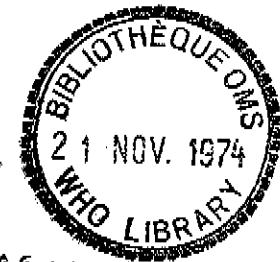




EXPERT COMMITTEE ON HEALTH STATISTICS
 (Ninth Revision of the International
 Classification of Diseases)

INDEXED

Geneva, 4-10 June 1974



1. *Vital and health Stat. Conf. etc.*
2. *Nomenclature - Conf. etc.*
3. *International Classification of Diseases*

REPORT

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The Expert Committee on Health Statistics met in Geneva from 4 to 10 June 1974.
Dr A. S. Pavlov, Assistant Director-General, opened the meeting on behalf of the Director-
General and welcomed the participants.

The Committee elected Dr M. A. Heasman, Chairman, Dr G. Cerkovnyj, Vice-Chairman, and
Dr R. Wells, Rapporteur.

The Committee adopted the agenda, which dealt principally with the general structure of
the Ninth Revision of the International Classification of Diseases (ICD), the revision of its
individual chapters and other matters related to its use.

1. PREPARATORY WORK ON THE NINTH REVISION OF THE ICD

Preparations for the Ninth Revision of the ICD had been proceeding for nearly five years
and had been the subject of three reports of the Study Group on Classification of Diseases
and four reports of meetings of Heads of WHO Centres for the Classification of Diseases.
These reports contained various technical recommendations intended as guidance in the prepa-
ration of draft proposals for a revision which would provide a classification suitable for a
wide variety of health and social requirements.

The Study Group on Classification of Diseases held its first meeting in Geneva in
October 1969 to consider the programme for preparation of the Ninth Revision. It laid down
general guidelines for the scope, content and form of the Ninth Revision, considered the
implications of developments and trends in various related activities, and recommended that
additional classifications, either within or complementary to the ICD, should be prepared for
handicaps and impairments, morphological (histological) classification of neoplasms, surgical
operations and other medical and surgical procedures, including laboratory examinations.

The second meeting, held in November 1971, reviewed the progress made in the revision of the individual chapters of the ICD and the associated classifications, and gave further guidance on certain general matters. It took account of views expressed at two meetings of Heads of WHO Centres for Classification of Diseases which had been held since the first Study Group meeting, and several meetings of groups of countries on a common language basis.

The third meeting of the Study Group was held in January, 1973, and considered matters of major principle contained in proposals for revision of the main chapters of the ICD prepared by the WHO Centres for Classification of Diseases, by WHO Headquarters Units, by WHO consultants and temporary advisers or expert groups, comprehensive proposals from the United States of America, the Pan American Health Organization, the Nordic Medical Statistical Committee (NOMESCO), the Drei-Länder Conference and meetings of countries organized by the Regional Offices of WHO, and comments received from many other countries and individuals. The Group also reviewed progress on the associated classifications.

On the basis of the Study Group's recommendations on the proposals, WHO was asked to prepare a complete draft of the Ninth Revision of the ICD, to circulate it to Member States and to submit the draft and a summary of the comments to the Expert Committee, together with drafts of the associated classifications.

The reports of these meetings were very valuable to the Expert Committee in its deliberations.

The Expert Committee,

NOTED the Reports of the Study Groups and the meetings of Heads of WHO Centres for Classification of Diseases, and

THANKED them for their valuable preparatory work for the Ninth Revision of the International Classification of Diseases.

The Expert Committee's recommendations for the Ninth Revision of the ICD are the subject of the body of this report. Many of these recommendations are those formulated by the preparatory meetings; others of their recommendations had to be reconsidered by the Expert Committee in the light of comments on the draft proposals circulated to Member countries.

2. GENERAL STRUCTURE OF THE ICD

The Expert Committee considered the comments which had been received from a number of countries on the draft revision proposals circulated to Member States.

2.1 General

2.1.1 The Ninth Revision of the International Classification of Diseases, Injuries and Causes of Death will be a direct descendant of earlier classifications designed for the presentation of single-cause statistics of causes of death. The most recent revisions recognized that the ICD could be and increasingly was being used for the presentation of statistics of morbidity and medical care, for indexing and retrieval of medical records such as hospital case records, and that multiple-condition analysis was being used in many of these applications. The Committee considered that these other uses of the Classification would increase in importance and the Ninth Revision of the ICD must accommodate such of their special needs as would not prejudice its traditional use in mortality statistics. In this connexion, the Committee noted the following resolution of the World Health Assembly in May 1974 (WHA27.55).

"The Twenty-seventh World Health Assembly,

Recognizing the vital contribution of the International Classification of Diseases to international cooperation in the field of health statistics;

Noting that the data currently provided have greatly assisted in the development of preventive services;

Recognizing additional needs for appropriate data created by expanding activities of planning and monitoring of health care delivery systems;

Noting also the increasing demand for relevant data for the evaluation of clinical activities; and

Concerned with the danger that these additional needs may be met by the development of a diversity of systems in different countries with a consequent lack of international communication;

REQUESTS the Director-General to ensure that the next Revision of the International Classification of Diseases would include the means of meeting these needs, without prejudice to the continuing use of the Classification for its traditional purposes."

2.1.2 Although a number of suggestions had been made that the ICD should undergo a radical revision of its entire concept and structure, the Committee did not consider that the Ninth Revision would be the appropriate time for this. Recognizing the merits of the current structure of the ICD, it nevertheless felt that the possibility of radical revision should seriously be considered for the Tenth Revision of the ICD.

2.1.3 In the Ninth Revision of the ICD, the essential basis of the Eighth Revision should be retained in respect of the axes of classification, the main chapters and the decimal numbering system; and, unless essential for other reasons, there should be as little change in the numbering of sections as possible.

2.1.4 In the early stages of the preparatory work it was thought that the Ninth Revision could be largely restricted to the provision of additional subdivisions of existing three-digit categories, but many of the clinical specialists consulted expressed grave dissatisfaction with the existing Classification, and in certain sections medical knowledge had advanced so rapidly that the existing arrangement of categories was already badly out of date. The 1973 Study Group considered that most of the demands for modifications to the ICD to make it suitable for health care purposes could be met without unduly affecting its suitability for "underlying cause" tabulations, and that these modifications should be incorporated in the draft proposals. The Expert Committee recommended the acceptance of this kind of modification; which involved, among other things, complete restructuring of certain chapters, or sections of chapters, but without changing the overall blocks of numbers previously allocated. Minor numbering changes, such as a shift of a series of numbers by one or ten, which tend to confuse coders and result in numerous errors in the statistics, should be kept to a minimum.

2.1.5 The Committee recommended that notes and instructions be included on use of the ICD for morbidity statistics and indexing as well as use in mortality statistics.

2.1.6 The Committee recommended there be better provision for classifying certain matters, such as complications of medical and surgical procedures, symptomatology, and other causes of hospital admission that cannot be covered by diagnoses of physical and psychiatric illnesses.

2.1.7 The Committee noted that multiple-condition analysis would enable certain additional categories of relevant information to be used, and recommended that the Ninth Revision should provide scope for the classification of handicaps, symptoms, and other secondary diagnoses and less precise information that would not normally be used if only a single diagnosis could be coded. Assumptions of etiology complicate multiple-condition coding and should be discontinued so far as possible.

2.1.8 The Committee recommended that the Tabular List should indicate unambiguously the content of rubrics, and where this could not be achieved adequately by the use of inclusion and exclusion terms in the usual way a note should appear explaining the category content. However, the appearance of such notes under diagnostic terms used as verbal descriptions of categories should not be represented as defining the meaning of these terms in normal medical usage; the meaning of some diagnostic terms may change with advancing knowledge, but the content of rubrics in the Ninth Revision of the ICD must remain constant.

2.1.9 It was considered that the titles and inclusion terms in the Tabular List should be the prime reference source of preferred terms, and so far as possible should be based on the work of the CIOMS in the preparation of their nomenclature of disease. The list of inclusion terms shown should, where possible, be based on studies of terms actually used.

2.2 Late effects

The Study Group meeting in January 1973 requested WHO to consider the possibility of bringing all "late effects" together in an area of the Classification where sufficient space could be found for a fuller classification of the nature of these effects. The ICD Unit attempted unsuccessfully to find a way to do this, and therefore as this was not possible the only practicable options were either to keep "late effects" categories much as they were in the Eighth Revision (and provide separately for the nature of the effects themselves) or to remove them altogether from the main classification. The Expert Committee recognized that there was a need for categories entitled "late effects of . . ." in the main classification, and therefore recommended that provision be made for this in the appropriate chapters of the Ninth Revision along lines similar to those in the Eighth Revision.

2.3 Fourth-digit subdivisions that are common to a group of categories

The Committee considered it desirable to reduce unnecessary repetition of fourth-digit subdivisions common to a group of three-digit categories, and yet prevent the former being overlooked. Where such fourth-digit subdivisions were not repeated after each three-digit category then an appropriate note should be added, at least on every page, indicating where details of the fourth-digit subdivisions are to be found.

2.4 Identification of "other" and "unspecified" components of residual sub-categories

The fourth-digit .9 should usually be reserved for "unspecified" and the .8 for "other specified" except where this digit was needed for a more specific category and little or nothing remained to be classified as "other specified".

2.5 Addition of .9 as a "filler" code for unsubdivided three-digit categories

The November 1971 meeting of the Study Group on the Classification of Diseases recommended that a .9 should be printed as a standard "filler" fourth-digit in three-digit categories which had no fourth-digit subdivisions. However, the Expert Committee noted that this proposal was unacceptable in some countries, and therefore recommended that no standard "filler" fourth-digits should be printed in the Ninth Revision.

2.6 Alternative classification of certain diagnostic statements

2.6.1 The Committee recommended that the Ninth Revision of the ICD should include a provision for alternative codes for those diagnostic statements which carry information about both the etiology and the manifestation or localization, and which have traditionally been classified by the ICD according to etiology, but where the manifestation component may be more important for certain health care purposes. Of the two alternative codes, one should be the traditional classification according to etiology and be identified by a dagger (†), the other should classify the statement according to manifestation and be identified by an asterisk (*).

2.6.2 For coding to provide statistics on the underlying cause of diseases, these diagnostic statements would be positioned in the classification according to etiology. However, for other purposes, the same diagnostic statements would be placed in the classification according to manifestation. Both of the alternative codes could be used in hospital and other record indexing and in multiple-condition coding. In this way, the use of one type of code to subdivide the other would enable both axes of classification to be shown and could provide a high degree of specificity.

2.6.3 The Committee noted that in the circulated proposals the scheme had not always been fully or consistently applied and asked that the Secretariat develop it to the maximum practicable extent. It also noted that the already arranged postponement of the Revision Conference until October 1975 would provide time in which this work could be done, and heard with satisfaction that because of improved methods of production of the printed volumes, WHO did not anticipate any delay in publication on this account.

2.6.4 During the discussion of this subject, a proposal was made to subdivide individual categories so that each manifestation and localization could be separately identified, thereby making it possible to construct lists of all codes for conditions affecting particular parts of the body and of interest to the relevant specialties. This would provide a more economical system of coding when both axes of classification are required. No additional coding would be required where an etiological rubric concerned a single anatomical localization; where an etiological rubric dealt with more than one localization, only one additional indicator (preferably alphabetical) would be required. The Expert Committee acknowledged the merit of this proposal, which it felt served purposes beyond the intention of the "dagger and asterisk" scheme, but considered that while this might be appropriate for the Tenth Revision it could not be recommended for the Ninth.

2.7 Coding of effects of drugs

The Expert Committee recommended that in the Ninth Revision of the ICD the adverse effect of drugs administered in therapeutic doses should be distinguished from poisoning by overdose, by a drug being administered or taken in error or by the wrong drug being given or taken. The adverse effects of therapeutic administration should be classified to the normal places for these conditions in Chapters I to XVI of the ICD, and poisoning should be classified in Chapter XVII.

2.8 Printing Format for Tabular List

The Committee noted comments suggesting that the use of dagger and asterisk symbols alone did not provide a sufficiently clear distinction when two codes were given for the same condition, and that there should also be a typographic differentiation. The Committee requested the Secretariat to consider whether it was possible to make a clearer distinction between the alternative codes; it was however important not to prejudice the timetable of publication.

3. PROPOSALS FOR REVISION OF THE MAIN CHAPTERS OF THE ICD AND OF THE E CODE

The Expert Committee had before them the draft proposals for revision of the main Chapters of the ICD and the E Code, which had been circulated to Member States, and considered a number of comments from those countries, including many on points of detail which were referred to the Secretariat, and are not set out in this report. The proposed changes in the Chapters and the E Code between the Eighth and Ninth Revisions, are described briefly below. The Committee recommended that WHO prepare definitive proposals for submission to the International Revision Conference, based on the draft proposals but adjusted in the light of their recommendations for the various Chapters as set out below, and matters of detail which were left to the discretion of the Secretariat.

Chapter I - Infective and Parasitic Diseases

The proposed changes in this Chapter mainly took the form of some increase in specificity and updating of terminology.

WHO had recommended that the former title "Infective and Parasitic Diseases" should be amended to "Infectious and Parasitic Diseases" to conform with standard terminology. The Committee considered that there was a difference in English usage between the meaning of the two words and that "infective" more accurately represented the content of the Chapter. They asked for the decision to be reconsidered.

The Committee noted a proposal from the Scientific Committee on Epidemiology of the International Union against Tuberculosis that the bacteriological confirmation of tuberculosis should be shown at the mandatory three-digit level in the Ninth Revision. This proposal was in line with the strong recommendations of the WHO Expert Committee on Tuberculosis¹ that "bacteriologically proved disease should become the basis for a diagnosis of pulmonary tuberculosis" in the International Classification of Diseases and with the present WHO policy on tuberculosis. The Expert Committee recognized that such information was extremely important, and that bacteriological confirmation of tuberculosis should be encouraged, but noted that this information was rarely provided on most of the records (including death certificates) which the ICD was used to classify. Confirmation of diagnosis was a problem applying generally throughout the ICD and was not confined to the sections on tuberculosis. This type of information was difficult to collect in a uniform manner, and its significance in mortality and medical care records often could not be assessed because of uncertainties about the time relationships between confirmation of diagnosis and the event being coded. The Committee, therefore, considered that the confirmation of tuberculosis was an item of information best dealt with outside the classification of the disease itself in the ICD, and endorsed the recommendations of the Study Group on Classification of Diseases in January 1973 that diagnostic methods in tuberculosis should not be indicated at the three-digit level in the Ninth Revision. This information could be indicated at the fifth-digit level, as in the proposal.

WHO was asked to consider whether it would be practicable in this Chapter to group together the diseases due to Chlamydiae and other newly-recognized classes of organisms.

Chapter II - Neoplasms

The proposed changes for malignant neoplasms were mostly of a minor nature, the majority of the categories being identical with those in the Eighth Revision. New sections had been inserted for carcinoma-in-situ and for well-categorized neoplasms the benign or malignant nature of which is not well defined. Benign tumours with endocrine function, previously classified in Chapter III, now had categories in Chapter II and it was proposed that endocrine function of any tumour could be coded as a separate item of information.

¹ Wld Hlth Org. techn. Rep. Ser., 1964, No. 290; 1974, No. 552.

It was noted that an "Adaptation of the ICD to Oncology", (ICD-O) will be published separately by WHO at the same time as the Ninth Revision. It was intended to meet certain special needs in oncology.

To assist in maximizing continuity in neoplasm statistics between ICD-8 and ICD-9 it was agreed that:

- (i) gaps could be allowed in the fourth-digit subdivisions of certain three-digit categories (162.1, 171.1, 183.1, 187.0 and 194.2); and
- (ii) an anatomically irregular subdivision of category 153, Malignant neoplasm of Colon, could be used.

It was proposed that a morphology (histology) code designating the type of neoplasm should be used in conjunction with the basically anatomical classification in Chapter II of the ICD, and be published as an Annex to the Ninth Revision. The Committee recommended that the exact form of the proposed code receive further consideration.

Chapter III - Endocrine, Nutritional and Metabolic Diseases

The proposed revision of the endocrine section of this Chapter was mainly concerned with providing additional detail at the fourth-digit level for the better classification of many newly-recognized disorders. In the nutritional section, a change of order allowed additional prominence for the various types of malnutrition. Metabolic disorders were classified in more detail and it was proposed to remove the distinction in the classification between those specified as congenital and the others (in practice many of these congenital conditions are not specified as such). A proposed additional category at the end of the Chapter provides for the classification of disorders involving the immune mechanism and it is proposed that the Chapter title should reflect this fact.

WHO was requested to determine whether the terms "nutritional oedema" shown as an inclusion term under 260, Kwashiorkor, and "hunger oedema" shown as inclusion term under 262, Severe Protein-Calorie Malnutrition, could be distinguished and separately defined.

Chapter IV - Diseases of the Blood and Blood-forming Organs

Extra specificity and provision for newly-recognized conditions was provided in the proposed revision of this Chapter by additional fourth-digit rubrics.

Chapter V - Mental Disorders

The development of proposals for revision of this Chapter had formed part of a long-term WHO project investigating international practice in diagnosis and terminology in mental illness and its effect on the statistics. Many categories remained comparable with those in the Eighth Revision but there had been extensive rearrangement and provision for different concepts.

The Committee considered that, as in the draft proposals, glossary descriptions should be given for most of the rubrics in this Chapter to define the intended content of each category, but not necessarily to define inflexibly the meaning of diagnostic terms.

Chapter VI - Diseases of the Nervous System and Sense Organs

It was proposed that the sections of this Chapter relating to nervous diseases and eye conditions should undergo a major structural revision to allow for more practicable grouping and more precise characterization of the conditions, in the light of current knowledge.

The Expert Committee accepted a request from the International Council of Ophthalmology for a rearrangement of numbering of categories 360 to 379 in the draft proposal for this Chapter, and recommended that paralysis and other late effects of brain lesions be more precisely identified.

Chapter VII - Diseases of the Circulatory System

Certain adjustments were proposed in this Chapter, but the basic structure remained as in the Eighth Revision. The distinction between malignant and benign hypertension would now be made at the fourth-digit level only, reflecting clinical doubts about the meaningfulness of the information. A section for diseases of pulmonary circulation had been introduced.

Chapter VIII - Diseases of the Respiratory System

A fairly extensive revision and restructuring of this Chapter was proposed to provide a more logical anatomical arrangement, to allow grouping together of chronic obstructive lung diseases, more specificity, and better provision for many newly-recognized disorders.

Chapter IX - Diseases of the Digestive System

In this Chapter, the proposed revision mainly took the form of increased subdivision at four-digit level without major restructuring.

The Expert Committee recommended that the categories for peptic ulcer, 531-534, should be subdivided to indicate not only whether the ulcer was acute, or chronic or unspecified, as in the proposal, but also whether there was perforation, haemorrhage or both.

Because of lack of space, the Committee did not accept a suggestion to classify dental caries at the three-digit level, although recognizing the importance of the condition as a source of morbidity.

Chapter X - Diseases of the Genito-Urinary System

Major restructuring was proposed of the sections in this Chapter relating to kidney diseases and disorders of female genital organs, to provide the more detailed classification required by clinicians while at the same time maintaining relevance for mortality statistics.

Chapter XI - Complications of Pregnancy, Childbirth and the Puerperium

The proposal for this Chapter was for major restructuring, to provide greatly increased specificity and more appropriate grouping of conditions for use in statistics of obstetric care.

The Expert Committee recommended that complications of the various types of abortion should be indicated at the fourth-digit level and not have to be demonstrated by multiple coding as in the draft proposals circulated.

Comments had been made that the categories for maternal non-obstetric conditions complicating the course of pregnancy, childbirth and the puerperium were not appropriate in this Chapter, and their inclusion would alter the definition of "maternal deaths". The Committee themselves recommended a definition of maternal deaths (see 6.3.4 and 10) which included these conditions and in addition recognized that they represented special problems during the care of pregnancy and considered the inclusion of categories for them in this Chapter was necessary. The categories should not be marked with an asterisk, since the conditions would be classifiable to these categories for all purposes.

Chapter XII - Diseases of the Skin and Subcutaneous Tissue

Extensive additional subdivision was proposed in this Chapter.

Chapter XIII - Diseases of the Musculoskeletal System and Connective Tissue

A major rearrangement of this Chapter was proposed, with extensive additional subdivision, which allowed for the grouping of back and other common disorders in a manner more in line with current medical thought, and which also provided better characterization within the Chapter of important clinical problems the causes of which were classified elsewhere. The Committee did not consider appropriate a suggested change of the Chapter title to "Disorders of the Locomotor System and Connective Tissue".

The Committee asked the Secretariat to consider the inclusion of a recommended fifth-digit code for site, which many of those who had commented on the draft considered important.

Chapter XIV - Congenital Anomalies

This Chapter had been considerably altered at the time of the Eighth Revision and it was proposed that there should only be a number of minor category adjustments.

Consideration was given to several suggestions for more detail to be provided on congenital anomalies of the circulatory system, particularly those of the heart. To provide space for this, it was agreed that an extra category be obtained for circulatory system anomalies by classifying the congenital anomalies of the nervous system in three three-digit categories instead of four, though it was emphasized that Anencephalus and Spina bifida ought still to be classified at the three-digit level.

Chapter XV - Certain conditions originating in the perinatal period

The proposal for the revision of this Chapter was for a major change, with removal of categories indicating combinations of maternal and fetal or infant conditions, and with much expansion of the rubrics for the conditions in the fetus or infant to allow better characterization of certain recently recognized conditions.

The Secretariat were asked to provide an explanatory note at the beginning of this Chapter to define clearly its content.

The Committee considered a suggestion that the categories for maternal conditions affecting the fetus or infant should be moved elsewhere, possibly to the E Code, but recommended that they remain in Chapter XV. Objections were noted to the inclusion in this Chapter of a category for certain infections peculiar to the newborn period, but the Committee recommended that the category remain as in the draft proposal circulated.

Chapter XVI - Signs, Symptoms and Ill-defined Conditions

An extensive revision of this Chapter in the circulated proposals allowed for more specificity in classification of signs and symptoms, and made provision for certain abnormal findings on investigation which also may be reported in lieu of diagnoses in health-care records. Certain other conditions which were classified in this Chapter in the Eighth Revision and which were thought to point clearly to particular diagnoses were now classified in the chapters for the relevant systems.

A comment had been received that all symptoms ought to be brought together in this Chapter, but the Expert Committee noted that there was insufficient space to do this adequately, and considered that the symptoms which were already or were proposed to be classified in other Chapters were better situated there.

Chapter XVII - Accidents, Poisoning and Violence

In the circulated proposals, the categories in this Chapter had been rearranged to a certain extent to allow for more detail, and in particular for specific classification of injuries to blood vessels, crushing injury and nerve injury, which were difficult to classify in the Eighth Revision.

The Expert Committee recommended that the category for "Injury, unspecified" should be moved from 996 to 959, which was available, and where it would be better placed.

It was agreed that categories for poisoning by drugs (overdose, wrong drug, etc.) were best expressed in terms of the kind of drug causing the poisoning state. The Committee recommended a more comprehensive classification of the adverse effects of misadventures and complications during medical and surgical procedures, and requested the Secretariat to develop this in the definitive proposals.

E Code - Supplementary Classification of External Causes and Injury and Poisoning

Although the revision proposals for this Code left the basic structure much as in the Eighth Revision, a more detailed classification was provided in many areas and there was improved grouping of accidents caused by machinery. The Committee noted comments received on the revision proposal suggesting that it would be difficult to produce statistics for total accidents in the home, farm accidents and sports accidents, and was informed of a proposed rearrangement which might meet more of these requirements. The Secretariat was requested to consider ways in which this point could be met, and if appropriate to develop the alternative proposal more fully.

So far as effects of drugs are concerned, codes in the E Code should enable administration in therapeutic doses to be distinguished from accidental poisoning, suicide, homicide, etc.

The Committee recommended that in the Ninth Revision the E Code be used to indicate the external cause of certain conditions classified in Chapters I to XVI of the Classification, i.e. adverse effects of drugs administered in therapeutic doses and localized or long-term effects of poisonous substances.

Although the E Code was to be regarded as a supplementary classification for mortality statistics the E Code should be used in cases in the presentation of statistics where both an E code and a code in Chapters I to XVII applied but only one code was being used.

4. SUPPLEMENTARY CLASSIFICATIONS

WHO was asked to consider further the titles of these codes and the alphabetical prefixes - particularly with regard to translation problems.

4.1 I Code - Classification of Impairments

The draft proposal for this classification consisted of a three-digit code, meaningful at two-digit level, and covered impairments not only of limbs and other parts of the body, including internal organs, but also impairments of special senses and related functions.

The Committee commended the work done in developing this new code, noted that it would be subject to some changes in the light of comments and recommended that when fully developed it should be published as a supplementary code to the Ninth Revision of the ICD.

4.2 H Code - Classification of Handicaps

The draft proposal for this consisted of a coding system for eight individual aspects of handicap each with a single-digit code, which could be used singly or in any appropriate combination, depending on users' needs. The work done on this code was also commended and the Committee recommended that it, also, should be published as a separate code at the Ninth Revision of the ICD when fully developed.

4.3 M Code - Classification of Morphology of Neoplasms

The Code classifying morphology (histology) of neoplasms, referred to in connexion with Chapter II of the main classification, is recommended to be published as a supplementary code in the Ninth Revision.

4.4 Code of Symptoms and Complaints

The Committee requested the ICD Unit to continue work on the development of a code to classify symptoms and complaints, but recognized that such a code would not be available in time to be published with the Ninth Revision of the ICD. However, the Committee requested that the ICD prepare a full draft of such a code with a view to its being published separately.

4.5 V Code - Classification of Other Reasons for Contact with the Health Care System

This Code has been developed from the former Y Code, and is intended for the classification of statements of "diagnosis" which are not diseases and are not classifiable in the main part of the ICD. It was noted that some of the categories, those in the later parts, may be used only in addition to another "diagnosis", whilst the earlier categories were suitable for use either when no conventional diagnosis from the main part of the ICD had been reported or as additional descriptor codes in multiple coding.

The Committee commended the work done on this Code and recommended that it be published as a supplementary code in the Ninth Revision.

4.6 Classification of Surgical Operations and other Procedures

The Committee commended the work done on these draft codes, which were the result of an international exercise and were compatible as far as possible with codes already in widespread use in several countries. WHO was requested to give consideration to the title of the codes, choosing one which better reflected the purpose and contents.

In the surgical classification, the Committee requested WHO to provide for further detail in certain types of surgical operation. Space for this could be found by omitting the summary classification of non-surgical procedures, which seemed to be redundant since full classifications of these procedures would be prepared.

4.7 Publication of Supplementary Classifications

The supplementary classifications in tabular list form, together with appropriate alphabetical indexes, and the main body of the ICD would be too bulky to publish in only two volumes. The Committee therefore recommended that the E, V and M codes be included in the main volumes, and the remaining supplementary classifications be published separately as soon as they have been fully developed and have received widespread approval.

The ICD system of reserving the terminal digits 8 and 9 for "other specified" and "unspecified", respectively should be used in the supplementary classification also, to allow individual users to expand them by subdividing "other" categories.

5. LISTS FOR TABULATION OF MORTALITY AND MORBIDITY STATISTICS

5.1 General Format

At its meeting in 1973, the Study Group on the Classification of Diseases approved and commended the general philosophy of a recommendation for a change in the structure of the "short lists" for tabulation for various purposes. The main features of the proposed system were that:

- (i) The residual groups ("other diseases of . . .") would be replaced by subtotals for the section concerned, with only certain conditions of particular interest or importance being highlighted.
- (ii) There would be minimal requirements of reporting for various purposes, though users would be free to include any additional items that might be considered important in a particular region or situation.
- (iii) The system avoided the present difficulties with the special tabulation lists A, B, C and D, whereby a particular short list item had a different number in each list or, while having the same or similar title in each list, might not have the same content.

The Expert Committee endorsed the above recommendations.

It was not considered necessary to have separate tabulation lists for the two (dagger and asterisk) systems of classification that are proposed for the Ninth Revision as these two systems used essentially the same classification at the three-digit level. It was essential, however, that users should state clearly which system had been used when publishing data, as the frequencies for certain categories would vary greatly depending on whether the data had been classified primarily according to etiology or manifestation.

5.2 Two-digit Minimum List for Publication of International Mortality and Morbidity Statistics

The Committee considered that this list should be restricted to about 50 categories, and should be prepared in the general format recommended above, while showing separately each quarantinable disease. In preparing this list, it was suggested that the Secretariat should consult the relevant WHO special units, the United Nations Statistical Division and PAHO. Members of the Committee were invited to send the Secretariat their individual proposals for categories to be included in this list.

This two-digit minimum list should be the obligatory minimum for all international reporting of mortality and morbidity statistics.

5.3 Three-digit Tabulation List

The work already done on this list was noted, and the Committee suggested that the Secretariat consult the relevant WHO special units in preparing the final draft.

5.4 Tabulation Lists for "Sentinel" Diseases and Conditions

The Committee noted that requests had been received from certain developing countries for appropriate short lists of so-called "sentinel" diseases and conditions. In circumstances where comprehensive and reliable health statistics were unavailable, a small number of easily recognized conditions might be valuable indicators of public health problems and of socio-economic development. However, lists of such conditions tended to have very limited local application, and the Committee therefore suggested that the Secretariat consult on this matter the WHO units concerned with national health planning and the Regional Offices.

6. OTHER ITEMS RELATING TO THE USE OF THE ICD

6.1 Multiple Conditions Analysis

Where more than one condition was recorded on a death certificate or morbidity case record, and multiple-condition coding and processing was intended, it was necessary to establish a set of coding rules. The Committee commended the following procedure and four rules which were essentially those produced by a WHO Consultation in 1969 and had been tested in relation to the Eighth Revision.

Procedure

(i) Where single-condition as well as multiple-condition coding is carried out, the single condition ("underlying cause" for mortality or "main condition treated" for morbidity) should first be selected and coded. Then, all the conditions (including the single condition just coded) should be dealt with according to the following rules.

(ii) For some purposes, users may wish to add some indication of the position of the terms on the certificate or abstract, or their relationship with each other.

(iii) The object is to code all morbid conditions reported, but if there are practical limitations to the number of conditions which can be coded, then an attempt should be made to code as many as would exhaust the information on the great majority (say 95%) of records. If there are more conditions than can be coded, see Rule 4.

Rule 1. Code the conditions by using existing ICD four-digit categories and sub-categories, as defined by the Tabular List and Alphabetical Index, but not taking into account linkages in the notes for underlying-cause mortality coding.

If the alphabetical index shows two codes for a single disease, use both.

No code number should be used twice.

Code in the order that conditions are found on the certificate or abstract. For E codes, V codes, etc., indicate the prefix in some suitable way.

Rule 2. Sometimes a certifier will use a general term to describe a condition and then define it more specifically. In such a case, code the specific term and ignore the general term. (The criteria for this are those of Rule 8 - Specificity - of the rules for selection of underlying cause from mortality records.)

Rule 3. If a surgical operation is mentioned amongst the diagnoses, do not code it as a surgical operation but code the condition for which it was performed. If this is not stated, use the code for the condition for which the operation is usually performed, or if in doubt, the residual category for the organ or site indicated by the name of the operation. If no site is indicated, code 799.8.

Rule 4. If there are too many conditions to code (see 1 (iii) above) proceed as follows:

(a) give priority in coding to:

(i) the condition or conditions selected for single-condition analysis (underlying cause and/or main condition treated);

(ii) concurrent conditions unrelated to (i);

(iii) conditions related to (i), and of these, those nearest in time to (i).

- (b) if several congenital malformations are listed, give priority to the first most specific code from each anatomical group;
- (c) if several injuries are listed, give priority in the order brain or skull, spine, internal organs or trunk, other fractures, other injuries. In extreme cases, use the codes for "multiple fracture", "multiple open wounds", etc. to reduce the number of codes;
- (d) give lowest priority to non-specific conditions such as "respiratory failure", "heart failure", "multiple pregnancy" - or in relation to a baby, "immaturity", "postmaturity", "maceration".

6.2 Selection of Single Condition or Problem from Health-care Records

For single code selection from morbidity case records to produce hospital and other health care statistics and tabulations, the Committee recommended identification by the responsible medical practitioner or other health care professional, and coding, of "the main condition or problem treated or investigated (during the relevant episode of hospital or other care)".

6.3 Health Statistics Methodology Related to Perinatal Events

6.3.1 A Scientific Group met in Geneva in April 1974 to consider this matter.

6.3.2 The Expert Committee,

NOTED the Report¹ of the Scientific Group;

THANKED the Group for its valuable work;

ENDORSED its recommendations relating to definitions, terminology and format of statistical tables relating to the perinatal period, and also the form of a special certificate of causes of perinatal death and its method of use;

NOTED with reservations its recommendations relating to the selection of a single underlying cause for mortality statistics from those reported on the proposed new certificate of causes of perinatal death;

NOTED with reservation its recommendations relating to maternal mortality definitions.

6.3.3 In regard to the proposed definition of maternal death and the associated rates, the Expert Committee agreed that it might be desirable for certain purposes to attempt to enquire into all deaths of women during pregnancy, childbirth and the puerperium, but considered it impracticable to include within the definition of maternal death those resulting from accidental or incidental causes not related to the pregnancy or its management (defined in the Scientific Group Report as "non-obstetric maternal deaths") because of the impossibility of identifying all such deaths. The Expert Committee therefore proposed to define maternal deaths as those resulting from direct or indirect obstetric cause.

6.3.4 All the recommendations of the Scientific Group, amended as described in paragraphs 6.3.3 and 6.3.4, appear in Annex I of this report.

¹ Document ICD/PE/74.4.

6.4 Rules for selection of cause of death for primary mortality tabulation

The Committee recommended the addition of a new modification rule to the 11 rules (set out on page 417 of Volume 1 of the English version of the Eighth Revision). See Annex II for illustrative examples of coding involving this new rule.

Rule 12. Complications and misadventures in medical care. Where the selected underlying cause was subject to treatment or surgery and the reported sequence in Part I indicates specifically that the death was the result of complication or misadventure during, or abnormal reaction to, such treatment or operation, code to the latter, regarding the sequence of events leading to death as starting at the point at which the patient reacted abnormally or at which something untoward happened. Disregard misadventures during attempts at resuscitation.

6.5 Training in the uses of the ICD

6.5.1 The Committee was informed of WHO proposals for training coders and others in the use and potential of the Ninth Revision of the ICD and its complementary classifications. These provided for courses of instruction at two levels - at the professional level to indicate how to make use of the data provided from the classification and at the level of statistical personnel involved in collecting, coding and processing the data.

6.5.2 It was proposed that late in 1975 or early in 1976 there should be a headquarters planning meeting to develop the detailed programme of courses and teaching methods.

6.5.3 Standard sets of training material in the four working languages of WHO would be prepared and made available, and WHO was considering incorporating advanced audiovisual methods. The Committee requested that WHO consider preparing programmed learning manuals which would also assist in the training of individuals outside formal courses.

6.5.4 The proposed training courses of one week at the higher level and two weeks at the other level, to take place over 18 months in 1976 and 1977, would be organized in the appropriate languages in cooperation with Regional Offices and Centres for Classification of Diseases.

6.5.5 The Expert Committee

WELCOMED and ENDORSED the proposals,

RECOMMENDED WHO to make provision

- for headquarters planning meeting on training;
- for organizing the training material to be used in the proposed training courses, and
- for providing consultants to assist with instruction at the courses.

6.6 Other systems of classification and nomenclature, and their relationship to the ICD

The Committee noted that a number of other systems were being used for certain medical care and health record purposes, and considered that it would be advisable to investigate their relationship to the ICD.

6.7 Assistance in the production of the alphabetical index to national versions of the ICD

As a by-product of the preparation of the Alphabetical Indexes for the Ninth Revision in English and French, WHO will prepare computer tapes indicating how each term appearing in the Eighth Revision indexes has been dealt with (re-classified, deleted, amended, etc.) and listing the new terms that have been added. Copies of these tapes can be made available to anyone who would find them useful in preparing an alphabetical index in another language.

7. TENTH REVISION

7.1 Scope and contents

The Committee concurred with the Secretariat's view that the ICD would require considerable extension in the fields of health (and not just medical care), rehabilitation and environmental health. In particular there was a need for a better classification of social health, both in its etiology and manifestation aspects.

7.2 Programme

There would be every advantage in commencing work on these classifications in the near future, and that they should not be tied to the traditional decennial revision of the ICD. This raised the possibility that revision of the main body of the ICD could also be made on a rolling or continuous basis.

7.3 Trials

The most reliable way to prepare new methods of classification was by the use of development trials, and the Committee considered that there should be more emphasis on such trials in developing the Tenth Revision.

7.4 Structure

The Committee recommended that WHO investigate the separation of coding and tabulation schemes, with the possibility of coding numbers being randomly allocated to classified conditions.

RECOMMENDED DEFINITIONS, TERMINOLOGY AND FORMAT FOR STATISTICAL TABLES RELATED TO THE PERINATAL PERIOD, AND USE OF NEW CERTIFICATE OF CAUSE OF PERINATAL DEATHS

1. The following limits for the inclusion of births and perinatal deaths in statistics are recommended:

1.1 that all fetuses and infants delivered weighing 500 g or more be reported for inclusion in the country's statistics, whether they are alive or dead. It is recognized that legal requirements in many countries may set different criteria for registration purposes, but it is hoped that countries will arrange the registration or reporting procedures in such a way that the events required for inclusion in the statistics can be identified easily;

1.2 that mortality statistics reported for purposes of international comparison should include only those born weighing at birth 1000 g or more.

2. Definitions

The following definitions relating to perinatal statistics are recommended.

2.1 Birthweight

The first weight of the fetus or newborn obtained after birth. This weight should be measured preferably within the first hour of life before significant post-natal weight loss has occurred.

2.2 Low birthweight

Less than 2500 g (up to, and including 2499 g)

2.3 Gestational age

The duration of gestation as measured from the first day of the last normal menstrual period. Gestational age is expressed in completed days or completed weeks (e.g. events occurring 280 to 286 days after the onset of the last normal menstrual period are considered to have occurred at 40 weeks of gestation).

Measurements of fetal growth, as they represent continuous variables are expressed in relation to a specific week of gestational age (e.g. the mean birthweight for 40 weeks is that obtained at 280-286 days of gestation on a weight-for-gestational age curve).

2.4 Perinatal period

The perinatal period is that which extends from the gestational age at which the fetus attains the weight of 1000 g (equivalent to 28 weeks gestation), to the end of the seventh completed day (168 hours) of life.

2.5 Pre-term

Less than 37 completed weeks (less than 259 days)

2.6 Term

From 37 to less than 42 completed weeks (259 to 293 days)

2.7 Post-term

Forty-two completed weeks or more (294 days or more)

Annex I

2.8 Birth

Complete expulsion or extraction from its mother of a fetus irrespective of whether or not the umbilical cord has been cut or the placenta is attached. Fetuses weighing less than 500 g are not viable and therefore are not considered as births for the purposes of perinatal statistics. In the absence of a measured birthweight, a gestational age of 22 weeks is considered equivalent to 500 g. When neither birthweight nor gestational age is available, a body length of 25 cm (crown-head) is considered equivalent to 500 g.

2.9 Life at birth

Life is considered to be present at birth when the infant breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of the voluntary muscles.

2.10 Live birth

The process of birth when there is evidence of life at or after birth.

2.11 Live-born infant

The product of a live birth.

2.12 Stillbirth

The process of birth when there is no evidence of life at or after birth. For the purposes of calculation of perinatal mortality rates (6.3) only stillbirths with a birthweight of 1000 g or more are included.

2.13 Stillborn infant

The product of a stillbirth.

2.14 Early neonatal death

Death of a live-born infant during the first seven completed days (168 hours) of life.

2.15 Late neonatal death

Death of a live-born infant after seven but before 28 completed days of life.

3. Calculation of mortality rates (for details, see sections 4-6 below)

3.1 Stillbirth rates

Defined as the number of stillborn infants per 1000 total births (stillbirths plus live births) over a given period.

3.2 Early neonatal mortality rate

Defined as the number of early neonatal deaths per 1000 live births over a given period.

3.3 Perinatal mortality rate

Defined as the number of stillborn infants and early neonatal deaths per 1000 total births (stillbirths plus live births) over a given period.

Annex I

3.4 The calculation of these rates for international comparison calls for inclusion of births weighing 1000 g and over. If the birthweight of a fetus or infant is not known, a gestational age of 28 weeks should be taken as equivalent to 1000 g birthweight. If neither birthweight nor gestational age is known, a body length (crown-heel) at birth of 35 cm should be taken as equivalent to 1000 g birthweight.

4. Recommendations for uniform minimal statistical tables

For the foreseeable future, mortality statistics for infants should be restricted to those weighing 1000 g and over and are intended to provide comparable information for all countries. They should also provide minimum data for those countries which are, at this time, unable to produce a more detailed analysis. It is recommended that all countries provide the following minimal uniform statistics as soon as possible:

4.1 Perinatal mortality rate

$$\frac{\text{Stillborn infants weighing 1000 g and over} + \text{early neonatal deaths weighing 1000 g and over}}{\text{Stillborn infants weighing 1000 g and over} + \text{live-born infants weighing 1000 g and over}} \times 1000$$

4.2 Early neonatal mortality rate

$$\frac{\text{Early neonatal deaths of infants weighing 1000 g and over at birth}}{\text{Live-born infants weighing 1000 g and over}} \times 1000$$

4.3 Stillbirth rate

$$\frac{\text{Stillborn infants weighing 1000 g and over}}{\text{Stillborn infants weighing 1000 g and over} + \text{live-born infants weighing 1000 g and over}} \times 1000$$

5. Recommendations for further analyses

For more detailed analyses of data on the perinatal period concerned with birthweight and gestational age, statistics should be presented in a uniform way which allows comparisons to be made easily.

Detailed tables should be given, where appropriate, related to the total number of infants born, identifying separately those stillborn, those live-born but dying in the first seven days and those surviving seven days.

5.1 By birthweight by weight intervals of 500 g, i.e. 1000 - 1499 g, 1500 - 1999 g, and so on.

5.2 By gestational age*
 less than 28 weeks (less than 196 days)
 28 - 31 weeks (196 - 223 days)
 32 - 36 weeks (224 - 258 days)
 37 - 41 weeks (259 - 293 days)
 42 weeks (or 294 days) and over
 (completed weeks or days respectively).

* The duration of gestation as measured from the first day of the last normal menstrual period. Gestational age is expressed in completed days or completed weeks (e.g. events occurring 280 to 286 days after the onset of the last menstrual period are considered to have occurred at 40 weeks of gestation).

Annex I

5.3 For early neonatal deaths, by age at death, using the following intervals:

birth - 59 minutes
1 - 11 hours
12 - 23 hours
24 - 47 hours
48 - 71 hours
72 -167 hours
(completed hours or minutes respectively)

Where detailed information is not available, data on age at death should be provided as follows:

birth - 59 minutes
1 - 23 hours
24 -167 hours
(completed hours or minutes respectively)

In each table, appropriate totals and sub-totals should be given (for example, all infants with birthweight 1000 - 2499 g, 28 to 37 weeks gestation, etc.) together with appropriate percentages. If more detailed breakdowns are tabulated, they should be able to be aggregated into the above groupings.

6. Mortality statistics

These should be presented in relation to different groups of infants, using the definitions of rates given above.

- 6.1 Stillbirth rates and perinatal death rates - all infants 1000 g or more
- all infants 1000 g or more in 500 g groups
- infants weighing 1000 - 2499 g
- infants weighing 2500 - 3999 g
- infants weighing 4000 g or more
- gestational age-groups
- 6.2 Early neonatal death rates - all live-born infants 1000 g or more in 500 g groups
- infants weighing 1000 - 2499 g
- infants weighing 2500 - 3999 g
- infants weighing 4000 g or more
- gestational age-groups
- age at death

7. Cause of death

Mortality statistics (numbers and rates) should be presented according to the appropriate ICD list, separately for stillbirths, early neonatal deaths, and perinatal deaths. These should be given for all infants weighing 1000 g or more as well as in appropriate sub-groups of weight, gestational age, and age at death.

8. Other variables

Whenever possible statistics on births and perinatal deaths should be presented to show the relation to other factors, such as region, characteristics of the mother (parity, health status, age, education), socio-economic, ethnic and cultural groups.

9. Early antenatal deaths

Wherever possible, the above statistical tabulations should also be produced separately, for the group of infants weighing 500 - 999 g at birth, using the corresponding denominators restricted to infants of 500 - 999 g.

10. Maternal mortality

10.1 A maternal death is defined as the death of any woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

10.2 Maternal deaths are subdivided into two groups:

10.2.1 Direct obstetric deaths: those resulting from obstetric complications of the pregnancy state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above.

10.2.2 Indirect obstetric deaths: those resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but which was aggravated by physiologic effects of pregnancy.

10.3 The maternal mortality rate, the direct obstetric death rate and the indirect obstetric death rate should be expressed as rates per 1000 total births, the latter defined as the births of infants born live or dead, weighing 1000 g or more at birth.

11. Special certificate of cause of perinatal deaths

11.1 A separate certificate of perinatal death should be adopted, in which the causes are set out in the following manner.

- (a) Main disease or condition in fetus or infant
- (b) Other diseases or conditions in fetus or infant
- (c) Main maternal disease or maternal condition affecting fetus or infant
- (d) Other maternal diseases or maternal conditions affecting fetus or infant
- (e) Other relevant circumstances

11.2 In addition, the following items were considered to be an integral part of any medical certificate of causes of perinatal death:

- Identifying particulars including relevant dates and times
- A statement as to whether the baby was born alive or dead
- Information about autopsy

11.3 While the supplementary information to be collected at death or stillbirth may be varied in accordance with the wishes of individual countries it is recommended that consideration be given to the collection of the following items as a minimum:

Mother

Date of birth:

Previous history:

Number of previous pregnancies: live-births/stillbirths/abortions

Outcome of last previous pregnancy: live-birth/stillbirth/abortion and date

Annex I

CERTIFICATE OF CAUSE OF PERINATAL DEATH

To be completed for stillbirths and live born infants dying within 168 hours (1 week) from birth

(Identifying Particulars)

This child was live born on _____ at _____ hours
and died on _____ at _____ hours

This child was stillborn on _____ at _____ hours
and died Before labour During labour Not known

Mother

Child

Date of birth

--	--	--	--	--	--

or, if unknown, age (years)

--	--

1st day of last menstrual period

--	--	--	--	--	--

or, if unknown, estimated duration
of pregnancy (completed weeks)

--	--

Birthweight: grammes
Sex: Boy Girl Indeterminate
Single birth First twin
Second twin Other multiple

Number of previous pregnancies:
Live births

--	--

Stillbirths

--	--

Abortions

--	--

Antenatal care, two or more visits
Yes

--

No

--

Not known

--

Attendant at birth

Outcome of last previous pregnancy:
Live birth

--

Stillbirth

--

Abortion

--

Date

--	--	--	--	--	--

Delivery:
Normal spontaneous vertex
Other (specify)

Physician Trained midwife
Other trained person (specify)
Other (specify)

CAUSES OF DEATH

a. Main disease or condition in fetus or infant

b. Other diseases or conditions in fetus or infant

c. Main maternal disease or condition affecting fetus or infant

d. Other maternal diseases or conditions affecting fetus or infant

e. Other relevant circumstances

The certified cause of death has been confirmed by autopsy
Autopsy information may be available later
Autopsy not being held

I certify
Signature and qualification

History of present pregnancy:

1st day of last menstrual period (if unknown then estimated duration of pregnancy
in completed weeks)

Antenatal care: Two or more visits: Yes/No/Not known

Delivery: Normal spontaneous vertex
Other, specify

Child

Birthweight: in grams

Sex: boy/girl/indeterminate

Single birth: first twin/second twin/other multiple birth

If stillborn, when death occurred: before labour/during labour/not known

11.4 It is recommended that the above data be collected routinely for all live and stillbirths so that denominators would be available to allow calculation of meaningful rates in relation to perinatal deaths.

11.5 A recommended format of Medical Certificate of Causes of Perinatal Death, which includes the supplementary data is appended.

11.6 There are problems in introducing the same certificate of causes of death of a live-born and a stillborn child in countries with different civil registration requirements for these events. In such countries the problem could be met by separate certificates for stillbirths and early neonatal deaths, each incorporating the recommended format for the causes of death.

11.7 Other variables which might also be included in the basic certificate include particulars of the birth attendant, as follows: physician/trained midwife/other trained person (specify)/other (specify).

11.8 Some countries might wish to collect certain of the items of information from sources other than the certifier of the death, who might not have first-hand knowledge of some of the data relevant to the birth. Such countries would need to make their own arrangements for the provision of this information, depending on local conditions.

11.9 Accuracy of certification

11.9.1 The accurate assignment of cause of death is in the best interests of all countries. The accuracy of ascertainment of cause of death in perinatal deaths is considerably enhanced when pathological evidence, both gross and microscopic, from autopsy, is reviewed in conjunction with the clinical data. It is hoped that there would be a considerable increase in the number of perinatal deaths reviewed in this detailed way.

11.9.2 The inclusion in the perinatal death certificate of a question asking whether or not additional information on the death might be available later is important. There is need for central classifying offices to collect such data when available and to give the certifier the opportunity to restate the causes of death, taking into account additional information obtained from autopsy and from any findings of a review of perinatal deaths. This is a useful way of meeting the need for accuracy where the original certificate had to be completed immediately after death.

Annex I

11.9.3 In order to reduce the number of certificates which are not satisfactorily completed and/or which have to be referred back to the certifier, it is important that the design of the form of certificate be clear, concise and yet allow adequate space for comments. There is need for practical instructions and examples. Efforts to improve the attitude of certifiers by education and feed back of useful data would be of benefit.

11.10 Tabulation of causes of perinatal death

11.10.1 Countries are encouraged to undertake full-scale multiple condition analysis of causes of perinatal death reported on the recommended new certificate, i.e. causes entered in any of the sections a-d of the certificate, singly and in combination.

11.10.2 Facilities for full-scale multiple-cause coding and analysis may be available in some countries and the following types of tabulation are recommended as a minimum:

- (i) main disease or condition in the fetus or infant (x other variables)
- (ii) main disease or condition in the mother (x other variables)
- (iii) cross tabulation of these (x other variables).

Examples illustrating coding of underlying cause involving new Rule 12

- Example 1: Ia Aplastic anaemia
 b Butazolidin treatment for
 c Arthritis

Code to aplastic anaemia and adverse effects of (properly administered) Butazolidin therapy. Arthritis, selected by the General Rule, is discarded in favour of the untoward effects of its treatment.

- Example 2: Ia Generalized internal haemorrhage
 b Platelet suppression
 c Gold injection

II Rheumatoid arthritis

Code to thrombocytopenia and adverse effects of (properly administered) gold therapy. Rheumatoid arthritis, selected by Rule 3 is discarded in favour of the untoward consequences of its treatment.

- Example 3: Ia Chronic myeloid leukaemia

 II Thrombocytopenia due to mitobronitol therapy

Code to chronic myeloid leukaemia; the effects of treatment are certified as contributory only and not in Part I.

- Example 4: Ia Hypernatraemia
 b Saline emetic and gastric lavage
 c Double dose of hypnotic drug inadvertently given in
 hospital (night sedation)

Code to poisoning by overdose of hypnotic drug, the first untoward event.

- Example 5: Ia Massive hepatic necrosis
 b Halothane anaesthesia
 c Cholecystectomy

II Cholelithiasis

Code to hepatic necrosis and adverse effects of (normally administered) halothane anaesthesia. Cholelithiasis, selected by Rule 3, is discarded in favour of the untoward consequences of the operation.

- Example 6: Ia Cerebral infarction
 b Anoxia
 c Wrong positioning of endotracheal tube during operation for
 d Carcinoma of uterus

Code to cerebral infarction and deficient oxygenation during administration of anaesthesia. Carcinoma of uterus, selected by the General Rule, is discarded.

- Example 7: Ia Failure of liver
 b Post-transfusion hepatitis (Virus B)

II Prostatectomy for hypertrophy of prostate

Code to serum hepatitis and misadventure in transfusion.