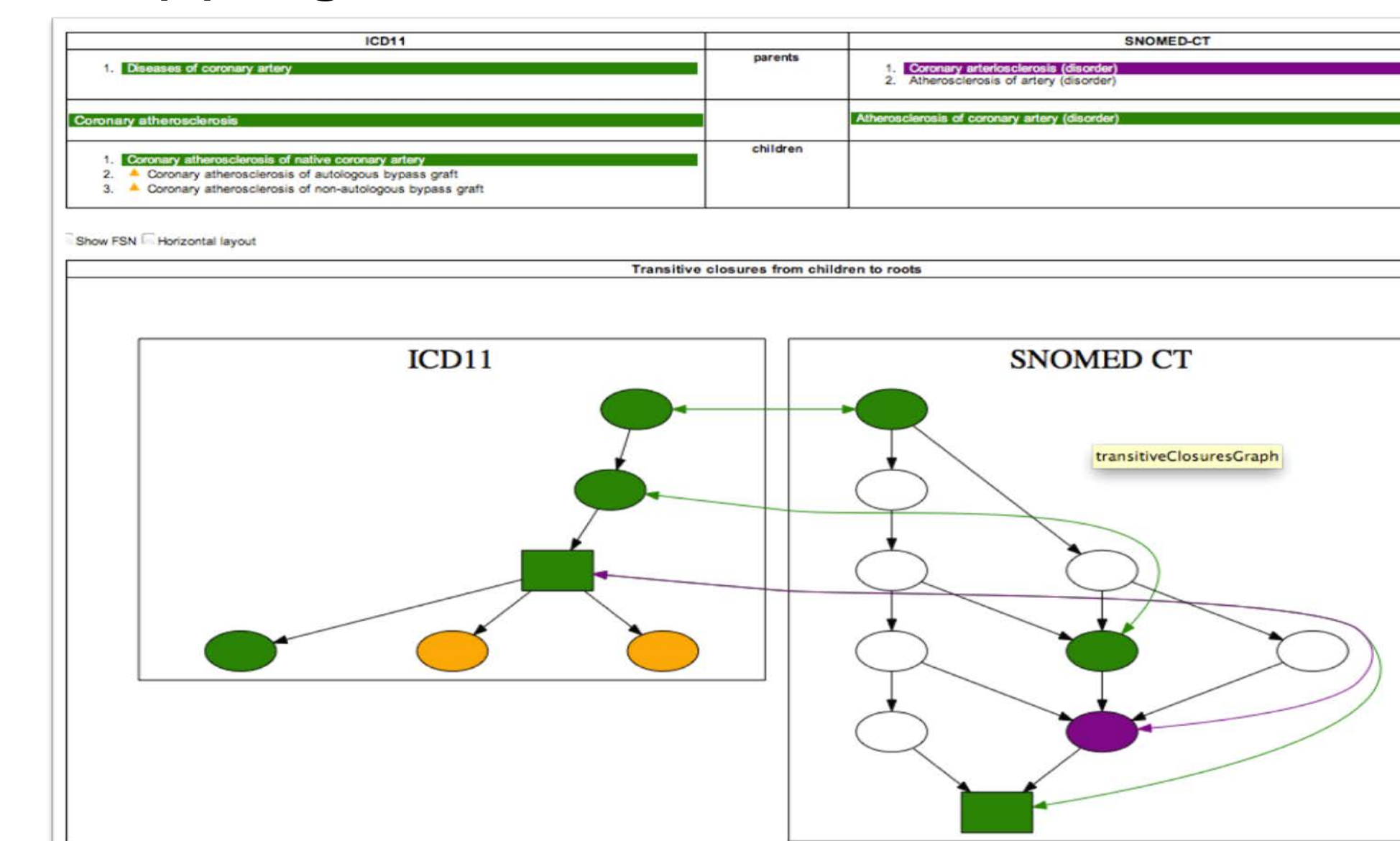
The WHO headquarters developed a **URI scheme** to identify ICD11 entities, accompanied by a **web services interface**. This may allow online distribution of single WHO classification entities directly from the network. A paper is being prepared on identifiers and web services.

## ITC-05: formal representation

ITC-05 is the SWP item devoted to enhancing formal knowledge representation of WHO classifications and their linkages to related terminologies.

This is a multilateral item requiring coordination with other committees, reference groups, and external participants. For the Beijing meeting, a **joint ITC-FDRG session** has been proposed to discuss the evolution of ICF towards a more formalized representation, including the possibility of a content model like the one at the basis of ICD11.

Regarding the **WHO-IHTSDO harmonization process**, ITC members, V. Della Mea and S. Kim are members of the WHO-IHTSDO Joint Advisory Group. They participated in meetings of that Group and supported WHO in the ICD-11 to SNOMED CT **mapping exercise** on the circulatory system. V. Della Mea designed and developed the software needed for the mapping exercise.



## Conclusions

ITC work during the year focused on moving forward on unified data exchange models (including harmonization with other terminologies) and better maintenance and publication standards and tools. Broader involvement of users has been sought by supporting translations with web-based tools and introducing social features for the maintenance of classifications. Any work identified in this annual report that was not undertaken by a collaborating centre was completed by Can Celik at WHO HQ. ITC wishes to acknowledge the work of the WHO HQ and collaborating centres for their contributions over the past year.

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# ICF implementation in Poland and Egypt

12 – 18 October 2013  
Beijing, China

Leonardi M.\* , Raggi A.\* , Quintas R.\* , Cerniauskaite M.\* , Giovannetti A.M.\* , Pagani M.\* , Sattin D.\* , Covelli V.\* , Schiavolin S.\* , Meucci P.\*

Poster Number  
WHO/CTS to insert

\* Neurological Institute Carlo Besta IRCCS Foundation - Neurology, Public Health and Disability Unit  
Italian WHO Collaborating Center Research Branch

**Abstract** Besta Foundation ICF implementation activities aim to bring the use of the WHO International Classification of Functioning, Disability and Health (ICF) and its nosological fundamentals in Poland and Egypt. In Poland, ICF could become the taxonomy by which the UN Convention on the Rights of Persons with Disabilities (UNCRPD) conceptual framework is applied in policy making for people with disability and in their implementation. In Egypt, ICF training was targeted to health and social workers dealing with children with disability assessment in Cairo and in rural areas around the capital city.

## Introduction

The aim of this poster is to present the implementation of the International Classification of Functioning, Disability and Health (ICF) through training courses done by Italian WHO FIC CC and to report on strategies for ICF dissemination and use in Poland and Egypt.

In Poland the ICF course was organized in Warsaw in May 2013 in collaboration with the WHO European Office and involving Ministry of Health, of Education, of Labour and Social Affairs, Polish NGO's of people with disabilities and the National Statistical Office.

In Egypt the course was organized in May 2013, in collaboration with the WHO Emro Office and in the frame of a collaboration between the Neurological Institute Carlo Besta IRCCS Foundation and the Ain Shams University – Faculty of Medicine, Cairo.

## Methods & Materials

The training on the ICF was prepared according to the Disability Italian Network (DIN) rules and adapting the material of the ICF training course developed by WHO so as to tailor each ICF course to the needs of the country. The courses are inspired by the principles of the UN Convention on the Rights of Persons with Disabilities (UNCRPD). An analysis of some relevant articles of the UN Convention was done both in Poland and Egypt.



## Results

In Poland, ICF is a crucial component of the tool for monitoring the implementation of the United Nations Convention on the Rights of Persons with Disabilities, which was signed and ratified by Poland in October 2012.

Undersecretary of State at the Ministry of Health, said that implementing the ICF would give Poland a new approach to disability issues, making it possible to better address and assess the needs of people with disabilities, using a common

language. The ICF Polish version was also launched in that occasion. The next steps for ICF implementation have been identified as: introducing training standards and train trainers on ICF and ICF-CY; selecting pilot areas for testing the ICF and conducting a study/trial; establishing a national leadership structure for ICF implementation involving all stakeholders, so as to provide a common framework for UNCRPD monitoring.

In Egypt the ICF course was organized by the Ain Shams University – Faculty of Medicine in collaboration with the WHO Euro Office. The Ain Shams University seeks continued development of programs and courses, supports and develops scientific research with the expansion of applied scientific research and health care programs to serve the needs of society and environment development. In this frame the Faculty of Medicine organized an "Interprofessional Training in Neurodisability". The training was done having as a framework the ICF-CY biopsychosocial model to analyze Neuropsychiatric disorders i.e. ADHD, Tourette Syndrome, Conduct disorders and Autism spectrum disorders. The main objective was the creation of a network connecting hospital, university and primary health care professionals dealing with children with disabilities.



CONVENTION on the RIGHTS of  
PERSONS with DISABILITIES



## Conclusions

The monitoring of the UNCRPD in Poland is an important step in establishing and implementing anti-discrimination policies to ensure the rights and equal opportunities for all the citizens. In this context ICF becomes the taxonomy by which the UNCRPD conceptual framework is applied in the making of policies and in their implementation.

In Egypt, ICF training was targeted to health and social workers dealing with children with disability assessment in Cairo and in rural areas around the capital city. The involvement of University on ICF training provide a possible effective approach to its broader diffusion and future implementation. Opportunities in using ICF tools were well appreciated by training participants especially because they considered that the Classification could represent a tool to improve outcomes allowing the development of tailored rehabilitation projects for children with disability by reinforcing multidisciplinary approach and community support.

## Acknowledgements

We would like to thank the Neurological Institute Carlo Besta IRCCS Foundation and the Ain Shams University – Faculty of Medicine.

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UN, 2006. UN Convention on the rights of persons with disabilities. 2006 New York: United Nations.  
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# ICD-11 and the "Factors influencing health status and contact with health services": a test of integration for the Family of International Classifications

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Gongolo F.<sup>1</sup>, Bang S.<sup>2, 3</sup>, Sykes C.<sup>4, 5</sup>

<sup>1</sup> Central Health Directorate of Friuli Venezia Giulia Region – Italian WHO-FIC Collaborating Centre; <sup>2</sup> Statens Serum Institut, National e-Health Authority, Denmark, <sup>3</sup> Collaborating Centre for the WHO-FIC in Nordic Countries, <sup>4</sup> World Confederation for Physical Therapy (WCPT) <sup>5</sup> Faculty of Health Sciences, University of Sydney

**Abstract** This poster represents a proposal for the restructuring of ICD-10 Chapter XXI within the ICD-11 revision process .

## Introduction

ICD-10 Chapter XXI is used to record health related circumstances that are not a disease. These categories, coded with Z codes, contain a mix of concepts, including reasons for encounter, risk factors and interventions. The current scenario of the revision of ICD presents an opportunity to review the chapter and propose new ways of organising the content. The Topic Advisory Group on functioning (fTAG) has the mandate of suggesting a new structure of the Z codes chapter starting from the alignment of the revised ICD and ICF but also taking into account all the possibilities given by the joint uses of the WHO-FIC.

## Methods & Materials

After a preliminary meeting of fTAG co-chairs with WHO a Z codes working group was formed. Background materials and briefing notes were made available and a work plan drafted. Current debate on Z codes and suggestions for change were collected through a search of scientific literature and through the commenting features of the WHO ICD-11 beta browser. The ICD-10 chapter XXI (current ICD-11 Chapter 23, Fig.1), exported in spread sheet format from the revision collaborative platform (Collaborative authoring tool, iCAT, Fig. 2), was taken as starting point for redrafting the chapter. The different blocks of chapter XXI were reviewed in teleconferences, highlighting the relevance of the single classification entities in terms of their relevance as post-coordination categories of ICD-11, as contextual factors of the International Classification of Functioning Disability and Health (ICF), or as categories of the International Classification of Health Interventions (ICHI, now under development).

INTERNATIONAL CLASSIFICATION OF DISEASES - Morbidity Linearization

**CHAPTER 23**  
**Factors influencing health status and contact with health services**

This chapter contains the following blocks:  
Persons encountering health services for examination and investigation  
Persons with potential health hazards related to communicable diseases  
Persons encountering health services in circumstances related to reproduction  
Persons encountering health services for specific procedures and health care  
Persons with potential health hazards related to socioeconomic and psychosocial circumstances  
Persons encountering health services in other circumstances  
Persons with potential health hazards related to family and personal history and certain conditions influencing health status

**Persons encountering health services for examination and investigation**

**Exclusions:** examinations related to pregnancy and reproduction

**8B0** General examination and investigation of persons without complaint and reported diagnosis

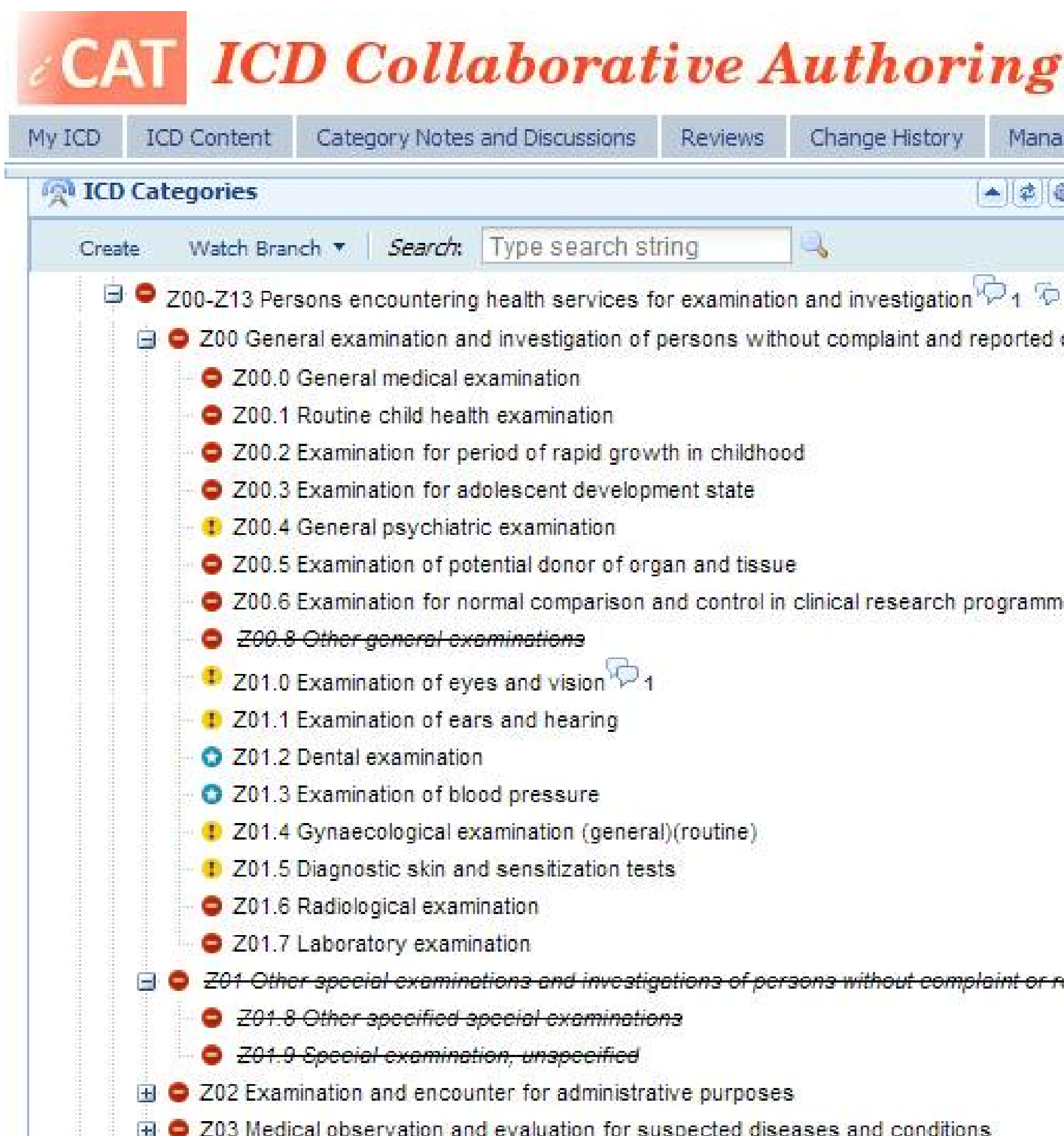
**Exclusions:** special screening examinations  
examination for administrative purposes

**8B0.1** General medical examination

**Inclusions:** Health check-up NOS  
Periodic examination (annual)(physical)

**Exclusions:** general health check-up of infant or child

**Fig. 1 – The Morbidity linearization of ICD-11 Chapter 23, former ICD Chapter XXI (June 2013).**



**Fig. 2 – a screen shop of Z codes in iCAT (June 2013)**

## Results

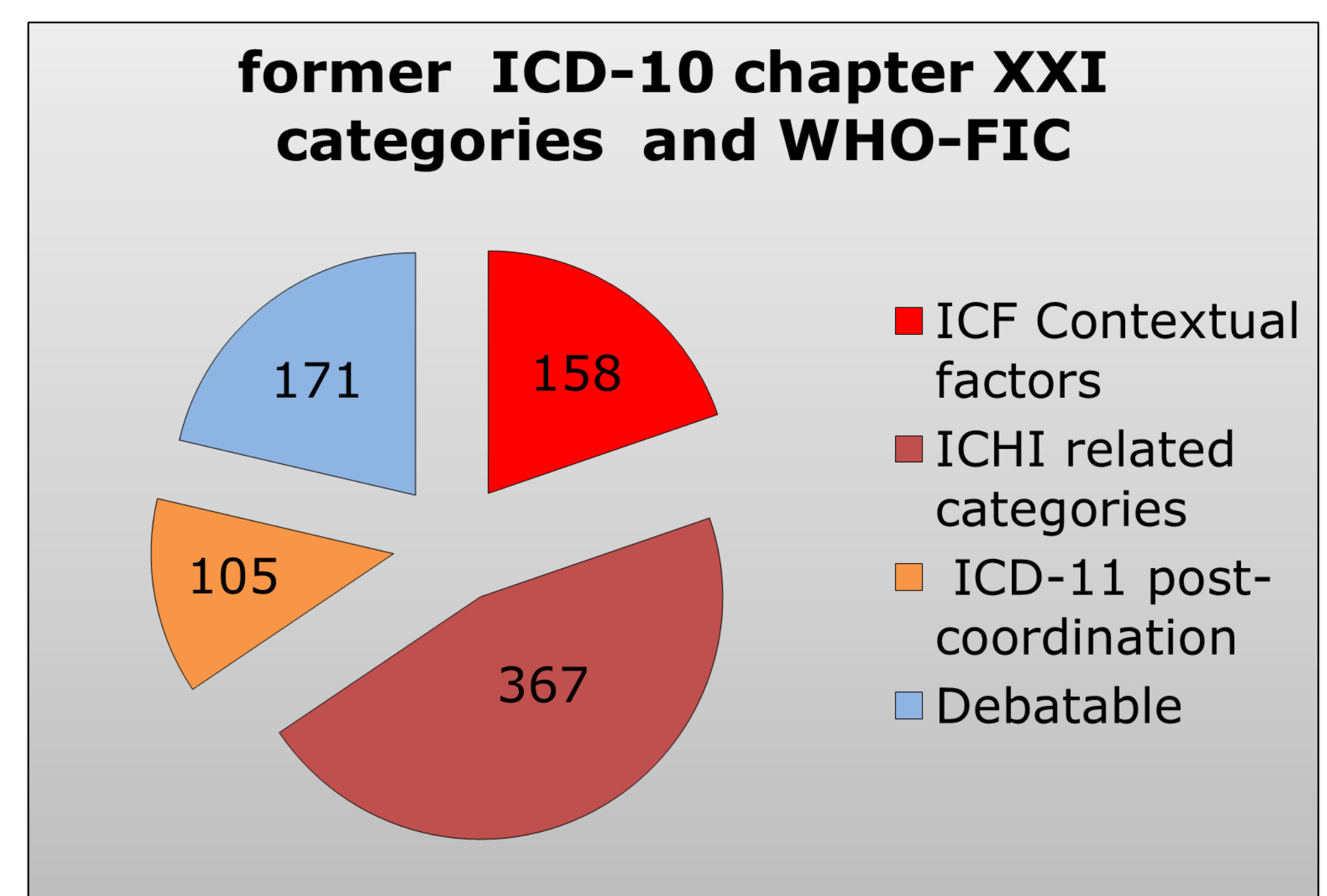
Of the 801 ICD-10 chapter XXI categories considered in the analysis 158 ICD-10 categories relate to ICF contextual factors. In this regard the development and integration of a personal factors classification is encouraged. A large group of categories (367) could be represented in an interventions classification. Classifications of devices and assistive technology are important extensions to these categories. The possibility offered by ICD-11 to post-coordinate dimensions such as "history of" would make redundant another 105 categories (see examples below in Tab. 1 and 2). For 171 categories alternative possibilities for ordering the concepts remain to be debated. Overall results are shown in Fig. 3

ICD-10 code and title	WHO-FIC classification
<b>Z51.0</b> Radiotherapy session	ICHI/interventions related
<b>Z51.2</b> Chemotherapy session for neoplasm	ICHI/interventions related
<b>Z51.3</b> Blood transfusion (without reported diagnosis)	ICHI/interventions related
<b>Z73.1</b> Accentuation of personality traits	PERSONAL FACTORS
<b>Z73.2</b> Lack of relaxation and leisure	PERSONAL FACTORS
<b>Z73.3</b> Stress	PERSONAL FACTORS
<b>Z73.4</b> Inadequate social skills	PERSONAL FACTORS
<b>Z73.5</b> Social role conflict	PERSONAL FACTORS
<b>Z97.0</b> Presence of artificial eye	ICHI/interventions related+ ISO9999

**Tab. 1 – Examples of Z codes and relevant WHO classifications**

ICD-10 code and title	WHO-FIC classification
<b>Z20.5</b> Contact with and exposure to viral hepatitis	ICD-11 post-coordination
<b>Z20.6</b> Contact with and exposure to human immunodeficiency virus [HIV]	ICD-11 post-coordination
<b>Z20.7</b> Contact with and exposure to pediculosis, acariasis and other infestations	ICD-11 post-coordination

**Tab. 2 – Examples of Z codes as ICD-11 post-coordination dimensions**



**Fig. 3 – Overall possible reassignments of former ICD-10 Chapter XXI Codes**

## Conclusions

Revising the structure of ICD-10 chapter XXI in the context of development of ICD-11 offers the possibility of testing the actual integration of the Family of International Classifications in terms to effectively represent, beyond the disease, all dimensions of health. In order to achieve this task the fTAG highly values the involvement, through the collaborating centres, of experts in all WHO reference classifications.

## Acknowledgements

Authors are members of the fTAG and in their work took advantage of preparatory materials made available by the Group for this purpose.

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<http://icat.stanford.edu/>
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<http://apps.who.int/classifications/icd11/browse/f/en>

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# ICF-SNOMED CT Harmonization a gap analysis

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Karlsson D.<sup>1</sup>, Gongolo F.<sup>2</sup>, Robinson M.M.<sup>3</sup>, Millar J.<sup>4</sup>  
<sup>1</sup> Linköping University, Sweden, <sup>2</sup>Friuli Venezia Giulia Central Health Directorate, Italy, <sup>3</sup>World Health Organization <sup>4</sup>International Health Terminology Standards Development Organisation

**Abstract** This poster represents the advancement status of the work on harmonization between SNOMED CT and ICF within the framework of the IHTSDO-WHO collaboration .

## Introduction

In 2010, the World Health Organization (WHO) and the International Health Terminology Standards Development Organisation (IHTSDO) signed a collaboration agreement to harmonize WHO classifications and SNOMED CT. The Authors are members of a Joint Working Group (JWG), set up by WHO and IHTSDO, through their Joint Advisory Group (JAG), to collect and discuss relevant information on the topic of the harmonization between the International Classification of Functioning, Disability and Health (ICF) and SNOMED CT (Fig. 1).

The following activities have been planned:  
 Phase 1 - Gap analysis: identify all existing SNOMED CT and ICF terms related to functioning and any possible alignment with each other

Phase 2 - New terminology: develop terminology around missing concepts in ICF and SNOMED CT

Phase 3 - Aggregation logic: develop and implement a methodology for aggregating SNOMED CT concepts to higher level ICF concepts.

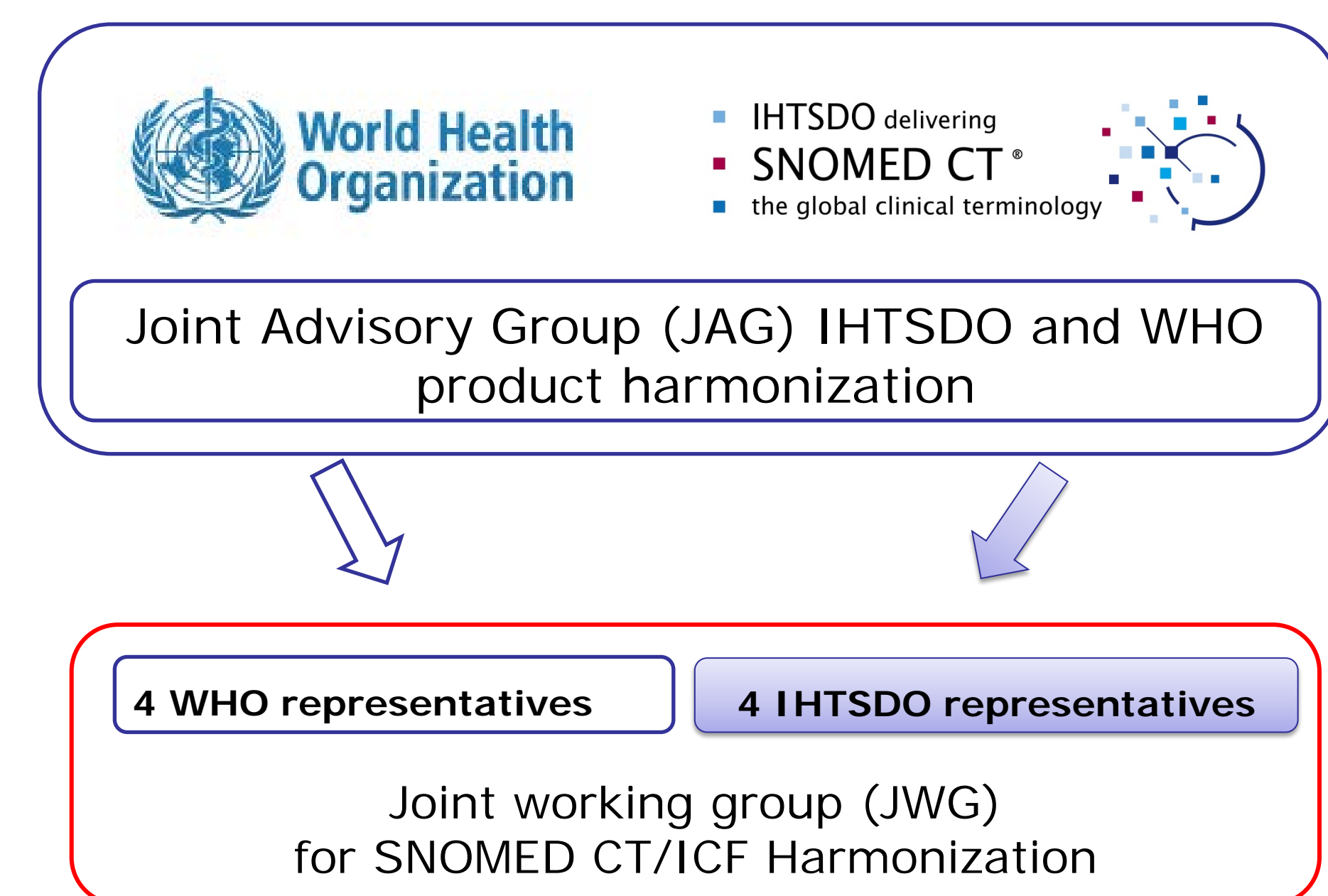


Fig. 1 – WHO, IHTSDO, JAG and JWG

## Methods & Materials

The members of the JWG, working in pairs (one from IHTSDO and one from WHO, see Fig. 2), independently reviewed all the ICF categories of *Activities and Participation (A&P)*, excluding residuals: concept, definition and relationship to other concepts were considered. Equivalence to SNOMED CT concepts was searched in terms of lexical, semantic (content) and hierarchical matching. For every ICF *A&P* category it was defined whether or not a gap existed with SNOMED CT. In the event of concept ambiguity, items were flagged either to WHO or IHTSDO for consideration. The pairs documented their independent reviews and then came together to discuss their findings. Weekly teleconferences were used to seek additional feedback and to review the methodology.

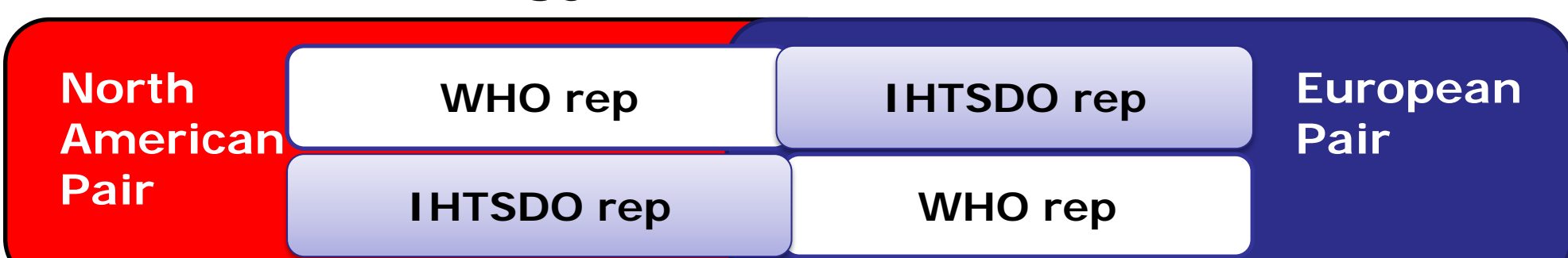


Fig. 2 – Gap analysis working methodology

## Results

Although in other components of ICF, such as Body Structures, preliminary work has shown good mapping possibilities, the present gap analysis suggests that the categories of *A&P* in ICF are semantically and hierarchically, and often lexically, different from the concepts in SNOMED CT. There were non-exact matches of various kinds, usually forms of overlap, but for about 40 % of the ICF *A&P* categories there were no matches of any kind. For individual chapters the ratio of non-matching categories ranged from 20 % to almost 90 %.

Thus, there is a need to develop new SNOMED CT content to support mapping to such ICF categories.

As an example, fig. 3 and 4 below, represent the 2 possible match for the ICF *A&P* category *d330 Speaking*. At least two SNOMED CT alternatives exist: *87335007|Ability to speak (observable entity)|* and *87335007|Speaking (observable entity)|*.

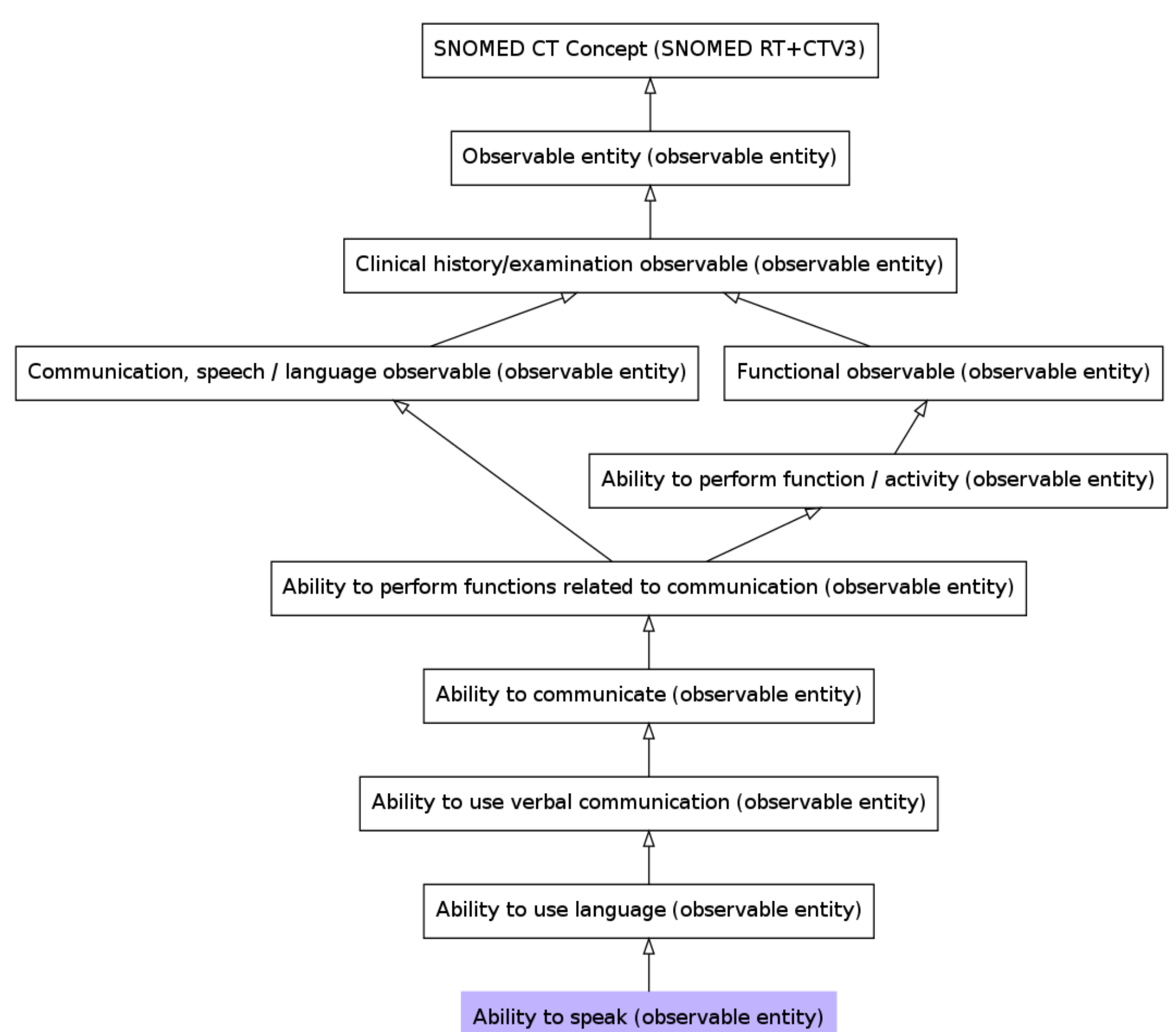


Fig. 3 – SNOMED CT Ability to speak

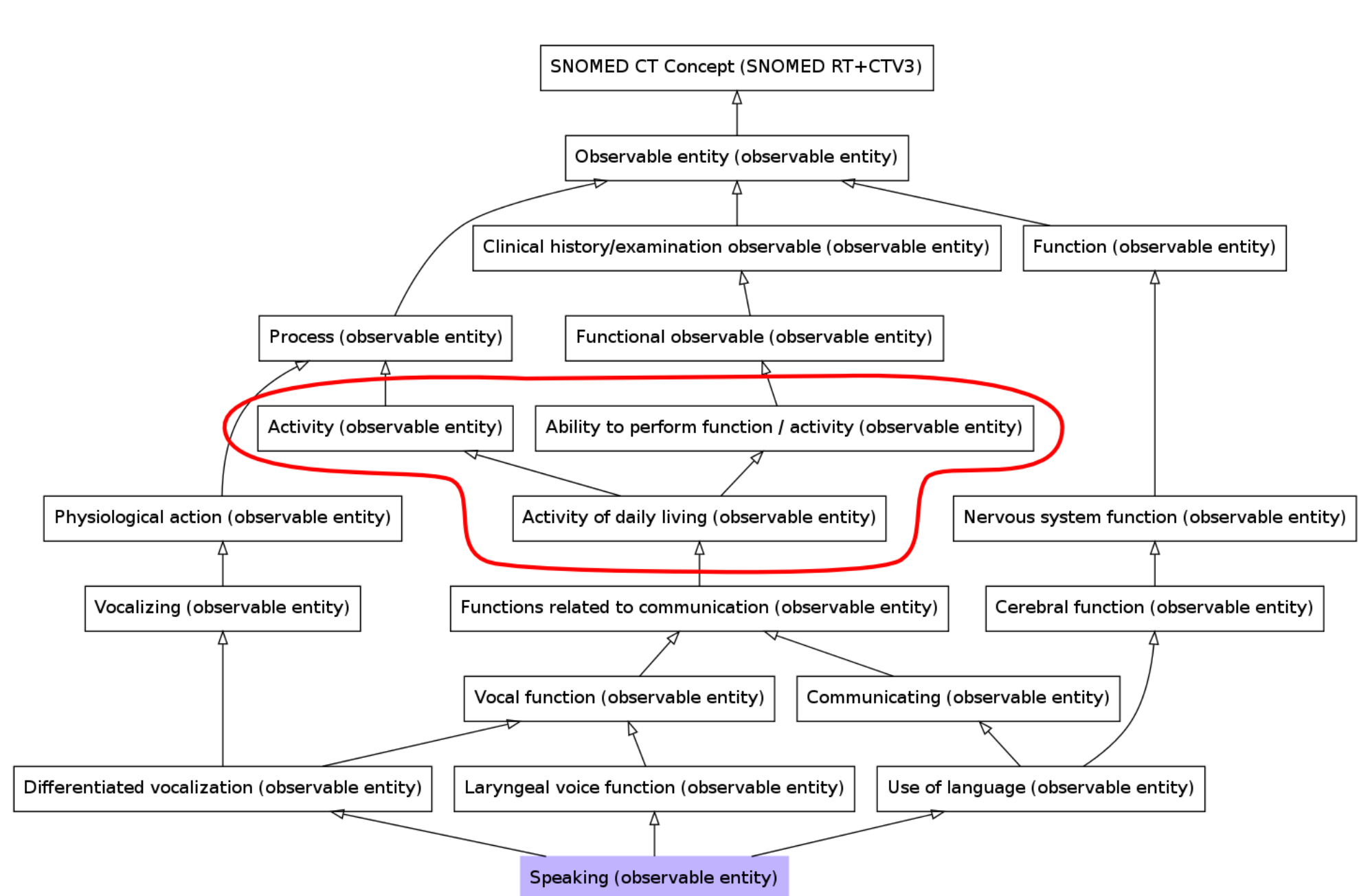


Fig. 4 – SNOMED CT Speaking

Lexically the choice may seem easy with a perfect lexical match between the ICF category and the latter SNOMED CT concept. However, when examining the ancestors of the *Speaking (observable entity)* concept, there are a few issues. There are two concepts *Function* and *Functional observable* where the difference in meaning is unclear.

Also the concept *Activity of daily living (observable entity)* has two parents: *Activity (observable entity)* and *Ability to perform function / activity (observable entity)* (red marking in Fig. 4). Thus, the concept *Activity of daily living*, and thereby all its descendants, including *Speaking (observable entity)*, are to be interpreted as both activities and the ability to perform those activities. A second example is the ICF category *d550 Eating*. According to the ICF note, the category includes several eating related activities, e.g. bringing food to the mouth and opening cans and bottles. There is no single SNOMED CT concept corresponding to this ICF category, but instead a number of distinct candidate SNOMED CT concepts e.g. *289005001|Ability to take food to mouth (observable entity)|* and *288399004|Ability to open and close containers (observable entity)|*.

## Major recommendations for joint consideration

There needs to be agreement between IHTSDO and WHO on a common model for representing the capacity and performance aspects.

In doing this, there will need to be consideration of what SNOMED CT needs to support in the electronic care record

What is also clear from this work that mapping will be impossible between SNOMED CT and ICF unless the two organisations take forward the recommendations and they should be done in a coordinated way to enable all planned phases, i.e. to reach harmonization of SNOMED CT and ICF.

## Conclusions

These results confirm the high value of the WHO-IHTSDO synergy aiming to frame together, in a joint effort, their respective unique contribution and agreed work going forward on ensuring that SNOMED CT and ICF can interoperate in electronic health records.

## Acknowledgements

Members of the JWG: Alarcos Cieza, Kathy Giannangelo, Francesco Gongolo, Daniel Karlsson, Cille Kennedy, Susan Matney, Jane Millar, M. Meri Robinson Nicol. Additional experts: John Hough, Olivier Bodenreider.

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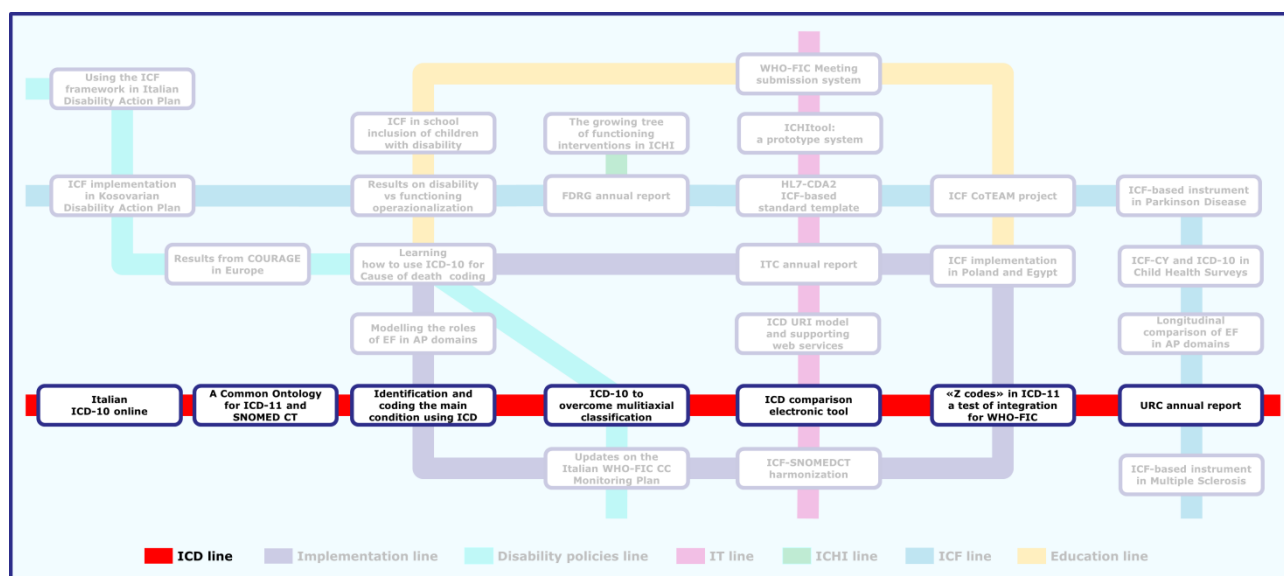
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## ICD Line



- *Gongolo F., Vogel U., Moskal L.* URC Annual Report.
- *Della Mea V., Vuattolo O., Gongolo F., Frattura L.* Smartly up-to-date: an electronic tool to compare ICD, its revisions and adaptations.
- *Frattura L., Gongolo F., Munari F.* ICD-10 implementation in the health information system of the Piedmont Region (Italy) to overcome WHO multiaxial classification of mental disorders of children.
- *Capezzuoli A., Grippo F., Saccoccio T., Alicandro G., Frova L., Pace M., D'Angiolini G.* ICD10 Online in Italian: new perspectives for users, epidemiologists and coders.

## Incrocio con **Implementation Line**

- *Frattura L., Gongolo F., Munari F.* Identification and coding of the main condition using ICD: suggested workflows.
- *Gongolo F., Bang S., Sykes C.* ICD-11 and the "Factors influencing health status and contact with health services": a test of integration for the Family of International Classifications.







# URC Annual Report

Poster Number  
WHO/CTS to insert

Gongolo F.<sup>1</sup>, Vogel U.<sup>2</sup>, Moskal L.<sup>3</sup>

<sup>1</sup> Central Health Directorate of Friuli Venezia Giulia Region – Italian WHO-FIC Collaborating Centre URC Co-chair; <sup>2</sup> German Institute of Medical Documentation and Information (DIMDI) German WHO-FIC Collaborating Centre – URC Co-chair; <sup>3</sup> Canadian Institute for Health Information (CIHI) – North American WHO-FIC Collaborating Centre, URC Secretariat.

**Abstract** This poster represents the Update and Revision Committee (URC) 2013 annual report as submitted August 30, 2013 for the Beijing WHO-FIC annual meeting.

## Introduction

Purpose of the Update and Revision Committee (URC) is to support WHO and WHO-FIC Network in keeping the WHO Family of International Classifications "Reference Classifications" up to date in line with current knowledge. The functions of the URC are the development of Update policies, Update coordination & decision making and the participation in the revision work in order to ensure synchronization from one revision to the other and consistency within the members of Family of International Classification.

## Methods & Materials

The URC work is conducted in accordance with the relevant part of the WHO-FIC Strategic work plan (Tab. 1). Activities are mainly carried out through the update and revision platforms which are workflow engines designed to facilitate communication within expert workgroups and ensure transparency of the processes. Work and communications are also carried out via e-mail, conference calls and meetings, including an annual meeting during the WHO-FIC Annual Meeting. Key deliverables of the URC work are the lists of updates for WHO-FIC member classifications.

Deliverable	Activities	Start Date	End Date (plan)	%
Annual updates to ICD-10	Submission, review, decision and implementation of update proposals for ICD-10.	nov-12	oct-13	0,8
Transition strategy from ICD-11 revision process to URC update process	Review of and input to information note on transition Participation in the coordination of the transition process	feb-13	oct-13	0,1
Realize a Foundation ICF implementation of ICF proposals	Submission, review, decision and implementation of ICF-CY related update proposals for ICF. Due to the difference in submission process and lack of supporting rationale additional work is required.	nov-10	oct-12	0,5
Provide annual updates to ICF	Submission, review, decision and implementation of update proposals for ICF.	nov-12	oct-13	0,8
Maintenance of ICF update platform user guide	Further elaboration of userguide for the update platform	nov-10	oct-13	1
Overall coordination of the update process	Secretariat. Participation in the works, meetings and teleconferences of Initial Review Group and FDRG.	nov-12	oct-13	0,8

Tab. 1 – The URC relevant part of the WHO-FIC SWP (August 22,2013 v, simplified):

	ICD-10 related items
	ICD-11 related items
	ICF related items
	overall coordination

## Results

In year 2012, 32 updates to ICD and 7 updates to ICF were approved by the URC and endorsed by the WHO-FIC Council at the annual meeting held in Brasilia, Brazil 13-19 October, 2012 (Fig. 1 and 2).

Instruction	Tabular list entries	Source URC #	Appr. Date	Major / Minor	Sugg. impl. Date
Revise category titles in List of three character categories	<b>Diabetes mellitus (E10-E14)</b> <b>E10 Insulin-dependent Type 1 diabetes mellitus</b> <b>E11 Non-insulin-dependent Type 2 diabetes mellitus</b>	Japan 1873	October 2012	Minor	January 2014
Revise category title in List of Three-Character Categories	<b>S79 Other and unspecified injuries of hip and thigh</b>	Canada 1941	October 2012	Minor	January 2014
Add inclusion	<b>B17.9 Acute viral hepatitis, unspecified</b> <b>Acute infectious hepatitis NOS</b>	Canada 1943	October 2012	Minor	January 2014
Revise excludes notes	<b>D76 Other specified diseases with participation of lymphoreticular and reticuloendothelial tissue</b> <b>Excludes:</b> (Abl-) Letterer-Siwe disease (C96.0) eosinophilic granuloma (C96.6) Hand-Schüller-Christian disease (C96.5) histiocytic sarcoma (C96.8) histiocytosis X, multifocal (C96.5) histiocytosis X, unifocal (C96.6) Langerhans-cell histiocytosis, multifocal (C96.5) Langerhans-cell histiocytosis, unifocal (C96.6) malignant histiocytosis (C96.8) reticuloendotheliosis: or reticulosis: • histiocytic medullary (C96.9) • leukemic (C91.4) • lipomelanotic (I89.8) • malignant (C85-7) • nonlipid (C96.0) reticulosis: • histiocytic medullary C96.8 • lipomelanotic (I89.8) • malignant NOS (C86.0)	Canada 1857	October 2012	Minor	January 2014

Fig. 1 – Snap shot from the ICD-10 Vol. 1 annual updates document v. 2013 (simplified)

Proposal ID & update type	Affected Code	Original version	Update version
Minor: extension of exclusion criteria ID # 19	b310 Voice functions	<b>Exclusions:</b> mental functions of language (b167); articulation functions (b320)	<b>Exclusion:</b> mental functions of language (b167); articulation functions (b320); <b>alternative vocalization functions (b340)</b>
Minor: Expansion of Inclusion Criteria ID # 20	b3401 Making a range of sounds	<b>Inclusions:</b> functions of babbling in children	<b>Inclusions:</b> functions of <b>crying, cooing, gurgling and babbling</b> e.g. in children.
Minor: Extension of the Inclusion Criteria ID # 22	b440 Respiration functions	<b>Inclusions:</b> functions of respiration rate, rhythm and depth; impairments such as apnoea, hyperventilation, irregular respiration, paradoxical respiration, and bronchial spasm, and as in pulmonary emphysema	<b>Inclusions:</b> functions of respiration rate, rhythm and depth; impairments such as apnoea, hyperventilation, irregular respiration, paradoxical respiration, and bronchial spasm, and as in pulmonary emphysema; <b>reduction in airflow through upper and lower airways</b>
Minor: Modification in note ID # 44	d110 Watching	<b>note:</b> Using the sense of seeing intentionally to experience visual stimuli, such as watching a sporting event or children playing.	<b>Note:</b> Using the sense of seeing intentionally to experience visual stimuli, such as <b>visually tracking an object</b> , watching a sporting event, <b>people</b> , or children playing.

Fig. 2 – Snap shot from the ICF annual updates document v. 2013

In 2013, in terms of annual updates to ICD, 121 proposals have been moderated and put to vote by members. In terms of updating ICF, 78 proposals have been reviewed by the FDRG and put to vote by URC members: the majority of these updates still relate to ICF-CY items reviewed in order to become part of a foundation ICF.

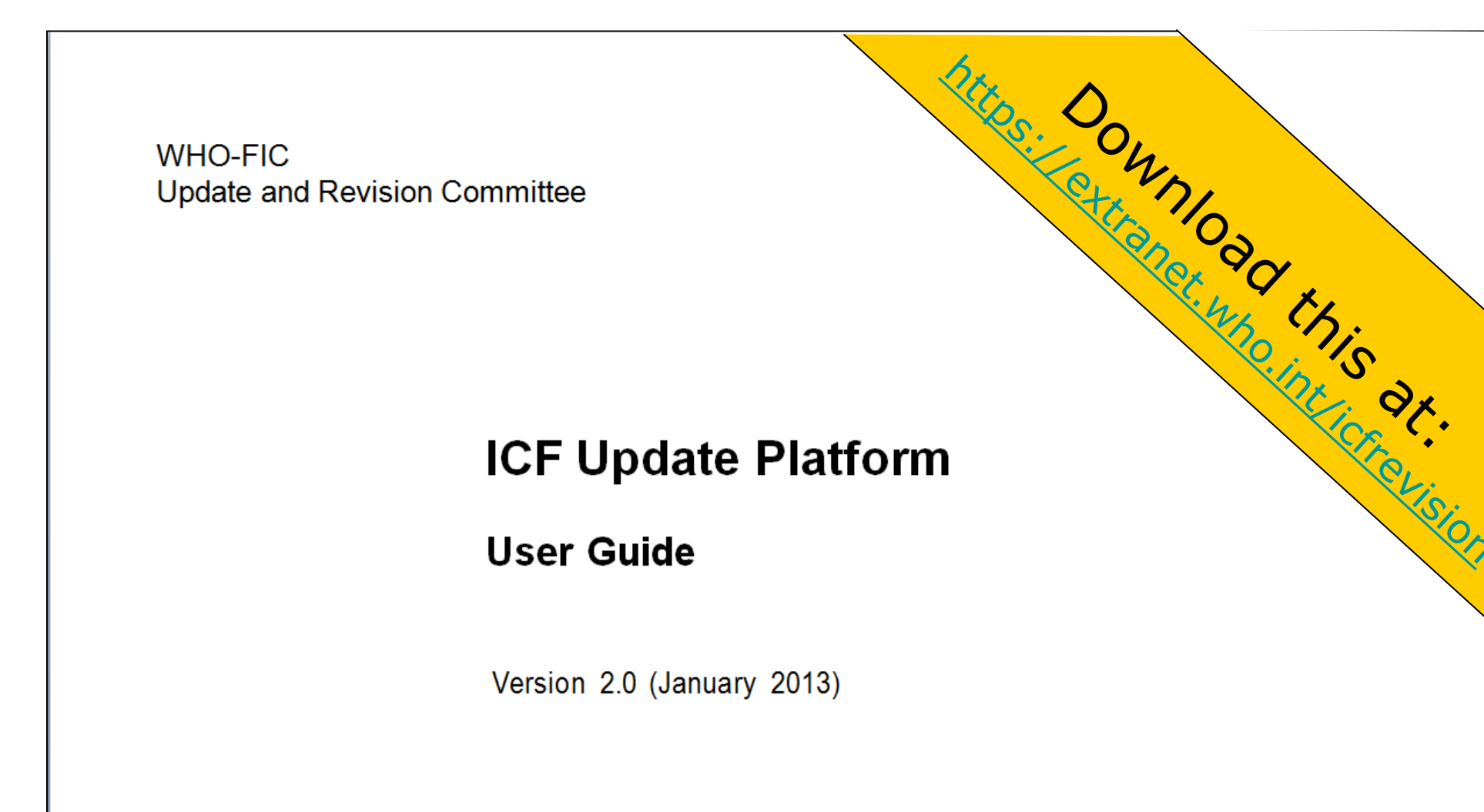


Fig. 3 – 2013 version of the ICF Platform User Guide

Updates to ICD-10 will continue to 2016 with final major updates to be approved in 2014. In terms of developing and maintaining the update policy, a new version of the ICF update platform user guide has been finalized (Fig. 3). Functions, activities and completeness of deliverables are represented in the latest version of the Strategic Work Plan submitted to the WHO-FIC Council.

## Conclusions

The achievements of the Committee are made possible by the generous efforts of members and relative institutions. The increasing number of ICD proposals being processed, the synchronization from one ICD revision to the other, and the realization of a foundation ICF with the implementation of the classification items coming from the ICF-CY, require an increasing engagement of the Collaborating Centres in the Committee's work.

## Acknowledgements

Members of the Committee:  
R. Anderson, S. Bang, C. Barral, H. Brear, A. Brooke, D. Caulfeild, L. Clarke, T. Crawford, V. Dimitropoulos, M. de Kleijn, H. Di Nubila, A. Elsworth, L. Frattura, S. Gomez, J. Hargreaves, D. Hoyert, R. Jakob, J. Jelsma, L.A. Johansson, J. Kasamatsu, N. Kostanjsek, R. Laurenti, R. Madden, D. Murphy, E. Oikawa, D. Pickett, M. Renahan, M. Robinson, H. Rocha, J. Rust, E. Sauls, P. Saxena, K. Seo, O. Steinum, H. Ten Napel, P. Tonel, U. Trinks, M. Virtanen, P. Wood, Y. Kang.

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# Smartly up-to-date: an electronic tool to compare ICD, its revisions and adaptations

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Omar Vuattolo <sup>1</sup>, Vincenzo Della Mea <sup>1</sup>, Francesco Gongolo <sup>2</sup>, Lucilla Frattura<sup>2</sup>  
<sup>1</sup> Dept. of Mathematics and Computer Science - University of Udine, IT WHO-FIC CC, Udine  
Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine

**Abstract** This poster introduces a tool, developed at the Italian WHO-FIC CC, to compare the possible extensions of ICD-10 with rubrics coming both from clinical modifications and from ICD-11 beta browser, thus potentially simplifying the transition from any ICD-10 based system to ICD-11.

## Introduction

Since its adoption in 1948, ICD has been progressively made suitable, through successive revisions, for grouping morbidity data. Worldwide, adaptations of ICD have also been adopted to respond to national requirements in terms of morbidity coding (clinical modifications). ICD-11 is now being developed, to be used in electronic health records and information systems. Member States have to use the most current ICD revision for mortality and morbidity statistics but one of the development goals of ICD-11 is to contain, in its foundation layer, all the different adaptations of ICD. A tool to compare different adaptations and different revisions of ICD would make immediately available existing resources (eg. extensions and translations) for the design of an ICD adaptation that takes into account classification possibilities already explored by other national modifications and at the same time incorporates the novelties of ICD-11.

## Methods & Materials

An informatic tool was designed to help experts in identifying ICD-10 candidate extensions from other available sources, including ICD11 beta morbidity linearization, national modifications of ICD-10, and possibly other resources such as ICD-9CM translations and the Orphanet inventory. Starting from ICD10 entities, candidate extensions are prompted from the available modifications, sorted, and when possible, merged according to lexical rules. A web-based interface is available for the user, that shows an ICD10 tree browser and on its side the set of candidate extensions, identified as above mentioned. For each ICD10 entity, the user views appropriate candidates for modification, and in a second step, can select subsets of extensions assigning them a code. Imaging to develop a new clinical modification or to maintain an existing one, the set of selected extensions can eventually be submitted via Web Services, in form of an update proposal, to a classification management platform and be adopted in the respective classification. To foster ICD11 compatibility, ICD11 entities always appear as first choices among extensions. Considering the possibility to use the tool for the Italian scenario, the English extensions of ICD-10, were linked to the Italian translation of ICD9-CM, currently used for morbidity coding.

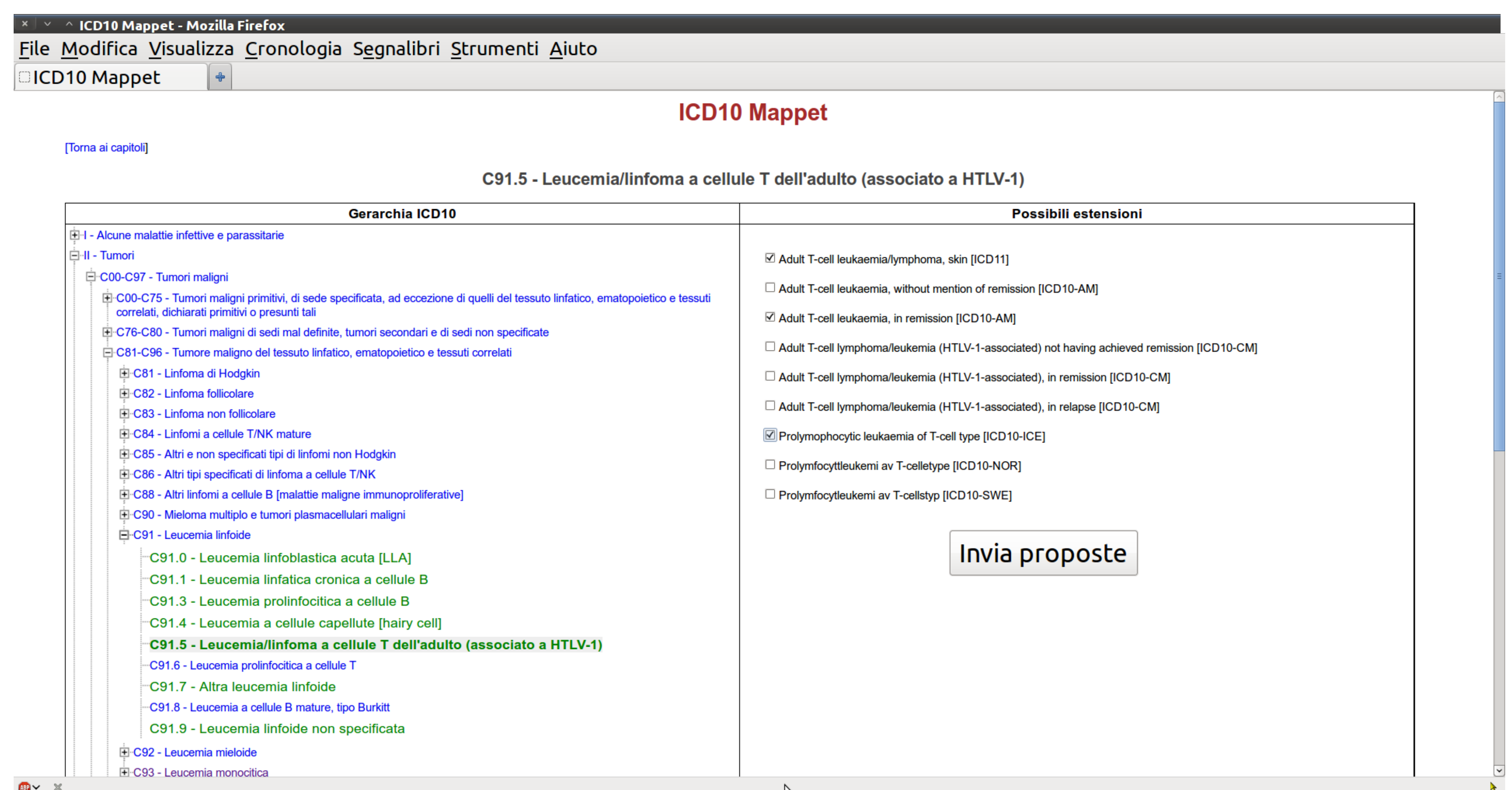
## Acknowledgements

The tool has been provisionally fed with the free online available electronic versions of ICD-10-CM, ICD-10AM, ICD-9-CM, ICD-10plus (Nordic Countries), ICD-11beta.

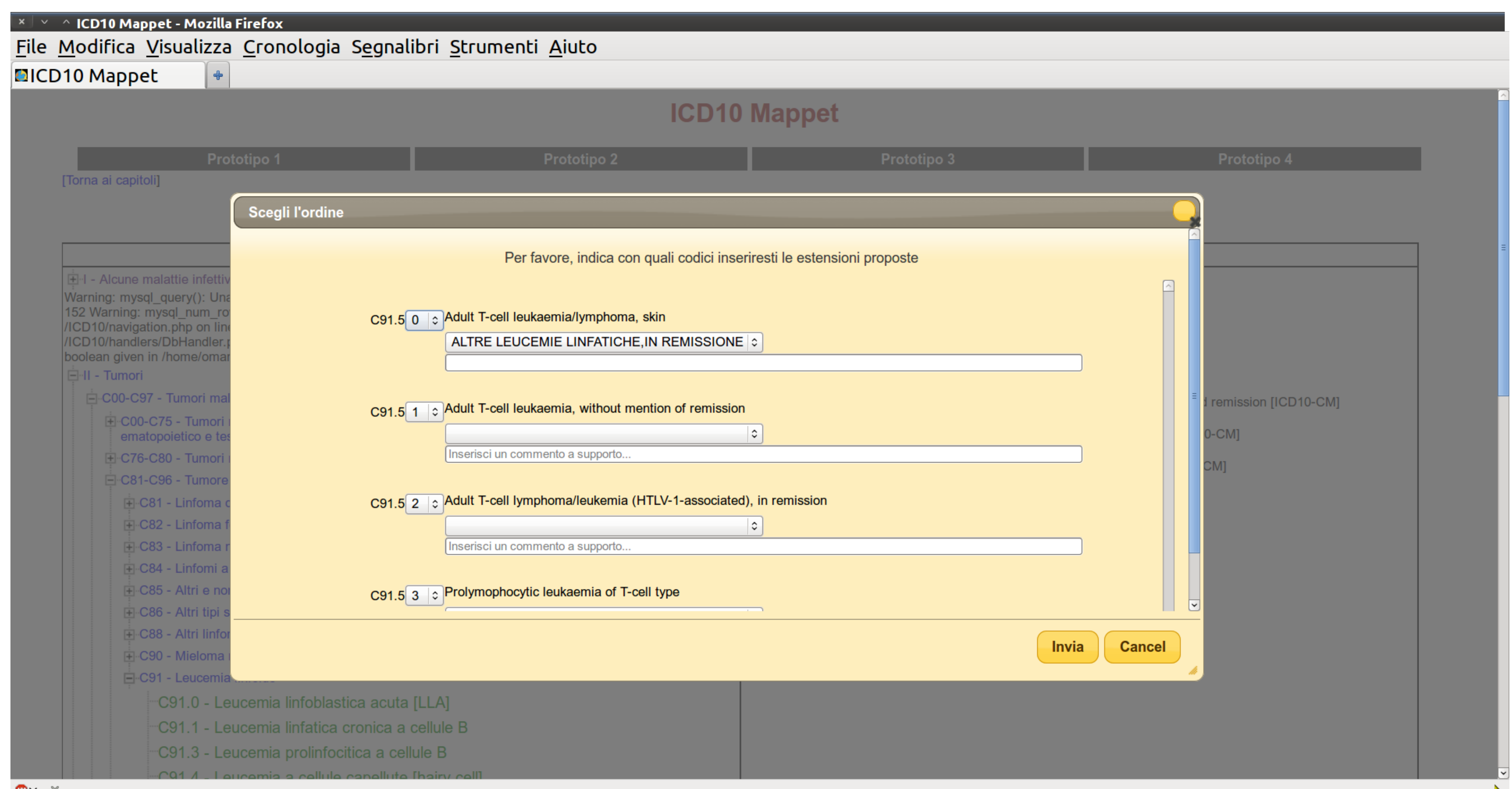
## Results

A first prototype (Figures 1 and 2) was developed that implements the above mentioned features, starting from ICD11beta (accessed through the new URI API), ICD10-CM, ICD10-AM, ICD10+ (Nordic Countries).

**Figure 1 – Snapshot of the proptotype window: on the left the Italian ICD-10 Vol. 1 hierarchy for adult Tcell leukemia/limphoma; on the right, possible extensions and relative source.**



**Figure 2 – Snapshot of the window for automated code assignment of selected extensions, editing of a prompted translation from available sources, optional commenting feature**



## Conclusions

The tool enables the development and maintenance of clinical modifications of ICD-10 and facilitates their representation as linearizations of ICD-11. Such representation simplifies the transition from any ICD-10 based system to ICD-11.

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# ICD-10 implementation in the health information system of the Piedmont Region (Italy) to overcome WHO multi-axial classification of mental disorders of children

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

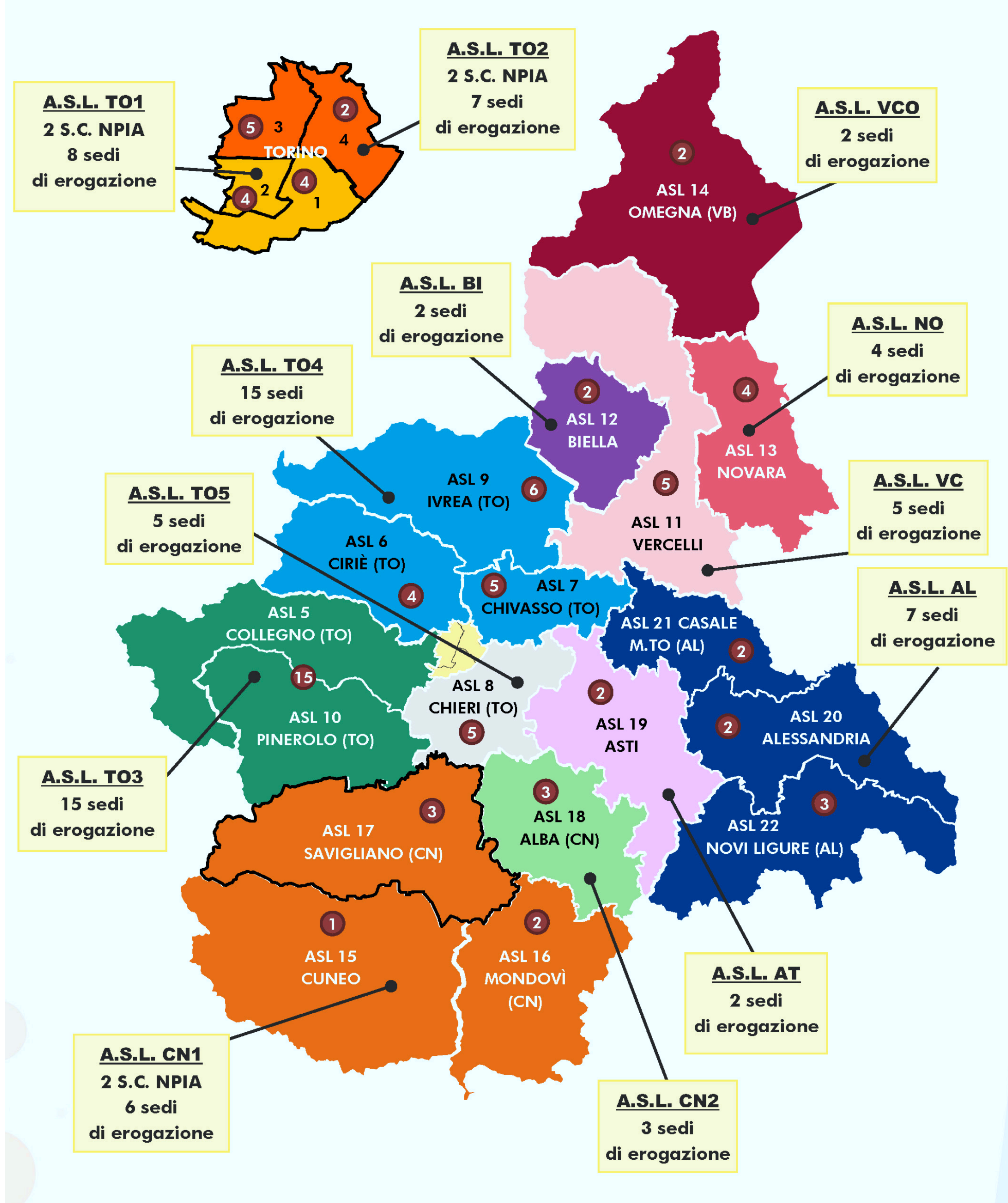
Lucilla Frattura, Francesco Gongolo, Flavia Munari  
Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine

**Abstract** This poster presents the activities carried out by the Italian WHO-FIC CC to implement the full use of ICD-10 in the Piedmont region (Italy), where the derived Multi-axial Classification (MC) of Child and Adolescent Psychiatric Disorders is used for epidemiologic purposes in the NPI.net, the regional information system collecting data from child/adolescent neuropsychiatry services.

## Introduction

Although ICD-10 is not mandatory for morbidity coding in Italy, Italian scientific societies have adopted the derived Multi-axial Classification (MC) of Child and Adolescent Psychiatric Disorders as a diagnostic tool (1). This has led to two misconceptions on ICD-10: ICD-10 is only a diagnostic tool and is limited to the categories of the MC (chapter V, some codes of chapter XXI, few codes from other Chapters). This paper presents the activities carried out by the Italian WHO-FIC CC to implement the full use of ICD-10 in the Piedmont region (Italy), where MC is used for epidemiologic purposes in the NPI.net, the regional information system collecting data from child/adolescent neuropsychiatry services.

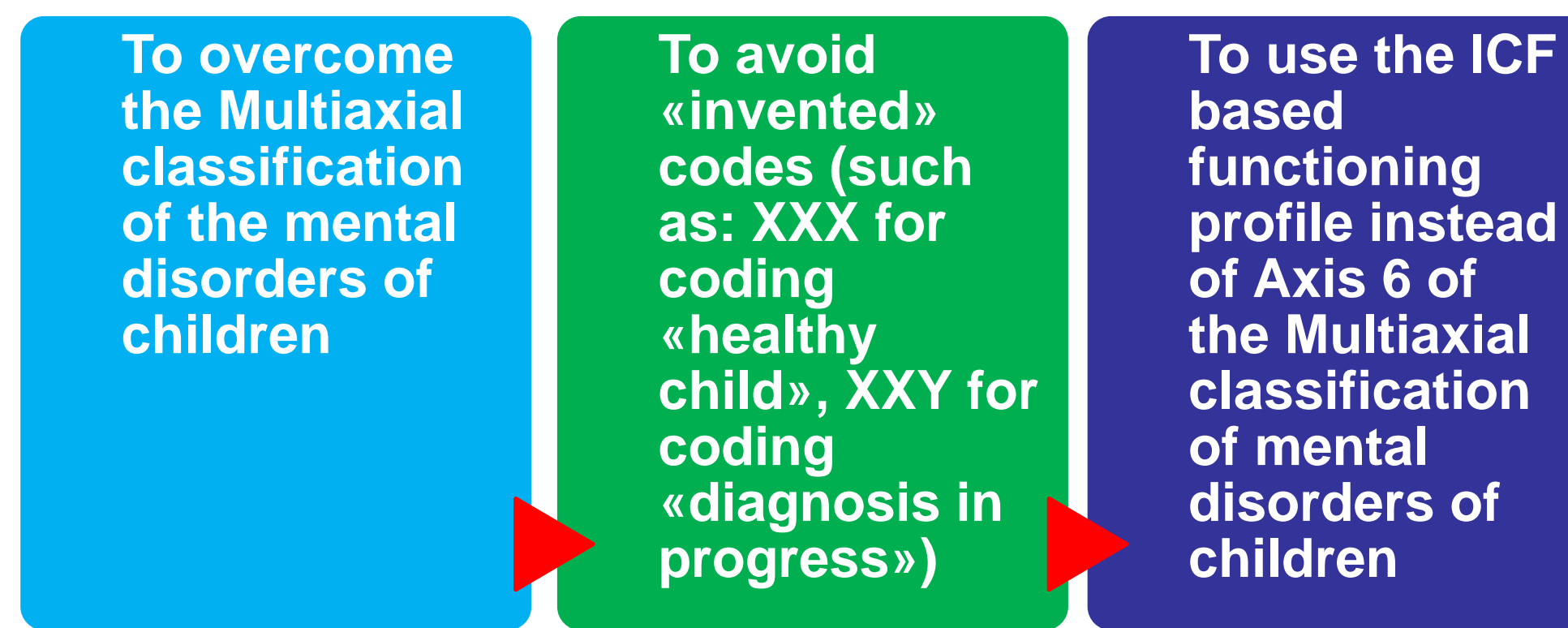
Figure 1: The local health authorities in Piedmont region



## Methods & Materials

By formal agreement, the Italian WHO-FIC CC provided the Piedmont region with support in the training of professionals and in the revision of NPI.net. The training aims were: (i) to overcome the use of the MC; (ii) to avoid the use of codes invented to fill the gaps of the MC in the clinical practice; (iii) to replace the sixth axis of the MC with an ICF profile. The first ICD-10 training (14 hours, two consecutive days) was for a restricted group of health services directors (N=30) and was held in November 2012 in Turin. The second ICD-10 training course (14 hours, two consecutive days) was held in May 2013 for 90 health professionals (psychiatrists, neurologists, and psychologists).

Figure 2: Three operational aims of the training programme



## Results

New education materials were developed, including three sets of coding exercises, tailored to the requirements of child/adolescent neurologists, psychiatrists, psychologists and rehabilitation operators; coding errors due to the outdated and approximate translation of the MC were addressed; wrong coding habits were corrected; and codes invented for conditions not present in the ICD-10 Tabular List as such were avoided by appropriate use of the ICD-10 Index. The distinction between the diagnosis and the coding of a health condition was made clear training was performed on the of the three decision trees designed by the Italian Collaborating centre. (2) At the end of the course, trainees were seamlessly switching from the use of the outdated MC to the use of the full ICD-10.

Figure 3: Use of Diagnostic categories, in the NPI.net database (pre-training analysis, ASL 12 only)

The 11 most frequent codes cover 50% of coded conditions		The most frequent code is 'XXY', «Diagnosis in progress»	
Diagnostic categories	N.	%	% CUM.
XXY	511	19%	19%
F70	176	6%	25%
G44	126	5%	30%
QXX	84	3%	33%
Z60.1	77	3%	36%
F80.1	70	3%	39%
XXX	66	2%	41%
F81.0	61	2%	43%
F81	54	2%	45%
F81.3	53	2%	47%
Z63.8	52	2%	49%
All the rest	1345	50%	99%
Not determined	33	1%	100%
<b>Total</b>	<b>2708</b>	<b>100%</b>	

Figure 4: The first ICD-10 class (including the three trainers/authors) on November 2012



## Conclusions

An appropriate use of ICD-10 allows users to keep the classification as a diagnostic tool and to fully code all conditions and reasons for encountering health services. The Italian translation of the WHO ICD-10 training tool is highly encouraged, although specific users needs should be considered. In the framework of the Italian WHO-FIC CC/ Piedmont region collaboration, a web application (FABER) will be implemented for an ICF-based evaluation of functioning, formerly described using the sixth axis of the MC (3). Although limited to the Piedmont region, the experience has national relevance as it is the first implementation of ICD-10 in a morbidity setting.

Figure 5: The second ICD-10 class on May 2013



## Acknowledgements

The activities carried out by the the Italian CC were funded by the Piedmont Local Health Authority n.12 "Biella". The authors thank all the professionals who participated to the training programme, in particular: Guido Fusaro (standing in Figure 5), Giampiero Vellar, Francesca Ragazzo, Fulvio Giucione, Alessandro Mariani, Paola Chiadò Piat, Giuseppe Viriciglio, Orazio Pirro, Giulia De Marchi, Francesca Menegon. Thanks to Maria Maspoli at the Piedmont region, Heath Directorate for her appreciation. Linda Best provided her collaboration in the design of the basis of an intermediate/advanced training course on diagnostic coding using the International Classification of Diseases (ICD-10).

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# ICD10 Online in Italian: new perspectives for users, epidemiologists and coders

12 – 18 October 2013  
Beijing, China

Capezzuoli A., Grippo F., Saccoccio T., Alicandro G., Frova L., Pace M., D'Angiolini G.

Poster Number  
WHO/CTS to insert

Istat – Italian National Institute of Statistics

**Abstract** The availability of an updated ICD10 is crucial for research purposes and correct data interpretation. With the intent to provide such a useful tool, the National Institute of Statistics (Istat) disseminated the ICD10 in the newly designed System of the Classifications. In this work the strategies to increase the usability of the ICD10 and the results achieved by disseminating this Classification in a web platform are described.

## Introduction

In Italy, ICD10 is used by the Italian National Institute of Statistics (Istat) for Causes of Death (CoD) coding since reference data year 2003. Version 2009 is being now used. Nevertheless, the version available for users is based on 1999 WHO updates produced by the Minister of Health as paperback.

In order to provide metadata of CoD documentation and to provide a valid support for coders, Istat made an effort in the dissemination of ICD10 through the newly implemented System of Classifications, a web based tool for browsing classifications used in official statistics.

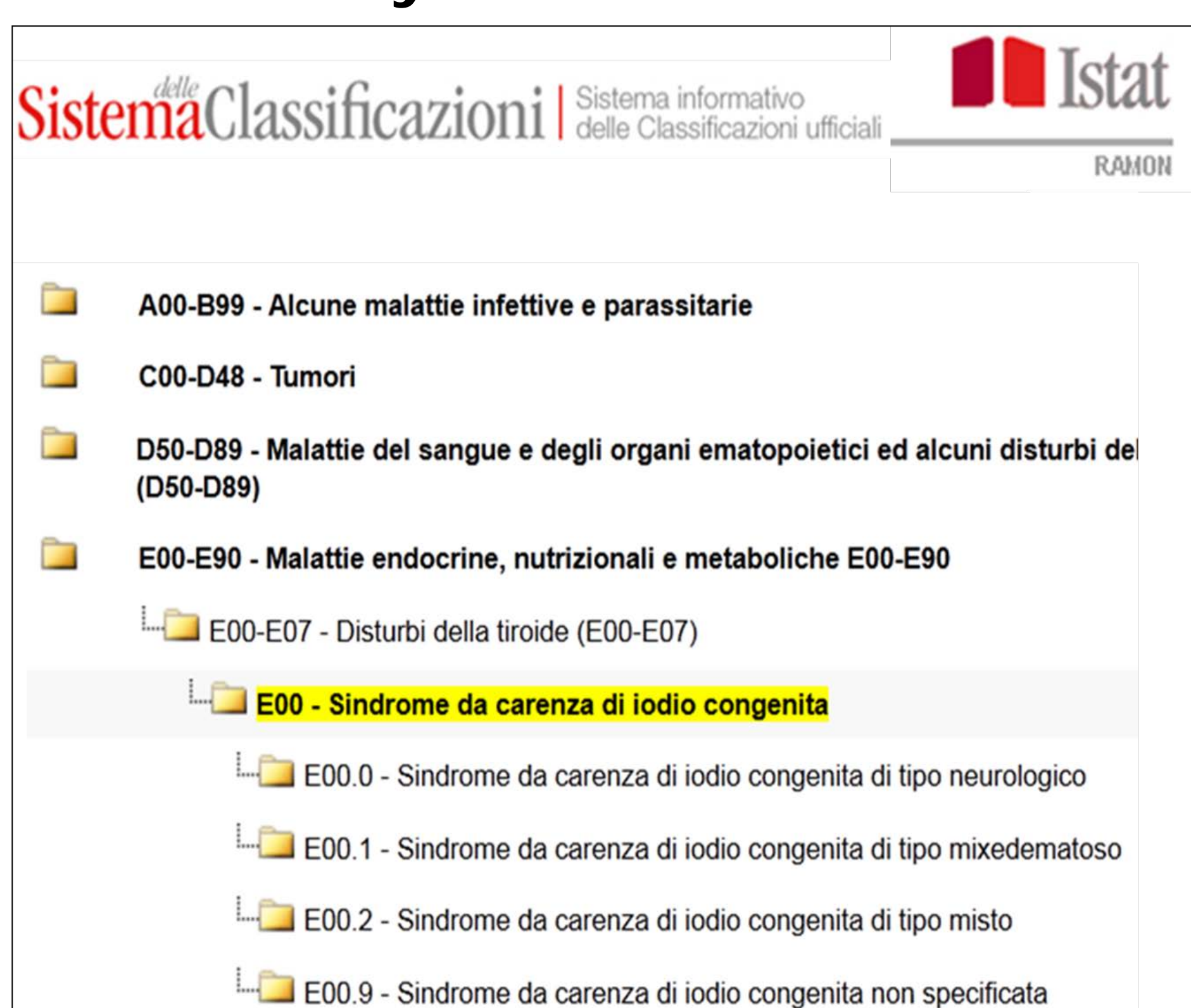
## Methods & Materials

A web application was designed in order to navigate the ICD10 and provide all the useful information for coding: hierarchic structure of the classification, inclusions, exclusions, dagger/asterisk codes.

Moreover, a module for the string search has been developed, based both on the Volume I and the Volume III. In this module, a system of string standardization and synonyms has been implemented in order to return the largest number of search results and the minimum number of false positive results.

All the information needed for the ICD consultation as well as the WHO updates up to 2009 were entered in a specific database compatible with Istat system of classifications.

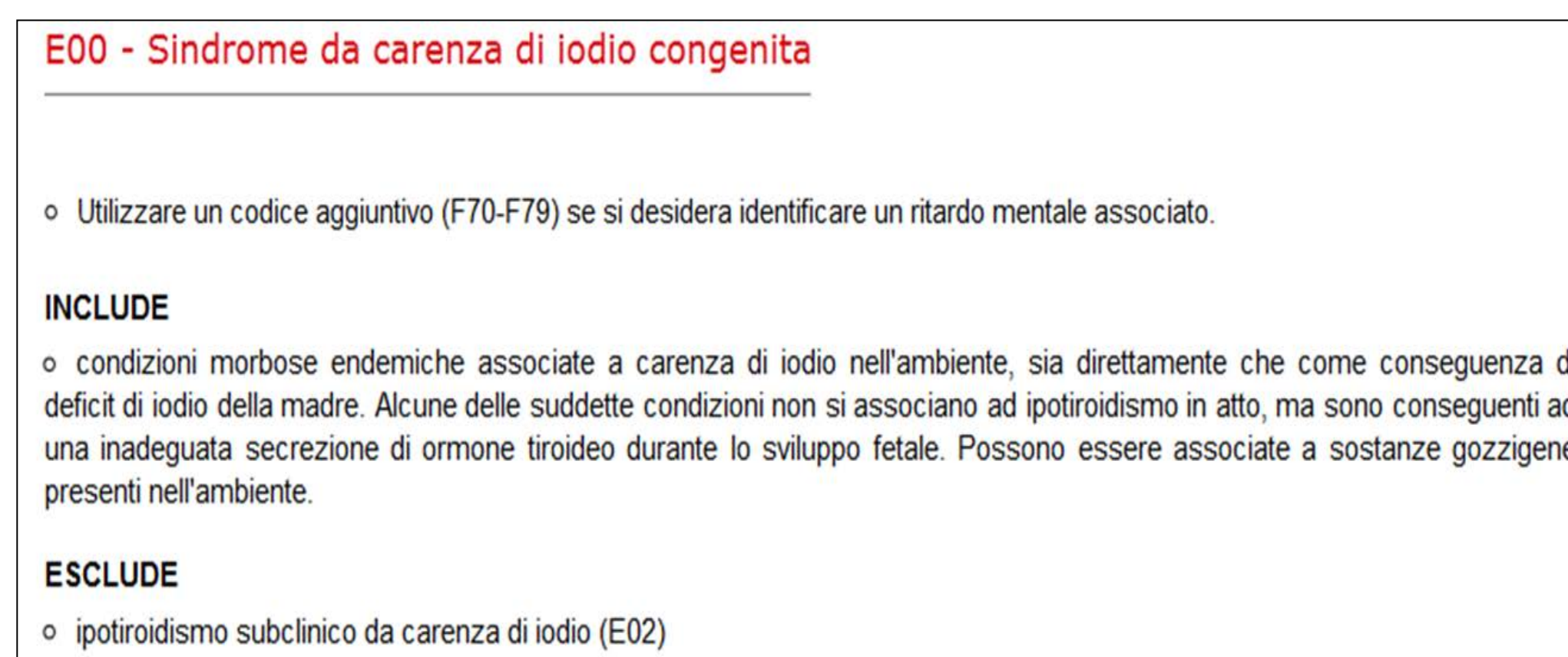
**Figure 1: Browsing the ICD10 in the Istat System of Classifications**



## Results

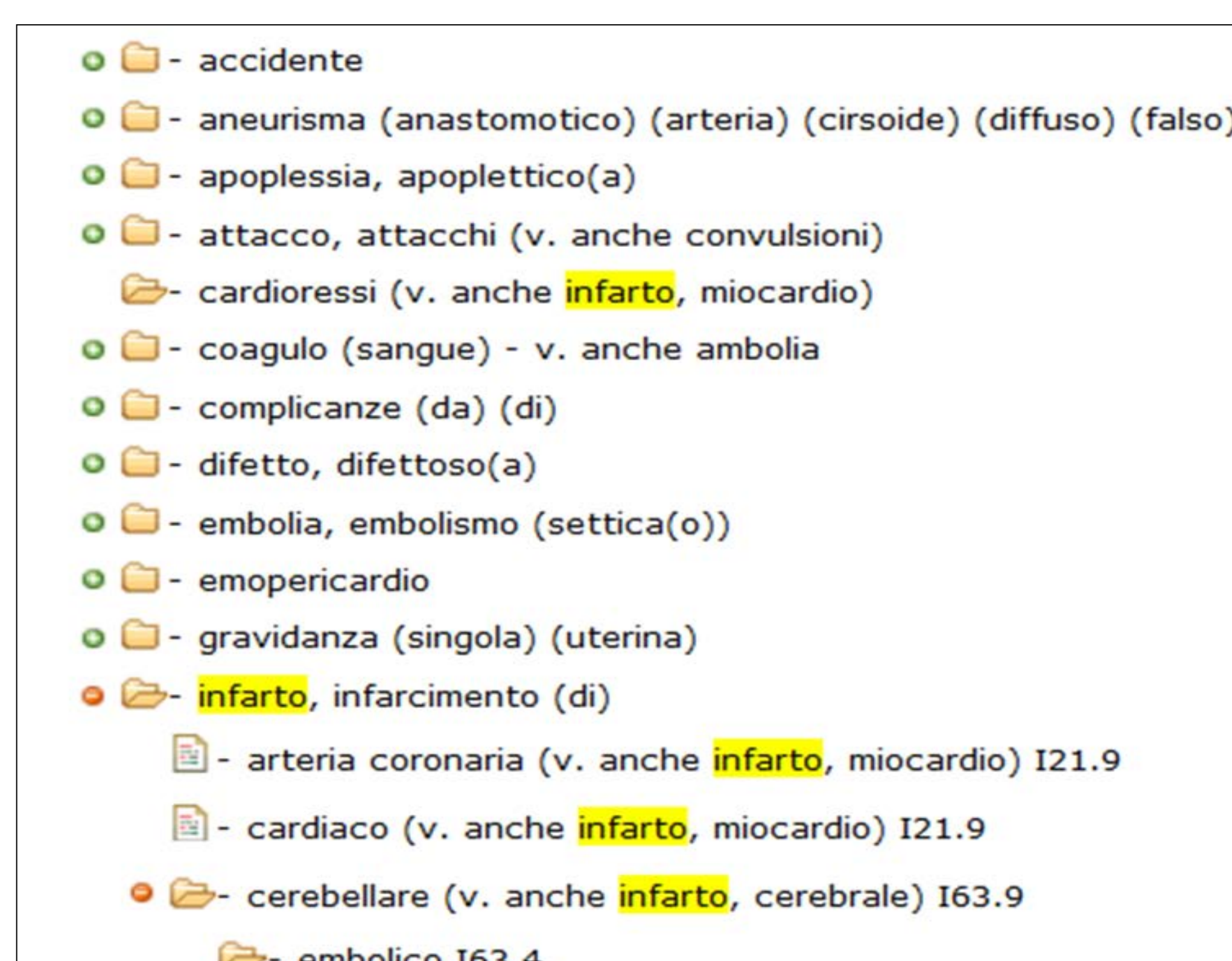
The analytical classification is displayed as shown in figure 1, allowing the consultation of all the needed information. This tool, together with the additional information box (Figure 2), allows the user to have the complete information about the codes.

**Figure 2: Additional information box contains all the information about the selected code. The user is redirected to the appropriate code by clicking on ICD10 codes mentioned in the "exclude" or somewhere else in the text**

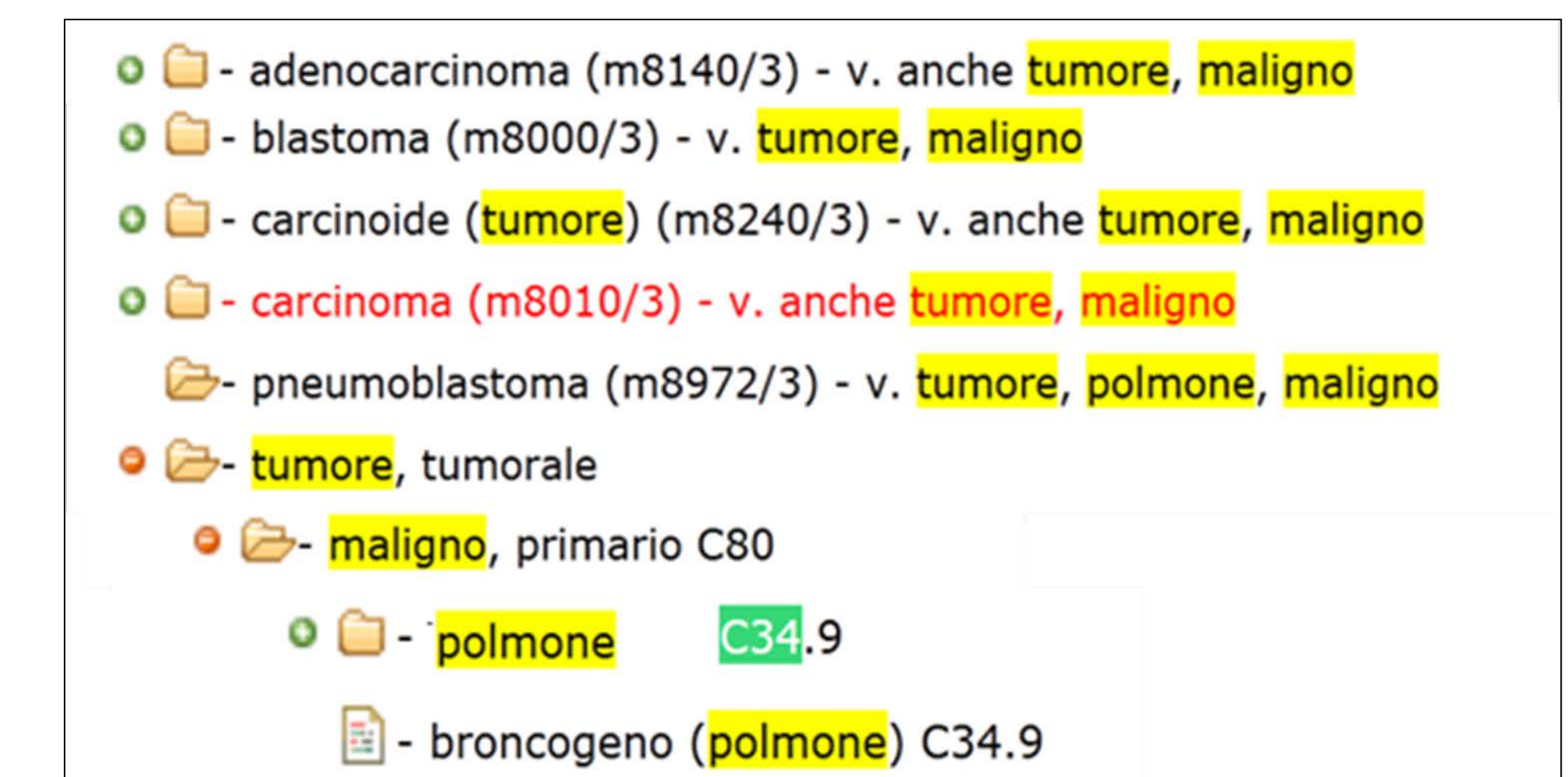


The search tool on the index is based on approximately 53 thousands terms. The power of the search is increased by the use of a system of synonyms (see and see also of ICD Vol III), and string standardization procedure. In order to better direct the user in the visualization of the many terms generated by the search, these are organized in the same way of the Volume III of the ICD10 (index) showing the results grouped by lead terms and indent. This view results to be very suitable for coding purposes (figure 3 and 4).

**Figure 3: Results of the search of the term "infarto" (infarction). The 230 terms containing this string are displayed grouped as in ICD10 volume III, allowing the user to follow the correct lead term and indents**



**Figure 4: Part of results of the search "cancro del polmone" (lung cancer). The system automatically follows the "see also" reported in the the ICD volume III (Cancer, see also Neoplasm, malignant)**



## Conclusions

The ICD10 Online in Italian represents an essential tool for documenting statistics based on this Classification. The possibility of keeping updated the ICD together with the powerful integrated search tool, allows the use for coding purposes. Finally, the availability of the Online Classification is an opportunity for implementing the ICD10 in new fields.

## Acknowledgements

This activity has been performed in the framework of the Istat working group of System of Classifications. ICD10 updates and data entry managed by research assistants of "mortality analysis and nosologic classification" unit of Istat.

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Portale Italiano delle Classificazioni: <http://www.reteclassificazioni.it>

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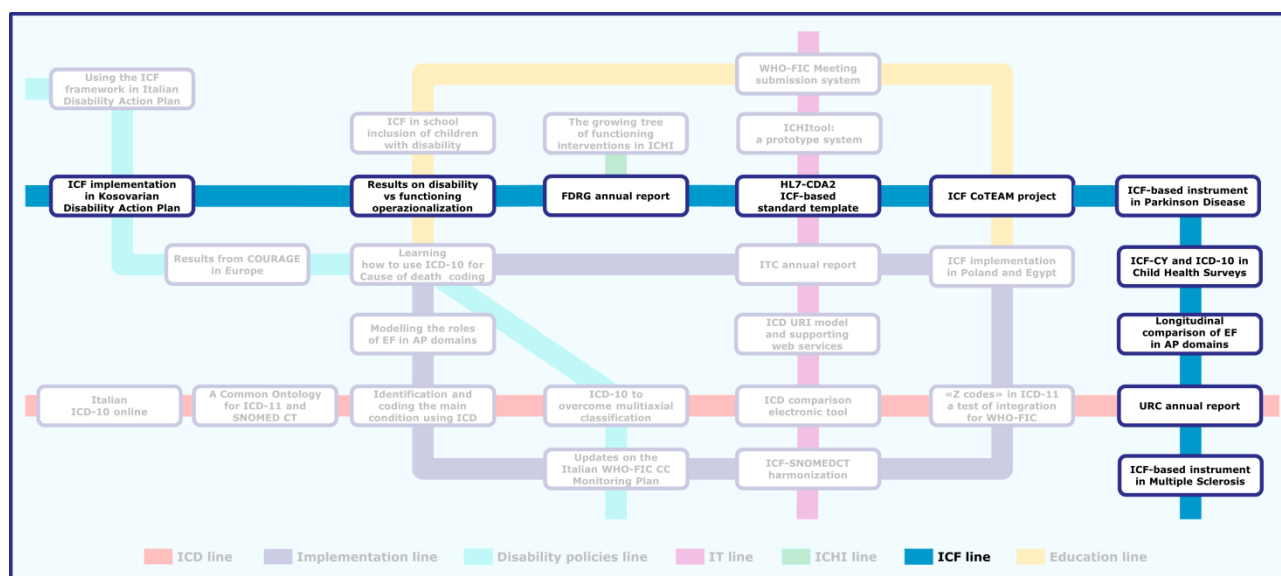
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## ICF Line



- Frattura L., Munari F., Gongolo F. Three years of ICF implementation in Kosovo under the national disability action plan 2010-2012.
- Frattura L., Anzilutti S., Rizzi L. Disability versus Functioning operationalization: results from a field trial on ICF-based informatic tools.
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## Incrocio con ICD Line

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# Three years of ICF implementation in Kosovo under the national disability action plan 2010-2012

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Lucilla Frattura, Flavia Munari, Francesco Gongolo  
Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine

**Abstract** We here present the results of the activities carried out in order to implement the use, recommended by the Kosovar disability action plan, of the International Classification of Functioning, Disability and Health (ICF), during the last three years.

## Introduction

Since 2011, Italian WHO-FIC CC has carried out a project to support the implementation of the Disability action plan of Kosovo, in strict cooperation with the Italian Ministry of Foreign Affairs - Italian Cooperation for Development. The project is funded by the Friuli Venezia Giulia Region, under the regional multiannual plan for international health policies. We here present the results of the activities carried out in order to implement the use, recommended by the Kosovar disability action plan, of the ICF.

Figure 1 – Kosovo is a newborn country



## Methods & Materials

The activities were carried out at municipal and central level to set up a work plan to implement a national recommendation for evaluating and overcoming disability according to a biopsychosocial model. At municipal level (Gjilan) three types of activities were carried out: (i) methodological assistance to an "ICF working group" to design a door-to-door survey on 300 families with children with disabilities and to analyse the collected data (2012); (ii) multiple training sessions to use ICF methodology for the evaluation of children with disabilities (2011-2013); and (iii) an 8-day training course for 30 nurses to develop communication and counselling skills useful to manage patients with disability experiences (2012-2013). At central level, three types of activities were carried out: (i) the realization of an international Autumn school on ICF in Udine (Italy) for an intersectorial Kosovar delegation (2011); (ii) the provision of technical assistance to the start-up of an interministerial working group for the adoption of ICF in Kosovo (2012-2013);

Figure 2 – His Excellence Italian Ambassador in Kosovo Michael L. Giffoni with the Italian CC expert FG - 2011



and (iii) the provision of technical assistance to the start-up of a Kosovar association for the implementation of ICF in Kosovo (2012-2013).

## Results

Data collected at municipal level were analysed and reported; an interministerial working group was established by the Kosovar Office of Good Governance, comprising the Ministry of Education, Science and Technology, the Ministry of Health, the Ministry of Labour and Social Welfare, a WHO representative, a UNICEF representative, and the representative of the Gjilan ICF working group. The Italian WHO-FIC CC support was requested to the Italian Ambassador. A professional association was formed in 2013, named OKiNF (where KNF in the acronym is the Albanian translation of 'ICF'). A 2013 work plan was submitted to support the two new social bodies to be run by the Italian WHO-FIC CC.

Figure 3 – The Gjilan Major and counselor for health with the Italian CC experts LF & FM and the Italian Development Cooperation expert - 2012



Figure 4 – The Gjilan ICF working group with the Italian CC expert LF and the Italian development cooperation expert - 2012



Figure 5 – The Gjilan nurses working group with the Italian CC expert FM - 2013



## Conclusions

Kosovo is a country in transition, in the process of refining and redefining its institutions; between 2008 and 2013 a key element has been the acceleration in the decentralization process at Municipality level. Education and accessibility have been considered as the most dynamic areas of inclusion and the optimal entry point to challenge a silted situation. The ICF model is considered a consistent framework to design new inclusive policies and programmes.

Figure 6 – The growing Europe



## Acknowledgements

**Friuli Venezia Giulia Region** that supported the sharing of technical expertise on disability in order to support the Kosovo Disability Action Plan implementation  
**Italian Embassy in Kosovo and particularly His Excellence Ambassador Michael L. Giffoni**, for the interest and appreciation expressed on the works of the Italian WHO-FIC Collaborating Centre (Letter of November 2012 to the President of the Friuli Venezia Giulia Region, Mr. Renzo Tondo;  
**Italian Ministry of Foreign Affairs, Cooperazione italiana allo sviluppo**, particularly dr. Mina Lomuscio for positive feedback and institutional support, and dr. Dolores Mattosovich, project manager of the Italian cooperation project in Kosovo;  
**Gjilan Municipality, Kosovar national bodies and all the kosovar professional and collaborators** with we worked together;  
**Local Health Authority n. 5 Bassa Friulana** for efficiently supporting management and administration.

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# Disability versus Functioning operationalization: results from a field trial on ICF-based informatic tools

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Lucilla Frattura<sup>1</sup>, Sara Anzilutti<sup>2</sup>, Laura Rizzi<sup>2</sup>

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**Abstract** The sample of 213 patients was considered to analyse positive and negative interactions between individual and EF, focusing also on their different levels. An analysis of EF role (barrier/facilitator) in AP chapters was firstly conducted. Youngers showed serious problems in activities of chapter d1, while MHS patients in activities of chapter d7. Chapters d2 and d7 presented the worst situation in terms of percentage of patients with a negative interaction. However the analysis pointed out that functioning and disability coexist in the same person and in the same population.

## Introduction

In 2011, a field trial using a new electronic ICF-based functioning/disability assessment protocol (VILMA/FABER) was carried out in the Friuli Venezia Giulia Region (1). A proposal for the operationalization of the disability and functioning constructs based on the analysis of Environmental Factors (EF) roles in the Activities and Participation (AP) domains is presented here.

## Methods & Materials

A sample of 213 outpatients was enrolled (mean age 34, range 1-92): 41.8% female and 18.8% younger than 18 years. The subsamples of those aged less than 18 (53 patients) and of those in charge to mental health services (MHS) (51) were separately considered also. Descriptive analysis allowed an initial exploration of some aspects of the EF citation frequency and of EF roles in AP domains. Whenever an EF is coded it becomes interesting to analyse performance qualifier value to verify a negative EF-individual interaction (disability) or a positive one (functioning). The analysis of performance qualifier allowed also to describe different levels of such interactions: *positive interaction* (performance qualifier 0), *negative interaction* (performance qualifier 1-4), *alarming negative interaction* (performance qualifier 3-4), and *absolute negative interaction* (qualifier 4).

## Results

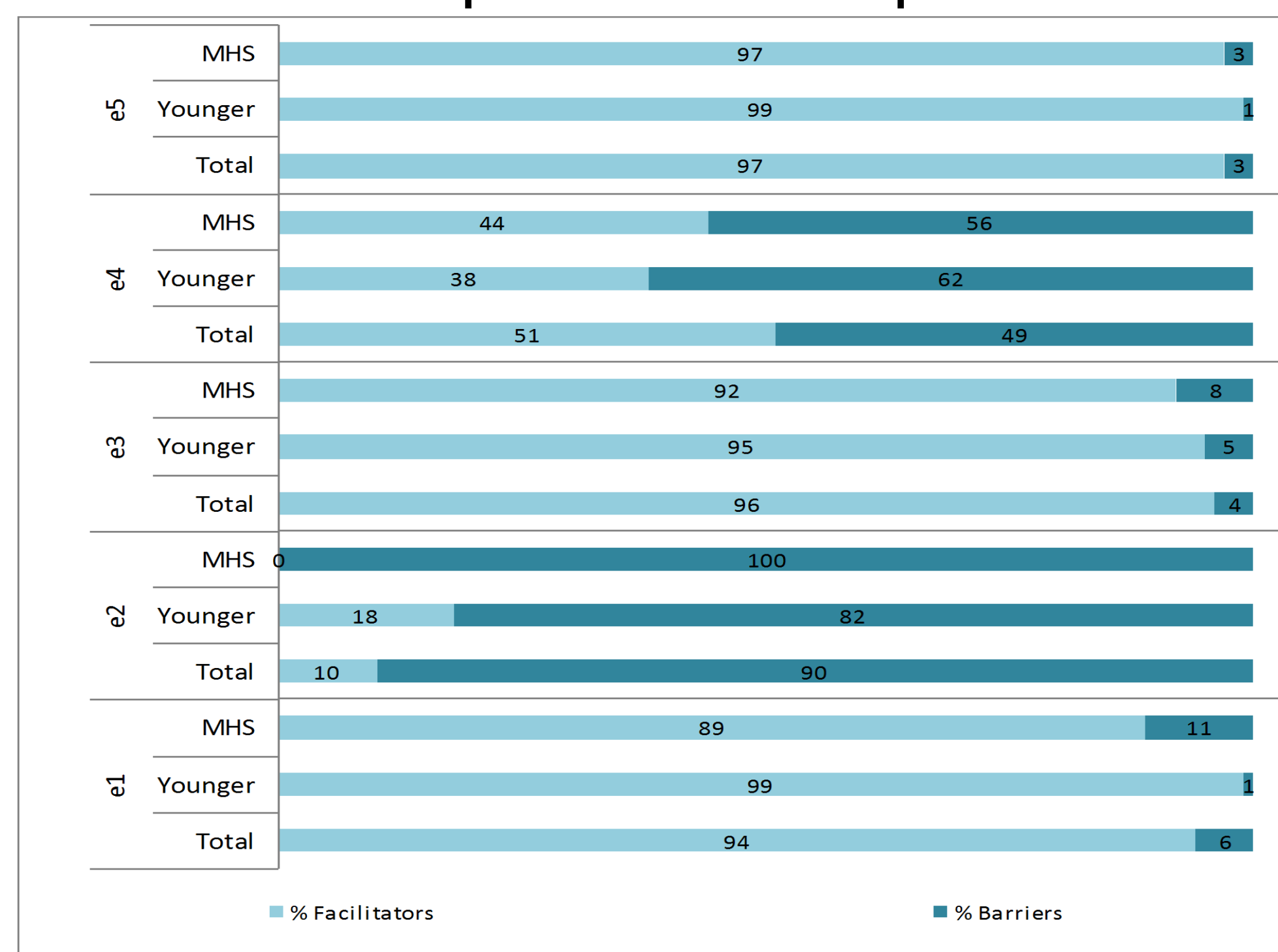
The most coded EF, related to AP items, were: “immediate family” (e310), “health professionals” (e355) and “general social support services, systems and policies” (e575), both in the whole sample and in the subgroup of younger patients, “products or substances for personal consumption” (e110) in the MHS patients subsample (Table 1).

**Table 1 – Main coded EF for AP categories in the whole sample and in the two subsamples.**

Environmental factor - EF	TOTAL	Younger than 18	MHS patients
e310 Immediate family	3431	1319	288
e575 General social support services, systems and policies	1609	496	275
e355 Health professionals	1477	349	702
e340 Personal care providers and personal assistants	1395	249	292
e110 Products or substances for personal consumption	1338	154	743
e360 Other professionals	1275	250	113
e580 Health services, systems and policies	1038	308	416
e570 Social security services, systems and policies	531	185	43
e120 Products and technology for personal indoor and outdoor mobility and transportation	394	124	11
e115 Products and technology for personal use in daily living	356	152	8

Analysis of the EF role related to AP categories (facilitators/barriers) pointed out that EF in chapters e1, e3 and e5 were more frequently coded as facilitators (94%, 96% and 97%, respectively), while those in e2 were generally coded as barriers. These results were confirmed in the subsamples (Figure 1). EF were generally coded as facilitators in AP chapters; however chapter d7 showed the highest percentage of EF coded as barriers, both for the whole population and for the younger (10% and 11%), while d4 for MHS patients (19%).

**Figure 1 – Percentages of citations as facilitator/barrier in AP categories, distinction by EF chapters and subsamples.**



EF are coded mainly in chapters d4 and d5 for the whole population, in chapters d1 and d4 for the younger group and in chapter d2 for MHS patients. Considering only AP items with some coded EF, most of the patients in the younger subgroup had *positive interactions* (performance qualifier 0) in chapters d5, d6 and d8, while the highest percentages of persons with *positive interactions* in the MHS subgroup were in d1, d5 and d6.

In the younger subsample, high percentages of persons with *negative interactions* (performance qualifier 1-4) were seen in chapters d1, d2, d3, d7 and d8, while in the MHS patients these resulted more frequent in items within d2 and d7. Persons with *alarming negative interactions* resulted still more frequent in chapters d1 and d4, among the younger, and in chapters d7 and d8, among MHS patients. Persons with *absolute negative interactions* presented equally high percentages in items of d3, d5 and d8 chapters, among the younger and in chapters d7 and d8, among MHS patients (see Figure 2). Figure 2 presented also the weighted means (mean of proportion of each type of interaction, weighted by the number of coded categories of every chapter), for the whole population and the subgroups. In the younger than 18 years subsample, the proportions of positive, negative, alarming negative and absolute negative interactions were higher than those of MHS patients; the younger had more difficulties than the other subsample but, at the same time, they had a higher proportion of persons without difficulty.

**Figure 2 – Proportions of persons with positive interactions, negative interactions, alarming negative interactions and absolute negative interactions (whole sample and subsamples), distinction by AP chapters and the weighted mean over them.**



## Conclusions

The comparison of the percentages of *negative* and *alarming negative* assessed milder problems in activities of chapters d2 and d3 and more serious problems in activities of chapter d1, for the younger patients. The MHS patients had mild problems in activities of chapters d2 and more serious problems in activities of chapter d7. The analysis showed also that the chapters presenting the worst situation in terms of negative interaction, were d1, d2, d3 and d7 for the younger group and d2 and d7 for MHS patients. In these chapters, in fact, more than the 74% of the younger and the 78% of MHS patients had a negative interaction. Chapters presenting the best situation in terms of positive interaction were d5 and d6, for the younger patients: the 57% and the 64% of them had at least one AP item with performance qualifier 0. However the percentages of people with these types of interactions overlap each other, showing that functioning and disability coexist in the same person and in the same population.

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# FDRG Annual Report

12 – 18 October 2013  
Beijing, China

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<sup>1</sup> World Confederation for Physical Therapy, United Kingdom

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Poster Number  
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**Abstract** This poster describes the activities of the Functioning and Disability Reference Group in the 12 months from October 2012 to October 2013. Four main streams of work are reported; 1 ICF updates, 2 ICF Practical Manual, 3 Measurement, 4 Harmonisation and development.

## Background

The items on the FDRG component of the WHO-FIC strategic plan are reported on below.

The co-chairs met monthly by teleconference. FDRG members and collaborators were informed of progress on the projects during the year and invited to comment on draft materials.

There were teleconferences and ad hoc meetings between co-chairs and FDRG members taking the lead on projects occurred in May (Updates), June (ICHI development) and August (Ontology development).

## ICF Updates

Updates workshops have been instrumental in the progress on ICF updates.

A total of 65 proposals were passed to the URC for voting.

This represents almost half of the proposals on the update platform and a significant increase in the number processed from 37 in the previous year.

### Summary of ICF updates in 2012-2013

LAYERS	Number of proposals with new review comments in 2013 & 2012	
INITIAL REVIEW LAYER	2013 15 Feb.-10 March	12/12
	2012	104/104
FDRG LAYER	2013 1st-26 April	7/7
	2012	63/104
OPEN DISCUSSION LAYER	2013 3 May-16 June	51/145
	2012	47/174
CLOSED DISCUSSION LAYER Recommendations before votes	2013	65
	2012	37

## ICF Ontology

### Why an ICF ontology?

There is evidence that show that ICF, as it stands now, does not have a clear ontological structure. A more stringent and logical redefining of the ICF categories would:

- reduce ambiguity of concepts and improve ICF use;
- facilitate semantic interchangeability among the major WHO classifications; and
- ease the process of ICF update and maintenance.

### What has been done so far?

The first steps towards an ICF ontology were including this task on the SWP and preliminary scoping of the project by the co-chairs of URC, ITC and FDRG. There was shared acknowledgment of the relevance of this work, and agreement to focus efforts on the analysis of the state of the art in this area and on possible strategies to tackle the task.

### What is needed to proceed?

If this issue is deemed relevant, commitment by WHO and the WHO-FIC community is essential if the immediate aim of delineating a realistic roadmap is to be achieved.

## Measurement

After considering the amount of data and literature presently addressing the issue of mapping measurement tools to ICF and vice-versa, and the potential difficulty researchers may find in orienting themselves into such abundance, this stream was directed to design a set of criteria (filters) to be applied to a web based tool, that could help researchers and users to weight the evidence in the various reports present, and find among the numerous sources the one best fitting their needs.

The development of this stream is fully described in a set of companion posters presented at this meeting.

## ICF Practical Manual

The final draft of the practical manual for ICF use has been completed. It consists of 8 sections, covering both general aspects of ICF use ("getting started" and "describing functioning") and special areas of ICF use: clinical, community support services and income support, population based census and survey, education systems, policy and program purposes, advocacy and empowerment).

The text run through a first turn of revision and commenting by the members of FDRG, of the EIC, and by WHO, which was completed in February.

All the comments and suggestions have been taken into consideration and dealt with.

The resulting version was finally presented to WHO for final comment and approval in June.

Pending this last step, the Practical Manual will be ready and will be posted on the WHO web site.

The writing group led by Ros Madden and including Andrea Martinuzzi, Judith Hollenweger, Diane Caulfeild, Jennifer Madans, Mitch Loeb are thanked for their tireless efforts to produce the manual. Thanks also go to those members of FDRG and EIC who commented on drafts and to WHO staff for their input.

## Harmonization and development

### Education and Implementation Committee (EIC)

The completion of an exposure draft of the ICF Practical Manual has been supported by EIC.

FDRG members have commented on the ICF eLearning tool following major changes in a new draft. Determining the path to completion and future ICF education requirements will be the subject of discussion at a joint session with the EIC.

### ICHI development group

Andrea Martinuzzi chaired the technical working group for functioning interventions. FDRG members and collaborators have contributed to the development of the axes and tabular list of functioning interventions. The scope of this work will be presented during the meeting in a joint session.

### Informatics and Terminology Committee (ITC)

In addition to working on ontology development the FDRG is working with ITC on the mapping database and the possible development of a mobile application for the collection of functional status data. A joint session is scheduled at the WHO-FIC meeting in Beijing

### functioning Technical Advisory Group (fTAG)

FDRG member Haejung Lee was nominated to join the fTAG to replace Ros Madden who resigned in 2012. Haejung has led the task of identifying codes in ICD and ICF that 'mirror' each other. Catherine Sykes with Solvejg Bang and Francesco Gongolo have reviewed ICD-10 Chapter XXI with a view to restructuring for ICD-11.

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# An HL7-CDA2 standard template for the ICF-based electronic biopsychosocial record

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Andrea Simoncello<sup>1</sup>, Matteo Girardello<sup>2</sup>, Vincenzo Della Mea<sup>2</sup>, Alessandro Cabroni<sup>3</sup>, Lucilla Frattura<sup>1</sup>

<sup>1</sup> Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, IT WHO-FIC CC, Udine

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<sup>3</sup> Insiel S.p.A.

**Abstract** The aim of this poster is to propose an HL7-CDA2 template for the ICF-based electronic biopsychosocial record (FABER) developed by the Italian WHO-FIC collaborating centre.

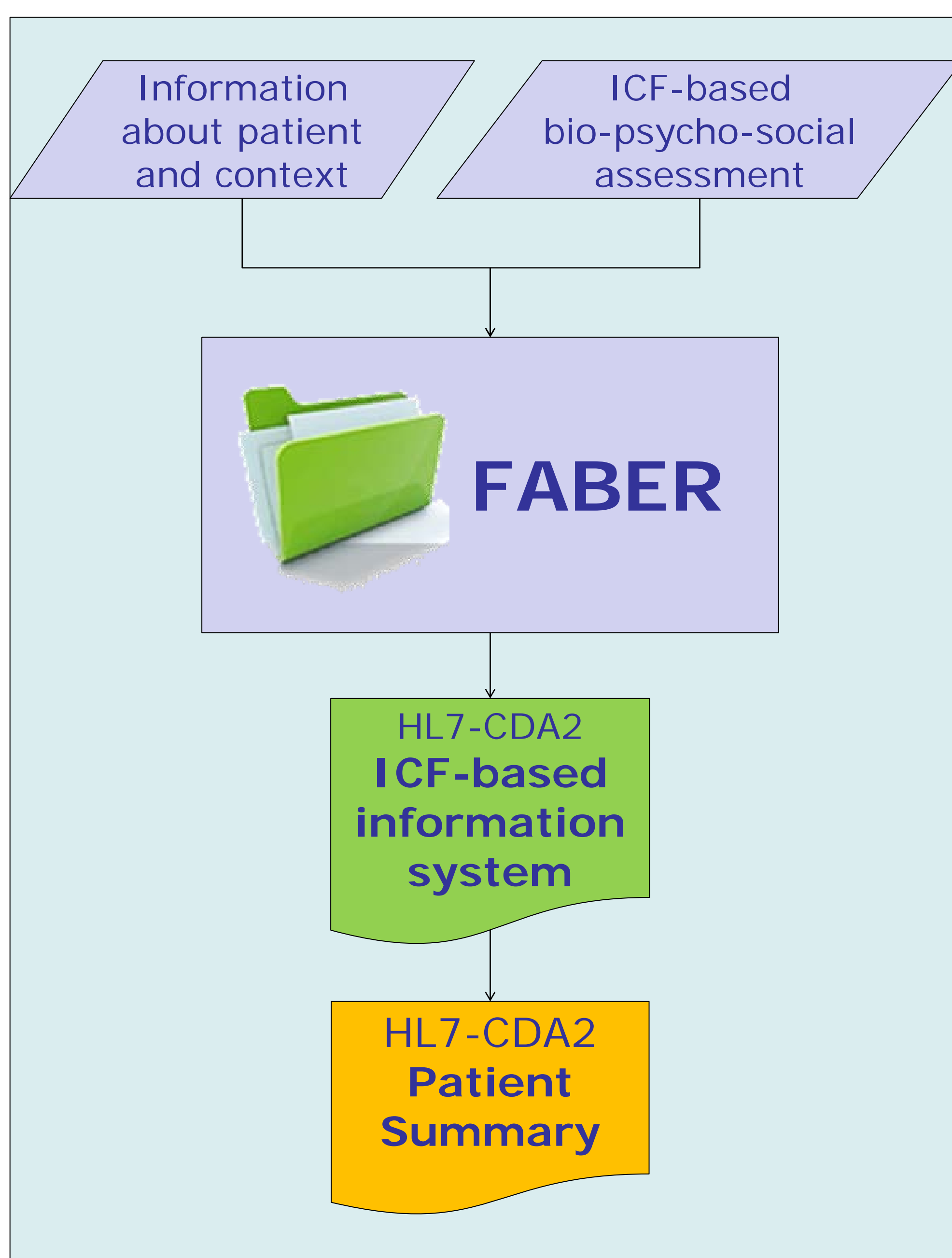
## Introduction

The aim of this poster is to propose an HL7-CDA2 template for the ICF-based electronic biopsychosocial record (FABER) developed by the Italian WHO-FIC collaborating centre (1,2). The HL7-CDA2 template was developed as a collaboration between the FVG Central Health Directorate (Italian WHO-FIC CC), the University of Udine, and Insiel S.p.a., the FVG Region in-house software developer.

## Methods & Materials

HL7-CDA2 (Health Level Seven – Clinical Document Architecture level 2) is the standard format for clinical documents, based on the HL7 Reference Information Model (RIM) and on the eXtensible Markup Language (XML) (3). Since the CDA2 document derives from the HL7 RIM, it is specifically designed for a complete integration with HL7 technologies, which are widely used worldwide (4). By analyzing the features of the currently available ICF software, we selected a set of elements and attributes to represent the ICF-based electronic biopsychosocial assessment (as performed by FABER) (Figure 1), thus creating an HL7-CDA2 template for a biopsychosocial patient profile.

**Figure 1 – FABER output into Patient Summary**



## Results

In our template, the first part of the document is the HEADER, which includes information about the patient and the context (creation date, owner, editor, structure delivering the services, authentication, etc). The HEADER was developed following the guidelines used for the Patient Summary (PS) version 1.1 RC2 (20/06/2011), which in turn refers to the Electronic Health Record (EHR) directives by the Italian Ministry of Health (PS is a clinical document summarizing the patient's past and present clinical history according to the European project EPSOS and also adopted in Italy). The second part of the document is the BODY, which collects the real content of the electronic biopsychosocial record. We chose to implement the Environmental Factors and, separately, the other three components: Body Functions, Body Structures, and Activities and Participation. Later, the Environmental Factors were linked to each single category (Figure 2).

**Figure 2 – Environmental Factors linked to single categories**

```

<!-- Activities and Participation Reference Component -->
<entry>
  <observation typeCode="OBS" moodCode="EVN">
<!-- Activities and Participation template -->
    <template Id root='templateIdAPObservation' />
    <id root='OIDObsIAP' extension='APObservation' />
    <code code="CodeICFActPart"
      codeSystemName="ICF Activities and Participation"
      codeSystem="OIDActPartICF"
      codeSystemVersion="CodeVersion" />
    <Text>
      <reference value="#apcodel"/>
    </Text>
    <statusCode code='completed' />
    <value xsi:type="CD"
      code="ValueCodeAPI"
      codeSystem="specificOIDAP"
      codeSystemName="ICF" displayName="CodeAPI"/>
    [...]
  </observation>
</entry>

[...]
```

```

<!-- Environmental Factor Link -->
<observation typeCode="OBS" moodCode="EVN">
[...]
```

```

<entryRelationship typeCode="REFR" inversionInd='false'>
  <observation classCode="OBS" moodCode="EVN">
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1' />
    <id root='OIDObsIAP' extension='APObservation' />
    <code code='CodeICFActPart'
      displayName=' '
      codeSystem='OIDActPartICF'
      codeSystemName=' ICF Activities and Participation' />
  </entryRelationship>
</observation>

```

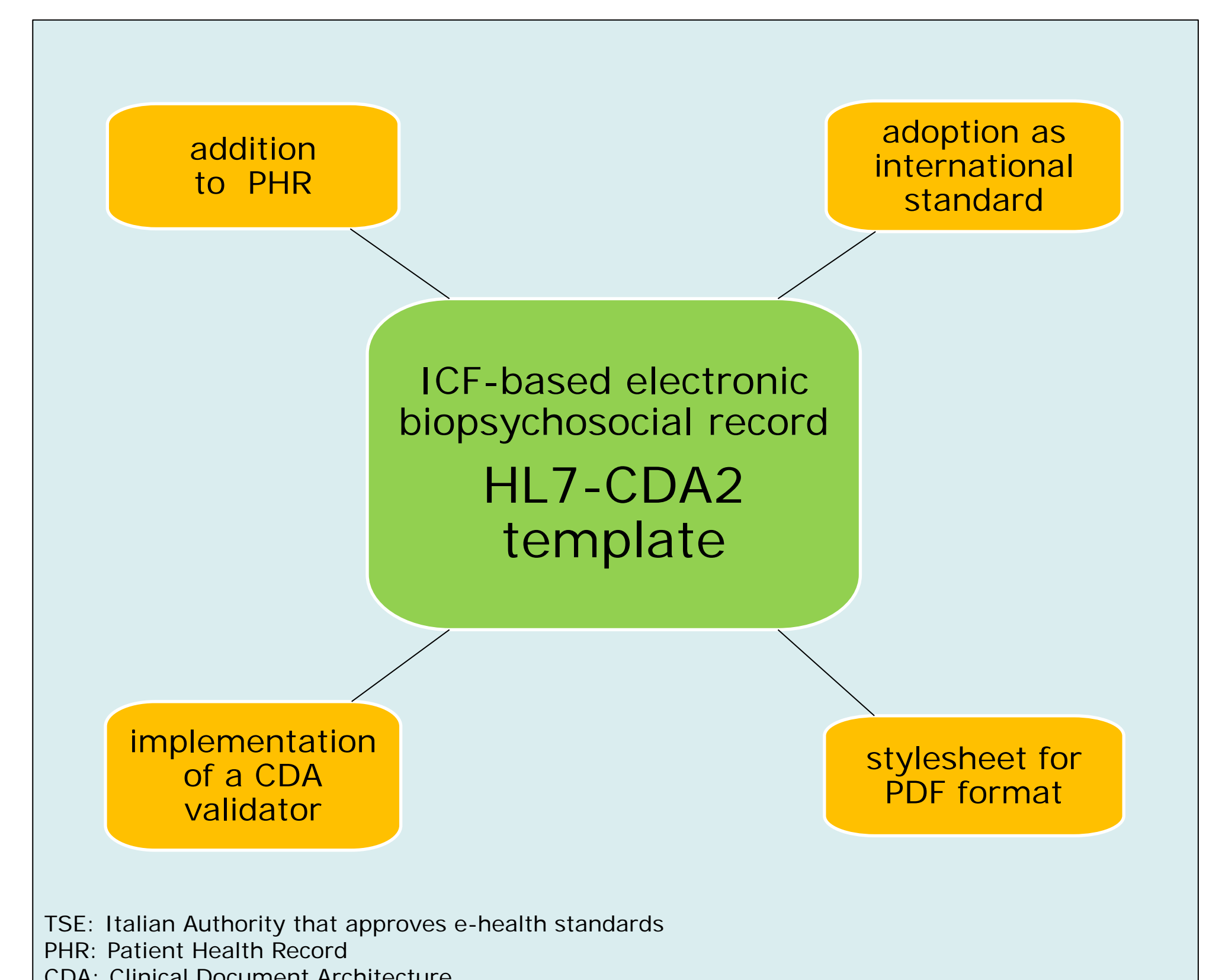
Once the HL7-CDA2 template was developed, we analysed the elements in common with the PS, in order to provide a possible implementation into the PS. Two possibilities will be submitted to the Italian Authority that approves e-health standards (TSE).

## Conclusions

Information included in an electronic biopsychosocial record can also be used in the PS. Future developments for the ICF-based electronic biopsychosocial record HL7-CDA2 template include (Figure 3):

- approval by the TSE and addition into the Patient Health Record;
- proposal for its adoption as an international standard template;
- implementation of a stylesheet for the PDF format to deliver to patients;
- implementation of a specific CDA validator.

**Figure 3 – Future developments**



## Acknowledgements

Thank are due to Region Friuli Venezia Giulia for funding the Italian CC project; Local Health Authority n. 5 Bassa Friulana for efficiently supporting management and administration; Insiel Spa for providing expertise in developing innovative tools using WHO-FIC.

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4. Health Level Seven International, HL7 Reference Information Model, [www.hl7.org/implement/standards/rim.cfm](http://www.hl7.org/implement/standards/rim.cfm)

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# Mapping met and unmet needs of persons with complex health conditions in the transition from childhood into adulthood with an ICF-based protocol

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Andrea Martinuzzi<sup>1</sup>, Silvia Pizzighello<sup>1</sup>, Sara Piccoli<sup>1</sup>, Monica Canciani<sup>2</sup>, Matilde Leonardi<sup>3</sup>, Vanessa Cavallera<sup>3</sup>, Paolo Meucci<sup>3</sup>, Maurizio Scarpa<sup>4</sup>, Caterina Agosto<sup>4</sup>, Franca Benini<sup>4</sup>, Paolo Brambilla<sup>5</sup>, Livia Fornasari<sup>5</sup>, Giovanni Bassi<sup>6</sup>, Andrea Simoncello<sup>6</sup>, Flavia Munari<sup>6</sup>, Lucilla Frattura<sup>6</sup>.  
The Italian Collaborating Centre Research network

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2=Emmeffe S.r.l. - Management & Formazione  
3= Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan- Italy  
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5 =DISM, ICBN, University of Udine, Udine, Italy  
6=Central Health Directorate/Classification Area – Friuli Venezia Giulia Region

## Abstract

The transition phase is a critical period in the life of a person with health conditions and complex needs, since the passage from adolescence to adulthood may coincide with changes in functional manifestation of the underlying health condition, changes in social expectations which are met by radical changes in service provision. For this reason a systematic appraisal of functioning of persons sharing diagnostic labels frequently associated with long-term care needs before and after crossing the "transition age" may inform on met and unmet needs and provide guidance to assure continuity of optimal care. A collaborative project named "COTEAM" which gathers partners involved in various stages/levels of care provision for this population in different Italian health service providers was launched Nov 2012. To appropriately describe the functioning profile of a representative sample of the transitioning population we selected five typical situations of potential gaps in service provision: access and orientation in the services, emergency handling, diagnosis, information and update with the latest information on the disease, patient and caregiver empowerment, continuity of care. We selected 39 ICD diagnoses typically associated with long-term care needs. As functioning descriptor ICF was recognized as the best tool to map the functional status and the environment responses for this cohort. Persons encountered by any of the five clinical participating units aged 14 to 20 years between Jan 2010 to Dec 2012 and carrying one of the selected ICD diagnoses have been identified and will represent the population from which a sample of 250 subjects distributed across the entire age span will be selected for the functioning evaluation. The ICF based assessment method (protocol/web application), which has been developed by the Friuli Venezia Giulia Region / Italian WHO-FIC CC, will be employed for the first time out of the Region, in order to verify its usability in describing everywhere the functioning profile of each subject and of a whole sample. The balance between functioning and disability will be evaluated for persons below age 18 and compared to that obtained for persons aged above 18, and will provide a proxy for met and unmet needs. The results of this project will provide the first systematic recognition of the functional profile of persons with disability transitioning from adolescence into adulthood. By offering a reasoned view of met and unmet needs it may be used as a guide in designing models of care minimizing gaps and obstacles in this critical phase.

## Introduction

The Society for Adolescent Medicine defined the transition as "the purposeful, planned movement of adolescents and young adults with chronic physical and medical conditions from child-centered to adult-oriented health care system" (1). Transition from childhood to adulthood, entailing individual and social changes in every domain of life, represents a demanding time for children and for their relatives. Reasonably, it could be even more complex for people with neurological disability, because of the occurrence of psychiatric symptoms that further complicate the management of this phase. Neurological disability can predispose to the onset of concurrent mental disability or interact and influence its persistence, therefore resulting in severe chronic condition.

Adolescents with neurological disability may have a greater need for support and, as consequence, are longer dependent on their parents, are more socially marginalized and can suffer for educational disadvantages and fewer opportunities than their peers (2,3,4).

On the other hand, evidence suggests that the period of transition is perceived from parents of severely disabled adolescents or young adults as a particularly stressful time (5,6,7).

Into this time, several barriers are registered: the difficulty identifying adult primary care providers, resistance and little or no preparation of adolescence and family, lack of institutional support, age rather than indication of maturity or independence as trigger for transition (8,9). Care is often fragmented, specialists rarely communicate with one another and little attention is paid both to physical and psychosocial aspects of disability (2). This make this children, and often their parents, growing up with insufficient knowledge about their neurological disorder and about the service to cope with (10). Even if much literature concerns difficulties in the transition from adolescence to adulthood, little has been written about the impact of severe physical and cognitive impairments in the transition phase. In this poster we describe an ongoing project based on the collaboration of different Italian health service providers launched in November 2012.

Goals of this project are:

- to describe the functioning profile of a representative sample of the transitioning population,
- to examine the way in which continuity of care between child and adult services is assured
- to highlight the met and unmet needs in this process
- to use data as a guide in designing a model of care minimizing gaps and obstacles in this critical phase.

## Methods & Materials

Figure 1 - Project phases



The project was organized as in Figure 1:

- 1. Preparatory phase:** we identified 39 ICD diagnoses typically associated with long-term care needs. decision of diagnosis. Selected diagnosis were contained in the following general codes:
  - Neoplasm
  - Endocrine, Nutritional And Metabolic Diseases, And Immunity Disorders
  - Mental Disorders
  - Diseases Of The Nervous System And Sense Organs
  - Diseases Of The Blood And Blood-Forming Organs
  - Congenital Anomalies

We then selected five typical situations of potential gaps in service provision: access and orientation in the services, emergency handling, diagnosis, information and update with the latest information on the disease, patient and caregiver empowerment, follow-up and personalized local care.
- 2. Identification and clinical/functional description of cases:** participating units collected data of patients aged 14 to 20 years between Jan 2010 to Dec 2012 carrying one of the selected ICD diagnoses. For each patient we collected the following data: date of birth, type of admission, source of referral, reason of referral, characteristics of service admission (duration, type and number of interventions carried out) and type of service involved at the time of discharge, if any.
- 3. Description of the current clinical pathway and current needs:** this phase will require participants units to contact selected patients and to submit a semi-structured interview. Collected data will allow us to come to an overall and complete overview of the current patient's clinical condition and to explore activated clinical pathways and met and unmet needs.
- 4. Elaboration of collected data:** we will use a web application developed by the Italian Collaborating Centre that will be employed for the first time out of the Friuli Venezia Giulia Region (11). This application will elaborate for each patient a profile describing the balance between functioning and disability. Profiles of persons below age 18 will be then compared to that obtained for persons aged above 18, highlighting met and unmet needs arising during the time of transition
- 5. Design of a new model:** starting from data, we will design and propose a model of care minimizing gaps and obstacles in this critical phase.

## Results

The project took pace in April 2013, and has completed the first phase of patient identification. Up to now, 782 patients were identified (see Table 1).

Out of the whole group, 11% were outpatients, 58% were full time inpatients and the remaining 30% received day hospital treatments.

A first attempt of applying the ICF based evaluation protocol to the whole sample was met with objective difficulties in retrieving the relevant data, in particular those related to the environmental factors, which are in turn critical for the definition of the functioning balance. Acknowledging the importance of a complete and uniform description of functioning, the protocol will be applied to a randomly selected sub-sample of patients who will undergo direct questioning and detailed examination.

Table 1 - Number of patients for each ICD general code

ICD DIAGNOSIS	NUMBER OF PATIENTS
Neoplasm	104
Endocrine, Nutritional And Metabolic Diseases, And Immunity Disorders	40
Mental Disorders	85
Diseases Of The Nervous System And Sense Organs	535
Diseases Of The Blood And Blood-Forming Organs	8
Congenital Anomalies	10
<b>Total number of patients</b>	<b>512</b>

## Conclusions

Our experience opens an observation window on the very critical phase of transition. The use of ICF to describe the functioning characteristics of the recruited population, albeit in a small subset, will allow a uniform comparison of data across the transition age, orienting towards the design of a new model for service provision.

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## Acknowledgements

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# Psychosocial Difficulties of patients with Parkinson Disease measured with an ICF-based instrument

12 – 18 October 2013  
Beijing, China

Leonardi M.<sup>1</sup>, Schiavolin S.<sup>1</sup>, Covelli V.<sup>1</sup>, Giovannetti A.M.<sup>1</sup>, Raggi A.<sup>1</sup>, Quintas R.<sup>1</sup>, Cerniauskaite M.<sup>1</sup>, Meucci P.<sup>1</sup>, Sattin D.<sup>1</sup>, Albanese A.<sup>2</sup>, Romito L.<sup>2</sup>, Carella F.<sup>2</sup>, Soliveri P.<sup>2</sup>, Elia A.<sup>2</sup>, Coenen M.<sup>3</sup>, Sabariego C.<sup>3</sup>, Cieza A.<sup>4</sup>

Poster Number  
WHO/CTS to insert

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**Abstract** In the framework of the EU PARADISE Project (Psychosocial Factors Relevant to Brain Disorders in Europe), Parkinson patients from the Foundation IRCCS Neurological Institute Carlo Besta were interviewed using an ICF based research protocol. This study aims to identify and describe psychosocial difficulties (PSDs) that patients with Parkinson Disease experience in their everyday life adopting a biopsychosocial perspective.

## Introduction

Parkinson Disease (PD) is one of the most common neurodegenerative chronic diseases. PD usually results in severe disability and reduced health, quality of life and functioning because of symptoms such as tremor, gait disorders, sleep disturbance and depression (Behari, 2005), of their effects on the person and reactions from the environment in which a person with PD lives (Raggi, 2011). Reported prevalence and incidence rate for PD in European countries are 108-257/100.000 and 19/100.000 per year respectively. Considering only older age group (> 60 years) these rates are much higher (Lindgren, 2005). The number of people with PD is increasing because of epidemiological transition and ageing of population: thereby the burden of PD is increasing (Gustavsson, 2011). **This study aimed to identify and describe psychosocial difficulties (PSDs) and role of environmental factors on patients with PD. PSDs are defined as impairments, activity limitations and participation restrictions.**

## Methods & Materials

Patients with PD (ICD-10:G20) were consecutively enrolled at Neurological Institute Besta from January to September 2012. Patients were recruited at the recovery or follow-up visit and they were interviewed using the EU Project PARADISE Protocol ([www.paradiseproject.eu](http://www.paradiseproject.eu)) – an ICF based protocol that allows to collect self reported PSDs associated to brain disorders and environmental determinants of those PSDs. The severity of disease was reported using the Hoehn & Yahr Score. Descriptive statistics were conducted to illustrate the distribution of socio-demographic and clinical variables and the percentages of persons selecting the response options used for the PSDs and environmental factors. Percentages  $\geq 50\%$  were considered highly representative.

## Results

### Sample:

80 adult patients with PD were interviewed.

Mean age	<b>61 years</b>
Females	<b>40 %</b>
Married	<b>61 %</b>
High school education or higher	<b>59 %</b>
Retired	<b>42,5 %</b>
Mean duration of the disease	<b>6.26 years (SD=4.40)</b>
Mean Hoehn & Yahr Score	<b>2.00</b>

### Most frequent PSDs:

Cognitive and motor slowness	81 %
Tiredness	75 %
Coordination	71 %
Stiffness	71 %
Coping functions	70 %
Sleeping	70 %
Tremor	69 %
Balance	66 %
Emotional impact	66 %
Fine movements	65 %
Depressive symptoms	64 %
Finding and understanding words	64 %
Sensory disturbance	63 %
Anxiety	61 %
Standing	60 %
Lifting and carrying	56 %
Strength	56 %
Walking activity	56 %
Pain	54 %

### Main environmental determinants acting as facilitators:

Medicines	95 %
Health professional's attitudes	93 %
Medical Care from GPs or neurologists	92 %
Family assistance	92 %
Family attitudes	90 %
Other treatments	87 %
Friend assistance	74 %
Friend attitudes	72 %
Assistive devices	71 %
Peers assistance	50 %

## Conclusions

PSDs of patients with PD are varied and differ according to severity and the stage of the disease, as well as to the environmental in which people live. We found not only **difficulties related to motor symptoms**, such as tremor, stiffness, coordination, fine movements and motor slowness but also **to emotional functions**, such as depression and anxiety. We also found that **family and friends assistance, medicine and medical care are facilitators for majority of our patients with PD.**

This study shows that **medical intervention alone is not sufficient to reduce burden of patients with PD but it is also important to consider other environmental factors. For tailored and effective treatment plans** it is important to identify the factors that facilitate or obstruct PD patients' life and work to enforce or reduce them so as to reduce the burden of patients.

## Acknowledgements

Acknowledgement of support from **PARADISE - Psychosocial Factors Relevant to Brain Disorders in Europe.** Visit us at:

[www.paradiseproject.eu](http://www.paradiseproject.eu)

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# Mapping European Child Health Surveys to ICF-CY and ICD-10

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Černiauskaitė M<sup>1</sup>, Leonardi M<sup>1</sup>, Meucci P<sup>1</sup> & RICHE Project Group  
<sup>1</sup> Neurological Institute Foundation IRCCS Carlo Besta, Milan, Italy

**Abstract** Our aim was to analyse contents of child health surveys in order to identify common areas covered by these surveys as well as existing gaps that could reflect gaps in child health research in Europe. We chose to map national and European child health surveys to WHO ICF-CY and ICD-10 classifications. This study was carried out inside of European project RICHE (A platform and inventory for child health research in Europe – [www.childhealthresearch.eu](http://www.childhealthresearch.eu)).

## Introduction

Data on child health is often difficult to compare inside and between European countries. Different definitions, measures, data collection strategies, missing data are just a few of reasons in the complex picture.

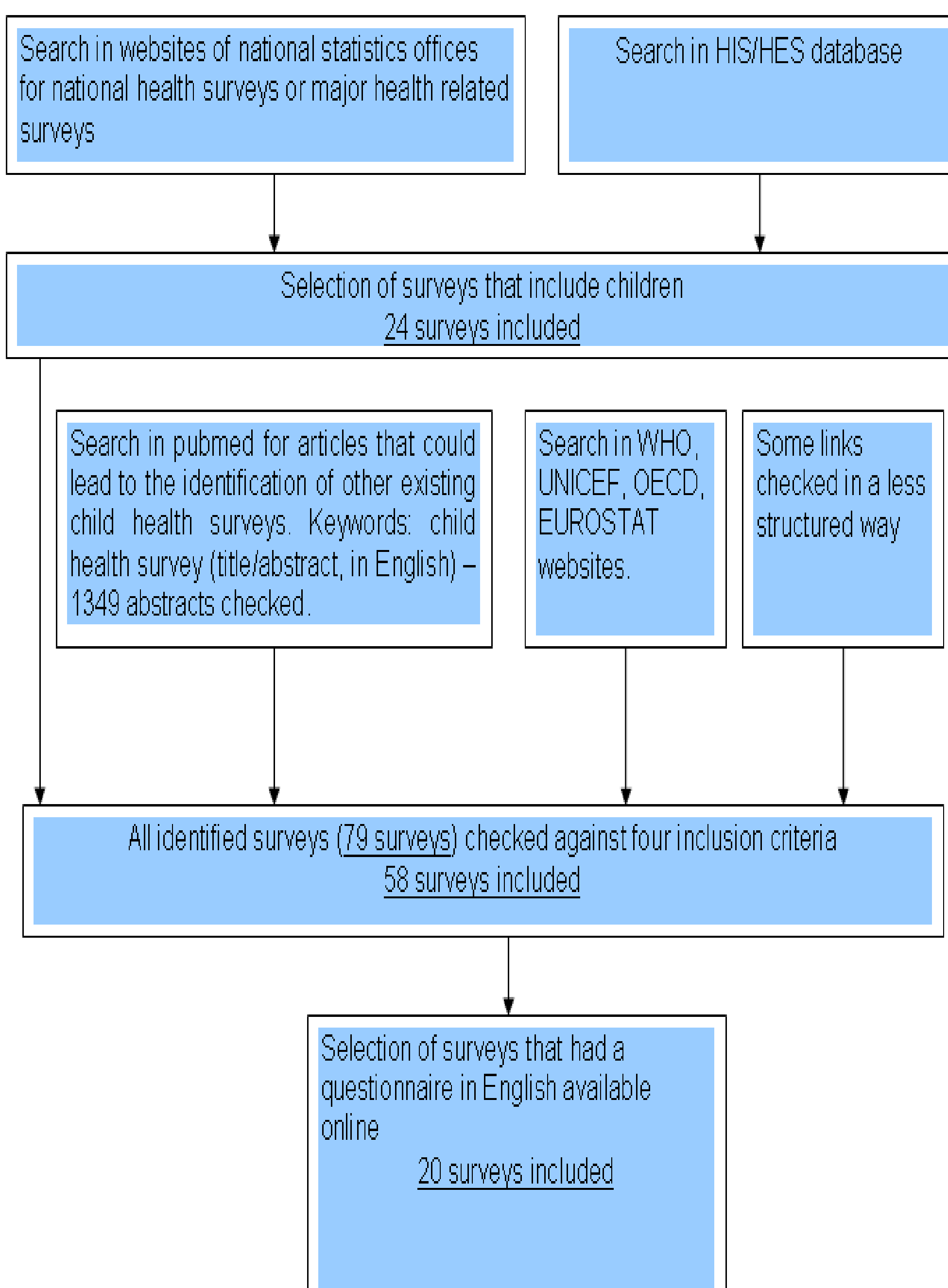
We used the UN definition of child, that defines a child as a “human being below the age of 18 years unless under the law applicable to the child, majority is attained earlier”.

As our intention was not to be limited to health conditions only, but also explore areas that are important to health and related to health, we were also interested in surveys with wider approach including education, free time, family, etc.

The aim was to **map national and European child health surveys to WHO ICF-CY classification in order to identify the most frequently studied areas and issues, as well as to identify possible gaps.**

Inclusion criteria: Period of survey's fieldwork 2000-2011; Health and health related surveys (child specific or children also included); Major national and international surveys (EU, EU and other countries); Not restricted to one specific health topic; Questionnaire(s) available in English via online sources.

## Methods & Materials



Descriptive analysis of selected surveys and mapping of surveys' contents to ICF-CY and ICD-10 were performed. The contents of the surveys chosen are analysed linking items of each survey to the ICF-CY and ICD-10. We used the standardised ICF linking rules (Cieza, 2005) for the identification of meaningful concepts and linking them to the ICF-CY.

## Results

**Table 1. Surveys included in the analysis**

International surveys	National surveys
Health Behaviour in School-Aged Children (HBSC)	The German Health Survey for Children and Adolescents
Survey on the Mental Health and Wellbeing of Children and Young Adults	The Scottish Health Survey
Rights of Children	Welsh Health Survey
The European School Survey Project on Alcohol and Other Drugs (ESPAD)	Mental Health of Children and Young People in Great Britain
PISA Programme of International Student Assessment	Scottish Schools Adolescents Lifestyle and Substance Use Survey
European Community Household Panel	The Mental Health of Young People Looked after by Local Authorities in England
European Social Survey	Dutch National Health Interview Survey
EU-SILC Survey on Income and Social Conditions	The Danish Health Interview Survey
EHIS European Health Interview Survey	Estonian Health Interview Survey
	National Public Health Survey (Sweden)
	Turkey Demographic and Health Survey

Twenty European and national health or health related surveys were analysed. Eleven national and nine international surveys were selected. National surveys represented ten different countries: Germany, Scotland, Wales, UK, England, the Netherlands, Denmark, Estonia, Sweden and Turkey. All international surveys included at least 15 EU member states. Three international surveys were carried out in all 27 EU member states. Seven national and 5 international surveys were specific to children and young people or included them as a specific age group together with other age groups. Respondents varied from children/young people themselves to parents and/or teachers. One national survey (The Danish Health Interview Survey) had one module for adults about their children. Three national and 4 international surveys included persons from 15/16 years and these

surveys were included in our analysis because according to the definition of child' employed by us we considered them as children.

Three surveys reported a wide range of questions about specific health conditions that can be linked directly to ICD-10 codes.

All items and questions of 20 surveys were linked to ICF-CY. **Second level analysis was performed to see how selected surveys covered ICF categories.**

Most often covered categories in **Body Functions** were Energy and drive functions (17), Emotional functions (11), Weight maintenance functions (9). Most often represented categories in **Activities and participation** were Recreation and leisure (16), Drinking (13), School education (12).

Categories of **Environmental factors** represented by the largest number of surveys were Products and substances for personal consumption (16), Health services, system and policies (11) and Design, construction and buildings products and technology (10).

## Conclusions

**Linking survey questions to a common framework such as ICF-CY can be a good starting point for improvements in future child health research as it allows the identification of missing areas in child health surveys**

An approach based on a common framework such as ICF biopsychosocial model of Health, Functioning and Disability together with Environmental factors could be useful to collect comprehensive and comparable data related to child health and to develop valid child health indicators across all countries.

## Acknowledgements

[www.childhealthresearch.eu](http://www.childhealthresearch.eu)

The work presented in this poster was carried out in the RICHE project (A platform and inventory for child health research in Europe), HEALTH-2009-3.3-5, funded under the EU's 7th Framework Programme.

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# Environmental Factors in the Activities and Participation domains: a longitudinal comparison

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Sara Anzilutti<sup>1</sup>, Lucilla Frattura<sup>2</sup>, Laura Rizzi<sup>1</sup>

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**Abstract** A sample of the 126 patients was selected and evaluated both in 2011 and 2012. A descriptive analysis of the coded EF in the AP domains allowed to deepen the EF effectiveness, comparing it by year. EF were coded mainly in chapters d2, d5, and d6 and when the performance qualifier value was equal to 1, 2 or 3; EF were more effective in items of chapter d6.

## Introduction

In 2011 and in 2012, a field trial was carried out in Friuli Venezia Giulia Region using a new electronic ICF-based functioning/disability assessment protocol (VILMA-FABER) (1). After a preliminary description of the sample, the interest was devoted to the longitudinal analysis of the Environmental Factors (EF) role on the Activities and Participation (AP) limitation presence and/or extent.

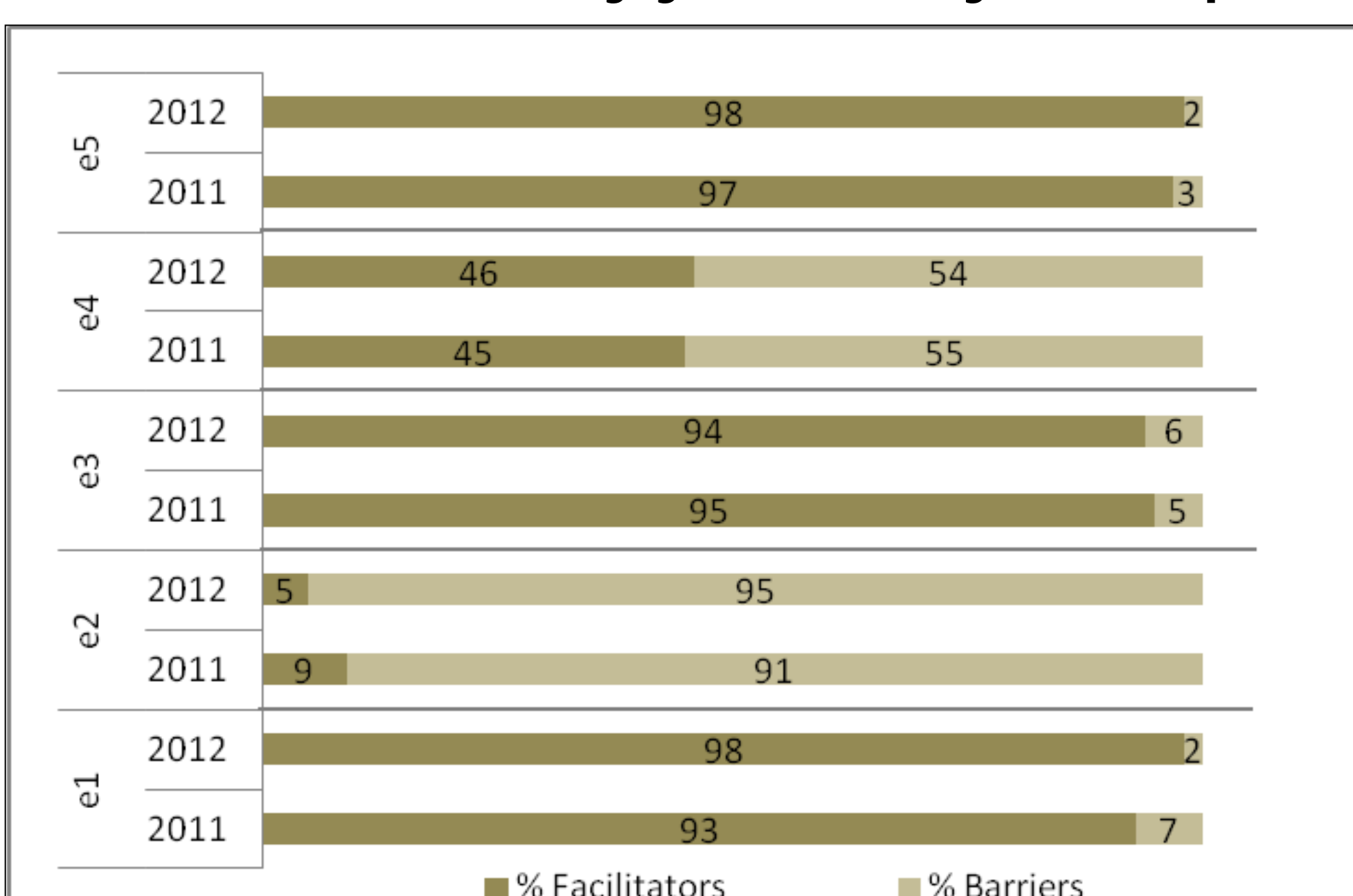
## Methods & Materials

A sample of the 126 patients, evaluated both in 2011 and 2012, was selected (mean age 33 years in 2011 and 35 in 2012, 41% females, 7% married, 18% in 2011 and 20% in 2012 living alone, 5% occupied, 88% in 2011 and 70% in 2012 certified under Italian invalidity laws). A descriptive analysis of the coded EF in the AP domains allowed to deepen the EF effectiveness, comparing it by year. The assessment protocol considered an ad hoc check list of 67 AP categories from all the nine AP chapters. EF were coded in the AP component for every selected item. The intervals of AP qualifier values were defined according to the exploratory analysis. Analyses were performed using R Software [1].

## Results

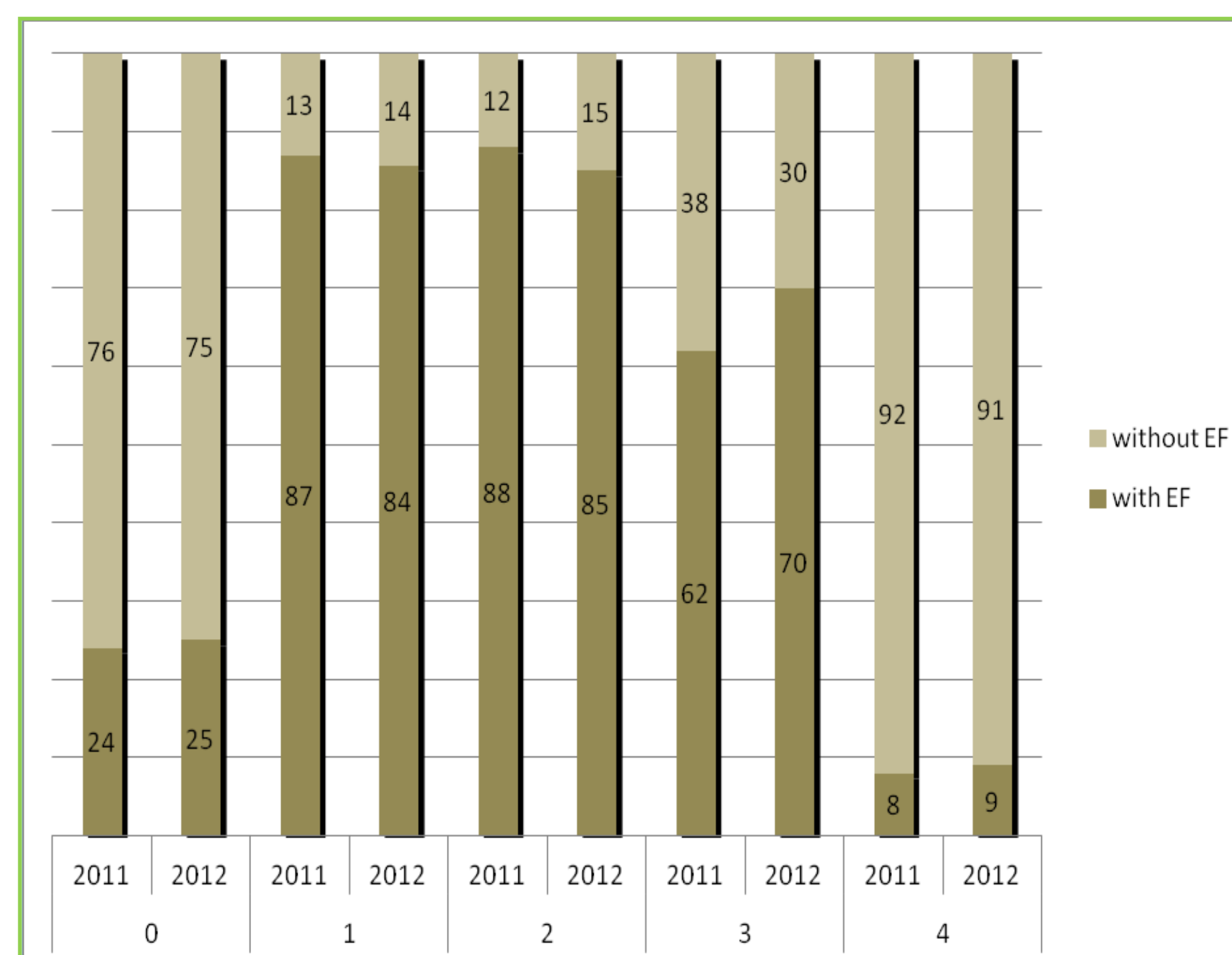
Globally, the EF related to the AP considered categories were 8,734, in the 2011 sample, and 7,848, in the 2012 one: the 93% (in 2011) and the 95% (in 2012) were coded as facilitators. In both years, most EF in categories of chapters e1, e3 and e5 were coded as facilitators, while those belonging to chapters e2 and e4 were coded mainly as barriers (see Figure 1).

**Figure 1 – Distribution of EF coded as facilitator/barrier by year and by EF chapter.**

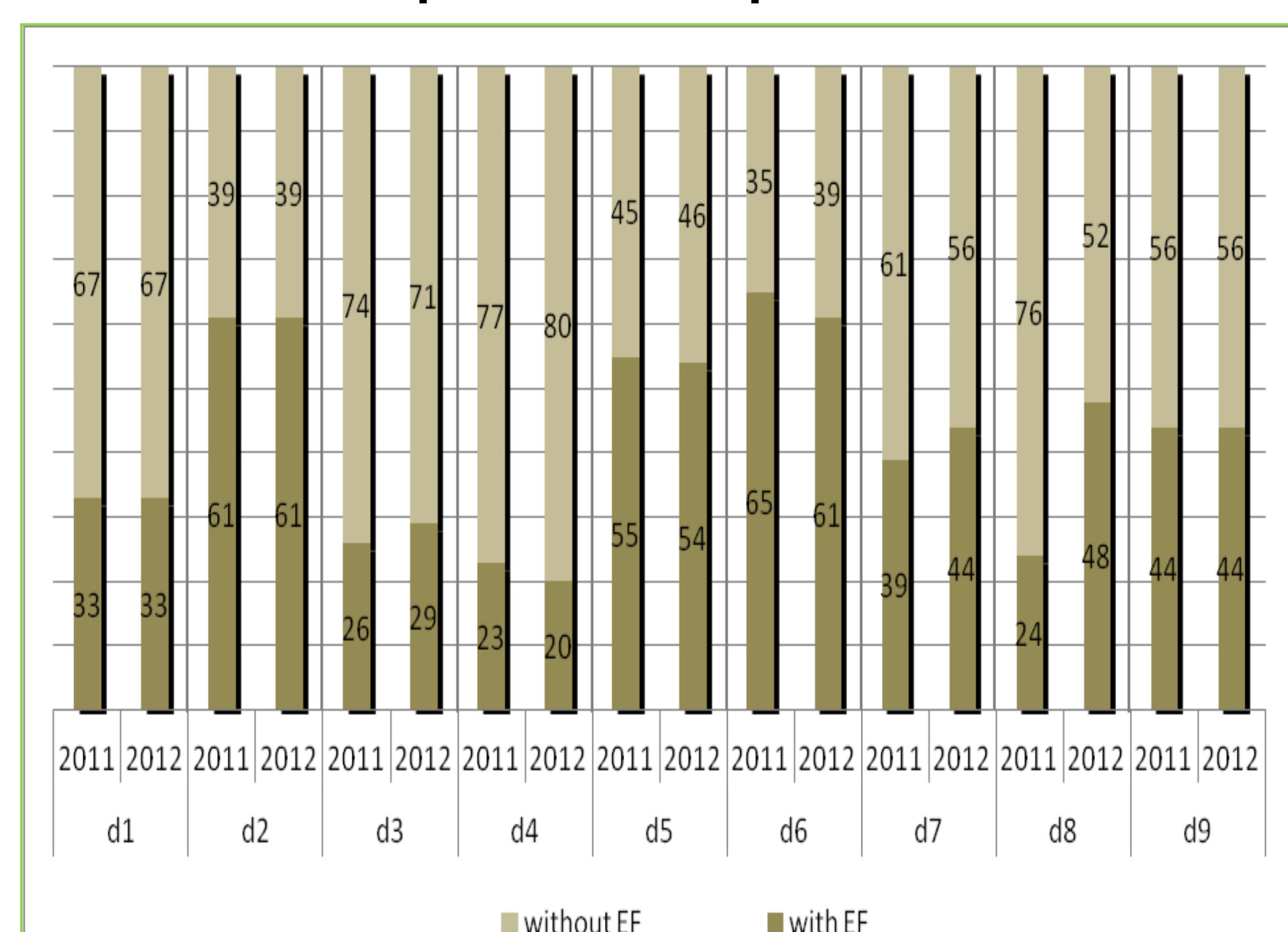


The analysis on the presence/absence of any EF citation by performance qualifier values showed that in d2, d5 and d6 AP chapters the number of categories with EF was larger than the number of categories without; furthermore, EF were more frequently coded when the performance qualifier value was equal to 1, 2 or 3 (see Figures 2a and 2b).

**Figure 2a – Distribution of AP categories by performance qualifier value and EF presence, by year.**



**Figure 2b – Distribution of AP categories by chapter and EF presence.**

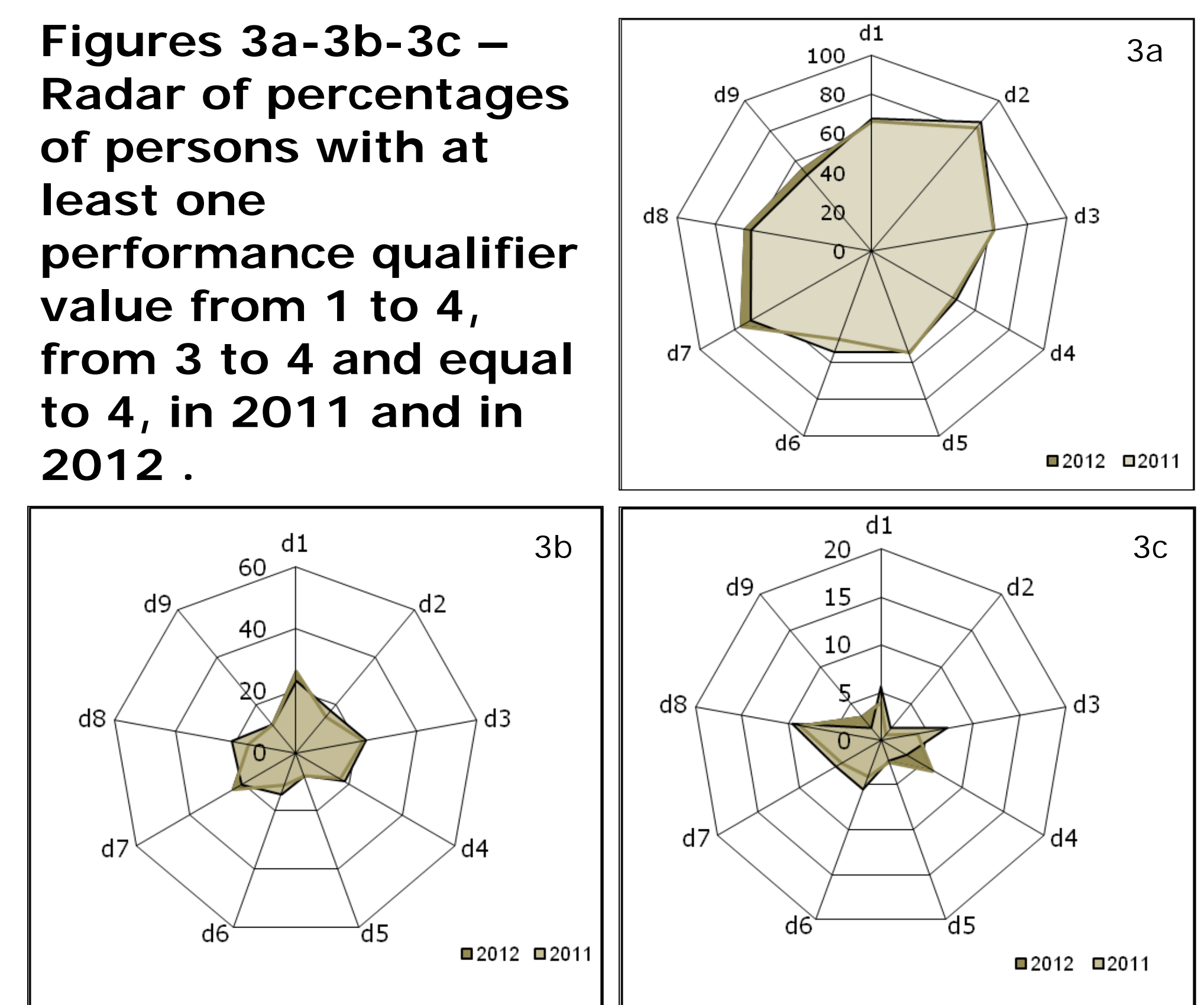


In both years and limited to the AP items with some EF coded, the chapters d5 and d6 showed the largest reduction in the proportion of persons with a value 1-4 of the performance qualifier with respect to the same values in the capacity one. Considering in the comparison only qualifiers' value 3 or 4, such reduction was large in all the chapters, particularly in d2, d5, d6 and d8, and it is even more large than that observed with qualifier value 4 only, which are larger for chapters d6 and d8. These evidences were confirmed in both years.

Considering the comparison on performance qualifier between 2011 and 2012 samples, the proportion of persons with qualifier 1-4 is higher for the 2011 sample in chapters d2, d3, d4 and d6 and is the same for both years in chapter d5 (Figure 3a); the comparison on performance qualifier value 3 or 4 pointed out the same results, except for chapters d1, where the proportion of persons with qualifier 3 or 4 is higher for the 2012 sample and d8, where it is higher for the 2011 sample (see Figure 3b).

The proportion of persons with at least once performance qualifier value equal to 4 was higher in most of the chapters for the 2011 sample, except d5, in which the proportion was the same in both years, d4 and d9, where the proportion was higher for the 2012 chapters (Figure 3c).

**Figures 3a-3b-3c – Radar of percentages of persons with at least one performance qualifier value from 1 to 4, from 3 to 4 and equal to 4, in 2011 and in 2012.**



## Conclusions

In this explorative analysis the EF resulted to be coded mainly in items of chapters d2, d5, and d6 and when the performance qualifier value was equal to 1, 2 or 3. Considering only the AP items with some coded EF and the value of the qualifiers performance and capacity from 1 to 4, we found the highest frequency of EF effectiveness in chapters d5 and d6, while considering only qualifiers' value 3 or 4, we found a high frequency of effectiveness of EF in every chapter. Considering only qualifiers' value 4, the effectiveness of EF was higher in chapters d6 and d8. The same results were obtained in both years. Globally, the chapter presenting the highest effectiveness of EF for every interval of qualifiers' value was d6. Considering only the performance qualifier, the analysis showed an improvement in the categories of chapters d2, d3 and d6, where the proportion of persons with qualifier value 1-4, 3-4 and 4, was lower in 2012 than in 2011; considering chapter d5, proportions were constant between 2011 and 2012 for every interval of performance values considered.

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## Acknowledgements

Thank are due to Region Friuli Venezia Giulia for funding the Italian CC project.

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## Psychosocial Difficulties of patients with Multiple Sclerosis measured with an ICF-based instrument

12 – 18 October 2013  
Beijing, China

Giovannetti A. M.<sup>1</sup>, Schiavolin S.<sup>1</sup>, Raggi A.<sup>1</sup>, Quintas R.<sup>1</sup>, Cerniauskaite M.<sup>1</sup>, Covelli V.<sup>1</sup>, Meucci P.<sup>1</sup>, Sattin D.<sup>1</sup>, Mantegazza R.<sup>2</sup>, Confalonieri P.<sup>2</sup>, Antozzi C.<sup>2</sup>, Torri V.<sup>2</sup>, Coenen M.<sup>3</sup>, Sabariego C.<sup>3</sup>, Cieza A.<sup>4</sup>, Leonardi M.<sup>1</sup>

Poster Number  
WHO/CTS to insert

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**Abstract** Multiple Sclerosis (MS) is one of the most burdensome disorders in young adults, with significant impact on patients' quality of life and well-being. This study has two aims: to identify the most relevant psychosocial difficulties (PSDs) experienced by persons with MS and to describe PSDs onset and evolution in these patients. The PARADISE ICF based Protocol was administered at 80 patients. Most frequently PSDs were related to restlessness, problems with motor functions, emotional functions and sleeping (57.6%). Main environmental determinants acting as moderate or strong facilitators were identified: medicines and other health treatments, assistive devices, family assistance and help, friends' attitudes, health professionals' assistance. A common biopsychosocial and functional trend can be observed. It can help clinicians to plan tailored and personalised treatment and rehabilitation programs.

### Introduction

Multiple sclerosis (MS) is an inflammatory, demyelinating disease of the central nervous system with a lifetime risk of 1 in 400. **It is the most common cause of progressive neurological disability in young adults** [1]. As reported in a review of 2008, the overall incidence rate of MS was 3.6 cases per 100,000 person-years (95% CI 3.0, 4.2) in women and 2.0 (95% CI 1.5, 2.4) in men [2]. The young age of adults affected by the disease and the correlated high burden makes **MS one of the most burdensome neurological disorders, with significant impact on patients' quality of life (QoL) and well-being.** In particular the cost of MS is one of the highest among brain disorders, as it includes direct medical and non medical costs (e.g. informal care or accommodation of living places), and indirect costs such as reduced work productivity and early retirement. The cost per patient/year in European countries is estimated at euro 26.974 one-third being indirect costs [3,4]. Taking together all these aspect, it is of primary interest to evaluate the impact of the disease on a person with MS life. Hence, this study has two aims: **to identify the most relevant psychosocial difficulties (PSDs) defined as impairments, activity limitations and participation restrictions, experienced by persons with Multiple Sclerosis (MS) and to describe PSDs onset and evolution in these patients.**

### Methods & Materials

80 adult patients with MS (ICD-10: G35) were consecutively enrolled and interviewed by a trained psychologist at Neurological Institute Carlo Besta in Milan (Italy).

The EU Project PARADISE developed an ICF based Protocol ([www.paradiseproject.eu](http://www.paradiseproject.eu)) that was used to collect information on PSDs associated to brain disorders.

### Results

Mean age of patients was **41 years**, 65% were **females**, 45% were **married**, and 72.5% **had a job**, 86.3% of the sample **had a relapsing-remitting MS** with a EDSS median score of 1.5 (IQR=1.0-2.5). Mean **duration of the disease was 7.66 years** (SD 6.94), mean duration of pharmacological treatment was 5.28 years (SD 5.19). **More than half of the sample (58%) rated their health as good or very good, despite MS disease.** Risk factors and comorbidities are reported in the following table.

Risk factors and comorbidities	n (%)
<b>Smoker</b>	
Daily smoker	22 (27.5)
Occasional smoker	6 (7.5)
Ex-smoker	16 (20.0)
Never smoked	36 (45.0)
<b>Drink Alcohol</b>	
Never	26 (32.5)
Monthly or less	17 (21.3)
2-4 times a month	19 (23.8)
2-3 times a week	10 (12.5)
4 or more times a week	8 (10.0)
<b>Number of comorbidities</b>	
0	46 (57.5)
1	23 (28.8)
2	8 (10.0)
3	2 (2.5)
4	1 (1.3)

**Most frequent PSDs of MS patients** were related to restlessness (81.2%), motor functions (sensory disturbance 56.3%; balance 58.7%; muscles strength 56.2%), emotional functions (being emotionally involved by the disease 76.3%; anxiety 73.8%; depressive symptoms 61.2% and coping functions 53.8%) and problems with sleeping (57.6%).

**Main environmental determinants acting as moderate or strong facilitators** were identified: medicines (75.7%) and cost of the medicines (61.0%), other health treatments (68.1%) (e.g. rehabilitation), assistive

devices (62.2%), family assistance and help (76.3%), friends' attitudes (63.2%), health professionals' assistance (69.3%).

### Conclusions

Despite clinical and sociodemographic differences between MS patients a common biopsychosocial and functional trend can be observed: **PSDs mainly involve motor and emotional functioning and are affected by the role of environmental factors.** Availability of medicines for free, health treatments, family, friends and health professionals' assistance represent the most important facilitators.

In addition to staging of signs and symptoms in MS patients attention to PSDs and their environmental determinants, in a biopsychosocial perspective, can help clinicians to plan tailored and personalised treatment and rehabilitation programs as well as policy planners to identify appropriate health and social policies.

### Acknowledgements

*We are grateful to all the patients who participated in our study. This study is part of the larger EU project "PARADISE" (Psychosocial factors relevant to brain disorders in Europe). It is supported by the Coordination Theme 1 (Health) of the European Community's FP7, Grant Agreement no. HEALTH-F2-2009-241572.*

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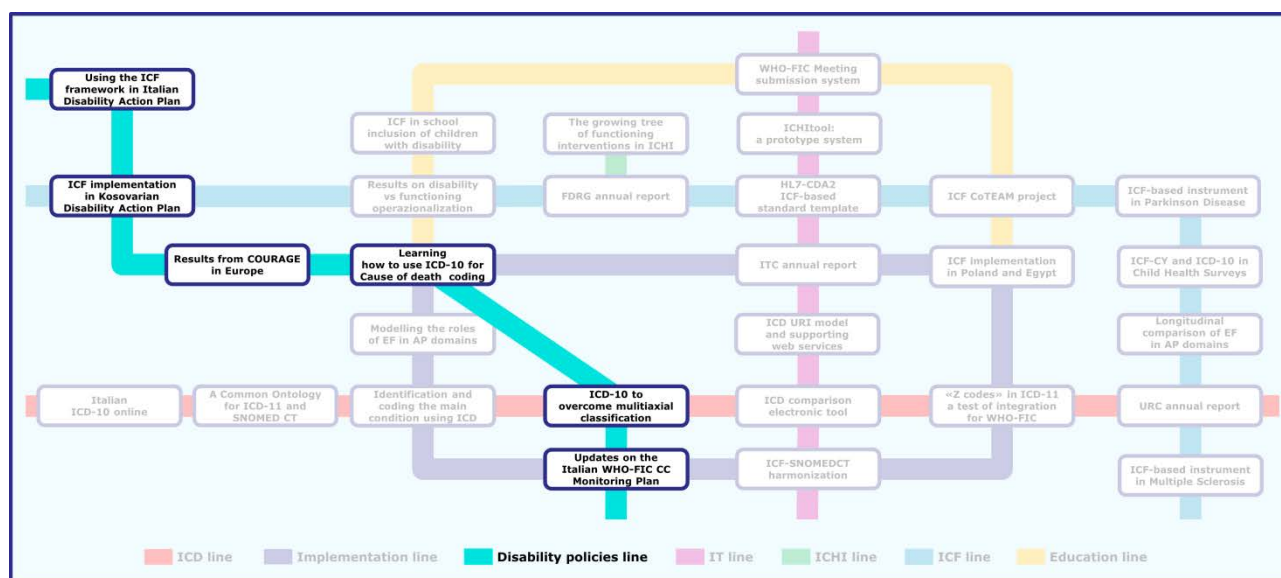
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## Disability policies Line



- Leonardi M., Raggi A., Cerniauskaite M., Giovannetti A.M., Pagani M., Sattin D., Covelli V., Schiavolin S., Meucci P., Quintas R. Health, Well-being and Quality of life of ageing population in Europe: results from EU COURAGE in Europe project.
- Leonardi M., Raggi A., Quintas R., Cerniauskaite M., Giovannetti A.M., Pagani M., Sattin D., Covelli V., Schiavolin S., Meucci P. Using the ICF framework and UN convention on the Rights of Persons with Disabilities to define the Italian Disability Action plan.

## Incrocio con Implementation Line

- Frattura L., Gongolo F. Updates on the performance monitoring plan of the Italian WHO-FIC Collaborating Centre
- Grippo F., Grande E., Simeoni S., Cinque S., Pennazza S., Rocchi P., Alicandro G., Mistretta A., Navarra S., Orsi C., Di Fraia G., Marchetti S., Pappagallo M., Frova L. Learning how to use Icd10 for cause of death coding.

## Incrocio con ICD Line

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## Incrocio con ICF Line

- Frattura L., Munari F., Gongolo F. Three years of ICF implementation in Kosovo under the national disability action plan 2010-2012.







# Health, Well-being and Quality of life of ageing population in Europe: results from EU COURAGE in Europe project

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Leonardi M.<sup>1</sup>, Raggi A.<sup>1</sup>, Cerniauskaite M.<sup>1</sup>, Giovannetti A.M.<sup>1</sup>, Pagani M.<sup>1</sup>, Sattin D.<sup>1</sup>, Covelli V.<sup>1</sup>, Schiavolin S.<sup>1</sup>, Meucci P.<sup>1</sup>, Quintas R.<sup>1</sup>.

<sup>1</sup> Neurological Institute Carlo Besta IRCCS Foundation - Neurology, Public Health and Disability Unit Italian WHO Collaborating Center Research Branch

**Abstract** COURAGE in EUROPE project developed and validated ICF-based tools for population surveys to measure health and disability determinants, quality of life (QoL), and well-being (WB) in ageing populations. Project's results increase our understanding of the effects of ageing on well-being, showing also a relationship between health and socio-economic status, QoL and WB.

## Introduction

There is a need for valid and reliable outcome measures for good statistics and innovative measurement instruments for cross-population comparative analyses that assess the relationships between a person's health state and his/her quality of life and well-being.

COURAGE in EUROPE project, supported by a 3-years Grant from EU, developed and validated an ICF-based survey protocol to measure health and disability, quality of life (QoL), and well-being (WB) in ageing populations and, thereby, **to find and empirically substantiate determinants of ageing across populations, looking also at the role of the built environment and social networks as health and disability determinants.**

## Methods & Materials

COURAGE in Europe is an observational, cross-sectional study of general non-institutionalized adult population reached through household interviews. **The sample is representative of three European countries (Finland, Poland, and Spain) that were selected to give a broad representation across different European regions, taking into consideration their population and health characteristics.**

A multi-stage clustered design was used to obtain nationally representative samples. A probability proportion to size design was used to select clusters. Within each cluster an enumeration of existing households was done to obtain an accurate measurement of size.

**COURAGE Survey Protocol is composed of instruments that allow the evaluation of health status, functioning and disability, quality of life, well-being, social networks and built environment of ageing population.**

## Acknowledgements

COURAGE in Europe Project was funded by the European Commission Seventh Framework Programme. Contract Number: Health-F2-2009-223071.

## Results

Sample size was composed of 10800 individuals: 1976 from Finland, 4071 from Poland, and 4753 from Spain. The individual response rate was 53.4% for Finland, 66.5% for Poland, and 69.9% for Spain.

A trend of increase in functioning difficulties with age and with levels of household wealth was observed for the whole sample, with older subjects and those with lower wealth reporting more difficulties in ADLs, IADLs and higher disability assessed with the WHODAS 2. An inverse relationship between health state and age was observed, with older subjects showing lower health. Differences among countries were also observed: respondents from Poland reported worse scores than those from Spain and Finland, which reported fewer difficulties in ADL and IADL and in disability scores. Regarding mobility functions, for Poland difficulties in walking 1 kilometre were much more common (56%) than in Finland (27%) and Spain (32%). Also, the prevalence of risk factors and their association with mobility limitations varied considerably between the three countries.

**Quality of life**, collected with WHOQoL-AGE, a COURAGE Project adaptation of WHOQoL for ageing studies, **was perceived better in Finland and in Spain, than in Poland** (Figure 1).

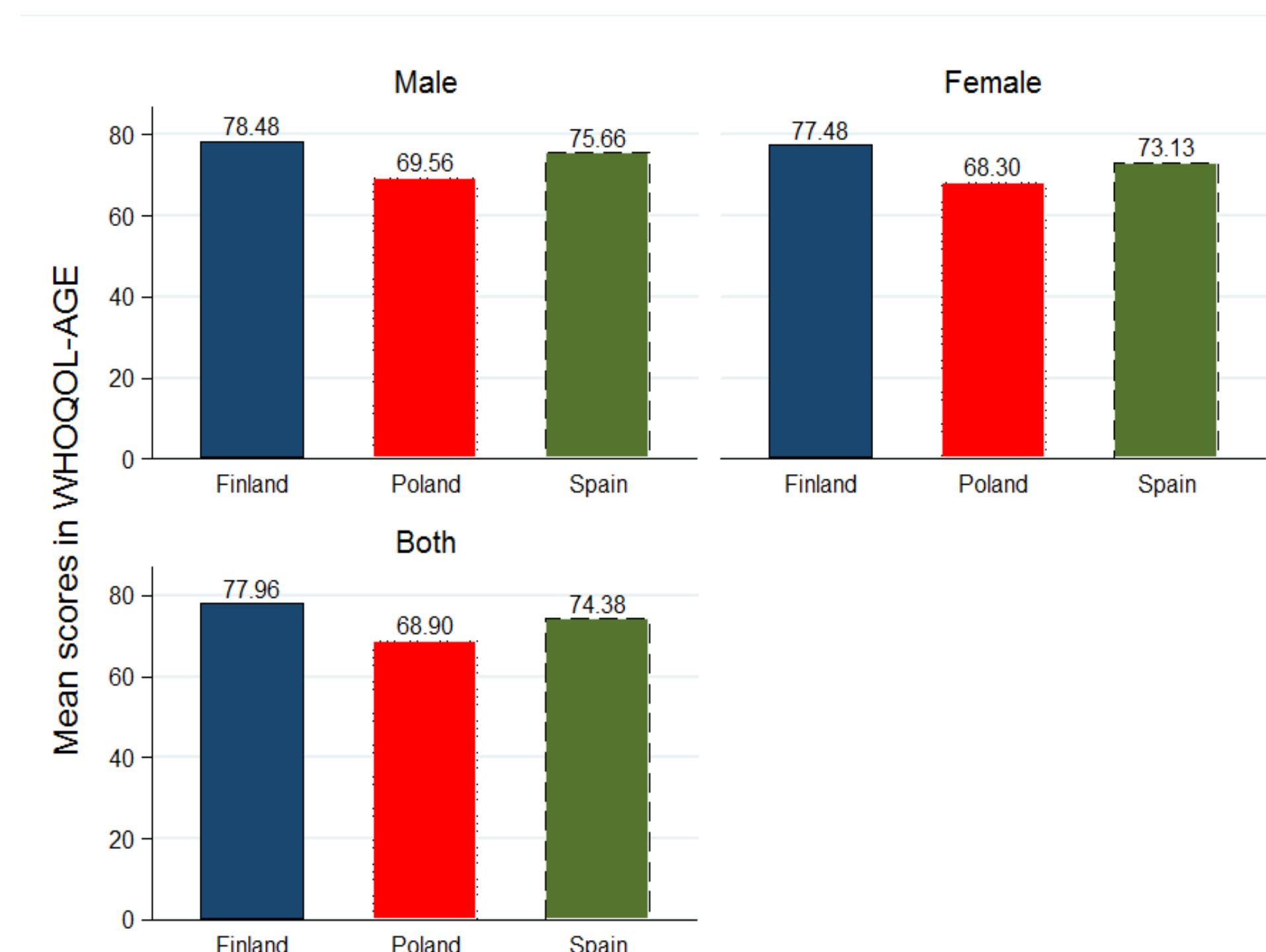


Figure 1. QoL in Finland, Poland and Spain

Regarding **Well-being**, people from Finland showed the highest well-being, and those from Poland the lowest, with Spain in the middle. Life evaluation worsened with age whereas the affect tended to improve: positive affect increased and negative affect decreased in Finland and Spain. In Poland negative affect increased with age (Figure 2).

	Life evaluation	Happiness	Positive affect	Negative affect	Net affect	U-index
Finland	7.60 (7.51, 7.68)	4.00 (3.97, 4.03)	4.63 (4.55, 4.71)	0.41 (0.37, 0.45)	4.22 (4.11, 4.33)	0.15 (0.13, 0.17)
Poland	6.07 (5.97, 6.16)	3.71 (3.67, 3.75)	4.34 (4.24, 4.44)	0.47 (0.43, 0.52)	3.87 (3.74, 3.99)	0.19 (0.17, 0.21)
Spain	6.77 (6.69, 6.84)	3.77 (3.74, 3.80)	4.86 (4.81, 4.91)	0.67 (0.63, 0.71)	4.19 (4.11, 4.27)	0.11 (0.10, 0.12)

Figure 2. Well-being in Finland, Poland and Spain

## Conclusions

The project showed the relationship between health and socio-economic status, health and well-being, and increased our understanding of the effects of ageing on well-being. It provided measures of environmental determinants to explain variation between countries (and in particular the European North-South gradient).

**The developed and validated COURAGE Protocol for Ageing Studies has proven to be a valid tool for collecting comparable data in ageing populations. It is therefore recommended that future studies exploring determinants of health and disability in ageing use the COURAGE derived methodology and protocol.**

COURAGE in Europe results and methodology allowed the analysis of the effects of social and policy changes on ageing and can support European States in the reorganization of their health and welfare systems so as to further implement the principles of equity, solidarity and universality.

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## Using the ICF framework and UN convention on the Rights of Persons with Disabilities to define the Italian Disability Action plan

12 – 18 October 2013  
Beijing, China

Leonardi M. \*, Raggi A. \*, Quintas R. \*, Cerniauskaite M. \*, Giovannetti A.M. \*, Pagani M. \*, Sattin D. \*, Covelli V. \*, Schiavolin S. \*, Meucci P. \*

Poster Number  
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\* Neurological Institute Carlo Besta IRCCS Foundation - Neurology, Public Health and Disability Unit  
Italian WHO Collaborating Center Research Branch

**Abstract** The Italian National Observatory on the Condition of Persons with Disabilities represents a complex instrument created to analyze, improve and enhance information about disability. The preparation of the Italian Disability Action Plan is one of the most noteworthy tasks of the Observatory. The Plan reports indication of priorities for normative and policy-oriented revision of legislative and governmental action and provides the pathway for Italian Government for next two years of policy development on disability.

### Introduction

On March 2007, Italy signed the UN Convention on the Rights of Persons with Disabilities (CRPD) and ratified it by Law 18/2009. By acceding to the Convention, Italy has committed itself not only to higher standards of non-discrimination with respect to persons with disabilities and to improving accessibility and social inclusion, but also to reforming the structure of its own policy making process. The CRPD contains specific provisions that respond to the need to translate the rights of people with disability into concrete domestic law, policies and good practices.

In line with the CRPD, Italy through its Ministry of Labour and Social Policies opted for setting up a new structure, the National Observatory on the Condition of Persons with Disabilities (*Osservatorio nazionale sulla condizione delle persone con disabilità*).

### Methods & Materials

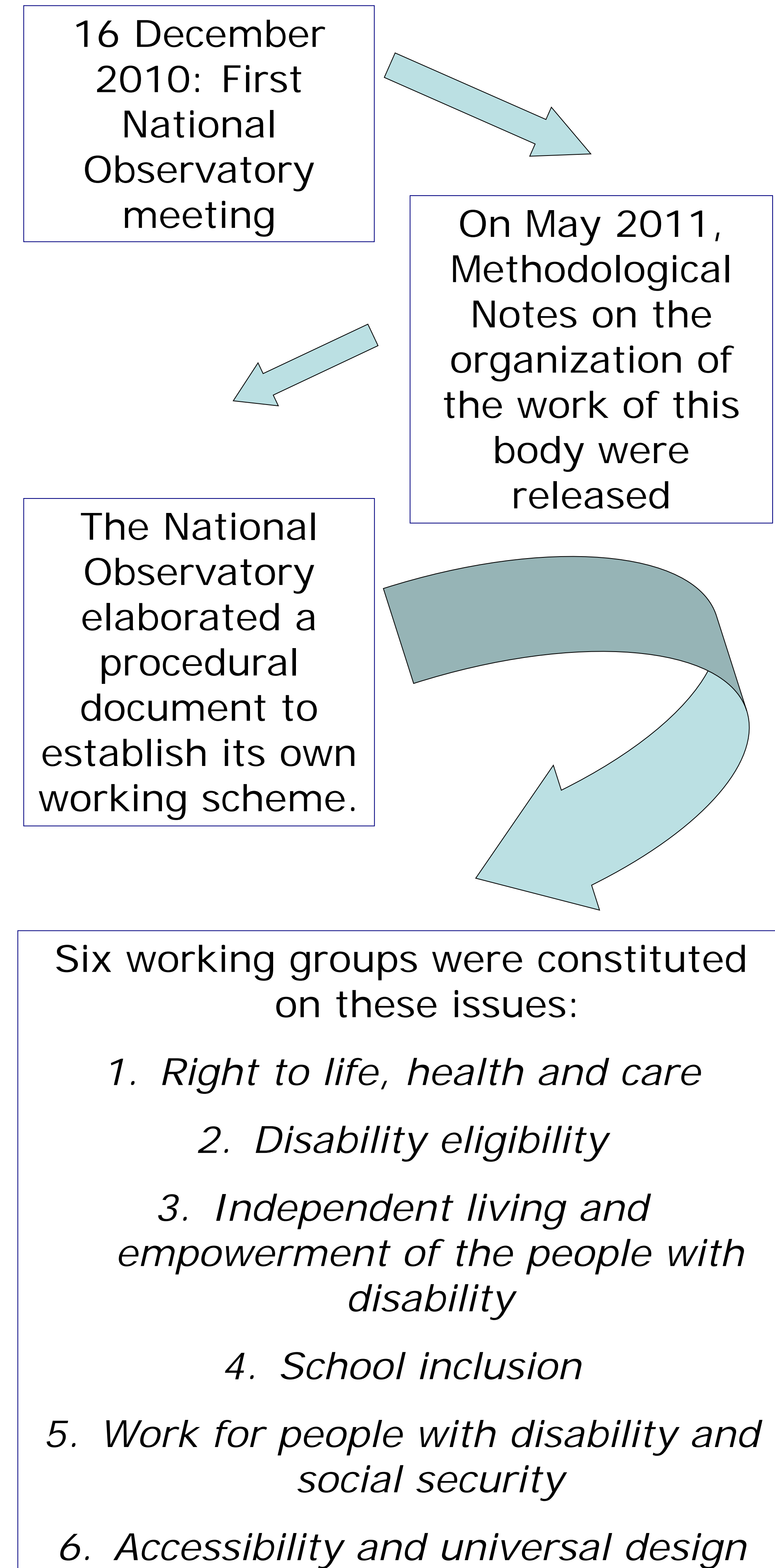
The Italian National Observatory on the Condition of Persons with Disabilities represents a complex instrument created to analyze, improve and enhance information about disability in Italy; at the same time, the Observatory aims at improving the level of effectiveness and adequacy of relevant policies. The Observatory acts as a consulting, technical and scientific body for the elaboration of National policies in the field of disability, with particular regard to: the promotion of the implementation of the UN Convention on the Rights of Persons with Disabilities; the promotion of collection of statistical data and the production of studies and research on this issue; the preparation of the report on the state of the art of the implementation of disability-related policies; the preparation of a two-year national action plan for the promotion of rights and the integration of persons with disabilities, in order to enact National and International legislation.

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### Results

#### MAIN STEPS OF WORK AND RESULTS



The Methodological Notes was the first tangible act of the National Observatory itself, and shows a strong commitment to the preparation of the report to be submitted to the CRPD Committee, to the biannual disability action plan setting forth policy priorities as well as to the revision of statistical indices to monitor the implementation of the Convention more effectively. Through these Notes, six working groups were constituted, each of them 'chaired' by a DPO member. Each group undertook a separate line of analysis with a somewhat different purpose, and the results of each have been gathered to contribute to the elaboration of the Italian State report to be submitted to the CRPD Committee at UN.

### Acknowledgements

The Italian National Observatory on the Condition of Persons with Disabilities is a collegial body established and supported by the Minister of Labour and Social Policy.

### Italian Disability Action Plan

The Italian Disability Action Plan is the result of an intense work inspired by the six working groups that previously prepared the report for UN. Data and information, normative and impact-based evaluations of policies are constantly updated with the elaboration carried out under the direct or indirect supervision of the Ministries involved and this work is based on the ICF framework and on the UN Convention on the Rights of Persons with Disabilities articles.

**On 13 February 2013 the Italian Disability Action Plan has been approved by the National Observatory on the Condition of Persons with Disabilities and presented to the Italian Parliament.** The Plan reports indication of priorities for normative and policy-oriented revision of legislative and governmental action and provides the pathway for Italian Government for next two years of policy development on disability.

### Conclusions

The preparation of a national biannual action plan is certainly a noteworthy task for a country. The plan has been discussed and prepared by the National Observatory and shared with hundreds of relevant stakeholders in all areas of disability. Upon the proposal of the Ministry of Labour and Social Policies and after approval by the Council of Ministers it has been adopted by Decree of the Presidency of the Republic. **The general structure of the National Action Plan is organized as a synthesis of normative and policy-related problems and is matched to ICF biopsychosocial model, as well as to the articles of the UN CRPD, so that discrepancies between real situation for people with disability and target are clear and this awareness requires Governmental bodies to take a position to find solutions. The Italian methodology could be used by other countries and the experience shared with other governments.**

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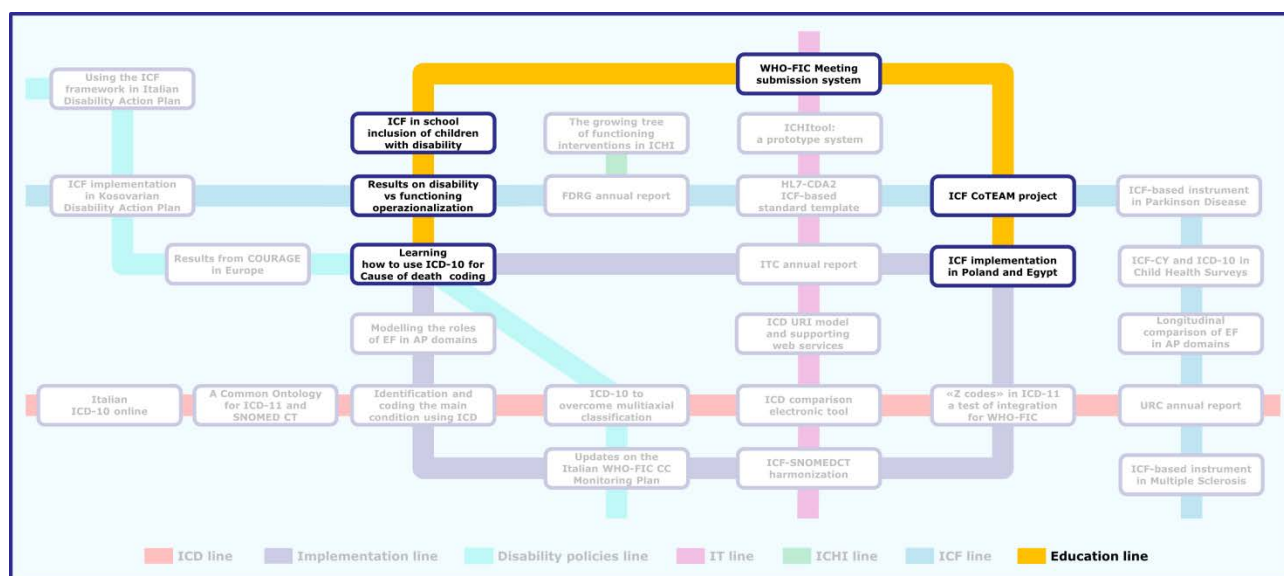
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## Education Line



- *Bortolot S., De Polo G., Pradal M., Tomasella R., Sandre S., Silvestri S., Martinuzzi A.* ICF in the process for School inclusion of children with disability in the Treviso province (Italy): evaluation of 5 year experience and new proposals.
- *Della Mea V.* The WHO-FIC Annual Network Meeting submission system.

## Incrocio con Implementation Line

- *Grippe F., Grande E., Simeoni S., Cinque S., Pennazza S., Rocchi P., Alicandro G., Mistretta A., Navarra S., Orsi C., Di Fraia G., Marchetti S., Pappagallo M., Frova L.* Learning how to use Icd10 for cause of death coding.
- *Leonardi M., Raggi A., Quintas R., Cerniauskaite M., Giovannetti A.M., Pagani M., Sattin D., Covelli V., Schiavolin S., Meucci P.* ICF implementation in Poland and Egypt.

## Incrocio con ICF Line

- *Frattura L., Anzilutti S., Rizzi L.* Disability versus Functioning operationalization: results from a field trial on ICF-based informatic tools.
- *Martinuzzi A., Pizzighello S., Piccoli S., Canciani M., Leonardi M., Meucci P., Scarpa M., Agosto C., Benini F., Bassi G., Simoncello A., Frattura L.* Mapping met and unmet needs of persons with complex health conditions in the transition from childhood into adulthood with an ICF-based protocol.







# ICF in the process for School inclusion of children with disability in the Treviso province (Italy): evaluation of 5 year experience and new proposals

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Bortolot S.<sup>1</sup>, De Polo G.<sup>1</sup>, Pradal M.<sup>1</sup>, Tomasella R.<sup>2</sup>, Sandre S.<sup>2</sup>, Silvestri S.<sup>2</sup>, Martinuzzi A.<sup>1</sup>.  
<sup>1</sup> E Medea Scientific Institute, Conegliano-Pieve di Soligo Research Centre  
<sup>2</sup> Provincial School Office, Treviso

**Abstract** One of the main ICF scope is to function as the commonly agreed conceptual reference model and current interprofessional language to describe disability and functioning especially in contexts where competences from divergent cultural backgrounds meet. The School is one of such contexts, especially in the Italian inclusive system where the pedagogical choices stem from the strict interconnection among health professionals, social workers, teachers, families. The province of Treviso had started the use of an ICF-based form to describe functioning and disability of the pupils with disability in 2007. The form was enriched with categories from ICF-CY to improve sensibility and specificity. The official interagency agreement that introduced this new tool expired in 2013, and the agreement is due for renewal. This gave the occasion for an appraisal of its use along these 6 years and for revision of its structure and content. The tool was applied to 2500 children with disability aged 3-18. The introduction of the tool was met with positive attitude by all stakeholders, and its implementation rate grew steadily. Observed effect of the new approach were: improved communication among professionals of the different agencies involved and with the family, also thanks to the very children-oriented choice of categories imported from ICF-CY; improved efficiency in resource allocation with better match between requested and assigned resources thanks to better adherence of individual project to actual needs. The poor representation of environmental factors in the original form was targeted for revision, and the new form developed an environmental factor listing attached to each ICF component. This experience of direct ICF use within the school inclusion process is unique in Italy, it strengthen the inclusive nature of the pedagogic plan for children with disabilities and should encourage wider diffusion of ICF in this sector.

## Introduction

The school integration process for pupils with disabilities in Italy is regulated by the 1992 Law #104 and by the regulations established in 1997 among the Central, the local government and the associations of persons with disabilities. The tools practically used by the health, social, school professionals and shared with the families are: the **Functional Diagnosis (FD)**, describing the functional profile of the pupil, the **Dynamic Functional Profile (DFP)** detailing the shared educational goals tuned on the pupil's capacities and the **Personalized Education Plan (PEP)** which defines the way by which the goals will be achieved. In the Treviso Province since 2007 those tools have been carved out of ICF-CY. After 5 years of implementation it was time for assessment of efficiency and revision of the tools.

## Goals

- getting the full count of the completed processes,
- assessing the stakeholders response to the tools,
- probing the completeness and usefulness of the information conveyed
- assessing the outcome in terms of services provided.

## Methods & Materials

Representatives of the health, the social and the education services met regularly and reviewed the experience in use of the ICF-CY based tools. A revision process was launched starting from the comments gathered along these years of implementation of the ICF-CY-based tools, and considering similar experiences developing in other Regions of Italy (e.g. Piedmont).

Pupils in the Province of Treviso 2013/14		
	Total student Populazion	Students with disabilities
Maternal school	6772	97
Primary school	42363	1064
Junior secondary Sc.	25701	758
Senior secondary 2°	38783	557
Total	113619	2476

FD 2013/14 Treviso – completed		
Maternal school		36
Primary school		211
Junior secondary Sc.		194
Senior secondary 2°		89
Total		530

DFP e PEP 2013/14 Treviso - expected		
Maternal school		70
Primary school		730
Junior secondary Sc.		510
Senior secondary 2°		410
Total		1720

### Example of FD section

1) AREA COGNITIVA E DELL'APPRENDIMENTO

FUNZIONI CORPOREE	0	1	2	3	4	8	9
<b>b114</b> Funzioni dell'orientamento							
<b>b1140</b> Funzioni dell'orientamento rispetto al tempo							
<b>b1141</b> Funzioni dell'orientamento rispetto al luogo							
<b>b130</b> Funzioni dell'energia e delle pulsioni							
<b>b1301</b> Motivazione							
<b>b1304</b> Controllo degli impulsi							
<b>b140</b> Funzioni dell'attenzione							
<b>b1400</b> Mantenimento dell'attenzione							
<b>b1401</b> Spostamento dell'attenzione							
<b>b1402</b> Distribuzione dell'attenzione							
<b>b1403</b> Condivisione dell'attenzione							
<b>b144</b> Funzioni della memoria							
<b>b1440</b> Memoria a breve termine							
<b>b1441</b> Memoria a lungo termine							
<b>b1442</b> Recupero ed elaborazione della memoria							

ATTIVITA' E PARTECIPAZIONE	0	1	2	3	4	8	9
<b>b)</b> Apprendimento di base							
<b>d131</b> Imparare attraverso azioni con oggetti							
<b>d135</b> Ripetere							
<b>d140</b> Imparare a leggere							
<b>d1400</b> Acquisire le abilità di riconoscimento di simboli, quali figure, icone, caratteri, lettere dell'alfabeto e parole							
<b>d1401</b> Acquisire le abilità di pronuncia di parole scritte							
<b>d1402</b> Acquisire le abilità di comprensione di parole e di frasi scritte							

### Example of DFP section

Area cognitiva e dell'Apprendimento – Fattori Ambientali (Schema 1 di 2)

Fattori ambientali	Servizi		Scuola		Osservazioni (Indicare i fattori ambientali sui quali intervenire per renderli facilitatori)
	F	B	F	B	
e1101 - Farmaci					
e1152 - Prodotti e tecnologie utilizzati per il gioco					
e1251 - Prodotti e tecnologie di assistenza per la comunicazione					
e1300 - Prodotti e tecnologie generali per l'istruzione					
e1301 - Prodotti e tecnologie sviluppati appositamente per l'istruzione					
e135 - Prodotti e tecnologie per il lavoro					
e2255 - Variazioni stagionali					
e240 - Luce					
e250 - Suono					
e310 - Famiglia ristretta					
e325 - Conoscenti, colleghi, vicini di casa e membri della comunità					
e330 - Persone in posizione di autorità					

F: facilitatore  
B: barriera

## Results

- Reception of the ICF-CY based tools by the stakeholders was very good, with recognized improvement in interprofessional communication, shared view of goals and methods, stronger alliance among services and families;
- Rate of completeness and correctness of the filled forms was >95%;
- In spite of a net reduction in resources available, the use of the ICF-CY based tools led to an improvement in the rate of satisfied requests;
- The incomplete representation of environmental factors in the tools was recognized as a major limitation;
- After a year of work the expert group prepared a revised version of the 3 tools in which the environmental factors recognized as most frequently encountered in the school setting were identified, coded and included. The new prototype will now be tested on a convenience sample of 40 pupils from schools of various levels, to be then further revised and included as official tools from the following year.

## Conclusions

The implementation of ICF-CY as reference matrix to inform and guide the process of school inclusion for the pupils with disabilities is well received by stakeholders and improves the efficiency of the service provision. The effect of a more precise description of environmental factors is expected to further improve this already positive experience allowing a more effective targeting of ecological modification.

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# The WHO-FIC Annual Network Meeting submission system

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Della Mea V.<sup>1</sup>

<sup>1</sup> University of Udine, Italy and Italian Collaborating Center

**Abstract** The present poster is aimed at describing the work done to provide a web-based submission system for the WHO-FIC Annual Network Meeting.

## Introduction

Every year the WHO-FIC collaborating centers meet at the annual meeting, after having submitted tenths of abstracts followed by posters, and in the past, papers.

The process of sending, awaiting notification, resubmitting posters on one side, and receiving, sending notifications and receiving again posters on the other side is time-consuming and prone to mistakes, lost files, etc.

For this reason this year for the first time a prototype web-based submission system has been tested, after its proposal during ITC work at the Brasilia network meeting. The present poster briefly describes the work behind.



## Methods & Materials

Experimental submission system for WHO-FIC Network Meeting 2013, Beijing, People's Republic of China, 12-18 October 2013.

### Instructions

Please submit your abstract (400 words max) through the link below. You will receive a password that will be needed to further upload your poster.

### Authors:

- Make Submission
- Edit Submission
- Upload File
- View File
- Withdraw Submission
- Check Status

The management of the annual WHO-FIC meetings is slightly different from the management of a scientific conference, due to the facts that it is invitation only, there is no strict peer review, and the final document is a poster going to be printed by meeting organizers. However, there are many similarities in particular for what regards communications among Authors and organization. For this reason, attention has been paid to conference management systems.

To avoid duplication of efforts, a brief review of available web-based conference management systems has been preliminarily carried out.

A number of open- and closed source, free or paid systems and services have been identified.

Among those, OpenConf (1) has been chosen because it is an open source system, written in PHP, and this allows some customization to fit the needs of WHO-FIC.

## Results

The selected system is based on an open source platform, **OpenConf**, which in turn has been developed using PHP and MySQL. Openconf is provided as free community edition, as professional edition mandatory for congress organizing companies, and as hosted service. The community edition has been chosen and installed on the web server of the Medical Informatics Lab at the University of Udine, Italy (2).

Due to the peculiar requirements of WHO-FIC, only few features of the system are really used, while on the other side a method to set manually chosen poster identifiers was missing. For this reason, a couple of extra functions have been implemented to allow:

- setting WHO-FIC poster **identifiers**;
- downloading the whole set of posters together, renamed after the WHO-FIC identifiers and compressed in a single **ZIP file**.

On the other side, a number of Openconf features have been considered very useful:

- large size **file download**, that circumvents issues when sending large files through email;

- **email communication** module, able to notify receipt of abstracts and files, and eventually to communicate to all Authors;

- "**paper topics**", that in our system became committee names to tag poster content;

- **summary views** like submissions per topic (committee) or per country.

Further features were not fully exploited this year, but will be in the next, like program committee access to let committee chairs see submitted posters of their interest.

OpenConf Peer Review & Conference Management System v5.10  
Signed in as: chair

### At-a-Glance Summary

Email (log)

- Settings:
- Configuration (advanced)
  - Modules +
  - Open/Close Status (log)
  - Topics
  - Passwords
  - Database: Backup | Reset

### Submissions:

- List/Delete/Withdraw Submissions (log)
- View Uploaded Files (set format)
- Create Submission Stub
- List Author Names: All | Accept | Reject
- List Submissions & Topics: All | Accept | Reject
- Show Topic Count: All | Accept | Reject
- Show Country Count: All | Accept | Reject
- Export Submissions: All | Accept | Reject
- WHO management (Now functioning!)

### All Submissions Country Count

Note: Only the country of the contact author is used for reporting

Country	Count
Australia	14
Austria	2
Bolivia	4
Brazil	6
Canada	6
Chile	1
China	5
Finland	1
France	3
Germany	2
India	3

### All Submissions Topic Count

View All Submissions by Topic

Topic	Count
COUNCIL	18
EIC	37
FDC	27
FDRG	39
ITC	22
MRG	14
URC	13

## Conclusions

This first experimental year had 120 submissions, with no particular problems registered.

While using it on the organization side, a number of possibilities have been understood to better use the system also for congress organization. For example, appropriately tagging abstract content might help in collecting posters by their topic, not only referring to committees and reference groups but also, for example, to the specific classification involved.

During this first annual meeting comments also from Authors will be gathered to enhance the system in view of its regular adoption.



OpenConf Peer Review & Conference Management System v5.10  
Signed in as: chair

Submissions

Number of Submissions: 121 | Select | all submissions | 1

ID	Title	Contact Author	File	WHO id
7	URC Annual Report	Francesco Gongolo	(9730)	prov1
8	ICD-11 and the "Factors influencing health status and contact with health services": a test of integration for the Family of International Classifications	Francesco Gongolo	(1398)	prov2
9	ICF implementation in Poland and Egypt	Matilde Leonardi	(1848)	prov5
10	Using the ICF framework and UN convention to define the Italian Disability Action plan	Matilde Leonardi	(1658)	
11	Health, Well-being and Quality of life of ageing population in Europe: the results from COURAGE in Europe project	Matilde Leonardi	(1880)	
12	Mapping met and unmet needs of persons with complex health conditions in the transition from childhood into adulthood with an ICF-based protocol	Andrea Martinuzzi	(2390)	

OpenConf Peer Review & Conference Management System v5.10  
Signed in as: chair

Set Topics

Note that if submissions have been made or reviewers signed up already, you should only add new topics to the end of the list or change a topic's name to clarify it. If you want to delete a topic in the middle of the list, replace its name with N/A or something authors and reviewers will know not to select.

Topics are used when making automated review assignments. Both authors and reviewers are asked to select topics. Enter a sequential list of topics below. When you click on Set Topics, topics will be added sequentially regardless of the Topic ID listed, with blank topics ignored; thus topics should only be deleted until a submission has been made or reviewer signed up. The Short Name field is optional; if present, it is used on pages where a long topic name may not display well.

Topic ID	Topic Name	Short Name (*20 chars)
1	Education and Implementation Committee	EIC
2	Informatics and Terminology Committee	ITC
3	Family Development Committee	FDC
4	Functioning and Disability Reference Group	FDRG
5	Mortality Reference Group	MRG
6	Update and Revision Committee	URC
7	Council	COUNCIL

## Acknowledgements

We thank Zakon Group LLC, developers of the Openconf platform.

## References

- (1) OpenConf:  
<http://www.openconf.com>
- (2) WHO-FIC Annual Network meeting submission system:  
<http://mitel.dimi.uniud.it/whotools/submission>

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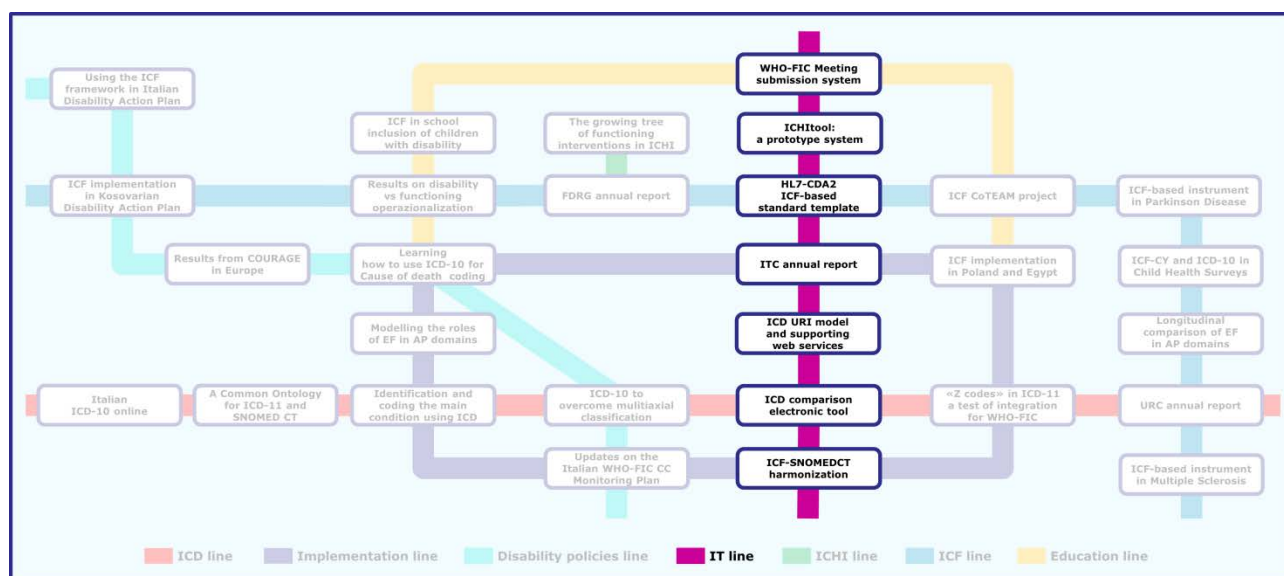
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## IT Line



- Della Mea V., Donada M., Best L., Cumerlato M., Madden R. ICHItool: a prototype system for ICHI development and maintenance.
- Celik C., Della Mea V., Noselli M., Vuattolo O. ICD URI Model and Supporting Web Services.

## Incrocio con Implementation Line

- Carvell K., Della Mea V. Informatics and Terminology Committee - Annual Report.
- Karlsson D., Gongolo F., Robinson M.M., Millar J. ICF- SNOMED CT Harmonization - a gap analysis.

## Incrocio con ICD Line

- Della Mea V., Vuattolo O., Gongolo F., Frattura L. Smartly up-to-date: an electronic tool to compare ICD, its revisions and adaptations.

## Incrocio con ICF Line

- Simoncello A., Girardello M., Della Mea V., Cabroni A., Frattura L. An HL7-CDA2 standard template for the ICF-based electronic biopsychosocial record.

## Incrocio con Education Line

- Della Mea V. The WHO-FIC Annual Network Meeting submission system.







# ICHItool: a prototype system for ICHI development and maintenance

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Della Mea V.<sup>1</sup>, Donada M.<sup>1</sup>, Best L.<sup>2</sup>, Cumerlato M.<sup>2</sup>, Madden R.<sup>2</sup>

<sup>1</sup> University of Udine, Italy and Italian Collaborating Center;

<sup>2</sup> Australian Collaborating Center

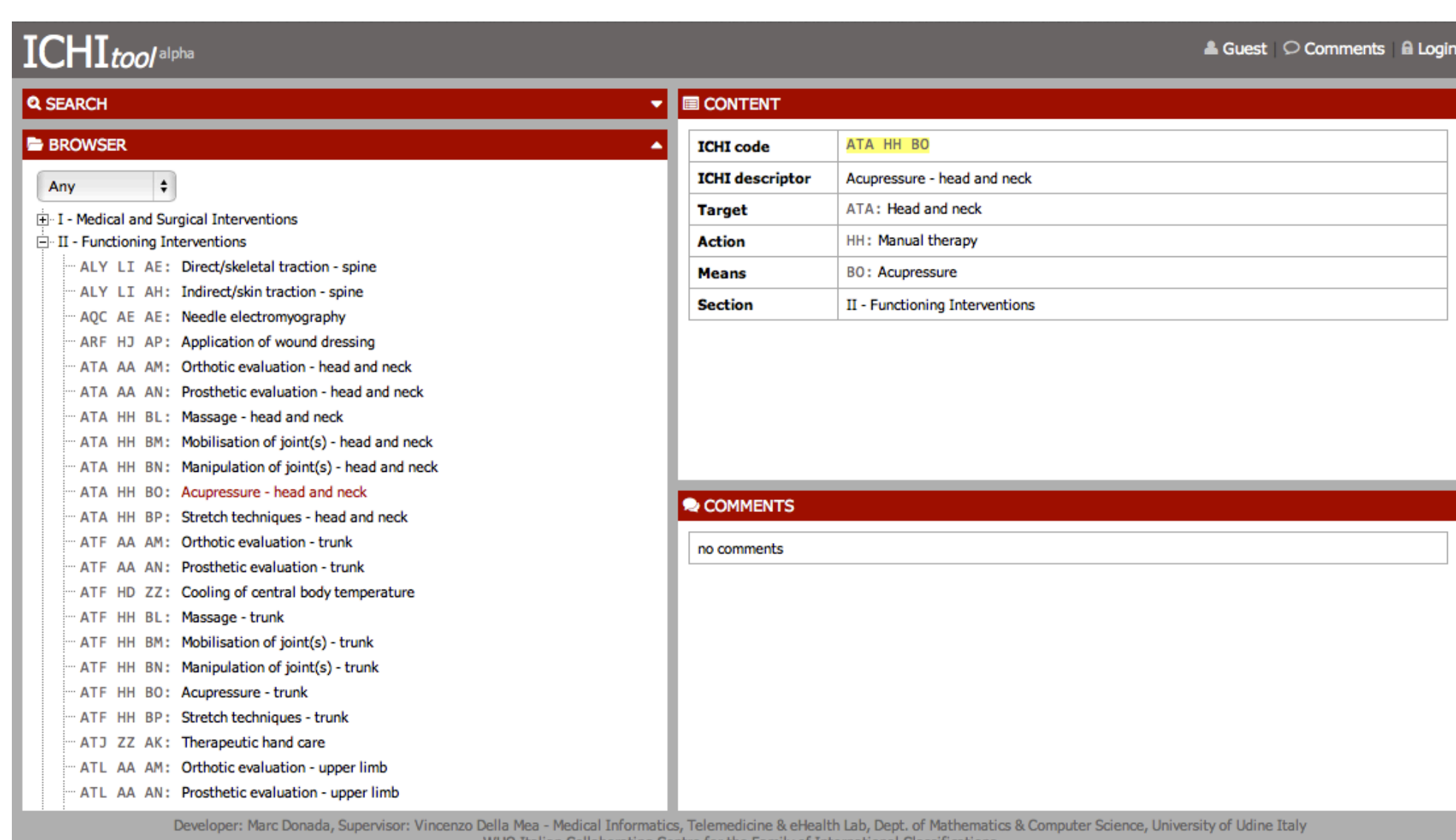
**Abstract** For a modern classification, it is essential to have a web-based platform. Such a platform enables collaborative development, consistent maintenance, and easier and more effective reviewing and commenting, like those available for ICD11, ICD10 and ICF. Aim of the present poster is to describe a similar prototype platform that has been developed for ICHI too.

## Introduction

For a modern classification, it is essential to have a web-based platform. Such a platform enables collaborative development, consistent maintenance, and easier and more effective reviewing and commenting. The platform should include a number of basic features such as navigation and search functionality, user comment facility, entity creation and modification, as well as advanced features including linkage to other classifications and terminologies, and a URI-based API.

This is what in the last years has been developed for ICD10 and ICF (browsers and update platforms), and later ICD11 (iCat and Revision platform) (1).

Aim of the present poster is to describe a similar prototype platform that has been developed for ICHI too.

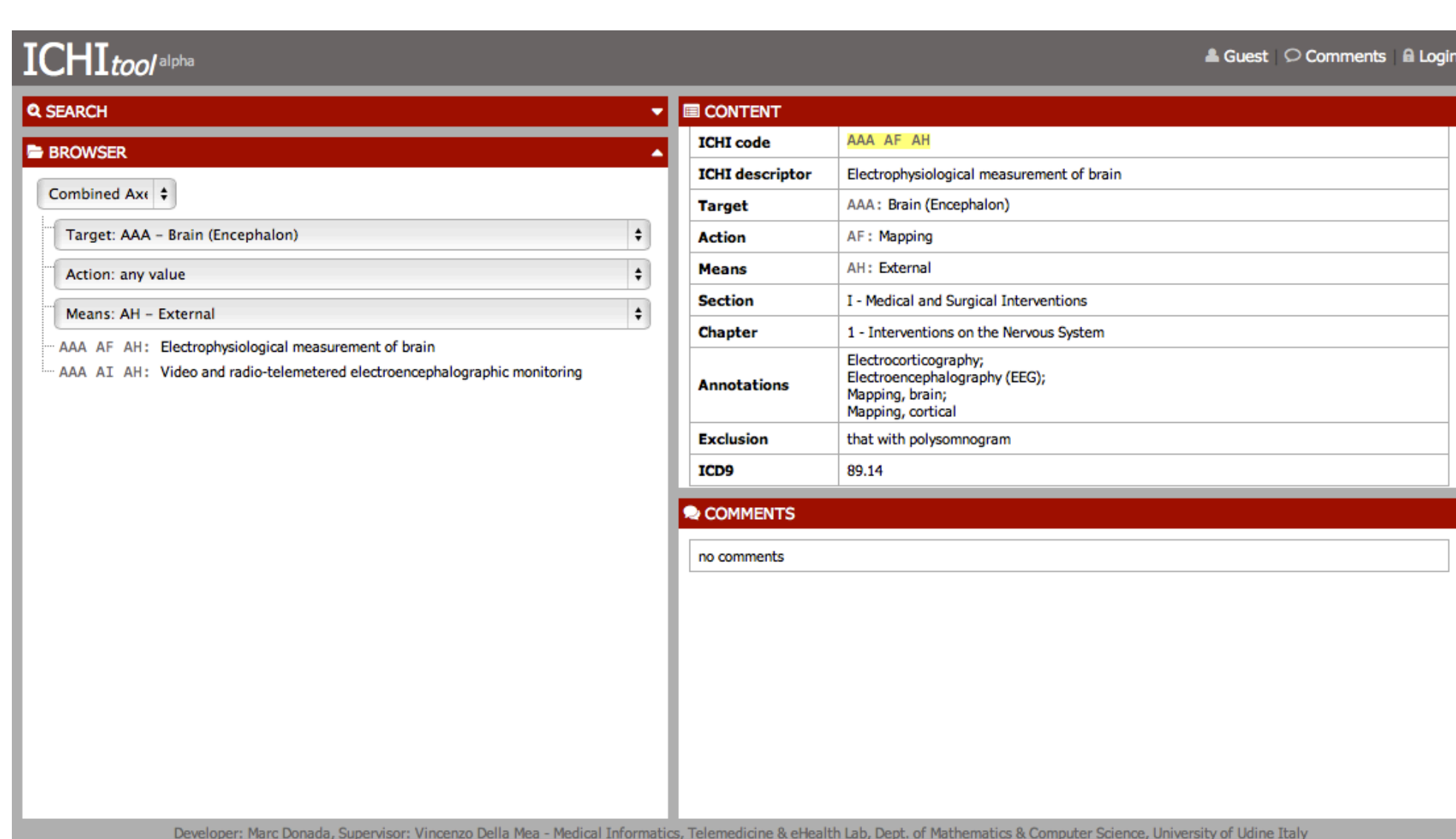


## Methods & Materials

To experiment with above mentioned features in the case of ICHI, the Australian WHO-FIC Collaborating Centre developed a list of requirements for an ICHI platform, based on the already known experiences that are at the basis of ICD11.

The Italian WHO-FIC Collaborating Center translated this list into a working prototype.

Iterations have been made among development team and ICHI management, including people from the Australian and German Collaborating centres, to ensure requirements were met.

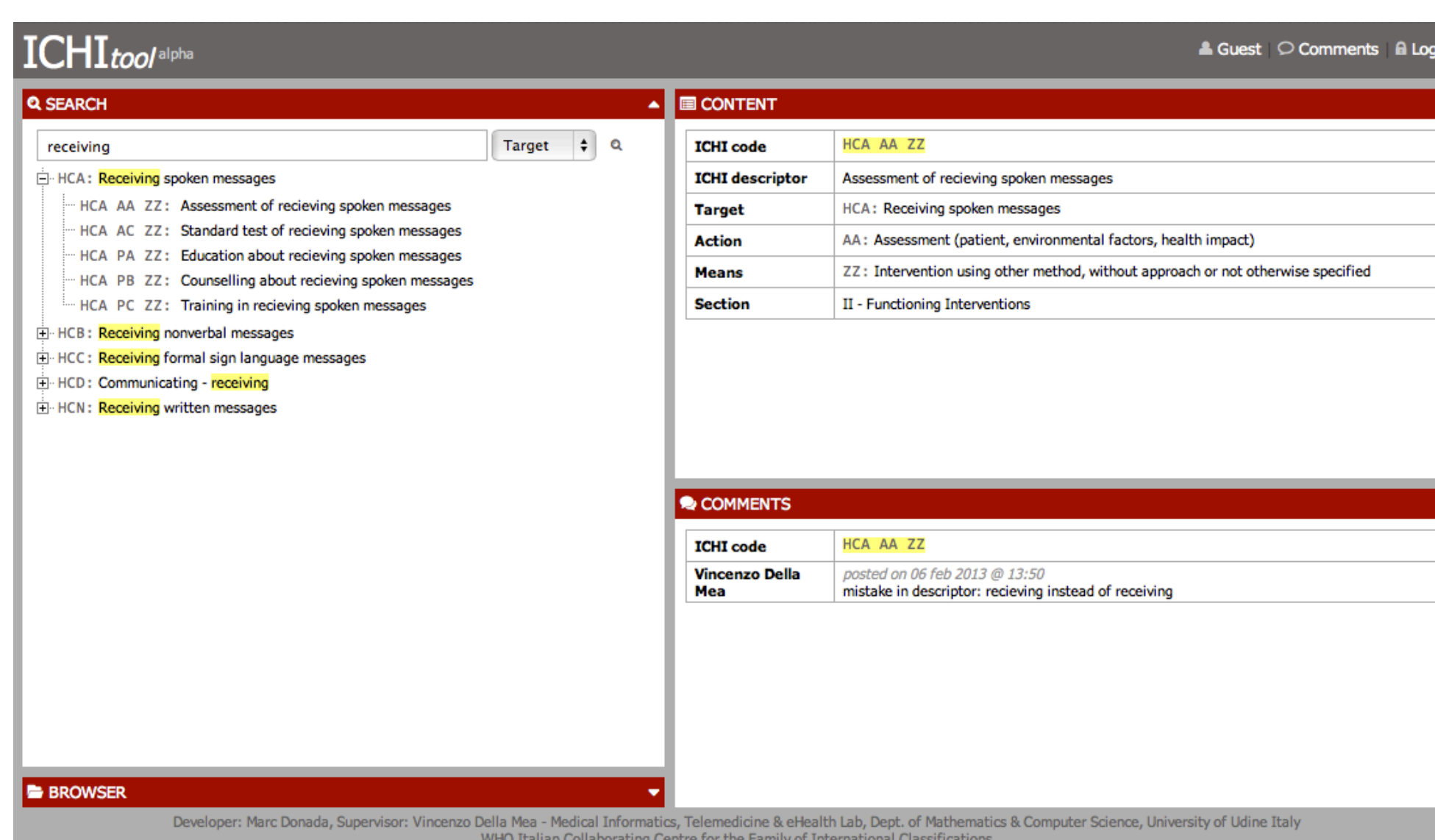


## Results

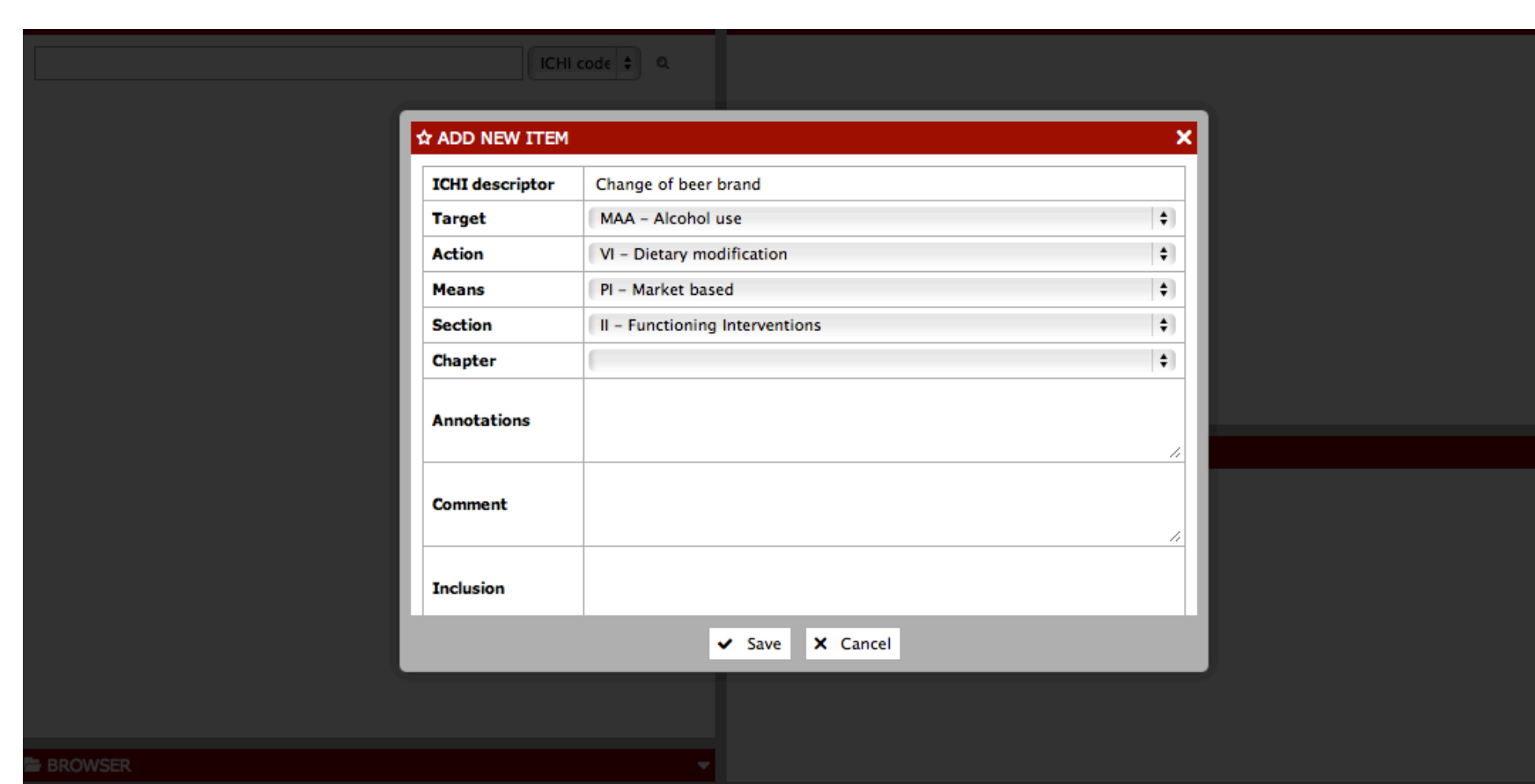
The Italian Collaborating Centre has developed a prototype tool (ICHItool) designed to have the look and feel of the other WHO-FIC platforms. This has been very useful for content review and revision.

The ICHItool currently has the following features:

- Storage facility for all required information that makes up ICHI
  - Content box for code titles and to have fields for definition, includes, excludes, and code also notes
  - Content box for axis titles and to have fields for definition, includes, and excludes-notes
  - Deletion/retiring of concepts capability
  - Access/password for limited users in the development period
  - Ability to download files to xls or txt
  - Ability to download either small sections, individual chapters or the whole of ICHI
  - Accessible to reviewers to enable commenting during the revision process
  - Format that will enable commenting, storage and revision of comments during the revision process.
- Three user profiles access the system:
- guest users may only browse and search ICHI entities,
  - registered users may also comment,
  - administrators can create and modify ICHI entities.



The platform, developed using PHP and MySQL, is hosted at the Medical Informatics Lab of the University of Udine, Italy, on a Linux Web server (2).

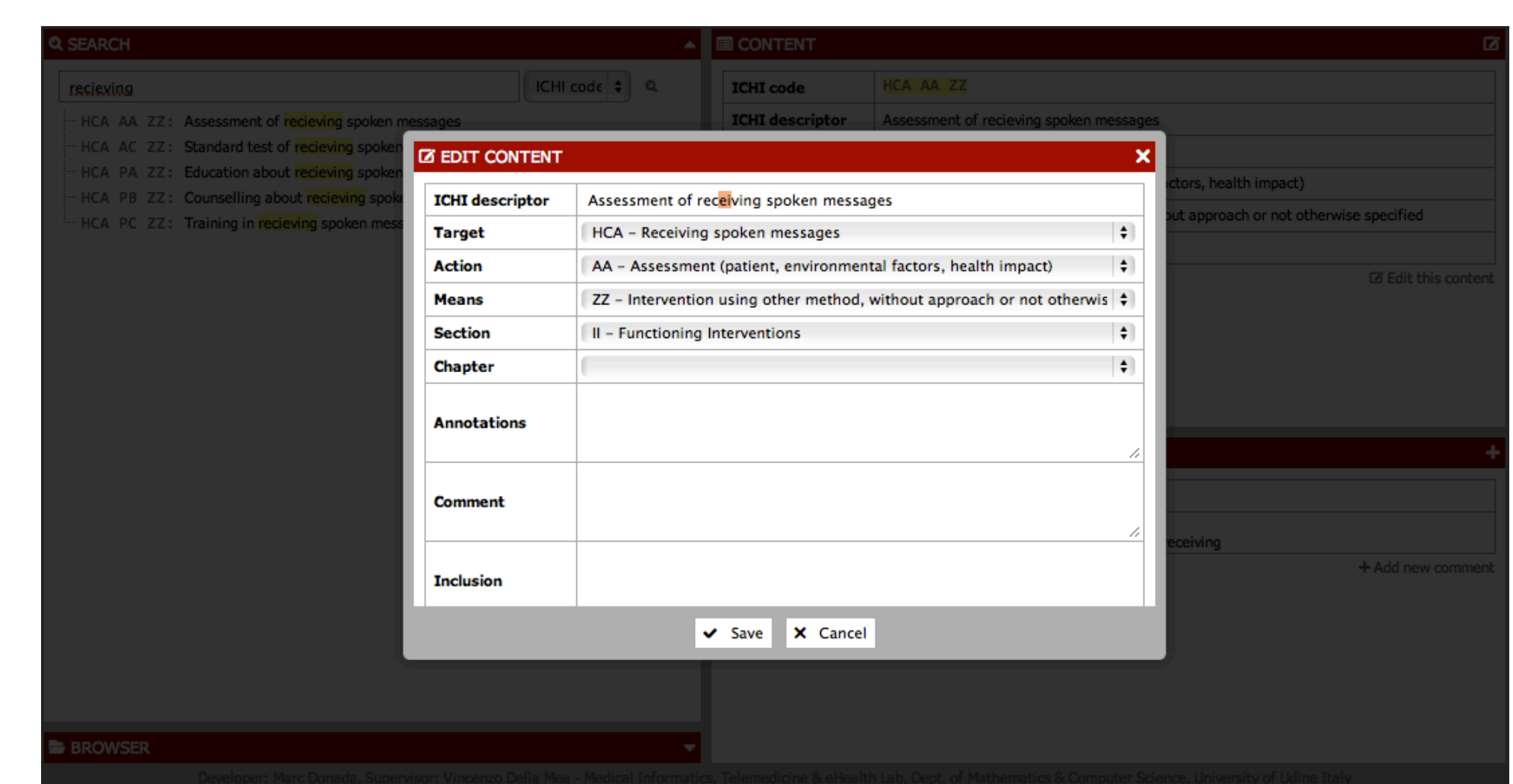


## Conclusions

The presented platform is currently only a prototype, yet is usable. Additional features to be added include:

- Ability to 'attach' a comment to an entity being created/updated to provide reasons for the change
- A change history record to see the changes to a concept over time
- Ability to search includes and excludes notes and annotations, as well as code titles
- Parameter field for addition of modifiers and qualifiers applicable to specific interventions
- Ability to output to CTK Birch
- Ability for an URI API system for automated access from other software programs
- A tool to be developed to allow terminology/ontology comparison with other classifications
- A linearisation function to permit production of various subsets.

These additional features would allow the ICHItool to act as a production platform for ICHI development. Such a platform is urgently required as the scope of ICHI expands and additional reviewers need to be accommodated (there is little prospect of capacity being available to adapt iCAT for this purpose in the short term). To date, the resources to allow ICHItool to be developed as a production platform have not been available.



## References

- 1) Tudorache T. et al. Supporting the Collaborative Authoring of ICD-11 with WebProtégé. AMIA Annu Symp Proc. 2010 Nov 13;2010:802-6.
- 2) ICHItool.  
<http://mitel.dimi.uniud.it/ichi/>

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# ICD URI Model and Supporting Web Services

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

Celik C.<sup>1</sup>, Della Mea V.<sup>2</sup>, Noselli M.<sup>1,3</sup>, Vuattolo O.<sup>2</sup>

<sup>1</sup> CTS, World Health Organization, Geneva, Switzerland; <sup>2</sup> Italian Collaborating Center and University of Udine, Italy; <sup>3</sup> University of Freiburg, Switzerland

**Abstract** The present poster briefly describes the ICD URI model that provides unique identifiers to WHO classifications and their entities, and the supporting Web Services that provide classifications and entities in computable format for their adoption into information systems. The poster anticipates a forthcoming guideline regarding ICD-11 and ICD-10, that could be adopted also for the other classifications.

## Introduction

In the past, WHO-FIC discussed methods for timely availability of classifications to information systems, as well as more unique identification schemes for classifications and classification entities.

Two main concepts are at the basis of the technologies described here: **URI** and **Web Services**. Together, they move the WHO family of International Classifications towards the so called **linked data** approach.

## URIs

A Uniform Resource Identifier (URI) is a compact string of characters for identifying an abstract or physical resource. Even the URIs most known – the subset called URL- are used as addresses for networked resources (web sites and pages, etc), the concept behind allows to identify any kind of resource, not necessarily corresponding to something on the Web.

## Web Services

The W3C defines a "Web service" as: [...] a software system designed to support interoperable machine-to-machine interaction over a network, usually based on SOAP and WSDL standards. In the last years a category of web services appeared that is based on simpler representational state transfer (REST) communications.

## Linked data

The Linked Data approach exploits URIs and, often, REST-based web services to help interconnection of structured data available on the Web, leading towards the so-called Semantic Web, and in particular towards the specific concept of Semantic Interoperability.

Tim Berners Lee provided four rules for truly useful linked data:

1. Use URIs to identify things.
2. Use HTTP URIs so that these things can be referred to and looked up ("dereferenced") by people and user agents.
3. Provide useful information about the thing when its URI is dereferenced, using standard formats such as RDF/XML.
4. Include links to other, related URIs in the exposed data to improve discovery of other related information on the Web.

## Scope

The URIs have been designed for the ICD Foundation Component as well as ICD-11 Linearizations and ICD-10. Currently the services have been deployed for the following content:  
ICD Foundation Component  
ICD11 Morbidity Linearization  
ICD11 Mortality Linearization  
ICD10 2010  
ICD10 2008

## Content negotiation for the format

The services behind the URIs provide the classification in different formats: The services support **html**, **rdf/xml** and **json-ld** formats. To be able to retrieve a specific format, we need to use content negotiation by appropriately setting the Accept Header.

## Content Negotiation for the Language

The services want to be multilingual. They support content negotiation using **Accept-Language** header. Currently only ICD-10 2008 has two languages so this can be demonstrated only with it.

## Service URIs: Foundation

The ICD Foundation Component and Releases of ICD are placed in different URI paths.

Foundation URIs are as follows.

### Top level

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

*Returned Properties:*

Title, Definition, Child

### Individual Entity

<http://id.who.int/icd/entity/{id}>

*Example:*

<http://id.who.int/icd/entity/1766440644>

*Returned Properties:* Parent, Child, Title, Definition, Long Definition, Synonym, Narrower Term, Inclusion, Exclusion, Body Site, Body System, Causal Agents, Causal Mechanisms, Signs And Symptoms, Genomic Characteristics, Investigation Findings, Type, Intent, Activity when Injured, Object or Substance Producing Injury, Mechanism of Injury, Place of Occurrence, Substance Use

## Service URIs: linearizations

ICD-11 Linearizations are available in two variants, with or without minor version.

URIs without minor version are as follows:

### Top level linearization:

<http://id.who.int/release/11/{Linearization Name}>

*Example:*

<http://id.who.int/icd/release/11/morbidity>

*Returned Properties:* Title, Latest Version, Version

### Entity in a linearization:

<http://id.who.int/release/11/{Linearization Name}/{id}>

*Example:*

<http://id.who.int/icd/release/11/morbidity/21500692>

*Returned Properties:* Title, Latest Version, Version

URIs without minor version are as follows:

### Top level linearization:

<http://id.who.int/release/11/{Minor Version}/{Linearization Name}>

*Example:*

<http://id.who.int/icd/release/11/beta/morbidity>

*Returned Properties:* Title, Definition, Child

### Entity in a linearization

<http://id.who.int/release/11/{Minor Version}/{Linearization Name}/{id}>

*Example:*

<http://id.who.int/icd/release/11/beta/morbidity/1012371341>

*Returned Properties:* Code, Parent, Child, Title, Definition, Long Definition, Inclusion, Exclusion, Index Terms, Class Kind, Source

## ICD-10 URIs

Similar URIs are available also for ICD-10, e.g.:

<http://id.who.int/release/10>

<http://id.who.int/icd/release/10/A00>

<http://id.who.int/icd/release/10/2010>

<http://id.who.int/icd/release/10/2010/A00>

## Conclusions

The availability of URI identifiers, and a fully fledged API to access classification entities, makes easier for any software developer to invent new ways of exploiting and combining WHO classifications, thus opening them to a wider and more intelligent use.

Further work is needed for securing access to the API to registered users only.

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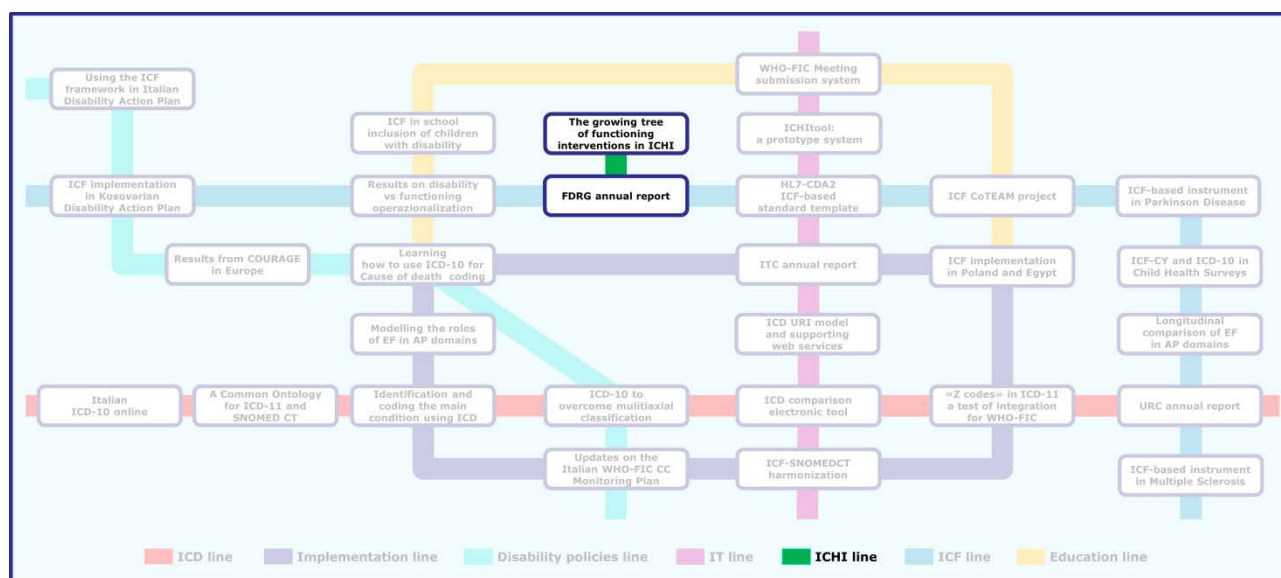
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## ICHI Line



- *Almborg A.H., Salvador-Carulla L., Sykes C., Berg L., Cumerlato M., Madden R., Martinuzzi A.* The growing tree of Functioning Interventions within ICHI.

## Incrocio con ICF Line

- *Sykes C., Martinuzzi A.* FDRG Annual Report.







# The growing tree of Functioning Interventions within ICHI

12 – 18 October 2013  
Beijing, China

Poster Number  
WHO/CTS to insert

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## Abstract

The International Classification of Health Interventions (ICHI) is the third WHO reference classification. The interventions aimed at body functions, activities or environmental factors (functioning interventions) typically delivered, e.g., in rehabilitation and mental health sectors, are growing in weight and complexity worldwide. The work of the "technical working group" (TWG) for functioning interventions here describe the further steps completed in ICHI-FI and the state of its development. The results for the whole ICHI are 627 targets, 130 actions and 54 means. The alpha2 version of ICHI functioning includes 1490 interventions. Conclusions. At the end of this first round of refinement, 782 functioning interventions are listed, which were doubled to the alpha2 version. A process for systematically checking of the present list for completeness and significance is now planned, with the goal to bring the functioning intervention list to a degree of stability.

## Introduction

The International Classification of Health Interventions (ICHI) is the third WHO reference classification, and among its scope is to provide a framework systematically describing health interventions to allow comparison in provision of health interventions, assist in the development of health policies, contribute to evaluation of effectiveness.

The interventions aimed at body functions, activities or environmental factors (functioning interventions) typically delivered, e.g., in rehabilitation and mental health sectors, are growing in weight and complexity worldwide, but they are paradoxically represented in a very sketchy and non-systematic way in the intervention list of ICD9CM and in intervention classifications used in some countries.

## Development 2011-12

The work of the "technical working group (TWG) for functioning interventions commenced in Sydney Australia in 2011 and led to the first listing of functioning interventions which consistently applied the three axes (target, action, mean) upon which the ICHI framework is built. This initial list of 782 functioning interventions was included in the ICHI alpha draft presented at the 2012 Brasilia WHO-FIC annual meeting.

We here describe the further steps completed in ICHI-FI and the state of its development.

## Methods & Materials

The goals were pursued with face to face meetings and teleconferences, in which the TWG included contributors from experts and practitioners in the selected areas, and reached agreement through discussion and audit.

## Goals

The Functioning TWG defined 3 goals to be reached within 2013:

- revising and enriching the ICHI axes to enhance the descriptive capacity of the system;
- address mental health, neuropsychology, Physical therapy and Occupational therapy as areas of particular relevance and complexity;
- perform a first revision of the functioning interventions.

## Results

The results are 627 targets, 130 actions and 54 means for the whole ICHI.

### Targets

Final count of targets is 627 distributed as following:

Anatomy	307
Body functions	111
Activities and participation	110
Environmental factors	75
Behaviours	21
Others	3

The body functions, activities and participation and environmental factors can be used at different levels such as chapters, blocks and 2<sup>nd</sup> and 3<sup>rd</sup> level of the ICF.

### Actions

Action codes were enriched to appropriately capture the peculiar nature of actions performed in the functioning field.

Final count of actions is 130. The actions are distributed as following:

Diagnostic	16
Therapeutic	76
Managing	14
Preventing	24

Clearer distinction between actions and means allowed the repositioning of some means as actions and vice versa.

### Means

Final count for means is 54 at approach, techniques, method and sample.

## Interventions

The alpha 2 version include 1490 interventions, which are distributed as follows:

Mental Health Interventions	67
Interventions on Body functions	389
Interventions on Activities and Participation	770
Interventions on an Individuals Environment	71
Public Health Interventions (incl Behaviours)	193

Issues raised during the revision process include:

- Need for extensions to represent variations in a given intervention
- Editorial rules to insure balance of granularity
- Position of non surgical interventions to specific systems or organs within the classification
- Overlap/relationship with interventions in public health

## Conclusions

At the end of this first round of refinement, 782 functioning interventions are listed. The Alpha 2 version of ICHI functioning includes 1490 interventions. A process for systematically checking of the present list for completeness and significance is now planned, with the goal to bring the functioning intervention list to a degree of stability.

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