

# Assessing ICD-11's Potential for Improved Mental Health Reporting in Canada



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## Abstract

As part of CIHI's assessment of ICD-11's fitness for use in Canada, a comparison project created a draft crosswalk of DSM-5 clinical concepts to ICD-11's "Chapter 06: Mental, behavioural or neurodevelopmental disorders." With ICD-11's new structure and updated clinical content, the data derived from DSM-5 and ICD-11 will be much more comparable.

## Background and objectives

The Canadian Institute for Health Information (CIHI) reports on mental health using data from different sources coded with the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada* (ICD-10-CA) and the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5). For pan-Canadian reporting, conversion algorithms are needed to ensure comparability of ICD-10-CA and DSM-5 information.

CIHI is assessing the implications of implementing ICD-11 in Canada. This project contributes to the assessment by comparing the content in ICD-11's "Chapter 06: Mental, behavioural or neurodevelopmental disorders" with that in DSM-5.

## Approach

In Phase 1, a sample of DSM-5 clinical concepts were assessed for comparability in ICD-11. DSM-5 concepts were mapped (using DSM-5 concept titles) to ICD-11 target codes and titles, with the specificity of the match assigned an outcome type as follows:

- **Conceptual match:** An exact match at the ICD-11 stem code level (equivalent)
- **Less specificity:** An ICD-11 code that is less specific than the DSM-5 concept at the stem code level
- **Greater specificity:** An ICD-11 code that is more specific than the DSM-5 concept at the stem code level
- **No match:** No match found in a single or multiple ICD-11 codes

In Phase 2, for cases where the ICD-11 code had less specificity than the DSM-5 concept, the concept was assessed to determine whether combining the target stem code with additional ICD-11 codes via post-coordination could improve the outcome type. Each concept was then assigned one of the following outcome types after post-coordination:

- **Exact specificity match:** An exact match to the DSM-5 concept after post-coordination
- **Partial specificity match:** Less specific than the DSM-5 concept after post-coordination
- **Not applicable:** Not applicable to post-coordination of this concept

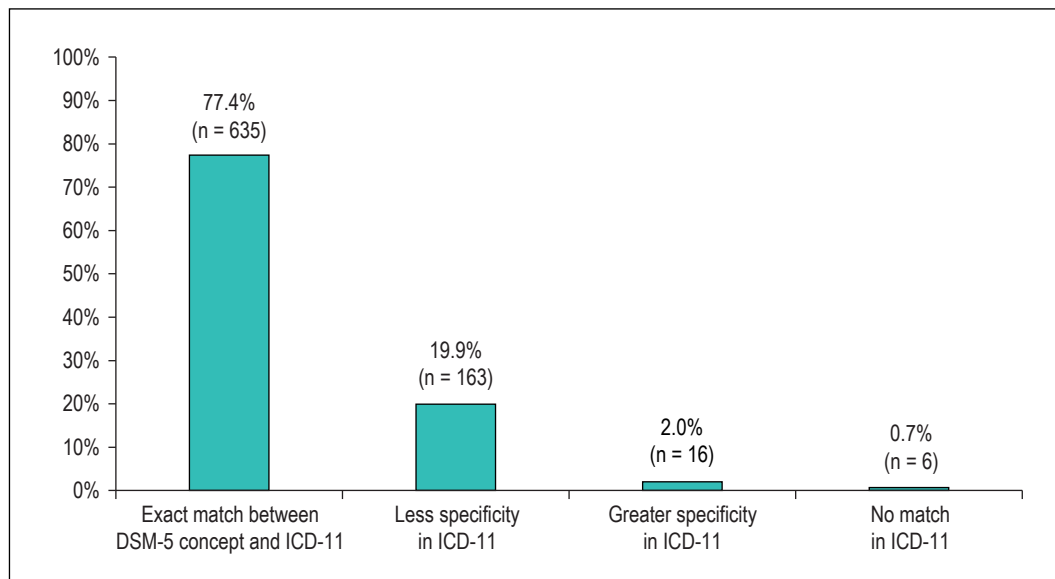
Reliability was assessed through dual mapping and validation during both phases of the project. When there was no map agreement and/or outcome type agreement, each concept was assessed and discussed for resolution.

## Results

Of the 820 DSM-5 clinical concepts assessed, 77.4% (n = 635) were found to be an equivalent conceptual match with ICD-11 when mapped to a single or combination of ICD-11 codes. 19.9% (n = 163) of DSM-5 concepts had less specificity in ICD-11 when mapped to a single or combination of ICD-11 codes, representing a loss of detail. Conversely, 2% (n = 16) of DSM-5 concepts had greater specificity in ICD-11. For the remaining 0.7% (n = 6) of DSM-5 concepts, there was no match, meaning that the DSM-5 concept could not be found in ICD-11.

Of the 77.4% (n = 635) of DSM-5 concepts that were an exact match, 48.3% (n = 396) were a match to a single ICD-11 code, while 37.6% (n = 239) were a match when multiple stem and/or extension codes were combined with the target ICD-11 code. Of the 163 (19.9%) DSM-5 concepts with less specificity in ICD-11, 51.5% (n = 84) resulted in a partial match when multiple stem and/or extension codes were assigned, and no additional ICD-11 codes could be added for 48.4% (n = 79) concepts.

**Figure** Comparison of 1 DSM-5 concept with ICD-11 codes (single target or multiple ICD-11 codes), by outcome type



Outcome type	Number	Percentage
Exact match between DSM-5 concept and ICD-11	635	77.4%
Less specificity in ICD-11	163	19.9%
Greater specificity in ICD-11	16	2.0%
No match in ICD-11	6	0.7%

**Table** Examples of a comparison of DSM-5 concepts with ICD-11 target stem codes

Outcome type	DSM-5 concept	ICD-11 target stem code and title	ICD-11 post-coordination (target stem and additional stem codes and/or extension codes)
Exact match at ICD-11 stem code level (equivalent)	Adjustment disorder unspecified	<b>6B43</b> Adjustment disorder	Not applicable
Less specificity in ICD-11 at stem code level	Opioid-induced anxiety disorder, with mild use disorder	<b>6C43.71</b> Opioid-induced anxiety disorder	<b>6C43.71/6C43.1Z</b> <b>6C43.71</b> Opioid-induced anxiety disorder <b>6C43.1Z</b> Harmful pattern of use of opioids, unspecified
Greater specificity in ICD-11 at stem code level	Bipolar I disorder, current or most recent episode depressed, with psychotic features	<b>6A60.5</b> Bipolar type I disorder, current episode depressive, moderate with psychotic symptoms	Not applicable
No match in ICD-11 (no map possible at single stem code level)	Personal history of military deployment	Not applicable	Not applicable

## Limitations

These findings represent preliminary results; further analysis and validation are required as new ICD-11 updates are released. During the project, there were challenges with the assignment of outcome type and post-coordination, and in some cases, clinical input was required. Updates to the ICD-11 implementation browser are in progress, including recently added definitions, inclusions and exclusions, and post-coordination options at the code level. There are plans for further enhancements that will continue to evolve the coding tool and support code assignment.

## Conclusions

Based on this sample, we found that only 20.6% (n = 169) of DSM-5 concepts have less specificity or no equivalency in ICD-11. This level of alignment is sufficient for pan-Canadian reporting purposes, and it suggests that the current model of conversion algorithms may no longer be required to ensure comparability. With ICD-11's new structure and updated clinical content, DSM-5 and ICD-11 information will be much more comparable.

Better coding can support improved capture of mental health data for research and for policy- and decision-making in Canada. With the improved clinical content coverage of ICD-11, there will be potential opportunities for enhanced reporting of mental health data. The results of this project will contribute to the preparation for ICD-11 implementation in Canada.

## Works cited

American Psychiatric Association. [\*Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition\*](#). 2013.

World Health Organization. [\*International Classification of Diseases, Eleventh Revision\*](#). 2019/2021.



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