

## **MODULE 1**

*Introduction to ICD-10 Structure  
and  
Principles of Classification*

## **Module 1: Introduction to ICD-10 Structure And Principles of Classification**

### **What Is Clinical Coding?**

**Clinical coding** is the translation of diagnoses of diseases, health related problems and procedural concepts from text to alphabetic/numeric codes for easy storage, retrieval and analysis.

### **What is a statistical classification of diseases?**

A **classification** of diseases is a system of categories or groupings to which diseases, injuries, conditions and procedures are assigned according to established criteria. It is the element of grouping similar terms, which distinguishes a statistical classification from a nomenclature. A nomenclature requires a separate name or title for each disease or procedure concept.

ICD-10 is a **statistical classification**, which means that it contains a limited number of mutually exclusive code categories, which describe all disease concepts. The classification is hierarchical in structure with subdivisions to identify broad groups and specific entities. The classification includes specific rules to guide its use.

### **Why use a classification?**

- To allow easy storage, retrieval and analysis of data.
- To allow systematic recording, analysis, interpretation and comparisons of mortality and morbidity data between hospitals, provinces or countries.
- To allow comparisons in the same location across different time periods.

### **History of the International Classification of Diseases**

The theory of disease classification began in the 17th Century when John Graunt recognised the need to organise mortality data into some logical form and therefore developed the first statistical study of disease, called the London Bills of Mortality. In this work, Graunt classified the deaths of all children who were born alive but who died before they reached the age of six. Death were classified as due to thrush, convulsions, rickets, teeth and worms, chrysoemes, livergrown, smallpox, swine pox, measles and worms without convulsions. It was hoped that clues regarding the nature and aetiology of these diseases would be brought to light and that this understanding would ultimately lead to better treatments.

During the 18th Century, Sauvages first attempted to systematically classify all diseases in a work called "Nosologia Methodica".

William Farr, the first medical statistician, who worked in the newly formed General Register Office of England and Wales in the mid-1800s, further developed the work of both of these men. Farr's work formed the basis of a recommendation to create the International List of Causes of Death, which was presented to the first International Statistical Congress, held in Brussels in 1853. Although modified in 1874, 1880 and 1886 to suit the needs of the time, Farr's classification did not receive universal acceptance, despite his best efforts to promote it. The general arrangement of the classification - which included the principle of classifying diseases according to body site - became the basis for work carried out by Dr Jacques Bertillon from Paris. Bertillon developed a classification that distinguished between diseases that affected the body as a whole (systemic diseases) and those that were localised to a particular body site. The Bertillon Classification of Causes of Death received general approval and was adopted for use by several countries. When the American Public Health Association recommended its use for Canada, Mexico and the USA, it also developed plans for the updating of the classification every ten years. At this time, in the very early 1900s, there were only 179 groups of causes of death!

In 1920, the Health Organization of the League of Nations, which had taken an active role in the collection and classification of death statistics, determined that it would take over the management of

the Causes of Death classification. When revising the classification for the fourth and fifth times, in 1929 and 1938, this organisation included classifications for non-fatal conditions for the first time.

In 1946, the Interim Commission of the World Health Organization was charged with the responsibility for the continued revision of the classification. The sixth revision conference marked a milestone in the collection of health and vital statistics. A new publication entitled "International Classification of Diseases, Injuries and Causes of Death" was issued in 1948, based on the previous work but including recommendations for the collection of morbidity data, as well as mortality statistics. This classification underwent minor amendment in 1955 and 1965 but mainly to correct errors of fact and inconsistencies. The 1965 revision included, for the first time, two volumes - a tabular list and an alphabetical index.

In 1975, the 46 member states of the WHO convened in Geneva to begin development of the ninth revision of the ICD, as it came to be known. In addition to the member states, a number of medical specialty groups sent representatives, due to the now almost universal interest in using the classification for medical record coding and indexing, monitoring and evaluation of health services and epidemiological research. The next year, the World Health Assembly agreed to the revision of the classification and to the development, on a trial basis, of a procedure classification as an accompaniment to the disease classification. Thus the ICD-9 and ICPM (International Classification of Procedures in Medicine) were introduced.

Work on the tenth revision of the International Classification of Diseases began in September 1983 when a preparatory meeting on ICD-10 was convened by the World Health Organisation in Geneva. This was followed by several meetings of an expert committee in 1984 and 1987 to make decisions on the direction the work should take and the form of the final proposal. In addition to the technical contribution provided by the expert committees, a large number of comments and suggestions were received from WHO member states and regional offices as a result of the worldwide circulation of the draft proposals for revision and review.

It became clear that many users wished the ICD to encompass types of data other than simply diagnostic information. Even if it was restructured, the ICD could not cope with the extremes of the requirements. The concept was therefore developed of a "family" of classifications, with the main ICD as the core, covering the traditional mortality and morbidity statistics, while the needs for more detailed or different classifications would be dealt with by other members of the family such as the International Classification of Functioning (ICF) and the Diagnostic and Statistical Manual of Mental Disorders (DSM).

Several alternative models for the restructure of the main ICD were investigated, and the final decision was to use an alphanumeric system, which would give a better balance to the chapters and allow sufficient space for future additions and changes without disrupting the codes.

The alphanumeric coding scheme uses one letter followed by three numbers, at the fourth character level. This has more than doubled the size of the coding frame in comparison with the ninth revision and has enabled the vast majority of chapters to be assigned a unique letter or group of letters, each capable of providing 100 three character categories. Of the 26 available letters, 25 have been used - the letter U having been left vacant for future additions and changes and for possible interim classifications to solve difficulties arising between revisions.

ICD-10 is part of the ICD family of classification systems, which also includes:

- International Classification of Functioning, Disability and Health (ICF)
- International Classification of Diseases for Oncology (ICD-O)
- Application of the International Classification of Diseases to Dentistry and Stomatology (ICD-DA)

- Application of the International Classification of Diseases to Rheumatology and Orthopaedics (ICD-R&O), including the International Classification of Musculoskeletal Disorders (ICMSD).

### **Overview of the ICD-10 classification**

ICD-10 is a variable-axis classification - meaning the epidemiological data and statistical data coded to it may be grouped as follows:

- epidemic diseases
- constitutional or general diseases
- local diseases arranged by site
- developmental diseases
- injuries

There are three (3) main elements to the structure of the ICD-10. They are:

1. there are 3 volumes
2. there are 21 chapters
3. the structure of the code is alphanumeric.

### **Volumes of the ICD-10**

Volume 1 is the **Tabular list**, which is an alphanumeric listing of diseases and disease groups, along with inclusion and exclusion notes, some coding rules, special tabulation lists for mortality and morbidity, definitions and regulation.

Volume 2 is **Instruction Manual**. It provides :

- an introduction to, and instructions on how to use volumes 1 and 3
- guidelines for certification and rules for mortality coding
- guidelines for recording and coding for morbidity coding
- Statistical presentation

Volume 3 is the comprehensive **Alphabetical index** of the diseases and conditions found in the Tabular list.

### **Chapters of the ICD-10**

The ICD-10 contains 21 chapters, each of which is identified by a Roman Numeral i.e. I, II, III, IV, V etc. When referring to a chapter, you should call it by its chapter number and not by the letters of the codes associated with it. i.e. refer to Diseases of the Digestive System as Chapter XI and not as the K chapter. This is because some chapters contain more than one letter and some letters are used in more than one chapter.

### **Structure of the ICD-10 code**

The first character of the code is an alpha character, followed by two, three or four numeric characters.

