



TExIEF: a thesaurus of expanded ICF Environmental Factor terms.

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**Abstract** In the frame of interoperable EHRs, specific coding systems are mandatory to complete healthcare documents, but ICF is not still considered. ICF usability has been criticized since its categories, including EFs, are too broad to be used in clinical settings. On the other hand the ICF update process is still focused on merging ICF-CY into ICF and updates regarding the EF component are very few or absent.

Introduction

In the frame of interoperable EHRs, specific coding systems are mandatory to complete healthcare documents, but ICF is not still considered. ICF usability has been criticized since its categories, including EFs, are too broad to be used in clinical settings. On the other hand the ICF update process is still focused on merging ICF-CY into ICF and updates regarding the EF component are very few or absent. The aim is to overcome the low descriptive power of the ICF EF component, providing a foundation thesaurus of terms (with an ICF suffix) having an increased descriptive power.

Methods & Materials

The methodology takes into account: i) a preliminary ICF term extraction process, starting from descriptions and inclusions; ii) integration of the extracted glossary of terms with existing international classifications such as ATC and ISO9999; iii) integration of the extracted glossary of terms with existing national standard terminologies such as terms for describing Health or Social systems and services; iv) semantic mapping of all terms to ICF EF second level categories; and v) creation of new "hybrid" terms with an ICF suffix. The thesaurus was developed in Italian.

Results

TExIEF, i.e. a Thesaurus of Expanded ICF Environmental Factors, was developed and it comprises:

- 176 terms in natural language defining subjects that provide support, assistance and relationships to the patients were defined according to the descriptions provided by ICF and each term was mapped to ICF codes in Chapter 3 (Table 1)
- 20 terms in natural language defining nutrition and dietetics, including products identified by national regulations and then classified by product groups, were mapped to ICF code e110 (Table 2);
- 3247 drugs, classified according to ATC codes, were mapped to ICF code e110;
- 841 ISO-9999 coded products were mapped to ICF codes in Chapter 1 (references 1-3)

- 87 Essential Levels of Health Care terms, delivered by the Italian National Health System were mapped to ICF code e580;
- 80 regional social services terms from the Social Services Information System were mapped to ICF code e575.

Table 1 – The expanded e3 terms

ICF code	Lay-language term	Expanded Term
e310	Spouse	e310 - Spouse (name surname)
e310	Partner	e310 - Partner (name surname)
e310	Father	e310 - Father (name surname)
e310	Mother	e310 - Mother (name surname)
e310	Brother	e310 - Brother (name surname)
e310	Sister	e310 - Sister (name surname)
e310	Son	e310 - Son (name surname)
e310	Daughter	e310 - Daughter (name surname)
e310	Foster/adoptive parent	e310 - Foster/adoptive parent (name surname)
e310	Grandfather	e310 - Grandfather (name surname)
e310	Grandmother	e310 - Grandmother (name surname)
e315	Uncle	e315 - Uncle (name surname)
e315	Aunt	e315 - Aunt (name surname)
e315	Nephew	e315 - Nephew (name surname)
e315	Cousin	e315 - Cousin (name surname)
e315	Cousin	e315 - Cousin (name surname)
e315	Ex spouse	e315 - Ex spouse (name surname)
e315	Brother-in-law	e315 - Brother-in-law (name surname)
e315	Sister-in-law	e315 - Sister-in-law (name surname)
e315	Father-in-law	e315 - Father-in-law (name surname)
e315	Mother-in-law	e315 - Mother-in-law (name surname)
e320	Friend	e320 - Friend (name surname)
e325	Acquaintance	e325 - Acquaintance (name surname)
e325	Colleague	e325 - Colleague (name surname)
e325	Neighbour	e325 - Neighbour (name surname)
e325	Community member	e325 - Community member (name surname)
e325	School mate	e325 - School mate (name surname)
e330	Employer	e330 - Employer (name surname)
e330	Supervisor	e330 - Supervisor (name surname)
e330	Religious leader	e330 - Religious leader (name surname)
e330	Leader	e330 - Leader (name surname)
e330	Substitute decision-maker	e330 - Substitute decision-maker (name surname)
e330	Trustee	e330 - Trustee (name surname)
e330	Guardian	e330 - Guardian (name surname)
e335	Student	e335 - Student (name surname)
e335	Worker	e335 - Worker (name surname)
e335	Member of a religious group	e335 - Member of a religious group (name surname)
e340	Provider of support for home-making and maintenance	e340 - Provider of support for home-making and maintenance (name surname)
e340	Personal assistant	e340 - Personal assistant (name surname)
e340	Transport assistant	e340 - Transport assistant (name surname)
e340	Nanny	e340 - Nanny (name surname)
e345	Stranger	e345 - Stranger (name surname)
e350	Domesticated animal	e350 - Domesticated animal (name surname)
e355	Health professionals	95 different e355 – specific profili professionali
e360	Other professionals	38 different e355 – specific profili professionali

Table 2 – The expanded e110 terms regarding foods for specific health purposes

ICF code	Lay-language term	Expanded Term
e110	Baby food: infant formula	e110 - Baby food: infant formula (4AA1A)
e110	Baby food: follow up formula	e110 - Baby food: follow up formula (4AA1B)
e110	Baby food: other	e110 - Baby food: other (4AA1C)
e110	Dietetic food: low calorie food	e110 - Dietetic food: low calorie food (4AA2A)
e110	Dietetic food: food for special purposes	e110 - Dietetic food: food for special purposes (4AA2B)
e110	Dietetic food: low salt/no-salt food	e110 - Dietetic food: low salt/no-salt food (4AA2C)
e110	Dietetic food: gluten free food	e110 - Dietetic food: gluten free food (4AA2D)
e110	Dietetic food: diabetic food	e110 - Dietetic food: diabetic food (4AA2E)
e110	Dietetic food: food supplements	e110 - Dietetic food: food supplements (4AA2F)
e110	Natural sweeteners	e110 - Natural sweeteners (4AB1)
e110	Synthetic sweeteners	e110 - Synthetic sweeteners (4AB2)
e110	Candies	e110 - Candies (4AX1)
e110	Chewing-gum	e110 - Chewing-gum (4AX2)
e110	Chocolate	e110 - Chocolate (4AX3)
e110	Cookies/snacks	e110 - Cookies/snacks (4AX4)
e110	Honey/jam/propolis/royal jelly	e110 - Honey/jam/propolis/royal jelly (4AX5)
e110	Natural food: whole food	e110 - Natural food: whole food (4AX6A)
e110	Natural food: organic food	e110 - Natural food: organic food (4AX6B)
e110	Pasta	e110 - Pasta (4AX7)
e110	Other food	e110 - Other food (4AX9)

Conclusions

TexIEF included 5224 Expanded ICF-EF terms compared to 74 ICF-EF at the second level categories. It might be considered a basis for a common Multilanguage thesaurus. The English version might be incorporated into a new version of ICF.

References

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