Undiagnosed patients coding: the RD-CODE project recommendations

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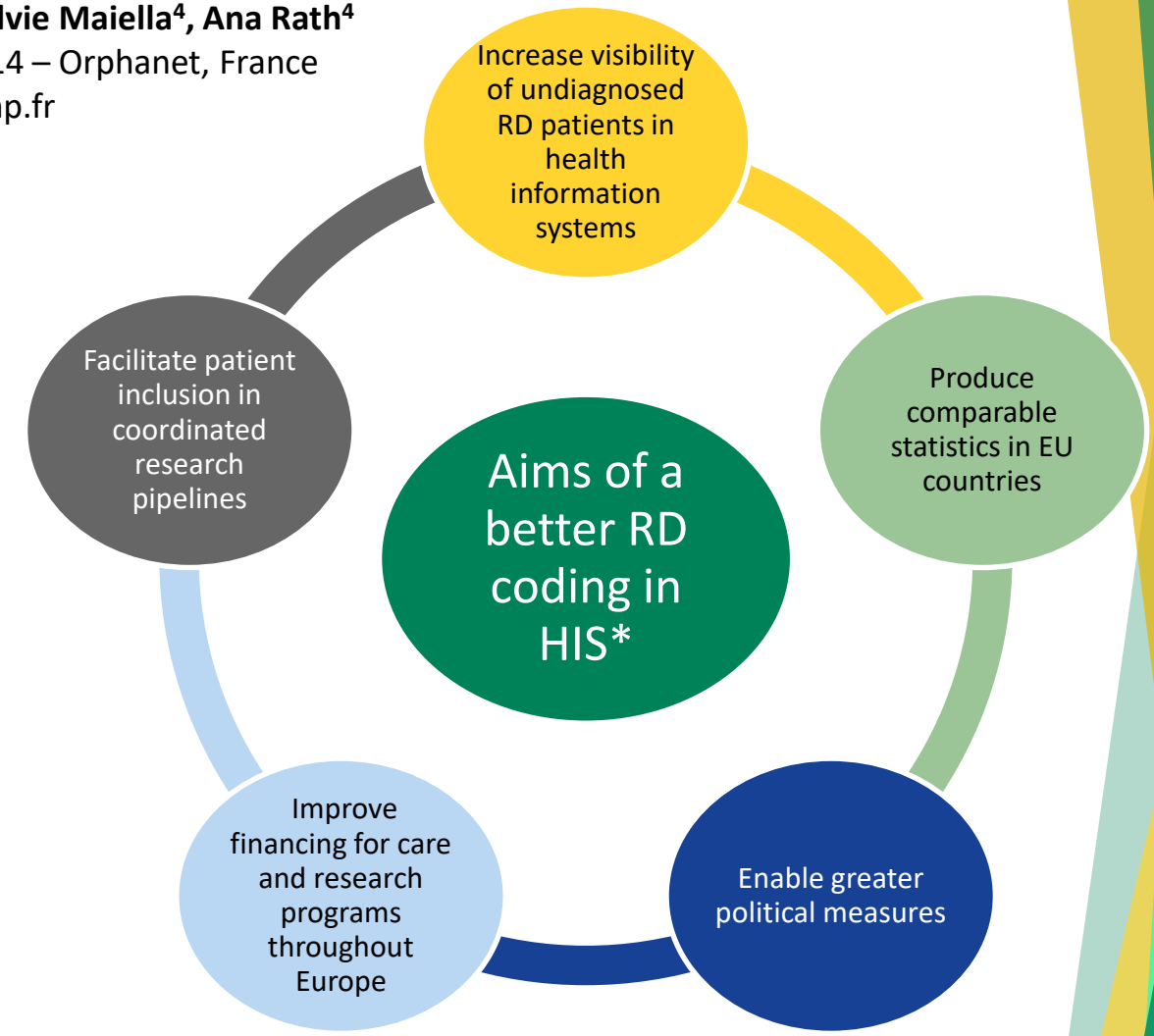
The RD-CODE project (Jan 19/Dec 21) was co-funded by the European Union's Third Health Programme.
Its objective is to support Member States in improving gathering information on rare diseases (RD) by implementation of ORPHAcodes.
A task was dedicated to producing recommendations for the coding of undiagnosed patients in Health Information Systems (HIS).

*HIS: Health Information Systems, such as hospital electronic health records or registries



- **Method:** To produce comparable statistics in EU countries and take action on them, a large implementation through European countries was needed. Thus, the RD-CODE project set up a multi-stakeholder working group (including SOLVE-RD, X-eHealth and ERN representatives) to issue **definitions and recommendations for coding undiagnosed patients in Electronic Health Records (EHRs) or in registries.**

- In the frame of the RD-CODE project, **undiagnosed patients were defined as patients for whom:**
  - no clinically known disorder could be confirmed
  - by a RD expert center
  - after all reasonable efforts to obtain a diagnosis
  - according to the state of the art
  - and diagnostic capabilities available

Deliverable published on the RD-CODE website (Dec 2021)
http://www.rd-code.eu/wp-content/uploads/2021/01/Existing-experiences-and-guidelines-about-coding-of-undiagnosed-RD-patients.pdf

RD-CODE recommendations for coding undiagnosed patients

Recommendation #1

Identify the level of diagnostic assertion

Whenever possible, capture the diagnostic assertion for all RD cases. Use the options "Suspected rare disease", "Confirmed rare disease" and "Undetermined diagnosis".

However, modifying hospital EHRs or registries existing forms to collect new items might be challenging. Thus, to identifying undiagnosed patients without adding any new field in data collection tools, it was recommended to rely on the Orphanet nomenclature that is currently implemented in the RD-CODE participating countries.

Recommendation #2

Use of a new dedicated ORPHACode

Use the dedicated ORPHAcode specifying the "undiagnosed" status, alone or in addition to the first recommendation.

ORPHA:616874

> **Rare disorder without a determined diagnosis after full investigation**

Recommendation #3

Completing the description of undiagnosed patients in registries

In registries, in line with the JRC Common data elements, each undiagnosed patient should be described by its phenotype, using HPO. When available, the genotype should be associated to help future diagnosis, using HGVS.

GROUP	ELEMENT N°	ELEMENT NAME	ELEMENT DESCRIPTION	CODING
6 Diagnosis	6.1.	Diagnosis of the rare disease	Diagnosis retained by the specialised centre	Orpha code (strongly recommended – see link) / Alpha code/ ICD-9 code/ ICD-9-CM code / ICD-10 code
	6.2.	Genetic diagnosis	Genetic diagnosis retained by the specialised centre	International classification of mutations (HGVS) (strongly recommended – see link) / HGNC / OMIM code
	6.3	Undiagnosed case	How the undiagnosed case is defined	• Phenotype (HPO) • Genotype (HGVS)

Extract from JRC Common data elements

Additional phenotypic descriptors could be used (for instance ICD, SNOMED, Orphanet categories…) as well as genetics descriptors (using a system generally recommended to describe genetic or genomic anomalies).

New dedicated ORPHAcode: ORPHA:616874

Guidelines to properly use this new code

The code must not be used for diseases that are not (yet) available in the Orphanet classification

If a code is not available, please use https://github.com/orphanet-rare-diseases-issues/RD-CODE

The code must not be used for coding patients along their diagnostic pathway

Make sure to use this code only after all reasonable efforts to obtain a diagnosis according to the state-of-the-art and diagnostic capabilities available were done

The use of this code can be combined with other descriptors