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The introduction of DRG funding and hospital nurses' changing perceptions of their practice environment, quality of care and satisfaction: Comparison of cross-sectional surveys over a 10-year period

Britta Zander *, Lydia Dobler, Reinhard Busse

Department of Health Care Management, Berlin University of Technology, Germany

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ABSTRACT

Background: As other countries which have introduced diagnosis-related groups (DRGs) to pay their hospitals Germany initially expected that quality of care could deteriorate. Less discussed were potential implications for nurses, who might feel the efficiency-increasing effects of DRGs on their daily work, which in turn may lead to an actual worsening of care quality.

Objective: To analyze whether the DRG implementation in German acute hospitals (as well as other changes over the 10-year period) had measurable effects on (1) the nurse work environment (including e.g. an adequate number of nursing staff to provide quality patient care), (2) quality of patient care and safety (incl. confidence into patients' ability to manage care when discharged), and (3) whether the effects from (1) and (2) – if any – impacted on the nurses themselves (satisfaction with their current job and their choice of profession as well as emotional exhaustion).

Design and data sources: Two rounds of nurse surveys with the Practice Environment Scale of the Nursing Work Index (PES-NWI), five years before DRG implementation (i.e. in 1998/1999; $n = 2681$ from 29 hospitals) and five years after (i.e. in 2009/2010; $n = 1511$ from 49 hospitals). The analysis utilized 15 indicators as outcomes for (1) practice environment, (2) quality of patient care and safety, as well as (3) nurses' satisfaction and emotional exhaustion. Multivariate analyses were performed for all three sets of outcomes using SPSS version 20.

Results: Aspects of the practice environment (especially adequate staffing and supportive management) worsened within the examined time span of 10 years, which as a consequence had significant negative impact on the nurse-perceived quality of care (except for patient safety, which improved). Both the aspects of the practice environment and the quality aspects impacted substantially on satisfaction and emotional exhaustion among nurses.

Conclusions: The DRG implementation in Germany has apparently had measurable negative effects on nurses and nurse-perceived patient outcomes, however, not as distinct as often assumed.

What is already known about the topic?

- Since the introduction of DRGs first in the USA, then in Europe, the potentially negative effects on quality of patient care have received a lot of attention, even though actual evidence has remained scarce.

* Corresponding author.
E-mail addresses: britta.zander@tu-berlin.de (B. Zander), lydia.dobler@campus.tu-berlin.de (L. Dobler), rbusse@tu-berlin.de (R. Busse).

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- Much less is known about the DRG impact on nurses and their practice environment and satisfaction.

What this paper adds

- Survey results of nurses in acute hospitals five years before and after the introduction of DRGs in Germany show that nurses perceive their practice environment as worse, quality of care as worse, and their satisfaction as lower – with an increase in patient safety the most visible exception.
- Besides the time factor (possibly mirroring fears and experience with DRGs), perceived inadequacy of staffing is the most powerful explanatory factor.

1. Background

The introduction of the DRG system represented the most visible and discussed reform of the German hospital sector within the last decades. The primary purpose for reforming the previous reimbursement system, which was based on budgets with per diem charges, was to create a more appropriate and fair resource allocation system by consistently defining and reimbursing all hospital services. While the DRGs as a patient classification system were introduced in 2003 (on a voluntary basis), respectively 2004 (on a mandatory basis), their use as a payment mechanism was implemented in a step-wise manner from 2004 until 2010 (Geissler et al., 2011).

Introducing the DRG system in Germany brought up several expectations as well as concerns. They were expected to facilitate a precise and transparent measurement of the casemix and the levels of services delivered by hospitals. A better documentation of internal processes as well as managerial capacity promised improved efficiency and quality of service delivery. Furthermore, transparency would be introduced regarding which hospitals produce their services less efficiently than others. As a consequence, a moderate contribution to cost-containment based on a reduction of length of stay and bed capacity was presumed (Braun et al., 2007; Geissler et al., 2011; Bartholomeyczik, 2011).

Other countries already had DRG-based hospital payment systems in place before Germany, though most of them had not been as extensive as the German one, in which only psychiatry was excluded. According to the actual or reported experience in the other countries, it was feared that the DRG implementation might particularly impact on patient selection (i.e. cream-skimming to the detriment of older and multi-morbid patients) as well as too early, so-called "bloody" discharges and a respective shift of activities (and costs) to the ambulatory care sector. Additionally, increased efficiency – if actually happening – might result in higher workloads for staff, especially nurses. However, empirical evidence was at the time of the parliamentary decision to implement DRGs (in 1999) almost only available from the USA (e.g. Rogers et al., 1990; Cutler, 1995) – and due to severe differences between the US and the German health care and hospital systems, the applicability of these was rather restricted. Nevertheless, these experiences were taken into account and the need of scientifically evaluating the consequences was acknowledged from the very beginning by putting the mandate for such an evaluation into the law. The first results were, however, only published in 2010 – and not in 2005 as stipulated – indicating that the intended aims of the DRG introduction will be achieved and that most of the feared negative consequences did not occur (IGES, 2010).

Besides the legally mandatory evaluation, there were various data sources and analyses which tried to capture consequences of the DRG implementation, though most of them were not longitudinal, were restricted to certain types of hospitals and/or did not take account of the working conditions and the quality of care of all labour groups in the hospital, and especially of nurses (Braun et al., 2011). Furthermore, often only insufficient comparative data was available from before the DRG introduction, which considerably hampered useful analyses. For example, a cross-sectional survey of 30 hospitals in Lower Saxony suggested that the introduction of DRGs did not create cream-skimming or early discharge problems in these hospitals (Sens et al., 2009). Based on interviews with hospital managers, health professionals and patients, the study suggested that service quality appeared to be steady over the period 2007–2008, and may even have improved due to better care organization, especially in large hospitals. However, this study did not analyse any concrete measures of patient outcomes or care quality.

With regard to nursing, a growing number of studies revealed a potentially hazardous impact of the organization and quality of nursing care on patient and nurse outcomes (Aiken et al., 2001, 2002, 2011) – which might be triggered or worsened under DRG conditions. Also in Germany, various recent nursing studies have called attention to deteriorating working conditions in German hospitals and their influence on quality of care and satisfaction: in this respect the Pflege-Thermometer conducted a survey among 10,000 hospital nurses in 2009 and highlighted the existing nursing staff shortage which – according to their results – was responsible for increasing workloads, extra hours on a regular basis and deficits in patient care, such as lacking patient mobilization, monitoring or psychosocial care. It furthermore associated the nurse shortage with the rising job dissatisfaction and intent to leave among nurses (Isfort et al., 2010). The ArbiK-study (Schmidt et al., 2008) examined the nurse work environment and its influence on patient care and job satisfaction on the basis of 111 nurses. It came to the conclusion that the collaboration between nurses and physicians worsened in Germany with a distinct influence on quality of care. It furthermore highlighted the association between the quality of leadership and nurse satisfaction. A deeper insight into the reasons, circumstances und consequences of the intention to leave the current job among nurses in Europe is given by the NEXT-study, which found that a considerable number of German hospital nurses suffer from emotional exhaustion which, as a consequence of decreased work ability, might lead to decreased quality