Healthcare procurement as the ultimate remedy against rising cost of healthcare?

Considering performance based healthcare procurement as a means to restore information to the healthcare market

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Abstract

Due to fast rising cost, healthcare is currently a dominant topic on the governmental agenda in most modern Western countries. Different initiatives are developed in order to reduce the cost and increase the efficiency of health services. All these initiatives relate to the increase of competition on the healthcare market. However, the benefits of competition can only be realized when certain preconditions are fulfilled. The provision of high quality information is one of the critical success factors for fair competition among healthcare providers. A careful consideration of the cost and benefits of performance based healthcare procurement at the *integrated care pathway* level shows that this can be used to restore the relevant information to the healthcare market as long as a set of requirements is met. However, as transparency of information is only one of the preconditions for fair competition, performance based procurement of health services does not guarantee the reduction of cost and the increase of the efficiency of health services.

healthcare procurement, integrated care pathways, competition, healthcare market, healthcare outline agreement, information management

1 Introduction

The expenditures in the healthcare sector has been rising rapidly over the past decades. In the Netherlands¹, healthcare cost rises annually with on average 5.5% percent per year, which is much more than the average GDP (Gross Domestic Product) growth. Comparable trends are present in most other western countries. The increasing cost of healthcare has the consequence that healthcare expenditures take an increasing part of the budget of the Dutch government. In 2010, 87.1 (compared to 17.3 billion euros in 1980) billion euros was spend on healthcare which is 12 percent of our Gross Domestic Product (Annema et al., 2012)

This paper discovers the capabilities of per-

formance based healthcare procurement as a means for the reduction of healthcare cost by the facilitation of fair competition.

1.1 Developments in healthcare

Several developments form the basis for the increasing cost of health services. Firstly, the quality of health services increased seriously over the past decades due to high investments in product innovation. This had the consequence that health services became more expensive. Process innovation at the same time lacked behind. Healthcare providers were not able to realize significant improvements in the efficiency of treatments that would neutralize the increased cost of health services.

The increased quality of care, the higher

¹ The situation in the Netherlands is taken as an example for the current situation in the healthcare sector in many Western countries.

life expectancy and the aging phenomenon led to a fast increase in the demand for health services. The increased life expectancy is partly the result of the increased quality of health services (Strauss et al., 2006; Stout and Crawford, 1988). These two trends together led to the current untenable situation in healthcare in terms of cost. This is demonstrated by the following formula as the total cost of the healthcare (C_{total}) sector are a simple multiplication of the cost per treatment $\overline{C_{treatment}}$ times the number of treatments Q

$$C_{total} = \overline{C_{treatment}} * Q$$

One can imagine that the total cost of the healthcare sector may increase rapidly when the terms at the right hand side of the equality sign increase. Figure 1 gives the total healthcare expenditures in the Netherlands and the healthcare expenditures per capita over the period from 1995 until 2010.

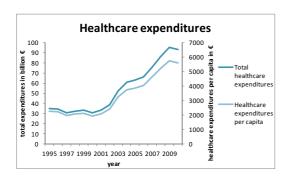


Figure 1: Healthcare expenditures in the Netherlands (based on (WHO, 2012))

1.2 Initiatives for change

The current situation in the healthcare sector of many Western countries led to the development of initiatives which have the purpose to reduce the cost and increase the efficiency of health services. This concerns the introduction of more competition, integrated care pathways, Pay for Performance and demand driven healthcare.

Competition Competition is seen as an ultimate means for the realization of cost reduction (Miravete and Röller, 2004) and the increase of efficiency (Bayoumi et al., 2004). Dependent on the degree of regulation that is applied to the competitive market², one can distinguish different types of competition. The choice for

regulations may depend on the type of product that is traded on the market and the existence of external effects. Health services are quasi-collective services which means that the market is not able to allocate cost and consequences of the operations of the actors on the healthcare market in a fair way. Additional legislation is required that can reduce the negative external effects and may help to distribute cost and consequences fairly among the users of the healthcare system.

Integrated care pathways Integrated care pathways are a means for increasing standardization in healthcare which where firstly introduced in the United States in 1980 (Corkin et al., 2012). Integrated care pathways can be seen as a predefined fixed sequence of steps that are executed during the treatment of a patient (Kitchiner et al., 1996). Integrated care pathways are build on the experience and best practices of a healthcare provider and may in that sense help to improve the clinical outcomes and efficiency of treatments in healthcare.

Pay for Performance Pay for Performance is concerns the concept that healthcare providers are no longer paid for the quantity they deliver but will be reimbursed by health insurance companies for both the quality and the quantity of the health services they deliver. This is a significant change in healthcare. Healthcare providers now have to focus on the quality of their treatments. This may lead to increased competition among healthcare providers, as the best performing healthcare providers are most likely to be rewarded with the highest reimbursements. The Pay for Performance concept is already proven in several countries (Scott, 2007; Doran et al., 2006; Rosenthal and Dudley, 2007).

Demand driven healthcare Demand driven healthcare concerns the restructuring of the healthcare system where the specifications of health services that are delivered to the healthcare market are no longer determined by the supply side (the healthcare providers) of the market but by the demand side (the patients) of the market. Productions at the healthcare providers are in that situation

²In literature this is called managed competition.

no longer resource³ based, but requirements⁴ based. Demand driven healthcare has the purpose to increase the appropriateness of health services for the patients.

All the initiative mentioned above are linked to the initiative concerning the introduction of more competition on the healthcare market. The several initiatives focus on improving the efficiency and performance of healthcare providers while keeping the prices of health services low. The success of these initiatives are not obvious as there are several factors that are critical for the success of these initiatives. The preconditions for fair competition are discussed in more detail in section 3.

Key for all initiatives is the changed role that health insurance companies get. At the start of 2012 they agreed, together with the national government and the healthcare providers in the healthcare outline agreement on increasing the efficiency and reducing the cost of healthcare (de Boer et al., 2011). Health insurance companies got the responsibility for the procurement of health services on predefined performance indicators. The adjusted role of the health insurance companies can be seen as in line with the cost reduction initiatives that are mentioned above. Health insurance companies will facilitate competition by making use of clear KPIs that measure the performance of healthcare providers on the right level of detail. This enables performance based reimbursement of healthcare services. In addition, health insurance companies will be an important facilitator of the move towards demand driven healthcare because health insurance companies should represent the needs and preferences of the patients in the healthcare procurement process⁵. This will result in the procurement of health services that are more appropriate for their insured population. The procurement of health services on the basis of the performance of healthcare providers will require a lot of information. It may at the same time be used to restore information to the healthcare market as healthcare procurement involves all information that is relevant for competition on the healthcare market (this is discussed in more detail in section 4.2). Transparency of relevant and sound information is required for fair competition among healthcare providers. Therefore the following research question is formulated

How can healthcare procurement help to restore information to the healthcare market?

This paper tries to find an answer on the main question that is defined above. Section 2 comprises a discussion on the healthcare market, the products that are traded on the market and the information streams that are flowing through the market. This may help to define the requirements for effective healthcare procurement. Section 3 discusses the cost and benefits of competition in healthcare and the preconditions that need to be fulfilled in order to enable fair competition among healthcare providers. Section 4 discusses the role of information in the healthcare market as one of the most essential preconditions for fair competition. This paper will round up with conclusions and recommendations (see section 5) about the information requirements that should be fulfilled by an effective⁶ healthcare procurement method.

2 The healthcare market

First of all it is important to understand what the healthcare market looks like and what the different characteristics of the healthcare market are. This may help to define the required information and the requirements that need to be fulfilled by an effective healthcare procurement method.

2.1 Key actors

Four actors play a key role in the Dutch healthcare sector. This concerns the patients, healthcare providers, health insurance companies and the national government (Koopman and Rademakers, 2008). These actors are involved in or affected by the operations in the healthcare sector. Their position

³With resource based productions is meant that the quality and quantity of the health services on the health-care market is determined by the availability of medical resources.

⁴With requirement based productions is meant that the quality and quantity of the health services on the healthcare market is determined by the needs and preferences of the patients.

⁵This is done by the procurement of health services on the basis of KPIs that adequately measure the performance of integrated care pathways on the preferences of the patients.

⁶ Effective is here meant as a method that facilitates health insurance companies in an appropriate way and at the same time helps to restore sound and relevant information to the healthcare market.

in the healthcare market is clarified in figure 2 in section 2.3

Patients play an important role in the healthcare system because they are subject to the performance of the healthcare system and are therefore directly affected by a change in the performance of healthcare providers. Each patient has a specific healthcare demand. All patients together form the demand side of the healthcare system. The preferences of the patients are an important input for the procurement of health services in the new situation in healthcare. Healthcare providers are all organizations that deliver care to the patients. Healthcare providers can be divided in primary, secondary, tertiary and informal healthcare providers. There are different groups of healthcare providers in each part of the healthcare system. In secondary healthcare for example there are independent treatment centers, private clinics, hospitals and academic medical centers. Health insurance companies are linked to both the patients and the healthcare providers. Health insurance companies are responsible for the procurement of health services at the healthcare providers and have thereby an important position on the healthcare market.

The different parts of the healthcare market in which the key actors play an important role are discussed in section 2.3. The national government has quite a different role in healthcare as they stand together with several regulatory bodies above the three mentioned actors and have the responsibility to secure the core values of the healthcare system. The interaction between the three actors may be influenced by the policies and regulations that are designed by the national government.

2.2 Healthcare products

The characteristics of the products that are traded on the healthcare market may have major consequences for the procurement of health services. Dependent on the product characteristics, some product may be traded most effective in a free market (individual goods and services) where other product may require more regulation (quasi public and public goods and services).

The healthcare product is in this research defined as the end result delivered by an integrated care pathway after the treatment of a patient. Integrated care pathways are in that sense not seen as the treatment that is executed within the borders of a healthcare provider, but as all activities that are involved in the treatment of a patient from the moment he enters the system until he leaves the system. These activities may transcend the border of a healthcare provider. The treatment itself is not seen as the healthcare product which is traded on the healthcare market, but as the production process that is required for the realization of the final result. can be made clear by an example. The patient that has the diagnosis of torn muscles may get different treatments at different healthcare providers. One healthcare provider may prescribe rest and some medicines where other healthcare providers perform a surgical procedure. The desired end result is in both cases the cured patient. Competition will take place on the end-product and not on the production process that is required to reach the end-result. However, the production process may be affected by competition on the end-product when there are practices in the production process that lead to a significant better end product. The following main characteristics can be distinguished for healthcare products

- health services are quasi public services
- The healthcare end-product is homogenous while the treatments are heterogeneous

health services are quasi collective services (Dalen and Swank, 1996). This means that healthcare products are publicly available for everyone but delivered by individual healthcare providers. Healthcare providers and health insurance companies are founded to deliver these services on behalf of the government and fulfill a beneficial role for everyone in the society (Kooreman, 2011). The fact that health services are quasi public services means that the cost of healthcare are not fairly distributed among the population of a country. Older people have a higher demand for health services than younger people. One percent of the population are responsible for twenty-five percent of the cost of healthcare, where fifty percent of the population is responsible for only three percent of the cost of healthcare (Gordon, 2010).

The healthcare end product as described above is a homogenous product, while the treatment process may be different for the integrated care pathways of different healthcare providers. This has the consequence that each integrated care pathway performs different.

2.3 Market layout

The healthcare market consists of three distinct sub-markets, namely the healthcare procurement market, the health insurance market and the care market, which is demonstrated by figure 2.

The care market is the interaction that exists between healthcare providers and the patients. The patients form the demand side of this particular sub-market and get their care at the supply side of the market; the healthcare providers. The interaction between the health insurance companies and the healthcare providers is defined as the healthcare procurement market. Health insurance companies procure health services at healthcare providers ac-

cording to the demand of their insured population. Health insurance companies represent in that way the demand side of this submarket, where healthcare providers form the supply side of the market. This research focuses especially on the role of the health insurance companies in healthcare concerning the procurement of health service on predefined KPIs. The connection between the health insurance companies and the patients is defined as the health insurance market. Patients are free to insure themselves at a specific health insurance company. The patient can be seen as the demand side of the health insurance market, where health insurance companies (supply side of the health insurance market) deliver insurance services to the patient.

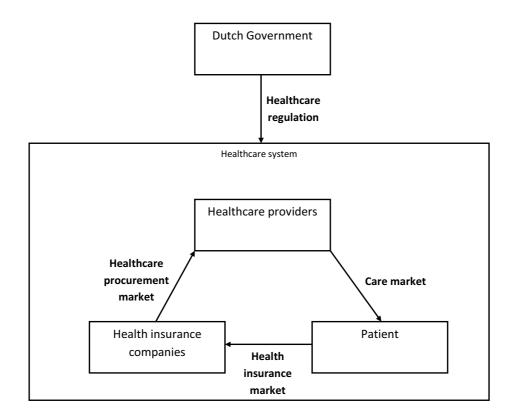


Figure 2: Layout of the healthcare market

3 Competition in healthcare

Competition in healthcare may take place on the different sub-markets mentioned in section 2.3. The choice for more competition is motivated by the threat that the core values of healthcare in the future no longer may be maintained. This concerns in the first place the affordability of health services and connected with that the accessibility of health services for everyone⁷. The introduction of competition may have some benefits compared to a fully regulated healthcare market. However, because of the complexity of the healthcare market and the characteristics of healthcare products, competition is not free of regulations.

⁷ Health services may no longer be accessible when people cannot pay for them. Patients may become excluded from the healthcare system when health services become to costly.

Competitors on the healthcare market have f.e. to comply with minimal quality standards. This form of competition is called *managed* competition. The benefits of managed competition (Enthoven, 1993) in comparison with the current situation in the healthcare sector are as follows

- More efficient allocation of resources on the healthcare market
- Lower prices for health services due to improved productivity and the development of cost reduction technologies
- More flexible healthcare system that can deal with changing population characteristics (aging phenomenon)
- The healthcare system is likely to deliver more appropriate services to the patients (a better focus on the preferences of the patient)
- Customers may make cost-quality tradeoffs in the future due to the insight in the price and the quality of healthcare services

The benefits of competition relate directly to the goals as described in the healthcare outline agreement as competition may increase the efficiency and reduce the cost of health services. There should be mentioned that these benefits only can be realized when there is fair competition on the healthcare market among different healthcare providers. Fair competition only takes place when a set of preconditions are fulfilled in the healthcare market. The most important preconditions for fair competition are

- the presence of a large number of buyers and sellers
- ullet low entry and exit cost
- high factor mobility
- the provision of sound and relevant information
- low transaction cost
- homogeneous products

Where the presence of most factors can be safeguarded by unilateral governmental interventions, is this not possible for the provision of sound and relevant information. Most of the preconditions that are mentioned above does not give any problems or can be solved with the help of increasing the transparency of information. For example, the mobility of patients highly depend on the availability of information. Patients will not travel a longer distance to a healthcare provider when they do not know the performance of the healthcare provider for the treatment of a specific disease. However, the provision of information is no simple and unambiguous task but asks for a well designed mechanism that can provide this information to the healthcare market. A mechanism for the provision of sound and relevant information to the healthcare market is for that reason discussed in more detail in section 4.

4 The role of information

Section 1 and section 3 demonstrates the need for the provision of sound and relevant information to the healthcare market. In summary it may have the following benefits. Sound and relevant information

- Improves fair competition among healthcare providers.
- Facilitates health insurance companies in the execution of their new role in healthcare, concerning the procurement of health services and their steering role towards a more efficient healthcare system

The quality of information can only be guaranteed when it meets certain quality criteria. Information quality is examined with a fixed set of criteria (de Boer et al., 2001; Shahin and Mahbod, 2007), namely transparency, symmetry, completeness and reliability. These criteria are valid for all information topics and all information that is delivered to the healthcare market should meet these criteria in order to facilitate fair competition.

4.1 Selection of relevant information in healthcare

In order to enable fair competition among healthcare providers, it is important that the relevant data topics are available for the relevant actors. Irrelevant information should be kept away from the market as it may be misleading for decision makers or leads to the wrong focus by the market parties. In order to define the relevant data topics, it is important to distinguish between the different decisions that are taken on the sub-markets that may

affect competition. These decisions should be based on high quality information. One can distinguish different decisions that are taken on the different sub-markets which leads to a specific information demand.

• healthcare procurement market

- Which healthcare providers do I have to contract? (health insurance companies)
- What criteria determine whether I get a contract? (healthcare providers)

• health insurance market

- Where will I be insured? (patient)
- What are the patients needs? (health insurance companies)

• care market

- Where will I be treated? (patient)
- What are the patients needs? (healthcare providers)

• general questions

- What is the actual performance of healthcare providers? (national government)
- What are the needs of the patients? (national government)

These questions show that in case of fair competition each action is accompanied with a quest for information by both the supply side as the demand side of the healthcare market. The supply side wants to know how to attract the demand side to buy their goods or services. The demand side want to know where to get their goods or services that is most appropriate for them in terms of cost and quality. The information flows the opposite direction as the demand for information. This

means that when the patient wants to know where to be insured, the relevant information about health insurance companies should be provided to them. When we look carefully at the sub-markets in healthcare, we see that decision making on the sub-markets is often based on the same information. The information streams that are present in healthcare are visualized in figure 3. Health insurance companies have a key role in the information infrastructure as they transfer and distribute information about the different actors on the healthcare market.

The arrows in figure 3 comprise the following content. The bold arrows represent information that is delivered by the national government. This is information about regulations, norms and standards that are relevant for the procurement of health services at the healthcare providers⁸. Health services often have to apply to a minimal standard of quality (f.e. the Treek-norm in the Netherlands, which is used for the maximum length of the waiting lists). The dashed arrows comprise information about the customer needs and preferences. In a free market, healthcare providers may adjust their operations on the basis of this information. Health insurance companies may use this information to contract healthcare providers that deliver health services that meet the requirements of the customer, in order to attract as many clients as possible. The national government may use this information in combination with information about the performance of healthcare providers in order to be able to design adequate policies (standards, incentives and regulations) that can push the healthcare providers in the desired direction. The thin arrows comprise information about the performance of healthcare providers. Health insurance companies base the procurement of health services on this information⁹. Patients use this information to decide where to insure themselves and where to be treated when they have a specific disease.

⁸ This may f.e. concern regulations and incentives regarding the cost of health services.

⁹They compare the performance of healthcare providers with the desired performance from the point of view of thee national government and the patients.

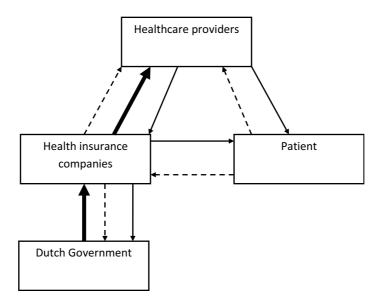


Figure 3: Information streams in healthcare

The information that is present on the healthcare market can be measured in a standardized way with the help of Key Performance Indicators (KPIs). KPIs measure the performance of healthcare providers on the goals of the healthcare system with the help of single values. The goals of the healthcare system may be established with the help of the needs and preferences of the key actors on the healthcare market. When defined adequately, KPIs are an ultimate format for information on the healthcare market because KPIs comprise information in a compact way as a single KPI ideally measures the performance of healthcare providers on one of the goals of the healthcare system. Subsequently, well defined KPIs are easy to interpret which makes it possible to compare a set of alternative treatments in a transparent way¹⁰.

4.2 Healthcare procurement

Section 4.1 shows what information is required on the healthcare market in order to enable fair competition among healthcare providers. The next step is to define a method to restore information to the healthcare market. Figure 3 demonstrates that health insurance companies play a central role in the provision of information to the healthcare market as health insurance companies distribute and transfer the several information streams to all key actors on the market. They should therefore get a central

role in restoring the required information to the healthcare market. This is also defined in the healthcare outline agreement where is defined that health insurance companies are responsible for the procurement of health services on a predefined set of criteria.

This may lead to a whole new infrastructure for the provision of information. Where in the past each actor in the healthcare sector had its own information storage, will all information in the future be concentrated at one central point from where it can be accessed by the key actors in the healthcare sector. Key actors on the healthcare market should no longer be dependent on other parties when they want to make a decision (see section 4.1 for important decisions that are taken on the sub-markets) but should be able to access the required information at each moment in time. This may help to solve issues about information asymmetry and information quality management may become much simpler with the help of single protocols that apply for all information that is stored in the central database¹¹. However, this new situation may also give rise to worries about the confidentiality and security of information. Proper authorization that regulates the accessibility of information for the different parties in healthcare is for that reason a minimum requirement. Health insurance companies should for example not get access to production information figures of healthcare providers, because that would distort competition as it may strengthen

¹⁰ This is especially valuable in case of competition were decisions are based on the performance of different alternatives.

¹¹The central storage may be a physical data center or f.e. the cloud.

the position of health insurance companies during the contracting process with the healthcare providers. The same is true for *all* key actors on the healthcare market. Each actor should

only get access to the information that is required for fair competition on the particular sub-markets.

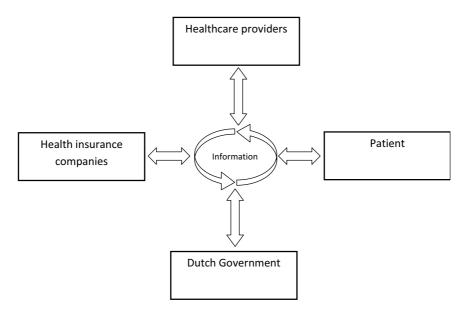


Figure 4: New situation for the provision of information on the healthcare market

As mentioned in section 1 the provision of sound and relevant information has two important benefits

- It promotes fair competition in healthcare among healthcare providers and health insurance companies
- It facilitates health insurance companies in the execution of their new role in the healthcare sector

However, procurement will only be effective when a broad set of requirements is fulfilled. Some requirements follow from competition that should be facilitated by the use of healthcare procurement and some follow from the new role of the health insurance companies in the healthcare system. The following requirements for the procurement of health services can be distinguished

- The KPIs that are used as a basis for the procurement of health services should be established in a transparent way.
- The KPIs that are used should be of high quality (i.e. specific, measurable,

achievable, relevant and time bound) and should lead to the provision of high quality information (i.e. information that meets the quality criteria: transparency, symmetry, completeness and reliability) to the relevant actors.

- The set of KPIs that is used for the procurement of health services should be complete and in line with the goals for the healthcare system as described in the healthcare outline agreement. This means the KPIs measure the performance of the healthcare providers on a complete set of goals from the point of view of the key actors in the healthcare sector¹². This is important, because the KPIs that are used for the procurement of health services determine the focus of competition in healthcare.
- The performance figures of the healthcare providers should be measured at the right level of detail, in order to facilitate competition on the relevant products. This means that the performance is measured at the level of the integrated care path-

¹² For accurate competition is required that the right information is available on the sub-markets for the relevant key actors. Missing information cannot be used in the decision making process and automatically leads to a sub-optimal decision making process.

ways as the patient is not interested in the performance of an institution, but in the performance of the products that are delivered by the healthcare providers (i.e. the treatment for a specific disease). In addition, the integrated care pathways are actually the level at which competition takes place.

- Key actors in the healthcare sector should should agreed on the set of goals that is defined for the healthcare system. This may prevent resistance by any of the key actors and guarantees accurate competition.
- The performance based procurement of health services should be executed in a transparent way.
- Healthcare procurement should guarantee the confidentiality of information by
 the distribution of access rights among
 actors on the healthcare market. These
 rights should guarantee the access to the
 relevant information for the relevant actors.

5 Conclusions and recommendations

The main question for this research was formulated as

How can healthcare procurement help to restore information to the healthcare market?

The research has shown that the provision of sound and relevant information to the health-care market is an essential requirement for fair competition among healthcare providers. Performance based healthcare procurement can be seen as an ultimate means for restoring this information to the healthcare market. For the purpose of effective healthcare procurement it is important that a broad set of requirements is fulfilled. Healthcare procurement may otherwise lead to impoverish competition and distort fair competition on the relevant goals¹³.

The initiatives in healthcare have the purpose to reduce the cost and improve the efficiency of health services. Although effective procurement seems to facilitate fair competition, it will not necessary lead to the reduction of cost and improvement of the efficiency of treatments. According to section 3, although the presence of sound and relevant information is important, there are more preconditions that should be fulfilled in order to enable fair competition. This is ultimately demonstrated by the situation around the services delivered by dentist where the prices of services are released since the start of 2012. The consequence was that the prices of these services increased since they are released. Several reasons can be distinguished. Firstly, there is no transparency about the cost and quality of services delivered by dentists. This reduces the position of the customer significantly and give dentists excessive market power¹⁴ (Vaartjes, 2012). Secondly, there is a shortage of qualified dentists which causes an imbalance between supply and demand on the healthcare market over a longer term as there exist entry barriers¹⁵ that prevent new entrants from entering the market. This shows that there are different preconditions that can be an obstacle for fair competition in healthcare. Additional regulations may be required to resolve the different barriers.

There can be stated that procurement seems to be an adequate means for restoring information to the market as long as it fulfills the requirements defined in section 4.2. The provision of sound and relevant information is one of the most important preconditions for fair competition. However, it seems to be necessary to adopt additional legislation to guarantee the preconditions for competition.

5.1 Next steps

One should remark that, although competition may be an ultimate way to reduce the cost and improve the efficiency of healthcare, also some consequences of competition can be expected that have a negative impact on the performance of the healthcare system. Among others, the following consequences can be distinguished

¹³Competition will be distorted when the wrong performance criteria are used. Competition will than focus on the wrong aspects which may damage the core values of the healthcare system (accessibility, affordability, robustness, quality etc.).

¹⁴Market power gives the possibility to settle prices.

¹⁵The main barrier for this particular market is the several years of education that is required before one can become a dentist.

- increased mobility of customers and healthcare employees
- increased concentration of health services

These consequences may have a negative impact on the performance of the healthcare system. The increased mobility of customers and healthcare employees f.e. may not only be a consequence of competition 16 but is also a precondition for fair competition (according to section 3). Fair competition is not possible when there exist mobility barriers in healthcare. Subsequently competition may lead to specialization by healthcare providers. This will lead to the concentration of healthcare providers which may have a negative effect on both the accessibility of health services in sparsely populated areas as the innovative pressure of healthcare providers. The performance of the healthcare system may in that sense be damaged as a consequence of the introduction of competition.

More research is required on the likelihood of the negative consequences and their impact on the performance of the healthcare system. Subsequently, it is required to get insight in what effective policy measures or incentives are available to cope with these negative consequences and how these policy measures should be implemented in order to effectively deal with the consequences.

5.2 Final remarks

One should remark that this research does not provide a blue print for the successful introduction of competition on the healthcare market of any country. The situation in each country may be quite different, as the healthcare market may be organized differently in most countries¹⁷. This will have consequences for the cost and benefits of any economic organizational form of the healthcare market in these countries. However, this research shows what obstacles might be expected by the introduction of competition on the healthcare market and what important prerequisites should be safeguarded when competition is introduced.

The final choice for the economic organizational form of the healthcare market in any country should be based on knowledge about the benefits, cost and consequences of the organizational form on one hand and the presence

or ability to apply adequate regulations to deal with these negative consequences on the other hand.

References

Annema, E., de Blok, J., Engelenburg, H., van Erp, L., van Geest, Y., Kakebeeke, P., Olsthoorn, S., Rutgers, M., Schellekens, W., Vegter, S., and Verhoek, M. (2012). Zorg kan beter en goedkoper. *FD Outlook*, (02):1–51.

Bayoumi, T., Laxton, D., and Pesenti, P. (2004). Benefits and spillovers of greater competition in europe: A macroeconomic assessment. Technical Report 803, National Bureau of Economic Research, Cambridge.

Corkin, D., Clarke, S., and Liggett, L. (2012). Care Planning in Children and Young People's Nursing. John Wiley & Sons, Hoboken.

Dalen, H. P. and Swank, O. H. (1996). Government spending cycles: Ideological or opportunistic? *Public Choice*, 89(1):183–200.

de Boer, J., Vandecasteele, J., and Rau, K. (2001). Use of the balanced scorecard for ICT performance management. *Compact*, 2001(1):6–19.

de Boer, R., Bruggeman, L., Dekker, J., Bontje, M., and Schippers, E. (2011). Bestuurlijk hoofdlijnenakkoord 2012-2015 tussen de nederlandse vereniging van ziekenhuizen, de nederlandse federatie van universitair medische centra, zelfstandige klinieken nederland, zorgverzekeraars nederland en het ministerie van volksgezondheid, welzijn en sport.

Doran, T., Fullwood, C., Gravelle, H., Reeves, D., Kontopantelis, E., Hiroeh, U., and Roland, M. (2006). Pay-for-performance programs in family practices in the united kingdom. New England Journal of Medicine, 355(4):375–384.

Enthoven, A. C. (1993). The history and principles of managed competition. *Health affairs*, 12(1):24–48.

¹⁶ Patient will go to the healthcare providers that deliver the most adequate services for the lowest prices. Healthcare providers are likely to attract qualified employees in order to improve their performance.

¹⁷The situation in the Netherlands is quite different from most Western countries as the health insurance companies play a unique role on the healthcare market.

- Kitchiner, D., Davidson, C., and Bundred, P. (1996). Integrated care pathways: effective tools for continuous evaluation of clinical practice. *Journal of Evaluation in Clinical Practice*, 2(1):65–69.
- Koopman, L. and Rademakers, J. (2008). CQ-index mammacare: onderzoek naar het discriminerend vermogen. Medical report, Nivel, Utrecht.
- Kooreman, P. (2011). Hoe komen we van sovjet-planning in de zorg af? http://www.mejudice.nl/artikel/744/hoe-komen-we-van-sovjet-planning-in-de-zorg-af.
- Miravete, E. J. and Röller, L. H. (2004). Estimating price-cost markups under nonlinear pricing competition. *Journal of the European Economic Association*, 2(2-3):526–535.
- Rosenthal, M. and Dudley, R. (2007). Pay-forperformance. the journal of the American Medical Association, 297(7):740–744.
- Scott, I. (2007). Pay for performance in health care: strategic issues for australian

- experiments. Medical journal of Australia, 187(1):31–35.
- Shahin, A. and Mahbod, M. (2007). Prioritization of key performance indicators: An integration of analytical hierarchy process and goal setting. International Journal of Productivity and Performance Management, 56(3):226–240.
- Stout, R. W. and Crawford, V. (1988). Activelife expectancy and terminal dependency: trends in long-term geriatric care over 33 years. *The Lancet*, 331(8580):281–283.
- Strauss, D. J., DeVivo, M. J., Paculdo, D. R., and Shavelle, R. M. (2006). Trends in life expectancy after spinal cord injury. *Archives of physical medicine and rehabilitation*, 87(8):1079–1085.
- Vaartjes, J. (2012). Wat kost een behandeling? http://www.tandarts.nl/tarievenverzekering/rekeningen/wat kost een behandeling.
- WHO (2012). WHO | global health observatory data repository. http://apps.who.int/ghodata/.