Managed competition in the Dutch Health Care System:
Preconditions and experiences so far

Richard C. van Kleef[‡]

Erasmus University Rotterdam

Abstract

In the early 1990's the Dutch government started to replace supply-side regulation in health care by managed competition. The idea of managed competition is that insurers and providers of care compete on price and quality while the government establishes certain rules to guarantee public objectives. The ultimate goal of the reforms is to achieve a health care system in which incentives for efficiency are combined with universal access to good-quality care. For successful application of managed competition, however, some important preconditions need to be fulfilled. This paper describes these preconditions and discusses how and to what extent they are fulfilled in the Netherlands. Special attention will be paid to the corner stone of managed competition: risk equalization. An important lesson from the Netherlands is that fulfilling these preconditions is a long process. The experiences so far reveal some positive effects as well as some serious issues that need to be solved.

I.   Introduction

In many OECD countries three consecutive waves of health care reform can be distinguished: 1) towards universal coverage and equal access, 2) cost control by the government via supply-side regulation and 3) efficiency via incentives and competition (Cutler, 2002). In the mid 1990's, the Dutch government started to replace supply-side regulation by managed competition. Since these years the Netherlands is considered to be in the third wave of health care reform (Van de Ven and Schut, 2008). The central idea of managed competition is that insurers and providers of care compete on price and quality while the government establishes certain rules to guarantee public objectives. This should result in a health care scheme that combines incentives for efficiency with universal access to good-quality care. This paper reports on the Dutch experiences with managed competition so far. It describes some positive effects as well as some serious issues that need to be solved. In the discussion special attention will be paid to the question whether

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[‡] email: <u>vankleef@bmg.eur.nl</u>

managed competition can be expected to actually reduce health care costs.

The structure of the paper is as follows. Section 2 provides a brief (historical) overview of the Dutch health care reforms. Section 3 describes the key elements of a milestone in the Dutch reforms: the introduction of the Health Insurance Act 2006. Section 4 describes some crucial preconditions that need to be fulfilled for a successful application of managed competition in health care. Section 5 discusses the corner stone of the managed competition model: risk equalization. Section 6 presents the experiences with managed competition so far in terms of positive effects as well as issues that need to be solved. Section 7 will conclude this paper and section 8 will discuss whether managed competition can be expected to actually reduce health care costs.

II.   Health care reforms in the Netherlands: Towards managed competition

The Dutch health insurance system has a long tradition of both public and private initiatives. Until 1940 there was almost no government regulation with respect to health care financing.   From 1940 to 1970 the government established several rules to achieve universal access. In this period two major health insurance schemes were introduced. The first – the so-called Sickness Fund Insurance (1941) – was mandatory for low- and middle income people and covered mostly *curative care*, such as primary care, inpatient and outpatient hospital care and prescribed drugs. At the end of the 20th century about two-thirds of the population was covered by this so-called sickness fund insurance. The major share of high-income people (who were not allowed to enrol in the sickness fund scheme) purchased private health insurance with similar coverage. The second scheme – the so-called Exceptional Medical Expenses Act (1968) – comprised coverage for long-term care, care for mentally and physically disabled and hospitalization for more than one year. This scheme – which still exists today – is mandatory for the entire population. From 1968 to 2006, the Dutch health insurance scheme consisted of four main components, as shown in Figure 1.

Figure 1 Four main components of the Dutch health insurance scheme from 1968 to 2006

Exceptional Medical Expenses Act:
A *public insurance scheme for long-term care (e.g. elderly care and care for mentally and physically disabled), mandatory for the entire population, regulated by the government and executed by administration offices that bear no financial risk.*

Sickness Fund Act:	Private Health Insurance:
A public insurance scheme for curative care (e.g. primary care, inpatient and outpatient hospital care and prescribed drugs), mandatory for two-thirds of the population with incomes below a certain threshold, regulated by the government and executed by administration offices that were bearing no financial risk until the mid 1990's.	*Private insurance for curative care (e.g. primary care, inpatient and outpatient hospital care and prescribed drugs), voluntarily purchased by those not eligible for Sickness Fund Insurance, no regulation by the government and executed by private insurance companies (who bear full financial risk).*

Supplemental Health Insurance:
Private insurance for supplemental benefits (not covered by the other three components, e.g. comprehensive dental care and physiotherapy), no regulation by the government and executed by private insurance companies (who bear full financial risk).

From 1970 to 1990 the government applied several forms of supply-side regulation by replacing fee-for-service and open-ended reimbursement by price regulation and budgeting systems (with respect to the Exceptional Medical Expenses Act and the Sickness Fund Act). This supply-side regulation was an answer to the significant rise in health care expenses which threatened universal access to health care as well as the economy. Since the early 1980's, however, there were growing complaints about supply-side regulation, which led to several policy proposals. Among these proposals was the advice of the Dekker-committee (1987) to implement market-oriented reforms in combination with a national health insurance scheme for curative care. This landmark proposal led to several reforms necessary to implement the so-called Health Insurance Act in 2006. This Act introduced a national health insurance (that replaced the sickness fund insurance and the curative private health insurance) and is aimed at combining efficiency incentives with universal access (Van de Ven and Schut, 2008). Since 2006, the health insurance system consists of three main components, as shown in Figure 2. The remainder of this paper will focus on the component in which the managed competition model has been implemented: the Health Insurance Act.

Figure 2 Three main components of the Dutch health insurance scheme since 2006

Exceptional Medical Expenses Act:

A public insurance for long-term care (e.g. elderly care and care for mentally and physically disabled), mandatory for the entire population, regulated by the government and executed by administration offices that bear no financial risk.

Health Insurance Act:

Private insurance for curative care (e.g. primary care, inpatient and outpatient hospital care and prescribed drugs), mandatory for the entire population, regulated by the government and executed by private insurance companies (i.e. the former sickness funds and private health insurance companies) who bear substantial financial risk.

Supplemental Health Insurance:

Private insurance for supplemental benefits (not covered by the other two components, e.g. comprehensive dental care and physiotherapy), no regulation by the government and executed by private insurance companies (who bear full financial risk).

III.   A milestone: The Health Insurance Act 2006

The Health Insurance Act is based on the principles of managed competition: insurers and providers of care compete on price and quality while the government has set certain rules to guarantee universal access to good-quality care. The ultimate goal is to achieve a scheme in which universal access is combined with incentives for insurers and providers to continuously improve efficiency in the delivery of care (i.e. lowering the costs given a certain level of quality *or* increasing the level of quality given a certain level of costs).

Universal access is achieved via 1) a mandate for everyone in the Netherlands to buy individual private health insurance, 2) broad coverage (e.g. primary care, inpatient and outpatient hospital care and prescribed drugs), 3) open enrolment and community rating per health plan, 4) subsidies for low- and middle income people and 5) risk equalization. Risk equalization means that insurers are compensated for predictable profits (on the young and healthy enrolees) and predictable losses (on the elderly and chronically ill). Together, these five regulatory aspects should make health insurance affordable and accessible for everyone.

Incentives for *efficiency* are achieved by 1) a standardized benefit package *described in terms of functions of care* (which means that – while the types of care in the benefit package are determined by the government – the insurer is free to decide *where* and *by whom* the care is delivered, i.e. selective contracting) and 2) free consumer choice of health plan. These two aspects are the basis for competition, i.e. consumer choice results in competition among insurers and selective contracting by insurers results in competition

among providers.

The new scheme is referred to as the "basic health insurance" and is mainly financed by three sources (Figure 3): a community-rated premium from enrolees of 18 years and older to the insurer, an income-related contribution from enrolees to the so-called risk equalization fund and a government contribution to the risk equalization fund for individuals up to age 18. The risk equalization fund functions as a national account from which the compensations (also referred to as equalization payments or capitation payments) to insurers are financed. As will be explained in Section 5, these compensations are based on the expected expenses of enrolees given their risk characteristics. For enrolees with *expected* expenses higher than the average community-rated premium (e.g. the elderly and chronically ill) the insurer receives a contribution from the fund, while for enrolees with *expected* expenses lower than the average community-rated premium (e.g. the young and healthy) the insurer has to pay into the fund. The goal of risk equalization – given the requirement of community-rating – is to reduce incentives for risk selection and to achieve a level playing field for insurers.

Figure 3 Financing scheme of the Dutch basic health insurance (Health Insurance Act 2006) *
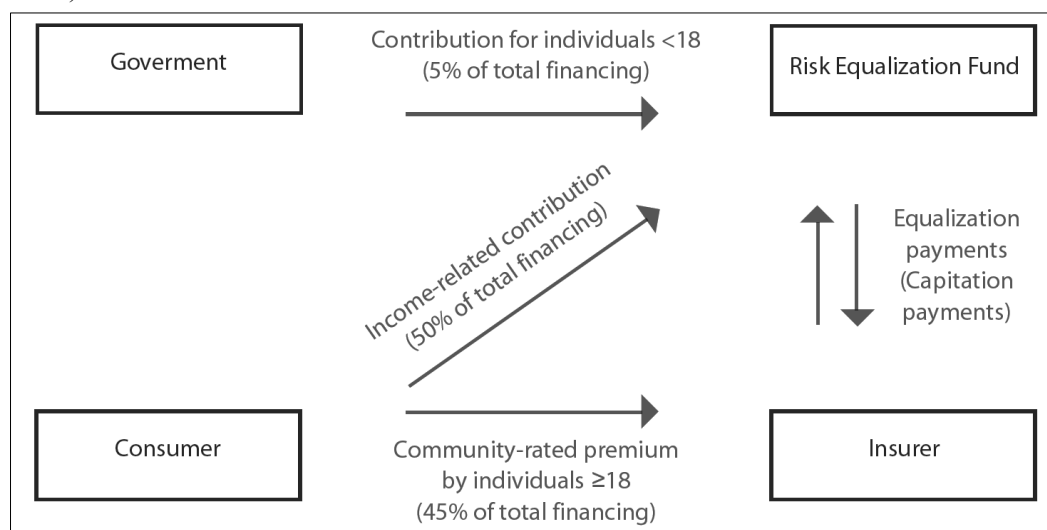
Source: Van Kleef and Van Vliet (2010)
* NB: low- and middle income people receive a premium subsidy from the government.

Next to the aspects described above, the Health Insurance Act includes additional elements to promote efficiency: 1) a mandatory deductible of 170 euro (deductible level in 2011) for enrolees of 18 years or older, 2) the possibility to increase this deductible (voluntarily) to a maximum of 670 euro in return for a premium rebate and 3) the

possibility for enrolees to enrol in a group contract (organized by employers, sport clubs, patient organizations, shops and private initiatives, for instance) in return for a premium rebate.

Table 1 provides some interesting facts and figures about the basic health insurance (which are meant for background information): the number of individuals obliged to enrol, the number of individuals who broke the law by not enrolling, the number of individuals who failed to pay their premium for at least six months, the number of insurers, the number of health plans, the number of enrolees switching health plan, the average insurance premium, the number of individuals enrolled in a group contract, the number of enrolees with a voluntary deductible and the average premium rebate for a voluntary deductible of €500. In addition to these figures about the basic health insurance it is interesting to mention that in 2011 about 90% of the population purchased supplemental insurance.

Table 1 Facts and figures about the Dutch basic health insurance (year = 2011)

Aspect	Figure
Number of individuals obliged to enrol (i.e. almost the entire Dutch population)	16.5 million
Number of individuals who broke the law by not enrolling	55.000 (0.3%)
Number of individuals who failed in paying their premium for at least six months	250.000 (1.5%)
Number of insurers	27
Number of health plans	56
Number of enrolees switching health plan	900.000
Average insurance premium (for an individual insurance policy without a voluntary deductible)	€ 1,250
Number of individuals enrolled in a group contract	11 million (67%)
Number of enrolees with a voluntary deductible	780.000 (6% of population >=18 years)
Average premium rebate for a voluntary deductible of € 500	€ 220

Source: Dutch health care authority (2011)

IV. Preconditions for managed competition

An important lesson from the Netherlands is that the implementation of managed

competition is a long and complex process: it started in the early 1990's and is still going on today. The explanation for this complexity is that successful application of managed competition requires some crucial preconditions to be fulfilled. Using the framework of Bevan and Van de Ven (2010), this section briefly describes eight of these preconditions (in random order) and discusses how and to what extent they are currently fulfilled in the Netherlands. *Note that these preconditions are necessary but not sufficient, i.e. there may be other preconditions necessary for successful application of managed competition.*

A first precondition is effective <u>market regulation</u> to guarantee a sufficient level of competition, quality of care, solvency of insurers and consumer protection. During the last decades four institutions have become responsible for supervision of these aspects. The *Competition Authority* protects the market against anti-competitive behaviour by preventing anti-competitive cartels and mergers, and abuse of dominant positions. The *Quality Authority* protects patients against insufficient quality of care by supervising health care providers. The *Solvency Authority* supervises the financial stability of the market by requiring insurers to meet certain levels of solvency. The *Consumer Protection Authority* protects consumer interests, such as adequate information and transparency of products. It examines whether the behaviour of insurers and providers is in accordance with the law.

A second precondition is <u>transparency of insurance products and medical products</u>. Transparency of insurance products is necessary since consumers are expected to compare insurance products and to "vote by their feet" (i.e. to choose their health plan in accordance with their preferences). In 2006, the transparency of insurance products was largely improved by the introduction of the basic health insurance which includes a standardized benefit package. With respect to medical products transparency is necessary for insurers and providers to negotiate about price and quality. Each product needs to be clearly defined in order to attach prices and to apply quality indicators. Transparency of medical products was substantially improved by the introduction of Diagnostic Treatment Combinations (DTCs) in 2005. Before that time, hospitals received a global budget and specialists were paid fee-for-service. A drawback of the DTC-classification, however, is the large number of products (i.e. >30.000), which makes it difficult to negotiate on price and quality for the entire range of treatments. In 2012 transparency will be further improved by replacing the original DTC-classification by a revised version including about 3,000 main products.

A third precondition is the availability of consumer information. In the first place, consumers should be aware of their rights and possibilities with respect to the Health Insurance Act, such as the requirement of open enrolment and the possibility to switch insurance plans each year. In the second place, they should be able to obtain (easily) information on price and quality of both insurance products and medical products. While the accessibility and quality of information on *insurance products* has been substantially

improved by the launch of websites and brochures, there still is insufficient information on the quality of *medical products*. This is mainly due to a lack of adequate quality indicators.

A fourth precondition is the <u>freedom for insurers to contract/negotiate</u>. In the period of supply-side regulation by the government sickness funds were obliged to contract with all health care providers in their region. Since the mid 1990's this obligation has been gradually abolished. Since the introduction of the Health Insurance Act in 2006, insurers are free to decide where and by whom the benefits in the basis package are provided. This instrument – which is referred to as selective contracting – is an important aspect of managed competition since it (potentially) results in competition among providers of care. Parallel to the introduction of contracting freedom, the government gradually deregulated price controls. Per 2012 insurers and providers are allowed to contract/negotiate for about 70% of hospital care (i.e. 70% of the so-called Diagnoses Treatment Combinations).

A fifth precondition is <u>consumer choice of insurer</u>. Consumer choice is the engine of managed competition: if consumers really "vote by their feet", insurers have an incentive to meet the preferences of consumers and to contract selectively with health care providers who deliver the "best" care for the "lowest" price. This process provides physicians and hospitals with incentives to continuously improve quality and reduce costs. In the period of supply-side regulation by the government consumers were obliged to enrol in their regional sickness fund and – therefore – had no choice of health plan. This drastically changed in the last decade. Since the introduction of the Health Insurance Act in 2006, consumers can annually switch between insurers and/or health plans.

A sixth precondition comprises <u>financial incentives</u> for efficiency for insurers, providers and consumers. Managed competition cannot work without financial responsibility. In the period of supply-side regulation by the government sickness funds, providers and consumers hardly bared any financial risk (i.e. most of the health care costs were fully reimbursed retrospectively). From the mid-1990's financial risk was gradually increased (see Figure 4). Per 2012 insurers will be responsible for about 90 percent of the total costs of the benefit package (i.e. only 10% of the health care costs is reimbursed retrospectively) and pay *fixed* (negotiated) prices per Diagnostic Treatment Combinations to hospitals and physicians. In the current system consumers are expected to be price sensitive at the margin in a way that differences in efficiency among insurance products are reflected in premiums.

Figure 4 Increase in financial risk for insurers (before 2006: sickness funds; since 2006: all health insurers executing the Health Insurance Act) with respect to somatic/curative care
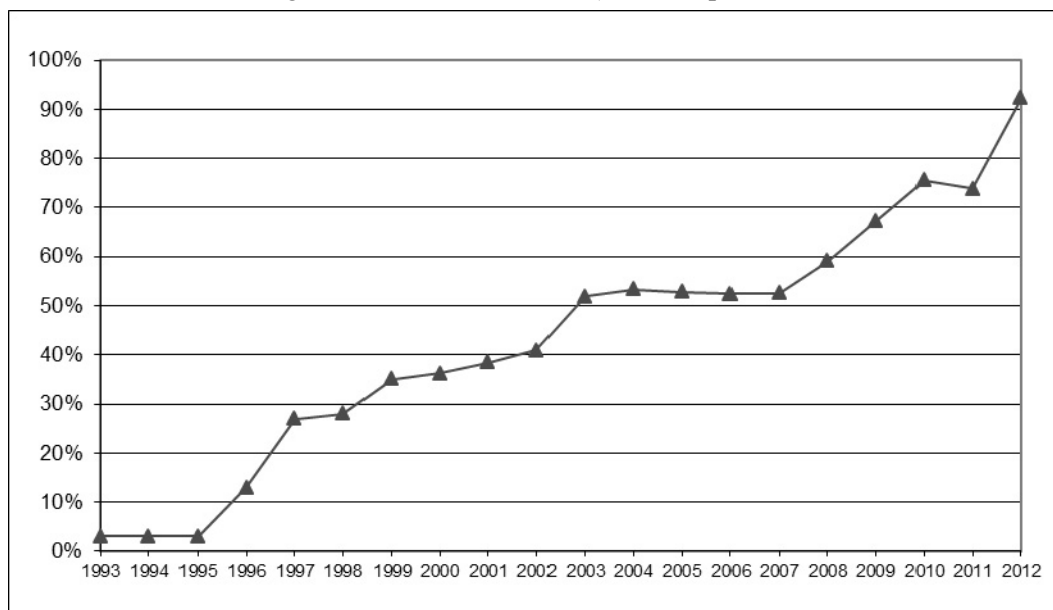
Source: Van Kleef et al. (2012)

A seventh precondition is a sufficient number of providers and insurers and <u>contestability of the market</u>. Without a reasonable choice of insurers and providers, effective competition (and thereby the incentives for efficiency) may be limited. Although this precondition seems to be satisfied in the Netherlands, there is an important task for the Competition Authority to prevent anti-competitive behaviour (e.g. cartels and mergers) and market barriers.

An eight precondition is <u>risk equalization</u>, which means that insurers are compensated for the predictable high expenses of the elderly and chronically ill. Such compensations are necessary since insurers are not allowed to risk-rate their premiums. Without accurate risk equalization insurers are confronted with predictable profits on young and healthy enrolees and predictable losses on the chronically ill. Predictable profits and losses provide insurers with incentives for risk selection and violate the level playing field when insurers have different risk portfolios. Since risk equalization can be seen as the corner stone of managed competition, it will be discussed more extensively in the next section.

V. The corner stone of managed competition: Risk Equalization

The Dutch risk equalization model was implemented in the sickness fund insurance in 1993. The essence of this model is that insurers receive a payment for each enrolee on their

list, depending on the risk characteristics of that enrolee. Since 1993, the following risk characteristics have been added to the model: age/gender (1993), region (1995), source of income interacted with age (1999), pharmacy-based cost groups (2002), diagnoses-based cost groups (2004) and socioeconomic status interacted with age (2008). In the risk equalization model of 2011, these risk characteristics are translated into 117 risk classes, i.e. 40 classes for age/gender, 10 classes for region, 17 classes for source of income / age, 24 pharmacy-based cost groups, 14 diagnoses-based cost groups and 12 classes for socioeconomic status interacted with age. The coefficients for the 117 risk classes in 2011 are calculated by a least-squares model, using information on cost and risk characteristics from 2008. See Appendix A, for more details about the Dutch risk equalization model.

Although the Dutch risk equalization model is considered as one of the most sophisticated risk equalization models in the world, recent studies indicate that it undercompensates for certain groups of people in poor health. In the presence of community-rated premiums, these undercompensations imply a predictable loss for the insurers. Table 2 shows the predictable losses for several subgroups in the Dutch population, given the risk equalization model of 2011 (source: Van Kleef et al., 2012).

Table 2 Predictable losses for subgroups of enrolees, given the Dutch risk equalization model of 2011 and community-rated premiums

Subgroup based on information from the preceding year	Estimated size of the group (%)	Predictable losses per enrolee per year
General health status: poor/moderate	18.4	607*
At least one chronic condition	32.7	350*
Visual impairment	3.8	907*
Mobility impairment	6.8	1,265*
10%-worst score physical health (SF-12)	10.0	812*
20%-worst score physical health (SF-12)	20.0	664*
Worst score Activities of Daily Living (on at least one item)	3.5	1,836*
Three or more self-reported diseases	12.2	791*
Use of medical specialist in prior year	41.5	297*
Use of physiotherapy in prior year	18.8	368*

Subgroup based on information from the preceding year	Estimated size of the group (%)	Predictable losses per enrolee per year
Use of durable medical equipment	5.8	1,184*

* Statistically significant from zero (two-sided t-test, p ≤.01).
Source: Van Kleef et al. (2012)

Per 2012 the risk equalization model will be improved by including a risk adjuster for multiple-year high costs. Although this new risk adjuster is expected to reduce predictable losses for the subgroups in Table 2, Van Kleef and Van Vliet (2012) indicate, that it will not reduce predictable losses completely. This implies that – also after 2011 – Dutch insurers remain confronted with incentives for risk selection. Despite the requirement of open enrolment, insurers have several instruments to do risk selection. A first instrument is selective contracting: if an insurer has a predictable loss on patients with disease X, he can choose not to contract with physicians who have the best reputation in treating disease X, which will make the insurer unattractive for patients with disease X. Another instrument is selective advertisement: if an insurer knows that high-educated people are more profitable than low educated people, he can choose to distribute his brochures at a university campus and not at social work places. Other effective instruments are group contracts (since open enrolment requirements do not apply to group contracts), service differentiation and selective acceptance for supplemental health insurance (i.e. consumers often purchase the basic health insurance and supplemental health insurance from the same insurance company), among others. Risk selection is undesirable since it reduces access to good-quality care (particularly for the chronically ill) and may reduce solidarity when healthy enrolees and the chronically ill concentrate in different insurance plans (resulting in a relatively low premium for the healthy and a relatively high premium for the chronically ill). Moreover, any resources used for risk selection (and not for improving the quality of care, for instance) can be considered as a welfare loss (Van de Ven and Ellis, 2000).

Although recent studies clearly indicate that the current risk equalization model undercompensates for particular subgroups – and that incentives for risk selection are present – it is hard to find evidence of risk selection in practice. The absence of this evidence, however, does not mean that the current risk equalization system is sufficient. Take, for instance, the group of patients with disease X for which insurers are substantially undercompensated. For this group insurers have no financial incentives to improve the quality of care. We will probably never know what the quality of care would have been if the incentives were right. This implies that further improvement of the risk equalization model is desirable. Directions for further improvement could be the inclusion of new risk

adjusters, e.g. risk classifications based on the prior use of durable medical equipment (Van Kleef and Van Vliet, 2010), the prior use of mental health care and/or multiple-year low costs.

VI.   Positive effects, issues and challenges

The Health Insurance Act has recently been evaluated by a panel of experts (ZonMw, 2009). Their conclusion was formulated as follows: "On balance positive, despite some serious issues." The following positive effects indicate that managed competition indeed has the potential to improve efficiency in health care. A first effect is the substantial level of premium competition: in the first years of the Health Insurance Act most insurers used their financial reserves to offer premiums (far) below cost price in order to be attractive. A second effect is that insurers have started to set up primary care centres and pharmacies, which provide them with strong instruments to organize these types of care efficiently. A third effect is that insurers are experimenting with bonuses for general practitioners (risk sharing), which stimulates these providers to work more efficiently. A fourth effect is that some insurers reimburse only the cheapest medicine of medicines that are therapeutically interchangeable, which stimulates patients and providers to take into account financial aspects regarding prescription drugs. A fifth effect is that quality of care is more an issue in the negotiations between insurers and hospitals than a few years ago, in particular for the services with free prices (70% in 2012). Next to the effects on efficiency, it can also be concluded that the level of solidarity has increased, because the basic health insurance is mandatory for the *entire* population (which was different before 2006). Next to these positive effects, there are also some serious issues that need to be solved. Eight of them will be discussed below.

A first issue is the insufficient risk equalization model. Undercompensation of particular enrolees in poor health is a serious threat to the accessibility and quality of care as well as the level playing field for insurers. It is therefore desirable to improve the risk equalization model by including new risk adjusters (see Section 5). The Dutch reforms have shown, however, that the development and implementation of new risk adjusters is a complex and time-consuming process (i.e. the risk equalization model has been under construction for more than 20 years). Moreover, it can be questioned whether the risk equalization model will ever be able to compensate for predictable, health-related cost variation completely. It may be interesting to look at alternatives for reducing incentives for risk selection. One possibility is to allow insurers to risk-rate their premiums, such that they are able to charge higher premiums to enrolees for whom they are undercompensated. A serious drawback, however, is that risk rating could reduce the affordability of health insurance for enrolees in poor health (who are undercompensated by the risk equalization

model). Another alternative for reducing incentives for risk selection is "risk sharing" (e.g., retrospective cost reimbursement to insurers for enrolees who are undercompensated). This eliminates the predictable loss for insurers and, thereby, the incentives for risk selection. An important drawback, however, is that risk sharing also reduces incentives for efficiency (Van Barneveld et al., 2001). The choice for applying these alternative strategies (i.e. risk rating and/or risk sharing) requires a trade-off between risk selection, affordability and efficiency.

A second issue – which is related to the first – is the requirement of community-rating. The general opinion is that the risk equalization model should only compensate for S-type risk factors (i.e. factors for which cross-subsidies are desirable) and not for N-type risk factors (i.e. factors for which cross-subsidies are undesirable). Examples of N-type factors are life-style and supply characteristics. No compensation for N-type factors, however, should go hand in hand with the possibility to differentiate the premium according to these risk characteristics. As long as insurers are required to charge full community-rated premiums (i.e. the same premium for all enrolees in the same health plan) they may be confronted with predictable losses caused by N-type characteristics, resulting in incentives for risk selection. With respect to the disadvantages of risk selection described in section 5, it would be better to allow insurers to differentiate their premiums according to N-type factors.

A third issue is that insurers are reluctant with respect to selective contracting. An important reason may be that the regulator is not clear about whether and to what extent insurers should reimburse the cost of health care provided by hospitals and physicians that are not contracted. The regulators (government and supervising authorities) should decide on this issue as soon as possible. With respect to the spirit of the managed competition model it is desirable to have a relatively low reimbursement rate for non-contracted care. The lower this reimbursement rate the more effective selective contracting can be in providing physicians and hospitals with incentives for efficiency. A second reason for insurers to be reluctant with respect to selective contracting may be the (expected) loss of reputation (i.e. consumers still have to get familiar with the idea of selective contracting). A third reason may be that quality indicators are still under construction (ZonMw, 2009).

A fourth issue concerns the connection between the basic health insurance (BHI) and the supplemental health insurance (SHI). Most consumers purchase their BHI and SHI from the same insurance company. Since no regulation applies to SHI insurers are free to do risk selection and to charge risk-rated premiums. Duijmelinck and Van de Ven (2011) found that some enrolees – in particular those with a chronic disease – did not switch to another insurer for BHI since they were afraid that the new insurer would either not accept for SHI or charge a higher premium for SHI. The explanation is that their current supplemental insurance includes a guaranteed renewability clause. In these cases, SHI can

be a hurdle for some (high-risk) people to switch for BHI. Since consumer choice of health plan is a crucial precondition for managed competition (i.e. if enrolees do not "vote by their feet" then there will be hardly any competition among insurers), such a hurdle is undesirable. Given the rise in health care costs it is likely that SHI will become more important in the future (i.e. benefits may be transferred from BHI to SHI), which may increase the reluctance to switch for BHI. Therefore, the government should be very careful with omitting benefits from BHI.

A fifth issue concerns the level of the out-of-pocket premium. As shown in Figure 3, enrolees contribute to the basic health insurance in two ways: via income-related contributions and out-of-pocket premiums with an average ratio of about 50/45. The average out-of-pocket premium per person per year is about 1,250 euro. It is recommended to reduce the out-of-pocket premium (and to increase the income-related contributions). In the first place, a decrease of the out-of-pocket premium – to a maximum of 500 euro for instance – may reduce the number of people who fail in paying their insurance premium (about 250,000 enrolees, see Table 1). In the second place, it will make the premium subsidy for low-income people redundant, which will save a substantial amount of administrative costs and makes the system more transparent. In the third place, it may increase competition since enrolees tend to be more responsive to an absolute premium difference of Y euro with relatively low premiums than with relatively high premiums (ZonMw, 2009).

A sixth issue concerns the viability of voluntary deductibles in the presence of (sophisticated) risk equalization. As shown in Table 1, only 6 percent of enrolees of 18 years and older opted for a voluntary deductible in 2011. This percentage is rather low compared to the Swiss basic health insurance, for instance. The reason for this low percentage may be the presence of risk equalization. Typically, voluntary deductibles are chosen by relatively healthy consumers (with low expected expenses) and not by the chronically ill (with high expected expenses). In a scheme with community-rated premiums and no/poor risk equalization (like the Swiss basic health insurance) insurers can/will incorporate the difference in expected expenses between these groups into the rebate for the deductible, which usually leads to substantial rebates (and substantial numbers of enrolees opting for a voluntary deductible). In the presence of sophisticated risk equalization, however, insurers are – to a large extent – compensated for the difference in expected expenses between these groups which reduces the possible premium rebate (and the number of enrolees opting) for a voluntary deductible (Van Kleef et al., 2006, 2007 and 2008).

A seventh issue is that some of the 30,000 Diagnostic Treatment Combinations (DTC's) include elements that are not covered by the basic health insurance. This is inconsistent with the idea that insurers and providers negotiate about prices on the level of

DTC's (i.e. not on *elements* of DTC's). Although this problem is considered to be relatively minor, it may become more serious after the revision of DTC's per 2012 (i.e. the reduction of the number of DTC's from 30,000 to about 3,000 DTC's). A solution may be to adjust the basic benefit package to the DTC-classification or vice versa. A drawback of this solution, however, is that (in the future) such adjustments will be necessary every time the benefit package or the DTC-classification is changed. A better solution may be to introduce a co-payment for elements of a DTC that are not covered by the basic health insurance.

An eight issue concerns the Exceptional Medical Expenses Act (see Figure 2). The reforms in the last decades mainly focused on the curative care. Recently, however, a national debate started on the question "What to do with the Exceptional Medical Expenses Act?". This public insurance consumes about half of the total health care budget in the Netherlands and lacks incentives for efficiency. One direction for improvement may be to have managed competition for this compartment of the Dutch health care system as well (or to transfer these types of health care from the Exceptional Medical Expenses Act to the Health Insurance Act). There are serious concerns, however, whether managed competition is a feasible concept for these types of health care. For most of these types – e.g. care for those with a mental disease, those addicted to drugs or those with dementia – managed competition may not be feasible since these consumers can/will not vote by their feet. For these types of care an important precondition for managed competition remains unfulfilled.

VII. Conclusion

Since the mid-1990's the Dutch government is replacing supply-side regulation in health care by managed competition. The experiences so far illustrate that this reform is complex and time-consuming: several important preconditions need to be fulfilled for a successful application of managed competition in health care, such as market regulation, transparency of insurance products and medical products, consumer information, freedom to contract, financial incentives, contestability of the market, and risk equalization.

The development and implementation of the risk equalization model is symbolic for the complexity of the reforms: since the introduction in 1993, this model has been gradually improved by developing sophisticated health-based risk adjusters. Although these risk adjusters resulted in significant improvements, the risk equalization model still undercompensates for particular groups of people in poor health, which confronts insurers with incentives for risk selection. Further improvements of the model (e.g. new risk adjusters) or additional measures (e.g. allowing risk-rating or applying risk sharing) are needed to reduce incentives for risk selection and to guarantee universal access to good-quality care. The development of the risk equalization model – which has been going

on for more than two decades – illustrates that market-oriented reforms in health care cannot be achieved from one day to another, but are complex and time consuming.

Note that the long time-span makes this type of reform vulnerable to changes in the political context. An important success factor in the Netherlands was that changes in political colours during the last two decades hardly affected the direction of the reforms. All governments in this period continued working on the preconditions for managed competition. The explanation may be that since the mid-1990's many parties – e.g. insurers, providers, academics and patient organizations – have become involved in the market-oriented reforms, which – in itself – increased the pressure on the government to continue in this direction. Anno 2012 it can be concluded that the preconditions for managed competition have been fulfilled to a great extent, but not completely. Further improvements are needed with respect to the risk equalization model, the development of quality indicators and the accessibility and quality of consumer information. Although managed competition has already shown some positive effects, there is still some work to be done.

VIII.   Discussion

An interesting question is whether managed competition can be expected to reduce the *total* health care costs. Following the theory of managed competition the answer is simple: although managed competition may improve the efficiency and quality of individual health care products (given that the important preconditions are fulfilled) it will not *by definition* reduce the total health care costs. The reason is that managed competition may result in a new equilibrium between demand and supply, which may imply an increase in the production of health care compared to a situation with capacity controls. It is too early, however, to say whether and to what extent this is actually the case in the Netherlands.

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Appendix 1 The Dutch risk equalization model of 2011

The essence of risk equalization is that insurers receive a payment for each on their list, depending on the expected costs of that enrolee. In the Dutch risk equalization model of 2011, the expected costs are based on the following risk characteristics: age, gender, region, socioeconomic status, source of income, pharmacy-based cost groups (PCGs) and diagnostic cost groups (DCGs). The coefficients for these characteristics in year t are simply calculated by a least-squares model, using information on cost and risk characteristics from year t-3. This Appendix describes how enrolees are categorized in risk classes (in the model of 2011).

The model includes 40 age classes (i.e., 20 classes for men and 20 classes for women). The age classes are: 0 years, 1-4 years, 5-9 years, 10-14 years, 15-17 years, 18-24 years, five-year cohorts up to the age of 90 and finally a class for people of 90 years or older. Information on age and gender is obtained from the insurers' administrative databases.

In addition, the model includes 10 clusters of regions. Regions are distinguished by the four numbers of the zip code, which can represent a village or town or parts of either. The clustering of these zip codes is based on the expected expenses per resident, corrected for the other risk adjusters included in the risk equalization model and using additional information that is not available at the individual level (e.g., proportion of non-Western immigrants, proportion of single-households, and distance to health care providers).

Furthermore, the model includes 12 classes for socioeconomic status (SES), interacted with age. This classification is based on income, number of household members, and age. For each enrolee, the income level is calculated as the household income divided by the number of household members. Those in the lowest 30% of the income distribution are categorized in SES class 1, those in the middle region of the income distribution (i.e. 30%-70%) are in SES class 2 and those in the upper 30% of the income distribution are in SES class 3. Enrolees living in a household with more than 15 members are classified in SES class 0 (independent of their income), the assumption being that they are living in a nursing home, an institution for physically or mentally handicapped or similar facility. Each of these SES classes is interacted with three age groups (0-17, 18-64 and ≥65). The information on income and households comes from the tax collector.

The model also includes 17 classes for source of income, interacted with age. The following four sources of income are distinguished: self-employment, disability benefits, social security benefits, and other (including employment). Each of these groups is interacted with four age groups (18-34, 34-44, 45-54, and 55-64). Enrolees in the age groups 0-17 and ≥65 are categorized in one separate class. The information comes from the tax collector and the registration service for social benefits and assistance.

As a direct proxy for health status, the model includes 23 PCGs. The essence of this risk

adjuster is that enrolees are classified into clinically homogenous groups, based on the prior use of pharmaceuticals. Enrolees are categorized in one or more of 23 PCGs if they received at least 180 defined daily dosages (DDDs) of a certain pharmaceutical in the previous year. For example, those with at least 180 DDDs for insulin are categorized in PCG diabetes. Those without one or more of the 23 PCGs are categorized in a separate PCG. (For more information and technical details about PCGs in the Netherlands see Lamers 1999.) The information for this risk adjuster comes from the insurers' administrative databases.

As another direct proxy for health status, the model includes 13 DCGs. The essence is to classify individuals into cost groups, based on a limited set of hospital (mostly inpatient) diagnoses from the preceding year. Those without diagnoses used for DCG's are categorized in a separate DCG. (For details on DCGs in the Netherlands see Lamers 1998.) The information for this risk adjuster comes from a national database on hospital care.