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SHOULD CATASTROPHIC RISKS BE INCLUDED IN A REGULATED COMPETITIVE HEALTH INSURANCE MARKET?

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Abstract—In 1988 the Dutch government launched a proposal for a national health insurance based on regulated competition. The mandatory benefits package should be offered by competing insurers and should cover both non-catastrophic risks (like hospital care, physician services and drugs) and catastrophic risks (like several forms of expensive long-term care). However, there are two arguments to exclude some of the catastrophic risks from the competitive insurance market, at least during the implementation process of the reforms. Firstly, the prospects for a workable system of risk-adjusted payments to the insurers that should take away the incentives for cream skimming are, at least during the next 5 years, more favorable for the non-catastrophic risks than for the catastrophic risks. Secondly, even if a workable system of risk-adjusted payments can be developed, the problem of quality skimming may be relevant for some of the catastrophic risks, but not for non-catastrophic risks. By 'quality skimming' we mean the reduction of the quality of care to a level which is below the minimum level that is acceptable to society.

After 5 years of health care reforms in the Netherlands new insights have resulted in a growing support to confine the implementation of the reforms to the non-catastrophic risks. In drawing (and redrawing) the exact boundaries between different regulatory regimes for catastrophic and non-catastrophic risks, the expected benefits of a cost-effective substitution of care have to be weighted against the potential harm caused by cream skimming and quality skimming.

Key words—catastrophic risk, regulated competition, health insurance, quality skimming, health care reform

1. INTRODUCTION

In 1988 the Dutch government and parliament decided to radically reform the health care system. The reforms are inspired by Enthoven's Consumer-Choice Health Plan [1] and are based on the recommendations of the Dekker-committee. The proposed system can be described as a national health insurance based on regulated competition. The reforms can be characterized as a transition from government regulated cartels to government regulated competition among insurers and among providers of care. Competing insurers are supposed to selectively contract with competing providers of care. Insurers therefore function as third-party purchasers of care. A major difference with Enthoven's Consumer-Choice Health Plan is the extent of the benefits package. In Enthoven's proposal qualified health plans would be required to cover, at a minimum, the list of services called 'basic health services' in the HMO Act of 1973 (as amended). That list includes physician services, inpatient and outpatient hospital services, emergency health services, short-term outpatient mental health services (up to 20 visits), treatment and referral for drug and alcohol abuse, laboratory and X-ray, home health services and certain preventive health services. We will refer

to these basic health services as 'non-catastrophic risks'. The Dutch government proposed that competing insurers should offer a benefits package covering these non-catastrophic risks as well as catastrophic risks like several forms of expensive long-term care (nursing home care, care for mentally and physically handicapped persons, and institutional psychiatric care). Since 1989 a step-by-step implementation of the reforms is taking place. Since then a number of major changes has taken place and new problems have emerged.

In this paper we will first shortly describe the main lines of the reforms and then sketch the progress made so far: what has (not) been realized and what new problems came up? (section 2). Then we will discuss two arguments why we think that some forms of catastrophic risks should be excluded from the competitive insurance market, at least during the implementation period of the reforms. These arguments are related to two major issues in a competitive market for health insurance (or: third-party purchasing of health care) with a regulated premium structure: skimming and skimping (section 3). Cream skimming or preferred risk selection is the selection by the insurer or third-party purchaser of care of those insureds for whom the expected costs are lower than the revenues. By 'quality skimming' we mean the

reduction of the quality of care to a level which is below the minimum level that is acceptable to society. Finally we will summarize the conclusions and discuss the perspectives for the Dutch health care reforms (section 4).

2. HEALTH CARE REFORMS IN THE NETHERLANDS

2.1. *Why such radical reforms?*

The health care system in the Netherlands is a complex mixture of elaborate government regulation and private enterprise. Despite the predominance of private ownership, the current Dutch health care system is heavily regulated by government. During the period 1960–1980 the health expenditures in the Netherlands as a percentage of gross domestic product doubled from 3.9 to 8.0%. In order to control this rise in expenditures, a lot of government regulation has been introduced, especially from the mid 1970s. During the 1980s the health expenditures as percentage of gross domestic product remained rather stable, which is mainly the result of the government imposed restraints on hospital capacity (introduced in the 1970s), the global budgeting of hospitals (introduced in 1983), government regulation of the salaries of nurses, manpower planning and other detailed government regulation of volume, price and productive capacity in health care. So one may wonder: what is the need for the Dutch government to come up with a proposal for such radical reforms?

In a clear answer to this question the Dutch government mentioned the following four reasons for reforming the health care system [2]. Firstly, the *uncoordinated financing structure* for health care and social welfare (homes for the aged, family assistance programs and social work) impedes cost-effective substitution of care. Closely interrelated forms of health care delivery are frequently artificially separated by multiple financing mechanisms and complex regulations. Secondly, the Dutch health care system is characterized by a *lack of incentives for efficiency*. There are hardly any financial incentives for efficiency for parties involved, i.e. producers of care, consumers and insurers. The financing system is such that in many cases economic and efficient behavior is financially punished, while noneconomic and inefficient behavior is financially rewarded. Therefore, changing the present financing system is a necessary condition for improving efficiency in health care. Thirdly, the *detailed government regulation turned out to have negative effects*. According to government many problems in the health care system are a consequence of the complex legislation and detailed regulation:

—The very detailed regulation of capacity planning in health care has turned out to be unworkable. This failure is due to the complexity of the planning process, the many parties involved, their conflicting interests,

and the lack of clarity of the regulation (many rapid changes and inconsistencies with other forms of regulation). As a matter of fact, rather blunt measures, such as a national budget for investments in hospital construction, proved to be far more effective than the sophisticated planning of health care facilities.

—A major problem appears to be the relationship between planning and financing. A crucial question is whether planning should precede financing or whether planning should follow financing decisions. In the present system, planning and financing decisions are made separately. Hence, none of the involved parties is fully responsible for the consequences of these decisions.

—The centrally regulated remuneration system of providers impedes flexibility and efficient allocation. Since the beginning of the 1980s, the remuneration system is the source of recurrent conflicts between government and health care providers.

Fourthly, there are *several problems with the present Dutch health insurance system*. All employees (and their families) earning an annual wage below 56,000 guilders (which equals about U.S.\$ 30,000 at 1994 exchange rate) are compulsorily insured by one of the 20 sickness funds. This also holds true after retirement. Except for a limited group of civil servants who have their own mandatory scheme, the remainder (about 34%) of the population, consisting mainly of self-employed and higher income groups, can voluntarily buy private health insurance. They can choose among one of the 40 competing private health insurers operating in the Netherlands. Finally, there is a compulsory national health insurance scheme (AWBZ) providing coverage for the whole population against catastrophic risks, such as hospital care exceeding one year, long-term nursing home care and long-term institutional care for mentally and physically handicapped persons. Without going into details, the many problems in the Dutch health insurance system are related to the existence of different insurance schemes with different premium structures, and the effects of an unregulated competitive market for private health insurance [2].

The above four arguments for reform were given in 1988 by the then center-right coalition cabinet. Two years later the new cabinet, a center-left coalition, endorsed the above arguments, particularly stressing the failure of the detailed government regulation of volume, prices and productive capacity. According to the government the major cause of this failure was that in fact only government was responsible for cost containment. All other parties—providers, insurers and patients—could oppose government regulation without committing themselves in any way. Government seriously doubted that in a system in which government is the only braking factor, in the long run

cost could be contained without jeopardizing the quality of care. Therefore, from the government's point of view, a major purpose of the proposed reform is to share the responsibility for cost containment in health care with the other parties, that is the providers, the insurers and the population.

2.2. Reform proposal

In March 1988 the Dutch government presented a proposal for a market-oriented reform of the health care sector [2]. This reform-proposal, that was based on the recommendations of the Dekker-committee (March 1987), was accepted by Parliament in the autumn of 1988. In 1990 the main lines of the reform proposal were also accepted by the new government [4]. Since then the reforms are referred to as 'Plan-Simons', named after the State Secretary for health, Mr Hans Simons. Although the main lines of the 1988-government reform proposal are the same as the 1990-proposal, the vocabulary is different, reflecting the social democratic background of the State Secretary. Key-words in the 1988-proposal of the then center-right coalition cabinet are competition, market and incentives. In the 1990-proposal of the center-left coalition cabinet these key-words are replaced by terms like shared responsibility between parties, consumer choice and decentralization. Nevertheless, the main lines of 'Plan-Simons' (1990) are the same as 'Plan-Dekker' (1987).

The proposed system can be best characterized as a compulsory national health insurance (known as 'basic insurance') based on regulated competition. Direct government control over prices and productive capacities will have to make way for regulated competition among insurers and among health care providers. Price cartels and regional cartels that have originated as the result of anticompetitive government regulation and self-regulation, will be broken down. The benefits package of the basic insurance will be very comprehensive and will consist of nearly all non-catastrophic risks (hospital, physician, drugs, physiotherapy and some dental care), catastrophic risks (nursing home care, long-term institutional care for mentally and physically handicapped persons) and health care related social welfare (old people's homes). Together these benefits account for about 95% of total expenditures on health care and social welfare. In addition to the benefits not included in the basic benefits package (i.e. 'supplemental' care) the population has to pay 10% of the total expenditures via user charges.

According to the government's proposal, all individuals will receive a subsidy to help them buy their compulsory health insurance from one of the competing insurers.* The subsidy will come from a Central

Fund which will be filled with mandatory income-related premiums, to be paid to the tax-collector. From the Central Fund the subsidy will go directly to the qualified insurer chosen by the insured. Qualified insurers are not allowed to refuse any insured in their working area and have to obey other procompetitive regulation. The maximum contract period is two years. So at least once every two years the consumer may choose another insurer. The subsidy per individual is independent of the chosen insurer and will be equal to the expected per capita health care costs within the risk group which the insured belongs to, minus a fixed amount, which is equal for all individuals. The deficit created by this deducted fixed amount, is met by a flat rate premium to be paid by the insured directly to the insurer of his or her choice. Figure 1 provides an overview of the proposed financing system.

An insurer is obliged to quote the same flat rate premium to all of his insureds who choose the same insurance contract. So the insurers' revenues will consist of the risk-adjusted per capita payments from the Central Fund, supplemented by the flat rate premiums to be paid by the insureds. The difference between the actual costs and the risk-adjusted payment will not be the same for all insurers and will be reflected in the flat rate premium that the competing insurers will quote. This creates the incentive for insurers to be efficient.

The insurers are expected to function as an intermediary between the consumer and the provider of care. To a high degree, insurers and providers will be free to negotiate the contractual terms. In the law the standardized benefits package of the basic insurance will not be described in terms of institutions like hospitals or nursing homes, but rather in terms of types of care. Any provider meeting certain quality standards is allowed to offer these services. This will greatly increase the possibilities for cost-effective substitution of care. Insurers will be allowed to selectively contract with providers and to offer different insurance contracts, as long as they provide coverage for all the types of care as described by law. The insurance contracts are different modalities of the standardized benefits package and may differ from each other only with respect to the *list of the contracted providers of care* and with respect to the *conditions* that have to be fulfilled in order to let the costs be covered by the insurer (for instance whether a referral card from a general practitioner is needed for the reimbursement of the cost of a specialist consultation). This flexibility in the description of the standardized benefits package should pave the way for setting up alternative health care delivery and insurance arrangements, such as health maintenance organizations and preferred provider organizations. Consumers will be free to choose among different insurers, picking the modality of the standardized benefits package they like the most. The premium paid will reflect the efficiency and cost-generating

*Besides compulsory health insurance people are free to buy supplemental health insurance (e.g. for a single-bed room). The premium for this voluntary supplemental insurance will not be regulated or subsidized.

behavior of the contracted health care providers. In this way it is expected that a situation will arise in which:

- insureds are being rewarded for choosing efficient insurers and choosing cost-effective providers of care;
- providers are being rewarded for effective and efficient provision of care;
- insurers, acting as intermediaries between insured consumers and contracted providers, are stimulated to contract efficient providers and to do market research for finding out about the consumers' preferences.

2.3. What has (not) been realized?

According to the 1988-proposal the reform should be realized by the end of 1992. The 1990-proposal extended the implementation period with three years. By mid 1994 however, it is clear that this time-schedule is far too optimistic. When we look at the two key-elements of the proposed reform, i.e. basic insurance and regulated competition, we may conclude that in 1994 both of them are not realized and that the perspectives for a *full* realization of the proposals are minimal. Nevertheless, in the early 1990s the

following steps toward a market-oriented health care have been realized:

- From 1993 sickness funds receive a partially *risk-adjusted per capita payment* from the Central Fund. In addition, each insured has to pay a flat rate premium to his sickness fund. Each sickness fund is free to determine its own flat rate premium. So the main lines of the proposed financing system (see Fig. 1) have been introduced in the sickness fund sector (62% of the population). This implies a radical change. During the period 1941–1991 all sickness funds received a full reimbursement of all their medical expenditures. Therefore sickness funds are now in a transition from administrative pay-offices to *risk-bearing enterprises*.
- From 1994 sickness funds have the option to *selectively contract* with physicians and pharmacists. This too implies a radical change. From 1941 sickness funds had the legal obligation to contract with each provider in their working area who wanted a contract.
- From 1992 sickness funds and private health insurers are allowed to negotiate *lower fees* than the officially approved fees. During the

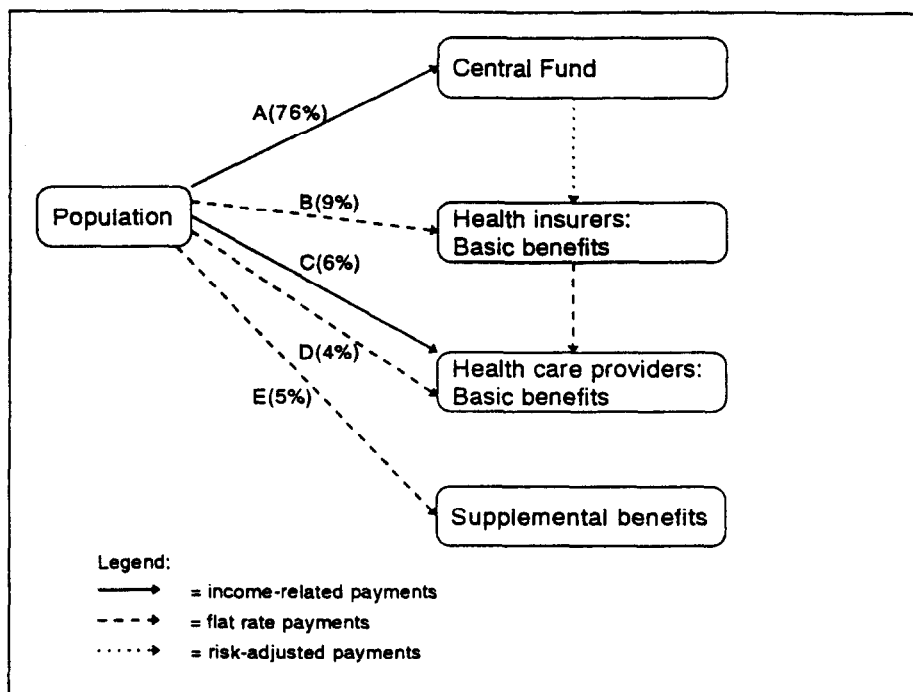


Fig. 1. Proposed health care financing scheme in the Netherlands. [According to the current (1993) proposals the basic benefits package should comprise 95% of total health care expenditures (i.e. $A + B + C + D = 95\%$). Two other restrictions are that 82% of the total health care expenditures should be covered by income-related payments ($A + C = 82\%$) and that (at least) 15% of the total health care expenditures should be paid directly to the provider of care ($C + D + E = 15\%$). Because the current income-related direct payments (primarily for institutional long-term care) are assumed to remain 6% of total health care costs ($C = 6\%$), the size of the payments as a percentage of total health care costs are as given in the figure.] Source: Ministry of Health, Letter to Parliament, 5 June 1992, Tweede Kamer 1991–1992, 22393 (20) (Note 'Modernisering zorgsector: Weloverwogen verder'), SDU, The Hague, 1992.

period 1982–1992 it was an economic offence to charge higher or lower fees than officially approved.

- From 1992 sickness funds are permitted to extend their regional working area and to gain members in other parts of the country. During the last decades it was practically impossible to do so because the required permission was usually not given. Now almost all sickness funds are working *nation-wide*.
- From 1992 several private health insurance companies got permission to establish a new sickness fund organization. This implies an *open entry to the sickness fund market*. During the period 1941–1991 no new sickness fund had been established (except by mergers of existing sickness funds).
- From 1992 sickness fund members have the option (at least) once every two years to choose another sickness fund. Each sickness fund has to accept each applicant who is eligible for the sickness fund insurance. This means (potential) competition among sickness funds based on the flat rate premium, quality, the contracted providers, service, responsiveness and reputation.
- From 1992 general practitioners (GPs) are *free to open a practice* wherever they want. Until 1992 GPs needed a license from the municipality to settle down into practice. The decision whether or not a new licence was available, was dependent on the number of GP's per capita in the municipality. If a new license was available, a profile was made with the desired characteristics of the new GP and candidates could apply for the position in an open procedure.

Looking at the above changes in legislation we may conclude that they are important steps towards a market-oriented health care and that these steps can be expected to fundamentally change the functioning and organization of the Dutch health care. In our opinion the point-of-no-return towards regulated competition on both the insurance and the provider market for *non-catastrophic risks* has been passed, especially because the above changes have been supported by both a center-left and a center-right coalition cabinet. As far as these types of care are concerned, there seems to be no way back to the old regulatory regime.

2.4. What effects?

For several reasons it is much too early for a full evaluation of the reforms so far. Firstly, major effects of the above mentioned changes in legislation cannot be expected at short notice. Health care is like an oil tanker in full speed, that cannot be turned immediately. Secondly, sickness fund organizations, which play a key role in the reform process, have a 50-year

history as regional administrative pay-offices and cannot be expected to become entrepreneurial, risk-bearing and consumer-oriented organizations just overnight. Their first reactions to the procompetitive measures were to engage in defensive mergers and to form (or better: to continue) all kinds of territorial and price cartels to eliminate or mitigate competition. Not surprisingly, in the first open enrollment period (which was in 1992) only a few insureds switched from one sickness fund to another. However, since the entry to the sickness fund market is open for (competing) private health insurers, the cartel behavior of sickness funds is substantially reduced. Therefore, in the future modest competition among sickness funds can be expected. Thirdly, because of the imperfection of the risk-adjusted capitation payments (see section 3.1) sickness funds are made responsible for only 3% of the differences between their actual expenditures in 1993 and the normative expenditure level on which the risk-adjusted capitation payments are based. The remaining 97% of their expenses is still retrospectively reimbursed. It is government's intention to enlarge the risk bearing percentage for the sickness funds together with improvements in the payment formula. Fourthly, despite the above mentioned changes, a substantial part of the old regulatory regime is still in force. e.g. with respect to hospital budgeting and hospital planning. This largely hinders the full development of innovative initiatives.

Although it is too early for a complete evaluation, the following effects of the reforms are worth mentioning:

- As the result of only the discussion about a more market-oriented health care system, we see a huge increase during the early 1990s in the activities concerning quality improvement and quality assurance. Several national conferences on the quality of care were organized with official representatives of the physicians, the hospitals, the insurers and the consumers. The association of GPs has developed some 50 protocols for frequently occurring medical complaints. The specialists are organizing quality assurance site visits in hospitals. The dentists are developing protocols. All associations of medical professions are discussing or developing a system of re-registration (say each 5 years) or certification. In the last three years we have seen more activities concerning quality assurance and quality improvement than in the 20 years before. Probably the main driving force for all these quality-improving activities is the idea that quality of care will be the major issue in a competitive health care system. Insurers who (selectively) contract providers of care, will be primarily interested, next to price, in good quality and good services, because their insureds are interested in

that. Providers of care might also fear that if they themselves do not develop criteria for good quality, insurers will do it.

- In the early 1990s we see increasing investments in cost-accounting systems by hospitals and other health care institutions. Most institutions are in a process of gradual transition from input- to output-pricing. At present, most prices in health care are administrative prices with no relation to the real costs of the services provided. These administrative prices provide misleading signals to all parties. Knowledge about the nature and real costs of the different services is necessary in a more competitive market. It prevents providers of care from selling products below costs (i.e. with losses) and it enables insurers to be prudent buyers of care and to make the appropriate trade-off between products that are substitutes for each other.
- Since the early 1990s we see a total reorganization of the internal structure of sickness funds. They are preparing themselves for their new role, i.e. being an intermediary between consumers and providers of care in a competitive environment. Administration-oriented chief-executives who go into (early) retirement are replaced by entrepreneurial, market-oriented managers. The service to their members is being improved, like better opening hours and mobile offices. In the previous decades, when sickness funds had their regional monopoly, there was no need for these types of activities.
- In anticipation of the proposed annulment of the difference between sickness fund insureds and privately insureds, we see an integration of sickness funds and private health insurers in the form of mergers, holdings and other forms of cooperation. Both parties have their own arguments to do so. Sickness funds hope to compensate their lack of experience with marketing, actuarial calculations and entrepreneurship in a competitive environment. Furthermore sickness funds fear that private health insurers—their future competitors—have a competitive advantage because of their better image, because they sell group insurance and because they combine health insurance with other insurance products (like automobile, property and life insurance) and other financial services ('one-counter shopping'). A major argument for private health insurers to integrate with sickness funds is to sell—via health insurance—other insurance products and financial services. Health insurance is characterized by a high frequency of contacts between insurers and insureds, which provide ample opportunities to sell other products. Another important reason for integration is the regionally concentrated mem-

bership of sickness funds, which is crucial for obtaining sufficient bargaining power at a regional level. Finally, the integration with sickness funds offers private health insurers the opportunity to benefit from their greater experience in contracting with health care providers. Most industry observers expect that as a result of these consolidations within a few years there will be left only 10 to 15 national chains of health insurers, serving a total population of about 15 million people.

- In the early 1990s we see several innovative activities. For example, sickness funds have broken the price cartel of providers of some medical devices. Subsequently, prices went down by a quarter to a third. Insurers are developing mail order firms as an alternative distribution method of pharmaceuticals. All kinds of electronic data interchange (EDI) projects are being developed, aimed at a better cooperation among providers and a more efficient cooperation between providers and insurers.
- Finally, we see an increasing number of activities of consumer- and patient-organizations. General consumer-organizations are involved in projects to better inform the population e.g. about health insurance conditions and choice of sickness funds. Consumer guides increasingly publish articles about health care. Hundreds of patient-organizations have organized themselves in a national organization in order to become an effective interest group.

2.5. *Reasons for 'slow' progress*

Although the implementation of the reforms is far behind schedule, from a historic point of view radical changes have been realized within a relatively short period of time. Take, for example, the abolition of the contract obligation for sickness funds. During the first decades of this century there has been a long conflict between sickness funds and physicians about whether or not sickness funds should have the option to selectively contract with physicians. Ultimately the physicians won this conflict and from 1941 (until 1991) sickness funds had the legal obligation to enter into a uniform contract with each physician established in their working area. Though creating the opportunity for selective contracting is another thing as putting it into practice, it certainly is a fundamental change from a historic point of view.

Those who are familiar with the history of the Dutch health care policy, probably have foreseen that the government's time-schedule was far too optimistic. On the other hand, if government would have announced a more realistic time-schedule, say 10–15 years, probably nothing would have been changed until now. As discussed before, the credible threat of competition has generated an enormous change in conduct of all parties involved.

What are the reasons for the 'slow' progress of the reforms? At least four reasons can be mentioned. Firstly, the *resistance from interest groups* who have powerful lobbies. Dutch health policy is characterized by a diffuse decision-making structure without a clear cut center of power. Hence, the government cannot impose changes without the consent of major interest groups, such as the organizations of physicians, health insurers, employers and employees [5]. The *employers* oppose Plan-Simons because they are afraid that a compulsory national health insurance with a broad benefits package would increase total health care costs (because of moral hazard). Because the premium is partly paid by the employers, increases in health expenditures would increase their labor costs and thereby deteriorate their international market position. The *insurers* oppose Plan-Simons because they strongly oppose a system of risk-adjusted capitation payments from the Central Fund and other government regulation that reduces their entrepreneurial freedom. The *physicians* oppose Plan-Simons because they find the functional description of the benefits package too general, leaving too much room for competition among providers of care.

A second reason for the slow progress of the reform is that the chosen implementation strategy has triggered growing *political opposition*. The Dutch government is traditionally composed of changing coalitions of at least two political parties. The term of government is four years at maximum, which is far too short to implement comprehensive health care reforms. As a consequence, viable reform proposals must be reasonably acceptable to all major political parties. From a political point of view the two key elements of the reforms are well-balanced. The basic insurance is attractive for the political left wing; regulated competition is attractive for the political right wing. This political balance of the reform proposal probably explains why both a center-right and a center-left coalition cabinet supported the reform proposal. Because of the complexity of the reforms, they have to be implemented step by step. But the step-by-step approach itself introduces a new complexity. In order to be politically acceptable, each step has to be as balanced as the whole reform proposal. According to the perception of the politicians this was not the case. The political right wing, supported by the employers, strongly opposed some steps because in their opinion more emphasis was put on the implementation of the basic insurance than on cost containment efforts. Another political problem is that the introduction of a basic insurance is likely to generate negative income-redistribution effects for relatively young and healthy middle-class people with private health insurance.

Thirdly, there is *no urgent need for a quick reform*. In a sense the reorganization of the health care system

is aimed at anticipating the 'luxury' problems of the next century: an advancing medical technology, an ageing population, and an expected increase of the share of gross national product going to health care. From a macro-economic point of view a step by step reform of the health care system can be afforded.

Fourthly, the *technical* complexity of the reforms is very high and has seriously been underestimated. Several problems relate to the process of implementation, such as the coordination of overlapping and sometimes inconsistent new and old regulations, the avoidance of substantial negative wealth effects for parts of the population, and the fine tuning with complex EC regulations. Another important problem concerns the content and the appropriate definition of the benefits that should be covered by the basic insurance. In addition, the problem of maintaining a workable competitive health care system should be addressed, which requires the development and enforcing of an effective anti-cartel policy in health care [3]. Probably the two most vexing problems, however, are related to the proposed role of the insurer as a third-party purchaser of health care on behalf of the consumer. The first problem is how to prevent *cream skimming* (or preferred risk selection) in a competitive health insurance market where insurers receive a risk-adjusted capitation payment. The second problem is concerned with the question how to ensure that the competing insurers will not *skimp the quality* of some types of (long-term) care.

3. SKIMMING AND SKIMPING

We will further concentrate on the two last mentioned problems, which can shortly be referred to as: *skimming* and *skimping*. The reason to focus on these problems is that they are not, like most of the other problems, specific for the Dutch reforms. *Skimming* and *skimping* are universal problems that might occur in any competitive market for health insurance (or: third-party purchasing of health care)* with a regulated premium structure.

3.1. Cream skimming

An important aspect of government regulation in the reformed Dutch health care system is the determination of the risk-adjusted capitation payments that the insurers receive from the Central Fund. The risk-adjusted payment per insured is dependent on the risk category to which the insured belongs. From 1993 all sickness funds in the Netherlands receive such payments for most of the non-catastrophic risks (hospital care, physician, drugs, physiotherapy and some dental care). In 1993 the per capita payments depend on the risk-adjusters age and gender. However, these risk categories appear to be much too heterogeneous. Sickness funds that have relatively (many) unhealthy insureds per age-gender group, receive too low payments. For example, the regional sickness fund in Amsterdam claims that in Amster-

*In this section we will consider the terms 'insurer' and 'third-party purchaser of health care' as synonyms.

dam there are—per age-gender group—relatively many AIDS-patients, drug addicts and people in the low socio-economic groups ('big-city problems').

A major disadvantage of too heterogeneous risk categories is that cream skimming may be very advantageous to the insurers. By cream skimming (or preferred risk selection) we understand selection by the insurer of so-called preferred risks, i.e. those insureds for whom the insurer considers the risk-adjusted per capita payment to be (far) above the expected cost level. If age and gender are the only risk-adjusters, cream skimming can be very profitable. From a previous study [6] we conclude that the 10% of the population with the highest non-catastrophic health expenditures (hospital, physicians, pharmaceuticals) in any year can be predicted to have per capita expenditures four years later that are on average nearly double the per capita expenditures within their age-gender group. So based on its own claims records each insurer can easily distinguish high-risk individuals.*

The adverse effects of cream skimming are three-fold. Firstly, for the chronically ill access to good health care may be hindered. Insurers will try to attract preferred risks and deter non-preferred risks. If the capitation payment system does not adequately compensate for health status, insurers might prefer not to contract with providers of care who have a good reputation of treating patients with AIDS, cancer, diabetes or high blood pressure, for instance, because the insurers do not want the patients who are attracted by these providers to be their subscribers. Secondly, i.e. the case of an insufficiently refined payment system *efficient* insurers may be driven out of the market by *inefficient* insurers who are successful in cream skimming. Thirdly, whilst individual insurers can gain by cream skimming, they only shift the costs to others, so there is no social gain. In fact, because of the costs involved in the process of cream skimming, there are only social welfare losses. In sum, if cream skimming takes place, it is counterproductive with respect to three supposedly positive effects of competition, i.e. improving the quality and efficiency of care and becoming more responsive to the consumers' preferences.

A lesson that can be learned from the Dutch reforms is that a system of sufficiently refined risk-adjusted capitation payments is a *necessary* condition in order to let the reforms be successful. In 1993 the payments that sickness funds receive are only dependent on age and gender. In order to reduce the above mentioned disadvantages of an insufficiently refined payment system, the Dutch government introduced a system of risk-sharing between the sickness funds and the Central Fund. In 1993 an individual sickness fund

is responsible for only 3% of the difference between its actual expenses and the predicted expenses based on age and gender. However, as long as the remaining 97% is retrospectively reimbursed, government does not want to give up the old tools for cost containment. Sickness funds, in turn, reproach government for providing them with financial risks without giving them sufficient tools for cost containment. This vicious circle can only be broken by the introduction of a sufficiently refined payment system. Therefore, a workable system of sufficiently refined risk-adjusted capitation payments is a *necessary* condition in order to reap the fruits of a competitive health insurance market with a regulated premium structure. Based on research findings [7] we are optimistic about the *technical* possibilities of finding a sufficiently refined capitation payment formula for the *non-catastrophic* risks. However, the implementation of such a capitation payment system in practice requires a considerable effort in data collection, research and administrative organization. In the first 5 years of the reforms the Dutch government has severely underestimated these issues.

We cannot draw any conclusion about the technical (im)possibility of finding a sufficiently refined capitation payment formula for the *catastrophic* risks, like long-term nursing home care and long-term institutional care for mentally and physically handicapped persons. Although age and gender, together with some straightforward indicators like 'whether or not being mentally or physically handicapped', will probably yield higher proportions of predicted variance for individual catastrophic expenditures than for non-catastrophic expenditures, the *maximum* predictable variance probably also is much higher for catastrophic than for non-catastrophic expenditures. As far as we know there has been no empirical study on risk-adjusted capitation payment formulas for catastrophic risks dealing with questions like: which risk-adjusters should be included? And what are the potential expected losses and profits for several subgroups per set of risk-adjusters? In the Netherlands, until now, the relevant data are lacking for performing even an explorative study in this area.

3.2. Quality skimming

A second major issue with respect to a competitive market for health insurance is the question whether or not competing insurers will be inclined to skimp the quality of some types of (long-term) care in order to reduce costs. By 'quality skimming' we mean *the reduction of the quality of care to a level which is below the minimum level that is acceptable to society*. It is important to understand that not *every* reduction in quality is unacceptable to society. Take, for example, a certain disease for which an effective treatment A exists with a high, but reasonable price. Suppose there is also a treatment B which is a little bit more effective than A, but its price is the tenfold of the price of A. Then, in order to get the best value for money,

*For an overview of strategies that can be pursued by insurers to perform cream skimming as well as for measures government can take to prevent cream skimming, see Ref. [7].

society could decide that everybody should have access to treatment A, but not to B. (For an example of such a choice, see Eddy [8].) So a marginal reduction of quality, in order to prevent a Cadillac-only style of care which society cannot afford, is not considered as 'quality skimping'. In fact, such a reduction improves society's overall welfare.

In this section we will discuss the 'quality skimping' problem under the assumption that there is a workable system of risk-adjusted capitation payments such that the cream skimming problem is sufficiently solved. Further we assume that, according to the Dutch reform proposal, competing insurers receive risk-adjusted payments for a broad benefits package including both non-catastrophic and catastrophic risks, that they are allowed to selectively contract with competing providers of care and that there is an effective competition (or: antitrust) policy to ensure workable competition on the insurance market as well as on the provider market [3].

There are several arguments to expect that the proposed type of a regulated competitive market for health insurance might increase the quality of care (both technical quality and service quality). Firstly, if the consumer is not satisfied, he or she will choose another insurance contract or another insurer. A single well documented case of an insurer contracting with a provider who delivers poor quality care, can severely damage his reputation followed by a dramatic drop in membership. Insurers will have a great stake in developing and maintaining a good reputation. Therefore it is to be expected that insurers will primarily be interested in good quality when selecting and contracting providers. Of course, *given* a certain level of sufficient quality, they will be interested in the least costly alternative.

Secondly, in a competitive market more information on the quality of care may become available than in a non-competitive market, and the availability of public information on quality will stimulate the providers of care to improve quality. Insurers will demand information on quality or they will collect it themselves in order to find out high quality providers. Consumer organizations will also provide the consumers with information enabling them to make the right choices. As we have seen in section 2.4, even the discussion about a competitive market may give rise to systems of quality assurance and certification. Consumers probably prefer certified providers, inducing insurers to conclude contracts with them. Therefore, providers of care who fail to get approval from the institute of certification will have difficulties obtaining a contract with an insurer. In conjunction with

necessary government regulation*, this kind of market and self-regulation may improve quality of care.

A third reason to expect that a competitive health insurance market might increase quality, is that good quality of care may reduce future medical expenditures. As Enthoven [10] states: "The first and most important way to control cost while maintaining quality is to control quality. That is, to do it right the first time. The right diagnosis made promptly and the appropriate procedure done by a person who is proficient and experienced and good at it, produces both the best quality result and the most economical result. In medical care quality and economy usually go hand in hand". Therefore, one of the insurers' tools to contain costs is to stimulate the provision of good quality of care.

In the proposed type of a regulated competitive health insurance market, pressure from the demand side urges insurers to act as an agent in the interest of the consumer. In general, insurers can expand their market share by being responsive to consumers' preferences and by contracting with efficient providers who deliver good quality care. For types of care of which a large percentage of the population consider themselves as *potential* users, the pressure from the demand side is likely to be sufficient to guarantee good quality care. For example, although a small percentage of the population is hospitalized during a year, most people realize that after a traffic accident they might get hospitalized, and therefore are interested in good quality hospital care. So an insurer who develops the reputation of contracting inferior hospital care, will probably lose a substantial part of his market share. However, the question arises whether the above arguments are valid for *all* types of care. Are there types of (long-term) care for which the insurer could skimp the quality without losing noticeable market share? The following two categories of care can be discerned for which quality skimping may become a problem because of insufficient pressure from the demand side:

1. Care that is often used by persons who do not have the (mental) ability to make a trade-off between price and quality;
2. Care that most people are not interested in because they have a very low probability of needing it during the next contract period.

The extent to which quality skimping may be a problem also depends on the extent to which an insurer is able to discriminate relevant types of care. If the relevant type of care is delivered by a 'general' provider who delivers many types of care (e.g. a general practitioner or a general hospital), it might be a hard job for an insurer to contract inferior quality for one or two types of care and good quality for all the other types of care delivered by the same provider. Therefore, the problem of quality skimping may be particularly relevant in cases where specific types of care are delivered by specialized pro-

*The Dutch government intends to specify minimum requirements with respect to the quality of care. Furthermore, as suggested by Enthoven [9], government should require the development of a national system of standard reporting of health outcomes and other indicators of quality.

professionals or institutions. In the following sections, we will examine the above two categories of care more closely.

3.2.1. Inability to make choices. For types of (long-term) care that are often used by persons who do not have the (mental) ability to make a trade-off between price and quality, the above arguments concerning a well-informed consumer choosing an appropriate health plan—voting with his feet—might not be valid. Examples are care for the mentally defectives, care for demented people, and care received by people who are not able to express their preferences. Of course, not *all* consumers need to be well-informed and critical decision-makers in order to favorably influence insurers' behavior (and thereby the providers' behavior). If those who, for whatever reason, do not make a trade-off between price and quality, only constitute a minority of the users of that type of care, they might be 'free riders' and might benefit from the critical consumer behavior of others. However, the free rider argument may not apply, for example, to long-term institutional care for the mentally handicapped. Skimping the quality of care for mentally defectives who receive long-term institutional care can yield high financial rewards. A reduction of 5% of the cost for such a patient equals the average total health care expenditure for an average person. There are several aspects of quality that insurers could subtly influence via selectively contracting with providers, like the professional quality of the physicians, the number and quality of the specialized nurses and other personnel, waiting lists, geographical access (e.g. distance), the hotel functions (e.g. number of patients per room) and other services.

In order to reduce the chance of skimping the quality of care that is often used by persons who do not have the (mental) ability to make a trade-off between price and quality, major decisions about health care could be made by an agent who is watchful of that person's interest, for instance a family-member or a close-friend. For people who have no relatives or others who are prepared to serve as an agent, society could appoint professional agents (or agency organizations). For instance, specialized licensed case-managers could be appointed to take care of such a person's health care matters, comparable to the guardian who is responsible for looking after that person's property. Furthermore, government could determine detailed requirements concerning the quality of care for these types of services. As an ultimatum remedy government could take away the insurers' financial incentive for quality skimping by providing full retrospective reimbursement of the cost of care.

3.2.2. Large proportion of indifferent low-risk users. Quality skimping may also occur if a large proportion of the population behave as if they are indifferent about the quality of specific categories of care for which they have a very low probability of needing it

during the next contract period. The indifferent attitude may be caused by the fact that 'myopic' individuals simply neglect the low 'objective' probability to need it, so that their 'subjective' probability is zero. Besides, their indifference may also be caused by the fact that the search costs of finding out quality differences are likely to exceed the expected benefits, because the expected benefits are presumably small due to the low probability of needing that type of care. The indifferent attitude of a substantial number of low-risk users towards the quality of specific types of care, may induce insurers to skimp the quality of that care without losing noticeable market share.

The following simple example may elucidate this argument. Suppose that for a specific type of care X, the total number of potential users N can be divided into a small group of high-risk individuals (N_H) whose probability of using X during the next contract period is unity ($P_H = 1$), and a large group of low-risk individuals (N_L), whose probability of using X during the next contract period is very low ($0 < P_L < 0.01$). Next, assume that conditional on using X, all users have the same costs c . If E denotes the total expenditures on X, then the total expenditures of the high-risk and low-risk utilizers can be defined as $E_H = c \cdot N_H$ and $E_L = c \cdot P_L \cdot N_L$ respectively. Suppose low-risk individuals behave as if their probability of using X is zero, so that only the high-risk individuals are interested in the quality of X. Thus the only pressure from the demand side to contract and deliver good quality care X comes from N_H . Then insurers will not lose noticeable market share if they use the compensation they receive for the expected costs of the low-risk individuals (E_L), for investments in other types of care or for reducing the premium. Hence, there is an incentive for insurers to skimp the quality of X.

Whether or not quality skimping will be a serious problem, however, crucially depends on the fraction of all expenditures on X that is intended to be spent on the low-risk group: E_L/E . The problem of quality skimping increases as this fraction increases. This conclusion can be illustrated by the following numerical example. Assume that 0.2% of the population has probability one to use a certain expensive type of care X during the next contract period, and let us begin by assuming that the other 99.8% of the population has an objective probability of zero ($P_L = 0$). With respect to X one cannot speak anymore of 'insurance', because there is no uncertainty anymore. Furthermore the risk-adjusted capitation payments to the insurers for the 0.2% 'certain' users can be considered as a kind of 'client-tied budget'. The insurers therefore are supposed to function more as a 'specialized case-manager' or a 'prudent buyer of care' than as an insurer. One might expect that a few 'insurers' will specialize in this submarket and that the patient-organizations or organizations of parents or other agents of the patients are in very close relation with these specialized 'insurers'. This might stimulate the

Table 1. The number of low-risk users as a fraction of all users, for different probabilities

Probability of low-risk individuals (P_L)	Total population: $N_L + N_H = 1,000,000$ Number of low-risk individuals: $N_L = 998,000$ Number of high-risk individuals: $N_H = 2000$			Low-risk users as a fraction of all users (E_L/E)*
	Expected number of low-risk users ($P_L \cdot N_L$)	Expected number of high-risk users ($P_H \cdot N_H = N_H$)	Expected total number of users ($P_L \cdot N_L + N_H$)	
0	0	2000	2000	0
0.00001	9.98	2000	2009.98	0.005
0.0001	99.8	2000	2099.8	0.05
0.001	998	2000	2998	0.33
0.01	9980	2000	11980	0.83

*Notice that $E_L/E = (P_L \cdot N_L)/(P_L \cdot N_L + N_H)$ because all users are assumed to have the same costs (c).

provision of good quality care. The fact that 99.8% of the population might not have any interest in good quality of X is not a problem because the insurers do not receive any payment for them to be spent on X (E_L is zero because P_L is zero).

However, a problem may arise if the 99.8% of the population consider themselves to be 'certain' non-users (i.e. their subjective probability is zero) and therefore have no interest in (insurance contracts providing access to) good quality of X, but their objective probability to use X in the next contract period is positive ($P_L > 0$). In this situation, insurers receive a compensation for the expected expenditures on X of the 99.8% of low-risk users (E_L), who are not interested in (insurance contracts providing access to) good quality of X because their subjective probability is zero. The chance that insurers will skimp the quality of X depends on the fraction of the total amount of money intended to be spent on this type of care, that is given to the insurers as a part of the risk-adjusted payments for the majority of the population (E_L/E). If this fraction is small, then the 'certain' users form a majority of the users of this type of care and therefore—assuming that the 'certain' users force the insurers to contract providers that deliver good quality—the chance on quality skimming will be small. In fact, the low-risk users than behave as free-riders. However, if the fraction is large, insurers' behavior might be more influenced by the indifferent low-risk majority than by the high-interest minority of 'certain' users. From Table 1 we conclude that if the objective probability (P_L) for the majority of the population is equal to 0.00001, the fraction of the total amount to be spent on this type of care that

will be allocated to them is 0.005 (again, assuming that the costs per user are the same for all users), which is negligibly small. However, when the objective probability equals 0.001 (resp. 0.01) the fraction of the amount that goes to them increases to 0.33 (resp. 0.83). Table 2 provides a numerical example of how, for a given objective probability for the low-risk individuals ($P_L = 0.0001$), the fraction of the amount that goes to them increases as the percentage high-risk users in the population ($100 \cdot N_H/N$) decreases. If the percentage of high-risk users is 2% the impact of low-risk users on insurer behavior will be negligible, since E_L/E is only 0.005. However, for very small values of N_H the fraction E_L/E approaches unity, in which case the lack of demand pressure from the low-risk users may become a problem.

The problem of quality skimming does not only depend on the relative weight of the expenditures of the low-risk group (E_L/E), but also on the absolute magnitude of E_L . If the absolute level of E_L is low, the financial rewards of quality skimming are small too. Therefore, the chance that an insurer will take the risk of incurring a bad reputation by skimming the quality will be lower, the lower E_L . We conclude that incentives for quality skimming are greater the higher E_L/E and the higher E_L , keeping all other things equal. Given that E_L/E equals $P_L \cdot N_L/(P_L \cdot N_L + N_H)$ and that E_L equals $c \cdot P_L \cdot N_L$, this implies that the problem of quality skimming is greater, the higher P_L (influencing both E_L/E and E_L), the higher c and the lower N_H .

Examples of types of care for which insurers may have an incentive to skimp the quality are long-term institutional care for physically handicapped people,

Table 2. The number of low-risk users as a fraction of all users, for different percentages of high-risk users in the population (given that $P_L = 0.0001$ and $P_H = 1$)

Percentage of high risk users in the population ($100 \cdot N_H/N$)	Total population $N = N_L + N_H = 1,000,000$			Low-risk users as a fraction of all users (E_L/E)*
	Expected number of low-risk users ($P_L \cdot N_L$)	Expected number of high-risk users ($P_H \cdot N_H = N_H$)	Expected total number of users ($P_L \cdot N_L + N_H$)	
2	98	20,000	20,098	0.005
0.2	99.8	2000	2099.8	0.05
0.02	99.98	200	299.98	0.33
0.002	99.998	20	119.998	0.83
0	100	0	100	1.0

*Notice that $E_L/E = (P_L \cdot N_L)/(P_L \cdot N_L + N_H)$ because all users are assumed to have the same costs (c).

institutional care for mental defectives, institutional care for chronic psychiatric patients, long-term care for alcohol and drug addicts and long-term nursing home care. These expensive benefits are characterized by a dichotomous probability density function: a large proportion of the population with a very low probability of using those benefits during the next contract period, and a small proportion of the population consisting of almost certain users. Furthermore, these types of care are delivered by providers who are specialized in this type of care. In these cases, where there is a very small fraction of the population who are certain users of very expensive care, where a substantial part of the population is a potential user ($P_L > 0$) and the overwhelming majority of the potential users consider themselves to be certain non-users, one may wonder whether there is sufficient pressure from the demand side to influence the insurers in such a way that they will not skimp the quality of these types of care. Empirical data are lacking to draw specific conclusions for different types of care.

There are several ways government could intervene to reduce the problem of quality skimming. Firstly, government and consumer organizations could reduce search costs and consumer myopia by providing information about the relevance of specific types of care and about the objective probability of needing it. Secondly, government could certify insurance contracts and could require that any insurance contract provides coverage for at least certain (specified) quality of care. Finally, government could take away the insurers' financial incentives for quality skimming by providing full retrospective reimbursement of the cost of care.

3.2.3. Different regulatory regimes. Although the last mentioned tool is very effective in preventing quality skimming, it also takes away the insurers financial incentives for an efficient provision and cost-effective substitution of these types of care. This implies a totally different regulatory regime for these types of services compared with the 'regulated competition'-model as proposed by the Dutch government. Therefore, if government decides to reimburse the insurers for the total costs of certain types of care, new questions come up like:

- who should be responsible for efficiency with respect to these types of care?
- should there be competition among the providers of these types of care?
- where exactly should we draw the boundary between types of care for which the insurers bear and do not bear financial responsibility?
- and how can we prevent that insurers encourage substitution of expensive care for which they do not bear any financial responsibility, for less expensive care for which they do bear financial responsibility (or that they block substitution the other way around)?

4. CONCLUSION AND DISCUSSION

In this paper we have presented an overview of 5 years of market-oriented reforms of the Dutch health care system. Although major changes have already taken place, the implementation process will take much longer than the 5 years as planned by government, because of resistance from interest groups and the technical and political complexity of the reforms. Most technical and political problems are specific for the Dutch health care system. Two major technical problems, however, seem to be relevant for all countries considering a regulated competitive market for third-party purchasing of health care. These problems can be labeled as cream skimming and quality skimming. In drawing conclusions with respect to these problems it appears to be essential to make a distinction between catastrophic risks and non-catastrophic risks.

Crucial to the solution of cream skimming is the development of a system of sufficiently refined risk-adjusted capitation payments to health insurers. Based on evidence from empirical research we are optimistic about the feasibility of a sufficiently refined capitation payment formula for the *non-catastrophic* risks (like hospital care, physician services and drugs). However, the practical implementation of such a payment system requires a considerable effort in data collection, research and administrative organization. Because empirical evidence is lacking, we are less confident about the feasibility of an adequate capitation payment formula for *catastrophic* risks (like several forms of expensive long-term care). At present in the Netherlands the necessary data about catastrophic risks for the construction of an adequate formula are virtually nonexistent. Hence, there is no prospect, at least within the next five years, for a workable system of risk-adjusted capitation payments for catastrophic risks.

Those who are not convinced of the potential solutions of the cream skimming problem, may favor the combination of a monopsonistic market for health insurance and a competitive provider market. However, one should realize that the prevention of cream-skimming is not only relevant for a competitive health insurance market, but also for a competitive provider market, where competing groups of providers receive an ex-ante determined capitation payment to provide (or to purchase) a defined set of services to a defined population group, like for instance the GP-fundholders in the U.K. [11]. Whether cream skimming will be more or less of a problem in a regulated competitive insurance market than in a competitive provider market, remains an open question. On the one hand, providers have more opportunities for cream skimming than insurers because they probably have better information about the riskiness of their patients and because they can use more subtle tools ('My colleague around the corner is very specialized in treating your disease').

On the other hand, providers may be more reluctant to skim the cream than insurers because of more powerful ethical restraints to do so. Therefore, answering the question how to prevent cream skimming in a regulated competitive health care market really provides a challenge to all countries that intend or implement market-oriented reforms in health care.

A second major problem that is relevant for all countries considering market-oriented reforms, is to find a way to counteract incentives for skimming the quality of specific types of care. By 'quality skimming' we mean the reduction of the quality of care to a level which is below the minimum level that is acceptable to society. We have mentioned several arguments why we expect that a regulated competitive market for health insurance may increase the quality of care, especially for the non-catastrophic risks. Insurers have great interest in developing and maintaining a good reputation, consumers may vote with their feet, the demand for information will rise and will probably result in the establishment of certification institutes and systems of accreditation. Given the extent of informational asymmetry and the complexity of information about the different aspects of quality of care, government still has to play an important role. To safeguard a minimum level of quality, government should specify minimum requirements with respect to the quality of care. In addition, government should require the development of a national system of standard reporting of health outcomes and other indicators of quality, to create the opportunity to compare standardized information about the quality of care. However we have argued that the above arguments may not hold for two categories of care: (1) care that is regularly used by persons who do not have the (mental) ability to make a trade-off between price and quality; and (2) care of which many people are indifferent about its quality because they ignore the low but positive probability of needing it during the next contract period. Examples of these types of care are: institutional care for mental defectives, long-term institutional care for physically handicapped people, chronic psychiatric care, long-term care for alcohol and drug addicts and long term nursing home care. Most of these types of care can be labeled as catastrophic risks.

The preceding analysis provides strong arguments for having different regulatory regimes for non-catastrophic and some of the catastrophic risks, at least during the implementation process of health care reforms like those in the Netherlands. Firstly, the prospect for a workable system of risk-adjusted payments for the catastrophic risks is highly uncertain. Without a workable payment system, cream skimming is very profitable with respect to these types of care. As a result of cream skimming the access to good health for the chronically ill may be hindered. Furthermore, efficient insurers might be driven out of the market by inefficient insurers who are successful in cream skimming. Secondly, even if a workable

system of risk-adjusted payments for catastrophic risks can be developed, the problem of quality skimming is much more severe for catastrophic risks than for non-catastrophic risks.

Consequently, countries that are considering a competitive market for third-party purchasing of health care, should primarily focus their efforts on the market for non-catastrophic risks, like hospital care, physician services and pharmaceuticals. If in due time sufficient favorable experience with non-catastrophic risks will be accumulated, a gradual extension of the benefits package with some catastrophic risks could be considered. In 1988 the Dutch government proposed the introduction of a competitive health insurance market for both non-catastrophic and catastrophic risks. After 5 years of health care reforms in the Netherlands, there is a growing support to confine the implementation of the reforms to the non-catastrophic risks and to retain the old regulatory regime for the catastrophic risks (AWBZ). The price of this more cautious approach would be the continuation of the different ways of financing of non-catastrophic and catastrophic risks. Consequently, there will be no financial incentive for a cost-effective substitution of the two types of care. In drawing (and redrawing) the exact boundaries between the two regulatory regimes, the expected benefits of cost-effective substitution should therefore be weighted against the potential harm caused by cream skimming and quality skimming.

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