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Introducing DRGs into Greek National Healthcare System, in 27 Weeks

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Abstract. Experiencing a devastating and intolerable economic crisis in Greece, the National Healthcare System (GR-NHS) needed a tool to manage expenditures and quality of healthcare services. The adoption of the Australian Disease Related Group (AU-DRG) system along with the International Statistical Classification of Diseases and Related Health Problems (ICD-10) constituted the major components of the needed tool. The tool provided the means to perform the transformation of the applying reimbursement system and at the same time to monitor and control expenditures and quality of GR-NHS. The prevailing fiscal conditions urged and obliged to design and implement a project regarding the introduction of a DRG system into GR-NHS in the limiting time period of 6 months or 27 weeks. The project utilized solely the available resources of the Ministry of Health with the direct support from the largest Health Insurance Fund (IKA). The aim of the project was to enable all hospitals demanding reimbursement from Social Security to use the developed KEN-DRG system. At the same time, the Social Security would be capable of controlling and budgeting the expenditures for beneficiaries and the Ministry of Health could control and assess the expenditures and the offered quality of services using the newly developed system.

Keywords. National Healthcare System, DRGs, Hospital Information System

1. Introduction

The Greek National Health System (GR-NHS) was founded in the early 80's, and a major reform took place almost two decades later to receive its current general form [1]. The economic crisis that emerged at the end of the first decade of this millennium found the GR-NHS unprepared to handle the unreasonably rising healthcare and pharmaceuticals expenditures as the system was designed to cover different incidental needs than those present at that time. During the period of delusive prosperity up to the year of 2009, the healthcare institutions were receiving reimbursements from numerous and different Health Insurance Funds (HIF). For each provided healthcare service the private and public healthcare sectors had to submit to the corresponding HIF the entire set of treatment documents. The bureaucracy developed barriers for the controlling services and accounting departments of the numerous HIF which were employing large numbers of staff while the Ministry of Health (MoH) was receiving an outdated and blurring picture of the prevailing situation of the GR-NHS with evidence which was made available months later due to the slow-moving bureaucratic clearing procedures

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that were processing large volumes of unorganized and non-normalized data. Thus, the healthcare administrative services were incapable of applying evidence-based control and decisions processes about providing grants and funding were based on data of poor quality, short-term insecure judgments, or even worse, on arbitrary political decisions.

This paper starts with a discussion of the reform needed in GR-NHS, then it provides a brief description of the project's to introduce DRG system design, it continues with project's administration that had to achieve the set goals within the time frame of 27 weeks, and ends with the drawn perceived conclusions.

2. The Need for a GR-NHS Reform

The emerged economic crisis challenged the State with bankruptcy and emergency activities took place to control the GR-NHS performance. In order to face the pharmaceutical expenditures, the e-prescription system developed reducing the spending from a quarter of a million per month to something more than a tenth of a million on a monthly basis for the largest HIF of IKA. Also, for the suspension of expenditures, the Center for the Evaluation of Disability (KEPA) established achieving in a quarter of a year to reduce the disability factor from 15% to 8% which is the average in the European Social Security Institutions. In addition, the national information network was developed (GR-NHSnet or ESYnet) that initially operated manually and procuring its successor that it is equipped to automatically gather reliable data from each of the 131 hospitals of GR-NHS and processing the collected data to support the policy making process of the MoH. Almost a decade later ESYnet is not fully automated and the MoH is not taking full advantage of the contemporary analytics with big-data, artificial intelligence, machine learning and deep learning methods. Moreover, Quality was chosen to be the means to control the financial expenditures deciding to develop Standards of Procedures (SOPs) for GR-NHS and at the same time, develop a new reimbursement system employing Disease Related Groups (DRGs). Thus, the development of a DRG system had to be developed in a tight time-frame of 6 months or 27 weeks to face the emergency situation supporting the emergency state and meeting the fiscal obligations [2].

The reasons a DRG system was expected to act as a catalyst are given in the following three directions. First, the patients' accounts clearance added a heavy overhead for the private and public hospitals to prepare and submit on-time the full documentation of treatments to each of the almost thirty (30) HIFs. Similarly, second, the HIFs faced an analogous overhead to examine and process the received documentation to proceed with payments. Third, the efficiency measurement of healthcare services was impossible and so, it was infeasible to indirectly measure Quality and control the financial performance. In other words, prepare GR-NHS for an internal reform [2] by evolving and moving from the so called "line-item-budget" towards the "fee-for-service" [3]. Thus, the largest HIF of IKA, which supports half the nation's population, fully supported the MoH to introduce an adequately adopted reimbursement system [4, 5].

After determining the necessity of the project regarding the introduction of a DRG system, the requirements' collection for the organization of the projects followed. The delegation's trip to the German organization AOKA proved disappointing as no assistance was provided with the excuse that they did not want to jeopardize their reputation with a forthcoming failure. Thus, a project was designed based on the locally

available resources and open scientific information. The project duration should be at most 27 weeks or 6 months of time and it should cover at least the 131 Hospitals of GR-NHS and volunteering private institutions.

3. Project Design

The Australian DRG system was selected, examined, and adopted. The defined committees of medical specialists made decisions about the patients' classifications, the medical classes of diseases or groups, the levels of severity within each class, the cost related with each medical class and setting the prices related with each of the classes, and determined the holding exceptions, e.g. for oncology [5]. Two approaches were decided for pricing estimations. The first approach asked the medical specialists committees to propose prices for each class. The second approach asked for the execution of a scientific economists' study which was performed by the National School of Public Health (NSPH), the Economics department performing a relative comparison between the Greek and the Australian prices system considering and comparing the analogies of characteristic sets of economic and financial parameters. The two sets of prices defined the initial limits for the applied prices of the GR-DRG system and eventually minor adjustments on prices applied [5] including the MoH policies.

The technical development and the execution of the project plan included milestones that required attention. Coding was on top of the priorities list because it presented threefold aspects. First, the development of the DRGs coding, second, the use of the DRGs coding by 131 hospitals and third, the maintenance and promptly update of it [2]. Also, in the priorities list, it was the topic of quality measurement which had to be associated, among others, with readmissions, mortality rates, excess of hospitalization dates, and complications during treatment.

The adoption of standards and good practices included the Australian DRG system and the international classification of diseases (ICD-10). In particular, the NSPH translated ICD-10 into Greek and performed an economic study over the Australian DRG to localize and adjust its values into the Greek reality. In order to achieve standardization at the Hospitals, a set of Standards of Procedures (SOPs) submitted and followed by the Hospitals covering specific areas of everyday activities. The project was aiming at the smooth transition from the Global Budget (line-item budget) to controlled areas of Fee-For-Service [3, 5]. Thus, the Australian DRGs and ICD-10 materials were disseminated to all participants and the project relied on the process-based PRINCE2, the PERT and CPM tools, and the continuous project auditing applying Risk management (ISO 31000), Business Continuity (ISO 22301), and Quality (ISO 9001) within a cybernetic framework.

4. Project Administration

The organizational structure of the project followed the Prince2 standard. A layered organizational model adopted a Steering Committee for making high level decisions on raised issues by a Project Board Committee for resolving technical matters or escalating issues to the Steering Committee whenever necessary. Rapporteur to the Project Board was the Project Director as responsible for the project management.

The project's structure was including four additional organizational facilities. First, Project Teams which were at each of the 131 Hospitals. Second, medical specialties were setting up committees for each class or group of Medical Diagnostic Categories (MDC) to support the scientific aspects even beyond the project's life cycle. Third, for the economic scientific support it was appointed to NSPH. Forth, the project was facilitated with an adequate Help Desk communicating through multiple and specifically designed communication channels, IT Support with Wikis and cloud computing applications, and Training services employing e-learning platform. Hence, all interested parties were participating with well-determined responsibilities and adequately defined contributions.

The project's administration was characterized by three fundamental ingredients. The first characteristic ingredient was communication which was applied through the carried documentation, reporting, and weekly meetings. The second characteristic was about control which was enforced at all structured levels of the project's organization with the aims to satisfy or to propose improvements and alterations to the project plan. The third characteristic was about feedback that was received through the paper or electronic correspondence of all participants with the Help Desk of the project.

5. Conclusions

The design of the project took under consideration Cybernetic principles focusing on the reduction of the introduced system's complexity and simultaneously the increase in the project's control while keeping sustainability. The maintained sustainability forced the optimization of medical, economic, financial, administrative, operational, and technical aspects of the project. The variety of the employed concepts was thoroughly defined trying to keep low the involved entropy maintaining narrow communication channels which activate simplified administrative controlling mechanisms with rectified behavior steaming from the employed feedback.

The set objectives have been achieved within the limited available time frame and the introduced system is still in-use but without being regularly updated as it was designed for. In addition, the MoH was never took advantage of the available system, neither supported with the appropriate personnel, nor provided the technical and administrative means to keep the system alive in spite of the establishment of a relative state organization. The lack of a grouper, either developing one or supplied some commercially available system is considered as a necessity.

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