

# C408

## Coding rules for the patient summary: analysis and requirements for an automated coding system

# C317

## A foundation terminology at the basis of morbidity coding in primary care: methodological issues

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# The EU Patient Summary

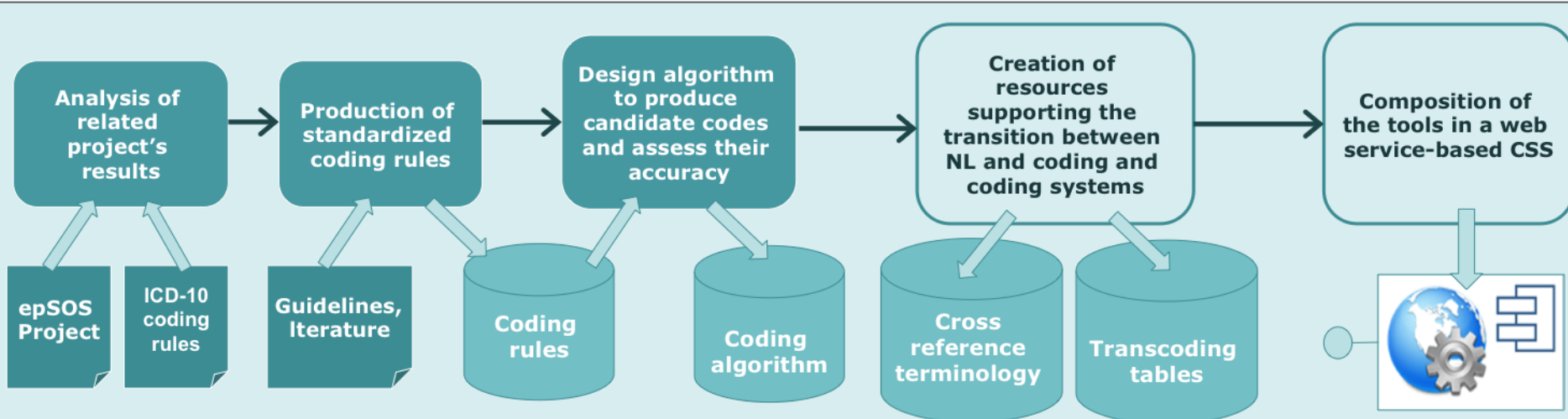
- EU directive on Patient Summary:
  - most Countries are regulating the use of coding systems
- Nonetheless, GPs massively use natural language to record health conditions in the EHRs
  - generating unstructured and not coded data
- Moreover, PS cannot be automatically derived from the EHR, because it has to be validated by the GP
- In this scenario, an **automated coding support system** (CSS) can be of help without breaking the law
  - Coding candidates, not automated coding

## CSS for PS

- In order to set up an automated CSS,
  - an Italian collaborative work group was set up
    - CNR, Italian CC, FBK
  - and a work plan was defined
- for developing the resources and tools to assist physicians in coding the PS
  - As an alternative to fully manual coding, that would require extensive training of >40000 GPs and >7000 pediatricians

# Methods

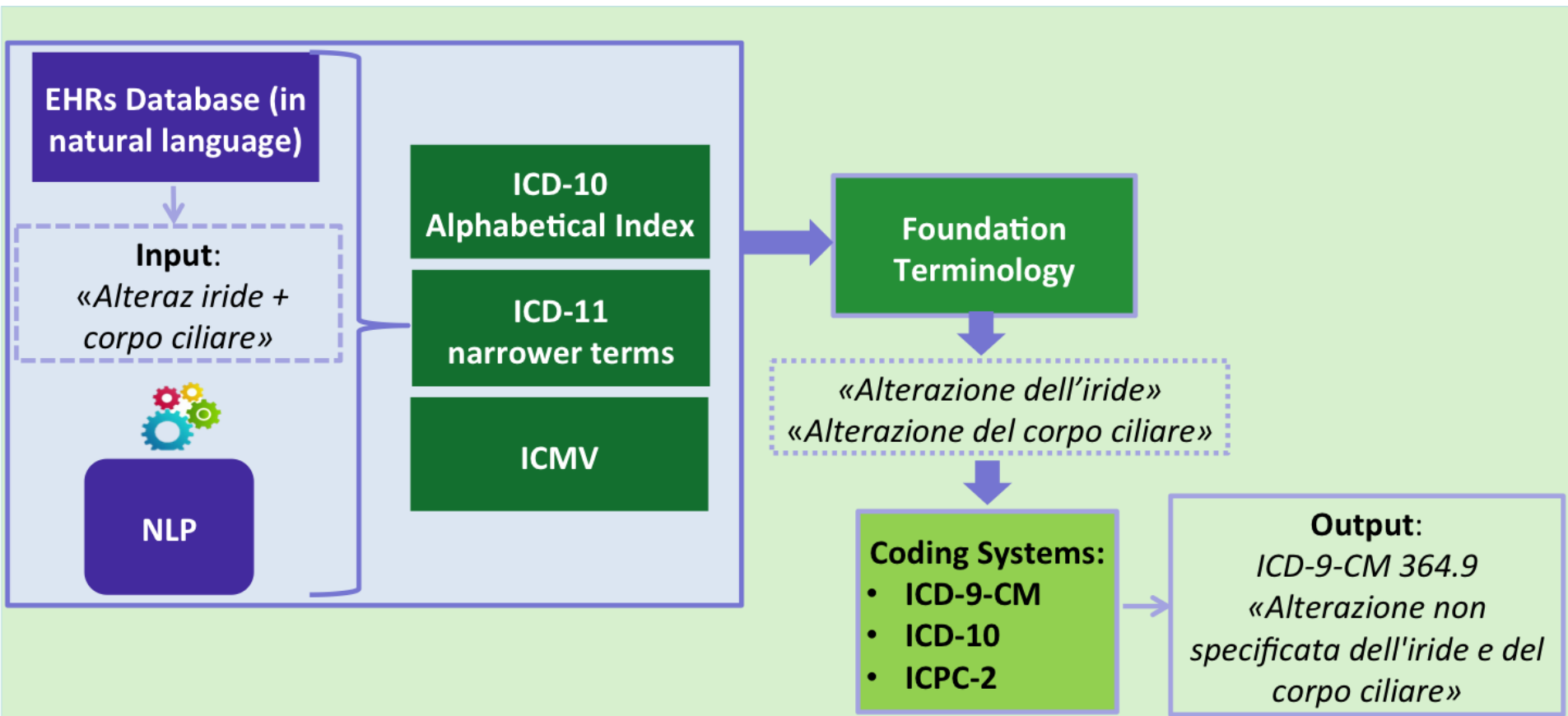
1. Development of coding rules from an analysis of EU PS rules and of ICD-10 coding rules for mortality data
2. Design of an *algorithm* that applies coding rules to produce candidate codes and assess their accuracy;
3. Creation of a *cross reference terminology* of structured technical and lay terms, and related *transcoding tables*
4. Development of a web service-based CSS.



# Foundation terminology

1. creation of a *Dictionary* resulting from a term extraction process on a database of GP EHRs,
2. semi-automatic integration of the *Dictionary* with existing Italian resources (*ICD-10 Index*, *ICD-11 synonyms and narrower terms*, ICMV (Italian Consumer-oriented Medical Vocabulary))
3. review by domain experts;
4. mapping of the reference terminology to the international coding systems used in the Italian primary care setting (i.e. ICD-9-CM, ICD-10 and ICPC-2).

# Foundation terminology architecture



## Current status

- A project is starting under fundings for the Italian PS initiative
- Expected advantages: less training costs for GPs, less coding time, better coding quality
- Expected issues: complexity of the domain, relatively low detail in available morbidity coding rules



# Thanks

