

**When Disease is Being Priced. The Translation of the American DRG  
System to the hospital sectors in Norway and Denmark**

*A Tentative Study Aimed at a Comparison between Norway and Denmark*

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## Introduction

In 1993 Kimberly and Pouvoirville published a survey and comparison of the migration of the American DRG system to European health care administration. The study of a total of nine countries showed that only two countries chose another solution than adopting the DRG system: Denmark and Germany<sup>1</sup>. However, they predicted that these two countries would adopt the DRG system as well since a “point of no return” had been reached in the dissemination of such measurement systems in the health service. The authors argued that the success and great impact of the DRG system could be explained by a particularly favourable context in the Western world. Among the nine countries in the 1993 study great variations were pointed out as to the extent each country had adopted the DRG system. Norway and Portugal were ranked among the countries that had made use the system to the greatest extent. The authors’ predictions about a point of no return due to a constellations of several favourable factors seems to have come true. Since 1993 the DRG system has expanded into new sectors and nations, including those that had not adopted the system in 1993.

In this paper we will examine the differences in the adoption patterns in Norway and Denmark. We will start out with the development in Norway, which appears to have been most “eager” among the European countries to adopt the DRG system, making use of top-down process of implementation. In contrast we will compare with a preliminary description of the Danish example, which is characterized by a slow, soft implementation, with limited usage in the beginning. By studying differences in the adoption pattern in relatively similar cultures we may also improve the specific understanding of the mechanisms behind the DRG system’s expansion. By way of a comparison we will make an effort to illustrate common features as well as contrasts in the dynamics behind the promulgation of the DRG system. The main objective is to show that both the diffusion process itself and the historical institutional context itself may play a role.

Despite the fact that Kimberly et al. pointed out that there were still examples of countries among the selected cases that had not introduced the system, they argued nevertheless that “irreversibility was reached in all countries, not only in the adoption of DRG, but also in the underlying logic”<sup>2</sup>. The diffusion of DRG was then only a secondary phenomenon viewed in the light of more basic change logic, an argument

which is reminiscent of a historical institutional or new institutional approach. It is implied that a paradigm shift takes place as to how several parties “perceive the hospital’s products, patterns for resource utilization and in understandings of how the production process must be supervised” (Kimberley et al 1993:361). Once you start to measure, you must continue to measure, and hence it is not decisive what kind of measurement system that is used, as it is shown in auditing literature (Power 2003). Also in countries that had not yet implemented the DRG system in 1993, Kimberly et al. believed that self-induced reinforcement processes would lead them to implement some kind of measurement system similar to the DRG system.

According to the authors in question there are two different demand dynamics behind the process in which more and more adopt the DRG system: a *policy market* and a *management market*. Attention is called to the fact that the relative strength and the degree of connection between these “markets” vary. In principle it is possible for the management of each hospital to use DRG regardless of the political use of the concept, but not the other way around. The more autonomous the hospitals are, the stronger the managers are in relation to the policy-makers, and the stronger ties between politics and hospitals there are, the more important the politicians become as potential adopters of the DRG system. Thus, the story about the DRG system is a minor part of a meta-narrative emphasising an international trend along the lines of increased emphasis on performance management and management by objectives in the production of services.

Clearly, the DRG-system itself plays a major role in the transformation of the hospital sector in major parts of the western world. It has been argued that the evolving structure of the hospital is dissonant with their traditional public service image and that the hospitals in the United States faced a legitimacy crisis as a consequence of the introduction of DRG (Geist and Hardesty 1992). If this is a general problem in the United States, then one may presume that it is even more so in Europe, and that governments are to take an even more important role in attempts to legitimate hospitals and rebuild trust relations after the introduction of DRG in these countries.

We start out with a discussion on theoretical positions, then a discussion of the background of the system, as well as a comparison of growth and adoption patterns in Norway and Denmark.

***Theoretical Frame of Reference 1 – A Translation Perspective, carriers and translators – Scandinavian Institutionalism***

According to previous studies the DRG-framework offers an ideal opportunity to study institutionalization processes (Covaleski, Dirsmith & Michelman 1993).

In an institutional perspective the cognitive “taken-for-granted” aspect of the DRG system is emphasized; and the idea of cost control and product-specific prospective rates is then perhaps the superstandard that lies behind its journey into the hospital sector in the Western world. This way the application of DRG can appear as “correct”, ideal and like a ruling fact in modern health planning and politics (Meyer and Rowan 1977; DiMaggio and Powell 1991; Røvik *ibid.* p. 19). In a Scandinavian neo-institutional translation model (Czarniawska & Sevón 1996) we take the following as our starting point: ideas/artefacts expand in time and space as a result of an ever-increasing number of new actors getting associated with the DRG-system. New fresh energy and diffusion power are released as the DRG system develops into a network. A translation perspective emphasise local actors role as translators, interpreters of ideas rather than imitators (Sahlin Andersson 2002, Nordgren 2006). The actors that relate to the DRG frame do not passively receive, but rather actively adapt and transform the ideas that are being circulated (Latour 1998). A silent naturalization is taking place as the DRG concept is translated into new contexts: *”A naturalized object has lost its anthropological strangeness. It is in that narrow sense desituated – members have forgotten the local nature of the object’s meaning”* (Bowker & Star 1999:299).

Translation and migration of ideas and recipes in connection with DRG can simultaneously be studied in a framework of carriers of management ideas or “path of entry” (Sahlin-Andersson and Engwall 2002). The DRG system expansion in most Western countries during the last 25 years, would not have taken place without the fact that the DRG ideas were brought forward, broadcast, interpreted, converted and

supplied with new energy on its path by many carriers: academic researchers, government officials, consultants, professionals and managers in hospitals and in education institutions, the mass media and the scientific press (media) as well as the new “networks of support” established in national and international health policy and planning (Kimberley et al. 1993).

DRG expansion can also be regarded as an example of international standardization (Brunsson 2004). For instance, a substantial coordination, joint knowledge production and exemplary dissemination take place between countries. In the Nordic region the so-called NordDRG collaboration is an example of standardization and institutionalisation of DRG practice. At the same time we see many examples of cross-sectoral expansion. The concept is put to use in more and more new areas in the health services, for instance in the support and rehabilitation of substance abusers, polyclinics, rehabilitation, psychiatry, local health services etc. First of all this takes place by way of translation of knowledge within professional communities, but also by way of policy learning, by policy-makers looking for solutions in other places of the world (Marmor et al. 2005). At present knowledge concerning DRG pricing and piecemeal financing in psychiatry is being imported to Norway from Australia and Canada. Sweden represents an early “ideal” example of DRG applications in rehabilitation, and Norway follows also in this area. Swedish secondary classification of diagnoses for “open wards” is also being translated. Through this type of module import Norway is on its way to establish a performance-based financing system in all parts of the health service.

The DRG system is used for different purposes in different places, and this is possible because it is just as much a label as a technology. As label it is associated with the efficient, trendy, modern, natural, general, efficient and future-oriented (cf. Meyer and Rowan 1977), as technology it is associated with a tool-box and a network of problem-solvers.

***Theoretical Frame of Reference 2 – Actor Explanations – Historical Institutionalism – Path Dependency***

The other story brings us back to Kimberly et al.'s assertion that it is not necessarily the dissemination of the DRG system in itself, which should be the focus of attention since there are other forces behind the development. In a historical institutional perspective the focus of attention is more on cross-national differences such as how relations between interest groups are constituted historically, particularly the relationship between the medical profession and the government and to what extent the hospitals have been granted autonomy or not. This, in turn, may contribute to make single actors demand different politics and concepts at a different time and in different places (Thelen and Steinmo 1992). An important aspect is that institutions build upon historical experiences and that policy-making and institutional change is path dependent. At certain points of time, e.g. when a punctuated equilibrium or a critical juncture occurs, there is a break with the past and there is an opening for new opportunities for adoption of system transforming techniques and ideas.

Originally the focus of attention in this tradition was on power, resources and interests. Gradually, more emphasis is put on the importance of ideas, and greater importance is also attached to policy-learning and transfer of concepts across communities and countries (Campbell 2004). In this case it is also natural to ask what kind of interest groups “demand” that the DRG system is adopted and what kind of ideas and frames are the underlying cause of such a demand.

Furthermore, one will look for important change of directions, for instance in national health systems, where a new underlying logic emerges, which turns out to be “irreversible” at least in a short-term perspective, meaning the last 20 years. One may thus ask what were the particular conditions in each country that cultivated the ground for the adoption of the DRG-system and thereby also the path dependencies associated with this system. Kimberley et al. (1993) mention three such conditions: pressure to modernize the administrative apparatus, search for new ways to stem the rising cost of health care, and the existence of champions that takes upon them the task to adopt the given technology in each national context.

***Empirical Material 1: Actors and Key Informants in the Norwegian and Danish DRG Reception***

The primary sources of our study are based on informant interviews with central actors in the Norwegian, Danish and Swedish DRG network. In Norway we interviewed five central contributors: two at the Directorate of Health, two researchers, (previously at NIS, Norwegian Institute for Hospital Research), and one general manager in a local health care enterprise. All of the informants have experience from the early development work with DRG in Norway and in the Nordic collaboration (NordDRG). From Denmark the interviewee was a central key informant with experience from the Ministry of the Interior and Health and the National Board of Health. So the informants have comprehensive experience with the system in the research sector, the political milieu and the hospital sector. The interviewees have not only been observers, but have been active participants in research, administration and politics in connection with the DRG systems. Based on their information we will make a tentative effort to reconstruct and interpret the DRG journey, from the initial development of ideas to the stage where ideas have matured through research, translation, action research and testing.

### ***Empirical Material 2: Written Material***

Secondly, we have interpreted and analysed existing written material (literature reviews, research reports, public documents and official reports) in order to improve our understanding of the Norwegian and Danish DRG reception. The literature on this subject is very extensive, so we have concentrated on some central pieces of literature in the area. We have also made use of documents linked to early research projects in the development of the Norwegian DRG system, i.e. publications in DRG-related projects at NIS as well as evaluations of early DRG experimental projects in Norwegian hospitals. In addition, we have made use of Internet sites dealing with DRG issues in the Nordic countries.

### ***The DRG System – Origin and Diffusion***

*"The material culture of bureaucracy and empire is not found in pomp and circumstance, nor even in the first instance at the point of a gun, but rather at the point of a list"* (Bowker and Star 1999).

The DRG system is an outstanding innovation in health planning and politics. It has spread to most Western countries during the last 30 years, and it has many areas of utilization and application (Kimberly & de Pouvourville Op.cit.). The DRG system is basically a classification system for patients, in which patients with similar

characteristics are grouped together. The classification of hospitalisation is based on what is generally accepted as homogeneous groups when it comes to clinical records and use of resources. The patients' primary and secondary diagnoses constitute the main basis for the classification. Each group of DRGs has a pricing, which is based on cost weights or average level of resource use for hospitalisation in this group (Lian 2003:76). The concept originated at Yale University in the US, where a group of researchers, including Robert Fetter (previously an engineer from the industry) and John Thomson (nurse), developed a classification system aimed at measuring hospitals' productivity, efficiency, as well as management and control of the use of resources<sup>3</sup>. The system, which was developed by Fetter and his fellow researchers for use in hospitals, had previously been applied in the industry for monitoring quality, efficiency and costs (Ministry of Health 1998; Lian 2003). This means that even then there was a "translation" from industry to health. In this way the engineers integrated the medical professional judgement within a production function and transformed hospitals to "hospital-factories" (Samuel, Dirsmith & McElroy 2005). In other words, at an early stage of the DRG system a coupling between the activities in two different knowledge spheres took place. One sphere was health economics and the other one was industrial cost accounting and quality development (Kimberly & de Pouvourville op.cit:7). During the 1970s the Yale researchers developed several versions and improvements of the DRG system. The first example of DRG application to public finance of hospitals came from the Reagan administration in USA at the beginning of the 1980s. The DRGs were then used for the first time as a financing system based on fixed prices in a public health service and thus as an instrument for the realization of neo-liberal health politics<sup>4</sup>.

### **The First Reception of DRG Ideas in Norway**

When Robert Fetter in 1984 came to Norway and met with persons from NIS, he took part in making the draft for the first Norwegian project (Aas et. al. 1989). In this manner Fetter involved more and more researchers and health administrators in an international DRG network where Yale represented the authoritative centre, and with several university environments being involved. The dissemination of ideas related to the DRG system took place by way of publication of DRG related articles in scientific magazines and journals. In the first Norwegian study (Aas 1985) a total of 116

scientific references is presented. In the preface there is an obvious enthusiasm and optimism in relation to the DRG system:

*“It is possible to curb the growth in expenses in the hospital sector. The experience from the introduction of the DRG system in the US in 1984 is an indication of this. Also with a view to the other advantages of the DRG system, it is no surprise that the DRG interest has spread to a lot of Western industrialized countries.” (Aas 1985:1).*

The review, which was undertaken by the Norwegian Institute for Hospital Research (NIS), was a commissioned piece of work on behalf of the Health Directorate, and it provided a brief introduction to the DRG system’s historical account, construction and application areas. In contrast to other countries in Europe and Scandinavia, it appears that the DRG ideas were adopted early by actors in the central government administration, illustrated by the fact that the first study was commissioned by the Health Directorate. The DRG system gained a foothold at an early stage at the Ministry of Health<sup>6</sup> and among other political actors (Hogsnes 1993). This has probably something to do with the fact that the Norwegian health research environments were small, that the bulkheads between the Ministry and hospital research environments (NIS) were relatively open, and the fact that the Ministry of Health had limited capacity to prepare reports in the subject area (Torjesen 2004). Only a few years after the first literature study by Aas in 1985, the application of DRGs was on the agenda after a suggestion from a state secretary committee. The proposal was included in the long term programme for the non-socialist Government for the 1986-1989 period. The idea was brought forward by the health economist Jan Grundt. He argued, among other things, that the application of the DRG system could act as an incentive to increased productivity in the hospital sector.

The researchers doing the national translation work were connected to the creator himself. The collaboration between Norwegian researchers and the creator himself (Fetter) was set up in January 1985 when Robert Fetter visited SPRI in Sweden and NIS in Trondheim. Fetter offered his services and he personally made a project proposal concerning technical assistance, development and implementation of DRG-based cost weights, budgets and management tools in Norway<sup>8</sup>. In 1985 a project was established at Haukeland hospital in Bergen with researchers from NIS and the Ministry of Health.<sup>9</sup> The purpose of the project was to develop a Norwegian DRG

standard and at the same time carry out small-scale experiments at a few selected hospitals <sup>10</sup>. In 1987 institutionalised, lasting and contractual collaboration was set up between NIS and Yale concerning translation of the Norwegian code classification system (ICD9) <sup>11</sup> to the American variant (ICD9-CM) <sup>12</sup>. A more detailed basis for the project and the collaboration can be found in Fetter's report (1989) about the Norwegian translation:

*The Norwegian classification system for procedures can be considered as national and is clearly different from the ICD9-CM procedure classification. It was decided to make Norwegian DRG definition as similar to US definitions as possible.*"<sup>13</sup>

We will now take a closer look at the continued journey of the DRG system to Norway, from early experiments in the beginning of the 1990s to the introduction of national DRG standards for financing somatic hospital operations in 1997. The point of interest in this period was perhaps first and foremost how the DRG issue became politicized and institutionalized, which in turn makes the political-institutional context important.

### **The Eilertsen Committee – Experiments – National Standard and Performance-Based Financing**

Some years would pass before there was a political will and majority to employ the system in a large scale. When experiences had proved that the system did not necessarily result in a more cost efficient operation, the concept was not abandoned for that reason, but rather connected to other current problems and recipes. The problems of hospital financing marked the public discussion in Norway throughout the 1980s. Accumulation of problems as a consequence of the existing block grant system was a hot potato. The Eilertsen committee (NOU 1987:25) criticized, among other things, the existing block grants for not being suitable for performance- and goal-oriented management in the hospital sector. At the time performance management, or management by objectives was about to become a central standard in Norwegian public enterprises and public administration (Røvik Op.cit.). The Eilertsen committee was influenced by the management by objective trend and saw a disparity between block grants financing and decentralized management. The committee argued that block grants gave the hospitals insufficient change competence and that

the people who worked in the actual production at the hospitals did not get enough leeway under the “old” block grants system. For that reason the committee proposed to introduce an arrangement with DRG-based per-case financing (NOU 1987:25).

It is reasonable to believe that the two concepts (DRG and management by objectives) have a close affinity to each other. Perhaps it is here that we see the combination of forces that leads to the “point of no return” in the adoption of the DRG-system noted by Kimberley et al (1993). The changes taking place in the Norwegian public sector during these years is reminiscent of the transformations that occurred in corporations in the last century, along with widespread adoption of the multidivisional form. Such organizational forms are based on the idea of comparison and performance management and may lead to a management demand for the DRG-system and similar management tools (management market). The political milieu also needs such measurement system to legitimate increased expenses in an expanding health care state (policy market) (Byrkjeflot 2005). Through greater commitment to activity planning, management by objectives and the corporate organizational form in the hospital sector, DRG has in this manner been one among a series elements of public sector reform aiming at establishing “private” organizational forms and quasi-markets. It was argued that previously unsolved problems (lack of regional equalization of service supply, incentives and cost efficiency) could be solved through a combination of the DRG system and activity planning.

DRG in the Norwegian variant saw the light of day as a financing system for the first time in the early 1990s. A small-scale experiment was then undertaken in the Nordland and Hordaland counties (1991-1993). The evaluation of these early experiments with DRG in Norway showed that per-case financing had not promoted cost efficiency. In addition, health personnel at the hospitals involved were not motivated by economic incentives (Solstad and Mo 1993:109; Lian 2003:77, Solstad 1996, Hagen 1994). Health costs in Norway have continued to grow after DRG and activity-based-financing (ABF) were put into use as a national financing standard. DRG and ABF have increased activity and reduced waiting lists. Technical efficiency has increased, but due to the fact that wage expenditures also have increased more than expected per employee, the improvement in cost efficiency was insignificant. The DRG concept may have come up against the established values and norms in

healthcare institutions; “treat illness regardless of costs”. If we turn to one of the main observers in connection with the development of the concept in Norway and Sweden, he gives the following answer to the question of how people in clinical operations reacted to the DRG system:

*“The Norwegian DRG system has been a system that came from the outside, in other words, from the Ministry of Health and was never founded on the specialist environments. This has, however, gradually started to change. People have started to understand that you have to live with it and take hold of it. Nevertheless, the initiative came from the outside.”*

### ***DRG as a Financing System in Somatic Hospitals Linked to the 1997 Waiting List Guarantee<sup>17</sup>***

A few years would still pass after the early experiments before the DRG system gained national currency and became a central government standard for financing. Change to a new system of per-case reimbursement in Norway was resisted (Aas 1995). The system was first rejected when the per-case experiment (including subsequent evaluations) was discussed in the Storting<sup>18</sup> in summer 1995. Not until Gudmund Hernes took over after Werner Christie as Health Minister and after he had been thinking it through for 100 days, the idea of linking DRG to per-case was reactivated and reinforced (Lian 2003). One of our main informants (general manager in the Health Directorate) comments on this, among other things, in an interview (February 2004):

*“After the per-case-finance experiment everything was relatively quiet. But then something happened, first and foremost politically in that there was a rush in the Storting regarding additional grants. The major increase started in 1994<sup>19</sup> and the interesting point here is that a need for measures emerged. In other words, there were a lot of additional grants from the Storting, how could this growth be stopped? Then introduction of the waiting list system, followed by guarantees.”*

Do you think that this is an example of a decision opportunity, in which one start looking for tools and solutions when new problems sail in?

*“Yes, exactly. I believe that is a correct description of what actually happened. There was a great need to get more out of the sector. You could not simply continue to pour money out to the county administrations. It was a real drain that was responsible for a lot of other activities, and the Storting felt that the money did not always end up for the purpose it was intended. In a way the DRG system became some kind of answer to the growth in hospital expenses – some kind of tool.”*

At the moment new applications are being discussed in Norway in psychiatry, support and rehabilitation of substance abusers, municipal health service and rehabilitation<sup>20</sup>. It appears that possible shortcomings and dysfunctions in the system (creaming, DRG-creep, detrimental imbalance between somatic treatment and psychiatry etc.) call for further development, improvement and promulgation. As an instrument for cost control the system has proved to be inadequate, for instance in relation to costs per patient analyses. These inadequacies press for the need of new reforms. Today's discussion is about the need for so-called cost per patient (PPT) analyses in which DRG has obvious deficiencies. More than 60 per cent of Norwegian hospitals report in a recent survey that they are making experiments with such a system, which is an alternative to the DRG system, based on "real costs" in each hospital, not a national average standard. In order to acquire safer methods for cost analyses the government have set it as a task to develop a national, identifiable patient data register.

By way of comparative discussion and juxtaposition we now sketch how the dissemination of the DRG system has taken place in Denmark.

### ***The Dissemination and Application of the DRG System in Denmark***

In Denmark it appears to be Kjeld Møller-Pedersen, professor at the University of Southern Denmark<sup>21</sup> and Anita Alban at the Danish Hospital Research Institute, who picked up the DRG system in 1984 – 1985 (Alban 1993, Møller-Pedersen 1987). We do not know this story in detail, but in Denmark as well there is an obvious research interest in the system at first, but gradually the resistance against the system increased. In Kimberley et al's essay collection the situation is summed up as follows:

*"The attitudes of the involved parties have changed. There is now a generally accepted view that the DRGS are not the answer to the efficiency problem in Danish health sector."* (Alban 1993).

In the article it is maintained that one has not reached the point of no return in Denmark, yet the book's editors draw another conclusion.

Central informants confirm that in the beginning of the 1990s the system was more or less banned. The County Council Organization<sup>22</sup> strongly believed in continued block grants management in the hospital sector and wanted to avoid centralized

management at any cost, for instance by way of DRG and piecemeal financing. The starting shot for application of DRG in Denmark came by way of the so-called SØK-committee<sup>23</sup> on the hospital's finances, which handed in its report in 1995. One of the recommendations was to commence the application of case-mix systems (DRG) in order to measure the hospitals' productivity. The problem with the first productivity measurements was the great resistance when the reports came up against in the specialist environments. As one of our main informants acknowledges:

*“When I gave a lecture for 42 doctors (1996) about the experiences with productivity measurements from North Jylland, one doctor got up and quite simply bawled me out. Nobody had confidence in the case-mix system (DRG) based on the American standard unless it was made Danish.”*

The bureaucracy and the political milieu in Denmark did not particularly believe in the DRG system either. In order for the system to become acceptable, it was argued, a Danish version had to be worked out, based on Danish cost structures and diagnosis groupings.<sup>24</sup> The DRG-system in Denmark was for this reason developed strictly based on a voluntary participation by the counties and hospitals. In the Danish tradition for health reform it has been common for central health authorities to rely on dialogues and collaboration with local health authorities. Researchers have been involved in this consensus-oriented system. The Norwegian approach of top-down implementation of the DRG-system may for this reason have been a less likely option in the Danish setting. The important role of the Danish County Council Organization has to be taken into consideration, which along with the clinical specialist organizations has contributed to a distinctive consensus-seeking work-style. Objections against uncritically adapting a system that was built on US clinical practice and US diagnostic codes came also from researchers (Møller-Pedersen 1987, Magnussen 1995). Consequently, it became more important to convert the DRG system along the lines of something that could make a fit with the Danish policy-making style, for instance by developing a separate context-based variant of Nord-DRG. From the 1990s several pilot projects were put into action.<sup>25</sup> When free hospital choice between the counties was introduced in 1993, DRG based rates were put into use as a basis for settlements of accounts for guest patients. Later on in 2000 the big breakthrough came. Danish politicians decided to introduce 100 per cent settlements of accounts of guest patients based on the DRG-system. At the same time

an activity-based financing arrangement was introduced through the new Finance Act (1999). This arrangement was 10 per cent DRG rates combined with 90 per cent block grants financing<sup>26</sup>. Particularly in comparison with Norway in the area of DRG, then, Denmark has adopted and introduced DRGs as a voluntary option. Whereas Norway has gone through a “revolution” in the introduction of the DRG-system, Denmark has gone through 10 year of slow “evolution”. Central health authorities describe this in their own words as a “softening” to increase the interest for DRG and as a way to “make the hospitals run for rewards”. The DRG-system in Denmark is developed strictly on a voluntary basis and counties are not obliged to use the DRG-system in the local activity based financing models. Yet the objective, also in Denmark, is to pave the way for free hospital choice and incentive management in the hospitals. Another step forward for the introduction of the DRG-system in Denmark came with the 2001 Folketing<sup>27</sup> election, when Venstre<sup>28</sup> formed a government for the first time. A more populist policy and a greater willingness to make use of open market-style techniques materialized in the new Health Minister Lars Lykke Rasmussen, who knew what he wanted to do with the DRG system. The bureaucrats in the Ministry of the Interior and Health that had previously been hesitant and sceptical of the DRG system, had to submit to the new political leadership. Activity-based financing (ABF) and incentive management have pressed forward in the wake of Lars Lykke Rasmussen. In connection with the new Finance Act in 2002 funds were earmarked (1 1/2 billion) to increase treatment capacity and reduce waiting lists. For 2003 1 billion was allocated as payment for increased activity. In 2004 the counties and the government agreed that ABF would constitute 20 per cent of the budget. After the 2005 Folketing election the confidence in Venstre was renewed. Lars Lykke Rasmussen continued as Interior and Health Minister, and he continued with incentive management in order to attend to his populist promises. After 2005 the arrangement with activity-based financing and DRG rates includes a voluntary arrangement for the counties, with 20 per cent as minimum and 50 per cent as maximum ABF financing. From 2007 a big structural reform will be implemented. Fourteen counties and the Copenhagen Hospital Corporation will be reduced to five regions and 271 existing municipalities will be reduced to 98 new municipalities. The single most important task of the regions is to run and manage the hospitals. As a part of the reform the governmental ABF-based pool will be raided from 1-2 per cent to 5 percent. The municipalities in the regions will co pay health care for their own citizens calculated as a share of the DRG-rates.<sup>29</sup>

The patients will also pay a fixed amount per inhabitant to the region. The counties have been antagonistic to the Structural reform, partly because tasks will be transferred to the regions, and because the new financing model. In this model the new regions will be totally dependent on financing by the municipalities and the state. In this way it seems that also Denmark has reached a point of no return. The re-elected Danish government has declared that ABF in hospital should be increased from 20 to 50 per cent – a development that is expected to increase the use of the DRG-system.<sup>30</sup> From the ministry it is found that there is currently no better alternative than DRGs as a system for information and allocation of funds in the health care sector and there is no wish for a return to a condition with very little knowledge of cost structures.<sup>31</sup>

### ***Comparative Discussion, Norway Versus Denmark***

We have presented a translation perspective and a historical-institutional perspective of cross-national diffusion of the DRG system. We have told the story about how the DRG system was invented and how it expanded into new terrains, and the various phases of adoption in Norway, as well as making a comparison with similar processes in Denmark. Why was the DRG system implemented so quickly in Norway while it took longer time in Denmark? What was the reason for a weaker resistance in Norway, at least among the major actors mentioned by Kimberley et al.?

In tables 1 and 2 below we have made a preliminary summary of the Norwegian and Danish DRG history.

Table 1: DRG reform history in Norway

#### ***Norway***

<b>Year</b>	<b>DRG application</b>	<b>Reform history</b>	<b>Political climate</b>	<b>Course of development</b>
1984 – 1990	Entry of ideas Start-up of initial research NIS Literature study	Long-term programme non-socialist government	Willoch 2 (coalition) Heløe Neo-liberalism	Phase of ideas Adopted by the research sector NIS

<b>Year</b>	<b>DRG application</b>	<b>Reform history</b>	<b>Political climate</b>	<b>Course of development</b>
1987	Used for productivity measurements	The Eilertsen committee NOU1987:25 Proposal for financing system	Brundtland 2 (86-89) Neo-liberalism, consolidation of the welfare state	Haukeland hospital
1990-1993	Piecemeal experiment, Hordaland and Nordland		Brundtland 3 (90-96) Hernes 1995	Increase in political interest and new proposals for application Experimental phase
1997	Activity-based funding (ABF 50%)	Waiting list guarantee ABF becomes national standard Report to the Storting no. 44	(Jagland 1996) Gudmund Hernes – National reformist politician + support from the Progress Party (Frp) <sup>32</sup> Neo-liberalism and reform technocracy	Political application Resolution in the Storting Top-down implementation Rapid implementation 6 months
1999	ISF (40-60%)	Patient Rights Act	Høybråten “Health Act package” (minority + the Progress Party)	
2001		Hospitals owned by central government, centralization Competition	Tønne (minority + the Progress Party)	Pressure towards standardization – psychiatry and rehab..
2005		Free hospital choice	Gabrielsen (market, strengthened patient rights)	

Table 2: DRG reform history in Denmark

**Denmark**

<b>Year</b>	<b>DRG application</b>	<b>Reform history</b>	<b>Political climate</b>	<b>Course of development</b>
1985			DRG is banned in counties, due to the resistance in the County	Adopted by the research sector University of Southern Denmark
1987	Productivity	The Health Ministry is		

<b>Year</b>	<b>DRG application</b>	<b>Reform history</b>	<b>Political climate</b>	<b>Course of development</b>
1988	measurements Information system planning	established.	Council Organization	DSI
1993-1995	Local experiments	Resistance after report from DHI DHI strategy paper:	Resistance in central administration	“Softening” of attitude to DRG
1993	Basis for settlements of accounts between the counties for guest patients	local experiments		
1999 2000		SØK-committee		Danish DRG, variant of the NordDRG on the basis of Danish cost structures
2002	100% settlements of accounts for guest patients (DRG-use voluntary)	Free hospital choice	Lars Lykke Rasmussen and Venstre (Liberal Party) populism Rights and market	
	Financing system 10% DRG rates Activity stimulus top financing	Finance Act ABF		Consensus-style top- down, bottom-up
2004		Finance Act	Strong political leadership The administration submits	Comprehensive consensus-oriented work (clinical validation) colaborating with clinical specialist organizations
	Rate system 20 – 50% ABF (20 min., 50 max.)			

A common feature between Norway and Denmark is to begin with the fact that the DRG system was first adopted by researchers and research institutions. It was here the first reception took place: in Norway, at NIS, and in Denmark at the University of Southern Denmark and at DSI (Danish Institute for Health Services). The health economics environments are in charge of this reception and early interest from the mid-1980s. Nevertheless the roads go separate ways from here. In Norway, the ideas associated with the use of DRG as a financing system was picked up early on by the political management at the Ministry of Health. It was the Directory of Health that commissioned the first literature review, and as early as 1987 the DRG system was presented as a way to improve efficiency in the health sector in a public report, the Eilertsen committee. The central state was taking an early initiative in the Norwegian

translation of DRG, and it took many years for the Danish Health Ministry to develop a similar interest. In Norway the first per-case experiments concerning DRG as a financing system were joint projects between hospitals, researchers and the Ministry of Health. Such experiments came later and were to a lesser extent coordinated with the healthcare bureaucracy in Denmark.

*Policy demands for an improved control system in the healthcare sector*

It seems that a changing “policy market” can explain much in both countries. Even though Norway started with experiments early and the system soon caught interest in the administration, a few years would pass until the system was applied as a financing system. Even though the per-case experiments had not honoured the expectations, the big breakthrough took place as a consequence of Gudmund Hernes becoming Health Minister in 1997 (Slagstad 1998, Berg 2005). As a sociologist taking an interest in economic models, it was natural for Hernes to make use of incentives that would both yield better health returns and improved utilization of resources (Berg *ibid.* p. 81). At the same time these ideas could get support from the right-wing populist Progress Party, for which accessibility and waiting lists were important part of the rhetoric to win votes. Hernes’ reformist, technocratic management enthusiasm coincided with Norwegian right-wing populism.

In parallel to this it is an interesting parallel point that Lars Lykke Rasmussen a few years later represents the big breakthrough in Denmark within a populist Liberal Party. It is pretty much the same ideas, which are brought forward as an argument in favour of ABF in Denmark, i.e. patient rights, incentives and improved utilization of resources. In the light of this the DRG concept got its decisive breakthrough in both countries by a way of strong political management and policy processes.

Even though there has been convergence in policy-making during the latter years between the two countries, there are still historical differences that may still be of importance. First of all the process in Norway was forced through far more rapidly. After a 1997 resolution concerning ABF in Norway it took only six months until the new financing system was implemented with an ABF share of 50 per cent. In Norway there was a tough top-bottom implementation and a broad dissemination of the

technology. In Denmark, on the other hand, the ABF share has constituted a moderate 10% since 2001 as stimulating means and top financing to be chased by the hospitals. In addition, the Danish case represents a model of soft implementation, voluntarily marked by dialogue, and flexibility. This is also the case from 2004 as illustrated with a voluntary fluid rate system between 20 and 50%. While the Norwegian process has been rapid and unpredictable, the Danish process has been softer and more predictable. The Danish hospitals have been able to adjust to the system slowly during a period of 5 – 6 years. For that reason the degree of penetration has been considerably less in Denmark, as well.

#### *A translation and standardisation view*

The first similar observation in both countries is change into new dominant knowledge regimes in health planning and health policy. A new normative heavy pendulum: utilitarianism and economic rationality have spread to health political discourses. The ideologically heavy trend of New Public Management and search for an instrument to fit with the idea of management by objectives may very well have created a demand for the DRG concept. DRG also became a “fashion”, a symbol of how resources in the health sector could be allocated in more rational and efficient way. Throughout many years Norway and Denmark have along with the other Nordic countries, developed and maintained a Nordic DRG standard (Nord-DRG)<sup>33</sup>. In the light of this standardization and the cross-country learning processes associated with these cross-national institutions are relevant explanations for the trend towards convergence between Norway and Denmark in the long run. Interpreted in a translating perspective we can say that the DRG- system has been transformed into different local national contexts dependent on different historical paths. The translating started earlier in Norway then in Denmark, but the use of the DRGs has become more and more similar in the two countries. Both countries started out with casemix development as a tool of productivity analysis, but both countries has increased the use of DRGs to financing purposes.

In Norway and Denmark as in many other countries it seems like the research milieu played a decisive role early on in the diffusion and translation of ideas. Relatively few actors in Norwegian and Danish research and administration have been central in

the adoption of ideas. Networks for technical assistance have been established both on the national and international level where DRG ideas have been supplied with renewed power and energy that have brought them quickly into political decision processes.

#### **A historical-institutional explanation**

A question brought up was why the resistance to the adoption of the DRG-system was stronger in Denmark than in Norway. We have referred to the stronger position of the County Councils in Denmark and a weaker tradition for the central state taking the initiative in healthcare reform than in Norway. Norway was early in being the first to put the American standard into use, while Denmark condemned it “to rack and ruin” and aimed at developing its own case-mix system. Both countries have, however, left the American standard and have been involved in the Nordic DRG collaboration, in which Norway relatively quickly used the system for financial purposes, while Denmark in the first years first and foremost used it as an information system for productivity measurements in hospitals.

The county administrations’ big budget deficits, unsatisfied needs and increasing patient queues, as well as annual additional grants by the Storting, formed a problem area, which in turn resulted in favourable conditions for a search for better solutions for the financing of Norwegian hospitals. In Denmark the situation was different.

There was not a similar problem with increase in hospital budgets, and there was a different tradition for dealing with financing problems in the hospital sector. Counties in Denmark have historically been in a more autonomous position with regards to tax collection and financing than in Norway. In Norway, the counties had no such right to set their own tax rates and collect their own taxes. The rate for the county tax was set by the state and there was no difference between the counties. This contrast may explain why there was less interest for the new financing system in the Danish context. The Norwegian counties had a much weaker position in their relationships with the state, and the position became weaker and weaker as a larger share of the funds for the hospital sector came from the state.

This paved the way for the hospital reform in Norway where the state took over ownership of hospitals from the counties and granted the hospitals status as state

enterprises (Byrkjeflot 2005). The DRG-system and an introduction of the principle of Activity-Based-Funding in combination with the Norwegian health enterprise model has been a way for the health ministry to balance control and autonomy; to keep the hospitals on an arm length distance from the ministry at the same time as they establish more control by setting the premises for resource flows and by controlling by direct means through their ownership position (Byrkjeflot 2005).

In contrast to Norway, had none of the Danish counties introduced the DRG system in 1993 (Alban 1993) and its still up until these days voluntary to use DRG's in contract negotiations. This situation has changed gradually<sup>34</sup> and will possibly change more as a consequence of the structural reform. The Danish context, with the different power relationships and linkages between research environments, central health authorities and counties is probably the most important reason why Denmark has gone through a long-standing maturation process, and it has taken more time to develop a special Danish case-mix system.<sup>35</sup>

### *Final comments*

If we go back to the starting point, Kimberly's argument that "irreversibility was reached in all countries" (DRG's as a global super standard), we should not ignore the way it represents a good example of a resourceful, well-organized supply side and perhaps a less developed demand side in many countries – a story that make a fit in the case of Norway. The DRG system that was developed by Fetter and his colleagues at Yale, was the first case-mix management advance, and there were no other competing concepts in the initial phase. The study of DRG in Norway and Denmark has showed that it is not only a matter of fashion trends, but also of development of policy –learning networks and changes in power relations. The carriers have provided the concept with renewed energy in the same way as American management caught the wind in the wake of the Marshall plan. The technological, research and financial dominance that USA have had in the Western world since World War 2 is of importance in order to understand that hospital financing models were brought in from the US as well. Technological enthusiasts, American laboratory conditions, multinational concerns (3M), prestigious research institutions (Yale University), and a far-reaching consultant-based support network, constitute a strong supply side. At the same time as more and more countries put the system into use, a form of standardization takes place. As the Eastern Europeans are now also putting the system

into use the DRG-system is becoming more and more the “Euro” of the health-care sector.

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## Notes

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<sup>1</sup> The DRG system (Diagnosis Related Groups) is a grouping system, which on the basis of diagnosis codes, surgical procedural codes, gender, age, and discharge routines group the admitted patients in approx. 510 groups. The groups are in compliance with certain criteria that are both medically significant and homogeneous when it comes to use of resources. The grouping relies on 20,000 diagnoses and 6,500 procedural codes. The DRG system entails a considerable schematizing and simplification of the clinical reality. Throughout the years, since the end of the 1970s, several DRG variants have developed, but they all build on the basic criteria. DRG was originally developed as a quality assurance system at the end of the 1970s.

<sup>2</sup> Irreversibility occurs when you have passed the point where you can no longer return to the previous situation.

<sup>3</sup> As early as in 1967, two years after the beginning of the Medicare programme, a group of physicians began to use traditional productivity concepts in the health sector. Later on this was established as a separate research project at Yale University under the direction of Professor Robert B. Fetter. During this research systematic mapping of how to describe the activities in a hospital was carried out. In the model that was developed the researchers focused on the accumulation of hospitalizations and discharges in relation to the patients' hospitalizations. The tool used by the researchers was a grouping of hospitalizations in diagnosis groups based on the International Classification of Diseases (Norwegian Official Report NOU 2003:1p 90).

<sup>4</sup> During 1960-1973 hospital spending increased considerably in the US. The increase in expenses was 256% per hospitalization day and 266% per hospitalization. In 1983, when the American Senate passed the bill to employ a prospective payment system based on DRG in Medicare, which comprised 30 million people, the bill was only subject to a 40 minute debate. The well-known economist Eli Ginzberg has interpreted this as an act of desperation in which the law was passed to make the impression that the Reagan administration was competent in handling the growth of expenses in the health sector (Source. Aas 1985:3).

<sup>6</sup> The name of the ministry has changed over the years. Currently the name is: The Ministry of Health and Care Services. For the sake of ease Ministry of Health has been used in this paper.

<sup>8</sup> Ulf Ljungblad, current director at Østfold Hospital (part of Eastern Norway Regional Health Authority), reports in an interview with the author (December 2004) that he and a couple of "friends", Pål Aksel Nilsson (gynaecologist) and Stig Aremark (gynaecologist) brought this home to Sweden in the mid-1980s and translated it into a local Swedish model at the Gothenburg Hospital in collaboration with the Swedish Planning and Rationalization Institute (SPRI).

<sup>9</sup> In March 1991 Robert Fetter was back in Norway together with representatives from Minnesota Mining and Minerals (3M) at the request of the Ministry of Health. The meeting took place at Haukeland Hospital and the purpose was to impart experience from so-called outpatient grouping.

<sup>10</sup> Later on the project was established with support from the Ministry of Health for the period 1986-1990.

<sup>11</sup> The international classification system for diseases, injuries and death cause (ICD) has been around for approx. 100 years and it is revised approx. every 10 years through the World Health Organization

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(WHO). In January 1987 Norwegian health authorities implemented the ICD-9 as a national standard. The Norwegian ICD-9 was at that time very similar to the international ICD-9 that was developed by the WHO in 1977.

<sup>12</sup> The DRG system developed by Fetter (ICD9-CM) was the first case-mix management offensive in the market. The system had already been used on a national scale in the USA.

<sup>13</sup> Here the technology committee gave specific guidance as to the “necessary translation”. *”The computer program for DRG-grouping developed in USA (developed by 3M) accepts only ICD9-CM disease and procedure codes. Norwegian disease and procedure codes cannot be used directly for DRG-classification. It was necessary to make a mapping which converts Norwegian disease and procedure codes to a corresponding ICD9-CM code”* (Ail et. al 1989: pp.5 and 7).

<sup>17</sup> St.meld. nr. 44 (1995-96)

<sup>18</sup> Storting is the Norwegian Parliament

<sup>19</sup> The real value growth in somatic hospital expenses in Norway increased tremendously from 1995 to 1997, more than 7% per year. The growth was, however, closely linked to the wage increase and must be viewed in the light of the wage settlements. The growth represents a considerable growth in the use of resources as well. There was a tremendous growth of approx. 12,000 man-labour years from 1990 to 2000 (NOU 2003:1).

<sup>20</sup> The development of new procedural codes in mental health care, support and rehabilitation of substance abusers is scheduled to be completed as a test version on 1<sup>st</sup> December 2006.

<sup>21</sup> Syddansk Universitet

<sup>22</sup> The County Council Organization, i.e. Amtrådsforening, is a joint organization for the 13 counties in Denmark, plus Bornholm’s regional municipality

<sup>23</sup> The hospitals economy

<sup>24</sup> The administrative staff stated that the analysis was not valid because it used cost weights from Norway. On the other hand the clinical staff stated that the Nordic grouping (NordDRG) did not reflect Danish clinical practice.

<sup>25</sup> In 1994 the Ministry of Health set up a committee lead by Karin Kristensen to test the casemix methodology making a productivity analyses based on casemix. The first analysis was performed in the county of Northern Jutland.

<sup>26</sup> In most counties a 90/10 model has been applied. The model implies that only production which exceeds fixed block grant production is paid according to activity. The settlements of accounts rates for production exceeding the block grant production varied between 10 and 100 per cent of the DRG rate.

<sup>27</sup> Folketing is the name of the Danish Parliament.

<sup>28</sup> Venstre is called Denmark’s Liberal Party.

<sup>29</sup> With a maximum payment of 4.000,- DKK for in-patients and 270,- DKK for out-patients.

<sup>30</sup> Poul Erik Hansen, National Board of Health DK

<sup>31</sup> Poul Erik Hansen, National Board of Health DK.

<sup>32</sup> Frp (The Progress Party) is Norway’s most populist party.

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<sup>33</sup> From 1995 the Nordic health authorities entered into a collaboration to develop an open, accessible, Nordic version of the DRG system, which has been named Nord-DRG and is based on the American HFCA-DRG (NOU2003:1).

<sup>34</sup> The introduction of top-financing from the government contributed to changing the attitudes to the DRG-system in the counties. The calculation of baseline production was still a question of discussion between the counties and the Ministry of Health and the National Board of Health.

<sup>35</sup> From 1998 to 2001 The Ministry of Health carried out a clinical validation of NordDRG in cooperation with the clinical societies. The new system called DkDRG was implemented from 2002.