



# **EXPRESSIVENESS OF A LOCAL INTERFACE TERMINOLOGY IN COMPARISON TO SNOMED CT**

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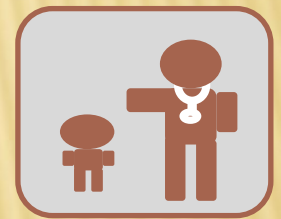
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# ***INTRODUCTION;***

As S. Trent Rosenbloom said, and we quote:

Necessary [...]attributes for an interface terminology include adequate synonym coverage, presence of relevant assertional knowledge, and a balance between pre- and post-coordination.

From: ([Rosenbloom ST1](#), [Miller RA](#), [Johnson KB](#), [Elkin PL](#), [Brown SH](#) . [J Am Med Inform Assoc](#). 2006 May-Jun;13(3):277-88. Epub 2006 Feb 24. [Interface terminologies: facilitating direct entry of clinical data into electronic health record systems.](#)  
<http://www.ncbi.nlm.nih.gov/pubmed/16501181>)



## ***OBJECTIVE***

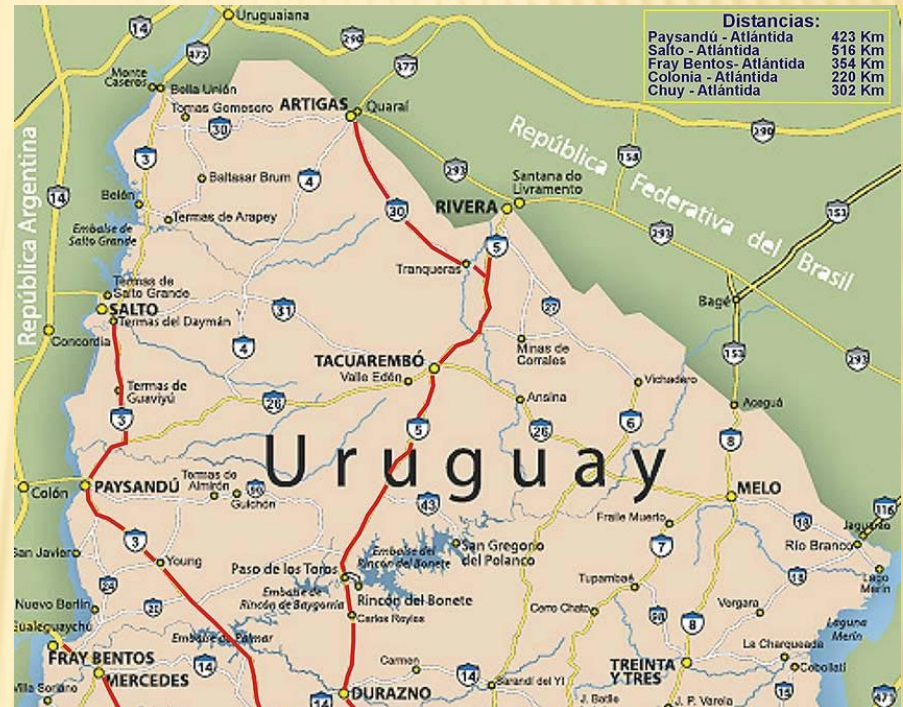
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Compare the expressiveness of a local interface terminology with that of SNOMED CT in the clinical findings hierarchy.

# MATERIAL & METHODS

## × **SETTING**

The source of the data comes from a leading private health care network composed by several companies serving more than 300,000 patients in the south of the country.



Private health care network composed by several companies serving more than 300,000 patients in the south of the country

Integrated **HIS** developed by an IT provider.

Universal Soluciones Tecnológicas.



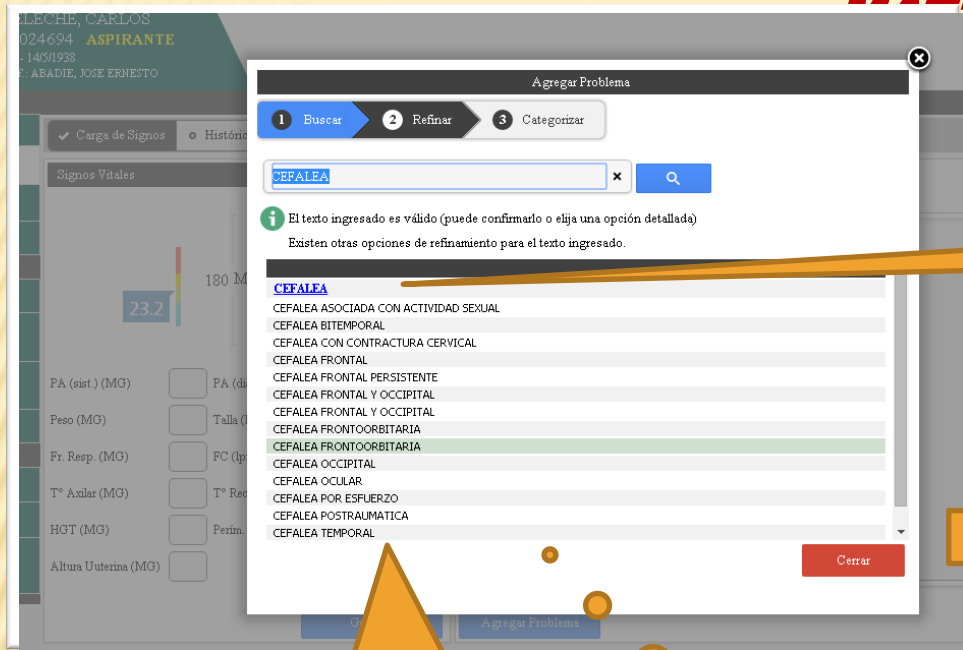
# MATERIAL & METHODS

- ✘ EMR - Patient Oriented Medical Record



150 thousand patients

# MATERIAL & METHODS



Preferred term.

## LOCAL TERMINOLOGY SERVICE.



Synonyms-

Not Visible  
Synonyms-

- Terminology web services of Hospital Italiano de Buenos Aires as a local terminology service.



# ***MATERIAL & METHODS;***

Measurement and comparison of the amount  
of mapped to Snomed Definition  
terms vs.  
post-coordinated Definition terms .

- CONTROL GINECOLOGICO
- CONTROL DE SALUD
- CONTROL
- CONTROL OFTALMOLO
- DISLIPIDEMIA
- HIPERTENSION ARTER
- CONTROL POR OFTALM
- COLPOSCOPIA
- CONTROL CLINICO
- HIPOTIROIDISMO
- ACNE
- MIOPIA
- CONTROL DE PESO
- NEVOS MELANOCITICOS
- PAPANICOLAOU
- GONALGIA
- LUMBALGIA
- SOBREPESO
- PRESBICIA
- ECCEMA
- CONTROL POR OTORRINOLARINGOLOGIA
- CEFALEA
- CONTROL POSTOPERATORIO



Preferred terms and visible and not visible Synonyms-  
were measured



# RESULTS



150,000  
patients

OCTOBER 2014 - SEPTEMBER 2015



124,018 patients in  
655,064 medical consultations



**260,842 entries**  
to patients problem lists  
related to “CLINICAL FINDINGS” hierarchy.

CONTROL GINECOLOGICO
CONTROL DE SALUD
CONTROL
CONTROL OFTALMOLOGICO
DISLIPIDEMIA
HIPERTENSION ARTERIAL
CONTROL POR OFTALMOLOGIA
COLPOSCOPIA
CONTROL CLINICO
HIPOTIROIDISMO
ACNE
MIOPIA
CONTROL DE PESO
NEVOS MELANOCITICOS
PAPANICOLAOU
GONALGIA
LUMBALGIA
SOBREPESO
PRESBICIA
ECCEMA
CONTROL POR OTORRINOLARINGOLOGIA
CEFALEA
CONTROL POSTOPERATORIO

# RESULTS

**22,597**  
**DESCRIPTION TERMS**

CONTROL DE SALUD  
CONTROL  
CONTROL OFTALMOLOGICO  
DISLIPIDEMIA  
HIPERTENSION ARTERIAL  
CONTROL POR OFTALMOLOGIA  
COLPOSCOPIA  
CONTROL CLINICO  
HIPOTIROIDISMO  
ACNE  
MIOPIA  
CONTROL DE PESO  
NEVOS MELANOCITICOS  
PAPANICOLAOU  
GONALGIA  
LUMBALGIA  
SOBREPESO  
PRESBICIA  
ECCEMA  
CONTROL POR OTORRINOLARINGOLOGIA  
CEFALEA  
CONTROL POSTOPERATORIO

**260,842 entries**  
to patients problem lists related to  
“CLINICAL FINDINGS” hierarchy.

When consolidated, they summarized  
**22,597 different DESCRIPTION**  
**Terms.**



# RESULTS

**22,597  
DESCRIPTION TERMS**



Corresponding to  
according to the  
**local interface terminology service**

**15,412 CONCEPTS**  
(Clinical Finding hierarchy)

CONTROL DE SALUD		
CONTROL		
CONTROL OFTALMOLOGICO		
DISLIPIDEMIA	8581000999108	CONTROL DE SALUD (SITUACION CON CONTEXTO EXPLICITO)
HIPERTENSION ARTERIAL	29261000999100	CONTROL (PROCEDIMIENTO)
CONTROL POR OFTALMOLOGIA	8931000999100	CONTROL POR OFTALMOLOGIA (SITUACION CON CONTEXTO EXPLICITO)
COLPOSCOPIA	8631000999104	DISLIPIDEMIA (HALLAZGO CLINICO)
CONTROL CLINICO	1000999107	HIPERTENSION ARTERIAL (HALLAZGO CLINICO)
HIPOTIROIDISMO		
ACNE	2261000999105	COLPOSCOPIA (PROCEDIMIENTO)
MIOPIA	8581000999108	CONTROL DE SALUD (SITUACION CON CONTEXTO EXPLICITO)
CONTROL DE PESO	051000999102	HIPOTIROIDISMO (HALLAZGO CLINICO)
NEVOS MELANOCITICOS	9781000999106	ACNE (HALLAZGO CLINICO)
PAPANICOLAOU	681000999104	MIOPIA (HALLAZGO CLINICO)
GONALGIA	9641000999103	CONTROL DE PESO (PROCEDIMIENTO)
LUMBALGIA	9041000999104	NEVOS MELANOCITICOS MULTIPLES (HALLAZGO CLINICO)
SOBREPESO	2701000999103	PRUEBA DE PAPANICOLAOU (PROCEDIMIENTO)
PRESBICIA	931000999103	GONALGIA (HALLAZGO CLINICO)
ECCEMA	451000999109	LUMBALGIA (HALLAZGO CLINICO)
CONTROL POR OTORRINOLARINGOLOGIA	1000999104	SOBREPESO (HALLAZGO CLINICO)
CEFALEA	3201000999102	PRESBICIA (HALLAZGO CLINICO)
CONTROL POSTOPERATORIO	0221000999108	ECCEMA (HALLAZGO CLINICO)
	5051000999108	CONTROL POR OTORRINOLARINGOLOGIA (SITUACION CON CONTEXTO EXPLICITO)
	831000999108	CEFALEA (HALLAZGO CLINICO)



# RESULTS

**15,412 CONCEPTS**  
(Clinical Finding hierarchy)

**15,412 CONCEPTS**

Mapped  
SNOMED  
CT pre-  
coordinated

**5753**

Post-  
coordinated

**9659**

**62,7% Post -coordinated  
expressions.**

**37,3 % pre- coordinated  
expressions.**

expressions.



- CONTROL GINECOLOGICO
- CONTROL DE SALUD
- CONTROL
- CONTROL OFTALMOLOGICO
- DISLIPIDEMIA
- HIPERTENSION ARTERIAL
- CONTROL POR OFTALMOLOGICO
- COLPOSCOPIA
- CONTROL CLINICO
- HIPOTIROIDISMO
- ACNE
- MIOPIA
- CONTROL DE PESO
- NEVOS MELANOCITARIOS
- PAPANICOLAOU
- GONALGIA
- LUMBALGIA
- SOBREPESO
- PRESBICIA
- ECCEMA
- CONTROL POR OTORRINOLARINGOLOGICO
- CEFALEA
- CONTROL POSTOPERATORIO

# RESULTS

**22,597**  
**DESCRIPTION TERMS**

**14,215 Preferred**

**8,382 Synonyms**

**CONCEPTS**  
(including hierarchy)

**7,607 Not visible Synonyms**

**775 Visible Synonyms**

**Preferred**  
**62.9%**

**Synonyms**  
**37.1%**

**Not visible**  
**synonyms**  
**90,8%**

**Visible**  
**synonyms**  
**9,2%**



- CONTROL DE SALUD
- CONTROL
- CONTROL OFTALMOLOGICO
- DISLIPIDEMIA
- HIPERTENSION ARTERIAL
- CONTROL POR OTOLOGIA
- COLPOSCOPIA
- CONTROL DE TIPO
- HIPOTIROIDEISMO
- ACNE
- MIOPIA
- CONTROL DE TIPO
- NEVOS MALIGNOS
- PAPANICOLAU
- GONALGIA
- LUMBALGIA
- SOBREPESO
- PRESBICIA
- ECCEMA
- CONTROL POR OTORRINOLARINGOLOGIA
- CEFALEA
- CONTROL POSTOPERATORIO

## ***DISCUSSION:***

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Interface terminologies are designed to support efficient structured clinical documentation in electronic health record.

SNOMED CT can be used as an interface terminology, because it is the most comprehensive clinical terminology and it supports the use of synonyms.

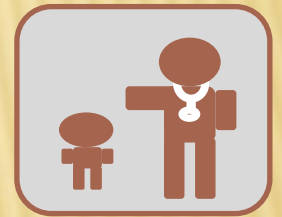
However, due to the richness and diversity of local jargons, it is best used as a reference terminology.

The logo for SNOMED CT is displayed within a white rectangular box with a thin orange border. The text "Delivering" is in a grey sans-serif font at the top left. Below it, "SNOMED CT" is written in a large, bold, blue sans-serif font. To the right of "SNOMED CT", the tagline "The global language of healthcare" is written in a smaller, black sans-serif font, with "healthcare" on a new line.

Delivering  
**SNOMED CT**  
The global  
language of  
healthcare

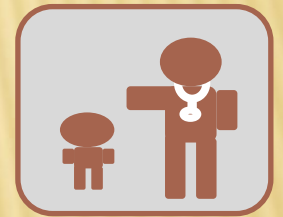
## ***DISCUSSION;***

- ✘ Post coordinated terms have such high use because SNOMED core does not maintain all the combinatorial explosion of local possibilities. Perhaps local jargon is different from that provided by the Spanish edition.
- ✘ Also, Not Visible Synonyms are useful to recognize the human entering errors.



## ***CONCLUSIONS***

Local interface terminology service  
allowed more comprehensive  
expressiveness than SNOMED CT.



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# THANK YOU

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