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Transferring an inpatient reimbursement system: Practical issues and Vietnamese-German considerations

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Abstract: The diagnosis related groups (DRG) reimbursement system, well established in the developed world, and increasingly interesting to the developing world, is widely considered as a superior system for the financing of inpatient services. Using Vietnam as an example, we present some practical considerations concerning the implementation of elaborate reimbursement systems to emerging healthcare systems. While planning the introduction of DRGs, the two institutions responsible for social health insurance (Vietnamese Ministry of Health and Vietnam Social Security) received advice from the German Ministry of Health, universities and development organizations. We analyzed the minutes of the meetings to identify the most important questions that occurred. We describe some key figures and current problems in the Vietnamese healthcare systems to give an overview over the current situation. Our aim is to uncover questions remaining unanswered and to encourage researchers to close such gaps. We highlight the challenges expected with the planned reforms and the two rather essential topics that are hardly discussed in the literature on DRG systems: details on institutional requirements and data management.

Keywords: Vietnam, Germany, diagnosis-related groups, health policy, inpatient services financing, development

1 Introduction

The diagnosis related groups (DRG) system, nowadays well established in many developed countries, is widely considered as a superior system for the financing of inpatient healthcare services (Mikkola and Linna 2002; Palmer and Reid 2001; Sanderson et al. 1986; Schreyögg et al. 2006; Wagstaff 2005; 2007; Wiley 2005). Unsurprisingly, developing countries' governments in need to balance cost, access, and quality of their emerging healthcare systems have increasingly become interested (Wagstaff 2005). Using Vietnam as an example, we present some practical issues occurring when implementing elaborate reimbursement systems to emerging healthcare systems. In Vietnam, for instance, rather limited budgets appear to be the most evident problem for hospitals. User fees are partial and do not fully cover the real costs of services, causing considerable gaps in funding. Inpatient treatments, which make up only about 8 percent of the total cases, account for 50 percent of total expenditure. The average per case expenditure is about 10 times higher than for outpatients. Moreover, the number of inpatient visits increased considerably over recent years (Tran et al. 2007; Wagstaff 2007).

Ambitious to improve transparency and efficiency in hospital financing, and supported by WHO and international development organizations (e.g. German, Australian or Swedish), Vietnam Social Security (VSS) and the Vietnamese Ministry of Health (MoH) looked at various foreign healthcare systems (Bihn 2008; Tran et al. 2006). Transferring the (highly developed) German DRG system to the (emerging) Vietnamese healthcare system was deemed to be one policy option. To assess feasibility, we present the Vietnamese situation in comparison to Germany; table 1 presents some general characteristics on Vietnam and Germany.

In this article, we discuss the questions, problems and challenges identified while planning the transferring process. Our aim is to uncover questions remaining unanswered and to encourage researchers to close such gaps. To this end, we present the results from expert meetings that united Vietnamese policy makers, development organizations and German experts. The remainder of this paper is organized as follows: The next section describes key figure of the Vietnamese and German healthcare systems. Section 3 describes the method, i.e. numbers of meetings, institutions involved and method of analyzing the meetings' results. Section four briefly describes results from the

meetings comparing them with the recent literature on both the Vietnamese healthcare system and DRGs.

2 Healthcare Systems in Vietnam and Germany

In Vietnam, a healthcare system, mostly funded by public subsidies and health insurance, but also by partial user fees, was established during the 1990s (Hien et al. 1995; World Health Organization 2005; Fritzen 2007). In 2006, public facilities made up about 96% of total facilities and had about 98% of total beds (see tables 2 and 3). Before 1986, the state-owned Commune Health Centers (CHCs) yielded fairly good outcomes; the Vietnamese population had one of the highest life expectancies and one of the lowest infant mortality rates among developing countries. Since the beginning of the Doi Moi period in 1986 however, CHCs became increasingly underfinanced, resulting in serious financial and organizational problems and deficient treatments. As a consequence, central hospitals are nowadays overused while some rural clinics get virtually no visits (Fritzen 2007; Nguyen et al. 2007; Hien et al. 1995).

In recent years, introduction of user fees, minor benefits from social health insurance and decreases in governmental healthcare spending caused increasing household expenditure and unintended inequalities. Healthcare services have become more difficult to afford for low income households (Hien et al. 1995; Wagstaff et al. 2003). Only 30.5 percent of total healthcare expenditures were funded publicly in 2006 (Tran et al. 2007).

The huge gap between annual per capita contributions to social health insurance, approximately 8 USD (130,000 Vietnamese Dong (VND)), and the considerably higher expenditure of approximately 45 USD (700,000 VND) causes serious financial problems (Nguyen et al. 2007); Ekman et al. (2008) present a detailed discussion of the recent health insurance reforms in Vietnam. They calculate lower expenditures of about 30 USD for the 1995 to 2005 period of which two thirds is private spending, mostly out-of-pocket. We therefore consider social health insurance and governmental support for the poor as essential.

In Germany, hospitals are in general excluded from the outpatient sector. They are, however, authorized for ambulatory surgery and related services as well as specific (highly specialized) procedures. In 1999, the Federal Department of Health replaced per diem refunds with a prospective DRG based per case reimbursement system (Lungen et al. 2004).

3 Method

This article is based on conferences with delegates from different institutions in Vietnam. Participants were members of the Departments of Medical Experts and International Cooperation, both parts of VSS. The MoH, assigned to establish a new legal framework for social health insurance and hospital care, was involved in all healthcare issues. Moreover, members of the Ministry of Science and Technology participated in order to identify further needs for scientific research. Finally, a representative from the National Economics University (Vietnam) was involved. From 2004 to 2006, InWent (see www.inwent.org) provided training on data management and DRG based reimbursement systems for the Vietnamese staff. After this preliminary training, conferences with experts from German health insurances, German Ministry of Health, InWent and the universities of Berlin and Cologne (Germany) were organized in November 2007. Aim of the five translator assisted meetings held in German and English was to derive a raw agenda for the transfer of the DRG reimbursement system.

Based on these conferences' minutes, the major debates were summarized by the authors of this article. The relevance of each part of the discussions was assessed according to the (subjective) intensity and duration. Moreover, lacks of knowledge among all parties and later calls for supplemental literature or expertise were taken into account. On this basis, we outline the Vietnamese governments' intentions as to adapting DRG based hospital financing and possible problems. Moreover, we present the basic questions discussed.

4 Results

Expectations: In Germany, early objectives of implementing a DRG system were to establish an equitable resource allocation and to shift inpatient treatments towards the outpatient sector. The latter, however, proved unattainable. Moreover, the system was not designed to highlight needs for facilities and hence inapplicable for hospital planning. As a main focus, technical design and precise methods for assessing per case costs improved rapidly (Lungen and Lapsley 2003). With respect to these developments, the Vietnamese delegation emphasized four main objectives: First was setting up a hospital information system to improve transparency of costs and quality. Second was upgrading the hospital and health management to increase efficiency, stabilize public hospitals' financial situation, and enable self-financing. Third was implementing quality assessment. Fourth was reorganizing and adjusting hospitals' responsibilities with respect to recent developments and social needs.

Data availability: As one basic result, Vietnam lacks adequate data. Improving quality and hospital cost transparency requires a suitable health management information system (HMIS). Standardized data collection and processing methods are constitutive for management and monitoring as well as strategic and investment decisions (Tran et al. 2007). In Germany, for instance, an independent institute (InEK-GmbH, Institut für das Entgeltsystem im Krankenhaus), being jointly funded by public and private health insurance companies as well as hospitals, is responsible for the definition of the exact DRGs. Initially, low data quality, insufficient coding of e.g. ancillary diagnosis, and false assignments of highly expensive services lead to biased per case estimates, and compensatory payments were needed to protect healthcare providers from resulting disadvantages (e.g. Cots et al. 2003; Sanderson et al. 1989; Schreyögg et al. 2006). The DRG reimbursements were, however, designed as a learning system, empirical per case rates based on representative data are calculated annually. Thereby, accuracy improved and complex disease patterns were factored in over time (Lungen and Lapsley 2003).

Structure of Healthcare Providers in Vietnam: Predicting the effects of a certain policy requires in-depth knowledge of the respective healthcare system. If, for instance, a shift from inpatient towards outpatient care is desired, providers' market access and options, waiting lists and selection

effects become an issue. Outpatient services, provided by the CHCs or village health workers, formerly produced fairly good health outcomes. With the collapse of the communal production system in the late 1980s, financing, and consequently quality and availability declined (Hien et al. 1995; Wagstaff 2007; World Bank 2006). Healthcare was reorganized at the district level with funding from Peoples' Committees. The new regulations, however, proved inefficient and a revised, realistic plan is required (Fritzen 2007; Tran et al. 2006). Nguyen et al. (2007) proposed investments focused on remote areas and preventive care.

Conversely, the Vietnamese hospital network advanced considerably (Tran et al. 2006). The organizational structure (district, province and central level) corresponds to the governmental administration levels. While district hospitals primarily offer basic services with low quality particularly in remote mountain areas, province hospitals are capable of some advanced medical treatments (Fritzen 2007; Hien et al. 1995). Patients overuse provincial and large central (or territorial) hospitals. The latter, situated in big cities and directly governed by the MoH, offer highly specialized services, import innovation, instruct lower-level hospitals and do clinical research (Tran et al. 2006). Apparently, the underlying reimbursement system gives no incentive to hospitals at the communal level to refer patients. Cooperation between different healthcare providers seems insufficient. There is no transparency about quality of services in hospitals. Absence of evidence makes a detailed analysis of this situation unfeasible (Ekman et al. 2008).

Implementation Process: Comparable e.g. to Scandinavian countries or the United Kingdom, the Vietnamese implementation process is basically coordinated by the VSS, with universities giving technical advice. The German DRG system was implemented and is now maintained by the health insurance companies and hospitals through the Collective Mandate-Setting Council. The DRG system in Germany is designed as one single mandatory system. Both, cost weights and base rates are annually adjusted according to technical and economic changes (Lungen and Lapsley 2003).

5 Discussion

In this article, we outlined some open issues concerning the transfer of an inpatient reimbursement system from developed to developing countries. Using Vietnam as examples, we discussed data availability, structure of healthcare supply and aims of the DRG implementation.

Depending on the later purpose (e.g. lump sum payments, single case reimbursements, hospital planning or quality assurance), structural patterns of healthcare supply can be of crucial importance. Because of the elaborate Vietnamese (central) hospital network and insufficient outpatient care, shifting patients from inpatient to outpatient care or from rural to urban facilities appears to be both unattainable and undesirable. Moreover, patterns of healthcare utilization at grassroots level are rather diverse and can only partly be influenced by supply-side factors; see Hien et al. (1995) or Fritzen (2007) for related discussions. The DRG system, however, appears to be adequate to decide on annual hospital budgets.

From the Vietnamese delegates' preliminary knowledge, we deduce that detailed information on formal calculations and technical details can be drawn from a broad, comprehensive supply of scientific literature, e.g. Cots et al. (2003); Lee et al. (2003); Lungen (2004); Mikkola and Linna (2002); Paddock et al. (2004); Sanderson et al. (1986); Schreyögg et al. (2006); Wagstaff (2005) or Wiley (2005), to mention a few. Two basic questions remained, however, unanswered: Firstly, information about the organizational requirements to implement a DRG system was preliminarily unavailable. Hence, infrastructural specifications, i.e. an institution capable of and responsible for implementing and monitoring, were one focus. Notwithstanding broad information on e.g. calculation of cost weights or trimming of outliers is available in the literature, see for example Cots et al. (2003) or Paddock et al. (2004), there are no descriptions of institutions such as the Collective Mandate-Setting Council. Secondly, lack of information on requirements as to data and information systems was emphasized. Special interests concerning data were on collection, standardization, validity and security. DRGs, designed as a learning system, substantially depend on adequate data. In the discussions, applying cost weights from other countries for a transitional period was agreed to be inappropriate for Vietnam.

We conclude that research on institutional and structural requirements, including detailed discussions

beyond the formalized, statistical and technical issues, is of vital importance. We therefore encourage researchers, policy makers and development organizations to establish a handbook of DRG transfers.

6 Literature

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7 Appendix: Tables

Table 1: Characteristics of Vietnam and Germany in 2006

	Vietnam	Germany
GDP (current US\$) (billions)	60.9	2,906.70
GNI per capita, Atlas method (current US\$)	690	36,620
Life expectancy at birth, total (years)*	71 ^{a)}	79 ^{a)}
Population, total (millions)	84.1	82.4
Population growth (annual %)	1.2	-0.1
School enrollment, primary (% net)*	87.7 ^{a)}	96 ^{a)}
Surface area (sq. km) (thousands)	329.3	357

^{a)} for 2005

source: data base World Bank; <http://web.worldbank.org> (accessed July 3rd 2008)

Table 2: Inpatient facilities in Vietnam and Germany in 2006

type	Germany	Vietnam (public only)				
	total	total	hospitals	regional polyclinics	rehabilitation clinics and sanatoriums	commune health centers
number	2104	1801	903	847	51	10672
beds	510767	145213	131480	9334	4399	46094

Sources: <http://www.gso.gov.vn> for Vietnam (accessed February 22nd 2008), and German Hospital Association (Deutsche Krankenhausgesellschaft) http://www.dkgev.de/media/file/4288.Vergleich_Grunddaten_2005-2006.pdf for Germany (accessed July 3rd 2008)

Table 3: Medical staff per 100,000

	Germany	Vietnam
physicians	340	63
nursing staff	970	88

Sources: <http://www.gso.gov.vn> for Vietnam (accessed February 22nd 2008), and OECD website <http://oberon.sourceoecd.org/vl=110441/cl=27/nw=1/rpsv/health2007/index.htm> for Germany (accessed July 3rd 2008)