



How to expand ICF Environmental Factors (EF) starting from ISO-9999 Classification: toward a "hybrid" standard terminology?

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Abstract VilmaFABER assessment system uses a ICF-ISO9999 "hybrid" standard terminology, developed by the Italian WHO-FIC CC to overcome the poor descriptive power of ICF Environmental Factors component. It was used to describe care and living environment in different samples of Italian outpatients. It has shown a positive answer from professionals and persons evaluated. A validation is kindly suggested in the context of the WHO-FIC network. It should be useful to consider new candidates for updating the ICF EF list of categories.

Introduction

As ISO-9999 classification is a related member of the WHO-FIC since 2003 [1] and it was suggested as a more specific and a more detailed classification in addition to the Environmental Factors (EF) listed in ICF, it seems reasonable to combine the two classifications in order to ensure a more precise description of the care and living environment [2]. The aim was to develop some expanded ICF-EF e1 categories by combining ICF categories with ISO-9999 terms, useful to implement web tools in order to better describe patients [3] and suggest ICF updates too.

Methods & Materials

ISO-9999 classes [4-7] were mapped to three digit categories of ICF-EF, Chapter 1, and compared with the semantic content of the titles and definitions (including inclusions and exclusions) of the ICF categories. If an ISO-9999 class was mapped to more than one ICF category, its subclasses were considered. Combined terms were created (Expanded ICF-EF terms), with the ICF code in first coding position and the ISO-9999 code in second coding position, for example: "e120 Wheelchairs (ISO 12 21)" or "e115 Aspirators (ISO 03 03 21)". This expansion was tested in a sample of outpatients (N=213) from Friuli Venezia Giulia Region. Detailed information on the field trial sampling procedure and results are shown elsewhere [8].

Results

Eight hundred forty-one ISO-9999 (ISO) classes were found to fit with 8 ICF categories. The distribution of ISO classes within the ICF categories was the following:

- 500 ISO classes fitted with ICF - e115,
- 98 ISO classes fitted with ICF - e120,
- 125 ISO classes fitted with ICF - e125,
- 64 ISO classes fitted with ICF - e130,
- 13 ISO classes fitted with ICF - e135,
- 21 ISO classes fitted with ICF - e140,
- 20 ISO classes fitted with both ICF - e150 and ICF - e155.

A total of 841 expanded ICF-EF terms out of 8 ICF-EF categories was thus obtained.

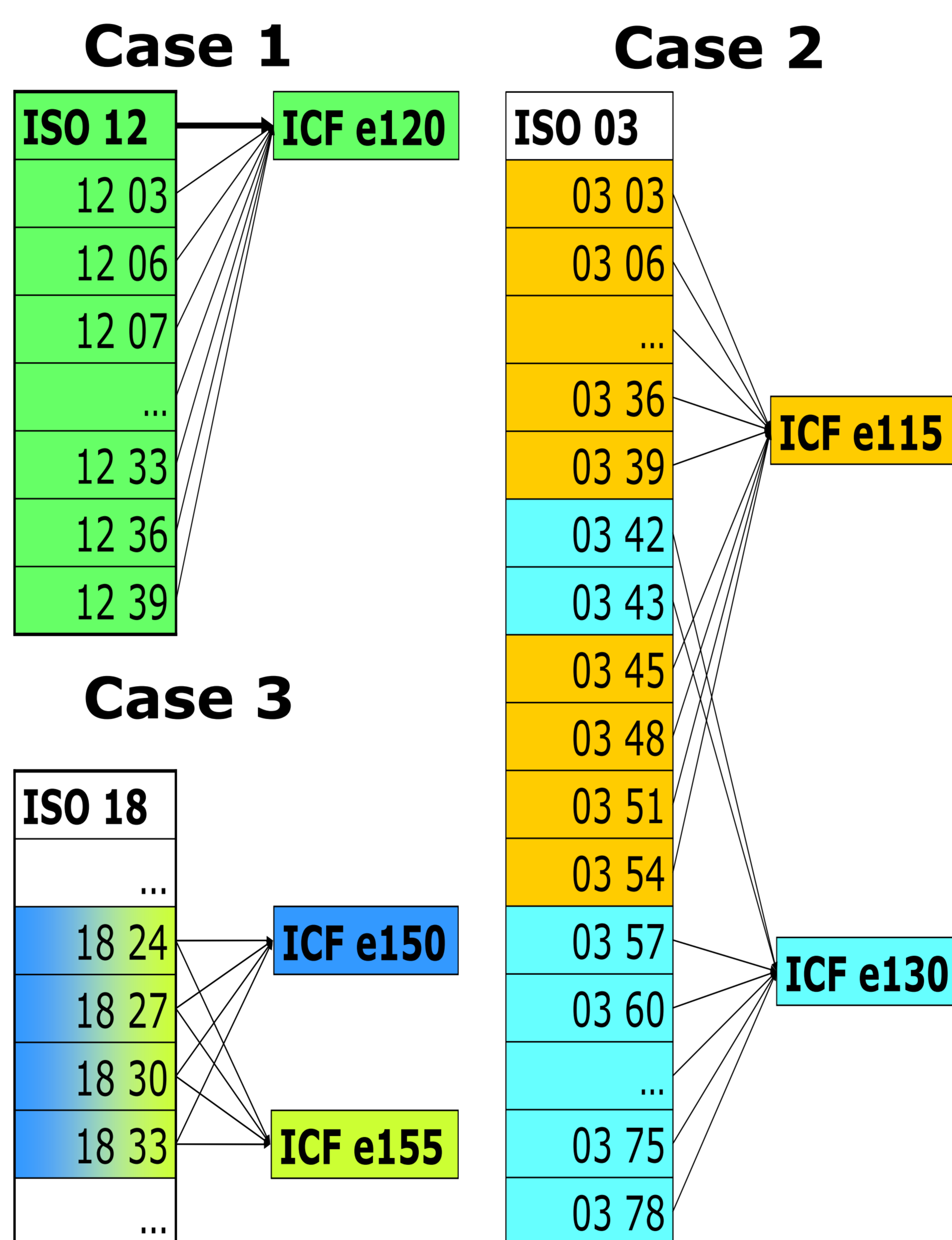
Table 1 – Results of mapping ISO9999 to ICF EF chapter 1

ICF category	ISO 9999 classes	Number (%) of overall ISO codes
e115	03, 06, 09, 15, 18, 21, 24, 27, 30	500 (59,5)
e120	12, 18	98 (11,7)
e125	21	125 (14,9)
e130	03	64 (7,6)
e135	24, 27	13 (1,5)
e140	30	21 (2,5)
e150 e155	18	20 (2,4)
Total N=8	Total N=17	841 (100)

Table 2 – Examples of the VilmaFABER expanded ICF-EF categories

e115 Assistive products for administering medicines (ISO 03 18)
e120 Wheelchairs (ISO 12 21)
e125 Assistive products for seeing (ISO 21 03)
e130 Assistive products for training in the arts (ISO 03 69)
e135 Industrial transportation vehicles (ISO 24 39)
e140 Musical instruments (ISO 30 12)
e150 Assistive products for vertical accessibility (ISO 18 30)
e155 Construction elements in the home and other premises (ISO 18 24)

Figure 1 – Examples of mapping of ISO codes to ICF categories



The distribution of ISO classes within the ICF categories, when applied to the field trial sample, was the following:

- 30 ISO classes fitted with ICF - e115
- 11 ISO classes fitted with ICF - e120
- 9 ISO classes fitted with ICF - e125
- 1 ISO classes fitted with ICF - e130
- 1 ISO classes fitted with ICF - e135
- 3 ISO classes fitted with ICF - e140
- 1 ISO classes fitted with ICF - e150

A total of 56 expanded ICF-EF terms out of 7 ICF-EF categories was thus obtained at population level [8].

Table 3 – Results of mapping ISO9999 to ICF in the first VilmaFABER field trial

ICF category	ISO 9999 classes	Number (%) of overall ISO codes
e115	03, 06, 09, 15, 18, 24, 27, 30	30 (53,6)
e120	12, 18	11 (19,6)
e125	21	9 (16,1)
e130	03	1 (1,8)
e135	24, 27	1(1,8)
e140	30	3 (5,3)
e150	18	1 (1,8)
Total N=7	Total N=16	56 (100)

Conclusions

Our findings highlight the importance of expanding the granularity of ICF-EF categories in order to describe more accurately the EF involved in the individuals' functioning and disability. The expanded ICF-e1 terms may be considered a new hybrid standard terminology and may be a useful solution instead of updating all e1 categories. The reliability of this methodology was further supported by the evidences obtained from the field trial. Furthermore, the mapping has to be revised using the ISO-9999 updated version. A validation of our mapping is kindly suggested in the context of the WHO-FIC network. This, may enrich the debate on the actualization of the WHO health classifications, particularly concerning the ICHI development. It should be also useful to consider new candidates to update ICF EF list of categories.

Acknowledgements



References

1. Bougie T, Heerkens Y. ISO 9999 with ICF. Working Document, A combined action of NEN (Dutch Normalisation Institute) and the Dutch WHO-FIC Collaborating center. 2009 Dec
2. Bassi G., Simoncello A., Frattura L. Mapping ISO9999 to ICF in health information systems. The FABER way. Who-FIC Network Annual Meeting, Brasilia 2012
3. Frattura L, Simoncello A, Bassi G, Soranzio A, Terreni S, Sbroiavacca F. The FBE development project: toward flexible electronic standards-based bio-psycho-social individual records. Stud Health Technol Inform. 2012;180:651-5.
4. ISO. 2011. ISO 9999 Assistive products for persons with disability – Classification and terminology. Geneva: International Organization for Standardization
5. ISO, ISO 9999 Ausili tecnici per persone disabili – Classificazione. Geneva, 1998
6. GMDN, GMDN User Guide, 2010
7. Ministero della Salute, Decreto Ministeriale 22 settembre 2005 e s.m.ei., Classificazione Nazionale dei Dispositivi medici (CND)
8. Castelpietra G., Bassi G., Frattura L. To kill two birds with one stone: how to automatically combine standard terminologies and nomenclature with ICF Environmental Factors in epidemiological studies. Who-FIC Network Annual Meeting, Barcelona 2014

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