awareness of mechanisms for participation in the continuous improvement and adjustment of the ICD.

Training material is currently compiled for ICD-10. Content follows the elements above that are founded on 15 and more years of training experience with ICD-10 and precursors (core curricula elaborated by the WHO-FIC Network). Present production allows easy adaption to ICD-11, and expansion for additional lessons, e.g. on relationship between different linearizations, scope of definitions, linkages, use in conjunction with linked terminologies and ontologies.

The majority of necessary changes and additional will become apparent with the Alpha version of ICD-11. The timeline allows having the training materials ready for the field tests.

Editors, authors, and financial resources for adaptation to ICD-11 have to be identified. Collaborating centres may act as editors or reviewers, pending funding.

Sustainable mechanisms and resources for updating in line with updates to ICD-11 have to be identified.

Failure results in delayed implementation and inconsistent use of ICD-11.

9.3 Crafting tools and strategies for transition from ICD-10 to ICD-11

This set of instruments includes transition tables, algorithms for assessment of statistical impact of transition, and procedural descriptions for implementation of transition.

Transition will be easier than the one from ICD-9 to ICD-10. ICD-11 is built starting from ICD-10. Electronic explicit tracking of conceptual changes will allow automated creation of transition tables for the major part of the classification. Human review is necessary for thoroughly changed parts of ICD. The electronic tracking of changes (e.g. of source concept in ICD-10 and target concept in ICD-11) allows also identification of areas of potential statistical continuity. Existing full text electronic death certificate data allows double coding of the same source data.

This task is critical to adoption of ICD-11. Failure results in delayed implementation or non implementation of ICD-11.

Resources have to be identified.

9.4 Designing mechanisms for updates and their dissemination

The HiKi allows continuous commenting and proposing of changes to ICD. This input is reviewed on an annual basis. Reviews inform amendments to ICD-11. Changes are published online for automated and manual incorporation in electronic systems. Files of updates for print are available online. Publication of updates is announced in the WHO Bulletin. Paper based versions are produced every 6 years.

The public makes proposals and provides some evidence. TAGs continue to exist after revision and review these comments as for the interim versions of ICD-11 (Alpha version and Beta version). WHO disseminates the updates.

RSG and URC review proposed edits. WHO editors carry out the edits.

Sustainable resources have to be identified.

Failure results in irregular or missing updates and/or their dissemination. In consequence compilation of international statistics is limited by incompatibilities between different versions of ICD-11.

9.5 Assembling user tool package

The user tool package includes training tools, sample implementation strategies, and translation tool.

WHO editors pull together the tools on a single CD or other portable format.

Resources have to be identified. Collaborating centres can assist WHO in this task.

Failure results maybe in delayed implementation.

ICD-11 implementation package ready.

All tools under 7.4-7.8 are available. Assembly(7.9) is an asset.

9.6 Implementing in selected pilot countries (developed and developing)

Implementation in pilot countries will allow assessment of routine data collection and technical incorporation of ICD in countries' health information systems.

Selected translations are made by collaborating centres of Alpha, Beta and Final Version of ICD-11.

Selected countries implement full ICD in selected coherent parts of their health information system, as in one administrative region for all applicable usecases.

Volunteers are invited by WHO.

Resources come from some countries. For low resourced countries, sustainable funding has to be identified. Pilots can be part of a donor project for implementation of a specific component of health information, as mortality.

Failure will result in lacking information for implementation obstacles at level of concepts, produced formats, language and cultural aspects.

Pilot countries implemented ICD11.

Selected countries have implemented full ICD in selected coherent parts of their health information system, as in one administrative region for all applicable usecases.

10 Producing multilingual versions

10.1 Assessing linguistic aspects

Languages have different sets of preferred terms and synonyms that may or may not correspond to the ones expressed in the English master version. Conceptualization of diseases may defer depending on language and culture.

Linguistic assessment comprises:

- Summary of translation problems with previous versions of ICD, and other classifications
- Reporting translation problems in early language versions at Alpha stage
- Translation and back translation of core concepts and category titles on a multilingual online system by users:
  - English texts are presented for translation proposals. The translation proposals are commented/edited by the crowd. Intensity and duration of changes will indicate a potential problem.
  - Texts of translations of the Alpha version will be presented in conjunction with the English source. Comments and proposed edits are made by the crowd. Intensity and duration will indicate problems.

Detected problematic parts of ICD will be reviewed and edited by the relevant translator together with the relevant TAG.

10.2 Assessing cultural aspects

Health and perception of health is a continuum between 'modern' and 'traditional' medicine. Some health related concepts are perceptions of illness from culturally dependent angle.

Cultural aspects were relevant topics already in formulation and maintenance of ICD-10, as for complications of traditional medicine interventions, lifestyle interventions, or some mental diseases.

Effectors and resources have to be identified.

Failure will result in concepts missing or not suitable to specific cultural settings.

10.3 Programming multilingual transition software

Translation software eases translation presenting English version and allowing parallel view on translations. Output will consist in standardized file format suitable to construction of multilingual ICD-11 and incorporation in the HiKi. Translations will become more consistent and can be reviewed online. The translation tool incorporates the translation guidelines (see 10.5, 'Formulating guidelines').

Effectors for design and programming have to be identified.

Resources have to be identified.

Failure results in non comparable and inconsistent translations hampering comparability of data between language regions.

10.4 Pilot test translations

Pilot translations are translations of the alpha and beta version of ICD core concepts at three character category level. A pilot translation would include titles of categories, only. In selected parts that reflect the full range of structural elements (corresponding to present chapters V, IV and XX) all conceptual levels will be translated. Pilot translations will be guided by the definitions that are part of ICD-11. Pilot translations will be used for linguistic and cultural assessment, and for field testing.

Revision process has to ensure all definitions are available for the selected sections that are translated fully. Failure will result in reduced evidence in assessment of translation errors.

Categories of ICD-10 that remain unchanged in ICD-11, no new translation is necessary. Linguistic and cultural assessment will apply to old and new concepts of ICD, as there has been no such procedure in the past.

Pilots in the six official languages are envisaged. In addition there will be pilots for Portuguese, German and Japanese. Pilots in additional languages are welcome and depend on the availability of appropriate centres and resources.

Pilot translations are carried out by the relevant collaborating centres. Resources for pilots in French, Spanish, German and Portuguese are available. Resources for Arabic, Russian and Chinese have to be identified.

Failure results in missing input of linguistic problems to ICD and resulting possible inconsistent translations.

10.5 Formulating guidelines of language versions

Translation guidelines will inform translators about extent, quality and tooling of translation. They will contain instructions on standard formats to be used. The guidelines are aimed at improving consistency between the different language versions of ICD, as well as ensuring completeness of translations. Standardized formats will facilitate linguistic assessment.

Core points include:

- Solutions to the orphans
- Differing preferred terms and literal translations
- Quality assurance (see also 10.1)
- Compilation of lists of synonyms (formerly index)
- Use of ICD maintenance tool and ClaML
- Maintaining consistency between translated ICD and linked terminologies, as SNOMED

They are based on the ones that were formulated for ICF, on experiences by collaborating centres and on internal recommendations of WHO.

The translation guidelines are formulated by WHO in collaboration with its collaborating centres during the planning phase of the revision, and will be ready before the alpha version.

Tools for development of synonym lists and production of indices have to be developed. Joint work with NLM, IHTSDO, WHO-FIC ETC, and others can facilitate development.

Resources have to be identified.

Failure will compromise creation of the translation tool.

10.6 First draft versions in languages other than English

First translations are full translations of all elements of ICD-11. They contain the definitions at least at the "public health level" of ICD-11. This would correspond to a 300 definitions. Explicit definitions that are linked to multilingual terminologies will facilitate translations.

First translations will include the piloted ones. They will become available shortly after the beta version and enable field testing in different languages, and cultures.

Resources for full translations in some official languages have to be identified (see also 10.3).

Failure will result in delayed implementation, and reduced linguistic adjustment of ICD-11.

ICD-11 in six official languages.

10.7 Final translations

Final translations will bebased on the draft translations and include all elements of the final English master version. Potential limitations in feasibility and need of translating definitions at all levels are under discussion. Achievement of the milestone includes electronic and printable versions of ICD-11. A multilingual online version will announce completion. Resources have to be identified. To a large extent resources will come from the collaborating centres. Additional resources have to be identified.

11 Project coordination & management

Organization of process, editing and maintenance of the workplan, keep up communication, monitoring of progress, financial administration.

WHO has formulated the goals and created a project team that consists of WHO staff, and the Chair of the Revision Steering group. The RSG consults the project team.

WHO has established communication mechanisms have been established in form of annual meetings and monthly teleconferences of the RSG. WHO and RSG share project documents on a WHO SharePoint site. The chairs of Topic advisory groups are members of the RSG and liaise with their TAGs via teleconferences, email, and biennial face to face meetings. The TAGs liaise with their working groups via email, and, as necessary, at face to face meetings. Work results are presented on the Revision Platform. Input, as proposals and all comments is made on the revision platform.

Detailed information on roles and responsibilities is described in

Annex 6.

Additional resources for WHO assistants and a project manager have to be identified.

Failure will result in incomplete achievement of the goals of the revision up to total failure of the revision.

III. Budget Summary

This section provides summaries of costs per task and per milestone.

MILESTONE	ACHIEVED BY	COST	CUMMULATIVE COST
Needs analysis executed	Sep 2008	$190,000	$190,000
Revision team is formed	Oct 2009	$994,000	$1,184,000
Revision Platform ready for all types of inputs and outputs	Dec 2012*	$1,500,000	$2,684,000
All information relevant to revision is compiled	Mar 2011**	$4,738,000	$7,422,000
Alpha-draft released	Feb 2010	$2,115,000	$9,537,000
Beta- draft released	Nov 2011	$1,405,000	$10,942,000
Field trials completed	July 2012	$1,590,000	$12,532,000
Pre-final draft released	Mar 2013	$725,000	$13,257,000
ICD11 endorsed by WHA	May 2013	$255,000	$13,512,000
ICD-11 implementation package ready	July 2013	$2,850,000	$16,362,000
ICD-11 published in six official languages	Mar 2014	$6,000,000	$22,362,000
Pilot countries implemented ICD11	Mar 2014	$13,338,000	$35,700,000

*functionality for relevant revision work will be available by 2010. Advanced output functionality will be available for preparation of the pre-final draft

** major input will be ready for the alpha draft. The process allows additional input until beta version for field testing.

Total budget of USD 42,600,000 includes USD 6,900,000 project coordination cost fully supported by the WHO.

IV. Risks

Risks include lack of funding for field testing and Ontology/Terminology aspects of the revision. Failure will result in production of ICD-11 in traditional formats. Evidence base will reduced. Incorporation in electronic health information systems will be subject to limitations.

Risks include lack of participation in providing contributions for specific fields (e.g. formation of appropriate TAG) or in commenting. Failure will result in no update to relevant parts of ICD.

Risks include lack of appropriate legal arrangements. Failure will result in non distributable definitions, missing linkages to relevant terminologies and ontologies.

Risk include lack of organization. Failure will result in uncoordinated activities, duplication of efforts and delays.

Risks include change of political directions of WHO. Results are not predictable.

Annexes

Annex 1 ToR RSG

The Revision Steering Group will serve as the planning and steering authority in the ICD revision process. Its terms of reference are as follows:

1. *Oversee the revision process and give advice for coordination of workgroups:*
   RSG will
   - determine the content of the revision process
   - review and make suggestions about the overall progress of the revision process
   - ensure adequate coverage of all chapters and codes to ascertain the input from existing clinical modifications of the ICD and other WHO-FIC members
   - maintain continuity between 10th and 11th editions
   - see to whether the full scope of health care diseases and related health conditions are congruent with the overall structure.
   - synthesise different inputs including field trials, ensuring participation from various regions, countries, languages and multiple stakeholders including NGOs.

2. *Identify uses of the classification and ensure that the revision process addresses the needs of users:*
   RSG will
   - ensure that the main uses of ICD for mortality and morbidity are maintained, and oversee proposals for other uses the classification; and
   - preserve coherence and consistency of the description of entities between the interlinked versions of ICD for Primary Care, Clinical care and Research.

3. *Identify basic taxonomic and ontological principles:*
   RSG will observe the consistency and coherence of basic taxonomic and ontological principles across the overall revision process, including:
   a. Key definitions: examples include disease, disorder, syndrome, sign, symptom, reason for encounter, trauma, and external cause
   b. Separation of disability and joint use with ICF
   c. Attributes, as mentioned in the information model ...
   d. Linkages to other WHO-FIC classifications and ontologies
   e. Be guided by input by the TAG HIM

   RSG will arrange for the development of clear taxonomic rules for the development of ICD-11.

4. *Generate suggestions to resolve problems and ways to field test options as necessary:*
   RSG will make suggestions to solve problems or conflicts arising across different proposals, and may make suggestions for field trials to gather empirical data for their solution. This area of function may include comorbidity coding, inference of causality in coding rules, and indexing.

5. *Develop plans and tools for transition from ICD-10 to ICD-11:*
   Identify requirements for users to adopt ICD-11 including coding guidelines, versions fit for various purposes, cross walks, electronic tools, and educational materials.

Annex 2 ToR TAG HIM

Terms of reference for a TAG
for
Health Informatics and Modelling (HIM)

The revision plan for ICD-11 incorporates intricate linkages between the classification scheme and terminologies. ICD-11 will have explicit operational linkages to underpinning ontologies built-in during the revision process which will result in both human-readable and machine-readable definitions. Depending on the purpose of the use of the classification, the semantic network around the ICD-11 concepts may allow different extractions for the classification (i.e. mortality, morbidity, case-mix grouping, primary care use etc).

To enable this objective of creating an ICD-11 with multiple semantic linkages to ontologies, a specific Technical Advisory Group is constituted to advise WHO and the Revision Steering Group on the following issues:

- To identify a cogent "information model" (a.k.a. context model) to express the several dimensions that relate to ICD-11 classes *(such as the classification entity as a disease, disorder, injury, sign, symptom etc; Site; Manifestations; Cause; Temporal Relations; Extent/severity; Impact/disability; use and other possible attributes)* and evaluate existing disease models for their suitability to ICD-11;
- To identify the logical operators that relate to knowledge representation in ICD such as the *description logic* to define, to diagnose, and to group diseases and other ICD categories;
- To evaluate and link the experiences of other taxonomy, terminology and ontology projects to contribute to the ICD-11 development (e.g. NCBO, ...)
- To design the specifications and requirements of a tooling environment that accommodates the use case needs for the revision process: A **web based tool** that allows editing the semantic structure of the classification through controlled distributed development by multiple groups. Design and production will start from the current ICD structure and enable use of available tools such as Collaborative Protégé, OWL and LexGrid structures.

Annex 3 TAG and Workgroup user guide

ICD Revision Manual for TAG and Workgroups

Please find information on the overall revision process and access to the revision platform on the Internet at www.who.int/classifications/icd/ICDRevision .

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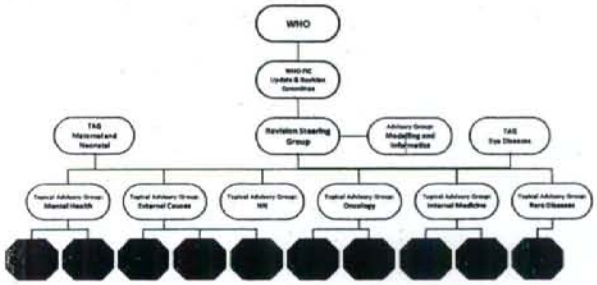
Annex 1: Declaration of conflict of interest

1 Introduction

This manual includes elements of the overall project plan that are of prime relevance to Topic Advisory Groups and Working Groups. Terms, roles and processes for work of groups contributing to revision of ICD are explained. The document includes a description of the main tasks for groups, Terms of reference of Working Groups, and of the Revision Steering Group, a brief overview of the organization structure and a list of procedural steps that ensure coordination among different groups. Terms of Reference, a Declaration of Conflict of Interest, and Terms and Conditions for participation will allow constructing ICD-11 in a transparent process and preventing conflicts in intellectual property and copyright.

The work for specified topics is organized through topic advisory groups (TAG). A TAG coordinates working groups that carry out the work that is described in the "tasks". The TAGs are coordinated by the Revision Steering Group, and chairs of TAGs are ex officio members of the RSG.

ICD-10 Revision Organization Structure



2 The tasks

Topic Advisory Groups will serve as the planning and coordinating advisory body for specific issues which are key topics in the update and revision process, namely Oncology, Mental Health, External Causes of Injury, Communicable Diseases, Non-communicable Diseases, Rare Diseases and others to be established.

The primary charge of each group will be to advise WHO in all steps leading to the revision of topic sections of ICD in line with the overall revision process. In particular:

- Advise on particular ***topic revision steps and establish workgroups and partners to involve*** - The TAGs will advise WHO on constitution of working groups to undertake generation of necessary evidence, to develop proposals for changes and to focus on specific issues as needed. Each TAG will (a) determine the number and content areas of the workgroups, (b) identify the members and chairs of the workgroups, (c) present an initial mandate to each workgroup, (d) establish procedures for the activities of the workgroups, and (e) facilitate cross-fertilization of ideas and reducing redundant efforts by making workgroups aware of one another's activities.
- Advise in ***developing various drafts of topic segments in line with the overall production timeline*** of ICD-11 TAGs will review initial recommendations of the workgroups and consolidate those to achieve consistency in proposals across groups and areas.
- Advise in ***developing protocols for and in implementing field trials*** - TAGs will also assist WHO in identifying appropriate representatives of various stakeholders and in establishing effective collaboration/consultative mechanisms.

Topic Advisory Groups (TAG) will lead the work in different fields of expertise. Such fields can be vertical, as cancers (oncology) or horizontal, as rare diseases that can be found in every chapter. The TAG will organize **workgroups** to deal with relevant subtopics, as necessary.

Ten rules will ensure consistent quality of work across all groups:

I.	**Definition of the diagnostic entity as a medical disease or disorder.**
II.	**Clustering of signs, symptoms, and operational characteristics.**
III.	**Link to underlying pathophysiology and genetic markers.**
IV.	**Clinical utility of the classification entity.**
V.	**Reliability of the use of the classification entity. .**
VI.	**Validity of the classification entity.**
VII.	**Separation of disease and disability elements**
VIII.	**Cultural elements that need to be attended.**
IX.	**Threshold considerations.**
X.	**Other nosological issues relevant to this entity**

Work Groups will serve as the key functioning unit for the review of evidence and generation of main proposals at a specific topic in the classification. For example, the TAG in the Mental Health Area will be responsible for the whole of chapter V and its linkages, whereas it may generate 5-10 working groups to carry out the systematic reviews on special sections of the chapter such as schizophrenias and psychosis; mood and anxiety disorders or topics such as children and youth, common brain disorders, etc.

The workgroups are asked to consider core issues that they will seek to address for each diagnostic entity in their content domain, and to develop a preliminary position on each issue based on their pre-existing knowledge of this domain. The initial position statement will effectively set the agenda for the workgroup and will define the range and scope of questions that the workgroup will consider.

The broad range of activities can be described by a set of tasks:

- TASK 1. Develop a preliminary position statement on each core diagnostic issue. Blocks of ICD may be a suitable entity.
- TASK 2. Review the empirical evidence
- TASK 3 Generate summary proposals on the revision platform for comment by other groups, RSG and the global community.
- TASK 4. Revised reports
- TASK 5. Field trials
- TASK 6. Final revisions and recommendations

2.1 TASK 1 Develop a preliminary position statement on each core diagnostic issue

The initial set of core diagnostic issues to be considered by each workgroup are listed in box I - these may be taken as an example by each workgroup to expand further on the key classification issues on the topic of interest.

I. **Definition of the diagnostic entity as a medical disease or disorder.** Given the key taxonomic guidelines and definitions each group should draw a line around the entity of interest, identifying its critical properties. How does the workgroup fundamentally view the full spectrum of disorders/diseases in this chapter/field in terms of their classification? Identify key criteria and level of evidence.

II. **Clustering of signs, symptoms, and operational characteristics.** Identify the features that are necessary and sufficient to define the disease/disorder, based on the common disease model of ICD.

III. **Link to underlying pathophysiology and genetic markers.** Identify the intra-individual markers that are associated with the disease/disorder, considering their biological plausibility, their measurement properties (e.g., specificity, predictive power), and their role in treatment response.

IV. **Clinical utility of the classification entity.** Consider the usefulness of the classification entity in diagnosis, predicting treatment response, course, and outcome.

V. **Reliability of the use of the classification entity.** Consider the stability of the classification entity over time and its consistency of detection across assessors and measurement instruments.

VI. **Validity of the classification entity.** Consider the associations of theoretically relevant variables with measures of the disorder and the support they provide for the validity of the diagnostic construct.

VII. **Separation of disease and disability elements.** Identify the features that signal the presence of the disease/disorder, defining the disease/disorder without reference to the distress, impairment, or other consequences that it produces. Suggestions to link to WHO ICF and operationalize specifically the criteria on disability and distress related rubrics.

VIII. **Cultural elements that need to be attended.** Consider variability in the presentation of the disease/disorder across cultures. Identify ways to achieve cross-cultural comparability and utility of diagnostic criteria rather than listing separate culture-bound syndromes or formulations.

IX. **Threshold considerations.** Identify the number and nature of diagnostic criteria that should be required to qualify for the classification entity. Consider the nature of the boundary separating the disease/disorder from normality, including evidence for the categorical/continuous distinction. Consider the classification entity boundaries with other classes, including challenges of differential diagnosis.

X. **Other nosological issues relevant to this entity** Identify any other aspects of the classification entity that the workgroup believes to be in need of evaluation, including potentially controversial aspects of the disorder that will need to be addressed. This list of additional issues may change as the evidence related to this disorder is reviewed.

2.1.1 Points for consideration

- Which elements are included in current ICD-10 (e.g. review by Block)
- Do specialty adaptations or national clinical modifications identify needs for further subdivisions?
- What do the usage statistics/frequencies show?
- Are certain categories unused across all use cases and countries?
- Are unspecific categories used extensively in certain use cases and countries?
- Would it be possible to mark codes or blocks for "minimal care", primary care, reimbursement, public health or research to be able to recombine or regroup codes in broad or detailed categories?
- do internationally agreed definitions of categories exist that could be used to define the corresponding category of ICD?

2.2 TASK 2. Review the empirical evidence

Workgroups will survey the available evidence for each diagnostic entity to address the ten diagnostic issues described above. Evidence will be reviewed using a three-tiered, iterative process that maximizes input from sources that are most readily accessible.

Review the published literature. A standardized system should be chosen to guide the compilation and coding of published results. This system will be selected by the Revision Steering Groupand provided to co-chairs early in the update and revision process. Participants will also receive guidelines concerning the parameters to be used in the literature reviews (e.g., inclusion criteria, exclusion criteria, review, and reporting style). Workgroup coordinators will then carry out these reviews at collaborating sites throughout the world. Study managers based at WHO Headquarters will remain in constant contact with the workgroup coordinators and the workgroup co-chairs throughout the review process.

Targeted secondary analysis of existing data. If no published studies are available to answer a particular question identified by a workgroup, workgroup members will search for existing data that would address this question but that have not yet been analyzed or published. Workgroup co-chairs will seek appropriate data by (a) directly contacting researchers in the field who may have relevant data and (b) putting out an open call for data relevant to the question at hand. When researchers with relevant data are identified, the co-chairs will, at their discretion, arrange with these researchers to share or analyze their data or to collaborate with workgroup members on analyses to address the knowledge gap. Results of these analyses will be evaluated using the same standardized rules used to evaluate published results in the literature reviews. Informative results may be published in the online Classifications Journal or in books or articles to be published by WHO on the ICD update and revision process.

Collection and analysis of new data. When no data sets are available to address unanswered questions of the workgroups, new data need to be collected. Because time and resources for new data collection are limited, such efforts will likely be restricted to questions that are relatively circumscribed and that can be fruitfully addressed through basic descriptive studies. Workgroups will generate proposals for data collection to address unanswered questions through rapid distribution of target measures to clinicians in the Global Health Practice Network that can be completed by the clinicians themselves or administered to their patients. These data will then be analyzed and their results systematically coded and integrated with evidence gathered in the first two tiers.

2.3 TASK 3 Generate summary proposals on the revision platform for comment by other groups, Revision Steering Group, and the global community.

Documenting the evidence on which recommendations are based. Using the results of their evidence-based reviews, the disorder workgroups will formulate suggestions for updating and revising the ICD-10 diagnostic categories, operational criteria, and/or overall coding structure.

Reporting interim and final results. Each disorder group will be asked to write and to post on the Revision platform an interim report of its progress every six months as well as a final report documenting its final results and recommendations. The Revision Coordinating Group, in consultation with the workgroup co-chairs, will establish explicit guidelines for the workgroups to use in preparing these reports, including separate templates for interim and final reports. The purpose of these guidelines will be to ensure completeness of desired information and consistency across documents submitted by different workgroups. As an incentive to engage in the report-writing process, workgroup members will have the opportunity to publish interim reports in special issues of the online Classifications Journal.

In addition to their review by the coordinating group, interim and final reports of the workgroups will be posted on the Revision Platform. This platform will serve as a public forum in which end-users can provide feedback to the workgroups throughout the development process, increasing the likely usefulness of the revised ICD for the wide range of constituents for whom it is being devised. To that end, comments on reports will be solicited from the scientific community and other ICD stakeholders. In addition to general comments, workgroups may request suggestions for future directions or call for information or data on a particular topic. Public comments will be continually collected and reviewed by postdoctoral fellows, who will screen them for content and relevance before forwarding them to the appropriate workgroups. These comments will be considered and weighed using the same criteria as those used in the review of empirical evidence.

2.4 TASK 4. Revised reports

Workgroups are likely to complete multiple rounds of reports in an iterative process in which they report their findings, receive feedback from the Revision Steering Group and the world community for a health field, and revise their work in response to feedback. The Revision Steering Group will establish a set of criteria for evaluating workgroup reports and may bring in external consultants to assist in the evaluation process. Evaluations may be followed by requests for clarification of competed work or for additional work in particularly important, controversial, or understudied areas. In addition, workgroups will complete annual updates of their literature reviews to ensure that the information in their final report—and the evidence on which final recommendations are based—is as comprehensive and up-to-date as possible.

2.5 TASK 5. Field trials

The provisional revised diagnostic criteria recommended by the workgroups will be tested in one or more iterations of field trials. Field trials will be conducted in collaboration with existing global networks.

Proposing questions for the field trials. Given the key questions identified in the review process workgroups will be asked to develop feasible questionnaires that could be applied within the global Network.

Evaluation of the feedback from the field trials. Results of the field trials will be provided to the workgroups to serve in developing the final revisions and recommendations.

2.6 TASK 6. Final revisions and recommendations

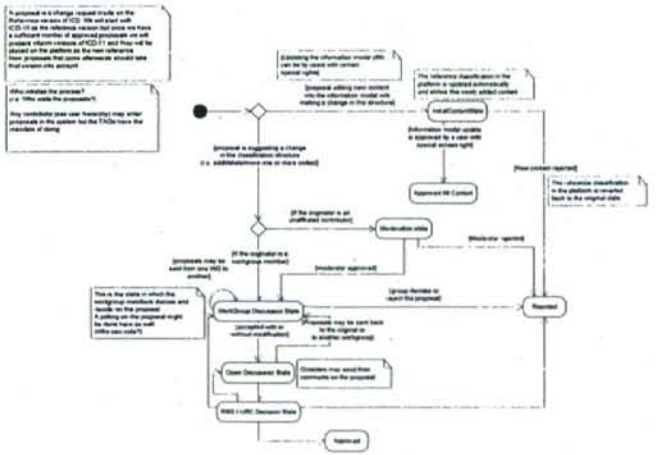
Preparing a final report. Based on the results of field testing, the workgroups will finalize the ICD-11 diagnostic criteria/external causes and prepare a final report summarizing their results and recommendations. The report will be presented to the Revision Steering Groupand posted on the Internet platform.

Setting an agenda for future work. While it is hoped that the comprehensive survey and synthesis of the literature will yield important advances in our understanding of disorders and their external causes, it is also expected that many questions will remain unresolved and that some new questions will become apparent as the update and revision process draws to a close. Having just reviewed and contributed to the available literature, the workgroups will be in an ideal position to identify remaining gaps in knowledge, chart the steps needed to fill these gaps, and set an agenda for the field for future research. The resulting proposals will be published in one or more of several possible forums, including the ICD text itself, the ICD web page, the knowledge portal, books published by

WHO on the ICD update and revision process, or a companion workbook accompanying the newly-published ICD-11.

3 Workflow

Proposals for update of ICD can be generated by Workgroups, or everybody accessing the revision platform. The proposals can relate to modifications of the structure of ICD, to modification of definitional content of ICD or to both. Any structural changes will be decided before definitional content is formulated. In some cases definitions will exist from previous versions of ICD, IND, and other internationally agreed sources, thus guiding decisions that may lead to structural changes. The graphics below depicts the flow of a proposal:



4 Forming TAGs and Workgroups

Each workgroup will be led by preferably two co-chairs, one of whom will be a member of the relevant TAG. These individuals will be responsible for selecting the members of the workgroup and establishing the membership and focus of the subgroups. They will supervise the work of the workgroup, monitoring progress, and ensuring quality control. If necessary each workgroup may include subgroups corresponding to subclasses of disorders or other areas requiring focused attention within the workgroup domain. TAGs and Workgroups are expected to include approximately 10-12 members. Subgroups can include participants who are not members of the workgroup, but must be chaired by a member of the workgroup. An effort will be made to draw members of workgroups and subgroups from multiple disciplines and nations.

Members are proposed by the chairs of the Groups. All members and chairs are nominated by WHO following consultations with chairs, and relevant stakeholders, as necessary.

- Formation of a Group includes:
- Identification and nomination of chairs
- Identification and nomination of members

Previous to nomination, the members will sign the WHO Declaration of Conflict of Interest. The procedure will make sure, in particular, that

- all contributions will be owned by WHO and there are no conflicts of intellectual property
- no single financial groups interest prevail in the revision
- the members comply with all ToR, rules, guidelines and procedures that are and will be established by WHO for the revision of ICD.

Membership of a group should cover the following criteria:

1. Active input providers: They provide input themselves or organise with others to provide the input needed
2. Regional coverage: to make sure all regions are represented adequately (for WHO regions see also www.who.int/about/regions/)
3. Available for the next 10 years
4. Able to transfer their knowledge to the next ICD revision
5. Practical experience with previous versions of ICD
6. In summary the members of a TAG/workgroup should cover the range of stakeholders addressed by the outcome of the work of that individual group.

Additional points for consideration are:

- Are all relevant stakeholders involved in the overall revision process, or is there a specific need to include one or the other party in a working group?
  - International organizations, as OECD <=> WHO
  - NGOs
    - Vertically, as FIGO or Diabetes
    - Horizontal, as paediatric or geriatric, or rare diseases
  - vertical: FIGO, KDIGO, Diabetes, other
  - Medical, non medical, statistical and policy communities

5 Copyright

It is envisaged that ICD-11 becomes an international public good. Copyright of parts of ICD vested with bodies other than WHO would seriously compromise implementation and distribution. Any person contributing, reviewing, or otherwise participating to the revision of ICD, legal bodies and other entities and all other possible parties are required to make sure that WHO can own the exclusive licence of their contributions and grant to WHO for the full period of copyright including any renewals or extensions throughout the world and in all languages an exclusive licence to publish

their contribution to the 11th revision of ICD, or permit others to do so in print editions and in digital formats including online and network editions of the ICD and in other derivative or collective works and to exploit subsidiary rights in the contributions, including database rights. They have to confirm they are the sole author of the contribution and that they are the sole owner of the copyright, or that they have explicitely been authorized to use the contribution in the context of ICD-11.

6 Chairing of TAGs and Workgroups

Co-chairs of all workgroups will have privileged access to the ICD Update and Revision Portal and will participate in a monthly telephone meeting with the TAG so that co-chairs of each workgroup can learn about the activities of other workgroups.

Chairs are liable to WHO that rules and regulations of the revision process are followed bey their groups.

Chairing is a proactive undertaking, and the range of activities and responsibilities that a chairman must perform is huge. The chair of a TAG is accountable to WHO. The chair of a committee must realize that the success or failure of that committee rests squarely on his/her shoulders. The primary duty is to guide the group's discussions. He/she should encourage every member to participate in the work and keep track of the discussion focused on the matter at hand. The chair ensures there are agendas and structured reports.

In particular, the chair ensures revision procedures are applied by the TAG and its workgroups

- Creation of workgroups
- Workflows
    - Proposals
    - Comments
    - Conflict resolution
- Evidence based review guidelines
- Communication with RSG /WHO

The chair is also responsible for encouraging opportunities for interactions between the members. Group should be provided the opportunity to get to know each other. Groups tend to work better if the members are familiar with one another. If members don't get along well, the leader must not allow those members to impede the flow of the meeting. A quick solution is not to allow the conflicting people to sit near each other or in the direct line of fire.

Members of workgroups should be carefully selected. These are the people who will help resolve issues for the relevant specialty. They should be knowledgeable in the area of the group's responsibility. Members should be a diverse group without being incompatible. Try to recruit people from different perspective on the committee – when these people agree on the solution, you know it's a good one.

Remind members that they should be receptive and open to new ideas and other people's opinions as work is accomplished in a committee through the give and take of an open, uninhibited discussion.

- Always lead by example
- Carefully plan your agenda; think of an agenda as a roadmap that will ensure your meeting serves its purpose
- Know where you are going; review the meeting objectives and desired outcomes in your opening remarks
- Make sure everyone participates in the discussion
- Anyone who voices a problem must also offer a potential solution... meetings should not be constructive, and not a forum for complaining about everything and everyone
- Ensure that committee members take ownership in desired outcomes by inviting them to do something to support the goals of the committee
- Delegate but have realistic expectations of the amount of work that should be asked from each members given their respective responsibilities
- Provide an agenda at least 4 days prior to the meeting date
- Indicate business items to be discussed versus decided upon
- Circulate minutes no later than 10 days following the meeting
- Chairs can also send a quick "to do list" summary the day after the meeting by email
- Evaluate your group from time to time by asking members about their experience on the group

Committees are an integral part of every successful organization. A committee with a clear purpose, a well-informed leader and dedicated members is on its way toward success.

Workgroups are an integral part of the revision. A working group with a clear purpose, a well-informed leader and dedicated members is on its way toward success.

DECLARATION OF INTERESTS FOR WHO EXPERTS

The assistance of distinguished authorities knowledgeable in a variety of medical and scientific fields is essential to WHO's work on global health issues. **It is expected that individuals who are qualified to serve as an expert for WHO may have private interests related to their expertise. But, at the same time, it is imperative that situations are avoided in which such interests may unduly affect, or may be perceived to affect, an expert's impartiality.**

To assure the highest integrity, and hence public confidence, in its activities, WHO policies require that all experts serving in an advisory role agree to disclose any circumstances which could give rise to a **potential conflict of interest** (i.e., any interest which may affect, or may reasonably be perceived to affect, the expert's objectivity and independence). Since you have been selected as a WHO expert in the activity described below, you are requested to disclose in this Declaration of Interest (DoI) form any financial, professional or other interest relevant to the subject of the work or meeting in which you will be involved and any interest that could be significantly affected by the outcome of the meeting or work. You are also asked to declare relevant interests of others who may, or may be perceived to, unduly influence your judgment (such as immediate family members, employers, close professional associates or any others with whom you have a substantial common personal, financial or professional interest.)

Kindly complete this form and submit it to WHO Secretariat, well in advance of the meeting or work. You are also asked to inform the Secretariat if any change in this information occurs before or during the course of the meeting or work. Non-completion of a DoI form at any stage precludes participating as an expert.

It should be clarified that the giving of affirmative answers to questions in a DoI form would not automatically disqualify or limit your participation as an expert. Rather, your answers will be screened by the Secretariat to determine if a potential conflict of interest may exist or may be perceived to exist. One of several outcomes can occur, depending on the circumstances (i.e., the nature and magnitude of the interest, its timeframe, the availability of sufficient measures to safeguard the integrity of the decision-making process if the expert is permitted to participate).

After reviewing the disclosures in the DoI form, the Secretariat may conclude that no potential conflict exists or that the interest is irrelevant or insignificant. If it appears that a conflict of interest exists and is potentially or clearly significant (or may be reasonably perceived to be so), one of the following three options, or a combination of these options, may be applied by the Secretariat: (i) you may be invited to continue to participate in the meeting or work, provided that your interest would be publicly disclosed; (ii) you may be asked not to take part in the portion of the meeting, discussion or work related to your interest, or not participate in related decisions; or (iii) you may be asked not to take part in the meeting or work altogether.

Any relevant conflicts will be **publicly disclosed** to other participants at the start of the activity and in the resulting report or other work product. The Secretariat will assume that you consent to such a disclosure, unless you check "no" in the space provided on the last page of this form. In **a later audit or investigation**, the contents of your DOI form may be made available to persons outside of WHO if the objectivity of the work or meeting in which you are involved is questioned and the Director-General considers disclosure to be in the best interests of the Organization, although only after discussion with you. By completing this DoI form, it is assumed that you agree to these conditions.

Name:

Institution:

Email:

Date and title of meeting or work, including description of subject-matter to be considered (if a number of substances or processes are to be evaluated, a list should be attached by the organizer of the activity):

Please answer each of the questions below. If the answer to any of the questions is "yes", briefly describe the circumstances on the last page of the form.

The term "you" refers to yourself and your immediate family members (i.e., spouse (or partner with whom you have a similar close personal relationship) and your minor children). "Commercial entity" includes any commercial business, an industry association, research institution or other enterprise whose funding is significantly derived from commercial sources with an interest related to the subject of the meeting or work. "Organization" includes a governmental, international or non-profit organization. "Meeting" includes a series or cycle of meetings.

EMPLOYMENT AND CONSULTING
Within the past 3 years, have you received remuneration from a commercial entity or other organization with an interest related to the subject of the meeting or work? Please also report any application or negotiation for future work.

1a Employment — Yes ☐ No ☐

1b Consulting, including service as a technical or other adviser — Yes ☐ No ☐

RESEARCH SUPPORT
Within the past 3 years, have you or your research unit received support from a commercial entity or other organization with an interest related to the subject of the meeting or work? Please also report any application for future research support.

2a Research support, including grants, collaborations, sponsorships, and other funding — Yes ☐ No ☐

2b Non-monetary support valued at more than US$1000 overall (include equipment, facilities, research assistants, paid travel to meetings, etc.) — Yes ☐ No ☐

INVESTMENT INTERESTS
Do you have current investments (valued at more than US$10 000 overall) in a commercial entity with an interest related to the subject of the meeting or work? Please also include indirect investments such as a trust or holding company. You may exclude mutual funds, pension funds or similar investments that are broadly diversified.

3a Stocks, bonds, stock options, other securities (e.g., short sales) — Yes ☐ No ☐

3b Commercial business interests (e.g., proprietorships, partnerships, joint ventures) — Yes ☐ No ☐

INTELLECTUAL PROPERTY
Do you have any current intellectual property rights that might be enhanced or diminished by the outcome of the meeting or work?

4a Patents, trademarks, or copyrights (also include pending applications) — Yes ☐ No ☐

4b Proprietary know-how in a substance, technology or process — Yes ☐ No ☐

PUBLIC STATEMENTS AND POSITIONS (during the past 3 years)

5a As part of a regulatory, legislative or judicial process, have you provided an expert opinion or testimony, related to the subject of the meeting or work, for a commercial entity or other organization? — Yes ☐ No ☐

5b Have you held an office or other position, paid or unpaid, where you may be expected to represent interests or defend a position related to the subject of the meeting or work? — Yes ☐ No ☐

ADDITIONAL INFORMATION

6a If not already disclosed above, have you worked for the competitor of a product which is the subject of the meeting or work, or will your participation in the meeting or work enable you to obtain access to a competitor's confidential proprietary information, or create for you a financial or commercial competitive advantage? — Yes ☐ No ☐

6b To your knowledge, would the outcome of the meeting or work benefit or adversely affect interests of others with whom you have substantial common personal, financial or professional interests (such as your adult children or siblings, close professional colleagues, administrative unit or department)? — Yes ☐ No ☐

6c Is there any other aspect of your background or present circumstances not addressed above that might be perceived as affecting your objectivity or independence? — Yes ☐ No ☐

7. **TOBACCO OR TOBACCO PRODUCTS** *(answer without regard to relevancy to the subject of the meeting or work)* — Yes ☐ No ☐

Within the past 3 years, have you had employment or received research support or other funding from the tobacco industry or had any other professional relationship with an entity, directly involved in the production, manufacture, distribution or sale of tobacco or tobacco products or representing the interests of any such entity?

EXPLANATION OF "YES" RESPONSES: If the answer to any of the above questions is "yes", check above and briefly describe the circumstances on this page. If you do not provide, the amount or value of the interest, where requested, it will be assumed to be significant.

Nos. 1 - 4: 7 **Type of interest, question number and category (e.g., Intellectual Property 4.a copyrights) and basic descriptive details.**	**Name of company, organization, or institution**	**Belongs to you, a family member, employer, research unit or other?**	**Amount of income or value of interest (if not disclosed, is assumed to be significant)**	**Current interest (or year ceased)**

Nos. 5-6: Describe the subject, specific circumstances, parties involved, time frame and other relevant details

CONSENT TO DISCLOSURE. The Secretariat will assume that you consent to the disclosure of any relevant conflicts to other meeting participants and in the resulting report or work product, unless you check "no" in the space provided here. If you check "no", the Secretariat will not disclose the information without your prior approval, although this may result in your not being able to participate in the meeting or conference. No: ☐

DECLARATION. I hereby declare on my honour that the disclosed information is true and complete to the best of my knowledge.

Should there be any change to the above information, I will promptly notify the responsible staff of WHO and complete a new declaration of interests which describes the changes. This includes any change which occurs before or during the meeting or work itself and through the period up to the publication of the final results.

Date: _____ Signature_____

Annex 4 Roles and workflows

Basic roles are:

Member of the RSG or a TAG	Access to all domains and layers, commenting at all stages in own domain
Member of a Workgroup	Access to own domain, commenting there at all stages, access to all other domains but commenting only in public layer.
Recommended contributor	Highlighted comments and contributions, access to public layer
Unknown contributor	Commenting at public layer
Linearization editor	Commenting at all layers and groups, direct editing access to the linearization editing frontend.

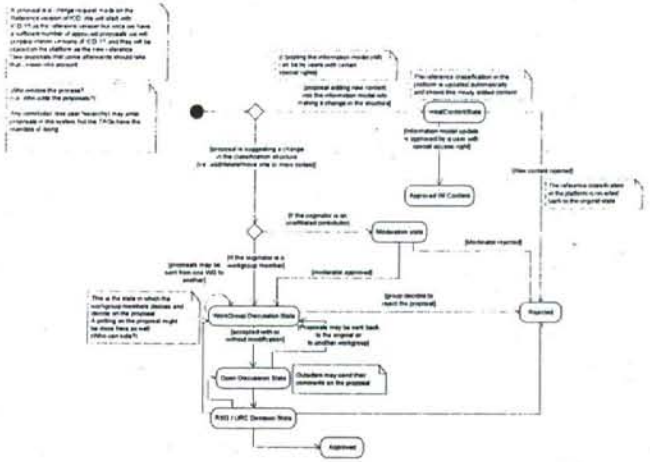
A recommended contributor is identified by valid, evidence based contributions, or has been constructively working actively for at least 3 months, or is identified to be a sound expert by his affiliation or scientific publications.

Unknown contributor is any person not included in one of the groups above.

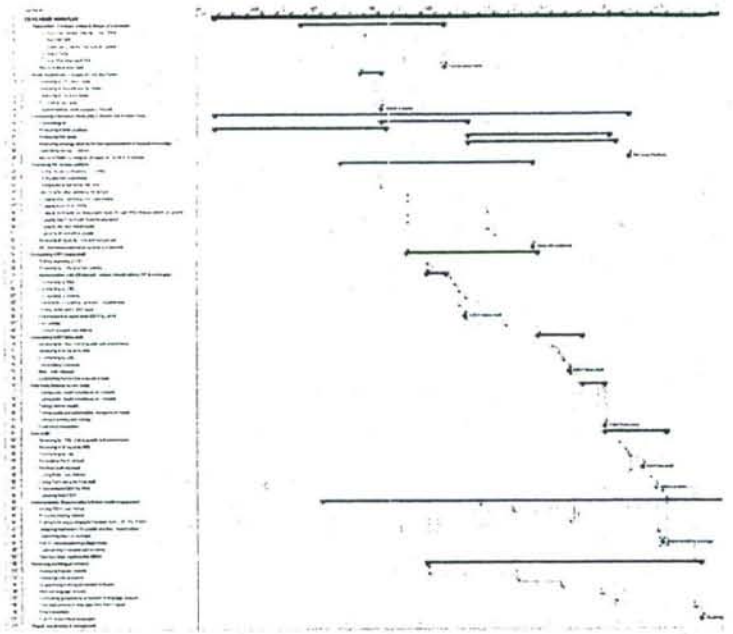
Contributions consist of comments, suggestions to structure of one or more linearizations, suggestions to definitions and to conceptual clustering for different usecases. Additional input comes for the rule base of ICD.

Access paths include submission of proposal to open discussion layer and forwarding to the relevant TAG by a moderator, and direct submission to the relevant TAG. Forwarding to a workgroup is task of the TAG.

Proposals for update of ICD can be generated by Workgroups, or everybody accessing the revision platform. The proposals can relate to modifications of the structure of ICD, to modification of definitional content of ICD or to both. Any structural changes will be decided before definitional content is formulated. In some cases definitions will exist from previous versions of ICD, IND, and other internationally agreed sources, thus guiding decisions that may lead to structural changes. The graphics below depicts the flow of a proposal:



Annex 5 Gant chart of the project



Annex 6 Roles and responsibilities

WHO Headquarters coordinates the overall ICD revision in consultation with the WHO Member States, the WHO-FIC Network, and multiple professional organizations to ensure that the final revision is broadly responsive to the many different aspects of health care. The work will be mainly carried out by the Revision Steering Group and the Workgroups as shown in the figure and further described below:

ICD-10 Revision Organization Structure

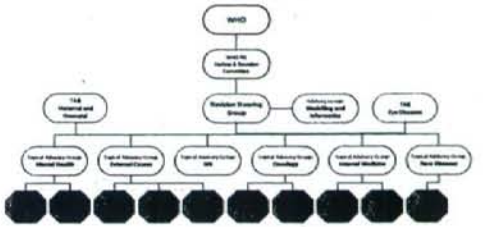


Figure 7 – ICD-10 Revision Organization Structure

WHO

WHO coordinates the overall revision process in conjunction with the relevant stakeholders? WHO is the secretariat of the World Health Assembly (WHA) and ensures the products from the revision process are acceptable to the WHA. The RSG assists WHO in this task. Daily business is done in a small executive group consisting of WHO, the chair of the RSG and a project manager

Update and Revision Committee

The committee was established to coordinate, decide, and advise WHO about updates to ICD-10. Its tasks now include updates for ICF, as well. In the revision process, the committee would deal with coordination of transition between ICD-10 and ICD-11, in conjunction with the last update to ICD-10 in 2010. The committee will verify, in cooperation with Mortality and Morbidity Reference Groups that the core linearizations of ICD-11 (mortality and morbidity) are fit for purpose. Assisting in design and evaluation of field tests of ICD-11 will provide the necessary evidence.

The Revision Steering Group (RSG)

The Revision Steering Group has been established as an oversight mechanism. Each main area of revision will be worked through a topic advisory group and multiple workgroups. For more detail see Annex ToR of RSG.

The Revision Steering Group will communicate on an ongoing basis by email, have regular conference calls, and will convene at least twice annually for an in-person meeting.

Topic Advisory Groups

Topic Advisory Groups will serve as the planning and coordinating advisory body for specific issues which are key topics in the update and revision process, namely Oncology, Mental Health, External Causes of Injury, Communicable Diseases, Non-communicable Diseases, Rare Diseases and others to be established.

The primary charge of each group will be to advise WHO in all steps leading to the revision of topic sections of ICD in line with the overall revision process. In particular:

- *Advise on particular topic revision steps and establish workgroups and partners to involve* - The TAGs will advise WHO on constitution of working groups to undertake generation of necessary evidence, to develop proposals for changes and to focus on specific issues as needed. Each TAG will (a) determine the number and content areas of the workgroups, (b) identify the members and chairs of the workgroups, (c) present an initial mandate to each workgroup, (d) establish procedures for the activities of the workgroups, and (e) facilitate cross-fertilization of ideas and reducing redundant efforts by making workgroups aware of one another's activities.
- *Advise in developing various drafts of topic segments in line with the overall production timeline of ICD-11* TAGs will review initial recommendations of the workgroups and consolidate those to achieve consistency in proposals across groups and areas.
- *Advise in developing protocols for and in implementing field trials* - TAGs will also assist WHO in identifying appropriate representatives of various stakeholders and in establishing effective collaboration/consultative mechanisms.

Topic Advisory Groups will consist of experts within each major domain of the classification chapters. Currently there are following:

- Mental Health :S. Hyman
- External Causes : J. Harrison
- Rare Diseases : S. Aymé
- Oncology : IARC Editor(s)
- Internal Medicine : K. Sugano
- Others: *to be formed e.g. Child and Adolescent Health etc.*

Topic Advisory Groups (TAG) will lead the work in different fields of expertise. Such fields can be vertical, as cancers (oncology) or horizontal, as rare diseases that can be found in every chapter. The TAG will organize **workgroups** to deal with relevant subtopics, such as diabetes in internal medicine.

The TAGs will communicate on an ongoing basis by email, have regular conference calls, and will convene at least twice annually for an in-person meeting.

TAG Health Informatics and modelling (HIM)

This TAG is established to ensure the consistency and usefulness of disease modelling and revision tooling environment. The TAG HIM will advise the Revision Steering Group, and will act after consultation with the RSG: For more detail see Annex ToR TAG HIM.

Communication will be the same as for the other TAGs. Involvement of modelling experts of SNOMED will be an asset.

Workgroups

Work Groups will serve as the key functioning unit for the review of evidence and generation of main proposals at a specific topic in the classification. For example, the TAG in the Mental Health Area will be responsible for the whole of chapter V and its linkages, whereas it may generate 5-10 working groups to carry out the systematic reviews on special sections of the chapter such as schizophrenias and psychosis; mood and anxiety disorders or topics such as children and youth, common brain disorders, etc. For more detail see Annex Instruction Manual for TAGs and Workgroups.

Ontology and terminology working groups

Ontology work means editing linkages of the drafted categories of ICD-11 inside ICD, rendering the analogue classification knowledge explicite and computable. The ontology work also consists of editing linkages to existing ontologies that relate to the descriptive dimensions of concepts in ICD.

At the current stage ontology experts are rare and it can not be assumed that such knowledge is widespread among other groups. The tooling environment of the revision will facilitate establishing such linkages by content-only experts, with a thorough review is done by ontology experts in conjunction with classification specialists.

Similar challenges and opportunities apply to terminology linkages. However, two main tasks are foreseen for the working group:

1. Terminological consistency inside ICD (particularly for diseases)
2. Terminological consistency and linkages to selected reference terminologies (anything except diseases)

Ongoing mapping processes between SNOMED and ICD are relevant to this part of the revision.

Annex 7 Standards

Standards, initiatives, and projects relevant to the revision of ICD are described for their field of activity, implementation, maturity, and problems. Present environment

1 Classifications

Members of the family of international Classifications, as core classifications, related, and derived classifications overlap with fields that are covered by current ICD. Alignment of fields of overlap requires consideration of such classifications.

1.1 ICPC

The International Classification for Primary Care shares concepts with ICD. Both classifications are being reviewed and will align common concepts.

WHO has accepted ICPC-2 within the WHO FIC mainly as a reason for encounter classification, and users may use it as a classification for primary care or general practice wherever applicable. ICPC-2 classifies patient data and clinical activity in the domains of General/Family Practice and primary care, taking into account the frequency distribution of problems seen in these domains. It allows classification of the patient's reason for encounter (RFE), the problems/diagnosis managed, interventions, and the ordering of these data in an episode of care structure. The ICPC-2 has a biaxial structure and consists of 17 chapters, each divided into 7 components dealing with symptoms and complaints (comp. 1), diagnostic, screening and preventive procedures (comp. 2), medication, treatment and procedures (comp. 3), test results (comp. 4), administrative (comp. 5), referrals and other reasons for encounter (comp. 6) and diseases (comp. 7).

The classification was developed in an international effort by the classification working group of the World Organisation of National Colleges, Academies, and Academic Associations of General Practitioners/Family Physicians (WONCA). An updated second edition has been published in 2003. A revised edition, the ICPC-3 is under preparation. WHO and WONCA are collaborating to align ICD and ICPC during the respective revision processes, as well as aligning ICPC and ICF. The ICPC-2 has been translated into more than 20 languages and is in use world wide.

1.2 Clinical modifications of ICD-10

Although some countries found ICD-10 sufficient for clinical reporting, reimbursement and resource allocation, many others felt that it did not provide adequate detail for clinical and administrative uses. Also, neither ICD-9 nor ICD-10 provided codes for classification of operative or diagnostic procedures. As a result, clinical modifications of ICD were developed, often along with procedure classifications (Australia, Canada, France, Germany, Thailand, Korea, and USA). These modifications will inform the revision of ICD-10.

1.3 Adaptations of ICD-10

Adaptations of ICD for Dentistry and Stomatology, Dermatology, Mental Health, Neurology (NA), Oncology (ICD-O), Paediatrics, Orthopaedics and Rheumatology, and other disciplines accommodate the need for more detail in these specialities. The detail added in these adaptations will inform the revision of ICD-10.

1.4 ICF

The overall aim of the ICF is to provide a unified and standard language and framework for the description of health and health-related states of an individual. It defines components of health and some health-related components of well-being (such as education and labour). The ICF therefore contains health domains and health-related domains. These domains are described from the perspective of the body, the individual, and the society in two basic lists:

(1) Body Functions and Structures

(2) Activities and Participation

As a classification, ICF systematically groups different domains for a person in a given health condition. Functioning is an umbrella term encompassing all body functions, activities, and participation; similarly, disability serves as an umbrella term for impairments, activity limitations, or participation restrictions.

ICF also lists

(3) Environmental factors

Those interact with all these constructs. In this way, it enables the user to record useful profiles of individuals' functioning, disability and health in various domains, as for pre-treatment and post-treatment assessment (e.g. for outcome measurement) or social insurance assessment.

The International Classification of Impairments, Disabilities, and Handicaps (ICIDH) was first published by the World Health Organization for trial purposes in 1980. Developed after systematic field trials and international consultation over five years, it was renamed ICF and endorsed by the Fifty-fourth World Health Assembly for international use in 2001. ICF is translated in over 38 languages and can be accessed online in the 6 official languages at WHO.

1.5 ATC/DDD

Revision of ICD will align categories that relate to drugs with the ATC/DDD.

The ATC/DDD system classifies therapeutic drugs. The purpose of the ATC/DDD system is to serve as a tool for drug utilization research in order to improve quality of drug use. In the ATC classification system, the drugs are divided into different groups according to the organ or system on which they act and their chemical, pharmacological and therapeutic properties. Drugs are classified into five different levels. Drug consumption statistics (international and other levels) can be presented for each of these five levels. The Daily Drug Doses reflect an average of international dosage to get an estimate of consumption.

The system has been since 1975. The classification is updated on an annual basis. So far, the ATC contains no reference to the ICD.

1.6 ICECI

The ICECI classifies external causes of injuries. First published in May 1998, ICECI is designed to help researchers and prevention practitioners to describe measure and monitor the occurrence of injuries and to investigate the circumstances of occurrence. The classification has a separate coding axis for each main concept. It aims to be useful for injury prevention, useable in many types of settings (different parts of the world; emergency departments and other places where data are collected) and to ensure comparability and complementarity with the ICD-10.

The ICECI has a multi-axial and hierarchical structure: a core module including seven items (mechanism of injury, objects/substances producing injury, place of occurrence, activity when injured, the role of human intent, use of alcohol, use of (other) psycho-active drugs) and five additional modules to enable collection of additional data on special topics (violence, transport, place of occurrence, sports, occupational injury). A set of short ICECIs been proposed for use in countries or societies with limited resources for injury surveillance.

It has been developed as a related classification with respect to ICD-10 chapter XX. An aim in developing ICD-11 is to increase compatibility between ICD and ICECI, with ICECI possibly being a derived classification from ICD in the future.

Custodianship and responsibility for maintenance and updating lies with an international group of experts: ICECI Coordination and Maintenance Group that includes WHO; a group of three persons act as the executive committee. The ICECI is available for free download on the internet in English, Spanish, and Portuguese

2 Terminologies

Although all of the items within this category may not meet the technical definition of a terminology, it remains important for ICD to coordinate and interface with them to reduce duplication and discontinuities in use and meaning, as well as support efficient processing. Terminologies play an increasing role in health, where electronic reporting of individual data is in place, e.g. electronic health records, cancer registration, and death certificates

2.1 SNOMED

SNOMED CT® (Systematized Nomenclature of Medicine-Clinical Terms) is a clinical healthcare terminology joint development between the NHS in England and the College of American Pathologists (CAP) to develop an international clinical terminology and was formed in 1999 by the convergence of SNOMED RT and the United Kingdom's Clinical Terms Version 3 (formerly known as the Read Codes). It has greater depth and coverage of healthcare than the versions of Clinical Terms (Read Codes) that it replaces.

The historical strength of SNOMED RT was its terminologies for specialty medicine and methods for distributed collaborative development, while the strength of Clinical Terms Version 3 was its terminologies for general practice. By combining these two systems, SNOMED CT is the most comprehensive clinical vocabulary available with concepts of unique meanings and formal logic-based definitions organized into hierarchies. It covers most aspects of clinical medicine with over 357,000 concepts for the electronic health record (EHR). SNOMED CT cross-maps to such other terminologies as ICD-9-CM, ICD-O3, ICD-10, Laboratory LOINC, and OPCS-4. It supports ANSI, DICOM, HL7, and ISO standards.

http://www.ihtsdo.org/

http://en.wikipedia.org/wiki/SNOMED_CT

2.2 OMIM

Online Mendelian Inheritance in Man (OMIM™) is a continuously updated catalogue of human genes and genetic disorders. OMIM focuses primarily on inherited or heritable, genetic diseases. It is also considered to be a phenotypic companion to the human genome project. OMIM (Online Mendelian

Inheritance in Man) is a computerized database version of Victor McKusick's book, Mendelian Inheritance in Man, provided through the National Center for Biotechnology Information. The primary difference between the two resources is that the online version is more current. The online database is updated daily, whereas the book contains all the information that was available online at the time of print. The online version also provides links to a variety of related resources.

The text Mendelian Inheritance in Man, authored and edited by Dr. Victor A. McKusick and a team of science writers and editors at Johns Hopkins University and elsewhere, is now in its 12th edition. See McKusick, V.A.: Mendelian Inheritance in Man. 12th ed., Baltimore: Johns Hopkins University Press, 1998.

http://www.ncbi.nlm.nih.gov/Omim/omimfaq.html

2.3 MeSH

MeSH is the US National Library of Medicine's controlled vocabulary thesaurus. It consists of sets of terms naming descriptors in a hierarchical structure that permits searching at various levels of specificity.

MeSH descriptors are arranged in both an alphabetic and a hierarchical structure. At the most general level of the hierarchical structure, there are very broad headings such as "Anatomy" or "Mental Disorders." More specific headings are found at more narrow levels of the eleven-level hierarchy, such as "Ankle" and "Conduct Disorder." There are 24,767 descriptors in 2008 MeSH. In addition to these headings, there are more than 172,000 headings called Supplementary Concept Records (formerly Supplementary Chemical Records) within a separate thesaurus. There are also over 97,000 entry terms that assist in finding the most appropriate MeSH Heading, for example, "Vitamin C" is an entry term to "Ascorbic Acid."

The MeSH thesaurus is used by NLM for indexing articles from 4,800 of the world's leading biomedical journals for the MEDLINE/PubMED® database. It is also used for the NLM-produced database that includes cataloguing of books, documents, and audiovisuals acquired by the Library. Each bibliographic reference is associated with a set of MeSH terms that describe the content of the item. Similarly, search queries use MeSH vocabulary to find items on a desired topic.

http://www.nlm.nih.gov/pubs/factsheets/mesh.html

2.4 UMLS

The purpose of US NLM's Unified Medical Language System® (UMLS) is to facilitate the development of computer systems that behave as if they "understand" the meaning of the language of biomedicine and health. To that end, NLM produces and distributes the UMLS Knowledge Sources (databases) and associated software tools (programs) for use by system developers in building or enhancing electronic information systems that create, process, retrieve, integrate, and/or aggregate biomedical and health data and information, as well as in informatics research. By design, the UMLS Knowledge Sources are multi-purpose. They are not optimized for particular applications, but can be applied in systems that perform a range of functions involving one or more types of information, e.g., patient records, scientific literature, guidelines, and public health data. The associated UMLS software tools assist developers in customizing or using the UMLS Knowledge Sources for particular purposes. The lexical tools work more effectively in combination with the UMLS Knowledge Sources, but can also be used independently.