Editorial

Nomenclature and Criteria for the Diagnosis of Cardiovascular Diseases

The establishment of the first cardiac clinic in the United States at Bellevue Hospital in 1911 and an Association of Cardiac Clinics in 1917 made it possible for the first time to do large-scale clinical research on ambulatory patients with heart disease. It was chiefly a biometric type of investigation on a special population, the objective of which was to study the natural course of chronic diseases of the heart at the same time that the patients were treated and students instructed in these diseases.

It became obvious early that a uniform nomenclature and clearly defined criteria for cardiac diagnoses were needed to guarantee that interpretation of phenomena and communication of observations would be as exact as possible and free from ambiguity when used by different groups of clinicians. One of the initial steps in this process was the establishment of a system of making a comprehensive cardiac diagnosis. There is some difference of opinion where the idea of a multirubric diagnosis began, and it is probable that it had multiple origins almost simultaneously. The first published paper on a diagnosis subdivided into etiologic, structural, and functional components was by White and Myers in 1921 but in it reference was made to the “functional” grouping (classes A, B, C, and D) used by the New York Association of Cardiac Clinics. In a friendly correspondence in 1937 between White and Wyckoff the former recalled that he had seen the system in operation in a visit to the Bellevue Clinic before he published the paper with Myers 16 years earlier. Cohn had in his possession a manila envelope from the Bellevue Clinic dated 1919 on which was printed a tripartite diagnosis listed as: A. Anatomical, B. Functional, and C. Etiology. In a review of some old charts of the cardiac clinic at Bellevue such a folder, dated July 12, 1919, with a listing of possibilities under each category (fig. 1A) was found. The diagnosis made later in the year on the patient (fig. 1B) revealed that a fourth rubric had already been added (D class 3). However, in a paper on clinical charts recommended by the Association for the Prevention and Relief of Heart Disease (an organization which originally spawned and later absorbed the Association of Clinics), which appeared in 1922, the charts reproduced showed spaces for only three subdivisions of the diagnosis.

In 1921 Wyckoff suggested to Dr. William P. St. Lawrence, then chairman of the Committee on Clinics of the New York Association for the Prevention and Relief of Heart Disease...
Figure 1

A, left. Part of chart of patient first seen on July 12, 1919. The subdivisions of the three major rubrics were printed on the chart for easy reference. B, right. Another part of the same chart disclosing that a fourth rubric (D Class 3) had been added later in 1919.

In 1926, Wyckoff, as chairman of the Heart Committee of the New York Tuberculosis and Health Association (the second name of the New York Heart Association) appointed a committee to draw up a more comprehensive set of criteria for cardiac diagnoses than had appeared in 1926. The members of this original “Criteria Committee” were Harold E. B. Pardee, chairman, William C. Munly, Joseph H. Bainton, and Robert L. Levy. This committee drew up the first detailed set of criteria that were published in 1928 with the title, “Criteria for the Classification and Diagnosis of Heart Disease.”

In the succeeding 35 years five editions

* Ed. 1, 1928; ed. 2, 1929; ed. 3, 1936; ed. 4, 1939 (several printings); ed. 5, 1953.

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The principal objective is to integrate the ever-increasing profusion of new data into a clinically usable set of diagnostic terms with rules for their use in order to insure further progress. The gap between what is known and what is taught is becoming wider because of the logarithmic rise in medical and scientific knowledge. This knowledge must be sifted and weighed continuously so that physicians are able to make use of it as soon as possible. Successive editions of the Criteria have been modest attempts to achieve this objective in the area of cardiovascular diagnosis.

A second objective, as in the original publication, is to improve cardiovascular communication and to free it from ambiguity on an international scale. This objective has involved the Criteria Committee in philology. Although the philologists say that scientific words have a constancy of meaning, this is by no means always the case. For example, Sir George Pickering emphasized in 1958 that the matter of not knowing what a word means or of being given different meanings by different individuals resulted in faulty transfer of information from the patient to the doctor, from one part of the doctor's mind to another part of his mind, and, he implied, from one doctor to another. He called attention to the difficulties in communication due to the then current variable meanings of shock, arteriosclerosis, bronchospasm, and hypertension. The best that can be achieved with such words is to define them in the light of present knowledge or ignorance, and hope that everyone will use the definition until new information becomes available that requires a change in meaning of the word. This is what has been attempted in the Criteria.

A third more recent objective is to provide a more accurate base from which the differential diagnosis of cardiovascular diseases can be made more quantitative by application of modern computer technics. The papers by Lusted and others have sharpened focus on this objective. In the first edition of the Criteria in 1928 the writers thought that not all of the signs and symptoms of every heart disease should be listed, as in a nosography or compendium, but rather only selected criteria essential for diagnosis. It is hoped with the passage of time and with the application of matrix analysis to the quantitation of differential diagnosis that it will be possible to eliminate, with good reason, unnecessary signs and symptoms which are held on to tenaciously and repeated sagaciously only because they were learned with great difficulty in youth or because they require expensive apparatus and great technical skill to demonstrate. In the new edition not all trivial signs and symptoms have been successfully eliminated because exact information to achieve this is at present inadequate. With the use of machine technics in differential diagnosis elimination of the least important
signs and symptoms for any specific diagnosis may be possible in future editions.

Code numbers were included in the previous edition but not in the new one. A little discussion of the reasons will bring out a few unrelated facts that may be of general or specific interest and provide an explanation for exclusion of code numbers from the Sixth Edition. The code numbers previously used were taken from the Standard Nomenclature of Diseases and Operations. This nomenclature is used in a great many, perhaps the majority of, hospitals for the codification of diseases and operations. It may be replaced in the future because of its complexity and difficulty in actual use. For these reasons these numbers were omitted from the present edition.

As a replacement the International Statistical Classification of Causes of Death and Morbidity was considered. This classification, however, was designed for the purpose of gathering health data. It is neither a nomenclature nor criteria in any sense. It serves as a means of collecting mortality data from all over the world where physicians vary tremendously in their educational backgrounds, training, and language. It is in the process of being revised. For these reasons the numbers of the International Statistical Classification were not used in the present edition of the Nomenclature and Criteria.

The current Medical Terminology of the American Medical Association was considered but was also rejected because it is in a state of trial.

In conclusion it was decided that no code numbers would be used at all. Instead, a simple, easily adaptable, decimal codification system has been included. The present Nomenclature and Criteria thus is in a sense a classification or nosology because the decimal system used can be adapted to any codification system the user wishes. The method may be of considerable interest to those who wish to do statistical studies or to improve differential diagnosis in the cardiovascular area with the aid of the computer.

The technical series of publications of the World Health Organization concerned with criteria for hypertensive disease, pulmonary heart disease, arteriosclerosis, and others may seem like duplication of the Criteria but actually their objectives are different. The WHO publications are epidemiologically oriented; they are criteria written for case-screening purposes. The objectives are, much like those of the International Statistical Classification, to gather data on health but of a detailed nature and on one body system.

It might be asked why efforts are not directed toward creating, on an international scale, a single publication which would be a combined nosology, nosography, nomenclature, and criteria for cardiovascular diagnoses. In view of the different levels of physician training, of differing schools of thought, of changing concepts based on rapidly accumulating new data, and of often limited objectives of investigative groups, attainment of this theoretically ideal publication is probably not possible or even desirable. Periodic revisions of the "Criteria" will be made as in the past with the hope, not of discouraging independent thought, but of achieving that amount of uniformity of nomenclature and diagnostic criteria which will be useful in furthering progress in the understanding and treatment of cardiovascular diseases.

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References


The Heart Sounds

Laennec attributed the first sound to the contraction of the ventricles and the second to the auricular systole; Laennec's error in the timing of the second sound was pointed out by J. W. Turner in 1828, and Hope, as the result of vivisection experiments performed at St. George's Hospital between 1830 and 1835, which gained for him the distinction of the F.R.S. and an unfortunate controversy as to priority with C. J. B. Williams, eventually concluded that the first sound was due to the muscular bruit and the tension of the auriculo-ventricular valves and that the second sound was due to the closure of the sigmoid valves.—Sir Humphry Davy Rolleston. The Harveian Oration. Great Britain, Cambridge University Press, 1928, p. 78.
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