

Explaining health care professionals' resistance to implement Diagnosis Related  
Groups: (no) benefits for society, patients and professionals

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# **Abstract**

## **Background**

Effective health system reform requires support from health care professionals. However, many studies show an increasing discontent among health care professionals toward certain government policies. When professionals resist implementing policies, this may have serious consequences for policy effectiveness.

## **Objective**

To develop and test a model for explaining resistance of health professionals to implement policies, based on three dimensions: societal benefits (such as improving efficiency), patient benefits (such as improving quality for individual patients) and personal benefits for professionals (for example increased income or fewer administrative burdens).

## **Methods**

We conduct a survey among 1,317 Dutch psychologists, psychotherapists and psychiatrists in 2010 who had to implement a new policy: Diagnosis Related Groups (DRGs). The dependent variable is professionals' resistance to implement these DRGs. As independent variables we develop scales to measure perceived societal benefits, patient benefits and personal benefits. Socio-demographic variables are also included.

## **Results**

The model worked adequately in that the three benefit dimensions, together with control variables, explained 43% of the variance in resistance to implement DRGs. Results indicate that health professionals were overall quite resistant towards the policy. The main reason was widespread belief that DRGs neither contribute to care quality nor help to control costs (low societal benefits). Resistance can also be explained by fears for one's personal status, income, and administrative burdens. Professionals furthermore doubt whether the policy is beneficial for patients, although this dimension is the least influential, which was unexpected. Perceived effects on patient choice, furthermore, does not contribute to willingness or resistance to work with DRGs. These insights can help in understanding why health care professionals embrace or resist the implementation of particular policies.

**Key words:** Health care professionals, policy implementation, resistance to change, policy benefits, Diagnosis Related Groups

# EXPLAINING HEALTH CARE PROFESSIONALS' RESISTANCE TO IMPLEMENT DIAGNOSIS RELATED GROUPS: (NO) BENEFITS FOR SOCIETY, PATIENTS AND PROFESSIONALS

## Introduction

In health care management literature, there is an intense debate concerning the pressures health care professionals face in service delivery [1-3]. This debate often focuses on the implementation of new policies [4, 5]. Professionals often appear to be resistant to implement new policies, which focus on reducing health care costs and increase transparency. For example, Bottery [6], examining the pressures on British health care professionals stemming from new policies, notes that “they [professionals] are now reduced to (as they see it) to being mere functionaries in a larger institutional and managerial scheme”.

Policy research has shown increasing discontent among health care professionals toward government policies [7, 8]. When they resist implementing policies, this may have serious consequences. Sabatier [9], for example, states as one of the necessary conditions for effective implementation “committed and skillful implementers who apply themselves to using their discretion so as to realize policy objectives”. In a similar vein, Ewalt & Jennings [10] note that “It is clear from the literature there is much that members of an organization can do to stymie policy implementation.” The quality of interactions between professionals and patients may also be affected by low commitment to new policies [11]. Health care professionals may sometimes have good reasons to resist new government policies, especially when they see little value in the policy for their patients or the health system. Alternatively, they may resist new policies for more personal reasons, such as worsening working conditions.

In this study, we focus on the resistance of mental health care professionals to use Diagnosis Related Groups (DRGs). We use a 2010 survey among 1,317 Dutch psychologists, psychotherapists and psychiatrists. We first describe the introduction of Diagnosis Related Groups in Dutch (mental) health care and the resistance against this development. We then discuss the theoretical framework, considering the relationships between the perceived benefits of a new policy and resistance to implement this policy. Hereafter, we describe the method and approach for conducting our survey, as well as its results. We conclude by discussing the contribution of this article to the understanding of health care professionals' attitudes towards policies based on Diagnosis Related Groups, and towards health care policies in general.

## **Resistance against Diagnosis Related Groups in Dutch mental health care**

The introduction of DRGs in Dutch mental health care is part of a larger trend towards the use of DRGs. In the early 1980s, DRGs were developed in the USA to calculate cost prices for health “products” in hospitals. This was an attempt to improve transparency and control costs. Since then, variants of the DRG-policy have been developed in a number of countries, such as Australia, Germany, the United Kingdom, Belgium, the Netherlands and China [12, 13]. DRG-policies are used to categorize patients according to their case-mix (type of patient, their treatment and associated costs).

While there have been a number of studies on the attitudes of health professionals in general [14] and attitudes towards health care reforms [15-18], only a small number of academic studies have concentrated on attitudes towards DRGs. One of these studies is of Tzavaras et al. [19], who surveyed hospital and health administrators and health officials in Greece and found that respondents generally had favorable attitudes and mainly mentioned practical stumbling blocks to using DRGs. Thibadoux et al. [20] organized in-depth interviews with practicing physicians in the US, which revealed physicians’ main concerns with DRGs were ethics and implementation-related issues. Both studies were, unlike ours, based on relatively small samples and were organized prior to the implementation of DRGs.

In 2005, the Netherlands introduced Diagnosis Related Groups (DRGs, Diagnose Behandelend Combinaties, DBC’s) in hospital care, in order to improve transparency and quality, by defining products which can be negotiated between purchasers and providers of care. The Dutch DRG-policy for somatic care differs on a number of aspects from typical DRG-policies [21]. First, in a typical DRG-policy there is a DRG for every hospital admission or outpatient contact, while DRGs in Dutch somatic care stretch from the first contact with a physician to the completion of the treatment. Second, the Dutch DRG-policy is used for both registering activity and payment, while other DRG-policies only focus on measuring activity. Furthermore, it is a very detailed policy, with over 30.000 DRGs, while a typical DRG-policy covers less than 3000 DRGs [21].

In 2007, the Netherlands introduced DRGs in mental health care to improve transparency about quality and price of care, and to allow for efficiency savings [22]. This policy is partly based on the DRG-policy in somatic care. It also stretches from first patient contact to

completion and payment of the treatment. However, it is far less detailed. For instance, there are only 92 DRGs for outpatient mental health care. This was based on the experiences that the very detailed way the somatic DRG-policy was structured was ineffective [23].

The DRG-policy in mental health care were recorded in national rules and regulations. More specifically, this concerns Reading MC-U-2803757, based on article 7 of the Law on Health Market Organization. This was part of a process to convert the Dutch health care system into one based on a regulated market [24]. The old system meant that the more sessions a professional caregiver (a psychologist, psychiatrist, or psychotherapist) had with a patient, the more recompense that could be claimed (a fee-for-service system). This system was considered by some to be inefficient [12, 24]. The DRG-policy changed the situation by stipulating a *standard* rate for each disorder, such as a mild depression.

The system of DRG-based payment in the Netherlands requires several administrative steps before actual payment takes place [25]. First, when a professional caregiver meets a patient, the professional diagnoses the patient: the diagnosis (such as a mild depression or bipolar disorder) and the type of care needed (such as inclusion in a mental health care organization or clinical treatment), are indicated. Second, this diagnosis is registered at the national organization 'DRG Maintenance' (DBC Onderhoud). After this, the treatment can start. All activities which are done in relationship to the patient are registered, including direct time (such as a face-to-face session) and indirect time (such as administration). Fourth, after the treatment is finished, the DRG code is sent to the organization DRG Maintenance, in order to validate it. They check for among else technical errors (such as missing dates on timesheets). Fifth, after validation, the DRG is invoiced at the health care insurer. Some specifics of the DRG (such as its product group, for example anxiety disorders) have to be sent along to the health care insurer. Sixth, the health care insurer will pay the health care provider. When the health care professional has a private practice, he will get paid directly. When the health care professional is part of a larger organization, the organization will get paid.

The implementation of DRG-policy encountered considerable resistance. Dutch mental health professionals established associations agitating against DRG-policy, such as "The Foundation of DRG-free Practices". Health care professionals also launched a number of

websites to voice their concerns about the DRG-policy.<sup>1</sup> Demonstrations against DRGs have taken place in 2008, and new demonstrations are being announced [26].

Mental health professionals seem to have a number of concerns with the DRG-policy. First, some note that the DRG-policy is not beneficial for their patients, as it undermines their privacy. To function as a price and payment system, the DRG-policy requires information about patients to be sent to insurers [22]. Second, some professionals feel that the Diagnosis Statistical Manual IV (DSM-IV) as a system for classifying the diagnosis of patients (for instance a mild depression or an anxiety disorder) is erroneous. They note that the DSM-IV is a classification system, which is very different from a diagnosis system. Third, professionals seem to have problems with the administrative workload that comes with the DRG-policy. Hence, it is not beneficial for themselves. Registering DRGs and entering information takes up a lot of time, in some instances even 20% of the available working time for the professional [27].

Many professionals seem to be unwilling to implement the DRG-policy. Protest against the DRG-policy has received considerable attention in the media, and through some general polls. The Foundation of DRG-free Practices in 2007 surveyed 321 psychotherapists and 313 psychiatrists. Three quarters of respondents considered DRGs a threat to patient privacy [27]. In 2008 the Dutch Socialist Party (SP) held a survey among 2,271 psychologists, psychotherapists and psychiatrists, using snowball sampling [28]. It found that as many as 9 out of 10 professionals wanted to abandon the DRG policy. The political nature of the latter survey, however, requires us to treat these findings with care. Still, an overall picture of broad resistance against DRGs among mental health professionals emerges.

## Materials and Methods

The studies summarised in the previous section tend to be descriptive rather than explanatory, and are not representative by design. We organised a large-scale representative survey (2010) among mental health professionals (psychiatrists, psychologists, and psychotherapists) implementing the DRG-policy in the Netherlands to explore the reasons why they resisted this policy.

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<sup>1</sup> Examples are [www.dbcvrij.nl](http://www.dbcvrij.nl), [www.devrijepsych.nl](http://www.devrijepsych.nl) and [www.deggzlaatvanzichhoren.nl](http://www.deggzlaatvanzichhoren.nl). [www.dbcvrij.nl](http://www.dbcvrij.nl) is also available in English.

## Model

In order to analyze the resistance of health care professionals against the DRG-policy, we will build on among else change management literature. This literature claims fairly unambiguously that a crucial condition for success is that employees do not resist the implementation of the change [29]. Metselaar [30] defines this change willingness as “a positive behavioral intention towards the implementation of modifications in an organization’s structure, or work and administrative processes, resulting in efforts from the organization member’s side to support or enhance the change process.” In this study, we use the ‘willingness/resistance to change’ concept, as developed by Metselaar [30], to study the willingness of professionals to implement a new public policy. This concept builds upon the seminal theory of planned behavior [31] and, further, its measurement has been validated in earlier research.

We examine whether the benefits of a policy, as perceived by professionals, influences the resistance of these professionals to implement public policies. Earlier research suggests a strong relationship between the benefits of a policy – as perceived by professionals – and their willingness to implement it [32, 33]. Some prominent scholars have emphasized the crucial role of the resistance/willingness of professionals to implement a policy [34, 35]. However, few have developed and tested a systematic explanatory framework [36].

In this article, we therefore take the novel approach to construct and test a model for analyzing the willingness of health care professionals to implement government policies. We develop a model with dimensions of perceived benefits of a new policy as determinants of general willingness to implement a policy, or resistance to do so. Three dimensions of benefits can be derived from research [34, 37-39]: benefits of the policy for *society* (societal benefits, such as cost reduction or higher quality care); patient benefits (such as higher quality of service); and *personal* benefits for the professionals themselves (such as higher income, status, or fewer administrative burdens).

When professionals feel that a policy is not valuable for society or for their own patients, we expect them to be more likely to resist it [40]. For instance, when health care professionals have the feeling that a policy will harm the privacy or wellbeing of their patients, this will increase their resistance [22]. Next to this, we expect that the more professionals feel that a policy does not have added value for themselves, the more resistant they will be to implement it [38]. In sum,

we analyze if (and if so, to what degree) a) perceived societal benefits, b) perceived patient benefits and c) perceived personal benefits influence the resistance of health care professionals to implement the DRG-policy. For instance, when professionals feel that the DRG-policy has no benefits for society, will they be more likely to resist it (and if so, how influential is this)?

### **Sampling and data collection**

Our sampling frame consisted of 5,199 professionals who were members of two nationwide mental health care associations. These were all the members of these associations who could, in principle, be working with the DRG policy. The sampling frame did not provide information on whether the professionals worked with the policy or not. A number of professionals indicated that they did not work with the DRG policy, making them unsuitable for further analyses. Using an email and two reminders, we received 1,317 returns of our questionnaire from professionals who worked with the DRG-policy; a response of 25%.

The gender composition of the respondent group was 66% female, which is consistent with the Dutch average (69%) for mental health care professionals [28]. The respondents' average age was slightly higher than that of the mental health care professional population (48 against 44). To rule out a possible non-response bias, we conducted non-response research where we contacted the non-responders for their reasons for not participating. Common reasons for not participating were a lack of time, retirement, change of occupation or not working with the (mental health care) DRGs (some organizations, including some hospitals, were not yet working with this policy). The large number of respondents, their characteristics in terms of gender and age and the results of the non-response research indicate that our respondents are a good representation of the population.

### **Measures and scales**

Items were used to measure the dependent and independent variables. For instance, one item for perceived patient benefits was "With the DRG-policy I can better solve the problems of my patients". Unless stated otherwise, all items were formatted using five-point Likert scales (possible answer categories to an item: strongly agree, agree, neutral, disagree, and strongly disagree). For some items, we used templates. Templates allow the researcher to specify an item by replacing general phrases with more specific ones that better fit the research context.



Two templates are used: policy and policy goal. Instead of stating 'the policy' or 'the policy goal', the researcher can rephrase these items using the specific policy and specific goals which the policy pursues. This makes it easier for professionals to understand items, as they are better tailored to their context and this increases reliability and content validity [41].

The items for the questionnaire are shown in the Appendix (in total 21 items). The template items are shown in underlined type. This makes it easier to use the items in subsequent research, not related to DRGs.

#### *Resistance to implement*

We measured resistance to implement using Metselaar's validated scale [30]. The Cronbach's  $\alpha$  was .85 in this study.

#### *Perceived benefits of DRGs*

We conducted a series of five expert interviews with mental health care specialists and four with quantitative methodologists to construct items for the three dimensions of benefits. Using factor analyses and reliability analyses, these were subsequently transformed into scales.

First, we will analyze the benefits for society. Societal benefits captures the perception of professionals concerning the value of the policy to socially relevant goals. We distinguish between two sets of policy goals: (1) care quality and efficiency and (2) patient choice. We developed items to measure these attitudes (4 items per goal)<sup>2</sup>. Cronbach's  $\alpha$  is .96 for the first set, .97 for the second.

For the scale on perceived benefits of the DRG-policy on patients, five items were used. Cronbach's  $\alpha$  of this scale is .80.

The personal benefits scale measures the professionals' perceptions of the added value of the policy for themselves. This scale is based on the personal valence scale of Holt [38] and consist of seven items. Cronbach's  $\alpha$  of this scale is .76.

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<sup>2</sup> Based on the factor analyses and suggestions of mental health care experts, we have merged the goals of care quality and efficiency in one scale. So for societal benefits there is one scale of 8 items (care quality and efficiency), and one scale of 4 items (client choice).

### *Individual characteristics*

We included commonly used individual characteristics: gender, age and whether the respondent occupies a management position (yes/no). Further, we included a variable showing whether a professional works for an organization (to some extent) or in a private practice, since professionals working independently may have different experiences with DRGs. We also distinguish between psychiatrists and others, because the former belong to the medical profession, while the latter (psychologists and psychotherapists) are non-medical professionals.

## **Results**

### **Descriptive statistics**

The descriptive statistics are shown in Table 1. Scales range from 1-10 to ease interpretation (middle=5.5). Assessed against the official policy objectives (higher care quality and lower costs, more patient choice), we see a widespread negative assessment of DRGs. For instance, the average score for increased quality and lower costs of care is 3.5. In general, professionals do not expect that the use of DRGs will improve quality or lower costs.

Opinions about DRGs' effects on increasing patient choice are even more dramatic, averaging just 2.9! However, this overall negative assessment of DRGs' expected effects does vary significantly across age, gender, and professional groups though. For instance, psychiatrists are significantly more negative than the group of psychologists and psychotherapists, across all dimensions.

When asked about the effects of the DRG-policy on their patients, mental health care professionals appear to be generally negative, with an average score of 3.3. Respondents indicate that they don't know how their patients can in the short term benefit from DRG policies, and state that they do not think DRG-policies are beneficial to their patients' welfare. Furthermore, we see that - on average - professionals feel that the DRG-policy will not be beneficial to them personally, reflected in a score of a 4.2. Lastly, we see that the average score on resistance to implement the DRG policy is quite high: 6.7. This means that mental health professionals in our sample are generally not willing to implement the policy. In the next section,

we test the developed model to explain this resistance by looking at the three dimensions of benefits (societal, patient, personal) and background variables.

**Table 1 Descriptive statistics and correlations**

Variable	Mean	SD	Cronbachs $\alpha$	1	2	3	4	5	6	7	8	9	10	11
1. Sex (0=male; 1=female)	60.9%	n.a.	n.a.	1										
2. Age	48.4	10.74	n.a.	-.327* <sup>1</sup>	1									
3. Psychiatrist	46.3%	n.a.	n.a.	-.271* <sup>1</sup>	.218**	1								
4. Working only in institution	66.5%	n.a.	n.a.	.148**	-.312**	-.012	1							
5. Working partly in institution, partly in private practice	17.9%	n.a.	n.a.	-.131* <sup>1</sup>	.147**	.056	-.658**	1						
6. Managing position	47.10%	n.a.	n.a.	-.246* <sup>1</sup>	.173**	.375**	.065*	.077*	1					
7. Societal benefit: Increasing care quality & efficiency	3.48	1.84	.96	.155**	-.188**	-.190**	.108**	-.039	-.071*	1				
8. Societal benefit: Increasing patient choice	2.92	1.70	.97	.163**	-.138**	-.180**	.084**	-.067*	-.123**	.676**	1			
9. Patient benefits	3.27	1.53	.80	.123**	-.171**	-.147**	.067*	-.063*	-.062*	.672**	.560**	1		
10. Personal benefits	4.21	1.52	.76	.042	.044	-.163**	-.218**	.012	-.108**	.424**	.351**	.531**	1	
11. Resistance to implement	6.68	1.77	.85	-.157* <sup>1</sup>	.151**	.152**	-.060*	.071*	.011	-.566**	-.447**	-.562**	-.477**	1

Note: \*  $p < .05$ , \*\*  $p < .01$ . Reference categories: 3: 0= Not a psychiatrist, 4/5: 0=Working private practice, 6: 0=Non-management position.

## **Multivariate findings and discussion**

We now run a multivariate OLS regression using SPSS to explain resistance to implement DRGs (all variables entered simultaneously, with listwise exclusion of cases with missing values). This is shown in Table 2. A multivariate model is necessary because, the socio-demographic and occupational variables are not mutually independent and to establish the independent effect of each of the perceived benefits. Model 1 looks at background variables only, while model 2 includes the perceived policy benefits as well.

In the first model, a number of relatively weak relationships emerge. Male respondents are less willing to implement DRG policies. Resistance also increases with age. Psychiatrists are considerably less willing to implement DRG policies compared to non-medical mental health care professionals such as psychologists and psychotherapists (who are also more often female and younger than psychiatrists). Respondents in a managing position are, not surprisingly, more willing to implement the policy. We found no effect of whether respondents work in a private practice, in an institution, or combining these. Overall, the model's  $R^2$  is relatively low, at just 4 per cent.

In the second model, we add perceived benefits of the DRG policy. When adding these variables, the effect of background variables largely disappears. Age and whether one works as a psychiatrist are no longer significant. Males are still significantly less willing, and respondents in a management position are more willing to implement the policy. The overall explanatory power of the model also increases significantly, to 43 per cent. When respondents think the new policy will not be beneficial for care efficiency and care quality, for patients, or for themselves, they are more likely to resist its implementation.

The perceived (absence of) benefits of DRGs for health quality and efficiency is the strongest variable in the model, suggesting that professionals resist implementation, because they think the policy will not improve quality, nor lower costs, despite official policy discourse of a strong connection between these and DRGs. This can be seen when looking at the betas. The negative beta of -.266 for societal benefits (care quality and costs) means that, when a professional would feel that these societal benefits are 1 point higher, his or her resistance to the policy will on average decrease by .266 (measured on the same scale, for instance a 1-5 scale).

Hence, the higher the (absolute value of) beta, the more impact a variable has on resistance to change.

Health professionals do not just think about benefits for patients and health in general, but also about benefits for themselves in terms of personal gains, status, finances and administrative burdens. The parameter for personal benefits is even stronger than the one for patient benefits, which is relevant as this is not discussed in policy discourse. Expected effects on patient choice appear to be irrelevant in explaining the willingness to implement policy. This suggests that mental health professionals do not associate DRG policies with policy initiatives to widen and strengthen choice for patients.

**Table 2 Multivariate regression analysis: resistance to implement policy**

	Model 1: background variables only	Model 2: Background variables and three dimensions of policy benefits
Female	-.106** (.120)	-.061* (.093)
Age	.105** (.006)	.042 (.004)
Psychiatrist	.127** (.118)	.030 (.090)
Working only in institution	.043 (.159)	-.029 (.130)
Working partly in institution.,partly in private practice	.074 (.186)	.022 (.148)
Managing position	-.089** (.119)	-.085** (.092)
1a. Societal benefits – Costs and quality of care		-.266** (.035)
1b. Societal benefits – Client choice		-.053 (.034)
2. Patient benefits		-.206** (.040)
3. Personal benefits		-.249** (.035)
Adjusted R <sup>2</sup>	.05**	.43**
N	1055	1055

Note: Standardized beta coefficients are presented. Standard error in between brackets. \* p < .05, \*\* p < .01.  
Regression criteria were met (independent residuals, no multicollinearity, no exclusion of outlying cases, Cooks distance max. .02 (criterion <1), homoscedasticity and normality criteria met.

## Discussion

We quantitatively examined factors that influence the resistance of health care professionals to implement new policies. Although some prominent scholars have emphasized the crucial impact of resistance of professionals to implement a policy, few have developed and tested a systematic explanatory framework. In this study, we have constructed a theoretical model linking three perceived benefits of a policy (for society, patients and personal) to resistance to implement public policies. This model was tested in a survey of mental health care professionals implementing Diagnosis Related Groups in the Netherlands. The model worked adequately in that the three dimensions of benefits, together with conventional control variables, explained over 40% of the variance in resistance.

One of the main results of the study is that many respondents felt that the DRG-policy did not have substantial benefits for society. The perceived absence of benefits of DRGs for health quality and efficiency is the strongest variable in the model, suggesting that professionals resist implementation, because they think the policy will not improve quality, nor lower costs, despite official policy discourse of a strong connection between these and DRGs. Furthermore, this is an interesting observation as it contradicts some research on New Public Management which argues that business goals, such as efficiency, are almost by definition not welcomed by professionals [42]. Conversely, it does not seem that professionals are against these business goals as such [43]. Rather the opposite: the mental health care professionals were unwilling to use the DRG-policy precisely because they believe it does not help to achieve the business goals. This betrays a great concern among mental health professionals about care quality and care efficiency. Resistance to implement DRGs can thus not be explained by suggesting health professionals do not care about efficiency and the financial bottom line. They are unwilling to implement this policy not because it focuses on business goals, but because it will not achieve those business goals. For policymakers and change agents implementing policies, this means that reducing care costs can indeed be seen as a valuable goal for a new policy. Therefore, such policymakers and change agents could more openly state that these are the goals being pursued and, further, they can try to include health care professionals in debates on how to achieve these goals.

A second main finding is that expected effects of the introduction of DRGs on patient choice do not have an impact on general willingness to implement DRGs. This suggests health professionals see no obvious relation between the system of DRGs and the public service choice agenda. Finally, perceived personal benefits have a quite substantial effect in the model. Factors such as a fear for more red tape, loss of status and income changes are important in explaining resistance to implement a policy. This means it is important to take the effects of new policies on the personal situation of health professionals into account when trying to convince them to implement the policy, and to also concentrate communication efforts on these aspects, mundane as they may be. To date, not much policy implementation research has focused on these personal benefits for health care professionals.

Professionals' resistance can have serious consequences for the effectiveness of the DRG policy, as professionals have an important role in the DRG policy. The most extreme option is that professionals refuse to work with the DRG policy. Some Dutch professionals indeed chose this option (such as professionals linked to Foundation of DRG-free Practices), but this often meant for the patients that their treatment is no longer reimbursed by health care insurers. Another option is that, when choosing a DRG, professionals opt for more general product groups – such as 'short treatment' - instead of product groups which are more easily linked to disorders – such as 'personality disorders'. This could increase patient privacy but diminishes the transparency of the DRG system. A third option is that professionals use 'upcoding', that is, they opt for a DRG which is more expensive than the DRG which is 'most suitable' for the patient [28]. This is also called DRG creep [44]. This increases the revenues for the health care provider, but increases total costs for society. In these and other ways, the behaviour of professionals can have serious consequences for the effectiveness of the DRG policy.

We can link the theoretical framework and findings of this study to the wider literature on DRGs, see for instance [12, 13, 45]. First, we found that many professionals felt that the DRG policy did not have substantial societal benefits, such as increasing transparency and efficiency. Other studies also indicated that DRGs did not have substantial societal benefits [46, 47]. On the other hand, there are also studies – mostly US based - that show that introducing DRGs increased the efficiency of hospitals [48]. These differences can be due to the various circumstances, such as the way in which the DRGs were designed in particular countries and the



way they were implemented. The second dimension focused on patient benefits, which were relatively meagre according to the professionals surveyed. In a similar vein, Evers [44] noted that a pitfall of the DRG system was that patients could receive poorer care quality in order to reduce costs. Still, it is important to note that other studies have found no negative effects in quality of care [45, 49]. The last dimension focuses on personal benefits. For this dimension, less research exists, although some note that DRGs could influence professional status, autonomy and lead to moral conflicts [50, 51]. In sum, it seems that DRG-policies do not by definition lead to societal, patient, or personal benefits. However, the wider research also shows that DRG-policies can be beneficial in some circumstances [45, 49].

Research to date have largely focused on objective aspects of DRG-policies. Less attention has been paid to the perceptions of professionals implementing the DRG-policy, and the related resistance. We have shown that this resistance is important to study, as it could lead to among else upcoding and professionals refusing to work with the DRG-policy. We argue that the developed framework with three dimensions of perceived benefits is useful because it integrates different perspectives on the value and effects of DRGs, rather than focusing on a single dimension (such as the benefits for society). We have shown that professionals do distinguish between different dimensions of perceived benefits, and that a measurement of different dimensions is necessary.

This study was based on a representative sample of mental health care professionals in the Netherlands. This does not mean, however, that results can be decontextualized and without caution be applied to other policies or other groups of health professionals. Further tests of the provided model are needed. Such tests will need to concentrate on other policies and on other groups of health professionals. A comparative approach might work adequately to control for the structural characteristics of the health care system, including the degree of central steering in national health systems and the extent of public and private involvement in the system. Related to this, scholars could study one core problem of DRG-systems in mental health care. That is, that it is very difficult – if not impossible – to define homogenous groups of psychiatric patients. The diagnosis does not seem to indicate the associated costs and treatment as in somatic care.

Methodological limitations of this research are those common to all survey-based research, and include socially desirable answering behavior, common method bias (no evidence

was found in our analysis), and non-response bias (but see the non-response analysis provided in the methods section). Our analysis also makes assumptions about the likely direction of causality, moving from perceived benefits to willingness to implement. An alternative view would be that prior resistance to implement influences how benefits are perceived. To obtain a fuller insight in to professionals' resistance, the findings of current study should be supplemented by non-attitude based research looking at actual behaviors of professionals during the course of their duties.

## **Conclusion**

This study provides insights that help to understand why health care professionals resist the introduction of DRG-based payment systems. We have shown that it is very important that professionals feel that a policy or innovation is beneficial, on multiple dimensions. Policymakers could think about ways to improve the perceived added value of a policy. One way could be to more intensively communicate the values associated with a policy, highlighting its urgency and the desired results. Further, pilots might be initiated before 'rolling out' a policy nationwide. This could improve the effectiveness of a policy, thereby increasing its perceived value and ultimately reducing resistance.

## Appendix: Measures and corresponding scales

**Table 3 Measures and scales used**

Note: Template words are underlined. Templates allow the researcher to specify an item by replacing general phrases with more specific ones that better fit the research context. The templates for “policy” is in this case “DRG policy”. The template for “policy goal” is in this case “more care quality”, “more efficiency” and “more patient choice”.

Note: R= Reverse-scored item

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### **Resistance to implement policies**

1. I intend to try to convince employees of the benefits the policy will bring (R)
2. I intend to put effort into achieving the goals of the policy (R)
3. I intend to reduce resistance among employees regarding the policy (R)
4. I intend to make time to implement the policy (R)
5. I intend to put effort in order to implement the policy successfully (R)

### **Societal benefits**

1. I think that the policy, in the long term, will lead to policy goal 1
2. I think that the policy, in the short term, will lead to policy goal 1
3. I think that the policy has already led to policy goal 1
4. Overall, I think that the policy leads to policy goal 1

### **Patient benefits**

1. The policy is harmful for my patients privacy (R)
2. With the policy I can better solve the problems of my patients
3. The policy is contributing to the welfare of my patients
4. Because of the policy, I can help patients more efficiently than before
5. I think that the policy is ultimately favourable for my patients

### **Personal benefits**

1. As a result of the policy, I experience positive financial consequences
  2. On the long term, the policy is beneficial for me
  3. I have won little as a result of the introduction of the policy (R)
  4. My future in this job will be limited because of the policy (R)
  5. I am worried I have lost some of my status due to the introduction of the policy (R)
  6. As a result of the policy, I have to do more administrative work (R)
  7. The policy erodes my duty of professional confidentiality (R)
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## References

- [1] M. Noordegraaf and A. J. Steijn, Eds., *Professionals Under Pressure: Perspectives on Professionals and Professionalism*. Amsterdam: Amsterdam University Press, forthcoming 2012.
- [2] S. Ackroyd, I. Kirkpatrick and R. M. Walker, "Public management reform in the UK and its consequences for professional organization: a comparative analysis," *Public Administration*, vol. 85, pp. 9-26, 2007.
- [3] A. De Ruyter, I. Kirkpatrick, K. Hoque, C. Lonsdale and J. Malan, "Agency working and the degradation of public service employment: The case of nurses and social workers," *The International Journal of Human Resource Management*, vol. 19, pp. 432-445, 2008.
- [4] W. G. J. Duyvendak, T. Knijn and M. Kremer, Eds., *Policy, People, and the New Professional. De-Professionalisation and Re-Professionalisation in Care and Welfare*. Amsterdam: Amsterdam University Press, 2006.
- [5] E. Freidson, *Professionalism: The Third Logic*. Cambridge: Cambridge University Press, 2001.
- [6] M. Bottery, *Professionals and Policy: Management Strategy in a Competitive World*. London: Routledge, 1998.
- [7] G. Hebson, D. Grimshaw and M. Marchington, "PPPs and the Changing Public Sector Ethos: Case-Study Evidence from the Health and Local Authority Sectors," *Work Employment and Society*, vol. 17, pp. 481-501, 2003.
- [8] L. Pratchett and M. Wingfield, "Petty bureaucracy and woolly-minded liberalism? The changing ethos of local government officers," *Public Administration*, vol. 74, pp. 639-656, 1996.
- [9] P. A. Sabatier, "What can we learn from implementation research?" in *Guidance, Control and Evaluation in the Public Sector*, F. X. Kaufmann, G. Majone and V. Ostrom, Eds. Berlin: De Gruyter, 1986, pp. 313-325.
- [10] J. A. G. Ewalt and E. T. Jennings, "Administration, governance, and policy tools in welfare policy implementation," *Public Adm. Rev.*, vol. 64, pp. 449-462, 2004.
- [11] V. J. J. M. Bekkers, A. Edwards, M. Fenger and G. Dijkstra, *Governance and the Democratic Deficit, Assessing the Legitimacy of Governance Practices*. Aldershot: Ashgate, 2007.
- [12] J. R. Kimberly, G. De Pouvourville and A. D. A. Thomas, *The Globalization of Managerial Innovation in Health Care*. Cambridge: Cambridge University Press, 2009.
- [13] R. Busse, A. Geissler, W. Quentin and M. Wiley, Eds., *Diagnosis Related Groups in Europe. Moving Towards Transparency, Efficiency and Quality in Hospitals*. New York: Open University Press, 2011.
- [14] K. Janus, V. E. Amelung, M. Gaitanides and F. W. Schwartz, "German physicians "on strike"—shedding light on the roots of physician dissatisfaction," *Health Policy*, vol. 82, pp. 357-365, 2007.
- [15] R. A. Bell, R. L. Kravitz, A. D. Siefkin and G. E. Foulke, "Physicians' attitudes toward managed care: assessment and potential effects on practice behaviors," *Am. J. Manag. Care*, vol. 3, pp. 1297-1304, Sep, 1997.

- [16] M. Deom, T. Agoritsas, P. A. Bovier and T. V. Perneger, "What doctors think about the impact of managed care tools on quality of care, costs, autonomy, and relations with patients," *BMC Health Serv. Res.*, vol. 10, pp. 331, Dec 7, 2010.
- [17] J. L. Twigg, "Health care reform in Russia: a survey of head doctors and insurance administrators," *Soc. Sci. Med.*, vol. 55, pp. 2253-2265, 2002.
- [18] A. D. Federman and S. Keyhani, "Physicians' participation in the Physicians' Quality Reporting Initiative and their perceptions of its impact on quality of care." *Health Policy*, pp. 234, 2011.
- [19] A. Tzavares, B. Spyropoulos and R. Gruen, "Diagnosis related groups: Approval and appropriateness for the greek national health system," in *Proceedings of the 5th International IEEE EMBS Special Topic Conference on Information Technology in Biomedicine*, Ioaniina, 2006, .
- [20] G. M. Thibadoux, M. Scheidt and E. Luckey, "Accounting and Medicine: An Exploratory Investigation into Physicians' Attitudes Toward the Use of Standard Cost-Accounting Methods in Medicine," *Journal of Business Ethics*, vol. 75, pp. 137-149, 2007.
- [21] S. S. Tan, M. van Ineveld, K. Redekop and L. Hakkaart-van Roijen, "The netherlands: The diagnose behandelend combinaties," in *Diagnosis-Related Groups in Europe: Moving Towards Transparency, Efficiency and Quality in Hospitals*, R. Busse, A. Geissler, W. Quentin and M. Wiley, Eds. New York: Open University Press, 2011, pp. 425-446.
- [22] A. Smullen, "Institutionalizing professional conflicts through financial reforms: The case of DBC's in dutch mental healthcare," in *Professionals Under Pressure: Perspectives on Professionals and Professionalism*, M. Noordegraaf and A. J. Steijn, Eds. Amsterdam: Amsterdam University Press, forthcoming 2012, .
- [23] M. Van Dorresteyn, "'Eenvoud belangrijk bij uitwerking ggz-dbc's'," *Zorgvisie*, vol. March 7, 2011.
- [24] J. K. Helderman, F. T. Schut, T. E. D. Van Der Grinten and W. P. M. M. Van De Ven, "Market-oriented health care reforms and policy learning in the Netherlands," *J. Health Polit. Policy Law*, vol. 30, pp. 189-210, 2005.
- [25] R. Janssen and P. Soeters, "DBC's in de GGZ, ontwrichtende of herstellende werking?" *GZ-Psychologie*, vol. 2, pp. 36-45, 2010.
- [26] W. Van den Elsen, "Bonden starten acties tegen DBC's in GGZ," *Zorgvisie*, 2010.
- [27] Koepel van DBC-vrije praktijken, "Enquête over DBC-systematiek," vol. 2010, 2007.
- [28] I. Palm, F. Leffers, T. Emons, V. Van Egmond and S. Zeegers, *De GGz Ontwricht: Een Praktijkonderzoek Naar De Gevolgen Van Het Nieuwe Zorgstelsel in De Geestelijke Gezondheidszorg*. Den Haag: SP, 2008.
- [29] A. S. Judson, *Changing Behavior in Organization: Minimizing Resistance to Change*. Cambridge, MA: Basil Blackwell, 1991.
- [30] E. E. Metselaar, "Assessing the willingness to change: Construction and validation of the DINAMO," 1997.
- [31] I. Ajzen, "The theory of planned behavior," *Organ. Behav. Hum. Decis. Process.*, vol. 50, pp. 179-211, 1991.

- [32] R. E. Matland, "Synthesizing the implementation literature: The ambiguity-conflict model of policy implementation," *Journal of Public Administration Research and Theory*, vol. 5, pp. 145-174, 1995.
- [33] M. Higgs and D. Rowland, "All changes great and small: exploring approaches to change and its leadership," *Journal of Change Management*, vol. 5, pp. 121-151, 2005.
- [34] P. J. May and S. C. Winter, "Politicians, Managers, and Street-Level Bureaucrats: Influences on Policy Implementation," *Journal of Public Administration Research and Theory*, vol. 19, pp. 453, 2009.
- [35] N. M. Riccucci, "Street-level bureaucrats and intrastate variation in the implementation of temporary assistance for needy families policies," *Journal of Public Administration Research and Theory*, vol. 15, pp. 89-111, 2005.
- [36] L. J. O'Toole, "Research on policy implementation: Assessment and prospects," *Journal of Public Administration Research and Theory*, vol. 10, pp. 263-288, 2000.
- [37] L. G. Tummers, V. J. J. M. Bekkers and A. J. Steijn, "Policy alienation of public professionals: Application in a New Public Management context," *Public Management Review*, vol. 11, pp. 685-706, 2009.
- [38] D. T. Holt, A. A. Armenakis, H. S. Feild and S. G. Harris, "Readiness for organizational change: The systematic development of a scale," *J. Appl. Behav. Sci.*, vol. 43, pp. 232-255, 2007.
- [39] L. G. Tummers, "Explaining the willingness of public professionals to implement new policies: a policy alienation framework," *International Review of Administrative Sciences*, vol. 77, pp. 555-581, 2011.
- [40] M. K. Meyers and S. Vorsanger, "Street-level bureaucrats and the implementation of public policy," in *Handbook of Public Administration*, B. Guy Peters and J. Pierre, Eds. London: Sage, 2003, pp. 245-254.
- [41] R. F. DeVellis, *Scale Development: Theory and Applications*. Thousand Oaks: Sage, 2003.
- [42] Y. Emery and D. Giauque, "Emergence of contradictory injunctions in Swiss NPM projects," *International Journal of Public Sector Management*, vol. 16, pp. 468-481, 2003.
- [43] L. G. Tummers, "De bereidheid van GGZ-zorgprofessionals om te werken met DBC's," Erasmus Universiteit Rotterdam, Rotterdam, 2010.
- [44] S. Evers, G. Voss, F. Nieman, A. Ament, T. Groot, J. Lodder, A. Boreas and G. Blaauw, "Predicting the cost of hospital stay for stroke patients: the use of diagnosis related groups," *Health Policy*, vol. 61, pp. 21-42, 2002.
- [45] R. Busse and W. Quentin, "Moving towards transparency, efficiency and quality in hospitals: Conclusions and recommendations," in *Diagnosis-Related Groups in Europe: Moving Towards Transparency, Efficiency and Quality in Hospitals*, R. Busse, A. Geissler, W. Quentin and M. Wiley, Eds. New York: Open University Press, 2011, pp. 149-171.
- [46] J. P. Borden, "An assessment of the impact of diagnosis-related group (DRG)-based reimbursement on the technical efficiency of New Jersey hospitals using data envelopment analysis," *J. Account. Public Policy*, vol. 7, pp. 77-96, 1988.
- [47] C. E. Dismuke and V. Sena, "Has DRG payment influenced the technical efficiency and productivity of diagnostic technologies in Portuguese public hospitals? An empirical analysis

using parametric and non-parametric methods," *Health Care Manag. Sci.*, vol. 2, pp. 107-116, 1999.

[48] R. B. Fetter, "Diagnosis related groups: understanding hospital performance," *Interfaces*, vol. 21, pp. 6-26, 1991.

[49] Z. Or and M. Bellanger, "France: Implementing homogeneous patient groups in a mixed market," in *Diagnosis-Related Groups in Europe: Moving Towards Transparency, Efficiency and Quality in Hospitals*, R. Busse, A. Geissler, W. Quentin and M. Wiley, Eds. Open University Press, 2011, pp. 221-242.

[50] G. Ritzer and D. Walczak, "Rationalization and the deprofessionalization of physicians," *Social Forces*, vol. 67, pp. 1-22, 1988.

[51] A. M. van Essen, "New hospital payment systems: Comparing medical strategies in The Netherlands, Germany and England," *Journal of Health Organization and Management*, vol. 23, pp. 304-318, 2009.