

Clinical Communications

Smoothing the transition from International Classification of Diseases, Tenth Revision, Clinical Modification to International Classification of Diseases, Eleventh Revision

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Clinical Implications

- Although the International Classification of Diseases, Tenth Revision, Clinical Modification has only recently been introduced in the United States, the present study is the first attempt to contribute for a softer transition of the International Classification of Diseases, Tenth Revision, Clinical Modification allergic and hypersensitivity conditions to the International Classification of Diseases, Eleventh Revision, whenever it will happen.

TO THE EDITOR:

American health care providers and payers were initially scheduled to adopt the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) in 2008, but the Centers for Medicare & Medicaid Services pushed back the deadline¹ because the conversion required health care providers and payers to adapt their information system to accommodate an increase in new diagnostic codes (Figure 1). The ICD-10-CM was finally launched in September 2015.

The World Health Organization (WHO) started working on the International Classification of Diseases, Eleventh Revision (ICD-11) in 2011 and intends to advise all the countries to move to the new edition once it is available. For the first time, the WHO opened the online ICD revision for public discussion to strengthen awareness and acceptability worldwide, making it more feasible to end users. The multihierarchy scheme is based on the Foundation, where it is possible to reach each entity, and the Linearization, containing the parents and stem codes. The ICD-11 prioritizes the postcoordination, defined by the adding to an existing entity (known as a stem code) additional details to provide greater specificity to the entity, such as topography and chronological and severity scale, now available in the ICD-11 "Extension codes" chapter.

Over the last 4 years, a detailed action plan has been put into practice for a better classification of the allergic and hypersensitivity conditions in the forthcoming ICD-11. All the steps have been acknowledged by the Joint Allergy Academies and documented by peer-reviewed publications.²⁻⁸ Meanwhile, we started a bilateral collaboration with the WHO ICD revision governance. A major achievement of this process was the construction of an "Allergic and hypersensitivity conditions" section in the ICD-11.^{8,9}

Considering the new classification model, to follow the WHO agenda and to support our US colleagues, we propose the first attempt of supporting a smoother transition from the ICD-10-CM to the ICD-11, whenever it will occur. Therefore, we first proceeded for a search of allergic and hypersensitivity conditions using the ICD-10-CM tabular list (available on the Centers for Disease Control and Prevention Web site, accessed December 2015).¹⁰ The prepared list and the online ICD-11 beta draft (February 2016 version)⁹ were considered as the basis for the mapping process. We carefully looked at the related terms, checked the correspondence in the ICD-11 beta draft,⁹ and classified them as "fit precoordination," "fit postcoordination," "indexed to the ICD-11 Foundation," "No code fit properly," or "No correspondence" in ICD-11. To understand the reasons why some conditions were classified as "no correspondent," all these conditions were reanalyzed and categorized as "classification change," "proposals submitted," "not elsewhere classified (NEC)," and "title change." All records were independently evaluated by 2 coauthors. Disagreements were resolved through open discussion and external review.

From overall 270 of ICD-10-CM terms related to allergic and hypersensitivity conditions, 54% were able to be precoordinated, 25% postcoordinated, 7% indexed to the Foundation, 3% had no code fitting properly, and 10% had no correspondence in the ICD-11 framework (Table 1). Precoordination strategy was mostly applicable to the "Diseases of the respiratory system" and the "Diseases of the skin and subcutaneous tissue" chapters. However, postcoordinated was mostly applicable in the "Diseases of the eye and adnexa" and "Injury, poisoning, and certain other consequences of external causes" chapters. There were no disagreements between the independent evaluators.

From all the "no correspondence" terms, 70% were due to "classification changes" and "NEC" terms. However, it is notable that the updated classification was responsible for 67% of these terms considering the fact that "classification changes," "Title change," and "proposals submitted" are due to new knowledge generated so far, mainly for conditions of the "Diseases of the skin and subcutaneous tissue" (Figure 2). All the proposals submitted were those related to the "Factors influencing health status and contact with health services" chapter. Some of "no correspondence" conditions have been submitted during the process and are in the process of implementation (eg, "Personal history of food allergy").

Efforts to support the ICD-10 (and adaptations) transition to ICD-11 aim to ensure the global acceptance of the ICD-11 new frame model. Although aware that the ICD-10-CM has been recently launched in the United States, we now started this discussion together with the American Allergy Academies to try to avoid the same problems faced in 2008. Data here presented consists in the primary step of the preparation strategy supported by a solid WHO ICD and academic collaboration. The mapping procedure demonstrated that 87% of ICD-10-CM terms could be captured in the ICD-11 beta draft framework,⁹ underlying stability and meaningful location in the new frame. We also have demonstrated that most of the conditions, which did not reach a correspondence, were due to updates in the classification as expected in the revision processes. In practice, by consolidating

TABLE I. Cross-linking and categorization of ICD-10-CM allergic and hypersensitivity conditions to the ICD-11

Allergic and hypersensitivity conditions related terms into the ICD-10-CM (270 terms)	Correspondence to the Allergic and Hypersensitivity conditions chapter of the ICD-11				
	Precoordination	Postcoordination	Index to the ICD-11 Foundation	No code fit properly	No correspondence
Diseases of the eye and adnexa (42 terms)	13 (31.0)	24 (57.0)	0 (0.0)	0 (0.0)	5 (12.0)
Diseases of the respiratory system (85 terms)	62 (73.0)	20 (23.6)	1 (1.0)	0	2 (2.4)
Diseases of the digestive system (5 terms)	2 (40.0)	1 (20.0)	0 (0.0)	2 (40.0)	0 (0.0)
Diseases of the skin and subcutaneous tissue (82 terms)	57 (69.5)	2 (2.5)	7 (8.5)	5 (6.0)	11 (13.5)
Injury, poisoning, and certain other consequences of external causes (24 terms)	10 (42.0)	11 (46.0)	0 (0.0)	0 (0.0)	3 (12.5)
Factors influencing health status and contact with health services (32 terms)	3 (9.4)	11 (34.4)	11 (34.4)	1 (3.1)	6 (18.7)

Values represent n (%).

ICD Revision No.	Year of conference when adopted	ICD, Clinical Modification (CM)	Year in use in the U.S.
First	1900		1900-1909
Second	1909		1910-1920
Third	1920		1921-1929
Fourth	1929		1930-1938
Fifth	1938		1939-1948
Sixth	1948		1949-1957
Seventh	1955		1958-1967
Eighth	1965	ICDA-8 H-ICDA-1 H-ICDA-2	1968-1978
Ninth	1975	ICD-9-CM	1979-1998 (1998: decision for keeping the ICD-9-CM)
Tenth	1989	ICD-10-CM ICD-10-AM ICD-10-CA ICD-10-GM ICD-10-SGB	2015-

FIGURE 1. Historic background of the ICD. *AM*, Australian modification; *CA*, Canadian modification; *CM*, clinical modification; *GM*, German modification; *H*, hospital adaptation; *ICDA*, United States modification; *SGB*, German WHO derived version.

all allergic conditions into a single ICD-11 section, all the relevant codes will be able to be used to represent mortality and morbidity outcomes. Our aim was to facilitate the use of such classification and codes by all relevant personnel. Although this article presented some technical aspects, we intended to introduce and simplify them with the aim of strengthening awareness and familiarizing the allergy community ICD end users of the process, preparing them to the new coding procedures, whenever it is available.

As main limitations, (1) the absence of a digital format of ICD-10-CM may have allowed missed conditions. However, the

results presented succeeded in providing a baseline to the expected transition and (2) there is a risk of having the classification tuned up until the end of the revision process because of regular ICD-11 beta draft platform updates.

The presented results were able to draft the first map and track the ICD-10-CM to ICD-11 bridge for allergic and hypersensitivity conditions. We strongly believe that our findings constitute a key step forward for a softer transition of the ICD-10-CM allergic and hypersensitivity conditions to the ICD-11, supporting the WHO and US colleagues in this process as well as ensuring the best practice of allergy worldwide.

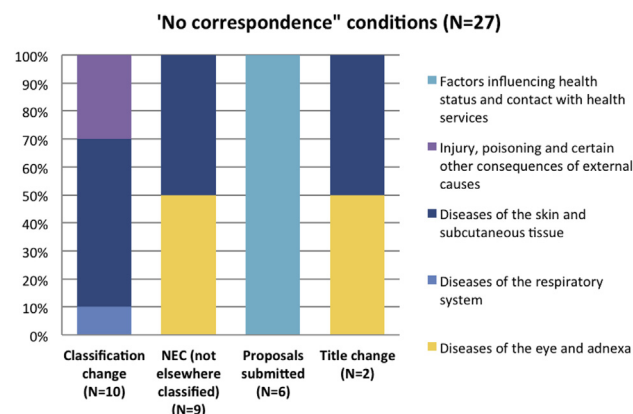


FIGURE 2. Reasons for no correspondence of ICD-10-CM allergic and hypersensitivity conditions to ICD-11.

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