MEDICAL PROFESSIONALS' RESPONSES TO A DRG PERFORMANCE MANAGEMENT SYSTEM FOR HOSPITAL CARE IN THE NETHERLANDS

Reinterpreting 'perverse effects', such as upcoding and patient selection, using arguments of professionalism and managerialism

Emiel Kerpershoek

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In loving memory of my mother
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“There is a crack in everything
That's how the light gets in.”

— Leonard Cohen

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Emiel Kerpershoek
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TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION

1.1 INTRODUCTION: INCREASING DEMAND FOR EFFICIENCY AND ACCOUNTABILITY IN THE PUBLIC SECTOR

Public-sector performance and efficiency have been key elements of Western European and Anglo-Saxon government attempts to manage their national deficits (Moynihan and Pandey 2005, Starling 2010, Rhodes et al. 2012). Indeed, since the 1980s and 1990s, many Western countries have sought to reform their public sectors to accommodate new, efficiency-oriented management and governance regimes. In particular, under the flag of the New Public Management (NPM) movement various public sectors have been reformed in such a way as to heighten their effectiveness and performance. NPM-oriented reforms centre on the introduction of private sector-type management in the public sector (Van Elsacker 2007). To enhance efficiency, public-sector organizations are subjected to business-like performance evaluation regimes and market-oriented logics (Noordegraaf and Van der Meulen 2008, Pollitt and Bouckaert 2011). However, despite all of these efforts, the belief that public sectors are not nearly efficient enough continues to persist and be widespread. Even today, public-sector restructuring is part of the austerity measures being undertaken in many European Union (EU) countries in response to the recent financial and economic crisis.

Implementing the NPM-mandated business-type logic typically includes introduction of competition and market processes into public organizations. This is often facilitated by newly established performance standards, performance measurement instruments, and performance management systems (see, e.g., Hood 1991, Osborne and Gaebler 1992, Kickert 1997, Dawson and Dargie 1999). Performance management systems are a key part of many public-sector reforms of recent years (Propper and Wilson 2003, Moynihan, Pandey and Wright 2012). As a result, performance management systems now serve as a basis for resource allocation and accountability in a wide variety of professional public-sector organizations including universities, courts of law, primary and secondary schools, and hospitals (De Bruijn

2007, Fryer, Antony and Ogden 2009). This “performance-based governance” of public organizations is typically characterized by a greater focus on meeting performance targets than on the way public-sector organizations meet these targets (May 2011)

PERFORMANCE MANAGEMENT IN HEALTHCARE

One of the public sectors in which the introduction of performance management has played a dominant role is the healthcare sector. Faced with ageing populations, technical advances in medicine, and the consequent increase in healthcare expenditures, many OECD countries have implemented healthcare institution payment systems based on “Diagnostic Related Groups” (DRGs) (Oxley, MacFarlan and Gerdtham 1994). The essence of DRG-based systems is the classification of patients into clinically and cost homogeneous groups that allows care providers to be remunerated on a standardized per-case basis (Sutherland and Botz 2006). DRG-based systems have been introduced in many EU countries, including the UK, Ireland, France, Germany, Austria, Sweden, Finland, Estonia, Poland, Portugal, Spain, and the Netherlands (Busse et al. 2013).

Since the 1980s, the implementation and effects of these DRG systems have been documented and addressed in a growing body of academic literature (e.g., Simborg 1981, Steinwald and Dummit 1989, Hsia et al. 1992, Silverman and Skinner 2004, Steinbusch et al. 2007, Busse et al. 2013). As DRG systems are used to classify patients based on their medical condition and cost of treatment, they are also referred to as “case-mix systems” (Sutherland and Botz 2006). Reimbursement of medical institutions based on patient classification effectively divides the full medical process into a number of uniform products, which are measurable and provide policymakers and managers a tool for monitoring and steering based on professional performance (Abernethy and Stoelwinder 1995, Wallace 1995, Noordegraaf 2006).

Public- and sometimes also private stakeholders use DRG systems for purposes of resource allocation and accountability. As these public and private stakeholders are in a position to influence the design and functioning of the DRG system, they are referred to from this point forward as the “system managers”. As DRG systems partition medical procedures into categories and products, they provide metrics to

guide monitoring and management of the performance of medical departments, hospitals, and even the overall healthcare system (Covaleski, Dirsmith and Michelman 1993, Lehtonen 2007). DRG systems are used by ministries of health, public regulators, and health insurance companies to adjust the financial incentives of medical professionals and stimulate changes in their behaviour, the ultimate aim being to increase efficiency and reduce costs (Preston 1992, Abernethy et al. 2006, Lehtonen 2007). The current research examines this function of DRG systems as performance management systems specifically for the healthcare sector.

Most DRG systems have been in use for decades. Nonetheless, many of the more recent efforts to improve hospital efficiency and quality of care build on a DRG system. In this respect, "pay-for-performance" has received much attention in the past decade. Pay-for-performance programmes aim to improve efficiency and quality by basing reimbursements on care outcomes instead of simply on services rendered (Lindenauer et al. 2007, Rosenthal and Dudley 2007).

Recent developments in population-based healthcare have similarly sought to realign incentives to improve quality, raise efficiency, and contain costs. With the 2010 introduction of the Affordable Care Act in the USA, performance management through a DRG system and additional instruments became a core element in the USA's development of "accountable care organizations" (Fisher et al. 2009, McClellan et al. 2010, Berwick 2011, Ayanian and Van der Wees 2012, Goroll and Schoenbaum 2012). These accountable care organizations[1] will share in any savings they manage to generate in care provision expenditures for the population under their care, providing that they meet specific quality indicators and targets. Further sophistication of existing performance management systems is considered a core principle in the development of pay-for-performance programmes and accountable care organizations (McClellan et al. 2010).

[1] Accountable care organizations (or "ACOs") are networks of doctors and hospitals that assume medical and financial responsibility for provision of a full range of care for a certain population of patients.

DRG-BASED PERFORMANCE MANAGEMENT IN THE NETHERLANDS

Introduction of a DRG-based performance management system was a key feature of the 2006 reform of the Dutch healthcare system. The previous supply-constraining budgeting system for hospital and medical specialist care in the Netherlands had been criticized since the late 1980s (Schut 2003). To create a more demand-driven healthcare system, the 2006 reform aimed to replace the fee-for-service modality with a DRG regime for reimbursing hospitals and remunerating medical specialists based on "average" care products. A DRG care product, in this respect, represents a predefined collection of medical services and activities reimbursable at the average cost of treatment by a typical hospital and medical specialist.

In many ways, the Dutch system resembled the DRG systems found in many countries. Compared to other DRG systems, however, the system introduced in the Netherlands had some unique characteristics that are relevant for this research (Oostenbrink and Rutten 2006, Steinbusch et al. 2007, Hasaart 2011, Tan et al. 2011). First, the Netherlands based its DRG care products not only on diagnoses, but also on the chosen treatment, and these so-called "diagnosis-treatment combinations" (In Dutch DBCs) were applied to inpatient as well as outpatient care. In addition, medical classifications in the initial Dutch system[2] were not based on the International Classification of Diseases (ICD-9 or ICD-10), which is commonly used in DRG systems. Instead, the professional association of each medical specialty (e.g. internal medicine, urology, etc.) provided its own list of diagnoses and treatments that should be available for DRG registration. As a consequence, more than 30,000 diagnosis-treatment combinations were registered, making the Dutch DRG system much more detailed than typical DRG systems, which usually incorporate less than 3,000 care products (Tan et al. 2011).

A second distinctive characteristic of the Dutch DRG system was its use not only for the reimbursement of medical institutions, but also for remuneration of medical specialists based on the average time spent treating a patient. DRG-based remuneration of medical specialists for both inpatient and outpatient care has been

[2] In 2012 the Dutch DRG was modified. Since then, DRG registration codes have been linked to the International Classification of Diseases.

fully implemented since 2008. By including inpatient care, outpatient care, and specialist remuneration, the DRG system covered some 85% of the specialist medical care provided in the Netherlands (NVZ 2012).

A third distinctive characteristic of the Dutch system involved the introduction of a free pricing regime for selected DRG care products (Maarse and Bartholomée 2007, Van de Ven and Schut 2008). To introduce market mechanisms into the Dutch healthcare sector, DRG care products were divided into two categories: List A and List B. The tariffs for List A DRGs are set by the Dutch Healthcare Authority (In Dutch NZa) (Stolk et al. 2009). The NZa calculates (or estimates) these tariffs based on the *average* of all medical activities and time spent on a patient with that specific condition from the beginning to the end of the treatment trajectory, which may include several admissions or contacts. As the List A DRGs are not subjected to the market regime, they mainly serve as vehicles for bringing in secure hospital earnings. For List B DRG care products, tariffs are set via local negotiations between individual health insurers and healthcare providers. In 2006, approximately 10% of care products was subject to this free pricing regime. Over the years, List B has been gradually expanded. It made up 34% of the total hospital production in 2010, though this share was greatly boosted to 70% in 2012. Nonetheless, for both List A and List B, the DRG system became the primary tool for payments and communications between healthcare providers, health insurers, and public regulators.

The DRG system and competition based on market mechanisms were introduced in the Netherlands in response to increasing care expenditures and lengthening waiting times for hospital and specialist care delivery. These problems were primarily attributed to a diffuse link between hospital funding and performance in the traditional budgeting system (NZa 2006). The primary objectives of the DRG system in the Netherlands were therefore to increase hospital efficiency and to provide insight into the relation between hospital funding and hospital performance with the clearly defined care products (Hasaart 2011). Apart from the overall budget that the Dutch government still set for its total healthcare expenditures, the DRG system was expected to contribute to cost containment, or at least to make the cost of care more transparent (Maarse and Paulus 2011). This dual need for cost containment and transparency increased with the economic crisis and consequent cuts in public services spending.

However, the transparency provided by the DRG system is highly dependent on how medical professionals use the system in practice (Tummers 2012). Since the introduction of the DRG system in the Netherlands, hospitals and medicals specialists have been suspected of manipulating the system to their own advantage. Over the years, newspaper headlines have decried the perverse effects of the system: “massive fraud potential in care declarations” (*VK* 2006), “medical specialists’ declarations are too high” (*Trouw* 2006), “unforeseen exponential growth of the income of medical specialists” (*NRC* 2009), “health insurers scammed for a billion euros” (*Parool* 2011). Media coverage typically explains unintended responses to the DRG system primarily as opportunistic behaviour of medical professionals seeking financial gain.

Nonetheless, the literature on performance management suggests a much wider range of purposes that unintended responses might serve (e.g., De Bruijn 2007). Yet, beyond direct financial gain for the medical professionals involved, the range of motivations for unintended responses has received limited empirical attention. The current research widens the scope of analysis to include diverging motivations for and interpretations of unintended responses, from two somewhat competing viewpoints: the managerial perspective and the professional perspective. The types of unintended responses utilized by medical professionals are examined alongside the types of measures taken by public- and private system managers to curb unintended responses in the use of the DRG system.

In 2012, modifications were introduced to the Dutch DRG system under the “DRGs towards Transparency Plan”. The main revisions were reduction of the number of DRG care products available for registration from some 30,000 to 4,000 and treatment registration being taken out of the hands of the medical professionals by introduction of a “grouper”,[3] such as used in most DRG systems (see, e.g., Geissler et al. 2011). Although these changes have likely impacted medical professionals’ coding practices, the essence of the system remained unchanged. The 4,000 “new” care products were derived by clustering the “old” care products. This means that

[3] A grouper is a common element in international DRG systems and refers to a grouping algorithm that is used to assign cases to a DRG care product based on the medical discharge data registered for a patient.

medical professionals still register their performance using average care products, only now these average care products are coarser, as they cover a wider range of patients and procedures. Moreover, since the revision of the DRG system, unintended responses and accusations of fraud have become a particularly recurrent theme in Dutch newspapers – "money in healthcare: …everybody steals a share" (*VK* 2013), "hospital sanctioned for improper declarations" (*AD* 2014) – and a major concern of regulators (NZa 2014).

1.2 Performance management in professional organizations: Beneficial and perverse effects

Beneficial effects of performance management systems

The academic literature has addressed performance management systems predominantly following an organizational logic. This logic holds that organizational performance can be improved by rewarding public-sector organizations for achieving measurable targets whilst imposing sanctions if they miss the goals set (Pollitt 2013). Following this line of reasoning, the design of a performance management system and compliance with the system become key factors in successful implementation of performance management. Organizational logic considers the influence of the context in which a performance management system is implemented to be of secondary importance (see Greenhalgh et al. 2009). Furthermore, the beneficial effects of a performance management system – in terms of improved transparency, efficiency, and quality – are viewed as intrinsic and self-evident as long as the system is well-designed.

The beneficial effects of performance management systems on organizational performance are commonly attributed to improved internal and external transparency. Regarding that latter, a performance management system may serve as an accountability instrument by which to reduce the complexity and ambiguousness of the performance of a professional public-sector organization into a number of indicators that can be easily communicated to external stakeholders (see, e.g., DiMaggio and Powell 1991, Van Elsacker 2007, Ter Bogt 2008, Spekléa and

Verbeeten 2014). In reducing organizational performance to its essence, performance management systems may provide a powerful tool for communication (De Bruijn 2007). In short, they offer public organizations and their stakeholders a common language (Moynihan 2005b, Kelman and Friedman 2009, Hammerschmid, Van de Walle and Štimac 2013).

Regarding internal transparency, performance management systems are thought to enable public-sector organizations to improve their primary processes. Viewing organizational processes from the perspective provided by a performance management system allows organizations to learn, improve, and innovate in their service provision and internal operations (De Bruijn 2007, Pen 2009, Hammerschmid, Van de Walle and Štimac 2013). In this respect, performance management does not only targets narrow process improvement, but also contributes to a more comprehensive understanding of policy changes and their effectiveness (Moynihan 2005a) Furthermore, feedback from performance management systems offer organizations an incentive to focus on their primary processes and core organizational performance (Osborne and Gaebler 1992, Johnsen 2005, Bevan and Hood 2006, Van Elsacker 2007).

PERVERSE EFFECTS OF PERFORMANCE MANAGEMENT SYSTEMS

Apart from the beneficial effects, empirical studies have increasingly shown that performance management is often accompanied by perverse effects as well (Smith 1995, Smith 2002, Bevan and Hood 2006, De Bruijn 2007, Teelken 2008, Kelman and Friedman 2009, Bevan and Wilson 2013, Pollitt 2013). Such perverse effects can include intentional misrepresentation of organizations' actual performance and "strategic" accounting or "gaming" the performance numbers to increase rewards or to avoid sanctions (Osborne and Gaebler 1992, Meyer and Gupta 1994, De Bruijn 2007, Pollitt 2013).

By "gaming the numbers", public-sector organizations effectively conceal the true nature of their performance from the external system managers responsible for allocating resources or regulating quality, safety, or efficiency standards (Oliver 1991, Mitnick 2000, Van Elsacker 2007). Gaming behaviours of hospitals and medical

professionals are considered an intrinsic risk of DRG-based performance management systems in healthcare (Busse et al. 2013, Pollitt 2013).

For DRG-based systems specifically, perverse effects are commonly attributed to two types of gaming behaviours, namely, “upcoding” and “cherry picking”. Upcoding also known as “DRG creep” refers to hospitals and medical professionals registering more demanding diagnoses or treatments for their patients than might be considered reasonable (see, e.g., Simborg 1981, Steinwald and Dummit 1989, Hsia et al. 1992, Silverman and Skinner 2004, Steinbusch et al. 2007). In other words, upcoding refers to the practice of inflating the medical performance on paper to increase reimbursement. For system managers, a primary concern is that upcoding clouds transparency, consequently leading to a suboptimal allocation of resources (Osborne and Gaebler 1992, Smith 1995, Goddard, Mannion and Smith 2000, De Bruijn 2007).

Cherry picking, also known as “cream skimming” refers to hospitals or medical specialists being strategic in the patients they accept and the treatments they choose to provide (Ellis 2001, Ellis and Miller 2008). Hereby, cream skimming can refer to risk-profiling of patients the accepted for treatment, but also the selection of treatments that a medical institution chooses to provide (Levaggi and Montefiori 2003, Berta et al. 2010). In the former case, medical institutions might, for example, select patients with a low risk of complications. As those patients are less likely to need follow-up care, the costs of treating them are expected to be lower than the associated standard reimbursement. Conversely, patients with higher risk profiles may be referred elsewhere, as their expected costs will be higher than the associated reimbursement (Busse, Schreyögg and Smith 2006). In the latter case, medical institutions might decide to cut back on treatments that are considered unlucrative, for example, because they require use of high-cost diagnostics. A medical institution may reduce the volume of such unlucrative treatments or may decide to stop providing these treatments all together. For both forms of cream skimming, DRG-based systems can encourage organizations to select the cases where the highest rewards for performance can be achieved relatively easily (Gay and Kronenfeld 1990). Like upcoding, cherry picking may thwart optimal resource allocation as well (Ellis and Miller 2008, Hasaart 2011).

CONDITIONS TRIGGERING PERVERSE EFFECTS

The literature on performance management identifies a variety of conditions associated with the occurrence of unintended responses and consequently of perverse effects. Two such conditions are especially pertinent here: the impact of performance management on the organization and the level of professionalism of the organization. Regarding the first, performance management systems are considered to be most prone to perverse effects when the system's impact on the organization is large (Jacob and Lefgren 2005, De Bruijn 2007). In particular, when "good performance" or "bad performance" are directly linked to financial rewards or sanctions, organizations have a clear – financial – incentive, to misrepresent actual performance through upcoding or cherry picking (Oliver 1991, Mitnick 2000, Goddard, Mannion and Smith 2000, Van Elsacker 2007). Impacts of performance management systems, however, are rarely financial alone. Impacts may, for example, extend to public reports of performance (e.g., leading to potential reputational damage) or intensified monitoring by public or private regulators if underperformance is determined (see, e.g., Crilly and Le Grand 2004, De Bruijn 2007, Lindenauer et al. 2007).

An organization's degree of professionalization has also been associated with perverse effects and unintended responses. Here, organizations characterized by a high level of specialized knowledge and recognized competences of employees are considered more inclined towards perverse effects. In highly professional organizations, performance management systems have been claimed to conflict with the nature of the professional process in several interrelated ways (Southon and Braithwaite 1998, Propper and Wilson 2003, Noordegraaf 2006, De Bruijn 2007, Teelken 2008). First, the relatively static nature of performance management systems is considered a poor fit with the dynamic nature of the professional process (De Bruijn 2007, Teelken 2008). A second cause of conflict relates to differences in rationale between a performance management system and the professional process. Whereas performance management systems focus primarily on managerial objectives at the system level, the professional process mainly rests on decision-making and outcomes at the client or case level (Løwendahl, Revang and Fosstenløkken 2001, Van Damme, Kober and Kegels 2008, Noordegraaf and

Schinkel 2011). A third cause of conflict concerns different types of incentives that apply to professional performance. In this respect, the professional process is not considered to be driven mainly by management objectives (such as efficiency or cost containment) but by shared normative standards and cognitive beliefs about what adequate professional performance entails. Based on these collective norms and values, professionals claim an autonomous position (Frankel 1989, Freidson 2001, Evans and Harris 2004, Vakkuri 2010). This autonomous position provides professionals more opportunity to use unintended responses. It is therefore considered an important factor in explaining the perverse effects of performance management systems (Moynihan and Pandey 2010, May 2011).

1.3 Research problem: How perverse are unintended responses to performance management systems?

A complication noted in the literature on performance management is that perverse effects and unintended responses are often used as interchangeable concepts. To illustrate, “gaming the numbers” is – in essence – an unintended response (i.e., manipulation of performance registration), but it is also considered a perverse effect due to the assumedly undesirable outcomes of this behaviour. The assumption that unintended responses will invariably have undesirable outcomes is often applied to performance management systems in the public sector. The design, implementation, and justification of many performance management systems for the public sector have primarily followed classic agency theory (Heinrich and Marschke 2010, Langbein 2010, Moynihan, Pandey and Wright 2012). According to this perspective, public-sector organizations and public sector professionals are opportunistic agents who pursue their own preferences at the expense of the objectives of their principals, the system managers. Although contemporary agency theory no longer holds opportunism to be the only motivation for agent behaviour, it is still the primary argument used to explain unintended responses to performance management systems (Moynihan, Pandey and Wright 2012).

Since opportunism is the predominant explanation for agent behaviour, unintended responses are by default considered to be perverse (Greenhalgh et al. 2009). As a

consequence, the literature often fails to distinguish between actual behavioural responses to a performance management system – i.e., (un)intended responses – and the normative appraisal of the outcomes of these behavioural responses – i.e., beneficial or perverse effects. Following this negative assumption of professionals as opportunistic agents, unintended responses are largely associated with perverse effects of performance management systems and assumed to be driven by financial incentives (Brehm and Gates 1993, Williamson 1993, Garoupa 2004). This interpretation is clear and concise, yet it is criticized as being too simplistic (Perrow 1986, Shapiro 2005). It rules out all non-opportunistic and non-financial motivations that may lead an agent to deviate from the intended use of a performance management system (Moynihan, Pandey and Wright 2012).

Scholars have long argued that unintended responses do not automatically lead to undesirable outcomes and perverse effects (Merton 1936). Indeed, recent empirical research shows that professionals may also use unintended responses to performance management systems as an instrument to prevent outcomes that they consider undesirable. Here, unintended responses are explained as acts of agents employing their autonomous position and expertise to the benefit of their clients, their principals, or society as a whole (Donaldson 1990, Dilulio 1994, Van Slyke 2007, Heinrich and Marschke 2010, Tummers 2012). In this light, principled agents use unintended responses to prevent unforeseen outcomes that might harm the interests of the principal. However, unintended responses are also used to prevent outcomes of performance management systems that conflict with basic values of the agent (Merton 1936, Etzioni 1988). This suggests that unintended responses are not necessarily opportunistic, financially driven, and dysfunctional. They can be instrumental in safeguarding professional values as well (Freidson 2001, Noordegraaf and Schinkel 2011, Tummers 2012). Thus, while unintended responses to performance management systems might be driven by opportunism and financial motivations, they may also stem from value-based motivations.

Few empirical studies can be found in the literature on unintended responses that incorporate both financial and value-based motivations. The studies that are available are almost exclusively mono-perspective. Nonetheless, insights on unintended responses from either the perspective of financial incentives or of value-based motivations are each subject to their own blind spots and thus offer an

incomplete picture of the phenomenon of unintended responses. The current research applies a dual perspective on unintended responses. It incorporates financial incentives as well as value-based motivations to analyse the unintended responses of medical professionals in their utilization of the Dutch DRG system. Such a dual perspective on unintended responses to performance management has been applied by selected scholars, including De Bruijn (2007, 2010), Le Grand (2003, 2010), and Noordegraaf (2006, 2011). This research builds particularly on the work of De Bruijn in interpreting the effects of performance measurement using both the managerial and the professional perspective. It furthermore extends this line research by applying this perspective specifically to a DRG-based performance management in the healthcare system of the Netherlands.

DISTINGUISHING BETWEEN BENEFICIAL AND PERVERSE OUTCOMES OF UNINTENDED RESPONSES

Whether unintended responses are motivated by opportunism or by value-based motivations says little about how their outcomes might be interpreted. The effects of unintended responses driven by financial incentives cannot be automatically labelled as perverse, just as the effects of unintended responses that serve to safeguard professional values cannot be automatically labelled as beneficial. A first complication in interpretation of unintended responses is that any normative judgement of their effects is actor-specific (Merton 1936). On some occasions, system managers and professional agents may agree that the outcome of an unintended response is desirable or undesirable, while on other occasions they may not. A second complication is that financially-driven and value-based motivations for responding in unintended ways to a performance management system are not necessarily mutually exclusive. Consider, for example, the following three illustrations of unintended responses of public-sector professionals:

(i) In 2010, an institute of higher education in the Netherlands made the news because it awarded undeserved diplomas to 250 students. Investigations revealed that the school had glossed over students' arrears in their study and "re-assessed" formerly rejected theses as sufficient for graduation because the school's budget was largely dependent on the graduation ratio of its student population (*VK* 2010). Certain departments of this school were clearly underperforming. Yet, the budget reductions

that would result from a lower graduation rate may well have had implications for the quality of education provided by other departments and likely have resulted in an accelerated downward spiral.

(ii) In 2004, performance targets were introduced for the Dutch police. To prioritize road safety, police departments were mandated to write a requisite number of tickets for speeding violations. At the end of the year, performance was evaluated based on whether those targets had been met (De Bruijn 2007). In response, some regional police forces intensified their traffic controls late in the year in order to achieve the quota (*VK* 2004).

(iii) Now, following the previous examples, we consider a hypothetical one. What if a specific police station or even an individual police officer decided to give priority to reducing speeding violations in areas where they pose the greatest threat to safety, such as close to an elementary school or a shopping centre? That police station or officer may spend more hours patrolling for speeding violations, but is still likely to write fewer tickets than a police station or officer monitoring speeding in higher traffic density areas, such as highways.

As these examples of unintended responses illustrate, compliance of professionals with the requirements or design of a performance management system (e.g., meeting a specified target) may not always lead to an outcome that system managers and professional agents would perceive as unequivocally beneficial. On the other hand, the examples suggest that noncompliance (i.e., not meeting the target) would not necessarily lead to an outcome that would be interpreted as unequivocally perverse.

Whether the outcomes of the professionals' responses in the three examples are interpreted as beneficial or perverse would likely determine – in hindsight – whether they were labelled as intended or unintended responses. There is probably little doubt that the choice made by the school cited in our first example was unintended and the outcome perverse. However, in the second and third examples such an interpretation is less straightforward. In the second example, the police department met its target, but the manner in which it did so would likely be considered unintended and perverse. Meeting the target in that case seems to have been decoupled from the goal of safeguarding road safety – which was the principal

objective of this performance management system. On the other hand, the response of the police department in the third example may be perceived as unintended and perverse from the perspective of a system manager if this police station did not meet its target. However, the response may equally be interpreted as intended and beneficial from the system manager's perspective, because in this approach local expertise is applied towards the objective of improving road safety.

Particularly when professional values and trade-offs are involved, the desirability or undesirability of an outcome and the labelling of responses in terms of "intended" or "unintended" in hindsight will likely be interpreted differently by different actors. However, the very fact that professional responses are labelled as intended or unintended in retrospect is problematic for unintended responses as an analytical concept. The actor-specificity of interpretations of the desirability or undesirability of an outcome of a professional response to a performance management system forms a bias in the labelling of professional responses. This bias hampers the study of potentially beneficial effects of unintended responses as well as the study of perverse effects of intended responses. For the purpose of this research, unintended responses as behaviours are separated from actor-specific interpretations of the outcomes of this behaviour in terms of beneficial or perverse effects. To this end, unintended responses to performance management systems are loosely defined as "responses of professionals to a performance management system that purposively deviate from use as intended by the system managers in the system's design". This broad definition of unintended responses enables us to reflect on potentially perverse as well as potentially beneficial effects of various types of unintended responses of medical professionals to the Dutch DRG system.

UNDERSTANDING UNINTENDED RESPONSES FROM A PROFESSIONAL OR MANAGERIAL PERSPECTIVE

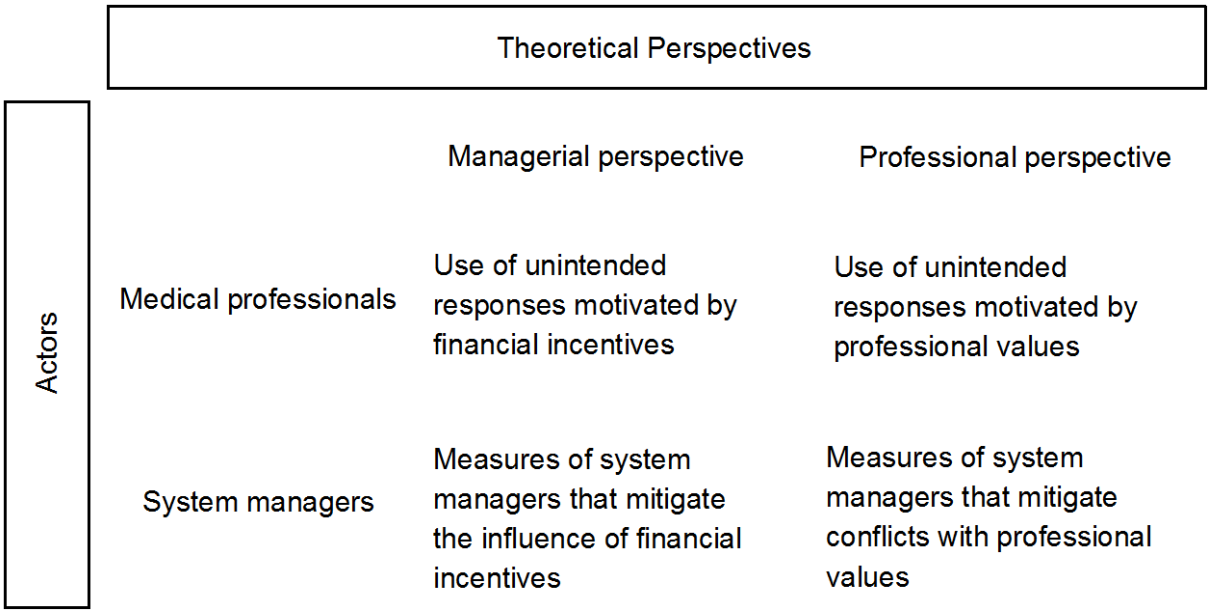
To study the interpretation of unintended responses from a theoretical perspective, the current research analysed the literature on performance management, as well as that on agency and on professionalism. This resulted in identification of two distinct perspectives on unintended responses: namely, the managerial perspective and the professional perspective, each resonating in the literature on agency theory and on professional occupations.

The managerial perspective interprets unintended responses as a dysfunctional phenomenon. Unintended responses of professionals to performance management systems are considered opportunistic, driven by financial incentives and inherently in conflict with system-manager objectives. The professional perspective, on the other hand, interprets unintended responses as a functional phenomenon. Unintended responses of professionals to performance management systems are viewed as instrumental in shielding professional values from harmful external influences.

In understanding unintended responses, these two perspectives are generally treated as isolated outlooks. As mentioned earlier, most research on unintended responses is mono-perspective, taking either the managerial or the professional view. This is problematic because each of these perspectives is challenged by its own blind spot. The managerial perspective cannot consider explanations for unintended responses other than opportunistic behaviour of the professional or the professional organization. Yet, the professional perspective focuses on value-based motivations, but tends to overlook opportunism and financial incentives in interpreting the unintended responses of professionals to performance management systems. The current research applies both perspectives together to analyse the phenomenon of unintended responses to the Dutch DRG-based performance management system in healthcare. Including the managerial and professional perspectives together, first, allows us to reflect on the influences of financial and professional motivations and on interpretations of unintended responses from multiple perspectives. Second, it allows us to reflect on the extent to which actual decision-making by medical professionals and system managers corresponds with either of these theoretical perspectives (figure 1.1).

Here, professionals are considered as acting in accordance with the theoretical professional perspective if their unintended responses are motivated by value-based considerations. However, if their unintended responses are motivated by financial incentives, they might also be considered as acting in accordance with the theoretical managerial perspective. Similarly, measures that system managers take to address the unintended responses of medical professionals can be associated with either or both perspectives.

Figure 1.1 The theoretical perspectives and actors encompassed by this research



For analytical purpose, the managerial and professional perspective are presented as a dichotomous perspectives, following the characteristics of the classic and the contemporary agency paradigm. However, in practice, the difference between managerial and professional perspective is not so clear cut. Professionals can act conform the assumptions of the managerialism perspective on unintended responses, just as managers can act conform the assumptions of the professionalism perspective on unintended responses. This view is in accordance with contemporary studies on hybrid and organizational professionalism. Apart from the professional occupations themselves, also organizations involved with such occupations are in a process of professionalization. As such, public sector organizations can be understood as hybrid organizations in which professionalism and managerial principles have become intertwined (see Noordegraaf 2007, Faulconbridge and Muzio 2008, Evetts 2011).

RESEARCH AIM AND QUESTIONS

The aim of this research is to enhance understanding of the complex social phenomenon of unintended responses. To this end, the phenomenon of unintended responses is studied empirically from the perspective of medical professionals and from the perspective of system managers. The medical professional perspective is expected to clarify the types of unintended responses employed in practice and the considerations that play a role in determining these. The system manager

perspective, in contrast, is expected to shed light on the way that unintended responses are interpreted, by examining the types of measures taken to address unintended responses by medical professionals and considerations that play a role in determining these. Interpretations of untended responses will thus be derived based on concrete examples of untended responses and their motivations as well as from examples and motivations for deterrences.

Following this research aim, the current study responds to the following central research question:

How can the phenomenon of unintended responses to the DRG performance management system in the Netherlands be understood?

To answer this central research question, six sub-questions will be addressed throughout this volume:

1. What are the strengths and limitations of the theoretical professional and managerial perspectives for understanding the phenomenon of unintended responses to performance management systems?
2. What types of unintended responses to the DRG system do medical professionals apply?
3. How do medical professionals motivate these unintended responses?
4. What measures do system managers take to address the unintended responses by medical professionals?
5. How do system managers motivate these measures to address unintended responses?
6. What does application of a dual managerial-professional perspective contribute to understanding the phenomenon of unintended responses?

1.4 Research methodology and design: Interpretative single-case study

The empirical part of this research rests on an interpretative single-case framework focused on the phenomenon of unintended responses to the DRG system. Because

of role differences between the medical professionals who employ unintended responses and the system managers who decide whether and how to respond to unintended responses, a comparative research design was deemed unfeasible. Instead, this single-case study is layered in order to incorporate a professional as well as a managerial perspective to analyse the phenomenon of unintended responses. The layer of the medical professionals provides insight into the phenomenon of unintended responses by exploring the different types of unintended responses that medical professionals employ and the motivations underlying them. The layer of the system managers sheds light on the phenomenon of unintended responses by analysing the types measures taken to curb unintended responses and the motivations underlying them.

Because this research investigates the behaviour of both medical professionals and system managers, while also examining the considerations underlying their choices, it can be categorized as both exploratory and explanatory see (Yin 1999, Fisher and Ziviani 2004). Its application of a dual managerial-professional perspective is expected to offer rich insight into the phenomenon of unintended responses. Compared to the predominantly mono-perspective studies of unintended responses in the current literature on performance management, the professional and managerial perspective as applied in this study could yield complementary insights, while exposing the blind spots of each of the respective viewpoints.

DATA SOURCES

Two main data sources were applied in this research: document analysis and semi-structured, in-depth interviews (Eisenhardt 1989, Reid, Flowers and Larkin 2005, Yin 2014). For the document analysis, a wide variety of policy documentation was studied, including constitutional documentation for the Dutch healthcare DRG system, parliamentary correspondence, and regulatory and procedural treatises. This analysis also included reports and monitoring statistics on the DRG system issued by various public and private system managers and consulting organizations. The document analysis served mainly for the study of the specifics of the design and context of the Dutch DRG system, but it also provided inputs for the interviews, which constituted the primary data source for this study. A total of 84 interviews were conducted with medical professionals and representatives of the system managers.

To study unintended responses from the medical professionals' perspective, 67 medical practitioners were interviewed. These represented a wide spectrum of surgical and non-surgical medical specialties and three types of healthcare institutions. Types of healthcare institutions represented were university hospitals (UHs), one of which was included in the study sample; general hospitals (GHs), again, one of which was included in the study sample; and independent treatment centres (ITCs) providing specialized care in a limited number of medical disciplines, with four ITCs included in the study sample. These three types of medical institutions were selected in order to maximize research sample variation on treatment complexity and typical employment status of medical specialists.

Another 17 interviews were held with representatives of the public and private system managers. Most representatives of the public system managers were employees of the three main public organizations responsible for regulation, maintenance, and functioning of the DRG system in the Netherlands. The representatives of the private system managers were employees of three health insurance companies or staff of an umbrella organization for Dutch health insurers.

ANALYSIS

To study the phenomenon of unintended responses from both the professional and the managerial perspective, this research applied an interpretative analytical technique. In line with grounded theory (see e.g., Strauss 1987, Thomas and James 2006, Glaser and Strauss 2009), inductive and interpretative analytical techniques hold that phenomena are best understood when studied within their context and including multiple coexisting perspectives and frames of reference (Rein and Schon 1994, Fischer 2003, Yanow 2007, Hoppe 2011). To investigate the phenomenon of unintended responses from the perspective of the medical professional, this research relied on interpretative phenomenological analysis, which is commonly applied in the field of health psychology. This technique provides insight into medical professionals' practices of unintended responses and the motivations underlying them by closely examining their experiences with unintended responses (phenomenology) and sense-making constructs (interpretation) (Smith 2003, Reid, Flowers and Larkin 2005, Smith, Larkin and Flowers 2009).

Although interpretative analyses are more commonly used in smaller research samples (see, e.g., Smith, Larkin and Flowers 2009), this technique is nonetheless well-suited for the purposes of the current study. In the first place, it allows us to explore motivations for unintended responses from a variety of perspectives. In the second place, the technique reveals the considerations underlying the phenomenon of unintended responses. The reasons why medical professionals employ unintended responses in specific situations are often tacit and ambiguous and can be revealed only through probing questions in interviews. The theory underlying the managerial and professional perspectives provides guidelines for coding and analysing the interview data on both the use of unintended responses by medical professionals and on measures taken by system managers to address the unintended responses employed.

By choosing an interpretative qualitative analysis, this research takes an original approach to study the phenomenon of unintended responses. Most previous studies, in addition to being mono-perspective, are quantitative, primarily focused on the prevalence of unintended responses and estimation of the magnitude of this phenomenon. Such studies, however, are ill-equipped to incorporate multiple perspectives to explain unintended responses. As both the managerial and the professional perspective have their own shortcomings, the current multi-perspective approach constitutes a significant advance. By taking both financial incentives and professional values into consideration, this research offers a more comprehensive understanding of the phenomenon of unintended responses.

POTENTIAL FOR GENERALIZATION OF FINDINGS

The inductive approach and qualitative design of this research on unintended responses has implications for the potential generalizability of the findings. In the first place, the single-case study design poses a limitation on generalizability. Furthermore, the findings of this qualitative research cannot be translated into claims regarding the magnitude of the phenomenon of unintended responses. Nonetheless, as this research seeks to understand and *not* to quantify the phenomenon of unintended responses, claims about the prevalence of unintended responses were not included in the study's aim. Instead, the research approach and design were chosen for their potential to explore and explain the phenomenon of unintended

responses by application of a dual perspective. Concerning magnitude and impact, existing literature on performance management has already shown that unintended responses cannot be dismissed as a rare phenomenon (Bevan and Hood 2006, Pollitt 2013). This conclusion applies to the Dutch DRG system as well (Hasaart 2011).

In the second place, the findings of this research cannot be drawn upon to support comparative claims about the phenomenon of unintended responses within specific types of medical institutions or medical specialties. For the selection of medical institutions and medical specialties, maximum variation sampling was considered best suited for providing a holistic understanding of the phenomenon of unintended responses. However, the consequent inclusion of a variety of medical institutions and medical specialties limits the potential of this research to make claims on differences between them. Nonetheless, the findings do signal certain characteristics of the unintended responses that appear to be particularly relevant to a specific type of medical institution or medical specialty. These could serve as inputs to future comparative studies on unintended responses.

1.5 BOOK OUTLINE

This book is composed of seven chapters. **Chapter 2** further outlines the theoretical perspectives applied in this research. Based on the theoretical notions taken from the literature on performance management systems, agency theory, and professionalism theory, this chapter presents the managerial perspective and the professional perspective on the phenomenon of unintended responses to performance management systems. Thereafter, **chapter 3** outlines the research design and method applied to analyse unintended responses and their interpretation by medical professionals and system managers. **Chapter 4** sketches the design of the Dutch DRG system, the relevant institutional characteristics of the hospital and specialist medical care sector in the Netherlands, and changes that followed from the 2006 reform of the Dutch healthcare system. The subsequent two chapters constitute the empirical part of this research. First, **chapter 5** presents an analysis of unintended responses based on the interviews with medical professionals. This chapter addresses the wide diversity of unintended responses employed by medical

professionals to the DRG system. It concludes with a typology of the unintended responses presented and of the primary motivations given by medical professionals to explain these responses. **Chapter 6** presents an analysis of unintended responses from the perspective of the system managers. Separately for the public and private system managers involved in the DRG system, this chapter elaborates on the different motivations and measures taken to address the unintended responses of medical professionals to the DRG system. The chapter discerns two types of measures taken by system managers to curb unintended responses: improving the system and improving the process. Finally, this chapter reflects on the modifications made to the DRG system in 2012 under the "DRGs towards Transparency Plan". Finally, **chapter 7** sums up the main empirical findings, interpreting these, drawing overall conclusions of the research, and reflecting on policy implications and directions for future studies.

CHAPTER 2 THEORY: MANAGERIALISM VERSUS PROFESSIONALISM AS A PERSPECTIVE ON UNINTENDED RESPONSES

2.1 INTRODUCTION

The period since the 1980s has witnessed widespread implementation of performance management systems to steer public-sector organizations. Yet, much is still unknown about the functioning of these management instruments (Moynihan and Pandey 2010). This knowledge gap is explained in part by the tendency in the academic literature to focus on the design and effects of performance measurement and management and less on how such instruments and systems are used in practice. Just how public-sector employees respond to implementation of performance management systems often remains a black box (see, e.g., Kickert 2010, Tummers 2011). Implementation of DRG-based healthcare system management in the Netherlands is no exception. Since the DRG system was first introduced in 2006, public debate has gone back and forth between the presumed benefits of the system (e.g., greater transparency, efficiency, innovation, and performance) and its potential negative effects due, for instance, to the many unintended ways that hospitals and medical professionals might use the DRG system in practice.

This chapter reviews relevant theoretical insights on how public-sector professionals interact with performance management systems upon their implementation. In particular, it elaborates on the diverging ways of interpreting the unintended responses of public-sector professionals in working with a performance management system. Unintended responses to performance management systems are explored from two distinct theoretical perspectives – managerialism and professionalism – each resonating in the literature on agency theory and on professional occupations.

The chapter seeks to answer the first sub-question of our study:

What are the strengths and limitations of the theoretical perspectives of professionalism and managerialism for understanding the phenomenon of unintended responses to performance management systems?

To answer this question, section 2.2 reviews some of the literature on performance management, focusing in particular on beneficial and perverse effects of performance management systems. The two theoretical perspectives are then explored with particular emphasis on the relationship between the unintended responses of professionals to a performance management system and beneficial or perverse effects of that system. Section 2.3 centres on the managerialism perspective. Managerialism draws on the classic agency paradigm and supporting views, which explain unintended responses of professionals largely as acts of self-interest or opportunism. The managerial perspective on performance management systems retains this rather negative view of agent motivation (Moynihan, Pandey and Wright 2012), even though contemporary agency theory has evolved to consider a wider range of explanations for unintended responses (see, e.g., Brehm and Gates 1997, Miller and Whitford 2007, Van Slyke 2007, Heinrich and Marschke 2010). Section 2.4 introduces an alternative perspective on unintended responses, that of professionalism. It draws on contemporary perceptions of the agency paradigm and supporting views that explain unintended responses as driven by professional values. Finally, section 2.5 presents a conjunctional analysis of the managerialism and professionalism perspectives, concluding with a brief reflection on how the current study applies the perspectives to better understand the unintended responses of professionals to performance management systems.

2.2 Performance management systems in the public sector

In recent decades, professional public-sector organizations in many Western European and Anglo-Saxon countries have been affected by introduction of new regimes of management and governance. Under the flag of the New Public Management (NPM), liberalization programmes have been rolled out, accompanied by a tide of efforts to improve public-sector performance. Introduction of performance management systems has been a key part of the NPM approach in many countries

(Moynihan, Pandey and Wright 2012). NPM-oriented reforms have been motivated in many cases by the belief that public-sector performance can be improved by creating an organizational context resembling that of the private sector (Van Elsacker 2007). Thus, NPM reforms build on the idea that professional organizations in the public sector should be subjected to 'businesslike performance regimes and market oriented logics' (Noordegraaf and Schinkel 2011, Pollitt and Bouckaert 2011).

To introduce such market-oriented performance regimes in the public sector, NPM relies on explicit performance standards, formulation of performance indicators, and hands-on professional management (Hood 1991, Osborne and Gaebler 1992, Kickert 1997). Indeed, the use of such systems has become ubiquitous in professional public organizations, such as universities, courts of law, schools, and hospitals, with such systems often being linked to financial rewards (Propper and Wilson 2003, De Bruijn 2007, Fryer, Antony and Ogden 2009).

The emphasis on outcomes and performance that is characteristic of the NPM approach has given rise to a mode of public steering that can be referred to as "government by performance management". Hereby, efficiency – which used to be the key concept in public steering – is redefined more broadly as "public-sector performance" and combined with specific public management objectives (Moynihan and Pandey 2005). Performance management is generally seen as an instrument for curbing public-sector spending and holding public-sector organizations and their employees accountable for their use of public funds. As such, performance management systems enable monitoring and steering of public-sector organizations by external stakeholders (Moynihan, Pandey and Wright 2012). We refer to these external stakeholders as "system managers", which may be public or private. Because of the increasing demand on public organizations to be accountable for their activities and decisions, performance management systems are also referred to as "accountability systems" (Radin 2006, Van de Walle and Cornelissen 2013).

PERFORMANCE MANAGEMENT IN HEALTHCARE SYSTEMS

Internationally, DRG systems constitute one of the foremost approaches to performance management in the healthcare sector. DRG regimes are, in essence, classification systems for defining "hospital products", which in turn provide a basis

for measurement of hospital performance. Since the 1980s, DRG-based systems have become an increasingly common basis for payments to hospitals throughout the industrialized world, particularly in the Anglo-Saxon countries and Western Europe (Busse et al. 2013).

DRG – or "case-mix" – systems begin with a classification of patients into clinically and cost homogeneous groups that allow standardized per-case payments to be made to care providers (Sutherland and Botz 2006). Medical procedures including all efforts, activities and services are thus condensed into a series of products, providing a relatively simple metric for monitoring and evaluating professional performance (Abernethy and Stoelwinder 1995, Wallace 1995, Noordegraaf 2006). DRG-based performance management systems provide system managers a tool for evaluating the functioning of hospitals, hospital departments, and medical professionals and to steer based on considerations of cost-efficiency or care expenditures (Preston 1992, Abernethy et al. 2006). The DRG system introduced in the Netherlands in 2006 can in this regard be characterized as a performance management system used by public and private system managers to monitor and steer the performance of Dutch hospitals and medical professionals.

Like other types of performance management systems, the intention of the Dutch DRG system is to stimulate improved performance of hospitals and medical professionals by arranging financial incentives, for example, performance-related reimbursement or remuneration (see, e.g., Hammerschmid, Van de Walle and Štimac 2013). However, the relationship between the incentives structure of a performance management system and the intended beneficial effects on performance is not always clear-cut in practice. The literature on performance measurement and management reports both benefits of performance management systems and perverse effects.

BENEFICIAL EFFECTS OF PERFORMANCE MANAGEMENT SYSTEMS

Much of the literature approaches performance management systems predominantly using an organizational logic. According to this logic, performance objectives are set for organizations, be they public or private, and measurable targets are derived from these objectives. Meeting these measurable targets is stimulated by offering rewards

or by the threat of sanctions (Pollitt 2013). Organizational logic takes for granted that if a performance management system is well-designed its beneficial effects on organizational performance in terms of improved transparency, efficiency, or quality will be intrinsic and self-evident (Greenhalgh et al. 2009).

The beneficial effects of a performance management system can be attributed to either its external or its internal function. The external function of a performance management system is to reduce the complexity of an organization's performance to a limited number of indicators that can be easily communicated to stakeholders for purposes of transparency, accountability, legitimization, and performance appraisal (DiMaggio and Powell 1991, De Bruijn 2007, Van Elsacker 2007, Ter Bogt 2008, Spekléa and Verbeeten 2014). Reduction of the complexity of organizational performance to a finite number of essential indicators forms a powerful instrument for communication between the public organization and its external stakeholders (De Bruijn 2007, Hammerschmid, Van de Walle and Štimac 2013). For example, by measuring waiting times for hospital care, health insurance companies gain an immediate impression of how hospitals are performing. Even though this impression may itself be flawed (Kelman and Friedman 2009), using waiting times as an indicator does provide the hospital and the health insurer a "common language" to talk about hospital performance.

Apart from simply providing a shared framework of understanding, performance management systems also aim to influence professional behaviour. in this respect, performance management systems also bring performative or constitutive effects for the actors involved (see e.g., Dahler-Larsen 2014). Standardizations and requirements put forth by the performance management system shape the context in which professionals work and can thereby alter their behaviour. A phenomenon that Bevan and Hood (2006) have vividly phrased as "What's measured is what matters" . Also concerning the Dutch DRG system, the indicators included in the system determine the focus of attention which can change the definition of quality as well as the behaviour of hospitals and medical professionals in achieving it (Bal and Zuiderent-Jerak 2011).

The internal function of a performance management system is to provide information on performance to the public organization itself, to enable it to learn, innovate, and

improve its organizational processes (Moynihan 2005a, De Bruijn 2007, Pen 2009). The performance management system thus provides incentives and key indicators for the organization to focus on in order to improve its overall performance (Osborne and Gaebler 1992, Johnsen 2005, Bevan and Hood 2006).

PERVERSE EFFECTS OF PERFORMANCE MANAGEMENT SYSTEMS

Whereas the benefits of performance management systems in the public sector have been amply addressed, divergences between the intended logic and alternative logics applied by users of such systems have received modest academic attention (Pollitt 2013). Nonetheless, as more performance management systems have been implemented in public sectors internationally, doubts have arisen about their expected impacts. Indeed, empirical studies have increasingly shown that the benefits of performance management are often accompanied by unintended and perverse effects as well (Smith 1995, De Bruijn 2002, Johnsen 2005, Bevan and Hood 2006, De Bruijn 2007, Teelken 2008, Kelman and Friedman 2009, Bevan and Wilson 2013, Pollitt 2013). For example, organizations may be strategic in the way they report on their performance (Goddard, Mannion and Smith 2004, De Bruijn 2007). They might “game the system”, intentionally misrepresenting aspects of performance to gain a strategic advantage (Osborne and Gaebler 1992, Meyer and Gupta 1994, Smith 1995, Goddard, Mannion and Smith 2000, Van Thiel and Leeuw 2002, De Bruijn 2007, Pollitt 2013). Gaming behaviours might cast a ‘corporate veil’ (Mitnick 2000: 433), concealing certain aspects of performance from system-manager stakeholders (Oliver 1991, Van Elsacker 2007).

Gaming behaviour among hospitals and medical professionals is acknowledged as an intrinsic risk in implementation of DRG-based performance management systems in healthcare (Busse et al. 2013, Pollitt 2013). “Upcoding” and “cherry picking”, for example, are considered particularly relevant in the context of DRG, or “case-mix”, systems of reimbursement for hospital and specialist care. The practice of gaming the system by misrepresenting performance on paper has been referred to as “DRG-creep” (Simborg 1981, Steinwald and Dummit 1989, Hsia et al. 1992, Silverman and Skinner 2004, Steinbusch et al. 2007). A primary concern is that upcoding reduces transparency, leading to suboptimal allocation of resources to hospitals and specialists (Osborne and Gaebler 1992, Smith 1995, Goddard, Mannion and Smith

2000, De Bruijn 2007). Similarly, adequate allocation of resources can be thwarted when a performance management system stimulates organizations to cherry pick or select cases strategically (Ellis 2001, Hasaart 2011). Organizations might select only those patients for whom high rewards for performance can be achieved relatively easily, whereas those that are difficult to handle or that bring greater risk of complications are minimized, as they are expected to be more costly to the care provider (Gay and Kronenfeld 1990).

Despite the empirical attention to the phenomenon of upcoding in DRG systems, theoretical treatments of this topic are largely lacking (Barros and Braun 2014). Instead, upcoding is often broadly defined as the practice of miscoding and misclassifying patient data to receive higher reimbursement for services provided (Lorence and Richards 2002). In this respect, upcoding is characterized as a deliberate and systematic shift in registration to improve reimbursement (Simborg 1981), facilitated by the ambiguity of medical procedures and the classification criteria (Steinbusch et al. 2007).

CONDITIONS TRIGGERING PERVERSE EFFECTS

Concerning the origins of perverse effects of performance management systems, the literature has identified a number of influential conditions. Two such conditions are especially pertinent for the current research: the impact of a performance management system on an organization and the characteristics of the professional organizational context.

Regarding the first, a performance management system is considered especially prone to perverse effects when its impact on the organization is high, because such an impact is typically directly linked to financial consequences in the form of rewards or sanctions (Jacob and Lefgren 2005, De Bruijn 2007). Indeed, perverse effects of performance management systems are commonly attributed to the financial incentives structure of such systems (Oliver 1991, Mitnick 2000, Goddard, Mannion and Smith 2000, Smith 2002, Van Elsacker 2007). In other words, if “bad performance” implies budget cuts and “good performance” leads to higher reimbursement, organizations have a clear – financial – incentive for upcoding or cherry picking. However, the reasons for such behaviour might extend beyond the

financial consequences of the performance management system, for instance, to also include reputational repercussions. Exposure of bad performance outcomes might lead to reputational damage for the organization or to intensified monitoring by regulators or other stakeholders (De Bruijn 2007, Pollitt 2013).

The second condition influencing the tendency towards perverse effects is the nature of the professional organizational context in which performance management systems are typically implemented. Overall, performance management systems may be considered a poor fit with the professional nature of many public-sector organizations (Noordegraaf 2006, De Bruijn 2007, Van Elsacker 2007). Attempts to reduce the complexity of organizational performance to standardized categories may well conflict with organizational contexts characterized by high levels of specialization, knowledge, and expertise. As such, the complexity of the professional performance of organizations like schools, universities, the police, courts of justice, and healthcare institutions is thought to have a low tolerance for the standardization propagated by performance management systems (Southon and Braithwaite 1998, De Bruijn 2002, Propper and Wilson 2003, Teelken 2008, Fryer, Antony and Ogden 2009). Moreover, the static character of performance management systems negates the highly dynamic nature of performance within professional organizations (De Bruijn 2007, Teelken 2008). Similarly, professional processes are not driven primarily by the managerial objectives that characterize performance management systems, but rather by shared normative standards and cognitive beliefs about performance, on the basis of which professional autonomy is claimed (Frankel 1989, Freidson 2001, Evans and Harris 2004, Lesser, Lucey et al. 2010, Vakkuri 2010). Thus, professional objectives and values may lead employees to respond to performance management systems in ways that conflict with the objectives set by the system managers (Moynihan and Pandey 2010, May 2011).

UNINTENDED RESPONSES ARE NOT NECESSARILY PERVERSE EFFECTS

That unintended responses do not necessarily result in undesirable outcomes has already been argued by Merton (1936) regarding unanticipated consequences of purposive social action. Nonetheless, this view does not seem to have permeated the design or the accountability processes associated with performance management systems in the public sector. The design, implementation, and justification of

performance management systems in the public sector follow primarily the classic agency theory perspective (Heinrich and Marschke 2010, Langbein 2010, Moynihan, Pandey and Wright 2012). This perspective holds public-sector organizations and their staff to be *opportunistic agents* who pursue their own preferences at the expense of the objectives of their *principals*, the system managers. Even though contemporary agency theory no longer views opportunism to be the only motivation for agent behaviour, designs of performance management systems retain this pessimistic assumption about agent behaviour (Moynihan, Pandey and Wright 2012). As a consequence, perverse effects of performance management systems are likely to be attributed to unintended responses driven by financial incentives and the opportunistic nature of the agent.

Likewise, beneficial effects of performance management systems are typically attributed to intended responses in compliance with system managers' targets and the design of the system (Greenhalgh et al. 2009). However, empirical research has shown that intended responses to performance management systems do not always result in beneficial effects. For example, system managers that make extensive use of monitoring and sanctioning to compel professionals to act in compliance with their preferences (i.e., intended responses) can crowd out professionals' own intrinsic motivations, transforming them from "knights" into "knaves" (Le Grand 2003, De Bruijn 2010, Le Grand 2010, Moynihan and Pandey 2010, Weibel, Rost and Osterloh 2010, Moynihan, Pandey and Wright 2012). In line with cognitive evaluation theory, intrinsic professional motivation may be negatively affected by the introduction of a performance management system (Deci, Koestner and Ryan 1999, Fehr and Falk 2002), particularly when such a system (financially) rewards "intended" behaviour (i.e., behaviour in line with the rules and conditions of the system) and punishes "unintended" behaviour. From the perspective of the professional, the system is interfering with his or her specialized knowledge and recognized competence in regard to the task to be completed, and hence encroaching on his or her autonomy. This is especially be so when professionals do not perceive the intended behaviour as having beneficial effects or if they do not believe unintended behaviour to have perverse effects. Indeed, when they consider reforms, such as performance management systems, to be meaningless (or even harmful) to their clients or the

general public, they are likely to resist their functioning (Deci and Ryan 1985, Tummers and Bekkers 2014).

In this respect professional values, too, can motivate unintended responses. This implies that unintended responses to performance management systems may be driven not only by immediate economic interests and opportunism, but also by intrinsic professional values. However, including value-based motivations in the interpretation of unintended responses is difficult. A consequence of retaining the classic agency perspective on unintended responses is that all motivations *other than* opportunism are ignored (see, e.g., Broadbent and Laughlin 2009, Moynihan, Pandey and Wright 2012). This narrow scope is appreciated for its simplicity, but is also problematic, as growing evidence suggests that unintended responses are indeed driven by value-based motivations as well (Brehm and Gates 1993, Dilulio 1994, Moynihan, Pandey and Wright 2012)

The current research incorporates both opportunistic and value-based interpretations of unintended responses. In line with Merton's (1936) concept of purposive action, we define unintended responses of professionals to a performance management system as *responses that purposively deviate from use of the performance management system as intended by the system managers.* To further explore the opportunistic and value-based interpretations of unintended responses, we draw on agency theory and on the professionalism theory. However, the literatures emanating from both of these strands of theory offer diverging views on unintended responses. In the literature on principal-agent relations, for example, we find both a classic paradigm and a contemporary paradigm. The literature on professional occupations presents similarly divergent views on unintended responses. For the purpose of this research, we therefore distinguish two perspectives that are pertinent to both strands. First is the managerial perspective, which emphasizes opportunistic and financial motivations for unintended responses. Second is the professionalism perspective, which is oriented towards value-based motivations for unintended responses.

2.3 A MANAGERIALISM PERSPECTIVE ON UNINTENDED RESPONSES: PROFESSIONALS AS OPPORTUNISTIC AGENTS

A HIERARCHICAL DYADIC RELATIONSHIP BETWEEN PRINCIPAL AND PROFESSIONAL AGENT

Principal-agent models applied in various academic disciplines have made a considerable contribution to our understanding of interactions between stakeholders in the public sector. Even though agency theory was developed almost simultaneously in the academic fields of economics (Ross 1973) and sociology (Mitnick 1975), the theory became most strongly rooted in economics. As part of the broader economic "theory of the firm" (Jensen and Meckling 1976, Williamson 1993), performance measurement was introduced as a managerial instrument for principals to govern relations with their contracted agents.

In this classic agency paradigm, the relationship between principal and agent reflects a contractual arrangement in which one party – the principal – delegates activities and responsibilities to another party – the agent. In general this delegation of activities stems from a lack of specialized knowledge, skills, capacity, or efficiency on the part of the principal. From the perspective of the theory of the firm, the owner of a corporation is perceived as the prototypical principal. This principal delegates responsibilities for operation of the firm to its top management, which is the prototypical agent in the contractual arrangement (Jensen and Meckling 1976). These contracts include incentives, monitoring instruments, and other forms of social control that serve to compel the agent to comply with the terms of the contract as set by the principal (Williamson 1993, Shapiro 2005). Accordingly, the classic agency paradigm focuses primarily on problems that arise in contract design by modelling the most effective ways to write and monitor contracts to minimize contract violations by the agent (Fama and Jensen 1983).

As principal-agent models have increasingly been adopted by academic disciplines other than economics, such as public administration, management, finance, accounting, marketing, and political science, the perception of the roles of the principal and the agent has changed (Eisenhardt 1989). Agency theory has shifted away from the traditional focus on the separation of ownership and control in a

contractual relationship between corporate owners and top management. For example, political scientists have applied agency theory to relationships between an executive's constituency (as principal) and a state's chief executive (as agent) (Miller 2005), but also to employer-employee and administrator-advisor relationships (Mitnick 1975). Across these various academic disciplines, the characterization of principal-agent relationship often follows the classic agency theory paradigm. In this respect, the principal and agent are in a dyadic relationship where the principal applies its formal authority position to prevent the agent from behaving in a way that would harm the principal's interests (Miller 2005). Principal-agent relationships are predominantly portrayed as 'superior-subordinate dyads' with the principal in the driver seat (Mitnick 1992: 88). In this respect, the problem presented by classic agency paradigm is chiefly one of concern to the principal.

THE PRINCIPAL'S PROBLEM: CONTROLLING THE AGENT'S BEHAVIOUR IN AN ASYMMETRICAL RELATIONSHIP

The principal's problem is one of the primary assumptions in agency theory (Ross 1973). The principal faces numerous challenges in compelling the agent to commit and work towards the principal's preferences. These challenges are attributed to two types of asymmetries that are claimed to characterize the dyadic relationship between principal and agent: (i) asymmetry in preferences between the principal and agent and (ii) asymmetry in distribution of information between the principal and agent (Miller 2005).

With regard to preferences, the classic agency paradigm holds that those of the principal and those of the agent are inherently conflictive (Waterman and Meier 1998, Miller 2005, Laffont and Martimort 2009). This assumption is mainly based on inferences on the nature of agent behaviour, taken from economic theories of agency and transaction cost economics. In the first place, behaviour of economic agents is assumed to be driven mainly by self-interest. This makes them prone to rent-seeking and opportunism with guile. As a consequence, agents are expected to conceal information, to violate the spirit of an agreement, to induce breach of contract, and to engage in other forms of strategic behaviour (Brehm and Gates 1993, Williamson 1993, Ten Heuvelhof et al. 2009). In the second place, the agency paradigm holds the principal to be risk-neutral, while agents are believed to be risk-averse

(Eisenhardt 1989, Williamson 1993, Shapiro 2005). The rationale underlying this assumption is that the principal can have an agent replaced fairly easily, while the agent is more dependent on the principal. As a result, the agent is expected to be opportunistic in diverting as much risk as possible, even when this negatively affects the principal's objectives (Shapiro 2005). Given the assumption of the agent's opportunistic nature, agents are expected to shirk, or at least, to not put forth the full effort agreed upon in the contract, whenever they get a chance (Eisenhardt 1989, Waterman and Meier 1998, Steenhuisen 2009). In this respect, the classic agency paradigm expects agency autonomy or discretionary power to result in strategic behaviour of the agent, to the detriment of the principal's preferences. To secure its own interests, the principal relies on its formal authority position to impose incentives that ensure the agent acts in accordance with the principal's preferences.

Regarding asymmetry in information, the agent is believed to hold an informational advantage over the principal. When the agent holds private information that is unavailable to the principal, it can result in suboptimal outcomes for the principal in two ways. In the first place, it may lead to "adverse selection" in contracting the agent. Hidden information on the part of the agent (Arrow 1985) may prevent the principal from being able to adequately evaluate the quality or level of expertise of the chosen agent. In other words, an agent may misrepresent his or her "type" (e.g., training, skills, and experience) causing the principal to hire a poorly qualified agent (Perrow 1986, Brehm and Gates 1997, Shapiro 2005). In the second place, information asymmetry can result in "moral hazard" for the principal. The principal is unable to observe all of the agent's actions and behaviours. This is referred to as the problem of "hidden action", which means that the principal has incomplete information on the actual efforts that the agent has made (Arrow 1985, Laffont and Martimort 2009). This may leave the principal unable to determine whether the agent's performance lives up to the letter or spirit of the contract, therefore preventing detection of shirking or underperforming agents (Williamson 1993).

In order to increase control on agent behaviour and bridge these information asymmetries, principals typically rely on performance measurement and monitoring (Shapiro 2005). Still, the information available to the principal will always be incomplete, leaving the agent with a certain extent of autonomy (Mitnick 1980). Waterman and Meier (1998: 195) claim that some level of agent autonomy is

inevitable: ‘The assumption that agents actively employ their information advantages to shirk principal attempts at hierarchical control implies at least that agents exert some level of bureaucratic discretion.’ In dealing with better-informed agents, the principal applies its formal authority to monitor and manipulate agent behaviour in order to minimize shirking and agency costs (Miller 2005).

PROFESSIONAL AUTONOMY: A LIABILITY

Following the assumption of the opportunistic nature of the agent, the classic agency paradigm holds agent autonomy to be a detrimental element in the relationship between principal and agent. This negative perspective on agent behaviour precludes features such as trust and cooperation between principal and agent (Fehr and Falk 2002). Agents are expected to exploit their autonomous position by cheating, distorting, and covering up, despite incentives and supervision (Cuevas-Rodríguez, Gomez- Mejia and Wiseman 2012). Classic agency paradigm defines autonomy as the part of the agent’s behaviour that either (i) cannot be monitored by the principal or (ii) is considered too costly to monitor (Alchian and Demsetz 1972, Mitnick 1975, Williamson 1993).

This negative interpretation of agency autonomy is also found in the literature on professionalism. It describes professions as occupational monopolies that distort the social and economic organization of a society. A main argument is that professions apply control mechanisms, such as schooling, examination, and licensure of practitioners, but also development of ethics codes that practitioners are presumed to obey. With these controls, professions create rigid entry standards and safeguard a minimum standard of professional ability (Frankel 1989, Abbott 2014). Such internal control is believed to weaken competitive pressures and hamper innovation and technological progress, as they turn professions into powerful cartels backed by licensure laws (Dingwall and Fenn 1987). Following from the above, professional self-regulation and professional autonomy are claimed to be dysfunctional. Autonomy makes professionals prone to opportunistic behaviour, and some claim that client interests would be better served if professional autonomy were weakened (Dingwall and Fenn 1987). Thus, from a managerial perspective, professional autonomy is perceived as a liability. This is also acknowledged by critics of the managerial perspective: ‘Advocates of the market and of bureaucratic management treat

professionalism as an aberration rather than something with a logic and integrity of its own' (Freidson 2001: 11).

A MANAGERIALISM PERSPECTIVE ON UNINTENDED RESPONSES OF PROFESSIONALS TO PERFORMANCE MANAGEMENT SYSTEMS

Related to the classic agency paradigm's interpretation of professional autonomy, the current study argues that – from a managerial perspective – unintended responses of professionals are detrimental to the functioning of performance management systems. Again, negative assumptions about the nature of the professional agent imply that unintended responses are driven by opportunism. The managerial perspective on unintended responses is perhaps best captured in the concept of 'renegade discretion', referring to the proneness of agents to revert to opportunistic behaviour (Dilulio 1994). Professionals are thus characterized as agents that evade the control of their principals by exploiting their advantage in expertise and skills (Brehm and Gates 1997) and by "shirking", "subverting", and even "stealing" when the opportunity arises. Driven by self-interest, professionals are expected to exploit their autonomous position for opportunistic and rent-seeking behaviour (Garoupa 2004). Although non-financial financial forms of self-interest, such as intellectual curiosity and inter-professional competition (see e.g., Abbott 2014), can motivate professionals, this research refers to self-interest as a financial motivation in accordance with the classic agency paradigm.

Even though critics have challenged these narrow assumptions about agent behaviour, the criticisms have had little effect on the application of agency theory (see, Cuevas‐Rodríguez, Gomez‐Mejia and Wiseman 2012, Moynihan, Pandey and Wright 2012). For example, scholars have argued that principal-agent relations are better understood as myriad forms of interactions between multiple principals and agents, rather than merely superior-subordinate dyads with a single principal and single agent (Waterman and Meier 1998, Brignall and Modell 2000, Miller 2005, Shapiro 2005, Steenhuisen 2009). The presumed opportunistic and self-interested nature of the agent is also considered to be an oversimplification of reality (Heinrich and Marschke 2010, Dow 2011, Moynihan, Pandey and Wright 2012). The primary reason why such criticisms have not changed the basic assumptions of the classic paradigm in the application of agency theory in practice is that such alterations would

introduce much more complexity in principal-agent models. Arguably, inclusion of many principal-agent relations instead of only dyadic relations or inclusion of non-opportunistic and non-pecuniary motivations for behaviour (i.e., behaviour that is considered irrational from an economics perspective) would make principal-agent models more intricate and less informative and straightforward (Kahneman 2003, Steenhuisen 2009, Dow 2011).

For similar reasons, we argue that the managerial perspective on unintended responses has been unable to incorporate behavioural motivations other than opportunism. For the purpose of the current research, from the managerial perspective, *unintended responses of professionals to performance management systems are considered to be opportunistic in nature and driven by financial incentives. Due to this opportunistic nature, unintended responses conflict with system manager objectives such as transparency, accountability, cost containment, and management of system-level performance and result in perverse effects of performance management systems.*

2.4 A PROFESSIONALISM PERSPECTIVE ON UNINTENDED RESPONSES TO PERFORMANCE MANAGEMENT SYSTEMS

MUTUAL DEPENDENCY BETWEEN PRINCIPAL AND PROFESSIONAL AGENT

Contrary to the classic agency paradigm, contemporary contributions to agency theory have focused on loosening the binary variables in principal-agent relations and the consequent intolerance for complexity (Miller 2005, Shapiro 2005). As we read above, scholars have challenged, for instance, the assumptions of preference asymmetry and the dyadic nature of principal-agent relations. Various authors have suggested the importance of a myriad perspective on this relationship that includes *multiple* principals and agents. This is considered to be more realistic than the view of a single isolated principal acting upon a unified and coherent set of preferences (Mitnick 1992, Miller 2005, Shapiro 2005). In practice, professional organizations often must deal with potentially conflicting interests of a variety of principals (Waterman and Meier 1998, Brignall and Modell 2000). The shift from a dyadic to a

myriad perspective, however, implies that principal-agent relations rely more on mutual dependency between parties than on only a hierarchical arrangement with the principal in the driver's seat (Sharma 1997, Shapiro 2005). In a context with multiple principals, relationships depend more on negotiation, as agents have more room to manoeuvre. In such relationships of mutual dependency, the agent's autonomy is not merely *granted* in contracts due to prohibitive monitoring costs. Professional agents also *claim* informal autonomy based on their expert knowledge, skill, and the (ir)replaceability of the services they provide (Sharma 1997, Verhoest et al. 2004, Groenleer 2009).

THE PRINCIPAL'S FORTUNE: GAINING BENEFIT FROM AUTONOMOUS AGENTS

To a certain extent, the classic paradigm leaves agency theory with a paradox. Principals seek out agents with specialized knowledge to handle the activities and decisions for which they themselves lack expertise. Yet, these same principals cannot trust the agent to make decisions for them due to their opportunistic nature, leading to the need for principals to control the decisions made by the agents (Shapiro 2005) – decisions for which the principal lacks expertise. In this respect, the classic paradigm has been criticized because it fails to consider the idea of a cooperative relationship between principal and agent. Indeed, various scholars argue that agents have more modes of action at their disposal than just self-interest (Perrow 1986, Etzioni 1988, Fehr and Falk 2002, Dow 2011, Cuevas- Rodríguez, Gomez- Mejia and Wiseman 2012, Moynihan, Pandey and Wright 2012). Thus, the motivations that drive choices agents make range from pure opportunism and self-interest to pure fiduciary and pro-social purposes. Furthermore, mutual dependency and the potentially continuous nature of the relationship between principal and agent may foster greater fiduciary and pro-social behaviour on the part of the agent as well as of the principal (Mitnick 1975, Perrow 1986).

A growing body of evidence on value-based, pro-social, and non-pecuniary motivations supports the view that agent behaviour is not determined by opportunism alone (Brehm and Gates 1997, Perry and Hondeghem 2008, Moynihan, Pandey and Wright 2012). Examples of value-based motivations are provided by Dilulio (1994: 277) in the concept of the 'principled agent'. In contrast to the classic agency paradigm, principled agents are said to act in accordance with their principal's

preferences and to not behave opportunistically, even in the absence of pecuniary incentives to deter this kind of behaviour (Moynihan, Pandey and Wright 2012). This view accords with the *stewardship theory* (Donaldson 1990, Davis, Schoorman and Donaldson 1997, Van Slyke 2007, Heinrich and Marschke 2010), which holds that no conflict of interest necessarily exists between principals and agents that prevents the agent from acting in the best interests of the principal. Unintended responses of such principled agents may be driven by professional norms, values, standards, and ideals (Dahler-Larsen 2014). In this light, agents can be seen as good stewards of their organization, internally motivated to achieve outcomes that are desirable for all parties involved. This scenario allows the principal to benefit from agents that make use of their autonomous position and expertise in carrying out the tasks and decisions delegated to them.

PROFESSIONAL AUTONOMY: AN ESSENTIAL COMPONENT

In contrast to the managerial perspective, contemporary agency theory does not consider professional autonomy to be necessarily detrimental to the principal's preferences in principal-agent relations. Instead, contemporary agency theory, as well as congruent views in the literature on professionalism, emphasizes a positive interpretation of agent autonomy. Rather than self-interest as the predominant explanation, autonomy is perceived as instrumental for safeguarding professional values from interfering external influences (Freidson 2001, Noordegraaf 2013, Tummers and Bekkers 2014). Even though professional values are a rather intangible concept, they are adequately understood as a collective occupational interest in improving standards of quality (Dingwall and Fenn 1987, Noordegraaf and Van der Meulen 2008). From this perspective, a profession – as an institution – serves as a normative reference group that defines the ethics and norms governing professional behaviour and outcomes (Frankel 1989, Evetts 2006). To this end, professions create social and moral ties between the practitioners that enter a community of common purpose and bind members together by shared values, training, and aspirations (Merton 1982, Frankel 1989). For the collectivization of professional norms and values, a profession needs to institutionalize a 'process of self-criticism, codification, and consciousness raising that reinforces or redefines the profession's collective responsibility' (Frankel 1989: 112). This collective

responsibility serves to shield an occupation from external influences that interfere with 'the professional soul' (Freidson 2001: 213).

In this light, professional autonomy is considered to be a defining component of professionalism (Eraut 1994, Freidson 2001, Tummers 2012). By virtue of autonomy, professionals claim the right to evaluate the demands of their principals. Autonomy enables professionals to criticize or refuse to comply with these demands. Such refusals or acts of deviance, however, are not based on opportunism and financial self-interest, but on a collective interest in preventing the profession's core values from being undermined (Freidson 2001). This perspective on professional autonomy resembles the concept of "the principled agent" driven by the will to excel and to serve the public interest (Dilulio 1994). However, even though the actions of the agent may be perceived as beneficial for a particular community or even society as a whole, they may lead to agency costs incurred by the principal (Jacobides and Croson 2001).

A PROFESSIONALISM PERSPECTIVE ON UNINTENDED RESPONSES OF PROFESSIONALS TO PERFORMANCE MANAGEMENT SYSTEMS

Following contemporary agency theory's interpretation of professional autonomy and concomitant views from professionalism theory, we argue that – from a professionalism perspective – unintended responses of professionals are a functional element in the operation of performance management systems. In contrast to the managerial perspective's negative assumptions about the nature of the professional agent, the professionalism perspective views the professional agent from a positive vantage point. Professions and professionals are held to be internally governed by collective norms and driven to improve standards of quality to the benefit of the public interest and, by extension, in the interests of their principals. Professionals are thus portrayed as agents that apply their expertise, skills, and autonomous position on behalf of their principals. This, however, does not mean that a professional agent always acts in accordance with a principal's demands. After all, a principal may lack the knowledge and expertise to adequately assess the consequences of some demands. The ability of an agent to deviate from external demands is seen as a fundamental difference between our earlier mentioned "knave" and "knight" (Le Grand 2003), or between a specialist and a professional.

"Specialists… serve their patrons as freelancers or hired guns: their loyalties lie only with those who pay them. They accept the choices of their patrons and serve them loyally as best as they can. In light of their specialized knowledge such servants may advise their patrons to qualify or modify their choices, but they do not claim the right to make choices for their patrons, to be independent of them, even to violate their wishes. That, however, is the kind of independence claimed by professionalism. The professional ideology of service goes beyond serving others' choices" (Freidson 2001: 122).

Unlike the managerial perspective, professionalism's positive perspective on the nature of the professional agent allows inclusion of a wide range of pro-social and value-based motivations for unintended responses. Yet, this same positive assumption may exclude opportunism and self-interest as explanations for unintended responses of professionals. Apart from the view that unintended responses by professional agents are not necessarily perverse (Evans and Harris 2004), the professionalism perspective differs from the managerialism perspective in its focus on the outcomes of performance management systems. Whereas managerialism is primarily concerned with professional performance in terms of system-level outcomes (e.g., transparency, accountability, and cost containment), professionalism focuses primarily on client-level outcomes. Professional decision-making rests mainly upon micropractices and outcomes related to individual cases, clients, or patients (Løwendahl, Revang and Fosstenløkken 2001, Van Damme, Kober and Kegels 2008, Noordegraaf and Schinkel 2011).

The current research notes that while the professionalism perspective incorporates pro-social and value-based motivations for the interpretation of unintended responses it is less able to incorporate opportunism and pecuniary incentives. For our purposes here, the professionalism perspective holds that *unintended responses of professionals to performance management systems are instrumental for shielding professional values from harmful external influences. Unintended responses conflict with system managers' preferences, but are employed when these preferences conflict with professional standards for case-level outcomes.*

2.5 THEORETICAL CONTRIBUTION OF A DUAL-PERSPECTIVE ANALYSIS

The literature reviewed in this chapter presents the managerial and professional perspectives predominantly separately in interpreting unintended responses to performance management systems. As the two perspectives each take a distinct approach to unintended responses (table 2.1), this separation may hinder comprehensive explanations of the phenomenon of unintended responses. With the use of a dual perspective analysis that incorporates both the professional and the managerial perspective the two views might serve to complement one another, resulting in a richer and more realistic interpretation of unintended responses to performance management systems.

Table 2.1 Key characteristics of the managerial and professional perspectives

Characteristics	Managerial perspective	Professional perspective
Focus	Focus on system-level objectives	Focus on client-level objectives
Principal-agent relationship	Hierarchical relationship between system manager and professional	Relationship of mutual dependency between system manager and professional
Nature of the agent	Professionals as opportunistic agents	Professionals as good stewards acting in the best interest of system managers and/or clients
Motivation for unintended responses	Unintended responses driven by financial incentives	Unintended responses driven by professional values
Effect of unintended responses	Conflictive with system objectives	Safeguarding professional values from undermining external influences

A single-perspective interpretation of unintended responses is also problematic in that both perspectives are challenged by their own blind spots. The managerial perspective, which is the dominant theoretical framework for analysis of unintended responses to performance management systems (Heinrich and Marschke 2010, Moynihan, Pandey and Wright 2012), fails to accommodate motivations other than financial incentives and opportunism. Yet, the professional perspective focuses

primarily on value-based motivations, paying little attention to opportunism, financial incentives, and accumulative system-level effects of unintended responses to performance management systems.

The current research thus elects a dual perspective for analysis of the unintended responses of professionals to the Dutch DRG system. This linking of the managerial and professionalism perspectives is expected to advance theory on performance management systems in four ways:

1. It balances the financial incentives and value-based motivations involved in the practice of unintended responses by medical professionals.
2. It reveals conflicts between system-level objectives and client- or case-level objectives and how such conflicts contribute to the phenomenon of unintended responses.
3. It allows us to reflect on measures used by system managers and the potential to reconcile conflicts between a managerial and a professional perspective.
4. It enables us to reflect on perverse and beneficial effects of unintended responses.

This study looks specifically at the unintended responses of professionals in using the DRG system introduced in the Dutch healthcare sector. The managerial and professional perspectives are applied to the motivations expressed by medical professionals for their unintended responses, but also to the motivations given by system managers for the measures they take in response to professionals' unintended responses. As a result, the unintended responses of medical professionals – as well as the remedial measures taken by system managers – are found to be in line with the managerial perspective, the professionalism perspective, or both perspectives (table 2.2).

Table 2.2 Behavioural responses of medical professionals and system managers in relation to the theoretical perspectives

		Theoretical Perspectives	
		Managerial perspective	Professional perspective
Actors	Medical professionals	Use of unintended responses motivated by financial incentives	Use of unintended responses motivated by professional values
	System managers	Measures of system managers that mitigate the influence of financial incentives	Measures of system managers that mitigate conflicts with professional values

Here, professionals are considered as acting in accordance with the theoretical professional perspective if their unintended responses are motivated by value-based considerations. However, if their unintended responses are motivated by financial incentives, they might also be considered as acting in accordance with the theoretical managerial perspective. Similarly, measures that system managers take to address the unintended responses of medical professionals can be associated with either or both perspectives.

CHAPTER 3 METHODOLOGY: AN INTERPRETATIVE CASE STUDY

3.1 INTRODUCTION

As addressed in the previous chapter, much of the existing research on unintended responses is mono-perspective. In other words, most studies explain unintended responses by focusing either on opportunism and financial incentives or on value-based motivations. Rarely does research incorporate both perspectives. The current study combines both explanatory factors to interpret the phenomenon of unintended responses. It makes use of a contextualized approach, investigating the phenomenon of unintended responses in the environment of medical professionals and system managers.

This chapter presents the research methodology and design. Section 3.2 defines the research case. Section 3.3 addresses the design of the case study. Section 3.4 elaborates on the selected interview candidates, which represent either medical professionals or system managers. After that, section 3.5 discusses the techniques used to collect and analyse the interview data. Section 3.6 concludes the chapter with a reflection on the validity and potential generalizability of the findings of this research.

3.2 DEFINITION OF THE CASE

To analyse the social phenomenon of unintended responses to performance management systems, this research explored the unintended responses of medical professionals to the Dutch DRG system. This case was selected for study based on the conditions identified by performance management theory as triggering perverse effects. Two conditions, in particular, led to the choice of the DRG system for study: (i) the professional nature of hospital and medical specialists' performance and (ii)

the direct financial impact of the DRG system on reimbursement of hospitals and remuneration of medical specialists.

To enhance understanding of the complex social phenomenon of unintended responses we chose a layered single-case study design. Thus, instead of studying cases of unintended responses from one or two medical specialties in a number of medical institutions, this research takes the phenomenon of unintended responses as "the case" under study (Tellis 1997), consisting of two layers. The first layer incorporates practices of unintended responses by medical professionals and motivations underlying these practices. The second layer involves measures taken by system managers to curb unintended responses and the motivations underlying these. The two layers are not comparative, but instead make complementary contributions to understanding the phenomenon of unintended responses to performance management systems (see Caronna 2010). The layer of the medical professionals provides insights into the types of unintended responses that occur and the rationale underlying them. The layer of the system managers sheds light on the types of measures taken to curb unintended responses.

3.3 CASE STUDY DESIGN

The present research is designed to provide a holistic understanding of the phenomenon of unintended responses to performance management systems. Case studies are a suitable research strategy for such comprehensive, in-depth study of complex social phenomena with respect to the dynamics of the natural setting (Eisenhardt 1989, Tellis 1997, Harling 2002, Baxter and Jack 2008, Caronna 2010, Yin 2014). In design, case studies can include single or multiple cases (Yin 1984). For the purposes of this research, a single-case design is used. The choice for a single-case design was motivated by the intention to detect a wide range of types of unintended responses and measures to curb them. The single-case design allows for extensive and in-depth analysis of the phenomenon of unintended responses, while also considering the lack of specialty-specific information on unintended responses we faced at the start of this research. Therefore, no rules or arguments could initially be made for inclusion or exclusion of specific medical specialties or types of medical

institutions. Nonetheless, a consequence of the choice for a single-case study design is a limited potential to compare unintended responses between different medical institutions or medical departments.

This study applied qualitative research methods to study the unintended responses of medical professionals to the Dutch DRG system. Qualitative methods deepen our understanding of complex social phenomena in ways that conventional quantitative research techniques cannot. Qualitative research is particularly suitable for the study of phenomena through experiences and interpretations of events by actors with differing stakes and roles (Sofaer 1999). Complementary use of quantitative research methods was expected to contribute little to the purpose of this research, which was to deepen understanding of unintended responses to the Dutch DRG system.

In the first place, quantitative methods would shed light primarily on the prevalence of unintended responses. While this would allow claims to be made about magnitude, for example, in terms of the financial impact of the phenomenon of unintended responses, it was expected to contribute little to our understanding of it in terms of underlying process and trade-offs. In addition, such research on the Dutch DRG system already exists (see, e.g., Hasaart 2011). In the second place, the nature of unintended responses complicates the use of database records for understanding the phenomenon. Most unintended responses to the DRG system manifest as inconsistencies between the performance registered in databases and the performance actually rendered by the medical professionals involved. Again, comparing different databases might provide insight into the prevalence of unintended responses, but it could provide no explanation of why such responses arise.

As this research sought a holistic understanding the phenomenon of unintended responses, the case study applied was designed as partly exploratory and partly explanatory (Yin 1999, Fisher and Ziviani 2004). First, it is exploratory because it identified types of intended responses by analysing experiences of medical professionals with practices of unintended responses. Second, it is explanatory due to its focus on understanding these unintended responses by investigating the motivations expressed by medical professionals for using them, but also because of

its analysis of the measures that system managers apply to curb these responses and also their associated underlying motivations.

3.4 CASE SELECTION

To examine the phenomenon of unintended responses of medical professionals to the Dutch DRG system, this research relied on document analysis and semi-structured in-depth interviews with representatives of the two layers in the case. The current section describes the sampling strategy for selecting the interview candidates representing both layers: the medical professionals and the system managers.

Selection of representatives of medical professions

Sampling of interview candidates representing the layer of the medical professionals followed a three-step procedure. Firstly, the medical institutions to be included were selected. Secondly, within these institutions, medical and administrative departments were selected. Thirdly, medical staff within these departments were selected for interviews, complemented by administrative staff involved in the DRG system and representatives of medical specialties and hospitals.

Selection of medical institutions

Interview candidates were recruited in six separate medical institutions. These represented three types of medical institutions: university hospitals (UHs), general hospitals (GHs), and independent treatment centres (ITCs). One UH and one GH were selected, alongside four ITCs. The choice for these three types of medical institutions was based on maximum variation sampling principles (Patton 2001, Vitcu et al. 2007). The conditions proposed by performance management theory as triggering unintended responses suggested the choice of these types medical institutions, as they offered high potential variance in the professional nature of their performance and the direct financial impact of the DRG system. UHs are associated with a higher complexity of care than GHs. In turn, complexity of care in a GH is likely to be higher than that in most ITCs. By including all three types of medical

institutions, the sample is thought to offer the maximum possible variation in complexity of care and potential effects thereof on unintended responses.

In a similar manner, remuneration of medical specialists varies over the three types of medical institutions. In UHs, all medical specialists are in hospital employment; in GHs some medical specialists are in hospital employment whereas others are self-employed and organized in specialty-specific “medical enterprises” within the hospital. In the ITCs, medical specialists are almost exclusively self-employed. By including all three types of medical institutions, again, maximum variation in employment status, and thus financial impact of the DRG system, is thought to have been achieved.

Given the precondition that the three types of medical institutions be represented in our case study, the further choice of the specific medical institutions to be included was determined primarily by accessibility, cooperation, and organizational support in relation to shared connections and professional network proximity.

Selection of medical departments

Maximum variation sampling was also applied in selecting the medical departments in which interview candidates would be recruited. Interview candidates were approached from a wide range of surgical and non-surgical medical departments, all of which registered DRG “care products” for their patients. In this respect, the selection of medical departments reflects a genuine cross-section of medical institutions in the Netherlands. Medical departments with limited involvement in DRG registration, such as anaesthesiology and medical microbiology, but also nursing staff, were excluded from the selection. The interviews conducted in the six medical institutions included in this research covered fourteen medical specialties:

1. gynaecology
2. orthopaedic surgery
3. urology
4. plastic surgery
5. surgery
6. psychiatry
7. eye surgery
8. internal medicine
9. rheumatology
10. paediatrics
11. dermatology
12. radiology
13. cardiology
14. oncology

Selection of interview candidates representing the medical professionals

This research relied on snowball sampling for selection of medical specialists for interviewing (Goldstein 2002, Morgan, Muetzelfeldt and Curran 2008). By this technique, the medical professionals interviewed were asked to recommend colleagues from a different medical specialty and representatives of administrative departments in the same hospital to take part in the survey as well.

Snowball sampling was considered a suitable technique for two reasons. First, hospitals and medical professions were considered to be rather closed networks (West et al. 1999). A risk factor for this research was thus that haphazardly addressing medical professionals might evoke distrust, making it difficult to gain their confidence and cooperation. Being recommended by a fellow medical professional was expected to help persuade prospective participants to cooperate.

Second, unintended responses to performance management systems are a delicate research topic, particularly because exposure of unintended responses may have negative consequences for the interview subject or the medical institution in question. Indeed, unintended responses to the DRG system by medical professionals in the Netherlands has been associated with unacceptable and even illegal behaviour and fraud. Therefore, participation in this research could be perceived as a liability, possibly leading to exposure of the medical professional, department, or medical institution concerned. We anticipated that referrals by colleagues would – to some

extent – vouch for our integrity and trustworthiness, and increase the likelihood of participation.

Previously interviewed candidates thus served as references or intermediaries in inviting new candidates to participate. As per our request, the interview candidates primarily recommended other medical specialists working in different medical departments. However, some also referred representatives of managerial and administrative departments within the same medical institution or representatives of a professional association for their medical specialty.

Especially at the UH, several respondents referred us to interview candidates from administrative and managerial departments. These departments were involved in medical or commercial management, but also in managing medical registration, information systems, planning and finance, and hospital-wide control. Those in these roles were well aware of issues posed by the DRG registration practices of medical specialists in specific departments and of cross-cutting matters pertaining to multiple medical departments. Thus, inclusion of interviewees from these administrative units provided us a greater general comprehension of the functioning of the DRG system within the medical institution, while also offering clarification of specific practices of unintended responses and their contexts.

Respondents, furthermore, regularly recommended that we interview people involved in professional associations nationally representing medical specialists or medical specialties and in umbrella organizations representing medical institutions. This led us to include eleven interviewees from the following eight representational bodies in our selection of medical professionals:

1. National Association of Medical Specialists (OMS)
2. Netherlands Paediatric Association (NVK)
3. Netherlands Society of Cardiology (NVVC)
4. Netherlands Urology Association (NVU)
5. Netherlands Neurology Association (NVN)
6. Netherlands Federation of University Medical Centres (NFU)
7. Netherlands Federation of General Hospitals (NVZ)
8. Netherlands Federation of Independent Treatment Centres (ZKN)

Inclusion of these representational bodies allowed us to relate the outcomes of the interviews conducted at the individual level to topics of national debate.

Selection of representatives of the system managers

Sampling of interviewees representing the layer of the system managers was guided by insights gathered from document analysis. This provided an overview of the public and private organizations involved in the functioning of the DRG system. To gain a fuller view of the phenomenon of medical professionals' unintended responses to the DRG system, 17 system managers were interviewed. These 17 interview candidates represented five public system management organizations and four private system management organizations.

Selection of representatives of the public system managers

The public system-managing organizations included in this research were the following regulators and authorities:

1. Ministry of Health, Welfare and Sport (VWS)
2. Health Care Inspectorate (IGZ)
3. Health Care Authority (NZa)
4. Health Care Insurance Board (CVZ)
5. DBC Maintenance (*DBC Onderhoud*)[4]

The interview candidates from these five public system-managing organizations were selected using the same snowball sampling technique described earlier. Like the selection of medical professionals, the interviewees representing the public system managers were sought via referrals from the previous interview candidates.

[4] Strictly speaking, DBC Maintenance is a foundation, which in legal terms means that DBC Maintenance is a private corporative body. Nonetheless, DBC Maintenance acts as an executive organ and is fully funded by the Dutch Health Ministry and the NZa. In accordance, references to the governance of the DRG system often include the triangle of NZa, CVZ and DBC Maintenance. See for example, www.nza.nl/binaries/21047/21050/Convenant-DBCO-NZa-CVZ.pdf (accessed 27 February 2013).

Selection of representatives of the private system managers

The private system management organizations represented in this research include the umbrella organization for health insurers in the Netherlands and three individual health insurance companies, namely:

1. Netherlands Association for Health Insurers (ZN)
2. Research Institute for Dutch Health Insurers (VEKTIS)
3. Health Insurance Company A
4. Health Insurance Company B
5. Health Insurance Company C

The snowball sampling technique was also used to select interview candidates among private system managers.

3.5 DATA SOURCES

As is customary for case studies, this research uses multiple data sources, with the two main sources being document analysis and in-depth semi-structured interviews (Eisenhardt 1989, Reid, Flowers and Larkin 2005, Yin 2014). Document analysis provided initial insights and context as well as primary information for the interviews with medical professionals and system managers.

DOCUMENT ANALYSIS

Via document analysis, detailed information was obtained on the development, functioning, and outcomes of the DRG system. The documents consulted were categorized into three groups: policy documents, reports and monitors, and articles from practitioners forums.

Constitutional documents issued by the public system managers of the DRG system included parliamentary correspondence from the Ministry of Health, Welfare and Sport; regulatory and procedural treatises, and mission statements issued by the regulators; as well as system design documentation and user instructions issued by the maintenance organization.

The second category, that of reports and monitors, provided information on the functioning of the DRG system and the Dutch healthcare system as a whole. Again, many of these reports and annual or biannual monitors were issued by the public DRG system managers. Nonetheless, reports and evaluations issued by health insurance companies as private system managers were also analysed. Finally, monitors of trends and developments in the healthcare market produced by various private consulting firms proved valuable for the purposes of this research.

The third category of documents is articles published on forums for medical practitioners and managers. During the course of this research we kept ourselves informed of developments concerning the DRG system by tracking articles posted on Internet forums. Forums for medical practitioners were consulted (e.g., www.skipr.nl) alongside those on health management topics (e.g., www.zorgvisie.nl), complemented by articles published in various Dutch newspapers (collected using Krantenbank/LexisNexis) since the introduction of the DRG system. Furthermore, we studied all articles referring to the DRG system published in a Dutch journal for medical practitioners (*Medisch Contact*) in the period from 2005 to 2010. Findings from this analysis of practitioner documentation provided inputs for our interviews with medical professionals and system managers.

INTERVIEWING

Whereas some of the documents studied mentioned unintended or undesirable responses of medical professionals to the DRG system, the documents shed little light on the processes and trade-offs that led medical professionals to respond in such a way. For such information, this research relied on in-depth, open-ended, semi-structured interviews (Strauss 1987, Reid, Flowers and Larkin 2005). Medical professionals and representatives of the public and private system managers were asked not only for their perceptions of unintended responses to the DRG system, but also to share their experiences and examples of concrete behavioural responses or measures in relation to this phenomenon (Glaser 1992).

For this research, 74 face-to-face interviews were held with a total of 84 interviewees. The interviews were conducted either one-on-one or in a dual interview setting with at most two respondents interviewed simultaneously. The medical

professionals' perspective on unintended responses was derived from interviews with 67 respondents. The system managers' perspective on unintended responses rests on interviews with 17 respondents. Especially for the interviews conducted in the medical institutions, we began with one or two interviews with respondents favourably disposed to participation in this research (e.g., a former colleague working in one of the medical institutions) (Strauss 1987). These contacts facilitated further access within the organization and provided the first names of other potential interview candidates. Interviews took place from 2007 to 2012.

The majority of respondents were invited to participate by email, though occasionally, we contacted a potential interview candidate by telephone or via direct introduction by someone previously interviewed. The email invitations noted the following aspects:

- the general aim of the study
- the name of the professional who suggested the recipient as a suitable interview candidate
- a brief overview of the topics the respondent would be asked to reflect on
- arrangements for confidentiality and anonymity of participants
- a request that the candidate allow recording of the interview
- the approximate duration of the interview

Use of snowball sampling to expand the list of respondents was expected to result in a bias towards medical professionals who were considered DRG "experts" or "trouble-shooters" within their medical institution. Therefore, the invitation emphasized that all medical professionals working with the DRG system were eligible to participate. Nonetheless, medical professionals most involved with the DRG system (e.g., DRG spokespersons, coordinators, or trouble-shooters for their medical department) may have been most willing to accept the interview invitation.

Due to the delicacy of the topic and the risk of harmful consequences stemming from media exposure of unintended responses, the invitation also stressed anonymity, confidentiality and the academic nature of the research (Goldstein 2002). For respondents from the medical institutions, anonymity was assured for both the individual respondents and the medical institutions they worked for. Of all medical

practitioners invited for an interview, approximately half accepted the invitation. The remainder either did not reply to the invitation and reminders or rejected the invitation, mainly citing time constraints as the reason. The following chapters refer to the interviews by interview number. Respondents from representational bodies of medical institutions and specialties and the representatives of the system managers are referred to by both interview number and the name of their organization. See appendix A for a full anonymized list of interview subjects and their affiliations.

To prepare for the interviews with the medical professionals at the selected medical institutions, articles were reviewed referring to the DRG system and published in the Dutch journal for medical practitioners *Medisch Contact* in the 2005 to 2010 period. Reports of conflicts experienced by medical professionals in using the DRG system and unintended responses to the DRG system were incorporated in the interview script. Six pilot interviews were conducted: three with medical professionals – two at different GHs and a dual interview at a UH – and three with system managers – one representative of a private system manager and two representatives of different public system managers. Firstly, these pilot interviews contributed to our general understanding of the functioning of the DRG system in practice. Secondly, they served to check the adequacy of our script for the later semi-structured interviews with the medical professionals and to signal flaws or omissions of relevant issues concerning their unintended responses to the DRG system.

Interview questions were open-ended and focused on experiences in working with the DRG system (cf., Thomas and James 2006). The questions used in the interviews with the medical professionals related to the following:

- respondent's position and working history
- experience and involvement in DRG registration
- knowledge of other forms of medical registration
- the diagnoses and treatments available for registration in their medical specialty
- regulations and instructions for registration in their medical specialty
- perceived differences with other medical departments
- perceived functioning of the DRG system within their medical institution

Respondents were also asked to comment on unintended responses gathered from the documentation study and unintended responses mentioned by medical professionals in preceding interviews. These examples covered areas such as highly complex care, multi-morbidity, multidisciplinary treatment, and regulations or conditions for DRG registration. The respondents were given an example and asked to comment on the way the DRG system had been used in that example and the extent that the example was recognizable from their own field of medicine and how relevant the issues presented were to their own daily practice. If the examples were familiar, respondents were asked to elaborate on their own related experiences, contexts, and considerations. In addition, they were asked to what extent the practices described were in line with what they considered to be use of the DRG system as intended by the system managers. To avoid a hindsight rationalization bias, a real-time setting was approached by discussing actual behaviours in particular cases insofar as possible. Most of the interviews with the public and private system managers were conducted at a later stage of the research. They served primarily for reflecting on the unintended responses reported by the medical professionals. These reflections incorporated national developments and trends in unintended responses, as well as measures and motivations for curbing unintended responses of medical professionals to the DRG system.

All respondents gave us permission to record the interviews, though due to technical failure of the recording device a few were not successfully recorded. In addition to these recordings, notes were taken during the interviews. The majority of the interviews, particularly those with the medical professionals, were transcribed verbatim. Two student assistants assisted in interview transcription.

3.6 ANALYSIS

Operationalization of unintended responses to performance management systems

The choice to focus this research on unintended responses means that responses to the performance management system that are in accordance with the system's intention are outside the study's purview. Nonetheless, unintended responses cannot be adequately apprehended without a notion of what are considered to be intended

responses. A complicating factor, however, is that – like the corresponding concept of strategic behaviour (see, e.g., Ten Heuvelhof et al. 2009) – the line between intended and unintended responses is inherently ambiguous. In hindsight, behavioural responses to performance management systems are commonly labelled *unintended* if their effect is interpreted as *undesirable* from an actor-specific perspective.

However, not all unintended responses are necessarily undesirable, nor are all undesirable outcomes caused by unintended responses (Merton 1936). Thus, it may be difficult to determine what responses should be considered unintended. For example, this label could be applied to rule-bending responses that may conflict with the *spirit* of system rules, or it may be considered to apply only to rule-breaking responses that conflict with the *letter* of a performance management system.

In accordance with this ambiguity, the current study refrained from operationalizing the concept of unintended responses a priori. Rather, it did so incrementally through the interviews with the medical professionals. Ultimately, responses were considered unintended if medical professionals believed them to deviate from the intended use of the system. These self-reported unintended responses were verified in interviews with other medical professionals, complemented by our analysis of policy and practitioner documents related to the DRG system. The unintended responses reported by the medical professionals were verified in the interviews with system managers through the measures and motivations reported for curbing unintended responses.

Coding unintended responses

The verbatim transcripts of the interviews with medical professionals were used to code unintended responses and their motivations. In the coding process, a three-step procedure was followed. First, in vivo coding was used to collect quotations on unintended responses and related motivations from the interview data. Then, interpretative coding was used to cluster unintended responses into internally coherent categories. Finally, four types of unintended responses were derived from these categories in accordance with the theoretical concepts of upcoding and cherry picking addressed in performance management theory and the literature on DRG

systems. The coding of system-managers' measures and motivations for curbing unintended responses followed the first and second steps of this procedure.

In vivo coding

The transcriptions of the interviews with the medical professionals were scrutinized for descriptions of concrete experiences with unintended responses and for the corresponding explanations and motivations mentioned by the respondent (Glaser and Strauss 2009, Saldaña 2009). For each respondent, quotes on unintended responses and motivations were collected and linked to the corresponding respondent number. The quotes collected for all interviews with medical professionals were gathered into a single document following the design structure of the Dutch DRG system. Effectively this meant that all records of unintended responses of medical professionals were categorized as relating to one of three groups:

1. registration of the diagnosis
2. registration of the treatment
3. the combination of diagnosis and treatment

Measures and motivations mentioned by the system managers for curbing unintended responses were gathered into a separate document using in vivo coding. To collect the relevant quotes, verbatim transcripts of interviews were used when available. In the absence of a verbatim transcripts, notes taken during the interviews were used to locate relevant passages.

Interpretative coding

Interpretative coding was used to cluster the in vivo codes into internally coherent categories (see, e.g., Fereday and Muir-Cochrane 2008). In this step, the quotes collected from the medical professionals were reviewed and categorized based on apparent similarities in the context of or motivation for the unintended responses. The categories resulting from this interpretative coding technique (unintended responses related, e.g., to multiple medical problems, to the use of high-cost medication, to selection of low risk patients, etc.) delineate the structure of the empirical analyses of the unintended responses of medical professionals in chapter 5. Likewise,

interpretative coding was used to categorize the quotes collected from the system managers on their motivations and measures for curbing unintended responses. These categories (e.g., introducing more restrictions in registration and benchmarking medical institutions) were used to the structure the empirical analyses related to the system managers in chapter 6.

Typology of unintended responses

The theoretical concepts of upcoding and cherry picking were further specified into four types of unintended responses. Three types of unintended responses were identified in relation to upcoding, which in general refers to misrepresentations of performance on paper (Simborg 1981, Hsia et al. 1992, Silverman and Skinner 2004, Steinbusch et al. 2007): registration multiple care products per patient, “creative” diagnosis registration, and “creative” treatment registration. One type of unintended response was identified in relation to cherry picking, that is, strategic selection of patient cases (see, e.g., Ellis 2001, Levaggi and Montefiori 2003, Berta et al. 2010, Hasaart 2011). This typology enabled us to transcend a context-specific and anecdotal nature of unintended responses (Schutz 1962, Dreher 2003, Kim and Berard 2009) and to link them with existing concepts in the academic literature on performance management and DRG-based systems.

An interpretative analysis of unintended responses

To analyse unintended responses from the perspective of the system managers, this research relied on interpretative policy analysis, a technique commonly applied in the field of public policy and administration. In line with constructivist grounded theory (see, e.g., Glaser 1992, Thomas and James 2006, Glaser and Strauss 2009), interpretative policy analysis holds that conflict areas – such as unintended responses to performance management systems – are best understood when studied in situ incorporating multiple coexisting actor perspectives and frames of reference (Rein and Schon 1994, Fischer 2003, Yanow 2007, Hoppe 2011). This approach was deemed particularly appropriate for the current study, as it allowed interpretation of the phenomenon being investigated based on multiple strongly-held perspectives and resulting in a more balanced and in-depth view (Hoppe 2011).

To analyse unintended responses of medical professionals, associated interpretative phenomenological analysis was used. This technique, commonly applied in the field of health psychology, provided insight into the practices and motivations of medical professionals by closely examining their experiences with unintended responses (phenomenology) and sense-making constructs (interpretation) (Reid, Flowers and Larkin 2005, Smith, Larkin and Flowers 2009). Unintended responses and their contextual embedment are therefore presented separately from the motivations that explain why they were used, insofar as possible. This disentanglement of behavioural responses from the actor-specific motivations provided for them, enabled us to include diverging interpretations of the same behaviour. The managerialism and professionalism perspectives derived in the theoretical framework of this research provided guidelines for our reflections on these diverging interpretations of unintended responses in conjunction.

As interpretative phenomenological analysis and interpretative policy analysis are inductive analytical approaches, a rigidly defined theoretical framework was considered unsuitable for this research. Unlike deductive analytical approaches and their derivative theoretical assumptions, interpretative analyses aim to explain a complex social phenomenon by exploring different interpretations. To this end, interpretative analyses tend to avoid a priori delineated data, assumptions, and hypotheses (Walsham 1995, Reid, Flowers and Larkin 2005). Therefore, the theoretical insights presented in chapter 2 served as guidelines for analysing the phenomenon of unintended responses, rather than as a specification of how the phenomenon of unintended responses should be studied.

3.7 VALIDITY AND GENERALIZABILITY

Validity of research findings

In the social sciences, reliability and validity have been foremost concerns in the academic debate, in particular for case study research (King, Keohane and Verba 1994, Golafshani 2003, Flyvbjerg 2006, Eisenhardt and Graebner 2007, Groenleer 2009). Concerns about reliability and validity are likely to be even greater regarding concepts as ambiguous as “autonomy” or “unintended responses of professionals to

performance management systems" (see, e.g., Groenleer 2009). Unintended responses, like other forms strategic behaviour, tend to be covert. This is not necessarily because unintended responses are straightforwardly illegal, but more because they are deemed unacceptable. As this research will show, unintended responses are associated more with professionals "bending" the rules by using loopholes in the system than with explicitly breaking the rules (De Bruijn 2007). Additionally, concerns for validity would affect corresponding research using quantitative methods as well. Unintended responses are difficult to measure due to their ambiguous and covert nature. As unintended responses typically manifest as discrepancies between performance "on paper" and "real" performance, attempts to measure them inevitably face the question of whether the quantities derived do represent the phenomenon they claim to measure. While a quantitative approach may be suitable for detecting discrepancies, for example, by comparing DRG registration data to other medical data registration systems (see Hasaart 2011), quantitative approaches would have little power to interpret any discrepancies thus uncovered. Challenges concerning reliability and validity are perhaps more acute in relation to the ambiguous nature of the phenomenon of unintended responses than regarding the use of qualitative instead of quantitative research techniques.

This study used four techniques to verify and improve the validity of the findings. The first was **triangulation of data sources**. Thus, the data gathered from the in-depth interviews was combined with an intensive analysis of policy and practitioner documentation (Yin 2014). The second was **triangulation of interpretations and perspectives**. The concept of "unintended responses" was defined in the interviews with medical professionals and validated in interviews with other respondents. Cross-checking in interviews served to confirm that unintended responses were being defined in a similar way by all of the medical specialists, administrative and managerial personnel, advocates of the representative bodies for hospitals or professions, and public and private system managers (Berry 2002). Our third technique to ensure the validity of findings was **research bias mitigation**. To inhibit social desirability and self-serving response tendencies, medical professional respondents were assured of confidentiality and anonymity (Goldstein 2002). To avoid a hindsight rationalization bias, interviews focused on unintended responses in a real-time setting, going over actual behaviours in particular cases (Berry 2002).

Finally, we ensured validity through **respondent feedback**. The factual correctness of references to the interviews drawn on in this study was verified by the respondents themselves. All respondents referred to in this book were asked to provide feedback on accuracy and to approve the references made to their interview in the text. For this, they were approached by email and asked to respond within two weeks. A total of 36 respondents provided feedback on factual correctness, and changes were made in the text if required. Non-response was taken to mean that no changes were required. Correctness in interpretation of the data was also debated in academic settings and in a two-hour session organized by one of the public system managers involved. At this meeting, the categories and types of unintended responses identified were presented and discussed with 21 employees of the NZa, which was involved in a project on upcoding.

Generalizability of research findings

The design of this research serves an exploratory and explanatory purpose. The objective was to study practices and motivations for unintended responses, as well as measures for curbing them. The aim, ultimately, was to answer the question of what types of unintended responses to performance management systems arise and why (Yin 1999, Fisher and Ziviani 2004). In this respect the current research contributes to a holistic understanding of the phenomenon of unintended responses by including multiple perspectives (i.e., those of medical professionals and of system managers). Despite the limitations on generalizability associated with single-case research (Yin 1999), our findings on unintended responses to the DRG system are nonetheless likely to apply to medical institutions throughout the Netherlands.

In the first place, potential for generalizability was improved by triangulation of data sources and interpretations (Golafshani 2003, Fisher and Ziviani 2004). Secondly, the potential generalizability was improved by using maximum variation sampling for selection of medical institutions and medical specialties. By including the three major types of medical institutions in the Netherlands and a wide variety of medical specialties, the research sample provides a genuine transect of the landscape of hospital and medical specialist care in the Netherlands.

This chapter has addressed the characteristics of the design and research methods applied in this research. The following chapter will elaborate on the relevant characteristics in the design of the Dutch DRG system and its institutional embedding in the Netherlands healthcare system.

CHAPTER 4 THE DESIGN AND INSTITUTIONAL EMBEDDING OF THE DUTCH DRG SYSTEM

4.1 INTRODUCTION: HEALTHCARE SYSTEM REFORM IN THE NETHERLANDS

As part of a reform of the Dutch healthcare sector, a DRG system based on diagnosis-treatment combinations was introduced for hospital and specialist medical care in the Netherlands starting in 2006. The aim of the new system, in the face of increasing healthcare expenditures, was to achieve more cost efficiency in care provision by replacing the pre-existing budgeting model with primarily performance-based reimbursement congruent with a more market-oriented service provision (Van de Ven and Schut 2009, Hasaart 2011).

To a large extent, the Dutch DRG system resembles similar systems that have been introduced in various other countries. In essence, all of these case-mix systems classify patients into clinically and cost-homogeneous groups (Sutherland and Botz 2006). This makes it possible to condense the activities of medical professionals into a series of "products" that can be measured by system managers and used to steer the system towards better performance (Abernethy and Stoelwinder 1995, Wallace 1995, Noordegraaf 2006).

However, compared to most DRG-based case-mix systems, the Dutch DRG system has certain unique characteristics as well (Oostenbrink and Rutten 2006, Steinbusch et al. 2007, Hasaart 2011). In the first place, the DRG care products that are eligible for reimbursement are not determined by the diagnosis registered, but by a specific combination of diagnosis and treatment selected by the medical specialist. Furthermore, the Dutch DRGs represent "average" care products registered by hospitals for reimbursement of a wide variety of care: inpatient care, day care and outpatient care. Moreover, contrary to most other DRG systems, a Dutch DRG care product covers a treatment trajectory from beginning to end, and may therefore include multiple hospital admissions or outpatient visits (Tan et al. 2011). A third distinctive characteristic of the Dutch DRG system is that the DRG care products are used not only for reimbursement of the hospital, but also for remuneration of the

medical specialist. Finally, a fourth rather unique characteristic of the Dutch DRG system involves its introduction of a free pricing regime for a selected subset of DRG care products (Maarse and Bartholomée 2007, Van de Ven and Schut 2008).

The current chapter provides a descriptive overview of relevant characteristics of the landscape of specialist and hospital care in the Netherlands, while also tracing the development, institutional design, and introduction of the Dutch DRG system. Section 4.2 addresses the political background and societal challenges that led to introduction of the DRG system. Section 4.3 then reviews relevant characteristics of the design of the DRG system and the basic procedures for working with the DRG system. Section 4.4 elaborates on the DRG funding model in the Netherlands. Section 4.5 examines differences in patient populations and DRG reimbursement between our three types of medical institutions: UHs, GHs, and ITCs. Finally, section 4.6 takes a closer look at key stakeholders in the Dutch DRG system, that is, representative bodies of medical specialists, medical institutions, and public and private system managers.

4.2 Introduction of the DRG system

Historical background of the reform of the Dutch healthcare system

Reform towards a more market-oriented healthcare system has a long history in the Netherlands. In 1987, a national advisory commission, the Dekker Committee, proposed managed competition as the dominant principal for restructuring the Dutch healthcare system (Rutten 2004). After studying the structure and funding of the then-current system, the Committee concluded that supply regulation should no longer be utilized as an instrument to control care expenditures; instead, new instruments should be introduced to facilitate more demand-driven care provision (Schut 2003). Specifically, the Committee recommended introduction of a competitive market in which health insurance companies and medical care providers would be actively involved. These proposed reforms were primarily motivated by the belief that the existing budgeting system of hospitals and medical specialists failed to reward healthcare providers for efficiency.

Indeed, care budgets bore no relation to actual performance of healthcare providers in terms of health outcomes and patient volumes. Instead, hospital budgets were set in line with activity volume indicators, such as hospital bed use and numbers of consults provided. Tariffs linked to such budget parameters, however, had grown out of balance with the actual costs of hospital services. As such, the budgeting model provided no incentives for efficient performance, nor did it sanction poor performance or inefficient use of resources (Hasaart 2011).

Later, in 1993, the Biesheuvel Committee followed up on the Dekker Committee's recommendations. The Biesheuvel Committee, too, proposed abolishing the supply-constrained budgeting system and replacing it with a demand-driven system of payment for hospital and specialist medical care (Maarse and Paulus 2011). This Committee went on to propose a reimbursement system for hospitals and medical specialists based on all-inclusive care "products", in the form of "diagnosis treatment combinations". In 1994, umbrella organizations representing various healthcare industry stakeholders collaborated to design such a reimbursement system, based on case-mix principles of funding. Alongside the Dutch Ministry of Health (VWS), four representative bodies were particularly involved in that effort: the Netherlands Federation of General Hospitals (NVZ), the Netherlands Federation of University Medical Centres (NFU), the National Association of Medical Specialists (OMS), and the Netherlands Association for Health Insurers (ZN) (Hasaart 2011). In 2005, this collaboration finally resulted in introduction of the DRG system for reimbursement of hospital care provided by all types of specialist medical institutions in the Netherlands.

SOCIETAL CHALLENGES: WAITING TIMES AND RAPID GROWTH OF HEALTHCARE EXPENDITURES

In parallel with a political drive towards more market-oriented regimes for various public services, societal turmoil regarding perceived inefficiencies of the Dutch healthcare system facilitated introduction of the DRG system. From the start, the DRG system was presented as an instrument to remedy the lengthening waiting times for hospital care and swelling care expenditures. The national Health Insurance Act (HIA), adopted in 2006, marked the start of the reform of the healthcare system. The HIA sought to reduce central steering and increase the efficiency of healthcare

provision by introducing competition and market mechanisms in the specialist and hospital care sector.[5]

Care expenditures in the Netherlands, indeed, had increased substantially since the late 1990s. Whereas healthcare accounted for a relatively stable proportion of gross domestic product (GDP) in the 1980s and 1990s, healthcare expenditures rose some 12% annually in 2001 and 2002 (CBS 2006). This increase was generally attributed to measures taken to reduce the waiting times for basic hospital treatments, such as knee and hip replacement surgeries and cataract operations (De Meijer 2012, Trienekens et al. 2012). Starting in 2000, the Dutch government decided to loosen some of the budgeting ceilings it had imposed on hospitals and medical specialists, as these restricted the volume of hospital output. While more open-ended financing for hospitals and medical specialists did seem to reduce the waiting times for care, it also contributed to increasing healthcare expenditures (CBS 2009).

4.3 DESIGN OF THE DRG SYSTEM

THE MEDICAL DESIGN OF THE DRG SYSTEM

The DRG system is based on a "case-mix" principal by which patients are classified according to their medical condition into "diagnosis treatment combinations" broadly representative of the average treatment provided by a specialist or hospital for that class of patients (Sutherland and Botz 2006). The DRG registration thus serves as the basis for reimbursement of hospitals and remuneration of medical specialists for the care they provide. An online medical dictionary defines case-mix as a way of expressing a hospital's production based on 'the groups of patients [it treats] requiring similar tests, procedures, and resources'.[6] Through this classification of patients, case-mix systems provide managers and administrators a way to interpret the total production of hospitals and to discern differences in costs of treatments between hospitals and between groups of patients.

[5] www.st-ab.nl/wetzvwmvt.htm (last accessed 16 June 2013).

[6] http://medical-dictionary.thefreedictionary.com/case+mix

Whereas most DRG systems rely on the International Classification of Diseases (ICD) for medical classification of patients, the Dutch DRG system was implemented differently. Instead, its medical classifications rested on diagnoses and treatments defined and submitted by professional associations of medical specialists (Oostenbrink and Rutten 2006). The primary reason for not adopting the common international DRG design was the desire to include outpatient care and specialist remuneration within the Dutch DRG system (VWS 2004). Adding these elements to an existing DRG design was considered overly problematic and time-consuming.

By providing the medical content, the representational bodies of medical specialties took a central position in design of the DRG system. One implication of decentralizing this aspect of the system's design to the various medical specialties was that each professional association was able to make its own assessment of how to accommodate DRG registration within its field of medicine. Some of the professional associations chose to include a high level of detail, resulting in large numbers of DRGs from which to choose. Other specialties, like geriatrics [24], preferred to keep categories coarse and simple. In this regard, a representative of the Netherlands Urology Association (NVU) [50] characterized his specialization as a '*large landowner*' in terms of the DRGs available for registration: '*Our strategy was to include every diagnosis and treatment that could potentially be used in our field, so we didn't exclude any combination beforehand. We felt that this approach would eventually reveal all relevant DRGs for our profession, as only these would get registered.*' A representative of DBC Maintenance claimed that this strategy was also applied by the professional association for neurosurgery, as it used a '*mathematically generated*' list of DRGs available for registration [65]. Ultimately, the decentralized approach resulted in the definition of a vast collection of approximately 100,000 DRGs, of which 34,000 were actually used for reimbursement (Blank, Dumaij and Hulst 2011).

THE REGULATORY DESIGN OF THE DRG SYSTEM

In addition to the medical building blocks of the DRG system provided by the separate professional associations, the public system managers defined generic rules and conditions for registration of DRG care products. They defined guidelines for when a DRG could be opened for a patient, when it could be closed (i.e., invoicing

the care to the health insurance company), and under what conditions multiple DRGs could be opened simultaneously for a patient being treated within the same medical specialty. To illustrate, regarding that last, system managers stipulated that parallel DRG registrations for patients were valid (i.e., eligible for parallel reimbursement) only for patients suffering from a second medical condition unrelated to the first and entailing a 40% increase in treatment effort.

The system managers also stipulated the conditions that must be met for a DRG to be eligible for reimbursement under the HIA, which specifies that hospital care must be proven effective and medically indicated [64]. Interestingly, the professional associations also set specialty-specific guidelines and restrictions for DRG registration within their various fields of medicine. These, again, showed great variety in the level of detail (Sanders 2005). For example, the professional association for cardiology decided to exclude parallel DRG registration altogether, regardless of the possibility of multi-morbidity and the increased treatment effort resulting from it. Its main purpose in doing so was to limit the bureaucratic workload for the cardiologists working in the field: '*Our strategy was to keep it as simple and workable as possible. For this reason, we excluded a great deal of nuance from our registration and also the possibility to register DRGs in parallel*' [49].

The professional association for rheumatology made the opposite decision, citing as its reason the desire to prevent the DRG system from eroding professional autonomy: '*In my professional organization the initial proposals regarding the registration rules of the DRGs contained an absolute prohibition of the registration of parallel DRGs, but fortunately I was able to prevent that. Like Machiavelli said, the best way to defeat your enemy is to limit his degrees of freedom as much as possible. And that is exactly what our professional association wanted to do to us!*' [41]. Because of these types of differences in the approaches taken by professional associations in designing the DRG system for the respective medical specialties, the managerial stakeholders joke that there are 26 DRG systems – one for each medical specialty – instead of just one [58, 66].

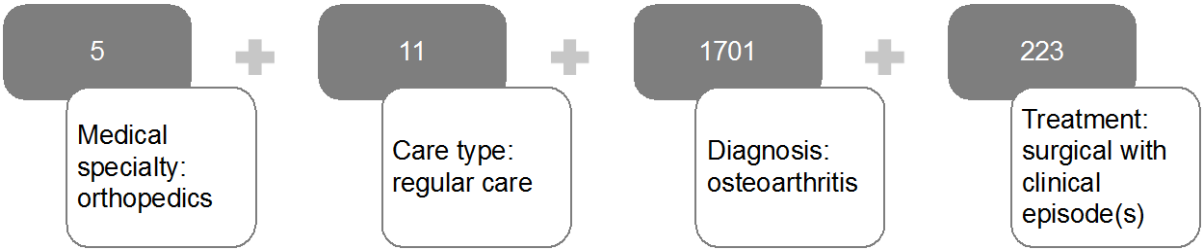
DRG CODING BY THE MEDICAL SPECIALIST

Medical specialists register DRGs using the lists of diagnoses and treatments provided by the professional association for their field of medicine. The medical specialist "opens" a DRG for a patient on their first encounter. At this point, the medical specialist registers four components that together make up the DRG care product for the patient in question. The four components are the following:

- medical specialty
- type of care
- (preliminary) diagnosis
- treatment category

Figure 4.1 shows an illustrative DRG for a patient diagnosed with hip joint osteoarthritis.

Figure 4.1 An example of the four elements that make up a DRG code for hip osteoarthritis



The specialty component in this example indicates that the medical specialist treating the patient is an orthopaedist. The type of care is specified as regular care, the diagnosis is osteoarthritis and the treatment of the patient is a combination of surgery and clinical visits. These components are initially registered upon the first contact between the patient and specialist and are not definitive. During the course of treatment, the medical specialist may arrive at new insights. For example, tests may bring a different diagnosis to light, or the specialist may decide that surgical intervention is not the preferred treatment for this patient after all. Therefore, the DRG registration can be adjusted or corrected up to the point at which the DRG is invoiced to the health insurance company.

This example also demonstrates that several different DRG care products might be registered for a patient with hip osteoarthritis, depending on the chosen treatment

trajectory. After all, the specialist might select a conservative treatment trajectory instead of a surgical intervention. Table 4.1 illustrates the different treatment categories that a surgeon can choose between in DRG registration

Table 4.1 Patient classification in DRG registration: An example from surgery

Medical specialty	***Type of care***	***Diagnosis***	***Treatment axis***
0303 Surgery	11 Regular care 21 Continuation of regular care 51 Tertiary referral	113 Appendicitis	201 Open-surgery outpatient 202 Open-surgery in day care 203 Open-surgery with clinical episode(s) 204 Single outpatient with procedure 206 *Inpatient without days* Open-surgery with clinical episode(s) 301 Endo-surgery outpatient 302 Endo-surgery in day care 303 Endo-surgery with clinical episode(s) 306 *Inpatient without days* Endo-surgery with clinical episode(s)

Source: Adapted from Tan et al. (2011: 436).

Besides the choice between the different treatment categories, the type of care might not be classified as regular care, but rather as a “tertiary referral” (i.e., a patient referred for this care by another hospital). Or, it could be classified as follow-up or continuation of regular care if the treatment trajectory has exceeded the maximum time period of one year (e.g., for chronic patients requiring long-term care on an outpatient basis). Any such variation would lead to registration of a different DRG care product.

The specialty-specific design of the DRG system might lead to different care products for similar patients as well. As noted earlier, the DRG system makes a strict distinction between the various medical specialties that operate alongside one another in hospitals. For example, a dermatologist and allergologist may treat some of the same patients. However, as they represent different medical specialties, they use different lists of diagnoses and treatments for DRG registration. This results in registration of different care products. Similarly, for treating a patient with carpal

tunnel syndrome (CTS), a plastic surgeon and neurologist register different DRGs. Moreover, different DRGs mean different tariffs.

DRGs AS "AVERAGE" CARE PRODUCTS

The reason why different DRGs yield different levels of reimbursement is that each DRG has its own normative performance description in the form of an "average" care profile. These care profiles reflect the average of all relevant treatment elements involved in care for a patient with that particular medical condition. The average care profiles include diagnostic testing, imaging and laboratory tests, medication, inpatient stays, and average amounts of time spent with the patient by medical specialists and nurses, if relevant, from pre-surgery to surgery and the post-surgery stage of a treatment trajectory. To illustrate the level of detail included in these average care profiles, table 4.2 lists a few of the average treatment elements included in the care profile of a DRG for a hip replacement.

Table 4.2 Average treatment elements covered by a DRG for hip replacement

Imaging	0.48 unit of thorax image per patient
Laboratory	0.24 unit of urine screening
Medication	1.0 unit of heparin
Prosthetic	1.0 hip prosthetic
Pre-surgery	66 minutes for the medical specialist, 72 minutes for the nurses
Surgery	107 minutes for the orthopaedic surgeon, 83 minutes for the nurses,
	105 minutes for the surgical assistant, 12 minutes for the anaesthesiologist
Post-surgery	85 minutes for the orthopaedic surgeon, 330 minutes for the nurses,
	321 minutes for physiotherapist

Source: Adapted from Tan, Oostenbrink and Rutten (2006: 27).

This average care profile indicates how tariffs for DRGs are determined. DRG tariffs are built up from two components: reimbursement for the hospital's expenses (e.g., imaging and lab tests, medication, prosthetics, nurses, and surgical assistants) and remuneration of the medical specialists involved for the time they spend with the patient (e.g., the orthopaedic surgeon and anaesthesiologist). The tariff amount derived from these two components represents the average care profile attached to

each DRG. As the DRG tariffs are based on these detailed average care profiles, the DRG system sets financial boundaries for the choices available to hospitals and medical specialists in patient treatment. After all, using more, less, or different resources than the ones covered by the average care profile would have positive or negative financial consequences, sometimes for the hospital, sometimes for the medical specialist, and sometimes for both.

4.4 THE DRG FUNDING MODEL IN THE NETHERLANDS

THE DRG SYSTEM AS AN INSTRUMENT FOR INTRODUCING MARKET COMPETITION

The DRG system was designed to facilitate introduction of market competition in the Dutch healthcare system. DRG care products were viewed as more informative than previously used budget parameters, such as the number of consults or hospital days. DRGs, moreover, allowed performance to be linked to a specific diagnosis. DRG care products were designed to represent the average of all medical activities involved in treatment of a patient, thus allowing hospitals and health insurance companies to make assessments of the nature and efficiency of care performance and to compare medical departments and hospitals with each other. In this respect, the DRG system created a common language between health insurers and care providers and established a platform for negotiations on performance between these parties.

For the introduction of market competition, the DRG funding model provided two parallel regimes, the so-called “List A” and “List B” care products. In short, only the List B products were opened to market competition. For the List A products the former budgeting model was, in effect, continued (Hasaart 2011). For the DRGs on List B, health providers and health insurers were asked to negotiate suitable tariffs, as well as appropriate production volumes and all relevant aspects concerning quality and safety of patient treatment. In order to stimulate competition between hospitals, a free pricing regime was introduced for some categories of elective and basic hospital care (e.g., cataract surgery and knee and hip replacements). Initially in 2006, only 8% of the total DRG production fell under List B. Thereafter, however, List B was gradually expanded. It encompassed some 70% of the DRG production of Dutch hospitals in 2012, a jump from 34% in 2011.

EXPOSURE TO FINANCIAL RISK UNDER THE DRG SYSTEM

The distinction between List A and List B regime products is one that had important financial consequences for hospitals and health insurers. In the first place, hospitals and health insurers were made financially liable for their activities in providing List B care products, while hospital budgets for List A care were guaranteed. This meant that until 2011, hospitals were certain of at least 66% of their yearly revenues. Similarly, health insurers knew beforehand what they would, at minimum, have to pay to a hospital. Moreover, an ex post risk equalization scheme was in place that substantially limited the financial risk borne by health insurers for List A DRG production (Schut and Van de Ven 2011). In contrast, revenues and payments generated by List B DRGs were variable, as these were determined by care providers' efficiency and volume of DRG production. Exposure to financial risk thus became much more of an issue under the List B regime. Furthermore, unintended responses related to List A care had little financial impact on hospitals and health insurers.

This, however, did not apply to medical specialists. Starting in 2008, the income of medical specialist became fully based on DRG production. Moreover, remuneration of specialists was fixed for each DRG, regardless of whether it concerned List A or List B DRG care. The reason for this was that the support of the medical specialists in implementing the DRG system rested primarily on the system's "pay-for-performance" principle. In contrast to the budgeting model, the DRG system paid medical specialists for each patient they treated, without caps or ceilings.

The income component of each DRG care product was determined by calculations or estimations of norm times for medical procedures. Remuneration per DRG was then the product of the norm-time represented by an average care profile and the fixed hourly wage for medical specialists set by the Dutch Health Care Authority (NZa) (Schäfer et al. 2010). As a result, remuneration of medical specialists for each DRG was known beforehand and was not a result of the negotiations between health insurers and providers of List B DRG care. It also meant that the choices made by medical specialists in DRG registration could be influenced by differences in remuneration between the different care products.

FINANCIAL FLOWS SEPARATE FROM THE DRG SYSTEM

For the hospitals, the financial impact of the DRG system was also dependent on financial flows separate from DRG reimbursement. One of these financial flows was allowances to compensate for research, education, and an uneven distribution of patient complexity over the various types of medical institutions. To this end, the university hospitals received a yearly lump sum, referred to as the "academic component", accounting for approximately 10% of their yearly revenue. Furthermore, UHs and the larger and more specialized GHs were licensed to perform highly complex treatments under the "Special Medical Procedures Act" (WBMV). For treatments such as various forms of transplantation surgery, heart surgery, and neurosurgery, these licensed hospitals received an additional "WBMV fee" on top of the DRG reimbursement they received for these treatments. The WBMV fees had considerable impact on the financial positions of the hospitals. The UHs in particular considered this source of revenue just as important as funds generated by DRG production.

Hospitals also received separate compensation for the use of a number of very costly medications, with the medications eligible enumerated by the Dutch Health Care Authority (NZa 2011). In 2011, this list included 34 high-cost medications (primarily biologic medications used, e.g., in oncology and rheumatology) (NZa 2011). If these medications were applied in the treatment of the specified medical conditions, the hospitals received a compensation of 80% of their expenditures for these high-cost treatments, in addition to the regular DRG reimbursement.[7]

The "academic component" mentioned earlier formed yet another separate financial flow, though applicable only to the UHs. This lump sum compensated the UHs for their treatment of highly complex cases, for their research and innovation functions, and for their educational role.[8] Whereas the academic component for the UHs was completely independent of DRG funding, the WBMV fees and compensation for high-

[7] www.rijksoverheid.nl/onderwerpen/geneesmiddelen/betaalbaar-houden-van-geneesmiddelen/ziekenhuizen-en-dure-geneesmiddelen

[8] www.orde.nl/pijlers/beroepsbelangen/universitair-medisch-specialist/bekostiging+en+financiering/onderwerpen/financieringsstroom-umc.html

cost medications were to some extent linked to the DRG system, as these fees required registration of a matching diagnosis or treatment in the DRG system.

The abovementioned aspects of DRG reimbursement and additional financial flows resulted in a certain level of variation over the different types of medical institutions. This variation was a product of the medical institution's ratio between List A and List B production, its remuneration of medical specialists, and the complexity of the patient population it served. The following section looks more closely at differences in patient populations and specialist remunerations across the three types of medical institutions represented in this research.

4.5 INSTITUTIONS FOR SPECIALIST MEDICAL CARE

Specialist medical care in the Netherlands is provided by UHs, GHs, and ITCs that have been licensed to provide hospital care covered by the HIA.[9] The HIA came into effect in 2006, marking the beginning of the reform of the Dutch healthcare system. Even though all institutions for specialist medical care are private institutions, legislation prohibits distribution of dividends by these licensed providers of specialist medical care. This means that currently all UHs, GHs, and ITCs are non-profit organizations (Kerste and Kok 2010).

The various types of medical institutions differ substantially in institutional context. Each serves a different patient population, provides a different pallet of treatments, and is more or less exposed to market mechanisms. Moreover, the medical specialists working within these medical institutions differ in status.

UNIVERSITY HOSPITALS

The hospital care sector in the Netherlands includes eight UHs. These had an average capacity of approximately 1,000 beds in 2010 (CBS 2012). The UHs are thus relatively large compared to the average hospital in the Netherlands, which has a capacity of 454 beds (Bos, Koevoets and Oosterwaal 2011).

[9] www.wtzi.nl/tziinhetkort/

Complexity of care

The primary focus of the UHs is on patient treatment, but education and research are also considered core activities. In accordance with their function in academic research, the UHs are highly specialized medical institutions, often serving as the care provider of “last resort” regionally and even nationally for patients with highly complex conditions. This last resort function means that other hospitals refer patients to the UHs if they require more specialized knowledge or treatments than the initial hospital or specialist can offer. For the UH included in our case study, the proportion of this so-called “top-referent care” was estimated at 40–60% of the patient population.

Furthermore, this image of a more complex patient population treated at the UH under study is reflected in its multi-morbidity figures. The medical specialists in the departments of internal medicine and cardiology set on average four diagnoses per patient. This indicates an above-average complexity of the patients served by the UHs, though it also reflects the more refined diagnosis registration used by the UHs – for the purpose of academic research – compared to the standard lists of diagnoses used in DRG registration. At the UH included in this research, medical specialists employed a detailed diagnosis registration based on ICD-9. These diagnoses were automatically translated into the coarser DRG diagnoses by the hospital computer systems.

Hospital reimbursement and remuneration of medical specialists

In line with their focus on treatment of high complexity patients, the DRG production of the UHs consists largely of List A DRGs. This means that the List B DRGs and the associated market mechanisms have had limited impact on the UHs. To illustrate, whereas List B represented 34% of the production of the average hospital in 2011, for the UHs it represented just 7% of production (NZa 2011). Therefore, UH revenues stemmed largely from the guaranteed hospital budget and financial flows outside the DRG reimbursement system, including the academic component for research, innovation, and education and WBMV fees for complex procedures.

However, even though List B was of limited importance for the UHs in general, their impact differed per specialty. For example, List B DRGs became very relevant for the

UH's gynaecology department in 2009 when the vast majority of obstetrics treatments were transferred from List A to List B. Furthermore, the UHs' more surgically oriented medical departments (e.g., ophthalmology and orthopaedics) were more exposed to List B production than the more reflective medical departments, such as internal medicine and paediatrics.

For their List B DRG production, the UHs have claimed that their patients have a higher risk profile than patients treated in the other types of medical institutions. Thus, although List B care, in theory, mainly captures basic and low-complexity hospital care, the UHs argue that even in these areas of care, they treat the more demanding patients in terms of age, complications, multi-morbidity, and ASA score (this is the American Society of Anaesthesiologists' classification system for the physical status of a patient). There was also a perception that the other medical institutions tended to refer higher risk patients to the UH, as these were less lucrative in a case-mix reimbursement system based on average care products.

GENERAL HOSPITALS

Besides the eight UHs, the Dutch hospital care sector counted 83 GHs in 2013.[10] These had operations in approximately 130 locations due to hospital mergers and in approximately 100 separate affiliated outpatient clinics. With an average capacity of 400 beds, the GHs are considerably smaller than the UHs. Nevertheless, GHs are more diverse in bed capacity than the UHs. In this respect, the larger GHs are often similar to the UHs, as they are often licensed to provide certain highly complex WBMV treatments and are involved in education and research as well.

Complexity of care

All of the GHs provide a full range of basic hospital care. However, 28 of the largest GHs have grouped together under the flag of Collaborating Top Clinical Teaching Hospitals (STZ). Similar to the UHs, these STZ hospitals are licensed to provide WBMV care and to undertake research and education. In contrast to the UHs, however, STZ hospitals do not serve as "last resort" treatment facilities, as top-

[10] www.zorgatlas.nl/zorg/ziekenhuiszorg/algemene-en-academische-ziekenhuizen/aanbod/locaties-algemene-en-academische-ziekenhuizen/

referent hospital care is delegated almost exclusively to the UHs (Blank, Dumaij and Hulst 2011). As the GHs do not serve as last resort providers, they can refer more complex patients to a UH specialist.

Another way that GHs differ from the university facilities is that all GH hospitals, including STZ facilities, generate higher volumes of basic hospital care than the UHs. In this sense, the STZ hospitals occupy a middle position between the UH and the average GH. Like the UHs, they operate in the high complexity care segment. Nonetheless, basic hospital care still accounts for a significant proportion of their DRG production.

Hospital reimbursement and remuneration of medical specialists

In line with the higher volumes of basic care provided by the GHs, List B DRG care products represent a larger part of the GHs' revenue than in the UHs. For the GHs, excluding the STZ hospitals, List B accounted for approximately 30% of GH revenue in 2009. For the STZ hospitals, List B represented close to 25% of hospital revenues that year. Whereas more than 90% of the UHs' yearly revenue is known beforehand, for the GHs this applies to 70–75% of the hospital budget. As such, the revenues of GHs have more of a variable component related to their DRG production.

Another difference between the UHs and the GHs concerns the position of medical specialists within the organization. Medical specialists working at the UHs are all in salaried hospital positions. In the GHs in 2009, 75% of the medical specialists were independent professionals organized in specialty-oriented partnerships (Schäfer et al. 2010). The 25% of the medical specialists in salaried positions at the GHs were mainly in medical specialties historically known as the low-earners. This category includes medical specialties, such as paediatrics, geriatrics, internal medicine, and psychiatry[11] in which performance and outcomes are often more ambiguous and harder to measure than in other fields of medicine. Hospitals provide self-employed medical specialists with the facilities required for patient treatment and nursing. In this respect, GHs function mainly as an atelier for self-employed medical specialists to work in (Blank, Dumaij and Hulst 2011).

[11] http://medischcontact.artsennet.nl/Tijdschriftartikel/67317/Grote-inkomensongelijkheid-onder-artsen-1.htm

INDEPENDENT TREATMENT CENTRES

ITCs (in Dutch ZBCs) are smaller scale clinics, either stand alone or part of a national chain of clinics, licensed to provide List A and List B hospital care under the HIA. The ITCs thus differ from unlicensed private clinics, which are restricted to provision of uninsured and mostly cosmetic procedures. Nonetheless, ITCs often provide a mix of insured and uninsured care. After the introduction of the DRG system the number of ITCs involved in DRG production increased rapidly until 2009, after which it stabilized, counting 236 in 2010 (IGZ 2011).

ITCs were initially mainly mono-disciplinary in nature, focusing on a limited number of selected treatments in a particular medical specialty. Recently, however, the number of oligo-disciplinary ITCs, offering treatments in a small number of medical specialties, has increased. Nonetheless, in contrast to the UHs and GHs, ITCs do not provide the full range of hospital care, as they incorporate only selected medical specialties in which they provide a finite number of treatments. Even though the number of ITCs operating in the Netherlands is quite substantial, their aggregate DRG production accounted for just 2% of total insured care provided in 2010.

Complexity of care

Compared to the UHs and GHs, the ITCs operate primarily in the market segment for low complexity hospital care. The ITCs' patient populations are composed of low-risk patients with clearly demarcated treatment trajectories. Indeed, the HIA restricts the level of complexity of the patient population eligible for treatment in ITCs. The ASA scoring system classifies patients from 1 "a healthy patient" to 6 "a patient declared brain dead". According to the Dutch Health Care Inspectorate (IGZ), ITCs should not treat patients with an ASA classification higher than 2 (patients with a mild systemic disorder) (IGZ 2010)

These restrictions on complexity stem from the fact that ITCs typically lack the facilities and safeguards required for offering highly complex care. Unlike the GHs and UHs, ITCs seldom have adequate intensive care facilities, nor do they have a trauma team on call or an anaesthesiologist present at all times. Furthermore, ITCs tend to lack facilities for a clinical stay, which is often required when offering more

complex care. The complexity of the patient population of the ITCs is therefore to some extent shaped by these constraints.

Nevertheless, even within the group of patients with an ASA score of 2 or less, ITCs may be selective in the patients they accept and the range of treatments their clinics provide. UHs and GHs often accuse the ITCs of “cherry picking”, selecting only the low-risk and more profitable patients for treatment, referring patients with complicating factors to nearby hospitals.

Reimbursement and remuneration of medical specialists

The proportions of List A and List B DRG production in ITCs is much like those of the GHs. In general two thirds of ITC production concerns List A and one third is List B. However, unlike the GHs and the UHs, ITCs’ List A production is not linked to a guaranteed hospital budget. In the first place, this means that the ITC is fully dependent on DRG production for both reimbursement of the treatment centre and remuneration of the medical specialists working there. Whereas the UHs and GHs know their yearly revenue for the most part, the revenue of ITCs is 100% variable. The fact that the ITCs operate without a guaranteed budget also means that the DRG production of ITCs under List A is not restricted by a budget ceiling. Therefore, up until 2011, funding for the ITCs was open-ended.

Especially the absence of budget constraints on production has motivated many medical specialists from the UHs and GHs to start working part time at one of the ITCs or to set up their own ITC. Of the medical specialists working in the ITCs in 2010, 60% appeared to work at a GH or UH as well (IGZ 2011). One reason for this is that medical departments in the GHs and the UHs compete with one another for their hospitals scarce resources and capacity. This internal competition constrains the DRG production of medical departments and thereby the income of self-employed medical specialists working in these departments. As the DRG production and capacity of ITCs are not restricted by a budget, these constraints on DRG production did not apply before 2012. Similarly, many medical specialists in hospital employment work part time at one of the ITCs to generate extra income.

Apart from sharing their medical specialists with UHs and GHs, ITCs often collaborate with UHs and GHs at an organizational level. Some 70% of the ITCs

collaborated with one or more nearby hospital (IGZ 2011). For example, an ITC might agree to refer patients with more complex conditions to a specific UH or GH. Or, a UH or GH might make use of an ITC's capacity by outsourcing to it some aspects of diagnostic testing. Furthermore, the distinction between ITCs and other hospitals is often ambiguous. Many UHs and GHs have set up their own ITCs to secure or improve their market position in low complexity hospital care.

4.6 The role of representational organizations for medical specialists, medical institutions, and system managers

Representational bodies of medical specialists

A number of representational bodies of medical specialists were approached in this research, including the National Association of Medical Specialists (OMS) and a number of professional associations representing specific fields of medicine. The OMS represents the interests of medical specialists providing hospital care in the Netherlands, regardless of medical specialty or status of employment (thus including self-employed specialists). The OMS collaborated with the Ministry of Health in the initial design of the DRG system as the formal representational body of medical specialists. In turn, the OMS worked closely with 26 professional associations representing diverse medical specialties in the initial design of the DRG system.

Apart from their involvement in the development of the DRG system, the professional associations also issue guidelines, protocols, and quality standards for patient treatment in their respective medical fields. These guidelines, protocols, and standards for patient treatment occasionally conflict with requirements of the DRG system. As intermediaries, the professional associations have also helped to address such problems faced by medical specialists with the public or private system managers.

Part of this process has been to request new DRG codes on behalf of their respective fields of medicine, initiating changes in the existing rules for DRG registration, and proposing new rules of exemption for their medical specialty. However, the professional associations also provide their respective constituencies with advice on

DRG registration issues. As the members and boards of the professional associations are made up mostly by practising medical specialists, the professional associations can be viewed as the managerial stakeholders in the DRG system closest to the medical professionals working in the field.

REPRESENTATIONAL BODIES OF THE MEDICAL INSTITUTIONS

Representational bodies for Dutch hospitals and specialist medical care include umbrella organizations representing the various categories of medical institutions. The main umbrella organizations are the Netherlands Federation of University Medical Centres (NFU), the Netherlands Federation of General Hospitals (NVZ), and the Netherlands Federation of Independent Treatment Centres (ZKN). Like the OMS on behalf of the medical specialists, the NVZ and NFU participated in the initial design of the DRG system as the formal representational bodies of the UHs and GHs. The ZKN was not involved in the initial design of the DRG system, as ITCs were only starting to emerge in the country at that time.

The ZKN has nonetheless gained acceptance as the official representational body of ITCs[12] in the Netherlands and has since been included in system-level developments on a regular basis (Skipr.nl 2011). Besides their initial involvement, the NVZ and NFU address bottlenecks in the DRG system from the perspective of the GHs and UHs with the health insurance companies and system managers. As such, they have deliberated with health insurers on, for example, interpretations of rules, conditions, and restrictions in DRG registration.

REPRESENTATIVES OF THE PUBLIC SYSTEM MANAGERS

The public system managers represent the public organizations that use the DRG system to steer the healthcare system based on the performance of the medical institutions and medical specialists involved. The group of public system managers consists of the primary public and semi-public stakeholders involved in the functioning of the DRG system and the Dutch healthcare system as a whole. The main actors are the Ministry of Health, Welfare and Sport (VWS); the Dutch Health

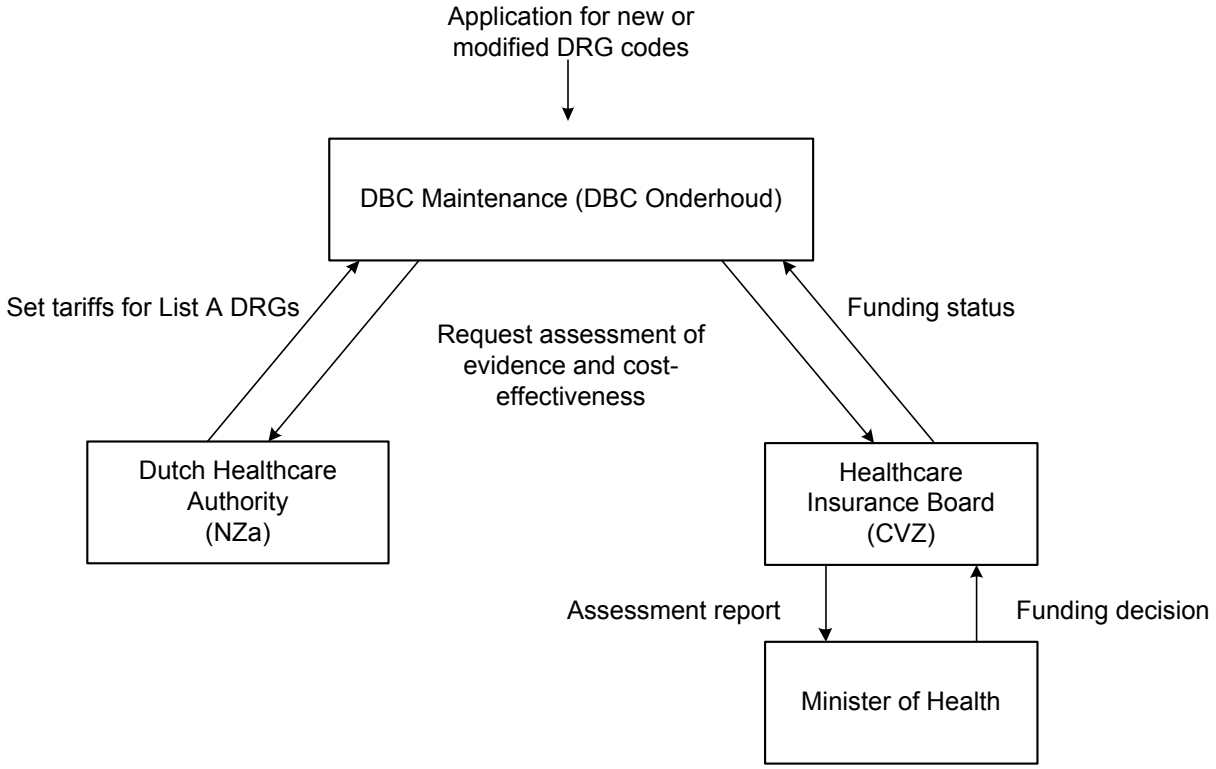
[12] www.rijksoverheid.nl/nieuws/2011/07/04/akkoord-over-beheerste-kostenontwikkeling-ziekenhuiszorg.html

Care Authority (NZa); the Health Care Insurance Board (CVZ); DBC Maintenance (DBC Onderhoud) (see figure 4.2) . VWS bears overall responsibility for the quality, accessibility, affordability, and efficiency of Dutch hospital and specialist medical care and sets the macro budget for healthcare expenditure.

To achieve these policy objectives, VWS relies on NZa, as the public regulator in charge of the functioning of the healthcare market, and IGZ, as the public regulator in charge of quality and safety of healthcare provision. Whereas the activities of IGZ in monitoring the quality of care are only loosely related to the DRG system, NZa focuses primarily on the functioning of the DRG system. NZa enforces laws and regulations applicable to health insurers and providers, while also setting budgets and tariffs for List A DRG products. To this end, the NZa collaborates closely with CVZ and DBC Maintenance. CVZ evaluates the (cost-) effectiveness, therapeutic surplus value and evidence-base of medical procedures and medications and advises VWS on inclusion or exclusion of treatments from the reimbursement under the HIA.

At a more operational level, DBC Maintenance is in charge of maintaining the system. It makes technical adjustments, solves problems, and creates new DRG codes when required. As the parties most directly involved in the functioning of the DRG system, DBC Maintenance and CVZ maintain close contact with the professional associations on issues concerning DRG registration.

Figure 4.2 The relationship between DRG Maintenance, the NZa and CVZ as the public system managers of the Dutch DRG system



Source: Adapted from Stolk, de Bont et al. (2009: 89)

REPRESENTATIVES OF THE PRIVATE SYSTEM MANAGERS

The group of private system managers represented in this research incorporates the Netherlands Association for Health Insurers (ZN) and individual health insurance companies operating in the Netherlands. ZN participated in the initial design of the DRG system as the representational body of health insurers. In this role, it was involved audit certification for hospitals and in interpretation of the rules and conditions for DRG registration.

However, interpretation of the rules and conditions for DRG registration has been a continuous source of conflict between the hospitals and medical specialists and the health insurers. Therefore, besides their involvement in the initial design, ZN and the umbrella organizations for the hospitals and medical specialists have been involved in ongoing negotiations about interpretations of the rules and “good conduct” in use of the DRG system. In 2010, these parties reached a considerable level of consensus

on interpretation of the rules for registration, but some topics of debate, like the conditions for registering multiple DRGs for a patient, have proven to be persistent.

Since the introduction of the DRG system, various mergers between health insurers have taken place. In 2011, the Dutch hospital and specialist medical care market was shared by five large conglomerates of health insurers. As the purchasers of hospital and specialist medical care, individual health insurers have considerable involvement in the functioning of the DRG system. In the first place, their involvement stems from insurers' role as purchasers of care. Health insurers negotiate on behalf of their insured with the hospitals they choose to contract for DRG production. These contracting negotiations concern production volumes, quality aspects, and DRG tariffs. In practice, however, the health insurers are not very selective in contracting care from the GHs and UHs. They usually contract the full package of care from all hospitals.

In the second place, the health insurers make use of ICT tools to verify the legitimacy of DRG invoices from the medical institutions. For this purpose, the health insurers have translated the formal rules and conditions for DRG registration into algorithms to inspect the invoiced DRGs for irregularities. If irregularities are detected, the health insurers may reject a DRG for reimbursement or send it back to the healthcare provider for correction and resubmission. As the interpretation of the rules for DRG registration has been a topic of debate, their strict application in the health insurers' control systems has been contested by the hospitals, the medical specialists, and their representatives.

The empirical analysis of unintended responses from the perspective of the public- and private system managers will be addressed in chapter 6. First, chapter 5 will address the findings of the empirical analysis of unintended responses from the perspective of the medical professionals as stakeholders in DRG performance management.

CHAPTER 5 RESULTS: UNINTENDED RESPONSES OF MEDICAL PROFESSIONALS TO DRG PERFORMANCE MANAGEMENT

5.1 INTRODUCTION

The current chapter presents the findings or our analysis of the unintended responses medical professionals utilize in their interactions with the DRG system. It addresses our study's second and third sub-questions:

2. What types of unintended responses to the DRG system do medical professionals apply?

3. How do medical professionals motivate these unintended responses?

These questions are answered based on the interviews conducted with the medical professionals. In accordance with the structure of the DRG system, the chapter focuses on unintended responses in the DRG registration of diagnoses (section 5.2), unintended responses in the DRG registration of treatments (section 5.3), and unintended responses in reimbursements based on diagnosis-treatment combinations (DTCs) (section 5.4). Using interpretative coding, the concrete examples of unintended responses were clustered into coherent empirical categories. Section 5.5 addresses the explanations given by medical professionals for their unintended responses to the DRG system. Finally, section 5.6 sums up the main findings on unintended responses and the motivations underlying them from the perspective of the medical professionals interviewed.

5.2 UNINTENDED RESPONSES IN DIAGNOSIS REGISTRATION

INTENDED RESPONSE: MEDICAL SPECIALISTS SELECT ONE DRG DIAGNOSIS FOR A PATIENT BASED ON MEDICAL GROUNDS

In reducing the complexity of a professional process, a performance management system inevitably makes certain assumptions about professional practices. Such assumptions are not always explicit; rather, they often implicitly follow from the design of the performance management system. One of the basic assumptions in the design of the Dutch DRG system is that patients seek treatment for one medical problem at a time. After all, each DRG is an average care product centred on one diagnosis that aims to cover all aspects of treatment in relation to that specific medical condition.

Also, in principle the system allows for only one DRG to be registered per patient treated within a specific medical specialty, unless certain criteria for parallel or sequential DRG registration are met. Formally, parallel registration is allowed only when a patient suffers from a second ailment that is unrelated to the first and requires a 40% increase in treatment effort. Whereas the rules for parallel registration were included in the initial design of the DRG system, restrictions for sequential DRG registration were added in 2009.[13] The new restrictions include a mandatory minimum time period before a second DRG can be registered with the same diagnosis and treatment setting (i.e., “outpatient”, “day care”, or “inpatient”).

Following the assumption that patients seek treatment for one medical problem at a time, the DRG system intends for medical specialists to register the diagnosis on the basis of medical accuracy. This is particularly important, as an aim of the DRG system is to render medical performance more transparent through the clinical classification of patients based on their medical condition.

[13] http://wetten.overheid.nl/BWBR0024605/geldigheidsdatum_23-03-2009 (accessed 05-04-2013)

UNINTENDED RESPONSES OF MEDICAL PROFESSIONALS IN DIAGNOSIS REGISTRATION

Even though the assumption that medical specialists register the most accurate diagnosis in the DRG system may seem self-evident, this research showed that choosing which diagnosis to register creates a fair amount of tension for medical professionals at the operational level. Interviews with medical specialists at all three types of medical institutions underlined two aspects of this tension. The first is that medical specialists may have a degree of freedom in registration of patients presenting certain medical conditions, because multiple diagnoses may be defendable from a medical perspective. The second is that the most accurate diagnosis from a medical point of view may not always match the diagnostics or treatment that were applied for a particular patient. These types of tension manifest in a variety of forms of unintended responses in DRG diagnosis registration.

Multiple DRGs for multiple medical problems

One of the bottlenecks encountered in DRG registration was in registration of patients suffering from multiple medical problems (i.e., multi-morbidity). DRG registration issues concerning multi-morbidity affected mainly the UHs, although not exclusively so. An orthopaedic surgeon at the UH said that co-morbidity was not uncommon among the patients he saw and that he always registered one DRG for each diagnosis he set for a patient [10].

The DRG coordinator of internal medicine at the UH explained that the specialists in that department typically registered two DRGs for the group of patients suffering from both haemophilia and HIV or hepatitis: *'We're aware that, according to the rules for DRG registration, we cannot open a second DRG for HIV or hepatitis because this does not lead to a substantial increase in treatment effort. However, we still do so because we feel it is important to make clear that we're dealing with two completely different clinical pictures for these patients'* [24]. In this case, the medical professionals prioritized accuracy and completeness of registration for a patient over the DRG registration guidelines.

Medical fields with a high level of sub-specialization are probably more likely to experience conflicts leading to registration of multiple DRGs [21, 22, 48]. This was

illustrated by a GH paediatrician who, also speaking for the professional association, explained that colleagues in neonatology *'treat so many infants with multiple medical problems, that they have to rely on creativity in registration in order to make the DRG system fit their professional practice'* [48].

From a different perspective, the head of the medical registration department of the UH explained that it was not always clear whether a patient's medical problems were in fact related or not. '*A good example of this is patients that present with kidney problems, but also require treatment for hypotension. We feel that two DRGs need to be registered for these patients, but not all health insurers accept this interpretation*' [32]. A rheumatology resident argued that the same applied to patients with a chronic rheumatic disease who develop gallbladder inflammation: '*Some of my colleagues tell me to change the DRG for rheumatism into a DRG for the gallbladder treatment, but others tell me to open a second DRG for it*' [35].

Multiple DRG registration was particularly common in the medical specialty of cardiology. The reason for this was twofold. The cardiology department of the UH performed a large number of highly complex treatments – classified as exceptional under the Special Medical Procedures Act (WBMV). Such procedures are primarily provided by university hospitals, but also by a select number of larger general hospitals. For patients that require a WBMV procedure, the cardiology department of the UH received a "complexity fee" in addition to the regular DRG reimbursement. However, the Netherlands Society of Cardiology (NVVC) itself had banned parallel DRG registration, meaning that patients with multiple medical problems posed a special challenge in registration. For patients requiring two different WBMV treatments, cardiologists at the UH typically registered two sequential DRGs. Nevertheless, sequential DRG registration for treatments required some pragmatism in use of the registration system, as both treatments took place during the same hospital admission. Thus, the number of days that the patient spent in the hospital had to be manually divided over both DRGs [22, 31]. According to a GH cardiologist and representative of the Netherlands Society of Cardiology (NVVC), registering two sequential DRGs was allowed by the system authorities and, in fact, was common practice among colleagues [49].

Multiple DRGs for a single medical problem that requires multiple treatments

Besides multi-morbidity, the application of multiple treatments related to a single medical problem could be a reason for medical specialists to register multiple DRGs for a patient. Two GH urologists [38, 50] explained that they preferred to be parsimonious in scraping tissue for patients with bladder cancer, but that occasionally this meant that a patient needed a second operation within a timeframe of a few weeks. However, restrictions on sequential registration were increased in 2008, when a mandatory timeframe was introduced between registration of two DRGs with the same diagnosis and treatment. As a result, registration of a second DRG for such patients became problematic for the urologists. '*The DRG for this type of surgery only accommodates 90 minutes of treatment time, which represents one surgical intervention. Therefore, we now open a DRG for the surgery and after that open another DRG for the bladder flushing that those patients also need. Once we're done with that, we open a follow-up DRG for the second surgery. That way we can register both surgeries and it is all legitimate. It is just altering the order of the treatments*' [38]. In this example, the urologists found a way to circumvent the newly introduced restriction on registration of sequential DRGs.

A representative of the National Association of Medical Specialists (OMS) argued that similar challenges had arisen in oncology: '*Take intensive chemotherapy, for example. For this, a patient is treated in week 1 and in week 3. The problem here is that the time period between the two treatments is too short to register both DRGs. And the health insurers check this meticulously*' [57]. Yet, she argued, decisions on the course of treatments should be made by the medical professionals involved, and not be influenced by restrictions in DRG registration and reimbursement.

Another example was provided by a dermatologist at one of the ITCs, who explained that he registered two DRGs when he removed two benign tumours for a patient: '*If I remove two then I need to ask the health insurer for permission beforehand. But of course, our preference is to do all necessary treatments during a single consult. So for removing that extra lump I just register a second DRG. That by no means amounts to fraud. It's just that I cannot register the second treatment otherwise*' [44]. In this case, the dermatologist said it was much more efficient to avoid the

bureaucratic procedures with the health insurance company and just register a DRG for each treatment.

Multiple DRGs for changes in the course of treatment

Changes in the course of a patient's treatment were sometimes a reason for medical specialists to register multiple DRGs. Two UH rheumatologists explained what happened when they registered two parallel DRGs for patients with rheumatoid arthritis who had developed bacterial arthritis requiring hospital admission – and how they solved the difficulty: *'We used to register this in parallel, in line with the registration instructions, but this caused too much difficulty [with the health insurers]. Now we just close the outpatient DRG for rheumatoid arthritis and open an inpatient DRG for bacterial arthritis, and once we've closed this DRG we open a DRG again for rheumatoid arthritis'* [11]. The head of the department for internal control at this UH said that such practices were the main source of invalid sequential registration. '*In these cases, medical specialists close DRGs too soon and cut up a single treatment trajectory into multiple DRGs. The… specialist is not supposed to invoice the first DRG for reimbursement, but to change the treatment setting of the DRG from outpatient to inpatient treatment'* [14]. In other words, in such situations, the specialist is allowed to register two DRGs for the patient sequentially, yet in this example the specialist has registered one too many.

Another example was provided by a representative of the department for medical administration. As she pointed out, '*some specialists decide to open a second DRG when the condition of a patient being treated as an outpatient worsens. Yet, officially, a second DRG is only allowed when the patient requires hospital admission. The specialist feels that this [opening a second DRG] is only fair and I tend to agree with them on that point*' [8]. Gastroenterologists have a similar tendency, she continued. They open a separate DRG for patients that require a gastroscopy under sedation, as this is much more demanding and time-consuming than a regular gastroscopy. A GH gynaecologist pointed out that she too occasionally registered multiple DRGs for a patient, if during the course of treatment it became clear that the patient required very specific diagnostic testing. *'The majority of the women who come here have multiple medical problems, but we mostly register just one DRG for them. In the end its about how much time you spend on the patient, and in most cases they need the same*

diagnostic testing for all of their complaints. Only when we need to register very specific diagnostics do we register a second DRG. Then we say, this is too specific for this DRG, so we close it and open another one to register this specific diagnostic test' [37].

Registering a diagnosis that covers the diagnostic tests

The choice of which diagnosis to register was in some cases determined by the diagnostic tests that were needed to determine the nature of a patient's medical condition. A DRG coordinator for the department of internal medicine at the UH said that the specialists in that department often treated patients with the difficult to diagnose symptoms of diarrhoea or vomiting. '*For these patients we do all kinds of unusual endoscopic tests just to find out what is actually wrong with them. The problem is that these expensive diagnostics can only be registered in combination with very specific diagnoses. So we have to pick a specific diagnosis in DRG registration even though we don't yet know what the actual diagnosis is*' [24]. Specialists faced a similar problem for patients presenting with vague complaints of fatigue.

A GH paediatrician declared that he almost always registered obstipation as the diagnosis for children presenting with abdominal complaints, to avoid matching difficulties in registration: '*You know why? Because the purpose of the whole workup, evaluation and diagnostics, is to verify or rule out obstipation. But of course the medical discharge diagnosis is not necessarily obstipation*' [42]. Medical specialists at the UH and the GH often referred to this as registering "suspected diagnoses" [19, 25, 42, 48]. The dilemma facing medical specialists in dealing with suspected diagnoses is illustrated by the example of a child coming into the hospital with symptoms of meningitis. Subsequent diagnostic testing (e.g., a lumbar puncture) typically rules out meningitis, and the most accurate (i.e., discharge) diagnosis for the child often turns out to be the flu. Two GH paediatricians, however, stated that in such cases they registered the suspected diagnosis of meningitis in order to get the diagnostics reimbursed [42, 48]. A UH paediatrician too recognised this dilemma in the choice between the initial and the discharge diagnosis in DRG registration [25]. Nonetheless, a medical manager and DRG coordinator for the paediatrics department at the UH asserted that the medically correct discharge diagnosis was

registered within the department, even if it was incompatible with the diagnostic tests performed on these patients [19].

Registering a diagnosis that covers the chosen treatment

Medical specialists sometimes based the DRG registration on the preferred treatment for a patient. This was illustrated by two urologists who explained why they changed the registered diagnosis of patients with interstitial cystitis into the diagnosis bladder tumour. '*Both diagnoses are treated with the same kind of bladder flushing, but this treatment doesn't match the DRG diagnosis for interstitial cystitis*' [38] This practice was also mentioned by the other urologist [50]. A gynaecologist working at the GH pointed out that she too had to change the diagnosis for a patient with myoma because the preferred treatment for the patient was actually an intervention one would expect for a fertility-related diagnosis [37].

Nonetheless, a DRG coordinator for cardiology and lung diseases said that such "creative" registration usually amounted to only minor changes in registration. She pointed out that the main cause of rejected reimbursements of DRGs was a mismatch between the diagnosis registered and the treatment performed: *'Often we can solve this by switching around the primary and secondary diagnoses. In these cases, the treatment just fits the secondary diagnosis better'* [22]. Here, "creative" registration merely means changing the prioritization of the diagnoses set for a patient. Nonetheless, even such minor changes result in a different DRG care product with a different tariff.

The examples presented above suggest that for medical specialists in all of the different types of medical institutions, the DRG diagnosis that is registered might be determined more by the treatment performed on a patient than their actual medical condition. Another tactic for dealing with a mismatch between diagnosis and treatment is to choose a resembling diagnosis. A DRG coordinator of internal medicine explained how his department dealt with DRGs that had been rejected for reimbursement: '*In those cases, we have to dive into the registration and discharge letters for the patient and ask ourselves, "Is the diagnosis rock-hard?" Perhaps we can use a diagnosis from a previous treatment*' [24]. Following the same logic, a surgeon at the GH explained his pragmatic approach in such situations: *'If the*

diagnosis and treatment don't match, I just register a generic or resembling diagnosis' [39]. A similar practice was noted by a representative of the Netherlands Urology Association (NVU): '*I contacted DBC Maintenance several times to ask them how I am supposed to register wrongfully excluded combinations of diagnoses and treatments. They told me that we just have to pick a different diagnosis that corresponds with a DRG that is more or less comparable in effort and medical condition. They basically told me to commit fraud'* [50].

At the UH, however, some medical specialists claimed that they preferred not getting the DRG reimbursed over a compromised registration of the diagnosis [13, 17, 29, 30]. One of these was a UH oncologist: '*We treat a small group of patients here that suffer from rare hereditary tumour syndromes. I can't find a DRG that adequately reflects the treatment we give these patients. I just accept the fact that these DRGs cannot be reimbursed and hope that they fall within the 5% margin of error*' [13]. A representative of the department for medical administration noted that for certain medical specialties, registration instructions explicitly state that it is permissible to choose a resembling diagnosis. '*This is the case for surgery, so that is what we do for this medical specialty. But we are not going to infringe on the truth. Then we prefer not invoicing the DRG at all*' [8].

Registering a diagnosis that allows for the use of high-cost medication

Another recurring topic in DRG registration at the UH and the GH was the rather new and booming area of patient treatment with biologic medication. These "biologics" were commonly applied in rheumatology and oncology. Like the WBMV treatments, these are high-cost medications that require additional funding, separate from DRG reimbursement. The problem facing both oncologists and rheumatologists was that the biologic treatments could be registered only in combination with a few specific diagnoses, while in practice the biologics were applied for a wider range of medical conditions. Two UH rheumatologists [11, 35] described how they dealt with the inability to register a biologic treatment for a patient suffering from polyarthritis instead of rheumatoid arthritis: '*For these patients we change the diagnosis into rheumatoid arthritis. One may call this fraud, but many of our diagnoses are open to a broader interpretation. I feel that the system just forces us to be less accurate.*'

A GH rheumatologist told a similar story: *'I see young men whose families are being destroyed by the other type of rheumatism, while I know I have an effective medication at my disposal to treat them. What do you think happens then? I change the diagnosis, and so do all of my colleagues'* [41]. The same applies in oncology. A UH oncologist and DRG coordinator for internal medicine said they used a curative chemotherapy to treat certain types of tumours in the prostate or throat, although these treatments could not be registered in combination with these diagnoses. They could, however, solve the problem by altering the diagnosis [13, 24]. Such "workarounds" in DRG registration were commonly shared among medical professionals through their professional associations [41, 48, 49, 50, 57].

Registering a medical diagnosis for a cosmetic treatment

Another form of unintended response relates to the registration of a medical diagnosis for a cosmetic procedure. Treatments that are considered cosmetic are ineligible for DRG reimbursement. On this account a dermatologist working in one of the ITCs pointed to the fuzzy and sometimes arbitrary distinction between cosmetic and medically indicated treatments: '*When an acne problem results in an atheroma cyst, removal of the lump is considered a cosmetic procedure and cannot be registered in combination with this diagnosis. So in those cases I change the diagnosis into a benign tumour, so I can remove the lump*' [44]. A plastic surgeon working part time at the UH and part time at a GH related a similar story: '*When a patient comes in with a pustule I have to decide whether this is, say, DRG code 203 or code 511. The 511 is insured care, but 203 is not and has to be paid for by the patient*' [15].

That same plastic surgeon pointed out that the distinction between cosmetic care and a medical diagnosis largely hinges on a professional assessment. Certain treatments, he said, *'[could be] considered cosmetic care, but if I suspect that the tissue may be malignant the treatment would of course be medically indicated*' [15].

Unintended responses might also arise if medical professionals disagree with a distinction that another, perhaps non-medical, organization has made between medically necessary care and cosmetic procedures. An example is the resistance of the Dutch Ophthalmology Society to the automatic labelling of all upper eyelid

surgery as cosmetic care. Even though medical professionals occasionally consider blepharoplasty to be a medical necessity, health insurers often reject this DRG for reimbursement [40].

Registering a diagnosis that yields a higher reimbursement

A last type of unintended response related to the choice of diagnosis registered in the DRG system concerns the perceived profitability of a DRG. A GH rheumatologist noted that the criteria for the various types of rheumatism were quite fuzzy, and in fact required him to exercise professional discretion. *'[S]o whether a patient matches the criteria for one syndrome or another really depends on my professional judgement. But of course you can imagine what happens if one type of rheumatism yields twice the reimbursement of another'* [41]. An eye surgeon at one of the ITCs provided a similar example: '*The diagnoses macular degeneration and macular pathology are closely related, but differ significantly in the reimbursement they yield*' [45]. A gynaecologist [37] and paediatrician [42] at the GH both confirmed that lucrativeness was certainly a factor in DRG registration. '*When I walk through the building, I can see those tables lying on the desks. Tables that allow you to compare the differences in reimbursement between DRGs*' [37]. A rheumatologist [41] and surgeon [39] at the GH also pointed out that lucrativeness of DRG registration was something to consider, as they felt an obligation to help keep the hospital in good financial health.

5.3 Unintended responses in treatment registration

Intended response: Medical specialists register a DRG treatment that accurately reflects the treatment provided

The previous section focused on the assumption that a single and correct diagnosis should be registered for each patient, reflecting the patient's medical condition. The current section addresses a similar assumption in treatment registration. However, unlike the assumption regarding diagnosis registration, the DRG system does not assume a single correct treatment for all patients with a certain medical condition. Almost every diagnosis allows for multiple treatment options (e.g., a conservative or

surgical treatment) and different treatment settings (i.e., “outpatient”, “day care”, or “inpatient”) and occasionally with different levels of complexity or effort (e.g., explorative or extensive treatment). As described in chapter 4, this rudimentary categorization of treatments in DRG registration leads to the reimbursement of specific care products, each with its own care profile. These care profiles reflect the average of all treatment elements that are considered to be required for treatment of a patient in that medical state. As the DRG tariff is based on this average care profile, the system sets a standard for patient treatment – even more so because the average DRG care profile also stipulates which treatment elements are essential for a DRG to be eligible for reimbursement. The assumption that follows from this design is that the DRG registered for a patient is consistent with the treatment that was actually provided to that patient.

UNINTENDED RESPONSES OF MEDICAL PROFESSIONALS IN TREATMENT REGISTRATION

The assumption that medical specialists register an accurate treatment in the DRG system is understandable, yet this research uncovered certain challenges to doing so. Interviews with medical specialists at all three types of medical institutions revealed these tensions to be related primarily to a disconnect between the static nature of the DRG system and the dynamics of professional practice. Our analyses showed various types of unintended responses of medical specialists in DRG treatment registration.

Registration of complex treatments under generic treatment codes

Registration of complex treatments under generic treatment codes was mainly utilized by UH specialists, many of whom explained that they felt compelled to register the complex treatments of many relatively small groups of patients under a generic treatment code [17, 26, 29, 30]. According to a medical manager of a department of neurology and psychiatry, ‘*Yearly we treat a group of approximately 100 epilepsy patients with surgery. However, since surgical treatment of epilepsy is very uncommon it cannot be registered in combination with the diagnosis. So this is an example of a complex treatment – which costs us 25,000 euros per patient – that we have to register under the category “other treatments”*’ [30].

This picture was confirmed by an interviewee from the planning and control department of the UH: '*A considerable share of the rare and expensive treatments we perform in this hospital end up in general DRGs or categories like "other treatments". Those are examples of incorrect inferences made based on the actual medical activities, just so that at least some DRG can be invoiced'* [29]. Although more loosely related to complexity, a GH surgeon explained that he tended to choose a generic category or one that resembled the treatment performed when confronted with difficulties in DRG registration [39].

Addition of fictive essential elements to DRG registration

Medical specialists may make adjustments in treatment registration in order to obtain a reimbursable DRG, for example, by adding a period of hospital admission for patient that was actually home-treated or treated as an outpatient. However, adding such a fictive hospital admission is not done in the DRG system directly, but in the hospital administrative system used to validate the DRGs for reimbursement. The interviews conducted revealed that medical specialists at the UH, but also those working at ITCs, faced difficulties in DRG registration of new approaches to patient treatment. A UH rheumatologist, for example, explained that home treatment of patients with chronic diseases is a fast-developing trend, but that this sometimes conflicts with the requirements of the DRG system. He explained that an episode of hospital admission is considered an essential element in DRG registration for some biologic treatments: '*So for biologics for patients that are in home treatment, we also need to register a day admission*' [35].

A UH oncologist related a similar story regarding oral types of chemotherapy administered in an outpatient setting: '*For these patients, I ask my secretary to add a day admission, so we can register the DRG*' [13]. The DRG coordinator of the UH department for heart and lung diseases [22] pointed out the same difficulty in DRG registration for the treatment of cystic fibrosis. Besides these examples from the UH, managers at two of the ITCs represented in our sample pointed out that conflicts in DRG registration regularly arose for new and improved treatment trajectories [46, 47]: '*When we started this clinic, we offered a new treatment method for sterilization in an outpatient setting, for which we inserted an artificial implant instead of the traditional surgical intervention. The DRG for this treatment could not be registered without*

admission of the patient, so we had to be creative about that' [46]. In this case, too, a hospital admission had to be registered in order for the DRG to be reimbursed.

Registration of innovative treatments under the code for regular treatment

The lack of adequate treatment codes for DRG registration is often a function of the use of new and improved types of treatment. One of the main and perhaps most obvious strategies for solving this dilemma is to register the DRG that reflects the regular treatment for these patients. Examples were mentioned by specialists at all three types of medical institutions (at the UH, [15], [18], [21], [26]; at the GH, [38], [41], [43], [50]; at the ITCs, [44], [56]). To illustrate the types of assessments made by medical specialists in registration of innovative treatment methods, a plastic surgeon who worked part time at a UH and part time at a GH explained that he often has multiple treatment approaches at his disposal for patients: '*If I work on one of a patient's joints, I can either use an artificial prosthetic or I can use the patient's own bodily tissue, which is definitely preferable from a medical perspective. However, the DRG that I register for these patients only reflects the use of artificial prosthetics*' [15].

Two medical managers at the UH [18, 21] and two urologists at the GH [38, 50] also cited developments in minimally invasive surgical techniques, like percutaneous and laparoscopic surgery. A manager of the UH's surgical department said that he and his colleagues used percutaneous surgery for patients with spinal injuries. This treatment method, he explained, was more time-consuming than regular surgery. Nonetheless, '*lacking an appropriate DRG code, we just have to register the DRG for the traditional spinal surgery*' [18]. The same was said to have applied to laparoscopic surgery in the past and more recently to the use of PTNS (percutaneous tibial nerve stimulation) for treatment of an overactive bladder [21, 38, 50]: '*Recently a treatment code for laparoscopic surgery was added to the DRG system, but in the first years this was not the case. Then we had to register it as a regular surgery*' [38]. Whereas the previous examples stress the negative financial consequences of this type of "creative" problem-solving in DRG registration, some medical specialists point out that the extra costs of innovative types of treatment may be compensated in other ways.

A GH oncologist said they had recently begun using a device for scalp cooling as part of chemotherapy treatments. In this case, the primary treatment (chemotherapy) remained the same. The innovation was the addition of a new element (scalp cooling) that made the course of treatment more patient-friendly: '*This [scalp cooling] is an innovative treatment that limits hair loss for these patients. However, the machine was very expensive, and this is not covered by the DRG tariff. Something that helps in this case is that patients who receive the cooling therapy stay in the hospital for more than two hours, which allows us to register the procedure as a day admission. That yields a higher reimbursement than the DRG for outpatient care we would register otherwise*' [43]. In other words, by adding this element to the chemotherapy, the patient spends more time in the hospital, allowing for registration of a different DRG. That different DRG may, in part, compensate for the increased cost of treatment.

Another example concerns new methods of treatment for varicose veins. While traditionally varicose veins were removed via an incision, radiofrequency ablation and laser treatment now offer a new and less painful alternative. Yet, a dermatologist explained that no separate treatment code was available for this newer treatment, so the extra cost of laser treatments was not covered by the available DRGs [44]. A representative of Netherlands Federation of Independent Treatment Centres (ZKN) said that besides being more patient-friendly, the laser treatment had the additional advantage of allowing specialists to treat both legs during a single consult [56]. Another form of compensation was noted by an ITC director, who explained that health insurers are sometimes willing to lend a helping hand: '*When we opened this clinic, there was no DRG code for non-surgical sterilization in outpatient care. The problem was that the materials used for this treatment were so expensive that we could hardly earn anything on the patients we treated. But fortunately, during those first three years we found two health insurers that were willing to pay us a little extra on top of the DRG tariff for the traditional sterilization procedure'* [47].

Registration of a different treatment that covers the cost of the actual treatment

Besides registering innovative treatments under a DRG for traditional procedures, the interviews revealed that medical specialists may also register a different treatment code if they feel that the regular DRG does not cover the costs of treatment.

Specialists at all three types of medical institutions explained that occasionally cost compensation instead of medical accuracy plays a considerable role in determining which DRG is registered. In such cases, a treatment might be registered that approximates the time and costs involved in the actual treatment.

A department of cardiology DRG coordinator [22] explained that the specialists in her department had to rely on this strategy for registering an artificial heart implant: '*An artificial heart implant is by far the most expensive type of surgery we do here, but there is no adequate DRG available for it. So we have to be pragmatic and just register the most expensive treatment we can find, but even then it is a no-fit*' [31]. The same DRG coordinator, furthermore, pointed out that this workaround in registration had been suggested by the national cardiology society. GH specialists also referred to this practice, though more generically [37, 39]. A GH paediatrician said, '*If I cannot find a DRG code for a treatment that I did, I start looking for another treatment that resembles it in effort and nature, because that is just frustrating*' [42].

Interviewees at the ITCs again associated such "creative" treatment registration with the use of innovative treatment methods [44, 46]. A dermatologist explained that for a long time no DRG code was available for ultraviolet light treatment of patients with superficial malignities: *'So in the meanwhile I had to register this under a code that resembled the costs for this treatment'* [44]. In a similar fashion, a manager at one of the ITCs argued that creative registration had to be used for new methods of treatment for which no codes were currently available: '*In our clinic we use certain expensive implants to treat patients with uterine prolapse. This is an innovative treatment for which no code is available. So what we do – and what we also see other hospitals doing – is register a code 703 for the treatment to compensate for the extra costs. But officially, code 703 is only meant for a full uterus resection*' [46].

He continued to say that registration remained problematic for new methods of treatment, like outpatient sterilization in the past and at present PTNS for treatment of an overactive bladder: *'In these cases, we need to register "as-if" DRGs, so DRGs that are factually incorrect*' [46]. A representative of the Netherlands Federation of General Hospitals (NVZ) referred to this practice as "nearest buys": '*In these cases, medical specialists often register the nearest buy. This means that you register something different than the actual treatment, but this is winked at by the authorities.*

But don't think these are all extraordinary cases. It even applies when you register an endoscopic type of surgery as an ordinary surgical intervention' [54].

Registration of a treatment code that yields a higher reimbursement

A last unintended response related to the choice of treatment registered is motivated by the perceived profitability of a DRG. Hereby, considerations of profitability could be related either to the medical specialist or to the medical department or hospital overall. A UH psychiatrist described his routine in DRG registration. Even though the actual nature of treatments varied from one patient to another he said, '*I always register pharmacotherapy for my patients, because I've heard that this is better for our department'* [20]. A paediatrician working at the GH also argued that perceived profitability was a factor in registration choices, even though the paediatricians do not benefit from this directly. '*Even though the paediatricians here are in hospital employment, some colleagues advised me to schedule the diagnostic tests a patient needs on multiple days so that I can register a 711 treatment code instead of a 714, which is less lucrative*' [42]. This same paediatrician and a gynaecologist explained that such strategic registration was widespread. '*It happens all the time, and also has to do with the fact that the distinction between explorative and extensive treatment has never been specified properly…. Some just systematically register extensive treatments*' [37]. Managers of the UH radiotherapy department argued that profitability considerations in DRG registration applied mainly to radiotherapists working at GHs and ITCs, as they were encouraged to systematically register more lucrative treatments: '*Radiotherapy is scaled from 1, which is uncomplicated treatment, to 7, which is the highest level of complexity. It is the medical specialist who decides which of these scales best reflects the treatment they provided'* [23]. According to this interview candidate at least one hospital is known to have engaged in upcoding by registering too many level 3 and 4 treatments.

5.4 Unintended responses in the combination of diagnosis and treatment

Intended response: All patients are accepted for treatment, regardless of cost considerations

In contrast to the assumptions about the DRG system addressed in the previous section, we focus here on an assumption not directly linked to DRG registration, but rather associated with the patient population or "case-mix" of medical institutions. The fact that DRG tariffs are based on average care profiles assumes that DRGs – as average care products – are a suitable parameter for estimating the effort involved in patient treatment across all different types of medical institutions. However, in practice various factors affect the characteristics of medical institutions' case-mix. Case-mix characteristics of treatment facilities might vary due to choices that hospitals and medical specialists make in treatments or in planning production. Actively or passively they may attract specific groups of patients, leading to changes in the distributions of patient complexity in the various types of medical institutions.

Unintended responses of medical professionals in acceptance of patients for treatment

The assumption of a relatively even distribution of patients with average care demands over the medical institutions seems plausible, but this research showed that the introduction of the DRG system led to changes in patient flows. Medical institutions and specialists may apply certain strategies to influence the case-mix of their patient populations. More specifically, the medical professionals interviewed mentioned a number of categories of unintended responses in relation to acceptance of patients for treatment.

Selecting patients with a low risk of complications

In response to the DRG-based performance management system, ITCs and GHs shifted their production to the treatment of patients with a low risk of complications. This practice was described by a UH plastic surgeon who also worked part time at a nearby GH: '*At the GH we need to keep production up. So if we see patients there that look frail or have complicating factors, like signs of pressure sores, we refer them*

to our practice at the UH for treatment. Those patients are just not suitable for our [GH] practice' [15]. According to commercial managers of the departments of psychiatry and neurology, neurologists who work part time at one of the surrounding hospitals also refer difficult patients to the UH [26]. Besides these examples from UH specialists with some involvement in a GH, many of the GH specialists interviewed indicated that the ITCs were in the best position to pursue an active policy of selecting low-risk patients [38, 39, 48]. Nonetheless, GHs were also noted to implement protocols for referral of likely unprofitable patients to the UHs [55].

Medical professionals at two ITCs [46, 47] said that they referred difficult or emergent cases to nearby hospitals, but that in addition they were selective in the treatments their clinics provided: '*We decide to provide a treatment or not based on the clarity of the treatment trajectory. This clarity depends on how easy it is to standardize the treatment trajectory and how predictable it is*' [46]. This description points to a preference among ITCs for straightforward patients and treatments with a low risk of complications. In line with the GH plastic surgeon's example [15], factors like obesity, diabetes, pressure sores, and age increase the risk of complications during or after treatment. Such risk factors compromise the predictability of the treatment trajectory for these patients. In accordance, an eye surgeon at one of the ITCs explained that his clinic mainly performed the easy cataract treatments. However, he also pointed out that this was not only the result of an active selection policy: '*It is mainly the waiting times for treatment at the UHs and GHs that prompt patients to start looking elsewhere. I used to be a member of the executive board of a UH, and I can tell you that low complexity care, like cataract surgery, just does not belong there*' [45]. On the other hand, a dermatologist interviewed at the same ITC said that he and his colleagues treat exactly the same patients and do the same treatments as they used to do at the GH where they worked before. However, he added that this was also a function of the nature of the field of dermatology: it is unusual to encounter patients requiring hospital admission for a dermatological problem.

A UH orthopaedic surgeon claimed that, as a consequence of these developments in the GHs and ITCs, *'More patients with obesity or diabetes or other complications are being sent our way. On the one hand, one could say that this is part of our academic function, but it is not a good development from a financial perspective*' [10]. In addition, an eye surgeon [36] and a manager of the UH surgery division [28]

explained that they had lost a large segment of their low complexity production since the introduction of the DRG system: '*Before 2006 we used to do approximately 1,200 cataracts a year. Nowadays we only do about 500 a year. These are all patients with complicating factors like small eyes or Down syndrome. These are all patients that the GHs and ITCs don't want to treat. Of course, it reflects our academic function, but with the [loss of] simple cataracts we also lost a financial foundation for our department and the UH as a whole*' [28]. This medical manager suggested that the UH had lost an especially large proportion of the low complexity treatments that now fall under List B DRGs.

Selecting high complexity patients

Contrary to the GHs' and ITCs' abovementioned strategy of selecting low complexity patients, the UH pursued an active policy of attracting high complexity patients. The interviewees suggested that developments and activities deployed by the UHs affected the level of complexity of their patient population. One UH oncologist explained that he visited the surrounding hospitals for consultations every two weeks as a part of the UH's service to the region: '*I select patients there that fit our academic profile and would benefit from treatment at the UH. These patients are then directed to us*' [13].

Besides this active selection, the development of centres of expertise has increased the overall complexity of the patient population. A manager of the surgery division said that the medical specialists in the division ran a national centre of expertise for patients who develop an infection after hip replacement surgery: '*This is a group of only 10 to 40 patients a year, but these people are really sick. They require an average stay in the hospital of 30 days, but the treatment of these patients can take up to 300 days. And for these patients we can only register the regular DRG for a hip replacement. That does not cover the cost of treatment for these patients by far. And the health insurer is not interested in the problem, since it only concerns a group of 40 people a year*' [28]. In a similar fashion, medical managers of departments of psychiatry and neurology pointed out that the UH was never meant to provide high volumes of low complexity care: '*For neurosurgery we mainly focus on the treatment of brain tumours, vascular surgery, and epilepsy. These are highly specialized and*

costly treatments. Low complexity treatments, say, for hernias or carpal tunnel syndromes, are just not that interesting to us' [30].

Cutting down on the use of high-cost diagnostics

Another response to the DRG system that affects the case-mix of medical institutions concerns changes in the course of treatments to render production of certain DRGs more cost-efficient. A gynaecologist described how cost-efficiency considerations might play a role in patient treatment: '*When done properly, fertility testing requires at least a few echographies and consults. However, since the reimbursable tariff for this DRG is only 150 euros many hospitals and clinics have stopped performing fertility testing. I still do it, but now only when certain important conditions are met – like the woman is under the age of 35 and the partner has good sperm quality. This approach leaves me with 10% to 20% of the patients that I would have tested before. So you see, it is possible to be cost efficient and maintain treatment quality at the same time*' [37]. An ITC eye surgeon reported changes in treatments in his field of expertise to overcome loss-making diagnostics: '*Fluorescent angiography [FAG] and vision field tests are thorough but time-consuming diagnostics that are not included in the average care profile and DRG tariff. One effect is that many of the clinics no longer have an anaesthesiologist present during the FAG, because it is too expensive. We still do the FAG in our clinic in the presence of an anaesthesiologist just in case the patient goes into anaphylactic shock'* [45].

Increasing production volumes in profitable DRGs

Instead of altering the course of treatments in order to make them more cost-efficient, GH specialists [37, 38, 41, 48, 49] and ITC specialists and managers [45, 46, 47] often preferred to alter the production balance between profitable and unprofitable DRGs. A GH gynaecologist, urologist, and surgeon pointed out that low complexity care is often relatively better paid than high complexity or innovative treatments [37, 38, 39]. The urologist described how the hospital accommodated the unprofitable part of its production: '*Sometimes, just comparing the average care profile of the DRG with the treatment protocol of our professional association shows you that a DRG will be a loss-maker. Then there are only two options. Either you decrease the production volume of the unprofitable DRG or you increase your lucrative production*

to compensate for your losses. This is how many hospitals pay for their innovation and complex care' [38]. On a similar note, the ITC eye surgeon pointed out that many clinics had stopped using high-cost diagnostics, *'or at least reduced their volume'.* His clinic still performed FAGs, he said, '*because we can still compensate for it with our more profitable production*' [45]. A GH rheumatologist pointed out that echography in his profession was not adequately covered by the DRG, but he and his colleagues still performed the procedure, both because they increased the quality of treatment and because the DRG system in general had been kind to his field of medicine [41].

A GH gynaecologist indicated that medical advances could cause shifts in production flows: '*In my profession, we used to remove cysts only when they were larger than 5 cm, because opening up a patient to do this brings certain risks. But nowadays we have less-invasive methods for removing these cysts, like endoscopic surgery…. This allows us to also remove cysts smaller than 5 cm*' [37]. However, she also pointed out that this is considered a profitable treatment in the field of gynaecology. '*What you see now is that one cyst after the other is being removed'* [37]. Occasionally, the increase in production volumes of profitable DRGs is stimulated by hospital management [41].

5.5 How do medical professionals explain their unintended responses?

The previous sections showed the types of unintended responses applied by medical professionals in patient selection and registration of diagnoses, treatments, or the combination of both. The current section looks at the explanations and justifications used by the medical professionals themselves to account for their reliance on unintended responses in utilizing the DRG system. Based on the statements made by medical professionals on their unintended responses, presented in this chapter, we distinguish between financial incentives and value-based motivations. However, it is important to note that these two categories are not mutually exclusive. Often the explanations given by medical professionals include both financial and value-based reasoning.

FINANCIAL MOTIVATIONS FOR UNINTENDED RESPONSES

To cover the actual costs of treatment

The first and most common financial motivation mentioned by the medical professionals for their unintended responses to the DRG system was to acquire adequate compensation for the treatments provided. This motivation was applied particularly in cases where multiple DRGs were registered for treatment of a patient [10, 11, 38, 44, 48, 50] and in instances where greater effort was required for patient treatment [8, 37]. In the minds of most medical professionals, the DRG system was not so much a medical registration system, but primarily a system for reimbursement of '*the time you spent on a patient*' [37]. This mindset suggests that unintended responses in such cases were driven by a sense of fairness. Unintended responses were used in individual cases where reimbursement of an average treatment cost was considered unfair, as it did not meet the actual expenditure of time and other resources on these patients.

Financial motivations in general applied to cases where unintended responses in DRG registration were aimed at covering the actual costs of treatment [22, 24, 31, 37, 38, 39, 44, 46, 50]. This was of particular concern in registration of "suspected diagnoses", which were later ruled out by the diagnostic tests applied; yet the aim maintaining their registration was to cover the costs of the diagnostics used [25, 42, 48].

To increase remuneration for the medical professional

The second category of financial motivations that interviewees mentioned was solely to increase reimbursements. This motivation was particularly a factor in selection of low-risk patients – especially by the ITCs. This was mentioned by multiple medical professionals at the UH and GH [15, 18, 26, 28, 38, 41]. They generally felt that the ITCs were making easy money by referring higher risk patients to other medical institutions. The medical professionals working at the ITCs offered similar motivations for their patient selection policy and shared the perception that the profitability of their total DRG production was determined primarily by patients' risk of complications [44, 45, 46, 47, 56].

Similarly, the choice of which diagnosis to register was claimed to be determined, in part, by which diagnosis had the higher reimbursement outcome [23, 37, 39, 41, 45], and there was a systematic tendency to register extensive treatment categories [20, 37, 42]. This motivation for unintended responses was confirmed by a gynaecologist: '*It happens all the time, and also has to do with the fact that the distinction between explorative and extensive treatment has never been specified properly…. Some just systematically register extensive treatments*' [37]. In these cases, the unintended responses were not claimed to serve any purpose other than to generate a higher reimbursement for the care provider.

To prevent underfunding of the department or hospital

The last category of financial motivations was to increase reimbursements for the sake of the hospital or medical department. However, unlike the previously described motivation, increasing DRG reimbursements in these cases was argued not to be an end in itself, but rather an instrument to safeguard the continuity of care for unprofitable patient groups. This was demonstrated by the fact that not only self-employed, but also hospital-employed medical professionals utilized unintended responses to increase reimbursements. A psychiatrist employed by the UH pointed out that the financial situation of his department was his primary concern in registration: '*Even though we're employed by the hospital and don't get any richer because of it, we have to make sure that we register optimally. You can't lie of course, but you can definitely make choices in registration*' [20]. A GH-employed paediatrician similarly explained that the financial situation of his department was a factor in DRG registration: '*Even though the paediatricians here are in hospital employment, some colleagues advised me to schedule the diagnostic tests a patient needs on multiple days so that I can register a 711 treatment code instead of a 714, which is less lucrative*' [42]. Thus, besides self-interest as a potential motivation for unintended responses, medical professionals appear to see it as their '*duty to also keep an eye on the production of our department*' [39].

This same motivation applied to the unintended responses in cardiology in which multiple WBMV treatments were registered [8, 22, 31, 49]. Particularly for the UHs, the additional fees that the hospital received for providing highly complex treatments accounted for a considerable part of the total hospital budget. As such, departments

of cardiology, but also other UH departments, might face severe consequences if they lost out on reimbursements for these costly treatments. In this respect, steering based on increasing the volume of lucrative DRG production – and cutting down on the use of high-cost diagnostics – were explained as ways to increase hospital revenue, thus allowing facilities to continue to provide the more complex and innovative treatments that were, nonetheless, generally unprofitable [37, 38, 39, 45]. This was illustrated by a GH rheumatologist: '*I brought this method to our department from Paris a few years ago. With this non-surgical procedure I can treat patients… that otherwise would have required surgical treatment and had a relatively large chance of relapse and complications. And even though I have to register this treatment under the old DRG – which does not cover the cost – I can still perform this treatment because our overall production is profitable*' [41].

VALUE-BASED MOTIVATIONS FOR UNINTENDED RESPONSES

To cope with the gap between the system and professional practice

One category of value-based motivations that we identified was to remedy a mismatch between the system and professional practice. This motivation was called upon when the dynamic nature of professional processes conflicted with the static nature of the DRG system. For example, advances in healthcare provision allowed more patients to be treated through outpatient care or even at home. Yet, various medical professionals mentioned that they had to add fictive hospital admissions for such patients, because a hospital stay was prescribed as a precondition for reimbursement [13, 22, 35, 46, 47]. As one of the ITC managers explained, a '*DRG for this treatment could not be registered without admission of the patient, so we had to be creative about that*' [46]. The addition of fictive hospital admissions for patients treated on an outpatient basis did not serve to generate a higher DRG reimbursement, but rather to enable the treatment facility to receive any reimbursement at all.

This same motivation for unintended responses also applied to cases for which the DRG system was perceived as too simplistic to reflect actual professional practices. For example, a medical professional might be confronted with a mismatch in DRG registration options between the diagnosis and the chosen treatment [22, 24, 38, 39,

50] or applied diagnostics [24, 42, 48]. In line with this, specialists felt compelled to register complex treatments under a generic code or to register innovative treatments under an "old" DRG. A representative of the UH planning and control department explained these as '*examples of incorrect inferences'* [29] in DRG registration. These served only to enable registration of some DRG for the rendered services. It thus at least allowed for a DRG care product to be invoiced, even though it did not adequately reflect the treatment or the time spent with the patient [15, 18, 21, 38, 43, 44, 50].

To accommodate the treatment that the doctor considers best

A second category of value-based motivations was to support the treatment or approach to treatment that the medical professional considered best. This motivation, for example, was often applied to cover improved treatment methods or innovative prosthetics [15, 18, 21, 38, 44, 46, 50]. It also applied to medical specialists' modification of a diagnosis registration in order to enable the use of high-cost biologics, which are officially restricted to specific groups of patients [11, 13, 24, 35, 41]. Furthermore this motivation was cited by the urologists [38, 50], who explained that registration of multiple DRGs for their patients with bladder cancer was a consequence of their preferred manner of treatment. Removing no more tissue than necessary reduced the risk of complications for the patient, yet it also increased the chance that a second bladder scraping would be needed if not all malignant cells were removed the first time. They believed this approach to be beneficial to treatment quality. From this perspective, such unintended responses can be seen as an ex post strategy to solve issues in DRG registration *after* the patient has received the treatment chosen by the medical professional.

To advocate for patient interests

A third value-based motivation found for unintended responses relates to the medical practitioners' duty and intention to serve the best interests of their patients. This mindset was expressed by one of the rheumatologists who claimed to have adjusted the diagnosis of some patients to enable treatment with a biologic: *'So, the system forces me to commit fraud, but I'm not ashamed of that. It is a bitter necessity, because we've all taken the Hippocratic oath to put the interests of our patients*

above all' [41]. Medical professionals consider biologics to be the best treatment available for these patients, yet they are too expensive for most patients to pay for out-of-pocket [11, 13, 24, 35, 41]. Preventing out-of-pocket payments was also mentioned as a motivation for unintended responses by medical professionals who felt that certain treatments were unjustifiably labelled as cosmetic care [15, 40, 44].

The use innovative and less-invasive techniques was another reason mentioned for unintended responses in DRG registration. In this respect, "workarounds" in registration were claimed to be necessary, as new types of treatments or prosthetics were being used but had not yet been included in the registration system [15, 21, 29, 30, 38, 43, 50]. This applied particularly to the ITCs, which often profiled themselves as offering treatments that were patient-friendlier than those provided in nearby hospitals [44, 45, 46, 47, 56]. One ITC manager referred to a new sterilization treatment for women that the clinic had introduced years ago: '*We were really keen to provide this innovative treatment because it is much more patient-friendly, and none of the surrounding hospitals were providing it'* [47]. Non-surgical treatments were considered patient-friendlier because they were generally associated with a speedier recovery [46, 47], but this also applied to the use of less painful treatment methods for varicose veins and tonsillectomy [44, 56], as well as the use of state-of-the-art equipment in eye surgery to reduce the risk of complications and the need to repeat procedures [45].

A ZKN representative claimed that the static nature of the DRG system complicated reimbursement for many treatments provided by the ITCs: '*In the countries surrounding us, patients with varicose veins have received laser treatments for years. But CVZ [the Dutch Health Care Insurance Board] still does not consider it evidence-based. We just advise our members to register the old DRG code and ask the health insurers if they are willing to pay a surcharge for the treatment, because it is so much better than the traditional surgery. For a new method of removing tonsils using a radiofrequency treatment, it is the same story*' [56].

Finally, patient selection practices were explained as serving the patients' own best interests. Medical professionals working at the UH preferred high complexity cases, as they felt best equipped to treat this group of patients [10, 12, 18, 28]. They also considered concentration of higher risk patients in the UHs to be beneficial to the

quality of care and patient safety. Consequently, they argued, patients with less complex problems were better off at the GHs and ITCs, as these medical institutions were more efficient in providing high-volume care.

ITCs were thought to be unsuitable for treating patients with highly complex conditions, primarily because these smaller clinics had fewer facilities at their disposal than the GHs and UHs. An ITC eye surgeon pointed out that many clinics did not have an anaesthesiologist present at all times [45], and unlike a GH or UH, they seldom had a trauma team on standby [40]. ITCs were also said to lack the intensive care facilities necessary for treating high complexity patients [67]. In fact, the Dutch health inspectorate has suggested that the risk profiles of patients currently being treated at ITCs are higher than desirable (IGZ 2010).

These financial and value-based motivations for unintended responses of medical professionals to the DRG system are not mutually exclusive. Any given unintended response is best explained by a combination of both types of motivations. This finding is in accordance with critiques of single-motivation explanations of behaviour based on, for example, self-interest as a mono-motivational theory (see, e.g., Orchard 1998, Kahneman 2003). Even though money may not always be the primary motivation for unintended responses to the DRG system, the choices and actions of medical professionals are invariably linked to financial outcomes. This makes it impossible to rule out a direct or indirect influence of financial reward as the “reason for conduct” in explaining unintended responses (Broadbent and Laughlin 2009). We argue that unintended responses by medical professionals can best be described as the result of a “Gordian knot” of financial incentives and value-based motivations.

5.6 SUMMING UP

The current chapter has shown that medical professionals working in various types of treatment facilities apply a wide range of unintended responses in their interactions with the DRG system. Based on the findings presented, four types of unintended responses can be identified.

1. Over-registration: Registration of too many DRGs per patient

Medical professionals registered multiple DRGs per patient, even when they understood that this was not in accordance with the rules for registration. This type of unintended response was found to be related mainly to multi-morbidity medical conditions, to simultaneous or repeated treatments, and to a worsening of a patient's condition.

2. "Creative" diagnosis registration: Registration of a diagnosis on other than medical grounds

Medical professionals registered DRG diagnoses that were suboptimal or incorrect from a medical perspective. This type of unintended response was mainly found to cover the cost of the applied diagnostics, the preferred treatment, off-label use of high-cost medications, and treatments considered to be cosmetic in nature. It was also used to increase DRG reimbursement overall.

3. "Creative" treatment registration: Registration of a treatment code inconsistent with the treatment provided

Medical professionals sometimes registered DRG treatments that did not accurately reflect the treatment provided to the patient. This type of unintended response was motivated by the need to cover the cost of more complex, innovative, or improved treatment methods; to cover the cost of the treatment actually provided; and to increase DRG reimbursement overall.

4. Patient selection: Selection of patients and treatments based on cost and risk profiling

Medical professionals were strategic in managing their DRG production. This type of unintended response concerned risk profiling in patient selection, cutting down on the use of high-cost diagnostics, and increasing production volumes of the more profitable DRGs.

Furthermore, we analysed the reasons provided by medical professionals to explain their unintended responses. As the chapter showed, unintended responses were usually explained by a mixture of financial incentives and value-based motivations. Unintended responses were almost always linked to increased DRG reimbursement, but medical professionals often claimed that this financial outcome was not an end in

itself. Like value-based motivations, the financial outcomes of unintended responses were argued to be instrumental to safeguard professional values.

However, the findings presented also indicate that the medical professional perspective on unintended responses is strongly grounded in individual cases. Unintended responses were primarily utilized when the DRG system led to conflict between the expenditure of time and resources to treat an individual or group of patients and the reimbursement for that treatment. In this respect, the medical professionals seem to exhibit scant reflection on the implications of their unintended responses at the system level. For this perspective, we must look at unintended responses from the viewpoint of the public and private system managers of the Dutch DRG system. This is the subject of chapter 6.

CHAPTER 6 RESULTS: SYSTEM MANAGERS' MEASURES AND MOTIVATIONS

6.1 INTRODUCTION

Chapter 5 addressed medical professionals' various types of unintended responses to the Dutch DRG system and the explanations they give for them. Those findings revealed that unintended responses of medical professionals to the DRG system can be explained, in part, as opportunistic behaviour, but also by strong value-based motivations, for example, to safeguard professional standards of quality and discretion in patient treatment. Whereas the previous chapter took the perspective of the medical professional, the current chapter focuses on the viewpoints of the stakeholders that act as the managers of the DRG system. It is their task to counter unintended responses by medical professionals. Hereby we distinguish between public and private system managers. This chapter addresses our study's fourth and fifth sub-questions:

4. What measures do system managers take to address the unintended responses of medical professionals?

5. How do system managers motivate these measures to address unintended responses?

The following section elaborates on the measures taken by the public system managers to curb unintended responses. Section 6.3 addresses the measures taken by the private system managers. Section 6.4 discusses the reasons offered by public and private system managers to explain the measures they take to curb unintended responses. Section 6.5 reflects on modifications implemented in a 2012 redesign of the Dutch DRG system and the relevance they bear for system manager measures to curb unintended responses. Finally, section 6.6 summarizes the main findings of our analysis of measures taken by public and private system managers to curb the unintended responses of medical professionals.

6.2 MEASURES OF PUBLIC SYSTEM MANAGERS TO ADDRESS UNINTENDED RESPONSES

Though they may not know all of the specifics, public system managers are aware that medical professionals respond to the DRG system in unintended ways. As they bear public responsibility for the functioning of the DRG system – and the healthcare system as a whole – the public system managers address unintended responses at the national level. They have been involved in consultations and covenants between the representative bodies of the various types of medical institutions, medical professions, and health insurers. In 2010, for example, the Netherlands Healthcare Authority (NZa) signed a covenant[14] with the Netherlands Federation of General Hospitals (NVZ), the Netherlands Association for Health Insurers (ZN), and the National Association of Medical Specialists (OMS). This was meant to provide clear guidelines for the registration of multiple DRGs per patient, which had long been an issue of recurrent conflict between health insurers and care providers [51, 54, 55, 66]. As such, the public system managers have tried to facilitate a shared understanding of the intended use of the DRG system among health insurers, medical institutions, and healthcare professionals.

In their interactions with the representative bodies of the medical professionals and medical institutions, the public system managers have also stressed the importance of medically accurate DRG registration. Reflecting on the practice of paediatricians to over-register the diagnosis meningitis to secure reimbursement for the use of high-cost diagnostics, DBC Maintenance insists that the accurate medical discharge diagnosis should be registered [66]: '*The rule is to register the discharge diagnosis, because we don't want to see a national epidemic of meningitis [in the health statistics], just because medical specialists register creatively*' [65]. In addition to the effect of this workaround in distorting national data on the prevalence of meningitis, system managers also pointed out that it frustrates the proper functioning of the system: *'If medical specialists were less opportunistic in these matters and just*

[14] www.internisten.nl/uploads/4X/UI/4XUIY7-5Ti_Eb5Yq1o0rjQ/Circulaire-ZN-2010-0003-incl.-bijlagen.pdf (accessed 5 April 2013)

routinely registered based on the facts, than [the relevant] diagnostics… will eventually become a weighed element in the average care profile of the DRG' [65]. In other words, using workarounds to prevent losses in individual cases hampers the system's learning potential. However, the idea that losses taken in individual cases will be remedied over time, or will be evened out by gains in other individual cases, does not appear to resonate in the hospitals. As shown in chapter 5, unintended responses of medical professionals often follow the logic of the individual case.

To curb unintended responses, the public system managers use various types of measures. Most can be categorized as either stricter regulation of DRG registration or alleviating conflicts that the medical professionals experience in using the system.

GREATER RESTRICTIONS ON REGISTERING MULTIPLE CARE PRODUCTS PER PATIENT

Regulations have been introduced to curb the registration of multiple DRG care products per patient. To develop these, the public system managers compelled the associations of medical professionals to list combinations of diagnoses to be excluded from registration in parallel or in sequence [57]. Furthermore, in 2009,[15] public system managers introduced a minimum time period between sequential registrations of DRGs with the same diagnosis and treatment setting for the same patient (NZa 2012).[16] According to DBC Maintenance [65, 66], the rules for parallel registration of multiple DRGs per patient still require further refinement. This is because the initial conditions for parallel registration were heuristic and therefore rather ambiguous. '*Like most of the rules for DRG registration, the 40% rule for parallel registration has never been specified in detail. As a result, the rules – or rather the guidelines for registration – have always been open to interpretation*' [65]. However, the system managers insist that it was essential to leave some room for

[15] www.wetten.overheid.nl/BWBR0024605/geldigheidsdatum_23-03-2009 (last accessed 5 April 2013).

[16] From 1 January 2012 these minimum time periods were extended to 42 days for inpatient or surgical care DRGs and 90 days for conservative outpatient care DRGs.

interpretation of the rules for registration when the system was introduced: '*We had to come up with certain guidelines for registration in 2006, but we couldn't be too specific in this. We just couldn't foresee exactly how the guidelines would work out in practice*' [66].

Over time, however, multiple DRG registration became recognized as an unintended response with considerable consequences and emerged as a cause of recurrent conflict between health insurers and care providers. The main concern of the public system managers was that the practice of registering multiple DRGs per patient might undermine the logic of a reimbursement system based on average care products. DRG products, after all, were meant to cover the full treatment trajectory of a patient, including complications that might arise after the initial treatment [53, 66]: '*They [care providers] are just supposed to handle these things within the same DRG trajectory*' [65]. In line with this reasoning, a problem with reimbursement of sequential DRGs per patient was that there was no way to rule out that the second treatment was caused by inadequate treatment the first time. In this scenario, the system could – unknowingly – reward treatments of low quality or, at best, provide no incentive for improving the quality of care [66].

Redefining reimbursable care

The public system managers have attempted to curb unintended responses by redefining the concept of reimbursable care. In this ongoing process, the national Health Care Insurance Board (CVZ) was mandated to evaluate whether new and existing treatments meet the standards for reimbursable care specified in the Health Insurance Act (HIA). For reimbursement, treatments must be both proven effective and part of a medically indicated care trajectory (as opposed to cosmetic care). New types of treatment are approved for reimbursement if they have sufficient therapeutic surplus value compared to alternative treatment approaches [4, 64]. In this respect, CVZ has conducted studies evaluating the effectiveness of off-label use of innovative high-cost medications (CVZ 2010), the effectiveness of medical procedures for treatment of chronic a-specific lower back pain (CVZ 2011), and the distinction between medically indicated and cosmetic treatments for varicose veins (CVZ 2011).

Based on these studies CVZ concluded that medical specialists tended to disregard the distinctions made by CVZ between reimbursable and non-reimbursable care: *'In practice medical specialists tend to ignore this distinction. We are therefore of the opinion that healthcare is frequently reimbursed under the HIA that does not live up to the criteria of being proven effective and medically indicated care*' [64]. Furthermore, this CVZ representative argued that the national database of DRG information showed a steep increase in recent years of varicose vein treatments registered under a more expensive DRG: '*We don't know exactly why that is. Perhaps it is related to this [non-reimbursable] laser treatment*' [64].

In addressing unintended responses, CVZ has focused its efforts on DRG reimbursement of treatments that have not (or not yet) been approved as evidence-based (e.g., laser treatment of varicose veins, off-label use of medication) and treatments that border on cosmetic procedures (e.g., upper eyelid corrections and breast reduction surgery) that are nonetheless invoiced for reimbursement [4, 64]. The public system managers were convinced that in practice medical professionals tend to disregard the CVZ's definitions of reimbursable care by using workarounds in DRG registration: *'I'm certain that plastic surgeons register virtually all of their treatments as suspected malignancy [to create a medical indication for treatment]. They do this under the pretext of eliminating any potential risk for the patient, but I'm also a medical doctor, and my impression is that this is often not justified'* [66]. CVZ is concerned that its redefinitions of which treatments are eligible for reimbursement and which are not may have little effect, because compliance with these regulations is insufficiently monitored by other public and private system managers. '*You wonder what the value of our guidelines is if the medical practitioners don't follow them. The problem is that the NZa – as the concerned regulator – does not consider this a priority and the health insurers lack incentives to pay close attention to this kind of behaviour*' [64]. In other words, the effect of directives issued by the public system managers may depend on the willingness of private system managers to enforce them.

EXEMPTION RULES TO PREVENT WORKAROUNDS FOR SPECIALTY-SPECIFIC BOTTLENECKS

Besides introducing more restrictions on DRG registration, the public system managers have also issued exemptions to DRG registration rules for certain medical specialties. The exemptions are aimed to curb unintended responses related to the inevitable registration bottlenecks in these fields of medicine. For these specialities, the specific nature of patient treatment is acknowledged as conflicting with the generic requirements that apply to DRG registration overall. A representative of the professional association for cardiology spoke about the problems they had experienced in DRG registration for patients requiring an ICD replacement in combination with another cardiac treatment: '*We had to lobby long and hard to persuade DBC Maintenance to include an exception for this in black and white in the registration rules*' [49]. However, similar bottlenecks were sometimes solved in more informal ways.

The representative of the cardiology association pointed out there was a lobbying effort under way for parallel DRG registration of patients requiring multiple high complexity treatments, classified as exceptional under the Special Medical Procedures Act (WBMV). For such patients, the hospitals received a supplementary fee: '*We register two DRGs when we have a patient with two WBMV treatments, and DBC Maintenance is aware of that. We wanted this stated explicitly in the registration rules that apply to cardiology. DBC Maintenance did not want to do that, but it is common practice and everybody knows it*' [49]. Even though no formal rule of exemption was established here, the public system managers were aware of the workarounds used in such situations. On a similar note, an interviewee from the Netherlands Paediatric Association (NVK) explained that for patients requiring two WBMV treatments, it was common practice to divide the days of hospital admission over the two DRGs, so these could be registered sequentially [48].

APPROVING NEW CARE PRODUCTS TO PREVENT WORKAROUNDS FOR INNOVATIVE AND COMPLEX CARE

To curb unintended responses, public system managers have approved new care products and included them in the DRG system, particularly for new types of

treatment and for highly complex care. With this, the public system managers have tried to mitigate the need for workarounds to register treatments that the system did not adequately accommodate. Such measures have included the approval of new treatment codes for registration and inclusion of new treatment elements in the average care profiles of existing products. Following standard procedures, both professional associations and individual medical specialists can request inclusion of a new type of treatment in the system. As shown in chapter 5, the absence of adequate DRG codes for registering new, innovative, or complex treatments was often mentioned as a reason for the unintended responses reported.

Concerning such a workaround used in the field of urology, CVZ stated, '*If the professional association for urology deems this [innovative treatment] to be the preferable treatment, they will just have to follow the formal procedure and request a DRG code for it*' [64]. She argued the same when it came to the use of "creative" diagnosis registration by rheumatologists for off-label prescribing of biologics. '*We urge them to take the high road and formally request the inclusion of new medical indications for which this type medication has been proven beneficial*' [64]. Nonetheless, the public system managers agree that the use of workarounds for innovative treatments is – to some extent – necessary, at least as a temporary measure to bridge the time it takes for new codes to be approved.

However, both public system managers [63, 64, 65, 66] and (former) representatives of professional associations [48, 49, 50, 56, 57] noted that medical professionals are not always inclined to start a procedure to request a DRG code for a new treatment method. The main reason for this disinclination is that the uptake of a new DRG code can be a lengthy process. This was expressed by an OMS representative: '*The request for a code… has been dragging on for five years now and is still ongoing,… mainly because DBC Maintenance, CVZ, and NZa are such static institutions*' [57].

In addition, if an alternate DRG can be registered – usually the DRG for the traditional treatment – and that adequately covers the cost of the innovative treatment, there is little urgency for medical professionals or hospitals to request a new DRG code. In fact, it may be more pragmatic to continue using the workaround in registration. For new types of treatment, requests for a DRG code must include a process of research and data gathering to establish "evidence" of the surplus value of

the new treatment. The ITCs, which are relatively active in providing new treatment types, are less research-minded, however, and often uninterested in participating in such an experimental phase.

A major concern for public system managers related to the workarounds for new types of treatments is that the use of innovative treatments cannot be monitored [64, 65, 66]. As medical professionals register the DRG for the traditional treatment, '*now this [innovation] is all registered via the backdoor'* [66]. DBC Maintenance [65, 66], CVZ [64], and the national Health Care Inspectorate (IGZ) [63] suggested that introduction of a dummy "experiment DRG" with a fixed tariff could improve transparency in the use of innovative treatments. Yet, until such a dummy registration code is available, unintended responses seriously obscure the visibility of innovative and complex care in the system and are therefore considered a major source of pollution of management information.

Public system managers also noted that innovative treatments rendered to a patient and registered and invoiced under the "old care product" may – in fact – be ineligible for reimbursement [66]. The reason may be because the innovative treatment has not (yet) been proven as evidence-based care. An example described in chapter 5 is the use of laser treatment for patients with varicose veins. This was a relatively new type of treatment that had not been approved for reimbursement, but it was still offered, though invoiced under a care product for a different type of treatment.

Refraining from measures to prevent patient selection based on risk profiling

The public system managers had taken no measures to try to curb patient selection based on risk profiling. Efforts of medical professionals and institutions to select lower risk patients did not require remedying, they said. This perspective was clearly shared by representatives of DBC Maintenance: '*There is nothing wrong with patient selection. I mean, it makes sense that the UHs serve a different patient population than the GHs or ITCs. The ITCs have low throughput times and high efficiency gains. That's a fantastic effect of the system*' [66]. However, they did add, '*It would be detrimental if the DRG tariffs became insufficient for the hospitals that systematically treat the more difficult patients. Obviously, that is an effect one wants to avoid*' [65].

Naturally, this latter notion about patient selection is the crux in a reimbursement system that relies on average care products. This concern was shared by most of the representative bodies for the professions, the medical institutions, and the public system managers [53, 54, 55, 57, 65, 66].

In general, the public system managers perceived patient selection – and the consequent differences in case-mix between the different types of medical institutions (i.e., the UHs, GHs, and ITCs) – to be a beneficial effect of the DRG system that contributed to improved care [65, 66]. In fact, IGZ would like to see a stricter separation of the patient populations among the various types of medical institutions based on risk profiling. Based on a 2010 study, IGZ concluded that patients treated at the ITCs often had a higher risk classification than was considered desirable (IGZ 2010). Its suggestion was that ITCs should not treat patients with an ASA risk classification higher than 2 (i.e., patients with a mild systemic disturbance).

In practice, however, the risk classification of patients treated at ITCs often exceeded this level [63]. The reason why restrictions on complexity were deemed appropriate for ITCs has to do with the lack of certain necessary facilities at these smaller private clinics. For example, unlike the GHs and UHs, they were often not equipped to provide intensive care support, they had no trauma team on call, they lacked the facilities for a clinical stay, and some may not have an anaesthesiologist present at all times. As such, the public system managers favoured patient selection, at least when practised by the ITCs.

6.3 Measures of private system managers to address unintended responses

The health insurance companies and their representative bodies play the role of private system managers in the Dutch DRG system. More than the public system managers, the private system managers have maintained close contacts with most medical institutions, as they act as the main purchasers of hospital and specialist medical care in the Netherlands. To curb unintended responses, the private system managers have implemented a variety of measures. The main aim of these has been

to detect deviating patterns in the DRG care products invoiced by medical institutions. The private system managers might, in individual cases, reject reimbursement claims if deviations are identified. Detected patterns of deviation have often become the subject of local negotiations between a specific medical institution and private system managers.

ESTABLISHING CONTROL SYSTEMS TO DETECT FLAWS AND FRAUD

To curb unintended responses, private system managers have implemented ICT systems and algorithms to detect invalid and potentially fraudulently invoiced care products [58, 67]. Such systems – of which "COPE" is the one most commonly used by health insurers – focus on easily detectable indicators of medical professionals' unintended responses in DRG registration. According to a ZN representative, *'Parallel DRG registration is easily detected by analysing the dates of registration and making comparisons to the lists of excluded combinations of diagnoses, but it's much harder to find out if a hospital runs a few extra tests for a patient to get a higher reimbursement'* [58]. However, this interviewee added that the ICT control systems served primarily to detect deviant patterns in overall DRG registrations, and were of lesser use for assessing the validity of individual invoices.

Besides ICT control systems, health insurers have set up their own fraud detection departments. According to one insurer, such departments have been effective mainly in revealing the most obvious anomalies and examples of fraud, '*for example, patients that were treated without a referral from their general practitioner, but also medical specialists who register treatments under a colleague's name because they are not authorized to do the procedures themselves. Other examples are treatments that were not performed according to the efficiency standards we agreed on in the contracting negotiations*' [52]. He argued that it is much more difficult to evaluate the legitimacy of the choices actually made by medical professionals in patient treatment.

Despite the strict interpretation of the registration rules applied in these control systems, the private system managers did not automatically consider all DRGs for which reimbursement was rejected as proof of fraud. More often, patterns of deviance in registrations served as inputs for negotiations with the care providers. Nonetheless, application of the regulations for DRG registration have been an

ongoing point of contention between health insurance companies and care providers [58, 67]: *´We are now in negotiation with the hospitals about this, because COPE is bothering all of us at the moment. If parallel or sequential DRGs get rejected for reimbursement, we don´t automatically assume that something is wrong'* [51]. Moreover, rejected DRGs can be corrected by the care provider and resubmitted for reimbursement [51]. In this light, rejecting reimbursement for a DRG is not considered a conclusive strategy for deterring unintended responses in DRG registration, though it might lead to further negotiation and mutually agreed approaches to DRG registration for specific types of treatments.

BENCHMARKING OF MEDICAL INSTITUTIONS AND DEPARTMENTS TO DETECT DEVIATING PATTERNS

Using the information provided by the ICT control systems, the private system managers have initiated benchmarking of medical institutions to curb unintended responses. Records on the DRGs invoiced constitute a valuable information source that expands each year that the DRG system is operational. Benchmarking based on these records serves to signal patterns of deviance in DRG registration and invoicing. A benchmark might show, for example, that a medical department at a certain hospital registers a specific DRG more often than colleagues at other hospitals. '*Take, for example, the gynaecologists that are removing cysts smaller than 5 centimetres on large scale. I think the health insurers should be able to have a say on that*' [52].

By 2011, the health insurers had information on the DRGs invoiced by the hospitals they had under contract for the past six years. The health insurers [51, 52] have used this database to extract trends and deviations and to compare the DRGs invoiced by individual hospitals and medical department with the national profile. However, they also pointed out that these benchmarks relate mainly to List B DRGs, on which the health insurers are exposed to higher financial risks than in the budgeted List A segment [58].

Benchmarking often focuses on trends in registration of clusters of DRGs related to a single ailment: '*Recently we looked at DRG registration for osteoarthritis and hip fractures. Especially for the treatment of osteoarthritis, we saw a great deal of variety*

between hospitals and regions. This indicates that some medical specialists prefer a conservative treatment while others prefer surgical intervention' [52]. This private system manager representative added that benchmarks often reveal a great deal of diversity in the courses of treatment chosen (e.g., conservative versus surgical) and in treatment setting (e.g., on an outpatient, day admission, or inpatient basis). Similarly, a 2009 benchmarking study by ZN, Vektis, and Plexus on the DRGs invoiced showed large regional and local variation between hospitals in their registration and choice of treatments (ZN, Vektis and Plexus 2011).

However, workarounds in DRG registration can reduce the informativeness of these benchmarks. An NVZ representative pointed out, '*Comparability is hampered because there are multiple options for treatment. There is quite a big difference between endoscopic and regular types of surgery, but they are often registered under the same DRG code*' [54]. Thus, the private system managers tend to use benchmarking as an input to local negotiations with specific care providers rather than drawing conclusions based on the benchmarks alone: '*It is hard to say whether this is strategic behaviour or not, but it has a major financial impact, so we are definitely going to express our opinion about it*' [52].

INTRODUCING AUTHORIZATION SCHEMES FOR INVOICING

Like the public system managers, the private system managers have modified the concept of reimbursable care to curb unintended responses concerning cosmetic procedures. Here, they have focused primarily on medical specialities that provide both medically indicated and cosmetic care. These disciplines include plastic surgery and dermatology, but certain treatments provided by eye surgeons are also considered prone to unintended responses [51, 58]. One of the private system managers interviewed explained how they approached these fields of medicine: '*For plastic surgery we described in detail how DRGs for certain treatments have to be registered. We specified – for example – that removal of multiple moles, in our opinion, still falls in under the DRG code for a simple treatment and not under the code for a complex treatment'* [51]. But, he added, it would be too time-consuming to apply this level of specification in DRG registration guidelines for all medical specialties.

Where such detailed regulations are drawn up for reimbursement, they are often accompanied by an authorization scheme in which the medical professional or patient is required to request health insurer approval for reimbursement of the treatment beforehand. The health insurer in question then approves reimbursement only if certain conditions are met. For example, almost all dermatologic treatments are considered cosmetic (i.e., non-reimbursable), except for the removal of tissue due to suspicion of malignancy. Breast reductions are eligible for reimbursement only from a certain cup size and when the patient has had a stable BMI of 30 or lower for a period of 12 months [15]. Upper eyelid corrections and eyebrow lifts are considered medically indicated (i.e., reimbursable) only when the surplus skin reaches a specified minimum contact or millimetre overhang in relation to the eyelashes, or in cases of mutilation or demonstrable, physical, functional disorders.

In these authorization schemes, the conditions set by the private system managers for reimbursement of treatment often exceed the requirements specified by the public system managers, and they may also vary greatly over time and from one health insurer to another [4, 64, 65]. Besides a detailed evaluation, authorization schemes may also function as a bureaucratic barrier. This was a reason for health insurers to institute a similar authorization system for prescriptions of patented statins and anti-hypertensive drugs by medical specialists (Kerpershoek et al. 2012). However, the medical professionals and their associations have criticized the dominant position of private system managers in the process of defining what care is reimbursable. The professional association for eye surgery, for example, has argued that various forms eyelid surgery are now wrongfully labelled cosmetic care and rejected for reimbursement. They claim that ptosis surgery, for example, is almost always a medically indicated intervention, yet health insurers nonetheless seldom approve it for reimbursement [40]. Such conflicts, however, are mostly perceived as disputes between individual patients and their health insurer.

NEGOTIATING CONSENSUAL SOLUTIONS

The private system managers have tended to address the various types of unintended responses via local negotiations with specific medical institutions. In such negotiations, insurers and medical institutions seek agreement on the permissibility of workarounds for registration of new types of treatments and the use of new types of

prosthetics. The outcome of such negotiations might be, for example, an agreement that medical specialists may register the traditional DRG for a new type of treatment or that a health insurer will pay a supplement to accommodate a new treatment or prosthetic used [51, 52, 67]. A Vektis researcher pointed to the example of an ITC providing a new sterilization treatment that could be offered on an outpatient basis: *'[T]hey registered [the new method] under the old DRG and found one or two insurers willing to pay them a little extra for this type of treatment. This is probably a frequent solution between health insurers and providers to tide over the two to three years it takes to get a new DRG approved*' [67]. The private system managers generally did not mind such workarounds, as long as they had been agreed upon during contract negotiations with the medical institution in question [51, 52, 58, 67].

Local negotiations were also used to address unintended responses related to registration of multiple care products per patient. For example, negotiations addressed the question of whether a care product for cataract treatment covered the treatment of one or both eyes [51]. Unintended responses in the choice of treatments were also negotiated, such as whether removal of multiple moles was to be considered a simple treatment or a complex treatment [51]. Similarly, health insurers and medical institutions negotiated efficiency standards for certain treatments and discussed questions raised about anomalous ratios between surgical and conservative treatments of, for instance, patients with osteoarthritis [52]. Unintended responses related to patient selection were also incorporated in local negotiations between healthcare providers and insurers. For example, private system managers applied generic discounts to fees paid to contracted ITCs, due to the more favourable risk profile of their patient population.

6.4 Reasons why public and private system managers address unintended responses

As the previous sections showed, the measures implemented by public system managers have taken a rather different form than measures taken by private system managers. The primary reason for this difference lies in the different roles of public and private system managers. Whereas private system managers – as purchasers of

specialist medical care – negotiate with individual medical institutions at a local level, public system managers act on a formal mandate at the national level and are held accountable for the functioning of the DRG system in accordance with the legal framework. Public system managers thus have less latitude for pragmatism. Nonetheless, despite the differences in the nature of the measures taken by public and private system managers, their motivations for taking these measures are not so different. The current section examines the motivations cited by the system managers involved in the Dutch DRG system to explain the measures they take to address unintended responses. The statements of public and private system managers reflect four general goals: to maintain the integrity of the management information provided by the DRG system, to uphold bureaucratic safeguards on quality of care, to advance cost-containment objectives, and to resolve conflicts between professional medical practice and the requirements of the DRG system.

BECAUSE UNINTENDED RESPONSES DISTORT MANAGEMENT INFORMATION

One of the primary concerns expressed by public system managers is that unintended responses distort the management information provided by the DRG system [64, 65, 66]. Workarounds in registration were said to be particularly harmful to the transparency of the system for monitoring innovative and complex care, because these types of care were registered through a '*backdoor'* [66]. The transparency of innovative care was limited even further by the fact that different medical professionals employed different workarounds to register the same treatment. The use of workarounds to secure reimbursement for applied diagnostics, instead of registering the accurate medical discharge diagnoses, affects statistics on the prevalence of certain medical conditions, while also hampering the system's learning potential, as systematic and accurate registration would signal flaws in the system that require mending [65, 66].

Private system managers considered registration workarounds to be problematic because they undermine the meaningfulness of care provider benchmarks [54]. However, unlike the public system managers, private system managers were not opposed to workarounds in all cases. Workarounds on which a health insurer and medical institution had reached prior agreement in local negotiations were deemed acceptable by most of the private system managers interviewed [51, 52, 58, 67].

BECAUSE UNINTENDED RESPONSES UNDERMINE BUREAUCRATIC SAFEGUARDS ON QUALITY OF CARE

A second and more implicit concern expressed by public system managers is that unintended responses may be resorted to in order to obtain reimbursement for additional treatments associated with a substandard quality of care. Registration of multiple care products for multiple treatments could, for example, signal a poor quality of the first treatment, thus rendering the second treatment necessary. In such a scenario, unintended responses to get both treatments reimbursed would lead to a system that rewards poor quality of care [65]. Workarounds for registering innovative treatments were also considered problematic, as these treatments may not or not yet be supported by an adequate evidence base, as required by the HIA. Unintended responses to obtain reimbursement for treatments that have not been proven effective may therefore also lead to a substandard quality of care being provided [4, 64, 66]. Unintended responses make it more difficult to distinguish between innovative treatments that have therapeutic surplus value, innovative treatments that do not have such surplus value, and traditional treatment methods. A similar concern applies to workarounds for reimbursement of treatments that include off-label use of high-cost medications [64].

Unlike the concerns about workarounds, system managers considered patient selection by ITCs based on risk profiling to be a desirable development, as ITC were considered less equipped to handle patients with post-surgery complications [63, 65].

BECAUSE UNINTENDED RESPONSES CONFLICT WITH COST-CONTAINMENT OBJECTIVES

A third concern, and one expressed by both public and private system managers, is that unintended responses might lead to over-reimbursement of medical institutions and medical professionals. In the first place, unintended responses in registration of multiple care products per patient were thought to conflict with the spirit of the Dutch DRG system, in which reimbursement is based on average care products. These care products are meant to cover the full spectrum of specialist care for a patient, including complications that may arise after an initial treatment [53, 66]. The principle of average care products is that the same tariff applies to every patient, both easy-to-

treat patients and those who prove more difficult to treat in the end. Therefore, reimbursement of multiple care products for patients with difficult conditions can be considered overpayment. Similarly, cost containment was a concern, especially regarding medical professionals' unintended responses to obtain reimbursement for treatments ineligible for reimbursement under the HIA [64, 65]. This applied to reimbursement for cosmetic treatments, for innovative treatments that were more costly than the traditional treatment, and for off-label use of high-cost medications.

The private system managers had invested considerable effort in regulating reimbursement of cosmetic procedures. However, their attention was not distributed evenly over the full range of unintended responses. Most of their focus was on List B care products. These fall under the market regime, meaning that unintended responses related to them had substantial financial implications for private system managers [51, 52]. Private system managers had little incentive to address the unintended responses with only marginal financial impact on them [64], such as those concerning non-reimbursable care invoiced under List A care products.

BECAUSE THERE IS A MUTUAL INTEREST IN RESOLVING THE CONFLICTS UNDERLYING UNINTENDED RESPONSES

Both public and private system managers have attempted to curb unintended responses by solving the conflicts that medical professionals experienced in utilization of the DRG system. For the public system managers, such measures consisted primarily of the incorporation of new care products to allow reimbursement of new types of treatment and of existing treatments that could not be registered accurately with the available DRG codes [64, 66]. Furthermore, rules of exemption were issued to resolve bottlenecks experienced in specific medical specialties, for instance, cardiology. In this field of medicine, sufficient reimbursement for patients requiring multiple, simultaneous WBMV treatments was considered particularly problematic. The generic restrictions on parallel DRG registrations were eased for cardiology, to allow cardiologists to collect the additional WBMV fees to compensate for the exceptional costs they incurred in providing highly complex treatments [48, 49].

Nonetheless, curbing unintended responses by addressing conflicts was a strategy most often applied by private system managers in their local negotiations with medical institutions. This was explained to some extent by the lengthy procedures involved if medical professionals, medical institutions, or representative bodies elected to engage with public system managers to resolve the conflicts they faced [64, 65, 66]. In this respect, private system managers chose to solve conflicts in easier and faster ways. In local negotiations, a private system manager and medical institution might agree on the permissibility of a workaround in DRG registration or on complementary fees to cover a new treatment method or new type of prosthetic [51, 52, 58, 67].

Private system managers also resorted to local negotiations to address differences between them and medical institutions in interpretations of conditions for certain reimbursements. Agreements were sought, for example, regarding when multiple care products per patient could be registered, as ambiguity surrounding these conditions was considered problematic for both parties [51]. Irregular invoicing patterns revealed by benchmarking studies were also addressed via local negotiations. The aim of these talks was to reach accord on efficiency standards or on required conditions for surgical interventions, for example, in treatment of osteoarthritis and varicose veins or for removal of tonsils or cysts [52].

6.5 Redesigning the Dutch DRG system: The DRGs towards Transparency Plan

Beyond the aforementioned measures taken by public and private system managers, the Dutch DRG system was recently redesigned, with structural changes being introduced to curb unintended responses of medical professionals. In 2012, six years after the system's initial introduction, this revision of the system was launched under the name "DRGs towards Transparency Plan". The current section examines four changes that were applied in redesigning the system that bear relevance for the

vulnerability of the system to unintended responses of medical professionals.[17] In brief, these changes concern the following:

- reducing opportunities for workarounds by limiting the influence of medical professionals in registration
- reducing the level of detail in the system by cutting down the number of care products
- increasing the financial exposure of health insurers to stimulate them to address unintended responses
- abating the financial impacts of registration to prevent upcoding and workarounds for high-cost medications

Reducing opportunities for workarounds by limiting the influence of medical professionals in registration

A first strategy applied in the redesign of the DRG system was to reduce the influence that medical professionals can exert in registration. This was done by introducing coding following the International Classification of Diseases 10th revision (ICD-10) for DRG diagnosis registration and by implementing a "grouper" for automated determination of the DRG care product. This means that the medical specialist is no longer the one to select the treatment code; rather, as in most international DRG systems, it is inferred by a grouping algorithm for medical activities and services. With the introduction of ICD-10, the specialty-specific listings of diagnoses that had characterized the initial DRG system were replaced by a single uniform and validated classification system applying to all medical specialties. The reason for giving primacy to the ICD-10 in DRG diagnosis registration was to allow for interdisciplinary care products in the redesigned system. This means that an inguinal hernia would be registered the same way, regardless of whether it was treated by a neurosurgeon or by an orthopaedic surgeon [49].

[17] The modified system has been operational since 2012, meaning that the process of DRG system redesign was still under way when the interviews for this research took place. This section draws on comments made about the redesign of the system in interviews with the system managers and medical professionals.

Additionally, using the ICD-10 for DRG registration will allow private system managers to develop international benchmarks of hospitals on diagnostics [52]. From these angles, using the grouped diagnoses of the ICD-10 is expected to render DRG registration less vulnerable to unintended responses and manipulation [52, 54, 65]. However, some medical professionals foresee the introduction of the ICD-10 as itself being an incentive for unintended responses. A representative of one of the professional associations argued that the ICD-10 is not an objective, but rather a political instrument for disease classification. Internationally, there is much debate on whether certain diagnoses should fall under one category or another and whether groups of diagnoses should be included in ICD-10 at all. Subdisciplines like allergology and paediatric urology, for example, are not included as groups in the ICD-10: '*If you find that whole parts of your discipline are not coded in the ICD-10, you have to come up with some kind of erratic reasoning to fit them in*' [50].

Apart from increasing the need for "creative" registration, reducing the degree of freedom available to medical professionals in registration was expected to elicit new forms of unintended responses. For example, while the use of an automated "grouper" for determination of care products was expected to inhibit practices of upcoding, it was also thought to provide an incentive for case-mix styling. Private system managers, in particular, expected the new system to be more conducive to selection of the more profitable patients and treatments [51, 52]. According to one of these private system managers, medical specialists might no longer select the DRG care product themselves, but they do control the activities and services applied in the medical procedure: '*I have already seen applications that highlight the treatment elements considered critical by the hospital; that is, determining the outcome in terms care product and tariff*' [52]. In other words, medical specialists appeared to be aware that adding, for example, a specific diagnostic test in the treatment of a patient leads the grouper to select a DRG care product that yields higher reimbursement. Public system managers agreed that the risk that medical specialists might choose a heavier treatment is greater under the new system than in the original design [65, 66]. Yet they argued it was up to the private system managers to identify and address such trends by benchmarking of care providers.

Reducing ambiguity in the system by cutting down the number of care products

A second strategy followed in the redesign of the DRG system was to reduce the number of care products. The more than 30,000 care products that were available for registration under the initial DRG system were translated into a little more than 4,000 care products [38, 56, 58, 65, 66]. Clustering the care products will reduce the level of detail in the system and is expected to make care product more cost-homogeneous [53, 58, 62, 65]. With the reduction in care products and the link with ICD-10, the Dutch DRG system more closely resembles the design of the DRG systems internationally [58].

However, the care products in the newly redesigned system cover a wider range of treatments under generic specifications of the medical condition, which makes the care products less coherent from the perspective of medically defined diagnoses [49, 58]. Two representatives of professional associations claimed that large parts of their work risked ending up in meaningless categories [49, 50]: '*Our first trial runs with the system showed that 60% of the patients we treated in the past few years would end up in a care product labelled as a-specific disorders. Now tell me, how are we supposed to negotiate with a health insurer on a price for that kind of a product*?' [49]. Health insurers shared this concern. They further indicated that future negotiations would be hampered by the new system's rendering obsolete many of the arguments and experiences developed in the preceding negotiations and benchmarks [52, 58, 67].

The reduction of care products in the redesigned system will be accompanied by more opportunity for cost differentiation than in the original DRG system. The new system will differentiate between heavy, middle, and lightweight products based on the treatment provided [58, 65, 66]. According to representatives of the public system managers, medical specialists will now have limited influence on reimbursement outcomes, other than choosing to provide a heavier treatment [53, 65, 66]: *'If a patient's treatment includes only a single outpatient visit, then that is what gets paid*' [66]. However, representatives of both the health insurers and the care providers argued that this cost differentiation may form a disincentive for efficiency [54, 58]: '*If you set the cut-off between a lightweight and middle-weight category at five hospital admission days, we fear that a lot of patients will be discharged on the sixth day*' [54].

Even though this concern also applied to the original DRG system, as it distinguished between day admissions and outpatient care, the financial impact of such unintended responses will be more profound under the system's new design, given the greater breadth of its care products.

A related concern is that the instrument of cost differentiation is not sufficiently sensitive to outweigh the effects of using average care products that cover a much wider range of medical conditions and treatments [38, 42, 50, 52]. Since the newly clustered care products were defined based on the care products of the original DRG system, the new system could face some of the same problems as before [52, 67]. Variation in the profitability of treatments covered by the same care product will increase with the broader profiles of the average products. Therefore, while reducing the number of care products may make unintended responses more difficult, it may also make them more profitable.

Increasing the financial exposure of health insurers to stimulate them to address unintended responses

The third strategy applied in the redesign of the system was to change the incentives structure for health insurers, hospitals, and medical specialists. Exposure to financial risk has been increased, primarily by the considerable expansion of the care products that fall under the List B segment. In 2011, 65% of the DRG care products were reimbursed within the boundaries of the fixed hospital budget (List A). With the introduction of the new system in 2012, List A was brought back to approximately 30% of reimbursed care products. List B products, which are in the liberalized segment, thus came to account for 70% of the hospital's yearly revenue on average in 2012 [51, 64]. With the guaranteed budget for List A care now accounting for only 30% of the hospital production, some 70% of the hospital's revenue will be variable, performance-based, and risk bearing. A transitional arrangement limits hospitals' risk exposure in 2012 and 2013, but that will end in 2014, leaving the hospital sector fully exposed to financial risks in relation to their full List B production.

Similarly, the expansion of List B was accompanied by an increase in health insurers' exposure to financial risk. As List A production is linked to fixed hospital budgets, two representatives of health insurers indicated that it was of little concern to them what

medical specialists registered and what care products hospitals billed to the health insurer [51, 52] – because both the hospitals and the health insurers knew that the accumulation of payments for List A care products would not exceed (or fall below) the secure hospital budgets. Yet, the expansion of List B production, by increasing the financial exposure of health insurers, is expected to increase their interest and efforts in addressing unintended responses by medical professionals in these areas of care.

Furthermore, in accordance with the more prominent role envisioned for the market regime under the system's new design, the former system of ex post risk equalization among health insurers is being phased out. In the past, these arrangements provided health insurers financial compensation for high costs incurred in individual cases, as well as generic compensation for high overall expenditures. As one public system manager noted, however, these arrangements under the original DRG system attenuated health insurers' incentive to address unintended responses [64]. Expanding List B and phasing out the risk equalization arrangements will incentivize health insurers to invest in curbing unintended responses, thereby improving the alignment of public and private system managers' interests [65, 66].

Abating the financial impacts of registration to prevent upcoding and workarounds for high-cost medications

Whereas the aforementioned strategies involve increasing the financial exposure of hospitals and health insurers via budget reductions, specific components were added to hospital budgets too. Under the DRG system's new design, the separate reimbursement for the use of high-cost medications will be abolished. Instead, financing of high-cost medications, such as TNF alpha inhibitors and other biologics, will be added to hospital budgets [62]. This increases the risk borne by hospitals for use of larger volumes of high-cost medications. At the same time, reimbursement for use of these types of medications has been opened to negotiation between health insurers and providers [58, 65]. Furthermore, from 2015 on the use of these medications is no longer strictly related to a specified set of medical indications, but subjected to budget constraints of the hospital.

From 2015 onwards, the link between remuneration of medical specialists and DRG production will be loosened. Under the redesigned system, self-employed medical specialists in all types of medical institutions will still be paid per care product, but their income will be capped by the part of the hospital budget that is earmarked for medical specialist remuneration. However, the actual distribution of this budget over hospital departments has been left to hospital management. Some medical professionals have expressed fears that this internal process of resource allocation "behind hospital doors" will be turbulent [56] and that the capped incomes under the new regime will reduce incentives for medical professionals to invest in the correct functioning of the DRG system [50, 57]. From 2015 on, the budget components for both high-cost medications and for specialist remuneration will be subjects of negotiation between health insurers and hospitals [65]. These changes imply a shift in responsibility for curbing specialists' incomes (i.e., production volumes) and for utilization rates of high-cost medications from the public system managers to the private system managers and hospitals [66].

6.6 SUMMING UP

The current chapter revealed a quite diverse array of measures taken by public and private system managers to curb the unintended responses of medical professionals to the Netherlands' DRG-based performance management system. Despite this diversity, two primary categories could be discerned. In the first category are measures to curb unintended responses by changing the DRG system itself. The second category consists of measures to curb unintended responses by changing the process of interaction between the system managers and the medical professionals and institutions in which the DRG system is embedded.

1. Curbing unintended responses by improving the system

This category of measures was applied primarily by the public system managers in their efforts to safeguard system-level objectives concerning transparency, quality of care, and cost containment. For example, new care products were introduced to eliminate the need for workarounds in registering new types of treatments; restrictions on registration of multiple care products per patient were expanded and

refined; and treatments excluded from reimbursement were redefined. Improvements to the system introduced by private system managers to curb unintended responses mainly took the form of control mechanisms implemented to detect invalid registration of care products.

2. Curbing unintended responses by improving the process

This category of measures was applied primarily by the private system managers. For example, authorization schemes were introduced to gain control of reimbursements in medical specialties that also offer cosmetic care. Furthermore, benchmarking was introduced to detect deviant patterns of registration, and emerging issues were addressed in local negotiations with individual medical institutions.

Attempts to curb unintended responses by focusing on the process were initially found mainly among the private system managers, particularly because of their position and influence in local contracting negotiations. However, public system managers eventually also took steps to improve the process by redesigning the system. Design changes aimed, in particular, to increase the exposure of private system managers to financial risk, abating the financial impact of DRG registration on specialists' remuneration, and improving the interaction between health insurers and medical institutions. Steps to reduce the number of care products and the influence of medical professionals in DRG registration were more concerned with system improvement.

Apart from these differences in the measures that public and private system managers took to curb unintended responses, the findings presented also reveal possible conflicts between the approaches taken by public and private system managers. First, unlike the public system managers, private system managers focused their attention on List B care products, as this was where unintended responses had the most financial impact. List B made up some 30% of total hospital care expenditures at the time of this research, meaning that the focus of the health insurers was much narrower than the focus of the public system managers. Second, unlike the public system managers, private system managers did not strictly oppose the use of workarounds in DRG registration. They only opposed medical professionals' use of workarounds without prior agreement. As our findings show,

private system managers and medical institutions negotiated agreements on workarounds, sometimes in conflict with the objectives of the public system managers. Furthermore, once a private system manager and medical institution reached agreement on the use of specific workarounds there was little need to follow the formal application procedures to change the system or get a new care product approved. This had implications for the uniformity of the DRG system, as such arrangements often remained between a private system manager and an individual medical institution and were not incorporated into the overall system.

CHAPTER 7 CONCLUSIONS: INTERPRETATION OF UNINTENDED RESPONSES FROM THE MANAGERIAL AND PROFESSIONAL PERSPECTIVES

7. 1 INTRODUCTION

The aim of this research was to enhance understanding of the phenomenon of professionals' unintended responses to performance management systems. To this end, the phenomenon of unintended responses was studied empirically from two perspectives: that of the medical professional and that of the system manager. The medical professionals' perspective served to clarify the types of unintended responses utilized in practice and considerations that play a role in determining these. The system managers' perspective shed light on interpretations of unintended responses in accordance with the types of measures taken to address them and the considerations that play a role here. The dual perspective applied contributes to a more comprehensive understanding of the phenomenon of unintended responses. It allows us to consider both financial and value-based motivations for unintended responses and thereby control for the blind spots that apply when either the professional or the managerial perspective is used separately. The current chapter presents the conclusions of this study and answers the central research question:

How can the phenomenon of unintended responses to the DRG performance management system in the Netherlands be understood?

To answer this question, each of the six sub-questions posed by this study addressed. First, *what are the strengths and limitations of the applied theoretical perspectives on unintended responses?* (section 7.2). Then, *what types of unintended responses do medical professionals apply?* (section 7.3), and *how do they explain them?* (section 7.4). Following, *what measures do system manager take to address unintended responses*? (section 7.5), and *how do they motivate them?* (section 7.6). After that section 7.7 addresses the last sub-question: *what is the surplus value of a dual managerial-professional perspective on unintended*

responses? Finally, section 7.8 discusses the policy implications of this research's findings. Section 7.9 addresses the primary limitations of this research, and section 7.10 reflects on implications of this research's findings for future governance of DRG performance management systems.

7.2 THEORETICAL INSIGHTS ON THE PHENOMENON OF UNINTENDED RESPONSES

Based on theories of performance management systems, agency, and professionalism, chapter 2 presented the managerial and professional theoretical perspectives on unintended responses. Indeed, the way the phenomenon of unintended responses is interpreted or understood varies from one perspective to the other. This section returns to the first sub-question of our study:

1. What are the strengths and limitations of the professional and managerial theoretical perspectives for understanding the phenomenon of unintended responses to performance management systems?

The literature presented in chapter 2 suggested that the managerial and professional perspectives both make their own unique contributions to understanding the phenomenon of unintended responses, but each also has its own interpretational blind spot.

The managerial perspective contributes to our understanding by focusing on unintended responses' perverse effects on the system-level objectives of performance management systems. Unintended responses are largely attributed to the opportunistic nature of (professional) agents and explained by financial incentives. However, the assumption of the opportunistic nature of the agent as the starting point for explaining unintended responses also defines the blind spot of the managerial perspective: it is unable to incorporate motivations for unintended responses other than opportunism or financial gain.

The professional perspective focuses on client-level objectives – or "case-level objectives" for the purposes of our study – to understand unintended responses.

Here, unintended responses are attributed to conflicts that arise between the performance management system and accepted standards of professional practice. This view thus explains unintended responses as instruments by which professionals prevent performance outcomes that would undermine professional ethos at a client level. The blind spot of the professional perspective also resides in this emphasis on client-level objectives: it is insufficiently cognizant of the cumulative system-level effects of unintended responses at the patient level.

Up to now, a primary limitation in understanding the phenomenon of unintended responses has been the tendency to apply each of these perspectives separately. Few empirical studies apply a dual perspective to explain unintended responses (see, e.g., Le Grand 2003, Noordegraaf 2006, De Bruijn 2007, 2010). Building on the work of De Bruijn the current research contributes to a broader understanding of the phenomenon of unintended responses by incorporating both the professional and the managerial perspectives into the analysis.

7.3 TYPES OF UNINTENDED RESPONSES APPLIED BY MEDICAL PROFESSIONALS

From the analysis of unintended responses presented in chapter 5, we saw that medical professionals working in different types of medical institutions apply a wide variety of unintended responses in their interactions with the DRG system. Notwithstanding this diversity, four types of unintended responses were discerned that apply to medical professionals across all three types of medical institutions. Here we revisit those categories, answering the second sub-question of this research:

2. What types of unintended responses to the DRG system do medical professionals apply?

Four categories of unintended responses applied by medical professionals

The unintended responses to the DRG system utilized by medical professionals are categorized into four types: over-registration, “creative” diagnosis registration, “creative” treatment registration, and patient selection.

Over-registration: Registration of too many DRGs per patient

Medical professionals register multiple DRGs per patient, even when they know this is contrary to the regulations for registration. This type of unintended response was found to be associated mainly with multi-morbidity medical conditions, simultaneous or repeated treatments, and a worsening of a patient's condition. However, ambiguities in DRG registration rules and requirements make the permissibility of parallel or sequential registration of multiple DRGs for a patient a grey area.

"Creative" diagnosis registration: Registration of a diagnosis on other than medical grounds

Medical professionals may register DRG diagnoses that are not the most accurate from a medical perspective. This type of unintended response was found to be mainly associated with the need to cover the costs of applied diagnostics, the preferred treatment, off-label use of high-cost medications, and close-to-cosmetic procedures, as well as to increase overall reimbursement.

"Creative" treatment registration: Registration of a treatment that is inconsistent with the treatment provided

Medical professionals may register DRG treatments that do not accurately reflect the treatment provided. This type of unintended response was found to be linked primarily with registration of more complex, innovative, or improved treatment methods, aimed at covering the costs of the treatment provided or at increasing overall reimbursement.

Patient selection: Selection of patients based on risk profiling and the anticipated cost of treatment

Medical professionals and institutions may be strategic in managing their patient populations and total DRG production. Risk profiling was sometimes applied in patient selection to minimize the need for high-cost diagnostics and to increase production volumes of profitable DRGs. Nonetheless, some extent of patient selection between the different types of hospitals was viewed as logical. Before the introduction of the DRG system too, UHs served a higher-complexity patient population than the GHs or ITCs. However, the findings of this research suggest that

the introduction of the DRG system has led to some changes in the patient populations of the different types of institutions for specialist medical care.

The findings of this research imply that patient selection has intensified since the introduction of the DRG system. GHs and ITCs have become more active in attracting “favourable” groups of patients, but also in referring less remunerative cases to the UHs. Medical specialists working at the UHs have generally not opposed this increase in complexity of their own patient profiles, as they see it as consistent with their core, “last resort” function. Nonetheless, concern was expressed that intensified patient selection under the DRG system will have undesirable consequences for resource allocation. Hospitals serving low complexity patient populations might be overpaid, and those with a high complexity caseload could be underfunded.

Theoretical reflections

Consistent with the literature on upcoding, many unintended responses were found to stem from ambiguities in the process of medical treatment and in the DRG system itself (see, e.g., Simborg 1981, Steinbusch et al. 2007). In accordance, this research indicates that fuzzy distinctions – for example, between diagnoses, between medical or cosmetic treatments, between high and low complexity care, and in identifying multi-morbidity in patients – play a role in all of the unintended responses reported. Furthermore, unintended responses often stemmed from a perceived mismatch between the DRG system and professional medical practice (De Bruijn 2007). Many unintended responses did not follow from ambiguities, but from system restrictions. Such unintended responses were viewed as a necessary means for medical professionals to accommodate treatments that were not in the system, to use high-cost medications off-label, or simply to provide for the course of treatment preferred by the medical professional when this conflicted with system requirements.

This study’s findings furthermore suggest that any theoretical interpretation of upcoding or unintended responses in registration must distinguish between unintended responses as a prospective or a retrospective strategy. Unintended responses as a prospective strategy arise when existing ambiguities are grasped upon strategically to increase reimbursement. In this scenario, the prospect of

financial gain forms the starting point for the practice of unintended responses. Unintended responses can be considered a retrospective strategy when they are utilized to accommodate services that have already been rendered to the patient, but which prove to be in conflict with system requirements at the time of registration or invoicing. In this latter scenario, financial gain may be the outcome of the use of a specific workaround in registration, but this should be seen as a side effect rather than the initial objective. This view is supported by certain unintended responses revealed in this research that could be labelled as undercoding rather than upcoding, for example, when highly complex or innovative treatments are registered under a generic code.

The scenario of unintended responses as a retrospective strategy suggests that the restrictions imposed by the DRG system do not prompt medical professionals to alter the choices they make in patient treatment. More than influencing the performance of medical professionals, the DRG system thus appears to affect the choices made in registration. Although in practice it may be difficult to disentangle unintended responses as a prospective or retrospective strategy, such an analytical distinction would allow separate reflection on financial motivations and financial outcomes of unintended responses, thereby facilitating a more balanced analysis of the phenomenon.

7.4 Motivations for unintended responses from the perspective of the medical professional

Apart from the actual behaviours engaged in as unintended responses, the analysis in chapter 5 addressed medical professionals' motivations for using unintended responses in working with the DRG system. Our analysis indicated that these motivations were in part related to financial incentives and in part connected to other non-financial aims. This brings us to the third sub-question of this research:

3. How do medical professionals motivate these unintended responses?

Financial or value-based motivations for unintended responses

The motivations given by the medical professionals for their unintended responses were categorized according to whether they were or were not related to financial incentives. However, these two categories were seldom found to be mutually exclusive. Almost all motivations for unintended responses contained both components.

Financial incentives as a motivation for unintended responses

In the category of financial incentives, medical professionals indicated utilizing unintended responses to increase their own individual remuneration and also to increase revenue for their department or hospital. This was expressed as serving a higher goal than pure economic gain, as it was thought to be necessary to maintain the department or hospital's financial health and obtain adequate compensation for services rendered in treating individual cases or specific groups of patients.

Value-based motivations for unintended responses

We categorize as value-based those motivations of medical professionals' unintended responses for purposes other than increasing reimbursement. Indeed, unintended responses were said to be instrumental, for example, to accommodate a preferred course of treatment, to adequately serve patients' interest in avoiding out-of-pocket payments, and to remedy the DRG system's lagging behind developments in professional practice.

Some unintended responses were explained solely by financial incentives and served no purpose other than to increase DRG reimbursement; yet, this applied only to a few cases. The majority of the unintended responses were explained by a mixture of financial incentives and value-based motivations. Nonetheless, as the DRG system is a reimbursement system, unintended responses are invariably linked to financial outcomes.

These findings indicate that financial incentives and value-based motivations for unintended responses *should not* and *cannot* be strictly separated. Nonetheless, most studies apply a mono-perspective analysis, explaining unintended responses

either as driven by financial incentives (in accordance with the managerial perspective) or as propelled by value-based motivations (in accordance with the professional perspective). This research demonstrates that even unintended responses that serve directly to increase reimbursement also include value-based motivations. In other words, the financial outcome of unintended responses is often instrumental for achieving a professional objective. This makes the use of the concept of upcoding analytically problematic, as upcoding labels professional responses as being prompted by financial gain alone. Furthermore, this research shows that even financially-driven unintended responses in some cases amount to undercoding, for example, when it concerns registration of highly complex care under generic codes. This research thus bears out the value of the concept of "unintended responses" as preferable over notions such as upcoding, as the former provides more leverage for an analysis that includes both financial incentives and value-based motivations.

DIRECTIONS FOR FUTURE RESEARCH ON THE PRACTICE OF UNINTENDED RESPONSES

Although the design of the current research precluded a comparative analysis of the different medical disciplines and types of medical institutions, the findings presented do signal "fields of interest" in these directions for future research. Two topics, in particular, merit further investigation: (i) the varying approaches to patient selection of the different types of medical institutions and (ii) unintended responses applied by medical specialties that provide (close-to-) cosmetic care.

Varying approaches to patient selection by different types of medical institutions

The opportunities for patient selection that are available for UHs, GHs, and ITCs are imbalanced. The "last resort" function of the UHs and their focus on academic research limits their opportunities (and willingness) to refer higher complexity patients to other hospitals for reason of unprofitability. Yet, it is relatively easy for the ITCs and GHs to refer patients to a UH for reason of profitability. However, this research suggests that patient selection is not motivated by financial incentives alone, but also by value-based motivations. Aside from the financial consequences, medical professionals at all three types of medical institutions generally agreed that patients

with more complex conditions were best served at the UHs. Indeed, UHs, GHs, and ITCs often made arrangements for patient referrals amongst themselves. However, it is unclear how such local arrangements between medical institutions affect and distribute the financial consequences associated with the different types of patient populations.

Further research is needed to better understand how such local arrangements between medical institutions influence the choices made in patient referrals and the distribution of financial consequences of patient selection over the medical institutions concerned.

Medical specialties that provide close-to-cosmetic care

The findings of this research indicate that medical specialties that provide both medically indicated and cosmetic care have a special position when it comes to unintended responses. This is due in part to the efforts made by public and private system managers to prevent reimbursement of treatments that they do not consider medically necessary or "essential". Such unintended responses remain a particular challenge to the public system managers' objective of cost containment (NZa 2014). However, this study found that medical specialties providing (close-to-) cosmetic care utilize unintended responses for value-based reasons, and are thus not motivated by financial incentives alone. For example, value-based motivations play a role in unintended responses stemming from conflictive professional and managerial interpretations of the concept of "essential" care. Therefore, future research adopting a dual managerial-professional perspective might contribute to further exploration of unintended responses applying to medical specialties such as plastic surgery, dermatology, and eye surgery.

7.5 SYSTEM-MANAGERS' MEASURES TO ADDRESS UNINTENDED RESPONSES

The findings presented in chapter 6 showed that public and private system managers implement a variety of measures to address the unintended responses of medical professionals to the DRG system. In reflection, two types of measures were discerned. This brings us to the fourth sub-question of this research:

4. What measures do system managers take to address unintended responses by medical professionals?

Two categories of remedial measures

In the measures taken by public and private system managers to curb unintended responses, two main categories can be distinguished: (i) measures that aim to improve the DRG system and (ii) measures that aim to improve the process of negotiation concerning unintended responses.

Curbing unintended responses by improving the system

The first type of remedial measure concerns changes implemented by the public and private system managers to the DRG system itself to reduce the need or opportunity for unintended responses. For the public system managers, this has included adjustments made in the course of maintaining the system, such as approving new DRG codes and developing rules of exemption for specific medical disciplines. It has furthermore encompassed measures to reduce the degree of freedom allowed to medical professionals in DRG registration, for example, by providing more detailed instructions and explicit restrictions in DRG registration and by redefining cosmetic versus medically necessary (and thus reimbursable) care.

Even though this type of measure was more commonly used by public system managers, certain measures taken by private system managers also fall into this category: establishment of detailed requirements for reimbursement of close-to-cosmetic care and implementation of elaborate automated monitoring systems to check the validity of invoiced DRGs.

Curbing unintended responses by improving the process

The second type of remedial measure concerns attempts by system managers to reduce the need or the opportunities for unintended responses by honing the processes surrounding the DRG system. These measures were applied primarily by the private system managers in their role as purchasers of care. Many such measures were linked to the conduct of local-level contract negotiations between health insurers and individual medical institutions. These led, for example, to the introduction of approval schemes for reimbursement of close-to-cosmetic treatments.

Private system managers also initiated extensive benchmarking efforts, to assess the performance of individual medical institutions and specific medical departments based on historic and contemporary national trends in DRG invoicing. The insights and trends identified via benchmarking became part of local contracting negotiations, sometimes resulting in local agreements on, for example, the permissibility of workarounds in DRG registration, supplementary payments for innovative treatments not yet included in the DRG system, and generic discounts in contracts to medical institutions serving a low-risk and low-complexity patient population.

Theoretical reflections

In relation to the literature on unintended responses, these findings suggest that system managers' measures are consistent with both the managerial perspective and the professional perspective on unintended responses. *Improving the system* as a strategy to address unintended responses is most closely aligned with the managerial perspective. This type of measure assumes a hierarchical relationship between the professional and the system manager, the latter of whom sets new requirements, imposes new restrictions, or approves changes requested by the former. In this respect, improving the system can be considered a strategy that seeks to find a technical solution for unintended responses.

Improving the process, on the other hand, is a strategy that is more aligned with the professional perspective. Negotiated solutions are sought for unintended responses, with space provided for professional input and considering unintended responses as potential acts of good stewardship. Thereby, this strategy recognizes a mutual dependency between the system manager and the professional, and it seeks consensus and tailored arrangements that are considered acceptable or beneficial by both parties.

7.6 MOTIVATIONS FOR SYSTEM MANAGERS' MEASURES TO ADDRESS UNINTENDED RESPONSES

Apart from the measures taken by public and private system managers, chapter 6 also analysed the motivations of system managers for curbing unintended responses. This brings us to our fifth sub-question:

5. How do system managers motivate their measures to address unintended responses?

Four categories of motivations for remedial measures

According to the findings presented in chapter 6, explanations given by public and private system managers for their measures to curb unintended responses can be clustered into four categories.

Because unintended responses distort management information

Unintended responses, but particularly the use of workarounds in DRG registration, distort management information. Regardless of their purpose, unintended responses in DRG registration misrepresent the diagnosis or treatment provided to a patient. This distortion of management information is further aggravated by the whimsical nature of unintended responses. Professionals make use of a multitude of workarounds that differ between cases and between professionals. This makes them unpredictable and difficult to pinpoint. The distorting effect of unintended responses is considered problematic by private system managers, but even more so by public system managers. Whereas private system managers occasionally approved of negotiated workarounds, public system managers did not. They saw unintended responses as obstacles to improvement of the DRG system that, in addition, made it impossible for them to monitor whether the care provided was in fact eligible for reimbursement under the HIA.

Because unintended responses undermine bureaucratic safeguards on the quality of care

The second concern among system managers was that unintended responses might stealthily undermine adequate safeguards on the quality of care. Public system

managers feared that unintended responses were being used to obtain reimbursement for treatments not yet proven effective. Unintended responses associated with registration of innovative treatments or off-label use of costly medications made it impossible to verify whether the care provided was effective and efficient. System managers even feared that unintended responses may lead the DRG system to reward poor quality care. Similarly, unintended responses obscured whether the care provided conformed with the requirements specified by the private system managers in their role as purchasers of care in the Netherlands.

Because unintended responses conflict with cost-containment objectives

A third concern among system managers was the possibility that unintended responses may undermine cost-containment objectives. Public and private system managers explicitly excluded reimbursement for specific medical conditions or treatments. This applied particularly to close-to-cosmetic care and to many innovative treatments. Workarounds were sometimes used to circumvent such exclusions. Unintended responses were also utilized to obtain reimbursement of multiple DRG care products per patient and for off-label use of costly medication, thwarting system managers' cost-containment goals. However, unlike public system managers, private system managers' consideration of unintended responses as problematic was largely limited to List B DRG production, for which they were exposed to substantial financial risk.

Because there is a mutual interest in resolving the conflicts underlying unintended responses

A final motivation expressed for addressing unintended responses was to serve the mutual interests of system managers and medical professionals. Thus, system managers sought ways to eliminate the need for unintended responses, by attempts to negotiate tailored solutions to conflicts in registration and reimbursement of treatments. The public system managers did so by making new DRG codes available for registration and by granting specialty-specific exemptions to the general requirements for DRG registration and reimbursement. Private system managers negotiated consensual agreements on the use of workarounds, particularly for innovative and less-invasive treatments.

In accordance with the managerial perspective, system managers' remedial measures were motivated by system-level objectives concerning the safeguarding of quality, containment of costs, and maintenance of the integrity of management information. However, in essence all of these system-level objectives can be said to depend on transparency. Therefore, system managers' primary motivation can be characterized as to neutralize the threat to transparency posed by unintended responses. Yet, contrary to what the managerial perspective might imply, many of the measures taken by system managers aimed to clarify what types of workarounds medical professionals used and under what circumstances they were permissible. If medical professionals could provide sufficient reason and substantiate the conditions for their use of unintended responses, private system managers in particular were apt to approve of their use. This outcome, however, also indicates that public and private system managers are not always necessarily aligned in their interpretations of unintended responses.

Theoretical reflections

This research signals that local arrangements for unintended responses might conflict with public system managers' objectives in DRG performance management. In this regard, a more structural analysis is warranted of possible conflicts between private and public system managers' approaches to unintended responses. A comparative research design could be used to provide a systematic overview of the types of local arrangements that have been approved to address unintended responses. Such a design might additionally clarify differences in arrangements made between the different types of medical institutions contracted by the same health insurance company, thus shedding light on the conditions under which consensual local arrangements for unintended responses are made and the extent to which such local arrangement converge with – or diverge from – public system manager objectives. Such an analysis, however, would require access to the content of actual contracting negotiations between health insurers and different medical institutions.

However, these asymmetries of information and preference between public and private system managers also suggest that a more experimentalist style of governance may be more suitable than a hierarchical style of governance. The

reform of the healthcare system in the Netherlands has shown that it is hard for system managers to specify exact policy goals and methods of achieving them beforehand. Under this strategic uncertainty, hierarchical governance with a reliance on fixed rules is ineffective. Instead, experimentalist governance based on provisional goal-setting and redefinition of means and ends during the course of problem-solving is a more suitable strategy to overcome barriers to change (see, Sabel and Zeitlin 2012). A strictly hierarchical style of governance conform the classic agency paradigm is too simplistic for the complex context of health care governance. By focusing on adjustment of policy goals and methods during the course of problem-solving, experimentalist governance takes an incremental approach to governance. This incremental approach may be more effective in relationships that are characterized by mutual dependency.

In line with the idea of experimentalist governance, recent studies on professionalism imply that new ways of blending the professional and managerial perspective may provide opportunities for more effective use of the DRG system in healthcare governance. Like public sector organizations, also public system managers that monitor the performance of public sector organizations are likely to undergo a process of professionalization of their own. However, in contrast to more traditional forms of professionalism depending on technical expertise, the process of professionalization for public system managers more likely involves developments in relational dimensions and organizing capabilities (see, Noordegraaf Van der Steen and Van Twist 2014). Such developments in this process of professionalization, will likely provide public system managers with new opportunities to exert influence on the debate and arrangements for unintended responses.

7.7 Understanding unintended responses from the managerial and professional perspective

Based on the findings on unintended responses presented in chapters 5 and 6, this section applies the dual perspective on unintended responses to answer our sixth and final sub-question:

6. What does a dual managerial/professional perspective contribute to understanding the phenomenon of unintended responses?

To answer this question, the current section brings together interpretations of the phenomenon of unintended responses from the managerial and professional perspectives.

Money-driven unintended responses are not just about money

In accordance with the managerial perspective, this research has shown that most unintended responses to the DRG system were associated with financial incentives. Therefore, on paper, these unintended responses are easily interpreted as opportunistic or perverse effects. However, including the professional perspective in the analysis demonstrates that a focus on financial incentives alone provides a poor understanding of the phenomenon of unintended responses. The vast majority of unintended responses that clearly increase reimbursement were also prompted by an array of professional objectives and trade-offs. For a comprehensive understanding of the phenomenon of unintended responses it is thus essential to consider the contribution of both money-driven and value-driven motivations.

Reliance on a mono-perspective in governance of the Dutch DRG system would be harmful as well as inaccurate. Applying truncated interpretations of a performance management system that involves competing managerial and professional objectives would rule out one perspective or the other. A focus on professional objectives would emphasize the quality of outcomes at the patient level, but would neglect concerns regarding the system's financial sustainability. The professional perspective also neglects the cumulative effects of individual unintended responses at the system level. Yet, a focus on managerial objectives would lead to an interpretation of unintended responses as fraud. This bypasses the important role of professional ethos and trade-offs and would likely harm professional stewardship at the patient level (see Le Grand 2003, De Bruijn 2007, Tummers 2012). Inclusion of both perspectives is important because it allows managerial and professional objectives to be weighed against one another each time a conflict comes to surface.

Competing system-level and case-level objectives

System managers and medical professionals were found to follow different logics in their interpretation of unintended responses. They even differed in their definitions of what an undesirable outcome was. To the system managers, an unintended response in itself was an undesirable outcome, as it distorted management information. To medical professionals, unintended responses were predominantly viewed as instruments to prevent the system's shortcomings and oversimplifications from leading to undesirable outcomes for patients.

An analysis of the phenomenon of unintended responses incorporating both a managerial and a professional perspective will inevitably reveal conflicts between system-level objectives and case-level objectives. Yet, herein also lies a primary surplus value of the multi-interpretative perspective, as detection of such conflicts may suggest a way towards conflict resolution. By signalling conflicts between perspectives, this study has pointed out where trade-offs may be made when such conflicts arise. System managers and medical professionals may act as countervailing powers in seeking a negotiated interpretation of desirable and undesirable outcomes of unintended responses.

A risk of using a dual perspective in analysing unintended responses is over-emphasis and primacy given to one of the perspectives. Even if both perspectives are considered even-handedly, their influence on interpretations of unintended responses may be imbalanced. Like the blind spots associated with a mono-perspective, over-emphasis on the managerial perspective would lead to a tendency to label unintended responses as perverse or fraud. Yet, many unintended responses can be legitimized from a professional perspective. Too much emphasis on this perspective might therefore lead to an "anything goes" interpretation of unintended responses. In either case, although combining the professional and managerial perspective strengthens the DRG system as an instrument of governance, an imbalanced approach hampers identification of functional trade-offs between system-level and case-level objectives.

Measures to improve the system are prone to waterbed effects

Inclusion of both the managerial and the professional perspective in interpreting unintended responses enables us to reflect more broadly on the impact of system managers' measures. The findings of this research suggest that system managers' measures to curb unintended responses by improving the DRG system tended to have a waterbed effect, evoking different unintended responses that manifest elsewhere.

In particular, measures taken by public system managers to refine restrictions on DRG registration and reimbursement risk ending in a cat-and-mouse game. The current study has shown that imposing greater restrictions on registration and reimbursement led medical professionals to explore new workarounds rather than to change their choices in patient treatment. The same applies to refinement of the restrictions imposed on registration of multiple DRGs per patient, to the more rigorous definitions of treatments as cosmetic or non-cosmetic, to the need for an adequate evidence basis before innovative treatments could be approved, and to restricted uses of high-cost medications. The choice of which treatment to register was primarily an ex post consideration. Thus, professional practice was not necessarily affected by the measures taken by system managers. The introduction of new rules, conditions, and definitions to prevent or limit reimbursement for specific types of care typically gave rise to new workarounds. This may be explained by the emphasis on the managerial perspective that is characteristic of this type of measure. As the professional perspective is underrepresented, this strategy has limited potential for conflict resolution.

The fact that improving the system as a strategy to address unintended responses is prone to waterbed effects also implies that the DRG system is not a suitable instrument for system managers to use to micromanage the professional process. It is particularly difficult for the public system managers, which operate at a greater distance from the professional process, to incorporate a professional perspective in any measures they may take to address unintended responses. The findings of this research indicate that it is easier for private system managers to address unintended effects at a local level. Indeed, a tailored institutional approach to unintended

responses at the local level was shown to provide opportunities for accommodating managerial and professional objectives while resolving conflicts.

Measures to improve the process tend to institutionalize unintended responses

Finally, by analysing unintended responses from a dual perspective, this research pointed out opportunities inherent in system managers' measures to improve the interaction process surrounding the DRG system. These types of measures had successfully ameliorated professional-managerial conflicts at the local level. For private system managers and medical professionals and institutions, local contracting negotiations provided a platform for making tailored arrangements on the use of unintended responses for specific treatments and groups of patients. This research found that via such local negotiations, private system managers and medical institutions reached agreements on the use of workarounds in DRG registration. Medical professionals and institutions were satisfied with the outcomes of such negotiated workarounds, as they accommodated innovative and less-invasive types of treatments. Private system managers were also acquiescent, as these negotiations allowed them to come to terms with some medical institutions' deviation from trends in DRG reimbursement, as revealed in their benchmarks.

"Even though local negotiations provided opportunities for system managers and medical professionals, consensual solutions for unintended responses were not easily reached. In this respect, the role of quality in such negotiations has been argued to be problematic, particularly when quality improvements come at a higher price (Bal and Zuiderent-Jerak 2011). Consensual solutions for unintended responses are the result of much wheeling and dealing between two countervailing powers with mostly conflicting interests and achieving them is by no means guaranteed.

In negotiations between private system managers and medical institutions, the managerial and professional objectives involved in the use of specific unintended responses became the subject of negotiation. Agreements made through such negotiations effectively institutionalized unintended responses. After all, local consensus on the use of workarounds reduced the need to start a formal procedure

to reach a solution approved by the public system managers. At the local level, such institutionalization was considered acceptable, since it allowed for reconciliation of conflicts between managerial and professional objectives through a local colouring of the system. In this respect, private system managers take an experimentalist approach to governance of the DRG system. Medical institutions and professionals are allowed discretion in the way they use the DRG system as long as they are transparent about this and their performance can be compared to that of peers by means of benchmarking (see, Sabel and Zeitlin 2012).

From the perspective of the public system manager, however, such institutionalization of unintended responses through local agreements was considered an undesirable outcome. Though it may be effective in solving local conflicts, it nonetheless interfered with the system's transparency and uniformity. With this approach, the public system managers do not appear to take an experimentalist governance approach towards steering on the performance of neither medical institution, nor that of the private system managers. Nonetheless, local colouring is viewed as inevitable to some extent in the decentralized Dutch healthcare system. Along with the allocation of more responsibility for system-level objectives, health insurers also need a degree of latitude to deal with conflicting professional objectives at the local level.

7.8 POLICY IMPLICATIONS

The insights on the phenomenon of unintended responses provided by the conjunctional analysis applied in this research are relevant for decision-making by policymakers in dealing with unintended responses to the DRG system. This section reflects on policy implications of the findings of the current study and provides some additional directions for future research.

Being tough on "fraud" comes at a price

This research has shown that the majority of unintended responses reflect a mixture of financially-driven and value-driven motivations. As even financially-driven motivations were often linked to professional objectives as well, the interpretation of

unintended responses in terms of desirable or undesirable outcomes was found to be quite complex. For governance of the DRG system, a considerable challenge will be to distinguish fraudulent behaviour of professionals and medical institutions from professional stewardship and constructive problem-solving. The Gordian knot of financial and value-based motivations revealed by this research provides ample grounds to contest any simplistic interpretation of unintended responses.

This research cannot provide an answer the question of where the line should be drawn between desirable and undesirable manifestations of unintended responses. That question must be answered by the system managers and professional organizations involved. Nonetheless, this research does shed light on how this question could be addressed. A zero-tolerance approach that by default treats unintended responses as fraud may curb financial misuse of the system. However, it is also likely to crowd out professional stewardship, consequently discouraging essential professional problem-solving. Combining the managerial and professional perspectives enables system managers to seek optimal trade-offs between functional and dysfunctional outcomes of unintended responses and provides a firm basis for policy change at the local or system level.

Facilitating local trade-offs between system-level and case-level objectives

Competition between system-level objectives and case-level objectives is essential to maintain the legitimacy of a DRG-based performance management system. This competition ensures representation of key interests from both the managerial and professional perspective and prevents infringements on either professional values or on managerial concerns from going unnoticed and unchallenged. In this way, system managers and medical professionals act as countervailing powers that safeguard their respective interests. The interaction between system managers and medical professionals favours incremental changes over rigorous changes to the system, which is conducive to system continuity. Thus we conclude that the conflict between system-level objectives and case-level objectives is not a problem in itself, as long as it is constructively structured.

To facilitate the trade-off between system-level and case-level objectives that are at play in the application of unintended responses by medical professionals financial as well as value-based motivations should be taken into account. In this respect, it is important to monitor that the financial impact of the DRG system does not crowd out the influence of professional values in professional decision making (see e.g., De Bruijn 2010). However, apart from managing the financial incentives provided by the DRG system, also increasing awareness of organizational and system-level objectives among professionals may help. Organizational and system-level issues concerning e.g. efficiency, financing systems and financial risks have received limited attention in educational programmes provided by the professional associations. By familiarizing professionals with managerial logics and by exploring way to connect these to professional logics, professional education programmes can contribute to a trade-off between system-level and case-level objectives (Noordegraaf 2011).

A major challenge in governance of the DRG system lies in designing the process for making trade-offs between system-level objectives and case-level objectives and deciding at what level this process is to take place. The findings of this research have shown that conflicting objectives can be addressed in two ways: by improving the system itself, which relies on a hierarchical prioritization of objectives from the managerial perspective, and by improving the process, which relies on a negotiated trade-off between objectives at the local level. Of these, the latter approach is to be preferred.

"Improving the system" has limited potential for curbing unintended responses

Public system managers, in particular, have sought to "improve the system" in order to curb the unintended responses of medical professionals. For example, they created new care products and refined rules and restrictions for DRG registration and reimbursement. These actions were indisputably essential, especially following the system's initial introduction. Any DRG system requires maintenance, mending of design flaws, and updating. Furthermore, the dynamics of the professional process, medical advances, and progressive insights on bottlenecks call for continuous readjustment of DRG systems. However, the findings of this research imply that the strategy of improving the system – in itself – will not diminish the proclivity of medical

professionals to resort to unintended responses. It might repress specific types of unintended responses, but these are then likely to be replaced by other types of workarounds in registration or by a focus on patient selection rather than workarounds in registration.

Nonetheless, certain aspects of the redesign of the DRG system in the “DRGs towards Transparency Plan” focus on improving the system as a strategy to curb unintended responses. Measures have been taken to influence the way medical professionals use the DRG system in practice. These include reduction of the number of care products available for registration, use of ICD-10 classifications for registration, and introduction of a “grouper” function for automated determination of DRG treatment codes based on the registration of provided services. These steps may reduce upcoding, as they limit the discretionary room for professionals in DRG registration, yet they may also lead professionals and medical institutions to be more selective in the patients they treat and in the treatments they provide. Therefore, instead of workarounds in DRG registration, unintended responses of medical professionals and institutions may shift to “cherry picking” among patient populations.

The current study suggests that a focus on improving the system alone has limited potential for curbing unintended responses. Overemphasis of system managers on this strategy, in spite of its neglect of conflicting perspectives as a cause of unintended responses, is likely to undermine the legitimacy of the DRG system as well.

Setting the framework for local processes

The findings of this research suggest that improving the process has greater potential as an effective strategy for addressing unintended responses. Nonetheless, as this strategy relies on local-level arrangements for addressing unintended responses, public system managers have little influence on the outcome. Agreements made through negotiations between private system managers and medical institutions are not transparent to public system managers. Moreover, such local arrangements might conflict with certain interests of the public system managers, for example, when they concern local agreements on reimbursement for treatments that have not – or not yet – been approved as evidence-based care reimbursable under the HIA.

Although direct influence of public system managers on the outcomes of such local negotiation processes may be limited, they can the context in which such processes take place. In fact, this was the approach taken in the recent revamping of the Dutch DRG system. Modifications to the system were made to increase the exposure of private system managers and medical institutions to financial risk. For example, List B care was expanded from 35% to some 70% of DRG care products. Moreover, ex post compensation arrangements for health insurers were reduced and budgeting modalities were modified for covering hospital expenditures on high-cost medications. In this respect, public system managers have sought to steer the system based on professional performance, though only indirectly. This means that they still rely on the private system managers and medical institutions to reconcile conflicts between managerial and professional objectives, while influencing the financial consequences of the trade-offs made at the local level.

7.9 RESEARCH LIMITATIONS

The qualitative design and interpretative analysis techniques applied in the current study were well suited for the primary objective of this research, which was to provide a more comprehensive understanding of the phenomenon of unintended responses. However, as a consequence of this design, the current research cannot support claims on the prevalence of unintended responses or the magnitude of their impacts and effects. Yet, this was not our aim. Although the maximum variation sample of medical institutions and medical specialists cannot be considered representative for the Netherlands it does suggest that unintended responses are a structural and not an incidental phenomenon. It is also noteworthy that unintended responses were reported in all types of medical institutions and in all of the medical specialties included in the sample, regardless of field of medicine and status of employment (i.e., self-employed specialists versus those on hospital staffs). This confirms that unintended responses cannot be dismissed as a trivial or whimsical behaviour of professionals in reaction to performance management systems (Bevan and Hood 2006, Kuhn and Siciliani 2008, Pollitt 2013).

7.10 Reflections on future governance of DRG performance management systems

To uphold managerial as well as professional objectives, governance of DRG systems should refrain from assuming that all deviations from intended uses represent perverse professional practices. Whether legitimate or not, unintended responses signal conflicts between managerial and professional objectives on the interface of the DRG system and the professional process. System governance that emphasizes a managerial perspective over a professional perspective on unintended responses tends to ignore such conflicts. Curbing unintended responses by improving and refining the system and demanding changes in the professional process appear to stimulate professional vigilantism. Medical professionals themselves decide whether and what unintended responses to use as corrective measures in the conflicts they encounter with system managers. The corrective measures they elect may in fact turn out to be more than adequate. In this respect, system governance by private system managers at the local level is pivotal in providing insight and information on how unintended responses are used in practice. Local-level negotiations also provide opportunities to balance managerial and professional objectives. Consensual arrangements with medical institutions provide an instrument for private system managers to influence the use – or conditions of use – of unintended responses. Notwithstanding the substantial potential of local system governance for conflict resolution, local arrangements do reduce the transparency of the system to public system managers and may well undermine public governance objectives. Therefore, any further shift to local system governance should be accompanied by greater involvement of public system managers in a continuous process of monitoring private system managers' adjustments of the incentives structure and conditions under which local negotiations take place between medical institutions and private system managers.

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SUMMARY

Introduction

The rise of the New Public Management (NPM) in the 1980s considerably changed the governance of public sectors in the Western and Anglo-Saxon world. NPM-inspired public-sector reforms brought managed competition to the fore as a dominant approach to steering public-sector organizations. The basic assumption of NPM is that public sectors will become more efficient if they are required to account for their performance and resource allocation just as private-sector organizations do. Performance management systems are deemed a crucial element of such accountability processes. They therefore became a conspicuous element of many public-sector reforms.

In healthcare systems, many public-sector reforms have targeted the funding or reimbursement systems of medical institutions and medical specialists. Many countries, including the Netherlands, have implemented healthcare funding systems based on Diagnosis Related Groups (DRG). In essence, DRG systems introduce patient classification into a number of diagnosis and treatment categories ("DRGs"). Each DRG represents a separate care "product" for which the medical institution receives a predefined payment. Besides this reimbursement function, DRG systems also serve as an accountability instrument. By tracking patient diagnoses and treatments, DRG systems can provide key information on the performance of medical institutions to public regulators, policymakers, and private stakeholders such as health insurers. These same actors govern the design and implementation of the DRG system and can therefore be termed the "system managers". DRG systems offer system managers a lever for steering medical institutions towards greater efficiency, but also towards greater control of quality, cost containment, and optimal accessibility of healthcare overall.

The reliability of the information provided by a DRG system is therefore vital for system managers. Yet, its reliability depends on how medical institutions and professionals use the DRG system in practice. Here, however, medical institutions and professionals are relatively autonomous. They are the ones who choose the medical procedures they provide to a patient and the way these medical procedures

are registered in the DRG system. Like performance management systems in other public sectors, DRG systems can have positive effects, but also effects that are unintended and potentially undesirable. International studies report that medical institutions and professionals sometimes use DRG systems in ways that are frowned upon by system managers. Examples of such unintended, and presumably undesirable, responses are *upcoding* – when a more expensive care product is registered than the treatment or condition of the patient allows – and *patient selection* – when patients with favourable risk and cost profiles are accepted for treatment while others with unfavourable profiles are rejected and referred to other hospitals.

In the public debate on the functioning of healthcare systems, unintended responses such as upcoding and patient selection are interpreted primarily as undesirable and perverse effects of DRG systems. The notion that unintended responses may be functional from the perspective of a medical professional is largely overlooked. Nonetheless, unintended responses can serve as an instrument for medical professionals to bridge the gaps between the DRG system's limitations and the reality of the medical process.

The research presented here explores and interprets the use of unintended responses by medical professionals in relation to the DRG system in the Netherlands. Based on an interpretative case study, the phenomenon of unintended responses is explored from the perspective of the medical professional and from the perspective of the system manager. This yields insight into the types of unintended responses applied by medical professionals, the considerations that play a role in these, and also the types of measures that public and private system managers take to curb unintended responses and their motivations for these.

Managerial and professional perspectives on unintended responses

Much of the existing literature on performance management in public and semi-public organizations adopts either a managerial or a professional perspective. It finds that systems of performance management, and case-mix systems in particular, induce "perverse effects" by stimulating medical professionals to behave in ways not originally intended by the managers of the system. These two perspectives take

either the position of the manager as the starting point for interpreting unintended responses or the position of the professional as the starting point. In the former, managerial perspective, intended and unintended responses are associated, respectively, with desirable and undesirable effects of performance management systems. The basic idea is that if performance management systems are well-designed, use of the system in accordance with the system managers' specifications and intentions will bring about the desired increase in transparency and efficiency. By contrast, using the system in a way that contravenes the system managers' specifications and intentions is interpreted as strategic behaviour or even fraud, which are assumed to undermine the desired effects. Moreover, professionals' unintended responses to a performance management system are assumed to be driven by financial incentives, and even to amount to fraud. Therefore, the managerial perspective holds unintended responses to performance management systems to be a dysfunctional phenomenon, as they inevitably conflict with the objectives of system managers.

The professional perspective explains unintended responses of professionals to performance management systems as a functional phenomenon. Literature on performance management holds performance management systems to be relatively static, particularly in comparison to the dynamics of a professional organization. They are therefore thought to be a poor fit with the (medical) professional process. In this light, unintended responses are interpreted as a necessary instrument with which professionals prevent performance management systems from producing outcomes that undermine their professional standards and ethos. Therefore, from the professional perspective, unintended responses serve professional objectives and are not necessarily in conflict with system managers' or societal objectives.

Limitations in the interpretation of unintended responses

Although many empirical studies on unintended responses have applied the managerial or the professional perspective, few studies have incorporated both perspectives together. There is thus little cross-fertilization of the insights that follow from each. This is problematic because both perspectives are challenged by their

own blind spots. The managerial perspective explains unintended responses based on opportunistic motives, while paying little attention to professional considerations. Conversely, the professional perspective explains unintended responses based on professional motivations and case-level outcomes, but pays little attention to strategic behaviour or cumulative effects on system-level objectives.

Yet, the managerial and professional perspectives on unintended responses may be complementary, if the insights from one perspective can correct for the blind spot of the other and vice versa. The current research thus applies a dual perspective to analyse and interpret the unintended responses of medical professionals to the DRG performance management system introduced in the Netherlands' healthcare system in 2006. The surplus value of this dual perspective is that it incorporates the influence of both financial and professional considerations and signals and clarifies conflicts between each perspective's interpretations of unintended responses.

Research design

The empirical part of this research rests on an interpretative case study of unintended responses of medical professionals to the DRG system in the Netherlands. This case was selected based on the conditions identified by performance management theory as triggering perverse effects. Two conditions, in particular, led to the choice of the Dutch DRG system for study: (i) the professional nature of hospital and medical specialists' performance and (ii) the direct financial impact of the DRG system on reimbursement of hospitals and remuneration of medical specialists.

This research explores rationales as well as behaviours to explain both what and why: what unintended responses medical professionals resort to and why, and what measures public and private system managers implement to curb the use of unintended responses and why. Because our focus is on the considerations and choices made by medical professionals and system managers in relation to unintended responses, we make use of qualitative research methods and techniques. Semi-structured, in-depth interviews are essential, particularly because the reasons why medical professionals employ unintended responses in specific situations are often tacit and ambiguous and can be revealed only through probing

questions in interviews. To analyse the phenomenon of unintended responses at the level of the system manager, 17 interviews were conducted with five public and four private stakeholders in the Dutch DRG system. The public system managers interviewed represent regulators, advisory bodies, and a system maintenance organization. The private system managers interviewed represent health insurers, which are the main “purchasers” of hospital care in the Netherlands. To analyse the phenomenon of unintended responses at the level of the medical professionals, 67 interviews were conducted with medical specialists, management representatives, and support staff at six institutions for specialist medical care in the 2007–2012 period. These six institutions included one university hospital (UH), one general hospital (GH), and four independent treatment centres (ITCs).

The hospitals and medical specialties were selected based on purposive, maximum variation sampling. Interviewees were selected via snowball sampling. To avoid socially desirable answers, they were assured of anonymity and guaranteed that the names of their hospitals would remain confidential. As our study focuses on unintended responses, we asked the interviewees they used the DRG system on a day-to-day basis. To avoid hindsight rationalization bias, we considered issues in a real-time setting, going over actual behaviours in particular cases. In addition, we cross-checked the unintended responses reported from one interview to the next, to validate our findings. The interviews were recorded and transcribed.

Distinct behavioural responses to the DRG system were identified through a two-step coding procedure. First, in vivo coding was applied, using labels as similar as possible to the interviewees’ own words. Second, interpretive coding was used, clustering the in vivo codes into types of unintended responses and thus transcending their specific context and anecdotal nature. This procedure yielded insight into interviewees’ actual behaviours as well as the meanings they attached to their behaviours.

The qualitative design of this research means that it cannot support claims on the magnitude of the studied behaviours (i.e., whether unintended responses are rare or common practice). Yet, as we sought a deeper understanding of unintended responses, this was not our research aim. The exploratory power of this research

was maximized by basing its design on maximum variation sampling and by gathering a large set of interview data. Ultimately, our findings suggest that unintended responses are a commonplace behavioural pattern rather than isolated occurrences. Moreover, even though key elements of the structure of the DRG system have changed since 2012 (and will probably keep changing), we expect the findings of the current study to remain relevant.

Unintended responses from the perspective of the medical professional

The interviews with the medical professionals revealed a wide variety of unintended responses to the DRG system. This rich collection of contextual examples was categorized into four overarching types. All four types of unintended responses were found to apply to medical professionals working in each of the three types of medical institutions sampled, regardless of their differences in patient populations and in employment status of the medical specialists.

Registration of too many DRG care products per patient

Although the Dutch system allows medical specialists to register more than one DRG per patient under certain conditions, medical specialists also registered multiple DRGs when these conditions were not met or when it was unclear whether they would be met. This type of unintended response was practised by medical specialists particularly in cases of multi-morbidity and for patients simultaneously receiving different types of treatment. Furthermore, this type of unintended response was reported in cases where patients received a repeat treatment or when the condition of the patient deteriorated during the course of treatment.

Registration of a DRG diagnosis based on non-medical grounds

The second type of unintended responses, registration of a DRG diagnosis on non-medical grounds, concerns cases where medical specialists registered a diagnosis that did not follow primarily from the patient's medical condition. In some cases medical specialists deliberately chose to register an adjacent, but less accurate diagnosis for the patient. In other cases, medical specialists deliberately registered a

diagnosis that they considered incorrect from a medical point of view, but nonetheless deemed adequate for some other reason.

This type of unintended response was used by medical professional primarily to compensate for the cost of applied diagnostic tests or the treatment preferred for a specific patient. Furthermore, this type of unintended response was used to finance (off-label or unregistered) use of high-cost medication, to gain reimbursement for treatments labelled as cosmetic care, to increase DRG revenues for the medical institution, or to boost the income of the medical specialists concerned.

Registration of a DRG treatment that is inconsistent with the treatment actually rendered to the patient

The third type of unintended response, registration of a treatment inconsistent with the treatment actually rendered, refers to cases where medical professionals registered an anomalous DRG treatment code. This type of response was reported primarily in association with highly complex treatments and the use innovative and less-invasive treatment methods for which codes were often not yet available in the DRG system. Furthermore, it was used when the costs of treatment in a specific case exceeded the reimbursement of the standard DRG, to increase DRG revenues for the medical institution, or to boost the income of the medical specialists concerned.

Patient selection based on risk profiling

This fourth and last type of unintended response refers to medical professionals' and medical institutions' active shaping of their overall DRG production based on risk and cost profiling of specific groups of patients and treatments. This type of unintended response implies referral of patients with a greater chance of developing complications to a different medical institution, usually a UH. Furthermore, this type of unintended response comes into play when medical professionals or institutions aim to diminish their use of high-cost diagnostics for specific types of treatment, to cut back on the production of unlucrative DRGs in general or, conversely, to stimulate the production of lucrative DRGs to compensate for losses made on other DRGs.

All in all, our interpretative analysis of medical professionals' motivations for unintended responses found the majority of unintended responses to stem from a

mixture of financial incentives and professional values. However, in practice, financial and professional considerations are hard to disentangle. Even when financial motivations were reported as the primary stimulus for unintended responses, financial gain was not presented as the main objective. Instead, the financial outcomes of unintended responses were presented primarily as a means to safeguard professional values, such as continuity of care, availability of innovative treatment methods, provision of treatment for unlucrative groups of patients, and maintaining availability of high-cost diagnostics.

Unintended responses from the perspective of the system manager

The interviews with representatives of the public and private system managers shed light on the diversity of measures taken to curb the unintended responses of medical professionals and the negative effects of these on system-level objectives. In the analysis, two types of measures were discerned: measures that focus on improvement of the system itself and measures focused on improving the process of interaction between the DRG system and medical professionals and institutions. Even though both types of measures were applied by both public and private system managers, public system managers were found to emphasize system improvement. Private system managers, on the other hand, placed more emphasis on measures to improve the process.

Measures to improve the system

Measures to improve the system were introduced to safeguard the transparency and reliability of the information that the DRG system provides for managing the quality and cost of care. To this end, changes were introduced to increase system managers' control on the way that medical professionals registered medical care. For example, fraud detection systems were introduced and new DRG codes were made available to inhibit utilization of "workarounds" in registration. In addition, restrictions on the registration of multiple DRG care product per patient were extended and refined, and decisions were clarified on the boundary between "insured" care and treatments not eligible for reimbursement under the Netherlands Health Insurance Act.

Measures to improve the process

Measures to improve the process were applied primarily by private system managers and aimed to provide clarity on and solutions for inappropriate use, conflicts, and differences of opinion. Benchmarking of medical institutions and departments was introduced to detect deviant patterns of registration. Once detected, however, aberrant registration patterns were addressed through a process of local negotiations between the private system managers and the medical institution involved. In this local setting, frictions, conflicts, and differences in interpretation of appropriate and inappropriate registration could be discussed and agreements or solutions sought for future registration.

Both types of system manager measures were incorporated in a large-scale modification of the DRG system in 2012 (under the name "DRGs towards Transparency Plan"). The number of DRG care products was reduced from 30,000 to approximately 4,000, and the influence of medical specialists on the DRG codes registered was diminished with the introduction of "grouper". These changes can be interpreted as a measures to improve the system. In addition, various measures were implemented to increase the exposure to financial risk of health insurers, as private system managers, and of medical institutions. These can be interpreted as steps to improve the process.

Conclusion: Interpretation of unintended responses from a dual perspective

To answer the central research question – *How can the phenomenon of unintended responses to the DRG performance management system in the Netherlands be understood?* – the managerial and the professional perspectives were both included together in the analysis of unintended responses. Compared to a mono-perspective analysis involving either the managerial or the professional perspective, the surplus value of our dual perspective lies in the richer but also the broader view afforded on the phenomenon of unintended responses to performance management systems. With this approach, this research provides a number of novel insights.

Money-driven unintended responses are not just about money

In the first place, the findings of this research show that the majority of unintended responses are linked to financial outcomes, but financial gain in itself is not necessarily the end-goal. The monetary effects of most unintended responses should not be surprising. As the DRG system serves as the basis of reimbursement of medical institutions and remuneration of medical specialists for care provided, each alternative choice in registration or treatment has financial consequences. Using only the managerial perspective, financially-motivated unintended responses would be interpreted as representing perverse behaviour of professionals with only undesirable outcomes. Yet, using the professional perspective exclusively would lead us to interpret financially-driven unintended responses as solely professional problem-solving behaviour, ignoring unintended responses that could rightfully be labelled as fraud. A dual perspective allows us to address conflicting interpretations by weighing the interests at stake from both perspectives against each other.

Competition between system-level and case-level objectives is a source of unintended responses

Diverging interpretations of unintended responses from the managerial and professional perspectives are commonly related to differences between system-level objectives and case-level objectives, both of which are at stake in the DRG system. System managers emphasize system-level objectives and consider unintended responses themselves an undesirable effect, particularly because they distort the management information derived from the DRG system. For medical professionals, however, unintended responses may be instrumental to prevent outcomes that they consider adverse for patients based on ideas, values, norms, and standards held by the medical profession. Although this ongoing competition between system-level and case-level objectives is the source of many conflicts, it also helps to align the DRG system with the complexity of reality. Prioritizing one level over the other in governance of the DRG system or the healthcare system as a whole would contradict this complexity. Oversimplification of reality would obscure valid objectives at both levels preventing them from being adequately weighed against each other.

Measures to improve the system can evoke new unintended responses

System managers' measures to address unintended responses by improving the system risk ending in a cat-and-mouse game. This research suggests that attempts to refine registration rules, to introduce new restrictions, and to redefine insured care merely evoked new unintended responses. System managers' influence thus does not appear to extend to the professional process (e.g., the choice of treatment). Rather, it is limited to medical professionals' behaviour in registering the treatments they choose. Perhaps this is because measures to improve the system are designed primarily from a managerial perspective. As such, they provide limited opportunity to address the concerns and bottlenecks that arise from a professional perspective along the way. System improvements are less appropriate for reconciling the conflicts that underlie unintended responses than measures to improve the process.

Measures to improve the process can institutionalize unintended responses

Measures to address unintended responses by improving the process might legitimize and institutionalize unintended responses. Through local negotiations, individual system managers and medical institutions in some cases reached agreements on condoned uses of unintended responses. This research found such agreements on how treatments could be registered, on "workarounds" for specific treatments (e.g., an innovative therapy or a less-invasive procedure), and on supplementary compensations or discounts.

Negotiations between a private system manager and a medical institution provide opportunities to resolve conflicts at local level. However, such agreements are not necessarily consistent with the objectives of the public system managers. Institutionalization in local agreements enables existing practices of unintended responses to continue, even if they are detrimental to transparency and system uniformity.

Research implications

This research does not intend to provide a normative evaluation of types of unintended responses that are to be considered desirable and types that are not.

Such an evaluation would depend on the weights attributed to the managerial and professional objectives at stake and are therefore reserved for system managers and medical professionals as the involved parties. The aim of this research was to explore the types of unintended responses utilized by medical professionals in working with the DRG system and to interpret them from the managerial and professional perspectives. Our findings suggest four recommendations for strategies to address unintended responses.

A zero-tolerance approach to "fraud" comes at a price

In the first place, the findings of this research indicate that a strategy of strict regulation and sanctioning of all unintended responses that appear to be fraudulent will likely bring undesirable side effects. Although this approach may effectively inhibit unintended responses aimed purely for financial gain, it is also likely to undermine the professional objectives being served by unintended responses. To prevent medical professionals from withdrawing from the debate on what are desirable and undesirable outcomes of DRG systems, it is important to weigh the managerial and professional objectives at stake in the use of unintended responses. For this, governance of DRG systems should focus on deriving benefit from the "professional attitude" and not squelching it. From a theoretical perspective, this implies that the academic field of performance management should distinguish between unintended responses in registration as a prospective strategy, in which the prospect of financial gain forms the starting point, or as a retrospective strategy, in which financial gain is a side effect rather than the initial objective.

Facilitate trade-offs between objectives at the system level and the patient level

Although conflicts between system-level and patient-level objectives may be perceived as a difficulty in governance of the DRG system, they nonetheless also contribute to the legitimacy of the system. In such conflicts, system managers and medical professionals act as countervailing forces. Professionals prevent system managers from overlooking key objectives in patient care. System managers, for their part, confront medical professionals with the cumulative effects of unintended responses at the system level. Conflicts therefore constitute opportunities to come to trade-offs between system-level and patient-level objectives. In fact, facilitating such

trade-offs is a foremost challenge in governance of DRG systems. Facilitating trade-offs between system-level and case-level objectives can serve as a strategy for minimizing perceived gaps between performance management systems and professional organizations.

“Improving the system” has limited potential for curbing unintended responses

System improvements, in the form of periodic maintenance and updates, are essential. Medical advances, technological developments, and progressive insights on bottlenecks between the DRG system and the nature of the medical performance it aims to measure require regular adjustments and corrections to the system. However, the findings of this research imply that system improvements in the form of expanded and refined rules and definitions do not offer a durable solution for the use of unintended responses. This is because system improvements often take a mono-perspective managerial view on unintended responses and neglect to address the potentially conflicting objectives underlying these responses.

Governance through local arrangements

This research found that a combination of system and process improvements has greater potential for curbing unintended responses. Opportunities for conflict resolution stem particularly from local consultation structures between medical institutions and the system managers that act as the main purchasers of medical care. These allow private system managers and medical institutions to reach agreements on the manner of registration and supplementary payments or discounts, as well as to raise issues concerning deviant patterns of registration and invoicing. Although conflict resolution is left primarily to the parties at the local level, public system managers can influence this process by rearranging financial incentives .

Managerial objectives and professional objectives alike contribute to the legitimacy of a DRG system. This research found unintended responses being used by medical professionals across all types medical institutions in the Netherlands. Moreover, these unintended responses do not necessarily have undesirable effects on the performance management system. Rather, unintended responses signal conflicts between different objectives at stake. In governance of DRG systems, unintended

responses – if adequately understood – could help to enhance the balancing of managerial and professional objectives at the local level.

SAMENVATTING

Inleiding

De opkomst van het New Public Management (NPM) gedachtengoed in de jaren tachtig van de vorige eeuw heeft de aansturing van publieke sectoren in de Westerse en Angelsaksische wereld aanzienlijk veranderd. NPM geïnspireerde hervormingen stelden het marktdenken centraal in de aansturing van publieke sector organisaties. De veronderstelling van NPM is dat publieke sectoren efficiënter zullen worden wanneer zij zich, net als 'private sector organisaties', moeten verantwoorden voor geleverde prestaties en voor de aanwending van (veelal) publieke middelen. Prestatie management systemen worden gezien als een cruciaal onderdeel van dit soort verantwoordingsprocessen en vormen daarom een herkenbaar element in veel hervormingen van publieke sectoren.

Specifiek voor de gezondheidszorg hebben hervormingen zich veelal gericht op bekostigingssystemen van ziekenhuizen en medisch specialisten. Veel landen, waaronder Nederland, hebben een bekostigingssysteem geïntroduceerd dat is gebaseerd op Diagnosis Related Groups (DRG). In essentie worden DRG-systemen gebruikt om patiënten te classificeren in een aantal categorieën op basis van diagnose en behandelkosten (DRGs). Elke DRG vormt hierbij een afzonderlijk 'zorgproduct' waarvoor de medische instelling een vastgestelde vergoeding ontvangt. Naast deze bekostigingsfunctie dienen DRG-systemen ook als een verantwoordingsinstrument. Door het inzichtelijk maken van diagnoses en behandel categorieën bieden DRG-systemen kerncijfers over de prestaties van medische instellingen aan publieke toezichthouders, beleidsmakers en aan private stakeholders als zorgverzekeraars. Dezelfde partijen oefenen invloed uit op het ontwerp en functioneren van het Nederlandse DRG-systeem en kunnen daarom worden gezien als de "systeem managers". De informatie die DRG-systemen opleveren stellen systeem managers in staat om te sturen op efficiency van medische instellingen en op beheersing van kwaliteit, kosten en toegankelijkheid van de gezondheidszorg in bredere zin.

De betrouwbaarheid van de informatie die een DRG-systeem oplevert is daarom voor systeem managers van groot belang. Deze betrouwbaarheid hangt in belangrijke

mate af van de wijze waarop medische instellingen en medisch professionals in de praktijk gebruik maken van het DRG-systeem. In de praktijk hebben medische instellingen en professionals namelijk relatief veel discretionaire ruimte in hun omgang met het systeem. Zij zijn degenen die bepalen welke behandeling een patiënt krijgt, maar ook hoe deze behandeling wordt geregistreerd in het DRG-systeem. Net als prestatiemanagement-systemen in andere publieke sectoren kunnen DRG systemen naast positieve effecten ook onverwachte en potentieel ongewenste effecten met zich meebrengen. Internationale onderzoeken tonen aan dat medische instellingen en medisch specialisten DRG systemen soms gebruiken op een wijze die niet kan rekenen op de goedkeuring van de betrokken systeem managers. Voorbeelden van dergelijk onbeoogde, en veronderstelt ongewenste, reacties zijn *upcoding* - waarbij een duurder zorgproduct wordt gedeclareerd dan de behandeling van een patiënt toestaat - en *patient selection* - wanneer patiënten met een gunstig risico- en kostenprofiel worden geaccepteerd terwijl anderen met minder gunstige profielen worden geweerd voor behandeling en doorverwezen naar een ander ziekenhuis.

In het publieke debat over het functioneren van een zorgsystemen worden onbeoogde reacties als upcoding en patient selection voornamelijk geïnterpreteerd als ongewenste en perverse effecten van DRG systemen. Het idee dat onbeoogde reacties vanuit het oogpunt van een medisch professional wel functioneel kunnen zijn, speelt nauwelijks een rol. Toch kunnen onbeoogde reacties een instrument vormen voor medisch professionals om knelpunten tussen het systeem en de realiteit van het medisch proces te overbruggen.

Deze studie verkent en duidt het gebruik van onbeoogde reacties van medisch professionals op het DRG-systeem in Nederland. Op basis van een interpretatieve case studie wordt het fenomeen van onbeoogde reacties op het DRG-systeem verkend vanuit het perspectief van de medisch professional en vanuit het perspectief van de systeem manager. Deze benadering biedt inzicht in de typen onbeoogde reacties die medisch professionals aanwenden en de overwegingen die hierbij voor hen een rol spelen, alsook de typen maatregelen die systeem managers treffen om onbeoogde reactie tegen te gaan en de motivaties die hierop van invloed zijn.

Management en professionele perspectieven op onbeoogde reacties

Het merendeel van de bestaande wetenschappelijke literatuur over prestatiemanagement in publieke en semipublieke organisaties volgt ofwel een management perspectief ofwel een professioneel perspectief. In algemene zin stelt deze literatuur dat performance management, en DRG systemen in het bijzonder, perverse effecten opleveren doordat medisch professionals worden geconfronteerd met prikkels om op een andere wijze met het systeem om te gaan dan door de systeem managers wordt beoogd. De twee perspectieven nemen of de positie van de systeem manager als uitgangspunt in de interpretatie van onbeoogde reacties of juist de positie van de medisch professional. In het eerstgenoemde management perspectief worden beoogde en onbeoogde reacties respectievelijke geassocieerd met gewenste en ongewenste effecten van prestatiemanagement-systemen. De gedachte hierbij is dat wanneer een prestatiemanagement-systemen goed is ontworpen, het gebruik van het systeem overeenkomstig de intenties en specificaties van de systeem managers zal leiden tot de gewenste effecten op transparantie en efficiëntie. Gebruik van het systeem dat in tegenspraak is met de intenties en specificaties van de systeem managers, aan de andere kant, wordt geïnterpreteerd als strategisch gedrag dat de gewenste effecten van prestatiemanagement ondermijnt. De veronderstelling hierbij is dat onbeoogde reacties van medisch professionals volgen uit financiële prikkels en worden al snel uitgelegd als fraude. Hiermee ziet het management perspectief onbeoogde reacties op prestatiemanagement-systemen als een disfunctioneel fenomeen omdat zij onvermijdelijk conflicteren met de doelstellingen van systeem managers.

Het professioneel perspectief legt onbeoogde reacties van professionals op prestatiemanagementsystemen juist uit als een functioneel fenomeen. Literatuur over prestatiemanagement ziet prestatiemanagementsystemen als relatief statisch, zeker in vergelijking met de dynamiek van een professionele organisatie. Hierdoor sluiten zij vaak moeilijk aan bij het (medisch) professioneel proces. Vanuit deze gedachte worden onbeoogde reacties geïnterpreteerd als een noodzakelijk instrument dat professionals gebruiken om te voorkomen dat prestatiemanagementsystemen leiden tot uitkomsten die afbreuk doen aan hun professionele standaarden en ethos. Vanuit dit professionele perspectief dienen onbeoogde reacties dus professionele

doeleinden en conflicteren zij niet noodzakelijk met de doelstellingen van systeemmanagers of maatschappelijke doelstellingen.

Beperkingen in de interpretatie van onbeoogde reacties

Alhoewel het management en het professionele perspectief al in veel empirische studies zijn toegepast, zijn er maar weinig studies die allebei de perspectieven opnemen in de analyse. Om deze reden is vermenging van inzichten die volgen uit beide perspectieven zeer beperkt gebleven. Dit is problematisch omdat zowel het managementperspectief als het professioneel perspectief kampen met een eigen 'blinde vlek'. Het managementperspectief verklaart onbeoogde reacties vanuit opportunistische motieven, maar laat professionele overwegingen die mogelijk een rol spelen in dit gedrag onderbelicht. Het professioneel perspectief verklaart onbeoogde reacties vanuit professionele overwegingen, maar schenkt juist weinig aandacht aan strategisch gedrag of cumulatieve effecten op doelstellingen die systeemmanagers nastreven met het prestatiemanagementsysteem.

Het managementperspectief en het professioneel perspectief kunnen elkaar hier complementeren. Inzichten die volgen uit het ene perspectief kunnen corrigeren voor de blinde vlek van het andere perspectief en vice versa. Om deze reden past de huidige studie een duaal perspectief toe in de analyse en interpretatie van onbeoogde reacties van medisch professionals op het DRG prestatiemanagementsysteem dat is geïntroduceerd in Nederlandse zorgsysteem in 2006. De meerwaarde van dit duale perspectief is dat de invloed van zowel financiële als professionele overwegingen worden meegenomen in een analyse die conflicten in de interpretatie van onbeoogde reacties vanuit beide perspectieven signaleert en duidt.

De opzet van het onderzoek

Het empirisch deel van dit onderzoek berust op een interpretatieve case studie naar onbeoogde reacties van medisch professionals op het DRG-systeem in Nederland. Deze case is geselecteerd op basis van condities die vanuit prestatiemanagement

theorie zijn gerelateerd aan het optreden van perverse effecten. Twee van deze condities in het bijzonder hebben geleid tot de keuze van het Nederlandse DRG systeem voor dit onderzoek: (i) het professionele karakter van de prestaties van medische instellingen en medisch specialisten en (ii) de directe financiële impact van het DRG systeem op de bekostiging van ziekenhuizen en de vergoedingen voor medisch specialisten

Dit onderzoek verkent zowel gedrag als de achterliggende gedachte om het 'wat' en 'waarom' van onbeoogde reacties te verklaren: Wat voor typen onbeoogde reacties gebruiken medisch professionals en waarom, en wat voor typen maatregelen treffen systeem managers om het gebruik van onbeoogde reacties tegen te gaan en waarom. Gezien de focus op afwegingen en keuzes gemaakt door medisch professionals en systeem managers in relatie tot onbeoogde reacties maken wij in dit onderzoek gebruik van kwalitatieve onderzoeksmethoden en technieken. In het bijzonder zijn semigestructureerde diepte interviews hierbij essentieel omdat de redenen waarom medisch professionals in specifieke situaties onbeoogde reacties gebruiken veelal ambigue is en berust op impliciete kennis. Kennis die alleen inzichtelijk kan worden gemaakt door doorvragen in diepte interviews. Om het fenomeen onbeoogde reacties te analyseren op het niveau van de systeemmanager zijn 17 interviews gehouden met vertegenwoordigers van vijf publieke en vier private stakeholders in het Nederlandse DRG systeem. De geïnterviewde publieke systeemmanagers bestaan uit toezichthouders, adviserende organisaties en een organisatie voor systeemonderhoud. De geïnterviewde private systeemmanagers vertegenwoordigen de zorgverzekeraars die bij het DRG-systeem betrokken zijn in hun rol als zorginkopers. Om het fenomeen onbeoogde reacties te analyseren op het niveau van de medisch professional zijn 67 interviews gehouden met medisch specialisten, vertegenwoordigers van het ziekenhuismanagement en met ondersteunend personeel in zes instellingen voor medisch specialistische zorg in de periode van 2007-2012. Deze zes instellingen omvatten één Universitair Medisch Centrum (UMC), één algemeen ziekenhuis en vier Zelfstandige Behandel Centra (ZBC).

De medische instellingen en de medische specialismen zijn geselecteerd op basis van 'maximum variation sampling' technieken. Interviewkandidaten zijn geselecteerd aan de hand van sneeuwbal sampling. Om een sociaal wenselijke antwoordtendens

te vermijden, werd de interviewkandidaten toegezegd dat hun bijdrage aan het onderzoek zorgvuldig zou worden geanonimiseerd en dat ook de naam van het ziekenhuis of de zorgverzekeraar waar zij werkten niet zou worden genoemd in de rapportage van de onderzoeksbevindingen. Aangezien dit onderzoek zich richt op onbeoogde reacties, vroegen wij de respondenten naar hun omgang met het DRG systeem in hun dagelijkse praktijk. Om een bias door rationalisatie van gedrag door respondenten achteraf te vermijden, werden voorbeelden besproken in een real-time setting waarin werd ingegaan op daadwerkelijk gedrag in specifieke gevallen. Ter aanvulling werden aangedragen voorbeelden van onbeoogde reacties gecheckt in meerdere interviews om onze bevindingen te valideren. Op basis van de gemaakte geluidsopnamen zijn de interviews woordelijk uitgeschreven.

Onderscheidende typen onbeoogde reacties zijn geïdentificeerd door middel van een twee-staps coderingsprocedure. In de eerste plaats werd *in vivo* codering toegepast, waarbij onbeoogde reacties werden gecategoriseerd op basis van labels direct gerelateerd aan de omschrijving door de respondent. In de tweede plaats werd interpretatieve codering toegepast, waarbij de in vivo codes werden geclusterd in typen onbeoogde reacties die specifieke context en het anekdotisch karakter van de voorbeelden overstijgen. Deze procedure geeft inzicht in het gedrag van de respondent en ook in de betekenis die zij aan dit gedrag toekennen.

De kwalitatieve opzet die is gehanteerd heeft als gevolg dat dit onderzoek geen basis biedt voor uitspraken over de omvang van het bestudeerde gedrag (dus of het gebruik van onbeoogde reacties een zeldzaamheid is of juist gemeengoed). Echter, dit was ook niet het doel van dit onderzoek aangezien wij streven naar een meeromvattend begrip van het fenomeen onbeoogde reacties. Door het gebruik van maximum variation sampling en door de omvang van de dataset is het explorerend vermogen van deze studie gemaximaliseerd. De bevindingen van dit onderzoek impliceren dat onbeoogde reacties eerder een gangbaar gedragspatroon vormen dan een verzameling van geïsoleerde incidenten. Tenslotte, alhoewel kerncomponenten in de structuur van het Nederlandse DRG systeem zijn gewijzigd in 2012 (en naar waarschijnlijkheid in de toekomst ook zullen blijven wijzigen), verwachten wij dat de inzichten die volgen uit de bevindingen van dit onderzoek van toepassing zullen blijven op het Nederlandse DRG systeem.

Onbeoogde reacties vanuit het perspectief van de medisch professional

De interviews met de medisch professionals lieten een grote diversiteit aan onbeoogde reacties zien. Deze rijke verzameling van contextgebonden voorbeelden zijn gecategoriseerd in vier overstijgende typen onbeoogde reacties. Al deze vier typen onbeoogde reacties bleken van toepassing voor medisch professionals werkzaam in elk van de drie typen ziekenhuizen, los van hun onderlinge verschillen in patiëntenpopulatie en in dienstverband van de medisch specialisten.

Registratie van teveel DRG-zorgproducten per patiënt

Alhoewel het Nederlandse DRG systeem medisch-specialisten onder bepaalde omstandigheden toestaat om gelijktijdig meerdere DRG's per patiënt te declareren, registreerden medisch specialisten ook meerdere DRGs wanneer niet aan deze condities was voldaan of wanneer onduidelijk was of er aan de condities was voldaan. Dit type onbeoogde reacties werd voornamelijk toegepast door medisch professionals wanneer er sprake was van multi-morbiditeit en wanneer patiënten gelijktijdig verschillende typen behandelingen ondergingen. Hiernaast werd dit type onbeoogde reactie gerapporteerd in gevallen waar patiënten een herhaalbehandeling ondergingen of wanneer de medische conditie van de patiënt gedurende het behandel traject verslechterde.

Registratie van een DRG-diagnose op niet-medische gronden

Dit tweede type onbeoogde reactie, registratie van een DRG-diagnose op niet-medische gronden, betreft gevallen waarin medisch-specialisten een diagnose registreren die niet primair volgt uit de medische conditie van de patiënt. In sommige gevallen betekende dit dat bewust een aanverwante, maar minder accurate diagnose werd geregistreerd voor de patiënt. In andere gevallen werd bewust een diagnose geregistreerd die vanuit medisch oogpunt incorrect is, maar die desalniettemin om andere redenen geschikt werd geacht.

Dit type onbeoogde reacties werd voornamelijk gebruikt door medisch professionals ter compensatie van kosten van toegepaste diagnostiek of van de behandelmethode die de medisch-specialist het meest gepast acht voor de betreffende patiënt.

Hiernaast werd dit type onbeoogde reactie gebruikt om (off-label of niet-geregistreerde) toepassing van dure geneesmiddelen te bekostigen, om vergoeding te realiseren voor behandelingen die als cosmetisch zijn aangemerkt en om DRG-inkomsten voor de medische instelling of de medisch-specialist in het algemeen te verhogen.

Registratie van een andere DRG-behandeling dan feitelijk verleend aan de patiënt

Dit derde type onbeoogde reactie, registratie van een behandeling die niet overeenkomt met de feitelijke behandeling, betreft gevallen waarin medisch specialisten een afwijkende DRG behandelcode registreerden. Dit type reactie werd vooral toegepast in de registratie van hoog-complexe behandelingen en voor het gebruik van innovatieve of minder invasieve behandelmethoden, waarvoor vaak nog geen code beschikbaar is in het DRG systeem. Verder werd dit type reactie gebruikt wanneer de behandelkosten in specifieke gevallen hoger lagen dan de standaard DRG vergoeding, en om DRG- inkomsten voor de medische instelling en de medisch-specialist in het algemeen te verhogen.

Patiënten selectie op basis van risicoprofielen

Dit vierde en laatste type onbeoogde reactie heeft betrekking op medisch specialisten en medische instellingen die actief proberen om hun totale DRG productie bij te stellen aan de hand van risico- en kosten profielen van specifieke groepen patiënten en behandelingen. Dit type onbeoogde reactie heeft betrekking op het doorverwijzen van patiënten met een hogere kans op complicaties naar een ander ziekenhuis, met name de UMCs. Hiernaast speelde dit type onbeoogde reactie een rol in het terugbrengen van het gebruik van dure diagnostiek voor bepaalde typen behandelingen, voor het verminderen van de productie van minder-lucratieve DRGs of voor het opvoeren van de productie van meer-lucratieve DRGs ter compensatie van andere verliesgevende DRGs.

Al met al laat de interpretatieve analyse van de motivaties van medisch professionals zien dat het merendeel van de onbeoogde reacties voortkomt vanuit een mengeling van professionele waarden en financiële prikkels. Echter, in de praktijk blijken professionele en financiële overwegen nauwelijks van elkaar te onderscheiden. Zelfs wanneer financiële overwegingen werden genoemd als de primaire motivatie, dan

nog werd financieel gewin vaak niet gepresenteerd als het einddoel. In deze gevallen werden de financiële uitkomsten van onbeoogde reacties vooral gepresenteerd als een instrument in het waarborgen van professionele waarden zoals de continuïteit van zorg, het in stand houden van het aanbod van innovatieve behandelmethoden, behandeling van niet lucratieve patiëntengroepen en de beschikbaarheid van dure diagnostiek.

Onbeoogde reacties vanuit perspectief van de systeem manager

De interviews met vertegenwoordigers van de publieke en private systeemmanagers bieden inzicht in de diversiteit aan maatregelen die zij treffen om onbeoogde reacties door medisch professionals. In de analyse worden twee typen maatregelen onderscheiden: maatregelen gericht op het verbeteren van het systeem zelf en maatregelen gericht op het verbeteren van het interactieproces tussen systeem managers, medisch professionals en medische instellingen omtrent het DRG systeem. Alhoewel beiden typen maatregelen door zowel publieke- als private systeemmanagers worden toegepast, ligt voor de publieke systeemmanagers de nadruk op systeemverbetering. Voor private systeemmanagers ligt de nadruk juist meer op maatregelen ter verbetering van het proces.

Maatregelen gericht op het verbeteren van het systeem

Maatregelen ter verbetering van het systeem richten zich op het borgen transparantie en van de betrouwbaarheid van de managementinformatie die het systeem oplevert voor het beheersen van de kwaliteit en de kosten van zorg. Omwille hiervan betreffen maatregelen vaak veranderingen of toevoegingen aan het systeem die beogen om de controle van systeem managers over de wijze waarop medisch professionals registreren vergroten. Dit geldt bijvoorbeeld voor de introductie van fraude detectiesystemen en voor het beschikbaar maken van nieuwe DRG-producten om creatieve registratie van nieuwe of bestaande behandeling tegen te gaan. Hiernaast is dit type maatregel ook van toepassing op het uitbreiden van restricties die gelden voor de registratie van meerdere DRG-producten per patiënt en voor het herdefiniëren van de grens tussen ‘verzekerde’ zorg en zorgbehandelingen die niet in aanmerking komen voor vergoeding onder der Zorgverzekeringswet.

Maatregelen gericht op het verbeteren van het proces

Maatregelen ter verbetering van het proces worden voornamelijk toegepast door private systeemmanagers en richten zich op het in kaart brengen en oplossen van oneigenlijk gebruik, conflicten en interpretatieverschillen. Hierbij speelt het benchmarken van medische instellingen en medische afdelingen om afwijkende registratiepatronen te ontdekken een belangrijke rol. Afwijkende registratiepatronen die uit deze benchmarks naar voren komen worden geadresseerd in lokale onderhandelingen tussen de private systeemmanager en de betrokken medische instelling. In deze lokale setting kunnen knelpunten, conflicten en interpretatieverschillen over toelaatbare en ontoelaatbare registratiewijzen worden bediscussieerd en afspraken gemaakt over de registratie van deze behandelingen in de toekomst.

In de aanpassing van het DRG-systeem in 2012 (onder de naam “DOT - DBCs op weg naar transparantie”) zijn beide typen maatregelen van systeem managers vertegenwoordigd. Het aantal DRG zorgproducten werd teruggebracht van 30,000 naar ca. 4000, en de invloed van medisch specialisten in DRG registratie verkleind door de introductie van een “grouper”. Deze aanpassingen kunnen worden geïnterpreteerd als maatregelen ter verbetering van het systeem. Aan de andere kant zijn de aanpassing van het DRG-systeem in 2012 verschillende maatregelen genomen die het financieel risico voor zorgverzekeraars - als private systeem managers – en voor medische instellingen hebben vergroot. Deze aanpassingen kunnen worden aangemerkt als stappen ter verbetering van het proces.

Conclusie: Interpretatie van onbeoogde reacties vanuit een duaal perspectief

Om de centrale onderzoeksvraag - *Hoe kan het fenomeen onbeoogde reacties op het DRG prestatiemanagement systeem in Nederland worden begrepen?* – te beantwoorden, zijn het management en het professioneel perspectief gezamenlijk opgenomen in de analyse van onbeoogde reacties. Vergeleken met een analyse waarin ofwel het management- ofwel het professioneel perspectief wordt gehanteerd, is de meerwaarde van het duale perspectief in dit onderzoek dat het een rijker, maar ook een ander licht werpt op het fenomeen van onbeoogde reacties op

prestatiemanagement systemen. Door deze aanpak levert dit onderzoek een aantal nieuwe inzichten op:

Onbeoogde reacties die financieel gedreven zijn gaan niet alleen over geld

In de eerste plaats tonen de bevindingen van deze studie aan dat het merendeel van de onbeoogde reacties financieel gedreven zijn, maar dat hierbij financieel gewin niet noodzakelijk de doelstelling is. Dat het merendeel van de onbeoogde reacties van invloed zijn op een financiële uitkomst is niet verrassend. Het DRG-systeem dient voor de bekostiging van medische instellingen en medisch specialisten, waardoor elke alternatieve keuze in registratie of behandeling financiële consequenties heeft.

Vanuit alleen een management perspectief zouden deze financieel gedreven onbeoogde reacties worden geïnterpreteerd als pervers gedrag van professionals met louter onwenselijke uitkomsten. Echter, interpretatie vanuit een exclusief professioneel perspectief, zou leiden tot een interpretatie van onbeoogde reacties als professioneel probleemoplossend gedrag en hierbij onbeoogde reactie die met recht kunnen worden aangemerkt als fraude onderbelicht laten. Een duaal perspectief maakt het mogelijk om conflicterende interpretaties te adresseren door voor- en nadelen vanuit beide perspectieven tegen elkaar af te wegen.

Competitie tussen doelstellingen op systeem niveau en op case niveau vormen een bron van onbeoogde reacties

Divergerende interpretaties van onbeoogde reacties hangen samen met verschillen tussen doelstelling op systeem niveau en doelstellingen voor uitkomsten van patiëntenzorg op case niveau, welke beide in het geding zijn in het DRG systeem. Systeem managers leggen de nadruk op doelstellingen op systeem niveau en zien onbeoogde reacties in zichzelf als een ongewenst effect, met name omdat deze de managementinformatie die het systeem oplevert vertekenen. Echter, voor medisch professional kan het gebruik van onbeoogde reacties juist instrumenteel zijn in het vermijden van uitkomsten voor patiënten die zij als onwenselijk zien omdat deze niet stroken met ideeën, normen, waarden en standaarden van de medische professie.

Alhoewel de voortdurende competitie tussen doelstellingen op systeem niveau en doelstellingen op case niveau een bron van conflicten vormt, draagt deze competitie

wel bij aan een betere afstemming tussen het DRG-systeem en de complexiteit van de werkelijkheid. Prioritering van doelstellingen op een van beide niveaus in de aansturing van het DRG-systeem doet afbreuk aan deze complexiteit. Een te sterke vereenvoudiging van de werkelijkheid verhult valide doelstellingen op beide niveaus en verhindert dat deze op adequate wijze tegen elkaar kunnen worden afgewogen.

Maatregelen ter verbetering van het systeem kunnen nieuwe onbeoogde reacties oproepen

Maatregelen van systeem managers tegen onbeoogde reacties door verbetering van het systeem lopen het risico om te eindigen in een kat-en-muis spel. De uitkomsten van deze studie tonen aan dat maatregelen zoals het verfijnen van registratieregels, het opwerpen van nieuwe restricties en het herdefiniëren van zorg die voor vergoeding in aanmerking komt, juist nieuwe onbeoogde reacties oproepen. Dit impliceert dat de maatregelen van systeem managers weinig invloed uitoefenen op het professioneel proces (als bijvoorbeeld de behandelkeuze). Eerder leiden de maatregelen tot een gedragsverandering van medisch professionals in de registratie van de behandeling die zij kiezen. Een mogelijke verklaring hiervoor is dat maatregelen ter verbetering van het systeem vooral vanuit een management perspectief worden vormgegeven. Hierdoor bieden deze maatregelen weinig ruimte voor bezwaren en knelpunten die gaandeweg opkomen vanuit professioneel perspectief. Maatregelen ter verbetering van het systeem zijn daarmee minder geschikt voor het oplossen van conflicten die ten grondslag liggen aan onbeoogde reacties dan maatregelen ter verbetering van het proces.

Maatregelen ter verbetering van het proces kunnen onbeoogde reacties institutionaliseren.

Maatregelen ter verbetering van het proces kunnen onbeoogde reacties legitimeren en institutionaliseren. In onderhandelingen op lokaal niveau hebben individuele private systeem managers en medische instellingen in sommige gevallen afspraken gemaakt over het toestaan van gebruik van onbeoogde reacties in toekomstige registratie van behandelingen. Dit onderzoek laat zien dat dergelijke lokale afspraken zijn gemaakt over de wijze van registratie van een behandeling, over het gebruik van een “workaround” in de registratie van specifieke behandelingen (bijvoorbeeld een

innovatieve of minder-invasieve behandelmethode) en over aanvullende vergoedingen of generieke kortingen.

Onderhandelingen tussen private systeemmanagers en medische instellingen bieden mogelijkheden om conflicten op lokaal niveau op te lossen. Echter, deze lokale afspraken zijn niet noodzakelijk in overeenstemming met de doelstellingen van de publieke systeemmanagers. Institutionalisering van onbeoogde reacties in lokale afspraken zorgt er voor dat het gebruik van onbeoogde reacties kan worden gecontinueerd, zelfs wanneer deze afbreuk doen aan de transparantie en uniformiteit van het systeem.

Implicaties van dit onderzoek

Dit onderzoek is er niet op gericht om een normatief oordeel te geven over typen onbeoogde reacties die wenselijk zijn en typen die onwenselijk zijn. Dergelijke oordelen hangen af van de waarde die wordt toegekend aan de verschillende professionele en managementdoelstellingen die in het geding zijn en zijn daarmee voorbehouden aan de systeem managers en de medisch professionals als de betrokken partijen. Het doel van dit onderzoek was om te verkennen welke typen onbeoogde reacties worden toegepast door medisch professionals in hun omgang met het Nederlandse DRG systeem en deze te interpreteren vanuit management en professioneel perspectief. Met deze aanpak bieden de bevindingen van dit onderzoek vier aanbeveling voor strategieën in de omgang met onbeoogde reacties.

Een zero-tolerance aanpak van 'fraude' heeft een prijs

In de eerste plaats impliceren de bevindingen van dit onderzoek dat een strategie van strikte regulering en sanctionering van alle onbeoogde reacties die een schijn van fraude hebben waarschijnlijk ongewenste bijeffecten met zich mee zal brengen. Alhoewel deze aanpak mogelijk effectief is in het terugdringen van onbeoogde reacties die puur zijn gericht op financieel gewin, is het ook waarschijnlijk dat deze aanpak afbreuk doet aan professionele doeleinden die worden gediend door onbeoogde reacties. Om te voorkomen dat medisch professionals zich terugtrekken uit het debat over wat wenselijk en onwenselijke uitkomsten van het DRG system zijn

is het van belang om management en professionele doelstellingen die in het geding zijn bij het gebruik van onbeoogde reacties tegen elkaar af te wegen. Hiervoor is het van belang dat governance van DRG systemen zich richt op het voordeel dat kan worden behaald uit deze 'professionele houding' en niet op het verdringen ervan. Vanuit een theoretisch perspectief impliceert dit dat academische disciplines die zich richten op prestatiemanagement onderscheid zouden moeten maken tussen onbeoogde reacties in registratie als prospectieve strategie, waarbij het vooruitzicht van persoonlijk financieel gewin het startpunt vormt, of als een retrospectieve strategie, waarbij financieel gewin eerder een bijeffect dan een doelstelling vormt.

Faciliteer de afweging tussen doelstellingen op systeem- en case niveau

Alhoewel conflicten tussen doelstellingen op systeemniveau en doelstellingen op patiëntniveau mogelijk worden gezien als een belemmering in governance van DRG systemen, dragen zij ook bij aan de legitimering van het systeem. In dergelijke conflicten bieden systeemmanagers en medisch professionals elkaar tegenwicht. Het perspectief van de medisch professional voorkomt dat systeemmanagers voorbij gaan aan kerndoelstellingen in medische zorg. Systeem managers, aan de andere kant, confronteren medisch professionals met de cumulatieve effecten van de onbeoogde reacties die zij gebruiken op systeem niveau. Conflicten bieden, in dit verband, mogelijkheden om in overeenstemming tot een afweging te komen van doelstellingen op systeem niveau en op case niveau. Het faciliteren van dergelijke afwegingen vormt een van de voornaamste uitdagingen in de aansturing van DRG systemen. Het faciliteren van afwegingen tussen doelstellingen op systeem niveau en doelstellingen op case niveau kan hierbij een strategie vormen om knelpunten in de aansluiting tussen een prestatiemanagement systeem en een professionele organisatie te minimaliseren.

Systeemverbetering hebben een beperkt potentieel voor het terugdringen van onbeoogde reacties

Systeemverbeteringen in de vorm van regelmatig onderhoud en updates van het DRG-systeem zijn noodzakelijk. Medische vooruitgang, technologische ontwikkelingen en voortschrijdend inzicht in knelpunten tussen het DRG systeem en de aard van de medische prestatie die het beoogt te meten, vereisen regelmatige

aanpassingen en correcties van het systeem. Echter, de bevindingen van dit onderzoek impliceren dat systeemverbeteringen in de vorm van uitgebreidere of verscherpte regels en definities geen duurzame oplossing vormen voor het gebruik van onbeoogde reacties. Een reden hiervoor is dat systeemverbetering vaak een mono management perspectief op onbeoogde reacties betreft en daarmee niet ingaat om potentieel conflicterende doelstellingen die aan het gebruik van deze reacties ten grondslag ligt.

Sturen op lokale afspraken

De bevindingen van dit onderzoek toont aan dat een combinatie van systeem- en procesverbeteringen meer mogelijkheden biedt voor de omgang met onbeoogde reacties. Mogelijkheden voor het oplossen van conflicten kunnen met name worden gevonden in de lokale overlegstructuur tussen medische instellingen en zorgverzekeraars, die als de private systeem managers de rol van inkopers van ziekenhuiszorg vervullen. Deze lokale overlegstructuren stellen private systeem managers en medische instellingen in staat om overeenkomsten te sluiten over de wijze van registratie, aanvullende vergoedingen of kortingen, maar ook om afwijkende patronen in registratie en declaratie aan de kaak te stellen. Alhoewel dit proces van conflicthantering zich vooral afspeelt tussen de partijen op lokaal niveau, kunnen publieke systeem managers invloed uitoefenen op dit proces door het bijstellen van financiële prikkels.

Zowel managementdoelstellingen als professionele doelstellingen dragen bij aan de legitimiteit van een DRG-systeem. Dit onderzoek laat zien dat onbeoogde reacties worden gebruikt door specialisten in alle typen medische instellingen. Hiernaast toont dit onderzoek aan dat onbeoogde reacties niet noodzakelijk tot onwenselijke effecten leiden. Zij signaleren ook conflicten tussen de verschillende belangen die op het spel staan. In governance van DRG systemen draagt een gedegen inzicht in de aard van onbeoogde reacties bij aan een betere afweging van verschillende management en professionele doelstellingen op lokaal niveau.

APPENDIX A

Pilot interviews

[1] Representative of a department for medical registration in a university hospital

[2] Representative of a department for medical registration in a university hospital

[3] Representative of DBC Maintenance (*DBC Onderhoud*)

[4] Representative of the Health Care Insurance Board (CVZ)

[5] Representative of Health insurance company A - that operates regionally

[6] Representative of a department for planning and control in a general hospital

[7] Representative of the board of directors of a general hospital

Interviews at the university hospital (UH)

[8] Representative of the department for Medical Information systems

[9] Two representatives of the department for Planning and Control

[10] An orthopaedic surgeon (MD)

[11] Two rheumatologists (MD)

[12] A paediatric surgeon (MD), head of medical staff hospital wide

[13] An oncologist (MD)

[14] Representative of the department for internal control

[15] A plastic surgeon (MD)

[16] Representative of the department for planning and control

[17] Representative of the department for medical registration and information systems

[18] Representative of the surgery division. A medical manager (MD)

[19] Two representatives (a commercial manager and a DBC coordinator) of the paediatrics division

[20] A psychiatrist

[21] Two representatives of the internal medicine division. A medical manager (MD) and a commercial manager

[22] Representative of the cardiology division. A DBC coordinator

[23 Two representatives of the radiotherapy division. A commercial manager and a DBC coordinator

[24] Representative of the internal medicine division. A DBC coordinator

[25] A paediatrics resident (MD)

[26] Representative of the neurology division. A commercial manager

[27] Representative of the gynaecology division. A medical manager (MD)

[28] Representative of the surgery division. A commercial manager

[29] Representative of the information and finance department

[30] Representative of the neurology division. A medical manager (MD)

[31] Representative of the cardiology division

[32] Two representatives of the department for medical registration

[33] Two representatives of the department for medical information systems

[34] Representative of the department for invoicing

[35] A rheumatology resident (MD)

[36] An ophthalmologist (MD)

Interviews at the general hospital (GH)

[37] A gynaecologist (MD)

[38] A urologist (MD)

[39] A surgeon (MD), head of medical staff hospital-wide

[40] An eye surgeon (MD)

[41] A rheumatologist (MD), former representative of the Netherlands Association of Rheumatology (NVR)

[42] A paediatrician (MD)

[43] An oncologist (MD)

Interviews at the independent treatment centres (ITC)

[44] A dermatologist (MD) at ITC A

[45] An eye surgeon (MD) at ITC B

[46] A commercial manager at ITC C

[47] A commercial manager at ITC D

Interviews with representatives of the professional associations and umbrella organizations

[48] A representative (MD) of the Netherlands Paediatric Association (NVK)

[49] A representative (MD) of the Netherlands Society of Cardiology (NVVC)

[50] A representative (MD) of the Netherlands Urology Association (NVU)

[73] A representative (MD) of the Netherlands Neurology Association (NVN)

[54] A representative of the Netherlands Federation of General Hospitals (NVZ)

[74] A representative of the Netherlands Federation of General Hospitals (NVZ)

[55] A representative of the Netherlands Federation of University Medical Centres (NFU)

[56] A representative of the Netherlands Federation of Independent Treatment Centres (ZKN)

[57] Two representatives of the National Association of Medical Specialists (OMS)

[75] A representative of the National Association of Medical Specialists (OMS)

Interviews with representatives of the public system managers

[60] A representative of the Ministry of Health, Welfare and Sport (VWS)

[53] A representative of the Healthcare Authority (NZa)

[04] A representative of the Health Care Insurance Board (CVZ)

[64] A representative of the Health Care Insurance Board (CVZ)

[63] A representative of the Health Care Inspectorate (IGZ)

[71] A representative of the Health Care Inspectorate (IGZ)

[72] A representative of the Health Care Inspectorate (IGZ)

[61] A representative of DBC Maintenance (DBC Onderhoud)

[65] A representative of DBC Maintenance (DBC Onderhoud)

[66] A representative of DBC Maintenance (DBC Onderhoud)

Interviews with representatives of the private system managers

[58] A representative of the Netherlands Association for Health Insurers (ZN)

[69] A representative of the Netherlands Association for Health Insurers (ZN)

[67] A representative of the Research Institute for Dutch Health Insurers (VEKTIS)

[05] A representative of Health Insurance Company A

[51] Two representatives of Health Insurance Company B

[52] A representative of Health Insurance Company C

Additional interviews

[59] Two representatives of the board of directors of a specialized general hospital in the Netherlands

[62] A representative of a federation for patients with rheumatic diseases the Netherlands (Reumapatientenbond)

[70] A representative of an interest and support organization for healthcare entrepreneurs (Actiz)

[68] A representative of the board of directors of a university hospital in the Netherlands

CURRICULUM VITAE

Emiel Kerpershoek was born in Valkenburg (z-h), the Netherlands, on the 12th February 1980. In 1999, he received his secondary school diploma (athenaeum) from the Visser 'T Hooft Lyceum in Leiden. He graduated from the Free University of Amsterdam, receiving a Master degree in Social Psychology in 2005. In May 2006 he started working as a junior researcher at the Faculty of Technology, Policy and Management at Delft University of Technology. At this time he was involved in various research projects with a focus on mechanisms for safeguarding public values in network industries. In May 2007 he started with his PhD research project on unintended responses of medical professionals to the DRG performance management system in the Netherlands at the Policy, Organization, Law and Gaming section. As of March 2012, he has been working as a researcher at the Netherlands Institute for Health Services Research (NIVEL). Emiel can be contacted via email at emielkerpershoek@gmail.com.