MILLIMAN WHITE PAPER

DRGs: Is this the next chapter for the Cyprus healthcare system?

Nicholas Kallis, FSA, MAAA

Diagnosis related groups (DRGs) is the standard envisioned within Cyprus' General Healthcare System (GHS – or commonly referred to as "GESY") as the process by which public and private hospitals will be reimbursed for their services. This brief note constitutes the first part of a series of short articles about DRG systems. This series will cover the definition and objectives of DRG systems, how other nations have developed and adopted the payment mechanism, their main advantages and disadvantages and, lastly, look into the possibility of such a system as a valid candidate for implementation in Cyprus to improve conditions, despite its relative complexity.

The DRG system is a complex prospective payment system used around the world, and which has become more prevalent in recent years. It is an admission classification scheme based on diagnosis and cost. This system is very similar to the International Classification of Diseases (ICD) system, which codes diagnoses, symptoms, and procedures. The DRG system uses an additional classification criterion, namely the cost of healthcare resources consumed for patient care. Thus, through the DRG system, patients can be classified simultaneously both by the intervention and the cost of care into specific DRG groups, which allows for the possibility of associating patient types with the hospital expenses incurred.

Essentially, each discharged patient is analysed in terms of biological and disease characteristics and allocated to a certain diagnosis group. Thus, diagnostic groups are described in terms of clinical homogeneity (i.e., within a certain DRG group, the services patients expect to have and costs incurred are going to be similar) and in terms of cost homogeneity (i.e., each DRG on average requires similar consumption of resources). Financing of hospitals is done by establishing tariffs for each diagnosis group at a central level or negotiated at a local level. Reimbursement is affected by elements such as the number of discharged patients for a certain hospital, as well as the complexity of cases treated by the hospitals. Hospitals that will have costs for a certain DRG greater than what is reimbursed will lose resources for that category of patients and vice versa.

The advantage of such a system is that it provides incentives for better cost control of each individual stay, so that resources are spent more efficiently. Average lengths of stay are reduced, which can be indicative of more efficient care, as this system reduces incentives for over treating patients. At the same time, it can also be a marker of poor quality of care when financial incentives are created to discharge patients earlier in order to reduce costs. As this system does not evaluate the quality of care directly, reimbursement based strictly on DRG needs to be carefully analysed so that patient care is not compromised.

As this system is considered a success story in many developed and developing countries it's worth considering whether and in what form it could be implemented in Cyprus. In this and upcoming articles in this series, we will explore and share the experiences other nations have had in DRG development and implementation.

Developments in Cyprus

As part of the GHS implementation, hospitals will need to implement a customised DRG system, with a catalogue of DRG codes and related definitions. It is envisioned that this will enhance efficiency in the delivery of hospital services, more so than other hospital payment models. We understand that this is expected to more closely resemble the German equivalent. We will look at the German implementation in a later article in this series. In one of the upcoming publications, we will delve further into the developments in Cyprus and all the ongoing efforts, and share advantages and disadvantages of this reimbursement reform.

United States case

The DRG system was initially developed in the United States, at Yale University. The Centers for Medicare and Medicaid Services (CMS), the agency that administers Medicare then adopted it at the federal level. Medicare is the federal health system designed for old age care, specifically for patients over 65 years of age and people with disabilities. Before adoption of the DRG system, Medicare reimbursement was on a fee-for-

service (FFS) basis, meaning that hospitals were reimbursed separately for each health service that they provided. There is widespread acknowledgement that the FFS reimbursement scheme can lead to inefficient care delivery, in particular unnecessary utilization, longer hospital stays and delayed discharges, and inappropriate hospitalizations when patients could receive services at other sites of care. All the issues above would put financial strain on the Medicare program.

The DRG system tackled some of these issues. The primary concept was to incentivise providers and hospitals to treat each patient in the most effective, efficient, and clinically appropriate manner. For example, in the United States, there has been a shift in site of care from inpatient to outpatient. This has been partly attributed to implementation of the DRG system. Under the prior FFS system, there were perverse incentives for hospitals to admit patients in some cases that might be more efficiently handled in an outpatient ambulatory environment. With advancements in clinical procedures, outpatient ambulatory settings have become a more efficient site of care for some procedures without a material impact on clinical quality or outcomes. The DRG system removes the incentives for hospitals to perform inpatient surgeries when the outpatient setting is a viable alternative. Additionally, there is evidence that Medicare would pay hospitals more to do the surgery in outpatient settings to promote this shift. Another intriguing aspect is if inpatient reimbursement is strictly controlled, i.e., subject to DRGs and admission thresholds, then the hospital has an incentive to move patients to outpatient settings because the reimbursements are not as controlled there (and can end up being even higher than inpatient reimbursement). Theoretically, this shift in place of service is a positive development. There are examples of countries that rely on inpatient care predominantly, thus placing more emphasis on treating the sick rather than preventing illness (due to less resources dedicated to preventive care). These countries face negative consequences on healthcare cost and utilisation control.

At the same time, some practical challenges still exist. One challenging topic is to convincingly tie the system's performance to the quality of care delivered. For example, the DRG partly incentivises cost control by the hospitals, but at the risk of compromising patient quality of care. If lengths of stay are reduced or necessary medical tests and therapies are omitted to control costs despite negative potential clinical outcomes, it can affect patient care. Some mechanisms are attempted such as readmission management to help reduce the too-short length of stay by reducing reimbursement if the patient returns because they were discharged too quickly. Several studies have attempted to assess the impact of cost controls on quality of care in the United States. The concept of quality is multidimensional, complex and controversial in the quantification and measurement of its several components.

The effects of the DRG system on quality of care reflects an ongoing debate with mixed conclusions. The DRG system introduces transparency in providing care by classifying patients and measuring output of care, and whether hospitals concentrate on reducing unnecessary care while using resources efficiently, which can improve quality. Another practical challenge has been to maintain accurate payments while balancing other objectives such as funding medical education and the expense of unpaid or uncompensated healthcare. Other challenges include potential errors in coding and billing, which can translate to payment errors, or upcoding, a practice that shifts patient episodes into DRGs with higher reimbursements. All these factors should be closely monitored for a more efficient system.

Despite these issues, in the United States, the DRG payment system has been considered a success story and formed the basis for further evolution of bundled and episode-based reimbursement models. It has been emulated in other countries in order to improve hospital performance. But its introduction was also very much in line with observations that, at least in European countries, the cost of care was on the rise, and the DRG system was a potential way to encourage more hospital efficiencies in the treatment of inpatients. At the same time, it has undergone numerous changes since its inception in order to meet challenges and to introduce improvements on many levels.

Next up in the series

In the next article of this series, we will look into the DRG versions implemented in Germany (the model Cyprus is using as the basis for DRG adaptation), the United Kingdom and Poland. Each of these nations had their challenges in implementing DRGs. We will investigate their unique situations and how they overcame hurdles, and will be able to start deriving our own conclusions in regards to the effectiveness of the programme in each of these countries. Assessing the impact of DRGs on the cost and quality of healthcare is not an easy task, therefore looking at other examples, understanding their nuances and complexities, advantages and disadvantages will only help our case in Cyprus and the ongoing efforts by the Health Insurance Organization (HIO) and hospital management teams to implement this complex payment system.

References and citations

Reinhard Busse, Alexander Geissler, Wilm Quentin, Miriam Wiley. Diagnosis-Related Groups in Europe: Moving Towards Transparency, Efficiency and Quality in Hospitals. European Observatory on Health Systems and Policies Series. McGraw Hill.

Worzala, C., Pettengill, J.& Ashby, J. (November/December, 2003). Challenges and opportunities for Medicare's original prospective payment system. Health Affairs. Vol. 22. No. 6.

Mihailovic, N., Kocic, S.,& Jakovljevic, M. (12 May 2016). Review of diagnosis-related group-based financing of hospital care. Health Services Research and Managerial Epidemiology 2016 Jan-Dec; 3: 2333392816647892.

Sturgeon, J. (25 May 2009). DRGs: Still frustrating after all these years. For The Record Vol.21. No.11, p. 14.

Chilingerian, J. (2008). Origins of DRGs in the United States: A technical, political and cultural story. The Globalization of Managerial Innovation in Health Care, pp. 4-33. 10.1017/CBO9780511620003.002.

Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life insurance and financial services, property & casualty insurance, healthcare, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

milliman.com

CONTACT

Nicholas Kallis

nicholas.kallis@milliman.com

© 2019 Milliman, Inc. All Rights Reserved. The materials in this document represent the opinion of the authors and are not representative of the views of Milliman, Inc. Milliman does not certify the information, nor does it guarantee the accuracy and completeness of such information. Use of such information is voluntary and should not be relied upon unless an independent review of its accuracy and completeness has been performed. Materials may not be reproduced without the express consent of Milliman.