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# On Developing a Psychiatric Multiaxial Schema for ICD-10

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As work proceeds on the development of the Tenth Revision of the International Classification of Diseases (ICD-10) widespread interest has been expressed in the preparation of a multiaxial diagnostic schema for psychiatric patients. In consideration of this task, the present paper briefly notes pertinent international experience on multiaxial diagnosis, the discernible purposes of this approach, design requirements, and a specific multiaxial proposal.

## International background

The multiaxial diagnostic approach, which typically consists of the systematic formulation of the patient's condition in terms of a set of highly informative aspects or variables, has found expression in at least 20 specific multiaxial systems, as listed in Table I. It documents considerable creative interest in comprehensive diagnosis since the seminal paper of Essen-Möller & Wohlfahrt (1947), with half of the proposals appearing in the past decade. They emerged in 11 different countries spanning three continents. Despite their diversity in date and origin, they reveal some common patterns. Most systems represent an elaboration of two major diagnostic aspects: phenomenology, on the one hand, and biological and psychosocial causative or associated factors, on the other. The specific axis considered in all systems was general psychiatric syndromes, followed by aetio-pathogenic formulation, personality conditions, psychosocial stressors, and physical disorders, and then by illness course, intellectual level or mental retardation, developmental delays, illness severity and adaptive functioning. The vast majority of the schemas were composed of either four or five axes.

For several of the multiaxial systems outlined above there are reports on their implementation in clinical settings and on appraisals of their worth. This is particularly the case for DSM-III (e.g. Williams, 1987), the Rutter *et al* (1975*a*) system for children and adolescents, the Ottosson & Perris (1973) tetraxial proposal (von Knorring *et al*, 1978; Perris, 1985), Helmchen's (1975) approach (Stieglitz *et al*, 1987), and the Bech *et al* (1987) schema (Zierau *et al*, 1986; Kastrup & Wig, in press). Most of the reports focus on the perceived usefulness of multiaxial diagnosis for clinical care, particularly with complex cases such as those often seen in child and geriatric psychiatry and consultation-liaison work, as well as an aid in professional education and research. A broad international consultation on multiaxial diagnosis involving 175 expert diagnosticians from 52 countries (Mezzich *et al*, 1985) revealed that most respondents were familiar with this approach and rated its usefulness as high.

Further information on the historical trajectory of, and experience obtained with, multiaxial systems as well as on the opportunities and issues they raise can be found in review papers by Strauss & Helmchen (1982, unpubl.), Mezzich (1979, 1985) and Cooper (1986, unpubl.).

Also of international interest on multiaxial diagnosis are the recommendations offered by many clinicians and groups commenting on proposals for ICD-10. Some of these clinicians participated in Field Trials of the core classification, while others just formulated conceptual comments on the available drafts. Other suggestions were obtained through the World Psychiatric Association (1987) consultation with national psychiatric societies on ICD-10 proposals. The report of this consultation listed the development of a multiaxial system as one of its top recommendations.

## Evolving roles of multiaxial diagnosis

Analyses of conceptual and empirical papers on the multiaxial model, suggest that the following are being perceived as key purposes of this diagnostic approach.

1. A broader picture of the patient's condition. This can be seen as an implementation of a biopsychosocial systems approach (Strauss, 1975; Lipowski, 1981), as well as a framework for a person-centred diagnosis pertinent to both psychiatry and general medicine (Lolas, 1985). Indeed, given that psychiatric multiaxial systems often include both a nosographic classification and a formulation of associated factors referring to the individual, it can be seen as a classification of both the patient and his disorders (Cooper, 1986, unpubl.).

2. A systematic articulation of critical elements of a psychiatric condition (e.g. Berner, 1986). This can be particularly important when dealing with complex conditions, such as organic brain states involving a recognisable behavioural pattern and



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TABLE I

*Origin and content of published multiaxial diagnostic systems*

| *Multiaxial systems, authors, countries and dates* | *Clinical aspects:* | *Psychiatric syndrome* | *Personality condition* | *Intellectual level* | *Development delays* | *Illness course* | *Illness severity* | *Adaptive function* | *Aetio-pathological formulat* | *Physical condition* | *Psychosocial stress/ situation* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Essen-Möller & Wohlfahrt (Sweden, 1947) | | X | | | | | | | X | | |
| 2. Bilikiewicz (Poland, 1951) | | X | X | | | | | | X | | |
| 3. Leme Lopes (Brazil, 1954) | | X | X | | | | | | X | | |
| 4. Rutter *et al* (UK, 1969, 1975*a*,*b*) | | X | | X | X | | | | | X | X |
| 5. Wing (UK, 1970) | | X | | X | | | | | X | X | |
| 6. Ottosson & Perris (Sweden, 1973) | | X | | | | X | X | | X | | |
| 7. Helmchen (FR Germany, 1975) | | X | | | | X | X | | X | | |
| 8. Strauss (USA, 1975) | | X | | | | X | | X | | X | X |
| 9. Sadoun *et al* (France, 1976) | | X | | X | X | | | | X | | |
| 10. Rocha (Brazil, 1977) | | X | X | X | | | | | X | | |
| 11. von Cranach (FR Germany, 1977) | | X | X | | | X | | | X | | |
| 12. Kato (Japan, 1977) | | X | X | X | | | | | X | | |
| 13. Kreyssig (German DR, 1978) | | X | | | | | | | X | X | X |
| 14. APA DSM-III (USA, 1980) | | X | X | | X | | | X | | X | X |
| 15. Mann *et al* (UK, 1981) | | X | X | | | | | | | | X |
| 16. Isager (Denmark, 1982) | | X | | X | X | | | | | X | X |
| 17. Retterstol & Dahl (Norway, 1983) | | X | X | | | | | | | | X |
| 18. Mogensen *et al* (Denmark, 1986) | | X | X | | | X | X | X | X | X | X |
| 19. Bech *et al* (Denmark, 1987) | | X | X | | | | X | X | | X | X |
| 20. APA DSM-III-R (USA, 1987) | | X | X | X | X | | X | X | | X | X |

underlying physical pathology. This more generally refers to the separation of syndrome and aetiology which motivated the pioneering bi-axial schema proposed by Essen-Möller & Wohlfahrt (1947). Also relevant here is the separation of certain aspects of the psychopathological picture, such as personality disorders and traits, from general psychiatric syndromes (Charney *et al*, 1981; Baumgartner & Helmchen, 1985).

The latter is related to a broader interest for delineating a developmental perspective, as expressed by the Danish and Brazilian psychiatric societies participating in the recent World Psychiatric Association (1987) consultation on ICD–10 proposals. This differentiating thrust is of course prominent in multiaxial systems for children, as exemplified by Rutter *et al*'s (1975*a*) separation of both mental retardation and specific developmental delays from other psychiatric syndromes. At the other end of the developmental dimension, a WHO (1972) scientific group, upon considering diagnostic problems in psychogeriatrics, recommended the use here of multiaxial approaches.

3. Informational support for comprehensive treatment planning, e.g. identification of a psychotic syndrome which may benefit from neuroleptic medication, of marital conflict which may suggest the use of family therapy, and of chronic difficulty holding a job which may be an indication for vocational training. This purpose has been identified in international surveys as one of the principal ways in which multiaxial diagnosis can be useful. Compelling discussions of this topic are furnished by Dimitrijevic *et al* (1978), Strauss (1979), Forness & Cantwell (1982) and Kreyssig (1983).

4. A tool for enhancing education in psychopathology and diagnosis. The value of multiaxial systems to this effect has been explicated by Helmchen (1980), Perris (1985), and Zierau *et al* (1986). This educational role of the multiaxial approach is pertinent not only to students, but also to already trained mental health professionals by furnishing evaluation standards to which all can look up to.

5. Enhancement of clinical and epidemiological research. This can be accomplished through the provision of a more thorough and standardised characterisation of research subjects that may facilitate comparative studies across different cultures and psychiatric schools (Wing, 1984). Also pertinent here is the potential of multiaxial ratings to allow the elucidation of causal relationships and useful nosological patterns (Lipowski, 1981; Roth, 1983) as well as the prediction of illness course and outcomes (Strauss & Carpenter, 1977; Vuks *et al*, 1984; Geissler, 1985).

### Design considerations

1. Determination of the most appropriate number and types of axes in such a way that most of the purposes of comprehensive diagnosis for general psychiatric patients are attended to through the simplest possible schema. One of the selection strategies may start with the list of axes frequently included in published multiaxial systems for general psychiatric patients. This list can be shortened first by grouping together some axes such as personality conditions, mental retardation and developmental disorders, all of which tend to involve stable and developmental handicaps, as suggested by several participants in the previously mentioned international consultation on multiaxial diagnosis (Mezzich *et al*, 1985). The list can be further shortened by nesting severity and course into the syndromic axes, given that their meaning is most clear when they qualify specific syndromes. A second strategy involves a search for conceptual coherence in the set of axes and their consonance with the basic purposes of a multiaxial formulation.

2. Consideration of measurement instruments for the chosen axes. This is a crucial task influenced by the level of development and informational requirements of the domain at hand. This may vary from a well developed classification, to a useful inventory of items, to a quantitative or rank scale. Furthermore, it would be desirable that the measurement tools be components of the ICD–10 family of instruments, which may enhance their international relevance and acceptability.

3. Architectural organisation of the schema. This refers to the order and clustering of the axes, in order to reflect their conceptual inter-relationships and their potential connections and cross-walks to other schemas.

### A proposed multiaxial schema for ICD–10

Table II presents an outline of a proposed multiaxial system for ICD–10 constructed on the basis of the above considerations.

The schema is composed of five basic axes; the second one (developmental conditions) containing three subaxes. They cover most of the clinical aspects frequently considered in published multiaxial systems. The remaining aspects, illness severity, course and aetiology, could be arranged to qualify specific psychopathological syndromes, although, with the exception of illness severity, they are not likely to be accommodated in the currently evolving classification.

Grouping the axes into Psychopathological, Physical and Social Facets may clarify their relative

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TABLE II
*Outline of a proposed multiaxial schema for ICD-10*

| *Facets* | *Axes* | *ICD-10 instruments* |
|---|---|---|
| Psychopathological | I. General psychiatric syndromes | FO-F5, F63-69, F9 |
| | II. Developmental conditions | |
| | A. Personality disorders and traits | F60-62<br>Pertinent Z codes |
| | B. Mental retardation/IQ | F7 |
| | C. Specific and pervasive developmental disorders | F8 |
| Physical | III. Concomitant physical conditions | Core classification chapters other than F |
| Social | IV. Abnormal psychosocial situations | Pertinent Z codes |
| | V. Disabilities (self care, occupational, family relations, social in general) | Revised classification of disabilities |

proximities. For example, a general psychiatric syndrome axis and a personality axis, both fall within the psychopathology domain and are conceptually closer to one another than to either a physical disorder axis or an abnormal psychosocial situations axis. Such arrangement in facets may help vertebrate the multiaxial system and provide basic stability across alternate schemas. For example, were a child psychiatry multiaxial schema to require having separate axes for mental retardation and for specific and pervasive developmental disorders, the nesting of all these axes within the Psychopathology Facet would provide a measure of uniformity across schemas. A similar situation would apply if in a substance abuse clinic it were deemed appropriate to divide Axis I into Substance-related Disorders and Other General Psychiatric Syndromes.

Another potential value of the facets is their heuristic relationship to the International Classification of Health Problems (physical, mental and social) in Primary Care. Such a relationship may eventually represent an opportunity for developing a simplified psychiatric multiaxial schema for the use of primary health workers.

The ICD-10 instruments proposed for measuring the chosen axes essentially include core classification chapters for the first three axes and accessory classifications for the last two. More specific details are presented below, on an axis by axis basis.

Issues on the global schema that are likely to require further consultation and empirical trials include the following: Are the proposed axes the most appropriate ones for general psychiatry? Would they be manageable in most clinical situations? Are there better ways to combine or re-order the components of the multiaxial schema?

### Axis I: General psychiatric syndromes

This is, of course, a central axis for the characterisation of the patient's condition. It would be rated using all sections of Chapter F (Mental Disorders) of ICD-10, except those corresponding to personality conditions (F60-F62), mental retardation (F7), and developmental disorders (F8). Conceivably, in most of the sections, a rating of severity of the syndrome may be accomplished through a fourth or fifth digit code, but this would require consultational and field trial clarification.

### Axis II: Developmental conditions

This axis would house most of the stable behavioural handicaps, including personality disorders (F60-F62) and perhaps personality traits of psychiatric significance (rated with Z codes), mental retardation (F7), and specific and pervasive developmental disorders (F8). The collapsing of these various aspects into one axis may be suitable for general psychiatric use. It may be necessary, however, to keep them separate for children and adolescents, an additional complexity that may require Field Trials.

### Axis III: Concomitant physical conditions

This would include all current physical illnesses as well as non-pathological conditions such as pregnancy, all of which are included in the various chapters of ICD-10 other than Chapter F.

Although it seems appropriate that the focus of this axis be currently active physical problems, the following issues require clarification: Would conditions of historical value be pertinent in some cases? Should this axis exclude active physical

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problems that the clinician feels do not require therapeutic attention? Would it be useful to explore ways of indicating which of the physical problems listed are contributory to psychopathology?

### Axis IV: Abnormal psychosocial situations

This axis along with the one on physical conditions identifies problems of associated or aetiological significance. It would specify abnormal psychosocial situations or stressors rather than just rate their overall severity and in this way it should be helpful for comprehensive treatment and public health planning.

It would be rated using selected Z codes from ICD-10 Chapter XXI Factors Influencing Health Status and Contact with Health Services. The scope of the selected Z codes and the possibility of refining their fourth digit categories require further consideration.

### Axis V: Disabilities

This axis would involve a reasonably differentiated statement on disabilities experienced by a patient in areas such as self care, occupational performance, functioning with family, and general interpersonal/social functioning.

It may be assessed with disability categories from a revision of the International Classification of Impairments, Disabilities and Handicaps (WHO, 1980). Alternatively, their assessment may be guided by the Disabilities Assessment Schedule (WHO, 1985), which would have to be revised to ensure applicability to general psychiatric patients of all ages. It may also be possible to establish core areas of evaluation (such as the four noted above) and then develop different rating procedures suitable to specific age groups.

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