

---

## Volume 11, Issue 5 /2009 - Financing

### Diagnosis Related Groups:A System Perspective

---

Using Diagnosis Related Groups (DRGs) is a way of describing clinical activity based on the resources consumed. DRGs were developed in order to define a fair payment mechanism, so that resources were directed exactly where they were consumed. DRGs would allocate resources amongst providers according to the services provided, thus improving allocative efficiency. However, once DRGs are the foundation to pay for services, they constitute one of the main drivers of clinical behaviour, thus leading to desired but also to unexpected results. This paper will briefly review the description of health systems, the impact of paying by DRGs on them, the additional measures that this form of paying demands, and what could be the future trends related to DRGs.

#### Health Systems

Health systems are complex systems with different elements interacting to produce a given output. Health systems include the functions of stewardship (or oversight), financing, paying, regulating, organising, and clinical and managerial behaviour, as the mechanisms that can be controlled to achieve their aims. Health systems are expected to offer a certain level of efficiency, access and quality as basic performance measures. More globally, they are maintained in order to protect and improve the health status of populations, to protect from financial risks associated with disease, to respect customer preferences, and to foster equity (table 1).

#### Paying by DRGs.

Because the different functions of a health system interact, a change in any of them will have an effect on the others. Paying by DRGs will influence clinical behaviour, financing, and hospitals do not aim at increasing the organisation of services. When paying by DRGs, the service provider's income depends on its patient case-mix, the number of patients and its budget rate. If the provider wants to increase its income, it is supposed to increase productivity. This is the rationale behind the assumption that DRGs may increase technical efficiency of health systems.

#### Intended and Unintended Effects of DRGs.

All these changes can potentially determine efficiency, access or quality. Behavioural changes associated with the introduction of DRGs as the basis for paying have been described numerous times in literature. In order to increase productivity, a hospital may decrease the length of stay (LOS), which will also decrease waiting lists, to increase the number of patients attended to. The second alternative described so far is to increase the case-mix index (DRGs creeping), which happens either because providers hospitals do not aim at increasing learn to manage registers more accurately or because they try to artificially increase income. A third alternative is to ration services, providing less services or tests.

The most widely described effect of DRGs has been decreasing LOS, which in turn raises a number of questions about the performance of the system. Shorter LOS always implies some form of reorganisation of tasks within or outside the hospital. The process to reach a diagnosis can be shortened by reorganising services and procedures. Some interventions can be transferred to outpatient services. Both changes may hamper quality of care of inpatients. For instance, patients may be discharged in a more unstable status. More unstable patients at discharge may put higher pressure on community services (elderly residencies, home care, social services), risking quality of care if these are not well equipped and prepared. Early discharges may also offer false low estimates of healthcare costs, if costs of outpatient care are not hospitals do not aim at Table 1: Functions of a health system. Based on Roberts (2004) and WHO (2000). included in calculations. As a consequence, no assumptions about quality of care or efficiency – in terms of societal costs – are warranted when lowering LOS.

A further consequences of decreasing LOS is that if hospitals admit more patients in any given period of time, total expenditures of healthcare will increase, unless some controls are introduced. One way of controlling expenditures that has been experienced is to put a ceiling on the total number of patients to be reimbursed. In such cases a rebound effect has been found, which is coherent with the assumption that hospitals do not aim at increasing productivity by itself, but rather try to increase their total income. Another way of controlling and stabilising health expenditures would be to close or downsize less productive facilities. However, geographical access and equity could be at stake in this case.

#### Lessons Learned

Some lessons can be learned from the experience so far with DRGs. It is clear that if you want a relevant effect on productivity, which is the rationale behind advocating for DRGs, you need an equally powerful quality control programme, to prevent adverse outcomes related to shorter LOS or rationing of appropriate services. Furthermore, it is not enough to assess how paying changes hospital costs. Total costs from the societal point of view should be calculated, and access and equity should be verified.

The interrelationship between the different functions of health systems is frequently overlooked. The interaction and coherence of different functions of the system and the outcomes of this interaction in terms of access, equity and quality should never be assumed. Assuming that healthcare providers will attend more patients if paid for it with no impact on quality or access may seem coherent with a simplistic interpretation of microeconomic theory, but it is naive. Interventions to improve the performance of health systems are never so simple, and never based on a single mechanism. Health systems need a sound and powerful information system to conduct appropriate evaluations based only on empirical data and not on assumptions.

All payment mechanisms need empirical evaluation, payment mechanisms based on DRGs are no different. Every payment scheme has drawbacks and potential unintended effects. Table 2 summarises what is known.

## Overall Effects and Future Trends

The experience of paying by DRGs as well as many other experiences on quality of care and healthcare management show the importance of taking into account the interrelations of different functions of the health systems, rather than conceptualising them one by one. Paying hospitals by DRGs show specifically that verifying the impact on other parts of the health system, such as primary care or long-term care, and even on the social system, is important. Therefore explicit plans to improve the coordination amongst these different care providers are needed. We also need much more powerful management tools for quality management of clinical procedures. Healthcare systems need more empirical evidence of their performance. Interestingly, DRGs can contribute to this if based on clinically relevant information.

## Conclusions

Paying by DRGs may have intended and unintended effects, depending on the coherence of other functions of the health system – such as other types of incentives, the organisation of quality programmes and the information system- with the desired objective.

Decisions on the elements of health systems – paying, organising, regulating, behaviour – should be based on empirical data and not on simplistic assumptions. Quality, efficiency and access should be verified whenever a change is introduced in the health system.

References available upon request,

[english@hospital.be](mailto:english@hospital.be)

**Author:**

**Carlos Segovia MD MPH.**

*Instituto de Salud Carlos III. Madrid, Spain.*

[csegovia@isciii.es](mailto:csegovia@isciii.es)

## EuroDRG - Diagnosis-Related Groups in Europe: Towards Efficiency and Quality

EU Framework Programme. It runs from January 2009—December 2011 with 12 participants from 10 European countries: England, EuroDRG is a project funded under the 7 Sweden, France, Spain, The Netherlands, Austria, Poland, Estonia, Finland and Germany.

It is believed that the “Europeanisation” of healthcare is the greatest challenge national health systems are facing. Increased patient mobility will place growing pressure on the different, and often incompatible, DRG systems used by the various EU Member States. Any modifications to national DRG systems should thus be made with an eye towards the EU as a whole. Indeed, calls for a Europe-wide system of DRGs are now commonplace. That is where EuroDRG comes in- its goal is to address this problem by analysing health systems in the ten different countries.

Phase one focuses on the determinants of hospital costs and DRG-based payments in the inpatient sector. Phase two seeks to develop and implement the first Europe-wide hospital benchmarking system as a means of identifying common issues and systemic factors.

For more information, please visit: [www.eurodrq.eu](http://www.eurodrq.eu)

Published on : Mon, 9 Nov 2009