

# Changes from *ICD-10* to *ICD-11* and future directions in psychiatric classification

Wolfgang Gaebel, MD, PhD; Johannes Stricker, MSc; Ariane Kerst, MD

This article provides a brief overview of the changes from *ICD-10* to *ICD-11* regarding the classification of mental, behavioral, or neurodevelopmental disorders. These changes include a new chapter structure, new diagnostic categories, changes in diagnostic criteria, and steps towards dimensionality. Additionally, we review evaluative field studies of *ICD-11*, which provide preliminary evidence for higher reliability and clinical utility of *ICD-11* compared with *ICD-10*. Despite the extensive revision process, changes from *ICD-10* to *ICD-11* were relatively modest in that both systems are categorical, classifying mental phenomena based on self-reported or clinically observable symptoms. Other recent approaches to psychiatric nosology and classification (eg, neurobiology-based or hierarchical) are discussed. To meet the needs of different user groups, we propose expanding the stepwise approach to diagnosis introduced for some diagnostic categories in *ICD-11*, which includes categorical and dimensional elements.

© 2019, AICH - Servier Group

*Dialogues Clin Neurosci.* 2020;22(1):7-15. doi:10.31887/DCNS.2020.22.1/wgaebel

**Keywords:** International Classification of Diseases; *ICD-11*; diagnosis; mental; behavioral or neurodevelopmental disorder; diagnostic guideline

## Introduction

The development of the Mental, Behavioral or Neurodevelopmental Disorders (MBND) chapter of the *ICD-11* was the largest and most participative process in the history of mental health disorder classification. The three major aims for this process were global applicability, scientific validity, and clinical utility.<sup>1,2</sup> In 2007, the WHO Department of Mental Health and Substance Abuse assigned the International Advisory Group for the Revision of the *ICD-10* Mental and Behavioural Disorders.<sup>3</sup> This advisory group, together with the WHO, established working groups in which experts from all continents reviewed the available evidence and proposed changes to specific parts of the *ICD-10* Mental and Behavioural Disorders chapter. These proposals were discussed in a collaborative process with

various stakeholders (eg, mental health professionals and users of mental health services), resulting in a beta-draft of the *ICD-11* MBND chapter. From 2015, the WHO made the *ICD-11* MBND beta draft publicly available on the internet for review and comments.<sup>4</sup> Additionally, feedback from mental health practitioners was obtained via formative field studies.<sup>5,6</sup> In May 2019, the 72nd World Health Assembly voted to adopt *ICD-11*, which will be implemented by the WHO member states from January 1, 2022.

In this article, we first present a brief summary of changes regarding the classification of mental, behavioral, or neurodevelopmental disorders from *ICD-10* to *ICD-11*. In this summary, we review, with examples, changes in the chapter structure, new diagnostic categories, changes in diagnostic criteria and dimensional approaches in *ICD-11*. Second, we

**Author affiliations:** Department of Psychiatry and Psychotherapy, Medical Faculty, LVR-Klinikum Düsseldorf, Heinrich-Heine-University, Düsseldorf, Germany; WHO Collaborating Centre for Quality Assurance and Empowerment in Mental Health, Düsseldorf, Germany. **Address for correspondence:** Prof Dr Wolfgang Gaebel, Department of Psychiatry and Psychotherapy, Medical Faculty, Heinrich-Heine-University, LVR-Klinikum Düsseldorf, WHO Collaborating Centre for Quality Assurance and Empowerment in Mental Health, Bergische Landstr. 2, 40629 Düsseldorf, Germany (email: wolfgang.gaebel@uni-duesseldorf.de)

# State of the art

Changes from *ICD-10* to *ICD-11* and future directions - Gaebel et al

review findings from a series of field studies evaluating how well the *ICD-11* functions when applied by health professionals. Third, we discuss new approaches in psychiatric nosology and we propose expanding dimensional additions to categorical diagnoses to a broader range of diagnostic categories in *ICD-11*.

## Changes from *ICD-10* to *ICD-11*

### Chapter structure

The *ICD-11* MBND chapter contains 21 disorder groupings compared with 11 disorder groupings in *ICD-10*. *Table 1* displays an overview of the disorder groupings in *ICD-10* and *ICD-11*. Sleep-wake disorders and conditions related to sexual health were separated from the *ICD-11* MBND chapter and cross-listed from the new sleep-wake disorders and conditions related to sexual health chapters. Principles for ordering disorder groupings in *ICD-11* were shared etiology, pathophysiology, and phenomenology. Additionally, the aim of the WHO and American Psychiatric Association to harmonize the structure of *ICD-11* and *DSM-5* influenced the chapter structure of *ICD-11*.<sup>2</sup> A central difference between *ICD-11* and *ICD-10* regarding chapter structure is the omission of a separate disorder grouping for mental and behavioral disorders with onset during childhood and adolescence. The disorders previously pooled in this grouping were moved to other disorder groupings in the *ICD-11* MBND chapter, highlighting developmental continuity across the lifespan.<sup>1</sup>

### New diagnostic categories in *ICD-11* and changes in diagnostic criteria

Several diagnostic categories were added in *ICD-11*. *Table 2* displays brief descriptions of these new diagnostic categories. The introduction of some new diagnostic categories in *ICD-11* has been controversially discussed.<sup>7,8,9</sup> For instance, there were concerns over the pathologization of grief, computer gaming, and compulsive sexual behavior.

In addition to the introduction of new diagnostic categories, there were also changes in the diagnostic criteria for previously existing diagnoses. For example, the diagnostic threshold for Post-Traumatic Stress Disorder (PTSD) was

raised in *ICD-11* by defining three core symptoms that should be present in all cases: re-experiencing the traumatic event as vivid intrusive memories, flashbacks, or nightmares; avoidance of thoughts and memories of the event, situations or people reminiscent of the event; persistent perceptions of heightened current threat. There is some evidence indicating that the prevalence of *ICD-11* PTSD is lower than the prevalence of *ICD-10* PTSD,<sup>10,11</sup> whereby the *ICD-11* criteria seem to identify the more severe cases of PTSD.<sup>12</sup> Regarding the prevalence of new diagnostic categories, preliminary evidence suggests that the prevalence of the *ICD-11* Prolonged Grief Disorder might be almost three-fold higher

than the prevalence of *DSM-5* Persistent Complex Bereavement Disorder (18.0% compared with 6.4%).<sup>13</sup> In sum, it is unclear how the introduction of *ICD-11* will influence the prevalence rate of mental disorders as a whole. To prevent pathologization of normal behavior, the *ICD-11* Clinical Descriptions and Diagnostic Guidelines (CDDG), which describe the main clinical features for each disorder, focus on defining the boundary between disorders and variation of normal human functioning.

### Dimensional approaches in a categorical system

Current classification systems of mental disorders are based on a polythetic categorical approach. In these classification systems, a list of characteristic symptoms is provided for each diagnosis. The presence of a, usually predefined, number of symptoms from this list is sufficient to assign the respective categorical diagnosis.<sup>14</sup> Categorical diagnoses are required to justify treatment in most countries, to communicate efficiently about mental disorders, and to collect epidemiological data. Additionally, a categorical diagnosis may aid in the decision whether to treat or not to treat a patient.<sup>15</sup> However, categorical classification of mental disorders is associated with various limitations including large within-category heterogeneity, comorbidity, and difficulties in representing subthreshold symptomatology.<sup>16</sup>

In a dimensional approach, the severity of a symptom or the degree of disturbance of a specific psychological function is rated on a quantitative dimension. There is a growing under-

Expanding the stepwise approach to diagnosis introduced for some diagnostic categories in *ICD-11* may help to meet the needs of different user groups of the ICD

# State of the art

Changes from *ICD-10* to *ICD-11* and future directions - *Gaebel et al*

<b>ICD-10 F00-F99 Mental and Behavioural Disorders chapter</b>	<i>ICD-11</i> 06 Mental, Behavioural or Neurodevelopmental Disorders chapter (and relevant disorder groupings from other <i>ICD-11</i> chapters)
<b>F00-F09 Organic, including symptomatic, mental disorders</b>	6D70-6E0Z Neurocognitive disorders (8A20-8A2Z Disorders with neurocognitive impairment as a major feature)
<b>F10-F19 Mental and Behavioural disorders due to psychoactive substance use</b>	6C40-6C5Z Disorders due to substance use or addictive behaviors
<b>F20-F29 Schizophrenia, schizotypal and delusional disorders</b>	6A20-6A2Z Schizophrenia or other primary psychotic disorders 6A40-6A4Z Catatonia
<b>F30-F39 Mood (affective) disorders</b>	6A60-6A8Z Mood disorders
<b>F40-F48 Neurotic, stress-related and somatoform disorders</b>	6B00-6B0Z Anxiety or fear-related disorders 6B20-6B2Z Obsessive-compulsive or related disorders 6B40-6B4Z Disorders specifically associated with stress 6B60-6B6Z Dissociative disorders 6C20-6C2Z Disorders of bodily distress or bodily experience
<b>F50-F59 Behavioural syndromes associated with physiological disturbances and physical factors</b>	6B80-6B8Z Feeding or eating disorders 6E20-6E2Z Mental or Behavioural disorders associated with pregnancy, childbirth, or the puerperium 6E40-6E40Z Psychological or Behavioural factors affecting disorders or diseases classified elsewhere
<b>F60-F69 Disorders of adult personality and behaviour</b>	6C70-6C7Z Impulse control disorders 6D10-6D11.5 Personality disorders and related traits 6D30-6D3Z Paraphilic disorders 6D50-6D5Z Factitious disorders (7A00-7A0Z Insomnia disorders) (7A20-7A2Z Hypersomnolence disorders) (7A60-7A6Z Circadian rhythm sleep-wake disorders) (HA60-HA6Z Gender incongruence)
<b>F70-F79 Mental retardation</b>	6A00-6A00.Z Disorders of intellectual development
<b>F80-F89 Disorders of psychological development</b>	6A00-6A06.Z Neurodevelopmental disorders
<b>F90-F98 Behavioural and emotional disorders with onset usually occurring in child-hood and adolescence</b>	6C00-6C0Z Elimination disorders 6C90-6C9Z Disruptive behavioural or dissocial disorders
<b>F99 Unspecified mental disorder</b>	6E60-6E6Z Secondary mental or Behavioural syndromes associated with disorders or diseases classified elsewhere

**Table I.** Disorder groupings in the *ICD-11* Mental, Behavioural or Neurodevelopmental Disorders chapter and in the *ICD-10* Mental and Behavioural Disorders chapter (and relevant disorder groupings from other *ICD-11* chapters).

# State of the art

Changes from *ICD-10* to *ICD-11* and future directions - *Gaebel et al*

DIAGNOSIS	DESCRIPTION
Catatonia	A syndrome of primarily psychomotor disturbances (no longer regarded as a subtype of Schizophrenia) characterized by the occurrence of several different symptoms including stupor; catalepsy; waxy flexibility; mutism; negativism; posturing; mannerisms; stereotypies; psychomotor agitation; grimacing; echolalia; and echopraxia
Bipolar Type II Disorder	Defined by the occurrence of at least one hypomanic episode and at least one depressive episode
Body Dysmorphic Disorder	Characterized by persistent preoccupation with at least one defect or flaw in one's appearance, unnoticeable or only slightly noticeable to others
Olfactory Reference Disorder	Characterized by persistent preoccupation with the belief that one is emitting a perceived foul or offensive body odor or breath, unnoticeable or only slightly noticeable to others
Hoarding Disorder	Characterized by accumulation of possessions due to excessive acquisition of possession or difficulties discarding them, regardless of their actual value
Excoriation Disorder	Characterized by recurrent picking of one's skin leading to skin lesions, accompanied by unsuccessful attempts to decrease or stop the behavior.
Complex PTSD	Develops following exposure to a threatening or horrific event (or series of events) and is characterized by severe and persistent disturbances in affect regulation, a negative self-concept and difficulties in sustaining relationships in addition to the three core features of PTSD (ie, re-experiencing the traumatic event in the present, avoidance of thoughts and memories of the event, persistent perceptions of heightened current threat)
Prolonged Grief Disorder	Abnormally persistent, pervasive and disabling response to bereavement
Binge Eating Disorder	Characterized by frequent and recurrent episodes of binge eating
Avoidant/Restrictive Food Intake Disorder	Characterized by abnormal eating or feeding behaviors resulting in the intake of an insufficient quantity or variety of food to meet adequate energy or nutritional requirements
Body Integrity Dysphoria	Characterized by an intense and persistent desire to become physically disabled in a significant way with onset in childhood or early adolescence
Gaming Disorder	A pattern of persistent or recurrent gaming behaviour ("video gaming")
Compulsive Sexual Behaviour Disorder	A persistent pattern of failure to control intense, repetitive sexual impulses or urges leading to repetitive sexual behaviour
Intermittent Explosive Disorder	Characterized by repeated brief episodes of verbal or physical aggression or destruction of property representing a failure to control aggressive impulses
Premenstrual Dysphoric Disorder	Characterized by a pattern of mood symptoms (eg, depressed mood), somatic symptoms (eg, overeating), or cognitive symptoms (eg, forgetfulness) that begin several days before the onset of menses, start to improve within a few days after the onset of menses, and then become minimal or absent within 1 week following the onset of menses

**Table II.** Overview of new diagnostic categories in the Mental, Behavioural or Neurodevelopmental Disorders chapter in *ICD-11*. PTSD, post-traumatic stress disorder.

# State of the art

Changes from *ICD-10* to *ICD-11* and future directions - Gaebel et al

standing that psychopathology is continuously graded in severity.<sup>17,18</sup> Dimensional approaches represent the severity of specific symptoms and psychological dysfunctions, including subthreshold symptomatology. A disadvantage of dimensional classification (eg, in the form of diagnostic profiles), however, is its increased complexity and, therefore, reduced clinical utility compared with categorical classification.

For *ICD-11*, the categorical approach of *ICD-10* was largely maintained. Yet, dimensional expansions regarding severity, course, and specific symptoms were added for some diagnoses. These dimensional expansions of categorical diagnoses mirror clinical practice, in which dimensional information (eg, severity of illness) is regularly taken into consideration for selecting treatments.<sup>19</sup> A large shift towards dimensionality concerned personality disorders.<sup>20</sup> The division of personality disorders into discrete categories in *ICD-10* is not empirically based.<sup>21</sup> Among other problems, a large proportion of patients simultaneously fulfilled the criteria for multiple personality disorders.<sup>22,23</sup> Against this background, the different personality disorders in *ICD-10* were replaced with a single personality disorder diagnosis in *ICD-11* which is characterized by problems in functioning of aspects of the self (eg, identity) and/or interpersonal dysfunction (eg, managing conflict in relationships). The *ICD-11* personality disorder diagnosis is further differentiated according to severity into mild, moderate, and severe. The diagnosis may optionally be specified by the presence of one or multiple maladaptive personality traits: Negative affectivity, detachment, dissociativity, disinhibition, anankastia and Borderline pattern. Whereas a different, more complex, dimensional approach to personality disorders was deemed as not feasible in the development of *DSM-5*,<sup>24,25</sup> there was a strong focus on clinical utility and simplicity in the revision of the personality disorders grouping in *ICD-11*.

Another shift towards dimensionality concerned depressive episodes. In *ICD-11*, depressive episodes in depressive or bipolar disorders may be described in detail by using qualifiers indicating the presence of specific symptoms: the melancholic features qualifier, the anxiety symptoms qualifier; the panic attacks qualifiers, and the seasonal pattern qualifier. Additionally, depressive episodes can be described according to severity (mild, moderate, or severe) and remission status (in partial or in full remission). For moderate

and severe depressive episodes, the presence of psychotic symptoms may also be indicated.

Also for the Schizophrenia or Other Primary Psychotic Disorders grouping in *ICD-11*, dimensional symptom specifiers and course specifiers were added.<sup>1,26</sup> Symptom specifiers describe the current severity of symptoms in six domains: positive symptoms, negative symptoms, depressive symptoms, manic symptoms, psychomotor symptoms, and cognitive symptoms. The severity of each of these symptoms is rated on a 4-point scale ranging from “not present” to “present and severe.” These symptom qualifiers may be used for any diagnosis from the Schizophrenia or Other Primary Psychotic Disorders grouping. Thus, mental health professionals may compliment categorical diagnoses from this disorder grouping by a profile of specific symptoms that conveys additional information regarding symptomatology. The course qualifiers for the Schizophrenia or Other Primary Psychotic Disorders grouping contain two components, allowing characterization of the longitudinal course. The first component (episodicity) differentiates between first episode, multiple episodes or continuous course. The second component concerns the cross-sectional evaluation of the acuity of the symptoms and allows differentiating the current clinical status: currently symptomatic, partial remission, full remission.

## A review of the *ICD-11* evaluative field studies

A series of field studies evaluated how well the *ICD-11* CDDG function when applied by health professionals. These evaluative field studies were conducted either with real patients (ie, ecological field studies) or online with prototypical patient descriptions (ie, online vignette-based field studies).<sup>27</sup> A large ecological field study of the *ICD-11* MBND chapter examined the reliability and clinical utility of 16 *ICD-11* diagnoses in a sample of 339 clinicians from 13 countries.<sup>28,29</sup> When the *ICD-11* diagnostic guidelines were applied to 1806 patients, interrater reliability was excellent for some diagnoses (eg, for social anxiety disorder), but improvable for others (eg, for dysthymic disorder). On average, the reliability of the *ICD-11* CDDG was higher compared with previously reported estimates of the *ICD-10* CDDG.<sup>28</sup> Additionally, clinicians' evaluations of clinical utility were positive: A large majority of clinicians (82.5% to 83.9%) perceived the *ICD-11* CDDG as quite or extremely easy to use, accurate, clear, and understandable.



# State of the art

Changes from *ICD-10* to *ICD-11* and future directions - Gaebel et al

However, utility ratings varied between countries.<sup>29</sup> In a different ecological field study with 23 practitioners from Mexico, interrater reliability was high for psychotic disorders, moderate for stress-related and mood disorders, and small for anxiety and fear-related disorders.<sup>30</sup>

A comprehensive online vignette-based field study investigated the diagnostic accuracy and clinical utility of the *ICD-11* CDDG compared with the *ICD-10* CDDG in a sample of 928 clinicians from all WHO regions.<sup>31</sup> Diagnostic accuracy, time required to come to a diagnosis, and perceived clinical utility (ie, ease of use, goodness of fit, clarity) were more favorable for *ICD-11* compared with *ICD-10*. However, advantages of the *ICD-11* over the *ICD-10* were largely limited to new diagnostic categories in *ICD-11*. After excluding all vignettes that pertained to new diagnostic categories in *ICD-11*, there was no significant difference in diagnostic accuracy, goodness of fit, clarity, or time required for diagnosis, but the perceived ease of use was significantly higher for *ICD-11* compared with *ICD-10*. For feeding and eating disorders, a vignette-based online field study with 2288 practitioners found higher diagnostic accuracy and perceived clinical utility of *ICD-11* compared with *ICD-10*.<sup>32</sup> Also for Schizoaffective Disorder, a vignette-based online field study with 873 practitioners showed small improvements in diagnostic accuracy using *ICD-11* compared with *ICD-10*.<sup>33</sup> A different online vignette-based field study with 1738 practitioners from 76 countries revealed a higher diagnostic accuracy of practitioners diagnosing based on *ICD-11* compared with practitioners diagnosing based on *ICD-10* for disorders specifically associated with stress.<sup>34</sup> Additionally, in a web-based field study, a sample of 163 mental health professionals rated the *ICD-11* classification of personality disorders (including three levels of severity and trait qualifiers) as more useful regarding its utility for treatment planning, communicating with patients, comprehensiveness, and ease of use compared with the *ICD-10* classification of personality disorders.<sup>35</sup>

In sum, the results from the evaluative field studies paint a positive picture of the *ICD-11* MBND chapter. However, there are different limitations of evaluative field studies that make overly enthusiastic appraisals of *ICD-11* premature. First, the samples could be biased in such a way that practitioners who are positive towards *ICD-11* are more likely to participate in *ICD-11* field studies. This could be particularly the case for online field studies for which participants

had to register on their own initiative. Second, individuals' knowledge that they participate in a field study modifies their behavior.<sup>36</sup> Thus, behavior in *ICD-11* evaluative field studies might not adequately reflect diagnostic decision making in routine care. Third, there is some concern over the artificiality of vignette studies. Because vignettes describe prototypic cases, they might not accurately reflect the complexity of real-life situations.<sup>37</sup> In summary, whereas the field studies give first indications regarding diagnostic accuracy and clinical utility, further ecological field studies are needed to reveal how well the *ICD-11* works when applied by clinical practitioners under regular conditions.

## Critical evaluation and future directions

In the development of the *ICD-11* MBND chapter, important steps have been taken to ensure clinical utility, global applicability, and scientific validity. There were also notable steps towards dimensionality regarding symptom severity and time course. Yet, one might argue that changes from *ICD-10* to *ICD-11* were relatively modest in that both systems are categorical, classifying mental phenomena based on self-reported or clinically observable symptoms. In this paragraph, we discuss different new approaches to psychiatric classification and nosology that might inform future revisions of the ICD.

### New approaches in diagnostic classification

Various different approaches to advance psychiatric nosology have been introduced over the last years. Of these approaches, the National Institute of Mental Health's Research Domain Criteria (RDoC) project<sup>38</sup> has received the most attention. RDoC is a research framework for the investigation of mental disorders that is not intended for immediate practical clinical use. The aim of RDoC is to provide a biologically informed framework for understanding mental disorders. The RDoC matrix distinguishes six domains of functioning (negative valence systems, positive valence systems, cognitive systems, social processes, arousal and regulatory systems, and sensorimotor systems) with various subconstructs and eight units of analysis: genes, molecules, cells, circuits, physiology, behavior, self-report, and paradigms. Varying degrees of functioning and dysfunctions in general psychological and biological systems may be described within this matrix. However, there is one major limitation: The RDoC matrix is too complex to guide diagnosis in clinical practice.

# State of the art

Changes from *ICD-10* to *ICD-11* and future directions - Gaebel et al

Neither the structure of the *ICD-11* MBND chapter nor the structure of *DSM-5* are based on neurobiology. Because of the large degree of biological heterogeneity within diagnostic categories of current classification<sup>39</sup> and difficulties distinguishing some diagnostic categories genetically<sup>40</sup> and neurobiologically,<sup>41</sup> different approaches have been proposed to shift diagnostic boundaries in a way that biologically more homogeneous subgroups are formed. One such approach is “reverse nosology,” which suggests redefining diagnostic categories based on their molecular, cellular, and circuit basis.<sup>42</sup> In this approach, patients that display a similar neurobiology (eg, similar brain activation patterns) are grouped in the same diagnostic category, although the self-reported symptoms or observable psychopathology may be fundamentally different. Thus, clinical practitioners would be no longer able to diagnose based on their clinical impression and self-report. Additionally, there would be large difficulties in communicating about a diagnosis because it might contain information regarding neurobiology, but only little information regarding observable psychopathology.

A different group of approaches aims to form biologically more homogeneous subgroups within existing diagnostic categories. For example, the Systems Neuroscience of Psychosis (SyNoPsis) project<sup>43</sup> aims to link clinical manifestations of Schizophrenia onto specific brain systems. SyNoPsis differentiates three behavioral domains of Schizophrenia symptoms that match the function of three higher-order corticobasal brain systems: Language (associative loop), affect (limbic loop), and motor behavior (motor loop). Within the SyNoPsis project, also a psychometric instrument that assesses symptoms from these three behavioral domains has been developed which is used to identify clinically and neurobiologically homogeneous subgroups of schizophrenia patients (Bern Psychopathology Scale<sup>44</sup>). Biologically defining subgroups of patients might then improve care by tailored treatment selection and earlier detection. However, thus far, the connection between neurobiology and psychopathology is not sufficiently understood to establish a diagnostic system on it.

A third approach to psychiatric nosology emphasizes the hierarchical structure of psychopathology. For example, the Hierarchical Taxonomy of Psychopathology (HiTOP<sup>45</sup>) suggests that arbitrary boundaries between diagnostic categories limit the reliability and validity of traditional taxon-

omies. This taxonomy is based on dimensional assessments of psychopathology and differentiates different levels of psychopathology with specific symptoms (eg, appetite loss) at the bottom and broader spectra or super-spectra as broader constellations of syndromes (eg, internalizing and externalizing spectra) at the top of the hierarchy. Factor analytic evidence also suggests the presence of a general psychopathology factor that explains the co-occurrence of symptoms across various disorders.<sup>46,47</sup> This general psychopathology factor describes individuals' propensity to develop any form of psychopathology and is related to increased life impairment.<sup>46</sup> For clinical practice, however, scores on higher order psychopathology dimensions are difficult to interpret leading to a low clinical utility of hierarchical approaches. Yet, dimensional information regarding specific aspects of psychological dysfunctions might aid in guiding interventions.

## **Reconciling the needs of different user groups: a stepwise approach**

A potential problem of current categorical classification systems is that they aim to serve many purposes for various different groups of users. For example, primary care practitioners need well communicable, comprehensible diagnostic categories. Researchers, on the other hand, often prefer detailed dimensional assessments.<sup>15</sup> Whereas complex approaches like RDoC are suitable for research contexts, the categorical approach in *ICD-11* provides a higher clinical utility.

To ensure that future versions of the ICD meet the needs of different user groups, a stepwise procedure to diagnosis might be appropriate. In this stepwise approach, each diagnostic step describes a patient's psychopathology with increasing detail. In the first diagnostic step, a patient's symptoms may be categorized into broad diagnostic categories. Regarding level of detail, this step might be similar to the *ICD-10* Primary Care Version for Recognition and Management of Mental Disorders. On this diagnostic level, patients that experience a level of distress requiring specialized treatment and further diagnostics may be identified. In the second diagnostic step, more specific differential diagnosis might be made. For practitioners in specialized mental health facilities and ambulatory care, the *ICD-11* CDDG provide the optimal level of detail. The CDDG contain detailed descriptions regarding the core symptoms of disorders, differential diagnosis, and boundaries with normal human functioning.

# State of the art

Changes from *ICD-10* to *ICD-11* and future directions - Gaebel et al

In specialized treatment settings and for research, additional dimensional assessments are required to more precisely describe psychopathology. Thus, a third diagnostic step might enrich categorical diagnoses with dimensional assessments, combining the advantages of both approaches (see the *ICD-11* Schizophrenia or Other Primary Psychotic Disorders grouping). In this diagnostic step, each categorical diagnosis could be complemented with a symptom profile that provides specific information regarding domains of psychological malfunctioning. Based on this stepwise approach, rapid communication will be possible based on diagnostic categories and dimensional assessments will provide more nuanced profiles for contexts in which detailed dimensional information is needed beyond the overall degree of severity to inform treatment (eg, psychotherapy) and for research.<sup>17</sup> Importantly, the use of nuanced and partly dimensional descriptions of psychopathology is not new to psychiatric treatment: There are various dimensional psychometric scales used in psychiatric hospitals (eg, Beck Depression Inventory-II<sup>48</sup>; Positive and Negative Symptoms Scale<sup>49</sup>) and doctor's letters frequently communicate differentiated clinical assessments.

Thus far, steps towards enriching diagnostic categories with symptom profiles was limited to some disorder groupings in *ICD-11* (eg, Personality disorders and related traits, mood disorders, schizophrenia or other primary psychotic disor-

ders). Yet, there is large potential for enriching further categorical diagnoses with symptom profiles. For example, it has been suggested to assess all symptoms of substance use disorders in *DSM-5* on (at least) a 3-point scale.<sup>50</sup>

## Summary

The development of the *ICD-11* MBND chapter was characterized by a focus on clinical utility, global applicability, and scientific validity. Thus far, mental health professionals' evaluations of the *ICD-11* are relatively positive. Changes from *ICD-10* to *ICD-11* include the introduction of new diagnoses, the refinement of diagnostic criteria of existing diagnoses, and notable steps in the direction of dimensionality for some diagnoses. However, there was no paradigm shift from *ICD-10* to *ICD-11*. There are promising new approaches to psychiatric nosology, which, however, have a low clinical utility. We argue in favor of a stepwise approach to diagnosis that retains categorical classification to ensure clinical utility,<sup>51</sup> but allows more detailed dimensional assessments of psychopathology to inform treatment in specialized settings and research. Expanding the stepwise approach to diagnosis introduced for some diagnostic categories in *ICD-11* may help to meet the needs of different user groups of the ICD. ■

**Acknowledgments/Disclosures:** The authors declare that they have no conflict of interest.

## References

1. Gaebel W, Zielasek J, Reed GM. Mental and behavioural disorders in the ICD-11: Concepts, methodologies, and current status. *Psychiatr Pol*. 2017;51(2):169-195.
2. Reed GM, First MB, Kogan CS, et al. Innovations and changes in the ICD-11 classification of mental, behavioural and neurodevelopmental disorders. *World Psychiatry*. 2019;18(1):3-19.
3. International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders. A conceptual framework for the revision of the ICD-10 classification of mental and behavioural disorders. *World Psychiatry*. 2011;10:86-92.
4. Luciano M. The ICD-11 beta draft is available online. *World Psychiatry*. 2015;14(3):375-376.
5. Reed GM, Correia JM, Esparza P, Saxena S, Maj M. The WPA-WHO global survey of psychiatrists' attitudes towards mental disorders classification. *World Psychiatry*. 2011;10(2):118-131.
6. Roberts MC, Reed GM, Medina-Mora ME, et al. A global clinicians' map of mental disorders to improve ICD-11: Analysing meta-structure to enhance clinical utility. *Int Rev Psychiatry*. 2012;24(6):578-590.
7. Aarseth E, Bean AM, Boonen H, et al. Scholars' open debate paper on the World Health Organization ICD-11 Gaming Disorder proposal. *J Behav Addict*. 2017;6(3):267-270.
8. Derevensky JL, Richard J. Response to commentary: the future of gaming disorder research and player protection: What role should the video gaming industry and researchers play. *Int J Ment Health Addict*. 2019. In press.
9. King DL, Potenza MN. Not playing around: gaming disorder in the International Classification of Diseases (ICD-11). *J Adolesc Health*. 2019;64(1):5-7.
10. Sachser C, Goldbeck L. Consequences of the diagnostic criteria proposed for the ICD-11 on the prevalence of PTSD in children and adolescents. *J Trauma Stress*. 2016;29(2):120-123.
11. Wisco BE, Miller MW, Wolf EJ, et al. The impact of proposed changes to ICD-11 on estimates of PTSD prevalence and comorbidity. *Psychiatry Res*. 2016;240:226-233.
12. Barbano AC, van der Mei WF, Bryant RA, et al. Clinical implications of the proposed ICD-11 PTSD diagnostic criteria. *Psychol Med*. 2019;49(3):483-490.
13. Boelen PA, Lenferink LI, Nickerson A, Smid GE. Evaluation of the factor structure, prevalence, and validity of disturbed grief in DSM-5 and ICD-11. *J Affect Disord*. 2018;240:79-87.
14. Parnas J. Differential diagnosis and current polythetic classification. *World Psychiatry*. 2015;14(3):284-287.
15. Kraemer HC, Noda A, O'Hara R. Categorical versus dimensional approaches to diagnosis: methodological challenges. *J Psychiatr Res*. 2004;38(1):17-25.
16. Krueger RF, Bezdjian S. Enhancing research



# State of the art

## Changes from ICD-10 to ICD-11 and future directions - Gaebel et al

and treatment of mental disorders with dimensional concepts: toward DSM-V and ICD-11. *World Psychiatry*. 2009;8(1):3-6.

17. Clark LA, Cuthbert B, Lewis-Fernández R, Narrow WE, Reed GM. Three approaches to understanding and classifying mental disorder: ICD-11, DSM-5, and the National Institute of Mental Health's Research Domain Criteria (RDoC). *Psychol Sci Public Interest*. 2017;18(2):72-145.

18. Van Os J, Linscott RJ, Myin-Germeys I, Delespaul P, Krabbendam L. A systematic review and meta-analysis of the psychosis continuum: evidence for a psychosis proneness-persistence-impairment model of psychotic disorder. *Psychol Med*. 2009;39(2):179-195.

19. Van Os J, Fahy TA, Jones P, et al. Psychopathological syndromes in the functional psychoses: associations with course and outcome. *Psychol Med*. 1996;26(1):161-176.

20. Tyrer P, Mulder R, Kim YR, Crawford MJ. The development of the ICD-11 classification of personality disorders: an amalgam of science, pragmatism, and politics. *Annu Rev Clin Psychol*. 2019;15:481-502.

21. Tyrer P, Crawford M, Mulder R, et al. The rationale for the reclassification of personality disorder in the 11th revision of the International Classification of Diseases (ICD-11). *Personal Ment Health*. 2011;5(4):246-259.

22. Reed GM. Progress in developing a classification of personality disorders for ICD-11. *World Psychiatry*. 2018;17:227-229.

23. Tyrer P, Reed GM, Crawford MJ. Classification, assessment, prevalence and effect of personality disorder. *Lancet*. 2015;385:717-726.

24. Krueger RF, Markon KE. The role of the DSM-5 personality trait model in moving toward a quantitative and empirically based approach to classifying personality and psychopathology. *Annu Rev Clin Psychol*. 2014;10:477-501.

25. Zachar P, Krueger RF, Kendler KS. Personality disorder in DSM-5: An oral history. *Psychol Med*. 2016;46(1):1-10.

26. Gaebel W. Status of psychotic disorders in ICD-11. *Schizophr Bull*. 2012;38(5):895-898.

27. Evans SC, Roberts MC, Keeley JW, et al. Vignette methodologies for studying clinicians' decision-making: validity, utility, and application in ICD-11 field studies. *Int J Clin Health Psychol*. 2015;15(2):160-170.

28. Reed GM, Sharan P, Rebello TJ, et al. The ICD-11 developmental field study of reliability of

diagnoses of high-burden mental disorders: results among adult patients in mental health settings of 13 countries. *World Psychiatry*. 2018;17(2):174-186.

29. Reed GM, Keeley JW, Rebello TJ, et al. Clinical utility of ICD-11 diagnostic guidelines for high-burden mental disorders: results from mental health settings in 13 countries. *World Psychiatry*. 2018;17(3):306-315.

30. Medina-Mora ME, Robles R, Rebello TJ, et al. ICD-11 guidelines for psychotic, mood, anxiety and stress-related disorders in Mexico: Clinical utility and reliability. *Int J Clin Health Psychol*. 2019;19(1):1-11.

31. Gaebel W, Stricker J, Riesbeck M, et al. Accuracy of diagnostic classification and clinical utility assessment of ICD-11 compared to ICD-10 in 10 mental disorders: Findings from a web-based field study. *Eur Arch Psychiatry Clin Neurosci*. 2019. Online ahead of print.

32. Claudino AM, Pike KM, Hay P, et al. The classification of feeding and eating disorders in the ICD-11: results of a field study comparing proposed ICD-11 guidelines with existing ICD-10 guidelines. *BMC Med*. 2019;17(1):93.

33. Peterson DL, Webb CA, Keeley JW, et al. The reliability and clinical utility of ICD-11 schizoaffective disorder: A field trial. *Schizophr Res*. 2019;208:235-241.

34. Keeley JW, Reed GM, Roberts MC, et al. Disorders specifically associated with stress: A case-controlled field study for ICD-11 mental and behavioural disorders. *Int J Clin Health Psychol*. 2016;16(2):109-127.

35. Hansen SJ, Christensen S, Kongerslev MT, et al. Mental health professionals' perceived clinical utility of the ICD-10 vs. ICD-11 classification of personality disorders. *Personal Ment Health*. 2019;13(2):84-95.

36. Adair JG. The Hawthorne effect: a reconsideration of the methodological artifact. *J Appl Psychol*. 1984;69(2):334-345.

37. Cullen S. Survey-driven romanticism. *Rev Philos Psychol*. 2010;1(2):275-296.

38. Insel T, Cuthbert B, Garvey M, et al. Research domain criteria (RDoC): toward a new classification framework for research on mental disorders. *Am J Psychiatry*. 2010;167(7):748-751.

39. Bzdok D, Meyer-Lindenberg A. Machine learning for precision psychiatry: opportunities and challenges. *Biol Psychiatry Cogn Neurosci Neuroimaging*. 2018;3(3):223-230.

40. Purcell SM, Wray NR, Stone JL, et al. Com-

mon polygenic variation contributes to risk of schizophrenia and bipolar disorder. *Nature*. 2009;460(7256):748-752.

41. Karcher NR, Rogers BP, Woodward ND. Functional connectivity of the striatum in schizophrenia and psychotic bipolar disorder. *Biol Psychiatry Cogn Neurosci Neuroimaging*. 2019;11:956-965.

42. Tamminga CA, Pearlson GD, Stan AD, et al. Strategies for advancing disease definition using biomarkers and genetics: The Bipolar and Schizophrenia Network for Intermediate Phenotypes. *Biol Psychiatry Cogn Neurosci Neuroimaging*. 2017;2(1):20-27.

43. Strik W, Stegmayer K, Walther S, Dierks T. Systems neuroscience of psychosis: mapping schizophrenia symptoms onto brain systems. *Neuropsychobiology*. 2017;75(3):100-116.

44. Strik W, Wopfner A, Horn H, et al. The Bern psychopathology scale for the assessment of system-specific psychotic symptoms. *Neuropsychobiology*. 2010;61(4):197-209.

45. Kotov R, Krueger RF, Watson D, et al. The Hierarchical Taxonomy of Psychopathology (HiTOP): a dimensional alternative to traditional nosologies. *J Abnorm Psychol*. 2017;126(4):454-477.

46. Caspi A, Houts RM, Belsky DW, et al. The p factor: one general psychopathology factor in the structure of psychiatric disorders? *Clin Psychol Sci*. 2014;2(2):119-137.

47. Lahey BB, Applegate B, Hakes JK, et al. Is there a general factor of prevalent psychopathology during adulthood? *J Abnorm Psychol*. 2012;121(4):971-977.

48. Beck AT, Steer RA, Brown GK. *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corporation. 1996.

49. Kay SR, Fiszbein A, Opler LA. The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophr Bull*. 1987;13(2):261-276.

50. Helzer JE, Bucholz KK, Gossop M. A dimensional option for the diagnosis of substance dependence in DSM-V. In: Helzer JE, Kraemer HC, Krueger RF, et al, eds. *Dimensional Approaches in Diagnostic Classification - Refining the Research Agenda for DSM-V*. Arlington, VA: American Psychiatric Association. 2008:19-34.

51. Brown TA, Barlow DH. Dimensional versus categorical classification of mental disorders in the fifth edition of the Diagnostic and statistical manual of mental disorders and beyond: Comment on the special section. *J Abnorm Psychol*. 2005;114(4):551-556.