EFFECTS OF THE INTRODUCTION OF DRG IN THE HEALTHCARE SYSTEMS OF EUROPEAN COUNTRIES

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Summary:

The European Health Commission has developed and funded a research project from 2009 to 2011, known as Euro DRG. It is dedicated to analyzing national DRG-based hospital payment systems using qualitative and quantitative research methods. The study analyzed 12 countries using 2 basic models based on DSG-hospital payment systems. Namely: countries with hospital payment systems based on disbursement for each patient treated with DRG in Estonia, England, Finland, France, Germany, Poland, the Netherlands and Sweden, hospitalized payment systems for DRG budget allocation in Austria, Ireland, Portugal and Spain.

Between the mid-1990s and for many years, many countries have reduced the number of patients to varying degrees. For France and the United Kingdom (Group 1 countries) respectively the decrease is between 18.1% and 42.5% for the period 1995 - 2008. In the Scandinavian countries and Ireland, the reduction in the number of patients ranged from 2.6 % for Estonia, up to 7.2% for Ireland (Group 2). However, Austria and the Netherlands show an increase in the number of treatment enrolled in their general hospitals by 22% and 15%, respectively.

The percentage share of DRG-related hospitals varies from country to country, ranging from 20% for Spain, 39% for Estonia, 60% for Poland and England, 80% for Portugal, Germany, France and Ireland to reach to 96% in Austria. Other payment components include a global budget and service charge (FFS) used in Estonia.

Keywords: *effects; diagnostically-related groups; European countries*

Introduction:

After World War II, hospital care in the United States is experiencing a "boom" and is developing rapidly. Along with an increase in the number of hospitals, there is a constant increase in the prices of medical services. An increase of 20% significantly outstrips the level of total inflation in the country, at this time 1 to 2% [1,2]. In 1967, the Federal Health Insurance Program of the United States - "Medicare", which pays the medical services provided by the hospitals of all Americans over 65 and the chronically ill, is in bankruptcy. There is a strong demand for a way out of the situation to allow for price hikes to be held back without reducing the volume and quality of services provided. The decision comes from Professor Robert Fetter and his colleagues from Yale University, who offered the DRG approach for measuring and financing hospital products [6].

In many countries, as a model for paying for hospital care, DRGs are gradually being introduced since the 1990s [9]. The basic design features of the DSG-based payment system are the comprehensive patient classification system and payment formula. The advantages of the DSG payment system are reflected in increased transparency, efficiency and reduction in the average length of stay. The disadvantage of DRG is the financial incentives created for earlier dehospitalisation. Effective use of resources, together with increased mobilization and improved pooling, is the key to achieving a faster transition to universal health coverage. Reforming payment mechanisms in hospitals [17] could lead to significant efficiency gains. The cost of

hospital services includes a large share of total healthcare costs in different countries, regardless of the level of their citizens' incomes [7,14].

Goal:

The aim of our study is to analyze the method of DRG as an alternative tool for the financing of hospital medical care in the Republic of Bulgaria and other European countries.

Materials and methods:

The hospitals covered by the study are: University Hospital "St. Georgi "EAD - Plovdiv; COC - Plovdiv; "SHR - NC" EAD - town of Banya; "SHR - NK" EAD - the town of Hissar; "SHR - NK" EAD - Pavel Banya

The study uses the method of analysis of healthcare financing arrangements in Bulgaria and other European countries; international benchmarking - benchmarking and analysis of trends in input data, results and functioning of health care financing in Bulgaria and other European countries.

Results:

European low- and middle-income countries. The region of Eastern Europe and the Balkans largely share the heritage of the historic system of Semashco and the former Yugoslavia in the area of health financing [8]. In EU research surveys, 12 low- and middle-income countries have DRS-based payment systems, and another 17 are in a pilot or exploratory phase. Most are located in Eastern Europe and belong to the Soviet geopolitical sphere of influence.

Countries have two options: to choose between existing DRG systems (to import them) or to develop their own DRG system, meaning that they will have to invest much more money and resources.

Estonia and Lithuania [8] decide not to develop their own DRG systems, as they consider that this is too expensive and resource-intensive. When countries decide to opt for an already existing option for DRG systems, their choice depends on many factors, such as the specific context of the country, the impact of external financing agencies, the level of regional cooperation, exchanges with neighboring countries, and the time needed to implement the specific system. For example, Scandinavian DRG systems (NordDRG) are used in Estonia and Latvia, while refined Australian DRGs (AR-DRGs) were introduced in Slovenia and later applied or researched in other Southeast European countries, such as Macedonia and Romania.

Hungary began developing its own DRGs in the early 1990s, for fear of being influenced by the US HCFA-DRG system, which was at the time the most widespread and most accessible.

In Romania, in July 2007, ABF was introduced. As a result of the new classification system, incorrect encryption was allowed. Upon switching to DRF in 2009, hospital incidence nationwide increased by 25% compared to 2007. Because of the new DRG system, hospitals sometimes change patient diagnoses to get more funding. It can be concluded that the complexity of the new classification system requires better evaluation and monitoring, as well as better legislation to achieve more effective patient care and better allocation of hospital resources [15].

Some countries are introducing a Volume Limit (PVL). Analyses of this new method for active hospital care in Hungary show that the size of all DRG burdens produced in one year has not changed between 2003 and 2006. In addition, the annual number of cases has increased, but the length of stay has decreased. The main effect of the introduction of PVL is the economic saving of health insurance from 1.9% in 2004, increasing to 2.6% in 2005, 3.4% in 2006,

reaching its peak of 5.6 % in 2007, and in 2008 dropped to 3.2%. In 2008, the use of PVL also led to a reduction in hospital activity and reimbursement of active treatment costs [15].

Since 2002 Croatian hospitals have introduced reforms of payment providers on a case-by-case basis, ranging from broad categories to therapeutic procedures. Then in 2009, formal diagnostic groups were introduced. Data were analyzed for 5 types of procedures: cataract, pneumonia, coronary bypass, appendectomy and hip replacement for a period of 10 years; and December 2009. The results of the analyses show that the reform of payments has not adversely affected the quality of care. The impact of the introduction of diagnostic-related formal groups in Croatia seems that the case-based payment system has increased the effectiveness of hospital care [15].

Review of experience in Western Europe. The European Health Commission has developed and funded a research project from 2009 to 2011, known as Euro DRG. It is dedicated to analyzing national DRG-based hospital payment systems using qualitative and quantitative research methods. The study analyzed 12 countries using 2 basic models based on DSG-hospital payment systems. Namely:

1. Patient payment systems based on disbursement for each patient treated by DRG in Estonia, England, Finland, France, Germany, Poland, the Netherlands and Sweden

2. Hospital-based payment systems for DRG budget allocation in Austria, Ireland, Portugal and Spain [10].

Between the mid-1990s and 2008, many countries have reduced the number of actively treated patients to varying degrees. For France and the United Kingdom (Group 1), a decrease of 18,1% and 42,5% respectively between 1995 and 2008. In Scandinavia and Ireland, the reduction in the intake of active patients ranged from 2.6% for Estonia to 7.2% for Ireland (Group 2). However, Austria and the Netherlands show an increase in the number of treatment enrolled in their hospitals for active treatment by 22% and 15%, respectively.

The percentage share of DRG-related hospitals varies from country to country, ranging from 20% for Spain, 39% for Estonia, 60% for Poland and England, 80% for Portugal, Germany, France and Ireland to reach to 96% in Austria. Other payment components include a global budget and service charge (FFS) used in Estonia.

France: In 2004/2005, in order to finance the active treatment of all hospitals, the French Government introduced a DSS-based payment system called T2A (Tarification à l'activité) [12]. Before this system, payment methods included global budgets and FFS. In 2010, hospital funding included 73% of T2A and FFS payments and 27% of all other payment systems, such as annual future payments, expensive medicines, specific mission funding, and investment.

Reform of T2A lead to: a slight increase in the number of hospitalizations + 1,36% in 2009 and a significant increase in the number of outpatient procedures by + 3,14%. This in turn significantly reduced the total number of hospital days and hence the costs of hospital care.

There are also some negative views on the financing of DRG-based hospitals. In 2009, The French Audit Office reported that the DSG-based payment model is not a very transparent mechanism for controlling managers' spending by local regulators, and the control of hospital resources, costs and quality is insufficient and unsatisfactory. This was followed by some further criticism of the French payment system based on DRG in 2012 by several national audit institutions. Unfortunately, hospital cost data is still not used for evaluation and comparative analysis or for identifying effective providers to facilitate understanding of different medical practices and to monitor the behavior of different actors.

Overall, the French experience shows that although the DRS-based payment system can increase hospital efficiency and transparency, it also involves some risks. It is reported that the DRG-based payment system also creates some problems in controlling the volume of hospital care and the appropriateness of care.

Austria introduced a hospital financing system based on DRG in 1997. It is called "Leistungsorientierte Krankenhausfinanzierung" (LKF).

There was an increase in public expenditure on hospital care from 1990 to 2012. However, the costs were higher between 1990 and 1997 - an increase of 6.1% compared to 1990, compared to the 1998 period until 2012, when the increase is by 4.8% compared to the 1990s. The share of public expenditure on hospital care, as a percentage of GDP, increased from 2.6% in 1990 to 3.2% in 1997 and from 3.2% in 1998 to 3.8% in 2012. However, the gradual stabilization of this increase in costs was not the result of the DRG, in particular LKF1997, but was due to the formulas for the change of revenue for contributions by States, the central state and the social security system at that time in Austria [15].

The number of hospital beds decreased by 14% between 1997 and 2011/2012, with a slight increase in hospital admission for the same period [15]. LKF1997 has been reported to cause a significant reduction in overall length of stay [15]. There are plans to introduce and implement a wage-based compensation system in the outpatient health sector in Austria.

Germany: There are 2,100 hospitals providing hospital medical care to more than 17 million patients a year. They are funded through a specific "double funding" system, with 2 different sources of funding for hospitals. Namely:

1. Infrastructure investments shall be financed by state-funded tax-financed budgets

2. Operational expenditure is mainly covered by health insurance funds and private health insurers [18].

The introduction of DRG started with 664 DRG in 2003. This number increased to 1,193 DRG in 2012. The main goal of DRG implementation and reform is to replace historically-based budgets for hospitals that have used daily charges as a cost recovery unit and to introduce a more active payment system to increase the efficiency, transparency and quality of hospitalizations [17].

When comparing German health services to international hospital services, they are considered effective but expensive. The total expenditure on healthcare amounted to 11.3% of GDP in 2011, which is 2% higher than the average (9.3%). The average increase in healthcare expenditure in Germany over the period 2000-2011 was 2.1%. Comparison of the cost of all other countries of the Organization for Economic Cooperation and Development (OECD) and reporting to the rapidly aging population in Germany shows that the increase is minimal. This is partly explained by cost-cutting measures as part of health care reforms. In 2011, public spending increased by 4% from the OECD average, reaching 76.4%, compared to 72.6% in previous years.

In 2009, the Hospital Finance Reform Act (KHRG) continued to amend the funding of hospitals in Germany. Baseline countrywide rates are required to reach the national base rate in 2015 and by 2012 provincial governments have had the opportunity to abandon the double-funding system and adjust payments for DRG-type hospitals, using the weights of investment costs.

After a period of ten years of careful introduction and correction of G-DRGs, the system is finally widely accepted and considered successful. The assessment of the system shows that it improved transparency in the hospital sector [5] and contributed to greater efficiency and quality of care.

Scandinavia - High Income European Countries.

Denmark: Introduced ABF in 2002. In some countries, the assessment of hospital funding in 2005 shows that between 39% and 52% of the total hospital funding belonged to ABF. Analysis shows that due to the introduction of ABF, activity has increased and waiting time has decreased.

Norway: in Norway ABF was introduced earlier, in 1997. However, it is not the only method that determines the financing of hospitals. The funding of Norwegian hospital research is based on a combination of block subsidies and ABF based on DRG prices. The percentage of ABF funding is determined by Parliament. Data from 2004 show that the share of ABF was 40%, while 60% of hospital funding was based on block subsidies. In 2005, the situation was the opposite and the share of ABF increased to 60%. According to SAMDATA (2006), only 26.8% of the actual costs of hospitals were covered through ABF in 2004 [12]. In 2005, the cost of hospitals covered by ABF increased to 41%. This increase may be due to an increase in the rate of recovery of DRF in 2005. [3].

In order to analyze the effect of the introduction of ABF and its effectiveness in hospitals in Norway, the data for analysis was taken from 47 hospitals over a 10-year period covering both before and after the ABF application. The analysis showed a significant correlation between the impact of ABF and the effectiveness in subsequent hospital care. The analysis of the effect of the ABF reform on efficiency in Norway for the period between 1992 and 2000 showed an average annual increase in hospital activity by 3.2% from 1997 to 2000, compared to 2% in the 1992 period until 1997.

The analysis showed that the introduction of ABF had a positive effect on technical efficiency between 4% and 5%, whereas its effect on cost effectiveness was quite insignificant for the reform from 2001 to 2005, compared with 9.4% before the reform, from 1999 to 2001.

Sweden: The use of DRG in Sweden varies greatly across regions, as there is no standard system for patient classification, although the Nord DRG system has been used in most Swedish regions. Some regions use the HCFA and AP classification systems developed in the United States.

It is estimated that hospital productivity in Stockholm increased by about 20% in the first two years of the reform [11]. As DRG prices decrease annually, costs also decrease. Productivity progress is due to reduced average length of stay, increased operations volume and faster patient turnover. In the first two years of the reform, long waiting lists were diminishing and the quality of care was improving due to shorter queues.

Conclusion:

Low- and middle-income countries in all parts of the world use DSS-based payment systems to pay for health service providers. Generally, the payment system based on DRS is administratively and technically complex. Its effective work depends on various institutional and organizational conditions [4]. The introduction of a DSG payment system should be seen as a dynamic process of development during which these conditions can be achieved gradually. Specific country studies are needed to further explore the potential impact of the various aspects of the DRG design system and policy levers.

If a country decides to introduce a DSG-based payment system, healthcare funding should come mainly from public rather than from private sources [9]. It is preferable to implement the system through selected hospitals and in combination with shadow charging and / or deployment

of selected DRG groups. If an existing DRG variant is imported, particular attention should be paid to its adaptation to the local context. Ultimately, DRY should be applied to as many different providers of hospital care as possible in order to avoid the creation of unwanted incentives. Vendor cooperation should be encouraged to improve the appropriate generation of data and information management. In addition, some form of cost or volume cap will help boost resource efficiency. Vendor cooperation should be encouraged to improve the appropriate generation of data and information management. In addition, some form of cost or volume cap will help boost resource efficiency.

The introduction of a DRS-based system is part of a long way of continuously developing and adjusting suppliers' payments. It may involve combining different vendor payment mechanisms to achieve the optimal combination of incentives, as is done in many advanced health care financing systems.

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