

Is DRG useful in orthopedics?

Timo Niinimäki¹, Pekka Jalovaara² and Eero Linnakko¹

The increasing hospital costs have provoked discussions about Diagnose Related Groups (DRG) and its role in controlling the growth of hospital budgets. The relevance to current operation statistics

and the structure of DRG in orthopedics are analyzed. The direct application of DRG to Scandinavian statistics does not appear to be reliable.

¹Department of Surgery, University Central Hospital, SF-90220 Oulu, Finland

²Finnish Hospital League, Helsinki, Finland

In Scandinavia, assessment of Diagnose Related Groups (DRG; Fetter et al. 1977, Aas 1985) was one of the measures taken in the early 1980s to manage the continuous increase of health care expenditures. DRG, which started in the USA as a reimbursement system for hospitals, was expected to be an applicable method in Scandinavia (Spri 1985).

In this paper, some problems related to the use of DRG in orthopedics are analyzed with emphasis on their application in the Scandinavian countries.

The origin, structure and purpose of DRG

DRG is a compilation of different diagnosis groups characterizing the diagnostic and therapeutic consumption of hospital resources in each group. The primary object is to define case types that are expected to receive similar outputs or services from a hospital (Håkansson 1988). The first version of DRG was ready in 1977 and comprised 383 different groups. Revision continued until 1983, when it came into everyday use in New Jersey, where all the acute hospital stays were financed with the aid of DRG. In principle, DRG is a patient classification scheme of 470 different groups relating demographic, diagnostic, and therapeutic characteristics of patients to their consumption of hospital resources. The most important data are the diagnosis, operation, age, other diagnoses and complications, the length of stay, and particular costs.

Diseases of the musculoskeletal system comprise 26 different groups for the operated on patient and 22 groups for medical care. The outcome of the system is an index that gives the costs of a patient in each group by simple multiplication with a basic amounts of dollars. Every group of DRG is a case mix (types of patients treated), which consists of cases that are similar in cost expenditures. Incidences of diseases, indications, and surgical regimes vary a good deal; and the direct application of DRG does not necessarily provide the same result in different countries.

Adaptability of DRG

If the data from the Scandinavian countries, Australia, and the United States are compared, the main lines in orthopedic treatment strategies and operative treatment strategies are the same. The stays in hospitals vary somewhat, however. Thus, the length of hospitalization for a hip/femur procedure in the Scandinavian countries and the United States are of about the same length, but in Australia longer (Figure 1).

The hospital stay in different hospitals within an individual country may even vary, as the example of hip and back operations shows (Figure 2).

In minor operations, differences are smaller, reflecting mainly various admission routines and local organization of the operation theaters (Figure 3).

Differences are often explained by the circumstances and the care policy of the hospital. Because the purpose of DRG is to calculate purely in terms of money, it is necessary to convert conventional statistics to DRG in order to obtain comparable data. This fact is important if DRG is offered as a tool for economic scrutiny.

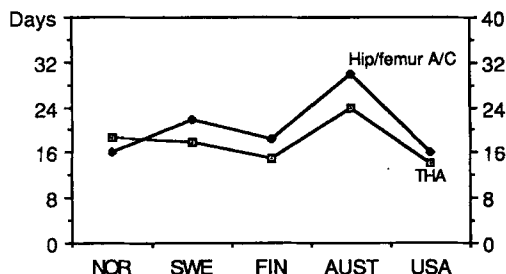


Figure 1. Hospital stay for total hip arthroplasty (THA) and other hip/femur operations including complications in patients aged 70 years or more in different countries (Norway, Sweden, Finland, Australia, and USA).

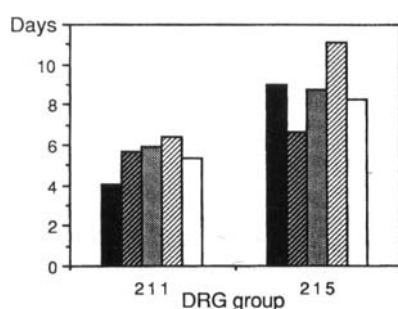


Figure 2. Mean hospital stay in four Finnish university hospitals due to hip/femur operations in patients aged 18-70 years (211) and neck/back operations in patients aged less than 70 years. □ overall mean.

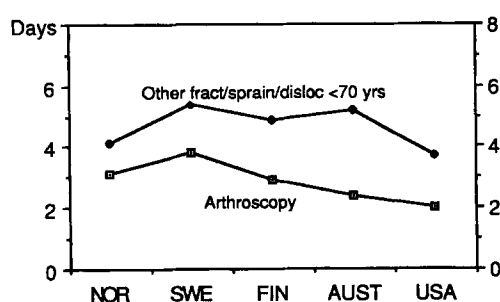


Figure 3. Hospital stay due to minor operations in different countries (Norway, Sweden, Finland, Australia, and USA).

Classifications of operations in Scandinavian countries

The classifications of surgical procedures are similar in all the Scandinavian countries. The codes consider the anatomic region, the diagnosis, the specific surgical method, and whether or not a reoperation is involved. Progress in surgical techniques calls for revisions that do not easily match with earlier versions. This makes long-term data processing and evaluation difficult. The Scandinavian classifications comprise from 1,450 to 2,050 codes, whereas the DRG has 100 operative groups (Niinimäki 1988).

Connections between DRG and Scandinavian classifications

A comparison between the DRG classification and the lists of operations used in the Scandinavian countries reveals that most operations on the Scandinavian lists can be unambiguously placed under a single DRG group. Unfortunately some do remain outside, the

most important being the techniques of internal fixation of fractures. Further, the classification of burns are different, being dependent on the organization of care. In the Scandinavian countries the main diagnosis is coded by WHO CD-9 (or 8), which is slightly modified for each country. The DRG classification is based on ICD-9-CM, which is a clinical modification of the classification of diseases containing an additional classification of procedures. This difference in coding the main diagnoses is not a problem in the field of orthopedics.

Discussion

DRG offers a frame independent of the speciality for the control of hospital economics with regard to effectiveness and productivity. The independence from specific disciplines makes it a noteworthy tool in the allocation of resources when different specialities are competing.

DRG is from our point of view not directly applicable in Scandinavian countries. It provides directions and relations, but not precision. It is not adaptable to circumstances where the care is shared between two hospitals—the first serving as an emergency and operation unit and the second taking care of the rehabilitation. Without further development, the linkage between DRG and Scandinavian classifications of operations is not complete. Duly adjusted, DRG will provide interesting possibilities for predicting and controlling the expenditures involved in orthopedic health care services.

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