

# **CARDIAC DISEASE**

**A Logical Approach  
Considering DRGs**

**VICTOR F. FROELICHER  
J. EDWIN ATWOOD**

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To Erika and my family  
V.F.F.

AND

To Eugene, Margaret, Amanda,  
Conant, Genevieve, and Frank  
J.E.A.

# Preface

Diagnostic related groupings (DRGs) are a reality that physicians must learn to work with in order to continue to deliver high quality medical care. They are actually quite logical and simple to use since they are based on the *International Classification of Diseases* (ICD) that has been used for more than 20 years to code diseases in hospitals. The ICD-9 (ninth volume) has several revisions and modifications but it is essentially based on the World Health Organization version. It is designed for the classification of morbidity and mortality information for statistical purposes and the indexing of hospital records by disease and operations for data storage and retrieval. The DRGs were derived from insurance company records of the most commonly submitted diagnoses for charges. The average charges for these diagnoses were calculated and the relative cost of a diagnosis was determined. The intent of using the DRGs in this manual is not to encourage the physician to use the diagnosis that gives the greatest charges but to use the appropriate diagnosis to get proper payment for services rendered.

This prospective payment approach to medicine should not impede proper patient care. The cardiovascular evaluation and testing procedures are purposefully not listed under the DRGs. This would not be appropriate. A test should be selected solely by what the physician and patient judge necessary. Instead, the evaluation and testing procedures are presented under a logical approach to the key features of cardiac disease. They are presented in a matrix referring to the key

features of heart disease that determine both symptomatology and prognosis. The simple, basic means (i.e., history, physical exam, and ECG) are emphasized. Remember that the physician should use a test based on the science and art of medicine and not on curiosity.

This manual presents a logical approach to patient evaluation and diagnosis in Part I, the DRG concept in Part II, and brief summaries of the key diagnoses and problems in cardiology in Part III. This manual was written with our house staff and fellows in mind. We have tried to present current information and include many tables in order to jog the minds of busy house officers. All of the teaching tools we have found helpful are described. House officers who are responsible for the initial DRG coding need instruction in the basics of DRG coding.

The aim of this manual is to enable the physician to make logical choices for the evaluation of the patient with cardiovascular disorders and to make clinically appropriate cardiac diagnoses within the DRG framework. The authors acknowledge Drs. Fred Wyle and David Webb for the initial draft of DRG guidelines and their suggestions, and to our fellows and colleagues for early drafts and their suggestions regarding the last section.

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# PART I | A Logical Approach

SUBSPECIALTY MANUALS usually contain too much specific information, as if the readers were expected to become subspecialists. Often, too, it appears as if the subspecialist is promoting the procedures performed by his subspecialty. This section will take a different approach. It will not overwhelm you with summaries of recent data or studies. It will not attempt to impress you with a thorough review of the literature. It is hoped that it will provide information that will last. It is obvious that practicing by the standards of today would be considered malpractice five or ten years ago, and vice versa. This is exemplified by the changing attitude regarding ambulation and exercise for myocardial infarction patients and the current use of nitrates for congestive heart failure and myocardial infarction. The emphasis will be on the predominant diseases of today and the currently available tests. The two major diseases are coronary heart disease and cardiomyopathy. Mitral valve prolapse is vastly “overrated”; the serious forms are very rare. Also, valvular heart disease has greatly declined.

What will follow will be a logical approach to test choices and interpretation that will help you understand the pathophysiology of disease. Remember, however, that biologic systems are complex and a physician can be very logical but very wrong in his conception of mechanisms of disease. Remember also that we tend to remember the exception, which makes the greater impression, more than the commonplace, which agrees with our understanding of pathophysiology. In spite of this, we must focus our attention on the most probable occurrence rather than the exceptions.

Why be logical in the evaluation of patients and their test results

and why try to understand the pathophysiology of disease in our patients? There are at least four reasons:

1. We cannot order every test. Financial constraints on the practice of medicine limit the number of procedures that can be done. Diagnostic Related Groupings (DRGs) are making it necessary for us to justify what procedures are ordered. It is our responsibility to keep health care costs reasonable.
2. If we understand the pathophysiology of disease and properly interpret test results, we know how to react to a patient's symptoms. A patient's shortness of breath may well be due to anxiety when there are no signs of ventricular failure. Chest pain can be due to causes other than cardiac if there is no evidence of ischemia.
3. If we know what we are treating, we are better able to treat it. Perhaps therapies will change, but this approach will improve our odds of doing more good than harm.
4. One of the most important reasons for understanding the pathophysiology of disease and interpreting our tests properly is that it allows us to estimate the prognosis and severity of disease in our patients.

There are several important points to consider when deciding to perform diagnostic tests. Inquisitiveness on the part of the physician is not reason enough. We should always ask, will this patient's health be better because of his encounter with the medical profession or because this test was performed? Our most important goal should be to improve the health and the quality of life of our clients. We should consider the total patient, including his job, his social life, his emotional well-being. One of the most important things to ascertain before deciding upon further testing or procedures is whether or not the patient is satisfied with his life status and with his understanding of his disease.

In tests or methods of evaluation to be considered, the emphasis is always on the basics, i.e., the history, physical examination, electrocardiogram (ECG), and chest x-ray. Special procedures to be considered are the exercise test, echocardiogram, nuclear cardiology, Holter monitoring, and cardiac catheterization. Though cardiac catheterization is the "gold standard" or most definitive of all of our procedures, it does have its limitations and risks. This invasive procedure should be carefully considered before being recommended to a patient.

There are five areas of patient evaluation that are critical and will be related to each of the testing procedures considered: myocardial dysfunction, myocardial ischemia, functional capacity, ventricular irritability (plus atrial fibrillation), and valvular function. These five features are extremely important because they are the cardiac *causes* of the most common symptoms in patients and they each have independent *prognostic* value.

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THE FIRST CONSIDERATION is whether or not the patient's disease is stable or unstable. This seems rather simple, but a careful history is the most important way of assessing this. Rather than changes from the disease, the symptoms may have changed due to psychosocial (family, financial stresses) or environmental circumstances (temperature, weather). In such cases, the instability may be treated by means other than adjusting medications or hospitalizing the patient. It is always recommended that the patient's test results be compared to detect changes. The most novice physician can compare ECGs and see if there are serial changes, even though he may not realize what they mean. However, when looking at test results and noting serial changes that suggest instability of the disease, remember that there are reproducibility limitations in all procedures.

Many books have been written on each of the following. Only key ideas will be presented here.

## HISTORY

Figure 1-1 illustrates the importance of the history. If it is poor, incomplete, or not taken, the entire arch of the patient evaluation comes crumbling down.

The history should be structured and an outline compulsively followed when the physician interviews a patient. The patient's chief complaint(s) should always be recorded in his own words. The following outline and those outlines presented in chapter 7 should be helpful: