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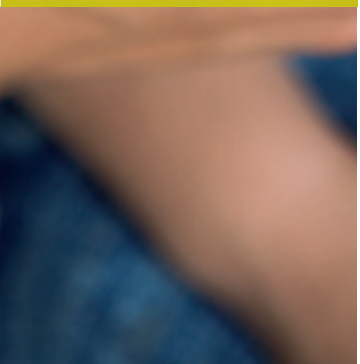
Dutch Health Care Performance Report 2008



DUTCH HEALTH CARE PERFORMANCE REPORT 2008

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FOREWORD

This is the second Dutch Health Care Performance Report. It provides a concise overview of the performance outcomes of Dutch health care and has been written as a monitoring report. The facts and figures provide a cross-section of the performance outcomes from 2006 and 2007, the first two years after the new health care system came into force. It therefore provides a first systematic review of the quality, accessibility and costs of care in the Netherlands following the health care system reforms on 1 January 2006.

The National Institute of Public Health and the Environment (RIVM) has compiled the Dutch Health Care Performance Report (DHCPR) on behalf of the Ministry of Health, Welfare and Sport, based on a framework of performance indicators developed in collaboration with researchers from the OECD and several Dutch universities and knowledge centres. As a result of this, the contents of the second DHCPR has a stronger evidence base. Both the state secretary and I believe it is vital that we have access to good information concerning the performance outcomes of health care suppliers in the Netherlands. It facilitates transparency within the health care sector. Health care organizations are working hard to increase our understanding of health care suppliers' performance and the opinion of health care users about their performance. We therefore expect the DHCPR to become more complete and accurate over the coming years.

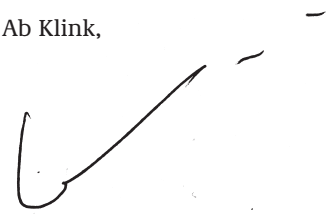
Key questions for me in the second DHCPR are the relative performance of the Netherlands compared to other countries and whether the introduction of the new health care system has been a favourable development. Although it is still far too early to draw firm conclusions, I am satisfied with the initial findings. The Netherlands continues to perform well. We have an accessible health care system and the care offered is mostly within good reach. On average the quality of care has increased slightly and although costs have risen, these rises are in line with those in neighbouring countries. The average Dutch person has confidence in the Dutch healthcare system and in the affordability of the necessary care. However, the report also shows that there is clear room for improvement. There are countries whose health care expenditure is lower than that of the Netherlands and yet in terms of health outcomes and the safety of care, for example, are comparable to us. Equally there are also countries with similar health expenditures that perform better than the Netherlands. Interestingly, although there are many initiatives and projects in the Netherlands regarding innovation in care processes, their outcomes are all too often not evaluated properly. Consequently we still know far too little about the dissemination of these innovations throughout our country.

Over the next few years, we will need to devote particular attention to further progress in the health care system reforms, long-term care, the coordination between health care providers, and safety in the provision of care. In this context, the effects of a tight

labour market should not be underestimated. The DHCPR provides a wealth of data and insights into all of these areas.

With the overview provided by the DHCPR on quality, accessibility and cost of care in our country, we have a good empirical foundation on which the Ministry of Health, Welfare and Sport can build its priorities for the next few years. The DHCPR provides a sound basis for the policy agenda that focuses on a high-quality and solidarity-based health care system for a healthy Dutch population, which the State Secretary and I strive for.

Ab Klink,



Minister of Health, Welfare and Sport

CONTENTS

EXECUTIVE SUMMARY

Using more than 100 indicators, the Dutch Health Care Performance Report (DHCPR) describes the performance outcomes of Dutch health care in 2006 (and part of 2007). The DHCPR provides a broad picture of the accessibility, cost and quality of Dutch health care. Where possible this is done using time series data and international comparisons. In this second DHCPR, special attention is paid to three themes: the efficiency of health care, the opinion of the public about health care and the effects of the health care system reforms. The first DHCPR was published in 2006 and described the situation in 2004 (Westert and Verkleij, 2006).

How well does the Dutch health care system score internationally and what trends are present?

Accessible, cost increases are average, but further improvements in quality can be made
The Netherlands has an accessible health care system. Since 2004, health care expenditure has risen annually by 5%. This rate of growth is comparable to that of neighbouring countries. Although for many aspects of care the quality is high, the Netherlands does not excel at an international level. The general public and care users are positive about the care provided, but there are differences between the various types of care. One concern is the availability of nursing and care personnel. Coordination and cooperation in health care and patient safety score relatively low. The efficiency of health care in the Netherlands is not optimal. Quality is not a driving force in the health care market.

Accessible for everyone?

Compared to other countries, the Netherlands has an accessible health care system and the most important health care services are within easy reach. Confidence in the affordability of the necessary care is high and few people did not visit a doctor because of costs.
The Dutch health care system obliges everyone living in the Netherlands to be insured against health costs. Hence, a basic package of health care is accessible to everybody. At 8%, out-of-pocket payments in the Netherlands are below the OECD average of 20%. In 2007, the percentage of people who said they did not visit a doctor because of costs was low in the Netherlands (1%) and the United Kingdom (2%). In Germany (12%) and the United States (25%) this percentage was much higher (Schoen et al., 2007). All things being considered, the majority of care in the Netherlands is highly accessible. At 70%, the percentage of people in the Netherlands who can reach a hospital within twenty minutes is far higher than the European average of 50%. However, certain aspects require extra attention. The waiting time for a transplant is still too long and the number of donors is below the target figure. Too little is known about the actual waiting times within health care because reliable data are lacking.

The use of care, in other words the actual accessibility, differs only slightly with respect to educational level and ethnicity, if differences in health are taken into account. However, lower educated people less frequently visit the dentist. Equal accessibility does not necessarily translate into equal quality. Nonetheless, from this DHCPR it is clear that hospital mortality within 30 days after a myocardial infarct does not differ between migrants and native Dutch people. This is a favourable outcome.

Sufficient personnel?

Between 2004 and 2006, the number of vacancies per thousand jobs in the health care sector increased by 42%. One-quarter of these are difficult to fill; in 2004 that was still 14%.
In 2007, 56% of nurses and caring personnel thought that there were enough personnel to guarantee safety (38% for nursing homes), whereas in 2004 that was still 70%. If this unfavourable trend of increasing personnel shortages continues, serious accessibility and safety problems will occur in the near future. The causes of this change in opinion have not been explored in this report.

Concerns about expenditure?

Health care expenditure has risen by about 5% per year since 2004. This rate of growth is comparable to that in the neighbouring countries. In the Netherlands the level of health care expenditure is above the EU-15 average.
Since 1990, the health care expenditure per working Dutch person has constantly been above the EU-15 average. The Dutch health care expenditure expressed as a percentage of the gross domestic product was 9.4% in 2006. This figure for the Netherlands is lower than that in Belgium (9.8%), France (10.8%) and Germany (10.3%), but higher than in Denmark (8.7%) and the United Kingdom (8.9%).

Quality: average or excellent?

Compared to other wealthy countries, the Netherlands does not excel in terms of the quality of health care provided. Although many types of care are of high quality and quality has increased, the overall picture is average on an international scale.
The Netherlands is one of the five wealthiest countries in the Eurozone (Eurostat, 2008) and so quite understandably, expectations regarding quality of health care are high. It is therefore quite natural to compare the Netherlands with the OECD top. This reveals the following picture with respect to the quality of prevention, curative and long-term care, safety, continuity of care and the level of innovation.

- Prevention
Participation in the vaccination and screening programmes is excellent; health promotion in regular care has developed little to date.

In the area of prevention, the Netherlands scores highly when it comes to screening and vaccination. For example, the level of participation for breast and cervical cancer screening is high, 82% and 66% respectively. The vaccination level (National Vaccination programme, RVP) is over 95%. The percentage of children who visit the child health centre during the first four years of life is very high.

However, the results are less favourable with respect to the promotion of a healthy lifestyle. Doctors are quite haphazard in providing their patients with specific recommendations about lifestyle. Canada, the United States and Australia, for example, all score significantly higher for this aspect. The number of schools in secondary education that implement an active and wide-ranging health policy is low.

- Curative care

Many elements of care are satisfactory and have improved; however, the Scandinavian countries consistently score better.

Only a small percentage of patients in primary care are referred by GPs to secondary care. Since 2001, this percentage has risen slightly, but the Dutch GP is still cautious about referring. In about two-thirds of cases, Dutch GPs prescribe medicines according to their own professional guidelines. This percentage has been stable since 2003. However, there are considerable differences between general practices.

From an international perspective the Netherlands occupies an average position with respect to curative secondary care (OECD, 2007a). The Scandinavian countries in particular (Norway, Sweden, Finland and Iceland) score better than the Netherlands when it comes to hospital mortality within 30 days of admission (acute myocardial infarct, cerebral haemorrhage and cerebrovascular accident). The same picture is found for five-year survival in the case of breast, cervical and colon cancer. With respect to perinatal mortality the Netherlands scores above the OECD average. Sweden, Luxembourg and Finland have the lowest perinatal mortality within the OECD.

For certain elements of care the Netherlands has an above average performance. In the Netherlands about 80% of patients with a hip fracture are operated on within 48 hours. This is well above the OECD average. Norway and Sweden both have a figure above 90%. Dutch adults with a serious anxiety, mood or addiction disorder receive care in 50% of cases and two-thirds of these persons receive a satisfactory form of care. In this respect, the Netherlands and Germany score better than France, Spain and Belgium.

- Long-term care concerns?

A number of positive developments have taken place in the broad and diverse field of long-term care, yet for other aspects both clients and personnel express, sometimes serious, concerns.

Since 2003 the incidence of decubitus in nursing homes, residential homes and home care has decreased. In nursing homes the figure was 10.3% in 2003 and 6.9% in 2006. The percentage of malnourished patients has also decreased. The number of places in small-scale residential facilities more than doubled between 2005 and 2007. In 2006,

clients gave residential homes and care for the disabled a score of 7.8 out of 10 and nursing homes received an average score of 7.4. Compared to other types of care, the figure for nursing homes in particular is on the low side. The aspects provision of information (5.0) and participation (6.0) score low. The availability of sufficient personnel is the most important point for improvement. Less than 4 out of 10 clients in residential and nursing homes indicated that a member of staff "sometimes struck up a conversation in passing". That percentage is particularly low and large differences between organizations were observed. The personnel in residential and nursing homes also assign a moderate score to the quality of care they provide and indicate a slight deterioration compared to 2003.

- Safety sufficient?

From an international perspective the Netherlands scores relatively well with respect to the safety of care, yet the number of adverse events still remains considerable. About 5% of the care users state that they have incurred damage. Avoidable care problems such as malnutrition and falls in care facilities are decreasing, but still occur very frequently.

According to a recent estimate, 5.7% of patients admitted to hospital experienced adverse events, 40% of which was considered to be avoidable. From an international perspective, the Netherlands does not score badly on this point. In a recent survey among the Dutch about safety in curative care, 5% of the respondents indicated that they had been subject to a medical error during the past year and 6% indicated that they had received an incorrect medicine or dosage. Although the Netherlands scores better in this respect than, for example, Australia and the United States, in absolute terms these outcomes in the Netherlands are also undesirably high. The Ministry of Health wants to reduce avoidable adverse events in hospitals by 50% between 2008 and 2011. The hospital standardized mortality rate (HSMR) gradually decreased in the period 1998-2005, but the risk of mortality in the hospital with the highest mortality was still 45% higher than the average in 2005. The prevalence of malnutrition in long-term care has decreased, but is still high (25%); also the number of fall incidents (9%) in long-term care remains unchanged.

- Coordination and cooperation between care clusters: substandard cluster quality

The coordination of care remains substandard. Poor cooperation between care providers could potentially lead to ineffective and unsafe care.

A *medical home* is important for a good coordination of care. For the Dutch that is the general practice, where 99% of the population are registered. The study by the Commonwealth Fund (CMWF) (Schoen et al., 2007) reveals that the vast majority of Dutch people have a medical home for medical care: the GP. In other countries that percentage is significantly lower. According to 93% of the Dutch respondents, the GP knows the patient's medical background, which forms a good basis for a coordinating role. However, the CMWF study reveals that the Dutch GP is less active in coordinating care that is provided by other physicians and care providers. Also, the Dutch GP provides the specialist with less relevant medical information than in other countries. The Dutch GP is, however, better informed about the follow-up care planned after hospital discharge compared to the six other countries. Furthermore, the respondents indicated that in

the Netherlands, just 44% of people who use medicines regularly discuss this use with a health care provider (GP, nurse or pharmacist). In 2006, information about medicines prescribed outside of the hospital was accessible in just 44% of hospital pharmacies.

Another recent Dutch survey revealed that about one in five patients with a specific condition (breast cancer, rheumatism, cataract) experienced either insufficient or a lack of coordination or cooperation between the health care providers involved. In the case of diabetes, more than 25% of the patients experienced insufficient coordination by the GP. In 2006, 44% of respondents stated that they had confidence in the cooperation between health care providers.

- Innovative and effective?
With respect to investments and the implementation of innovations, the Netherlands scores well on an international scale. There is also a lot of activity in the area of organizational innovations in the Netherlands, but too little information is available about the effectiveness of these activities.
With respect to health care innovations and *best practices* the Netherlands carries out surgical interventions during day surgery far more often than other European countries. Dutch GPs (98%) work more intensively with electronic patient records than their colleagues in Germany (42%), the United Kingdom (89%), the United States (28%) and Canada (23%). The availability of minimal invasive techniques (laparoscopy, MRI) has oscillated around the EU-15 average for the past 10 years.

Over the last few years many initiatives have been started in the area of organizational innovations (process innovations). In 2007, there were a large number of breakthrough projects in almost all types of health care. However, too little information is available concerning the effectiveness of these projects even though the systematic evaluation of these is indispensable.

The public's opinion

Dutch people are positive about health care. The percentage of people who believed that the health care system functioned well has scarcely changed; it was 45% before and is 42% after the system reforms.
The majority of Dutch people feel that they are in good hands in the Dutch health care system. Indeed, an average of 9 out of 10 people is highly positive about physicians and about care in general. Almost 30% gave a score of as high as 9 out of 10. Some 6 out of 10 people are confident that they will receive excellent and safe care should they become seriously ill. Just 5% stated that they had little or no confidence in this.

There are wide differences in the level of confidence that consumers have for different aspects of care. The lowest level of confidence is in mental health care, nursing homes and residential homes. Between 2004 and 2006, confidence in all aspects of care fell slightly.

The Dutch believe that GPs deal with their patients in an open and patient-centred manner (90%). The Netherlands scores higher for this aspect than other countries (UK: 82%). The CQ index for general practice care reveals that Dutch GPs score well for all aspects of interpersonal conduct. Care users are satisfied with the attention and expertise received from doctors and nurses in hospitals (Prismant, 2007).

This positive picture is confirmed by international research. At the end of last year the Commonwealth Fund presented the results of an international comparative study, entitled "Toward higher-performance health systems" (Schoen et al., 2007). In this report the experiences of adult residents with health care systems of the following seven countries were compared: Australia, Canada, Germany, New Zealand, the United Kingdom, the United States and the Netherlands. The Netherlands scored well in this study: "... the Dutch public stands out for its positive views, including high levels of confidence in the quality and accessibility of care and low levels of cost-related concerns".

Confidence in the health care system is lower than the confidence in the care provided.
In one part of the CMWF study, people were asked about how well the health care system functions. As can be seen from *Figure 1*, in 2007 more than 40% of Dutch people believed that the system functioned well. Although this score might not seem particularly high, the scores for other countries that participated in this survey were not higher than 26%. In 2002, the same question was also posed to inhabitants of 15 EU countries. Back then, the results for the Netherlands were similar (45% were positive).

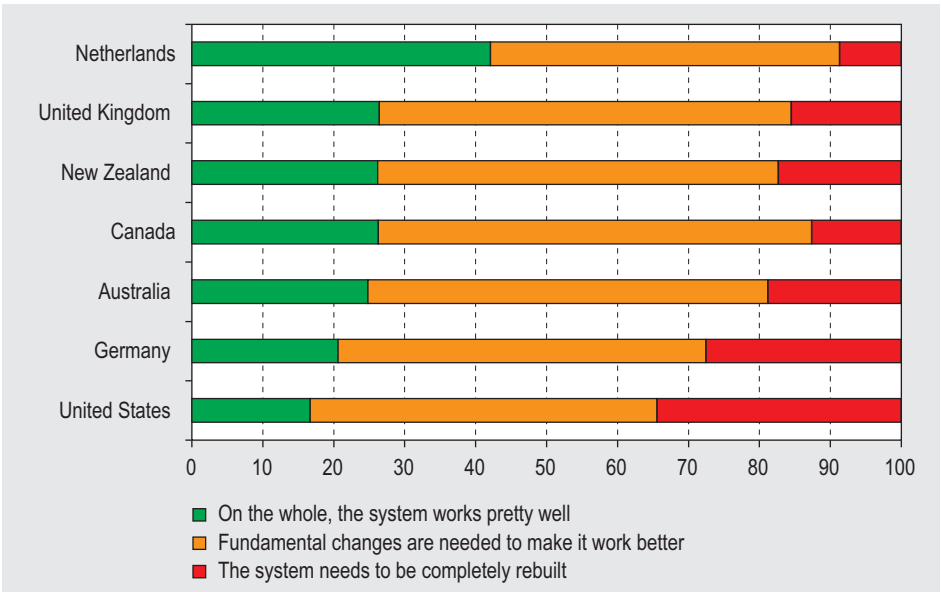


Figure 1: Overall view of the general public on the health care system, in 2007 (%) (Source: Grol and Faber, 2007; Schoen et al., 2007).

Efficient and productive?

The Netherlands occupies a mid-table position with respect to efficiency; there are countries with similar health expenditures and a lower avoidable mortality.

A growth in the health expenditure of 5% per year over the next few years is not inconceivable. Therefore, we urgently need to ask ourselves whether our health care system is efficient enough. Is the health care system capable of using the resources deployed to realize an optimum level of health gains or can we achieve the same using less resources? In this DHCPR we examine the differences with regards to this topic between countries and between health care organizations.

Avoidable mortality provides an insight into the disease-related mortality that could be treated effectively in view of the current level of care and scientific knowledge. Within the current health care system, nobody should die from these diseases (Nolte and McKee, 2003; Nolte and McKee, 2004). The trends in avoidable mortality have been measured in 14 countries over the last 10 years. There has been a decrease in avoidable mortality in these countries, and the figure for the Netherlands is average. How does this relate to the current health expenditure if we take this as an indication for the care efforts? *Figure 2* shows that countries with higher health expenditures do not always realize a lower avoidable mortality. It would appear that the Netherlands still does not achieve an optimal return on its investment. For example, France realized a lower avoidable mortality with roughly the same level of health expenditure. Moreover, Japan and Spain realize a lower avoidable mortality with even smaller health expenditure rates.

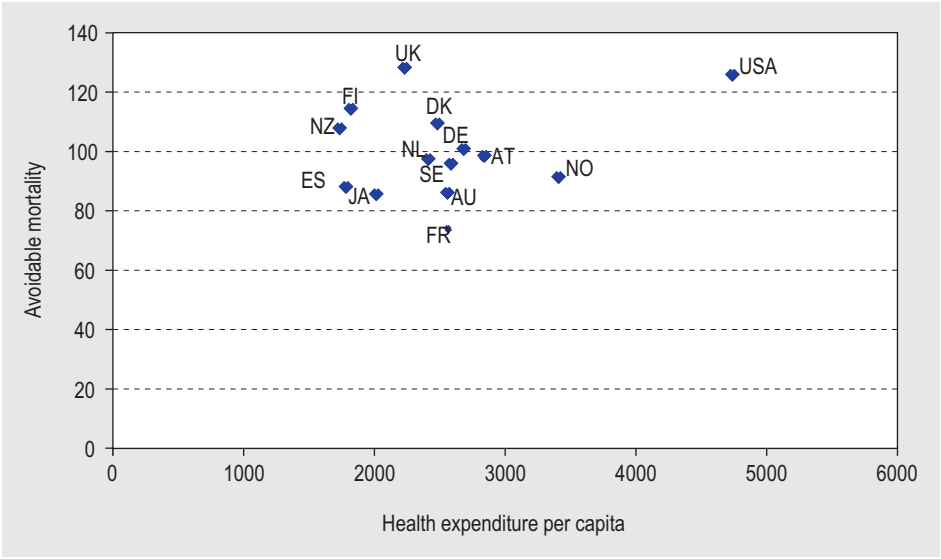


Figure 2: Health expenditure per capita (US$, adjusted for cross-country price differences) and avoidable mortality (per 100,000 population under the age of 75), in 2003 (Source: WHO, 2007b; OECD Health Data 2007; data processed by RIVM).

In *Figure 3* the hospital mortality within 30 days is plotted against the health expenditure in hospitals. This analysis reveals an even more direct relationship, between *input* and *output,* than in *Figure 2*. The score for each country lies between zero (lowest possible mortality) and one (highest possible mortality), and includes the mortality for a number of frequently occurring life-threatening conditions (myocardial infarct, cerebral haemorrhage and cerebrovascular accident). The figure only includes expenditure for hospital care. *Figure 3* reveals that Norway, Australia and Japan have better outcomes than the Netherlands, whilst only in Norway is expenditure significantly higher.

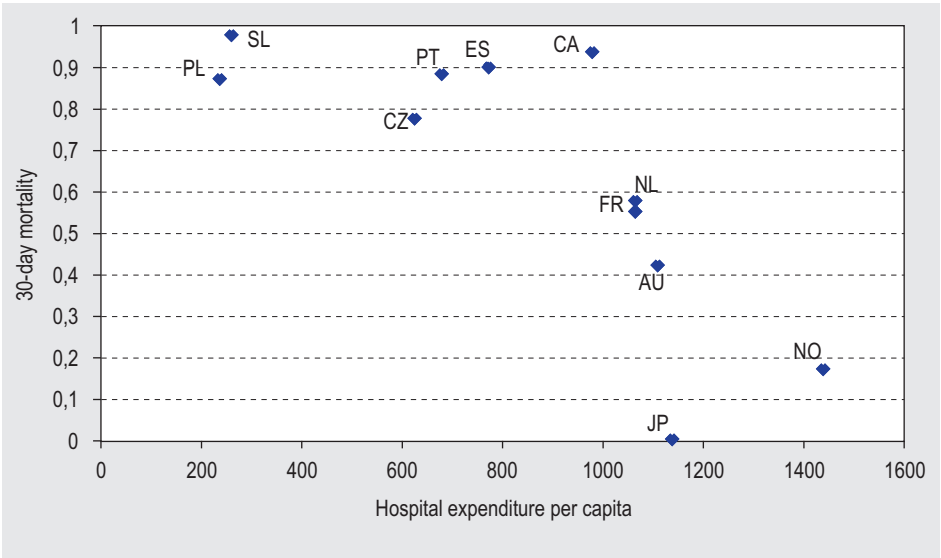


Figure 3: 30-day hospital mortality rate and hospital expenditure per capita (US$, adjusted for cross-country price differences), in 2004 (Source: OECD Health Data 2007; data processed by RIVM).

In the Netherlands, the number of avoidable hospital admissions is low; a significant proportion of the length of stay in hospital is, however, avoidable.

Unnecessary hospital admissions can be an indication of inefficient care. An admission is unnecessary if a relatively expensive hospital admission can be prevented by effective or accessible primary care. For a number of diseases, admissions are defined as 'unnecessary' in the literature (Weissman, 1992), for example, an admission due to asthma or pneumonia. Between 1995 and 2005, the proportion of avoidable admissions decreased from 3% to 2.5% of the total number of hospital admissions. This percentage is lower than the most recent figures for Canada (4.7%) and the United States (11.5%). According to this performance indicator the Netherlands has an effective and accessible primary care.

In 2000 and 2006, the average length of stay in the hospital with the longest length of stay was respectively 2.5 and 1.7 times longer than in the hospital with the shortest length of stay. This figure has been corrected for differences in the composition of the patient population admitted. On a national level the length of stay could be reduced by 15%. This could be realized if all hospitals were to adopt the length of stay of the hospital that scored well with respect to this point (the 15th percentile hospital), for example, by ensuring that all clinical admissions that are potentially eligible for day surgery are actually performed in day surgery.

The labour productivity has increased in recent years.
The number of patients or admissions (per labour unit) in hospital care has increased since 2001. In care for the elderly the labour productivity, measured on the basis of days and hours of care, rose by 1.4% per year between 2000 and 2005 However, neither of these two measurements could take into account the possible differences in the quality of the care provided during the period investigated.

Since the system reforms in 2006

The system reforms – at the start of 2006 - have led to clear effects on certain aspects, but have still not resulted in demonstrable changes in the quality, accessibility and costs of care at the macro-level. The health insurer mainly purchases health care on the basis of price and is no more critical about the quality than in 2004. At present, the quality of care is not transparent enough.
The system reforms in 2006 led to a lot of movement by insurance policyholders. One in five policyholders switched insurer and the competition between health insurers was fierce from the moment the reforms were introduced. Premiums failed to cover the costs and the profit margins in the premiums were limited. This picture continued into 2007. In a short time a strongly competitive market has developed to acquire more policyholders.
However, in 2006 and 2007 hardly any use was made of quality criteria for hospital care during the purchasing of care. In the care purchasing market no competition is visible yet with respect to the price/quality ratio. The prices in independent treatment centres are lower, although the causes of this are still not completely clear. In the freely negotiable part of hospital care (the B segment) the volume of care in particular is rising. Due to a lack of information about the quality of care, no statements can yet be made about trends in the quality of care in the B segment.

Information about the quality of the care must counteract market forces that are purely price driven. A lack of such information could lead to quality losing out to competitive prices. Although care users can independently gain some insight into the quality of care, they also need to be assisted by the health insurers who purchase care on a critical basis. However, there is still not enough transparency concerning the quality of care.

In the DHCPR 2010 it will be evaluated whether improvements in transparency with respect to the quality of care, the withdrawal of financial certainties and guarantees for care suppliers and the expansion of negotiable care, have further stimulated market forces and what the effects of these are on the accessibility, quality and costs of care.

1 BACKGROUND AND APPROACH

The commission

The Dutch Health Care Performance Report (DHCPR) is compiled by RIVM and was commissioned by the Ministry of Health, Welfare and Sport (further referred to as the Ministry of Health).
The DHCPR comprises two informative products:

- The summarising report 'The DHCPR', which with the help of roughly 100 indicators describes the quality, accessibility and efficiency of Dutch health care from a macro-perspective.
- The Dutch website http://www.gezondheidszorgbalans.nl, which, besides the findings about the performance levels of Dutch health care per indicator used, also provides a scientific justification.

The approach

For the purpose of the DHCPR (2006), the Ministry of Health provided a large set of indicator domains that are crucial for assessing the performance achieved and the actual status of health care. RIVM ranked the set of indicator domains across the three objectives for which the Ministry of Health bears overall system responsibility: quality, accessibility and costs (Westert, 2004).

Health care is defined as activities aimed at alleviating, reducing, compensating and/or preventing deficiencies in the health status or autonomy of individuals (Van der Meer & Schouten, 1997). In this report, health care includes preventive, curative and care services for both somatic and mental conditions and complaints. Welfare has not been included in the DHCPR.

The DHCPR makes use of a conceptual framework for performance indicators (see *Figure 1.1*) that is based on the report *Bakens zetten [Positioning beacons]* (Delnoij et al., 2002) and an extensive international literature review (Arah et al., 2005 and 2006). In the applied framework, health care is divided into four specific health care needs: staying healthy (prevention), getting better (cure), living independently with a chronic illness or disability (long-term care), and end-of-life care. For each separate care demand, health care performance is presented and analysed for the aspects quality, accessibility and affordability. The indicator framework developed and used is well accepted internationally. The Organization for Economic Co-operation and Development (OECD) has adopted this framework for the further development of international comparisons of health care system performance (OECD, 2005).

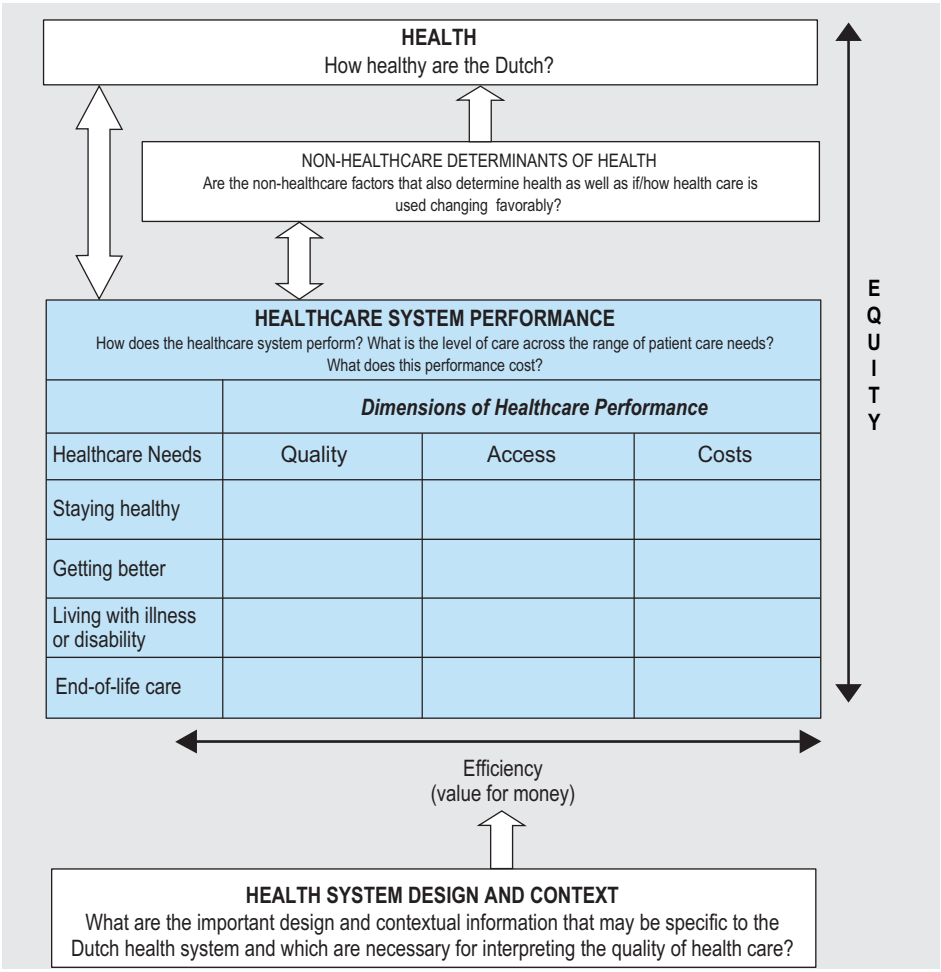


Figure 1.1: Conceptual framework for health care system performance levels within the broader framework of public health (Source: Arah et al., 2006).

The structure of the DHCPR

DHCPR -> System objectives (3) -> Indicator domains (12) -> Indicators (110) -> Key findings

The DHCPR has a graded structure. The first layer consists of the three system objectives, namely quality, accessibility and costs. These three objectives are then subdivided into twelve indicator domains based on (international) literature.

Indicator domains
Quality
- Effectiveness, Safety, Innovation

Accessibility
- Financial barriers, Geographical barriers, Timeliness, Social barriers, Availability of care and personnel, Freedom of choice

Costs
- Health care expenditure, Financial position of care providers and health insurers, Labour productivity

For each indicator domain, indicators were selected that have a signalling function for the domain concerned. An indicator is a measurable aspect of care that gives an indication of a specific performance aspect, such as quality of care (Colsen & Casparie, 1995). The selection of indicators is primarily based on (a combination of) two criteria:
- the intrinsic relationship between the indicator and a specific care aspect to be investigated,
- the availability of data.

Each indicator eventually leads to a key finding.

Connecting themes

In the second DHCPR, three connecting themes are used for the first time: the public's opinion, efficiency, and the effects of health system reforms. The first connecting theme is about the opinions of the general public and care users on health care. This theme is considered in greater detail than in the previous DHCPR, as a lot of new material has been collected since then. The public's opinion concerns indicators from almost all domains.

The theme 'efficiency' considers whether an optimal output is produced with the resources invested. Accordingly this theme attempts to link the public objectives of 'costs' and 'quality'. Are the Dutch getting value for money?

The third theme considers recent health care system reforms. In principle, this DHCPR can measure the initial effects of the reforms of the health care insurance system implemented on 1 January 2006, since the first DHCPR described the situation in 2004 and the second report (2008) describes the situation in 2006/2007. Therefore this DHCPR can provide an answer to the question about the effects the reforms have had to date on the quality, accessibility and costs of the *entire* health care system, seen from a macro-perspective. For various reasons a cautious answer will be given. The reforms were introduced only recently and are part of a previously initiated (and not yet completed) series of measures aimed at introducing more market forces into the health care system. Therefore clear cause and effect conclusions cannot always be drawn.

The connecting themes have lead to a slight adjustment in the structure of the DHCPR. In the first DHCPR, part of the theme 'the public's opinion' was tackled in the section 'Consumers experiences with health care'. As the public's opinion is important for almost every aspect of care, it was decided to replace this existing section (and the indicator domain 'patient centredness') with a connecting theme. In the previous DHCPR, the theme efficiency was very briefly touched upon in the 'Executive Summary', and therefore did not receive its own section. Finally, the 'old' section about the functioning of the health care market has been incorporated into the section about the health system reforms, as these two themes are strongly related to each other.

The purpose of the DHCPR

The aim of the DHCPR is to make a contribution to the strategic decision-making of the Ministry of Health in the area of health care. To realize this objective the DHCPR attempts, in accordance with its commission, to paint a broad picture, to present trends over time, to compare the Netherlands to other countries and where possible to state (policy) standards and benchmark data, so that policymakers have the information they need to make their own assessment of the performance of the Dutch health care system.

An important requirement of the DHCPR is to minimize the number of indicators used. Consequently, during the selection of the indicators not all of the data available in the Netherlands were included. Therefore the DHCPR mainly has a *signalling function* at a global level, without fully considering all specific components and aspects of the health care system. The DHCPR presents about 110 indicators in measurements and counts, which explain a maximum number of aspects of health care. The ultimate goal of presenting all these measurements is to create a representative picture of the general system performance of the Dutch health system, in line with the system objectives of the Ministry of Health policies.

Introduction to the DHCPR

Chapters 2, 3 and 4 describe the three system objectives, namely quality, accessibility and costs. Each chapter starts with a section *"What is..."(2.1; 3.1; 4.1*), in which quality, accessibility and the costs of care are defined and the indicator domains are explained. The domains are discussed in separate sections. The format is the same for each section:

- Key findings
- Indicators used to determine performance
- The current state of affairs in measurements and counts
- Conclusion

The twelve indicator domains are eventually considered in sixteen sections. In several cases a given indicator domain is further divided, as is the case for effectiveness and timeliness.

Chapter 5 contains the three connecting themes. The concluding chapter, *Chapter 6,* assesses how the DHCPR has developed up until now, describes important gaps in the provision of the information needed and looks ahead to the next DHCPR in 2010.

2 QUALITY OF HEALTH CARE

2.1 Quality of care

Attempts to define quality of care, inevitably lead to tautological arguments in which the concept of 'quality' is replaced by terms such as 'good', 'responsible' or 'best possible' (Van Tongeren and Bal, 1998). It is not so much a question of what quality of care is, as a question of what do we understand quality of care to involve, or how do we operationalize quality of care.

As was explained in the previous DHCPR, our interpretation of the concept of quality of care is in line with that of the Institute of Medicine (IOM, 2001). In its interpretation of quality of care, the IOM distinguishes four major aspects: effectiveness, safety, timeliness and demand orientation. Timeliness is dealt with in *Chapter 3* on the accessibility of health care.

Part of the IOM interpretation of quality of health care is also present in the Quality of Care Institutions Act (Kzi): *The health care provider offers 'responsible' care. Responsible care implies care of a high standard, that is provided in an effective, efficient and patient-centred way and that meets the patient's actual needs* (Kzi; Article 2).

This description reflects the three perspectives from which quality of care can be perceived: professional (effective), economic (efficient) and patient (patient-centred). Efficiency is dealt with in *Chapter 5* as one of the connecting themes.

There is a subtle difference between measuring quality of health care and quality of the healthcare *system*. This difference is comparable to a company that will focus not only on product quality, but also on management and innovation. The latter are to ensure that in the future products will also be of good quality. This is one of the reasons why Delnoij et al. (2002) stressed the importance of the *balanced scorecard* to monitor the healthcare system (Kaplan and Norton, 1992).

In line with these interpretations and arguments, this chapter on quality of care focuses on:

- Effectiveness
- Demand orientation
- Safety
- Innovation

Below the notions of effectiveness, demand orientation, safety and innovation will be elucidated and it will be explained how these notions relate to the *sections 2.2 to 2.7*.

Effectiveness

Care is effective when the goals of care are met. What these goals are, depends on the type of care. Curative care aims at recovery or, if this is not feasible, at alleviating pain or delaying the disease process. The aim of long-term care is to support people in order to enable them to live the life they wish to lead and are used to living and to do the things they consider important and meaningful, given their abilities and limitations (Arcares et al, 2005b). Prevention aims to enhance the health status of the population by promoting and protecting health, to prevent diseases and conditions from occurring or to detect them at as early a stage as possible to be able to start treatment early. Prevention also includes preventing and delaying the onset of disease complications.

Demand orientation

The Dutch Patients/Consumers Federation (NPCF) defines demand orientation as: "*Demand oriented care, is care that, according to care consumers or their representatives, contributes optimally, at the collective or individual level, to dealing with the problems they experience*" (Goudriaan and Vaalburg, 1998).

This definition is in line with the interpretation of demand orientation in the DHCPR. The public and patient perspectives on care are central to this interpretation.

Safety

The IOM (2001) defines safe care as: "*avoiding injuries to patients from the care that is intended to help them*". This definition is very close to the definition by Bruijne et al. (2007): "*the (near) absence of (the risk of) patient injury due to the substandard performance of health care professionals and/or shortcomings in the health care system*". The injury may be physical as well as psychological and result in temporary or permanent disability or death of the patient.

Innovation

Innovations are the applications of new products, technologies or processes. Innovations in care may contribute to the reduction of disease risk, pain and disability and thus attain much health gains (OECD, 2005a). The old maxim that stagnation means decline also applies to health care. People's care demands change, and it is of great importance that health care adapts to these changes. Not just present care should be up to standard, but it is equally important that future care remains up to standard. Current treatment methods can be improved upon or be more efficient or new treatment methods can be developed. Just as in a 'healthy' company, there should be sufficient innovation in a 'healthy' health care system. The DHCPR addresses innovative developments and the requirements for a 'climate of innovation'.

Structure of this chapter

This chapter includes seven sections. In *section 2.2 to 2.5* effectiveness is the central topic. Each of these sections focuses on a specific type of care: prevention (*2.2*), cure (*2.3*), long-term care (*2.4*) and mental health care and addiction care (*2.5*). *Section 2.6* deals with safety in health care and *section 2.7* with innovation in health care. Demand

orientation is not the subject of a separate section, but is dealt with in several sections and is one of the connecting themes in chapter 5.

The various aspects of the indicator domains are no separate entities, but they tend to overlap and fade into one another. Thus, unsafe care is also less effective care and long-term care is by definition not effective if it is not demand oriented.

The arrangement of sections in this chapter is based on both theoretical and pragmatic considerations. Some indicators could have been categorized under a different domain. Thus, a separate section is dedicated to mental health care, while this type of care could also be categorized under cure or long-term care.

Finally, we would like to point out some differences with the previous DHCPR. Firstly, accreditation and certification are left out. The reason is that these subjects allow only structural indicators to be measured, while it is unknown how these structural indicators relate to outcomes of care. A second reason is that accreditation is not so much an (operational) objective, but rather a means to promote quality.

Secondly, patients have been given a more prominent place in the present DHCPR. The patient perspective is the subject of one of the connecting themes. Consequently, information on patient experiences is divided over the sections, and patient experiences are also the exclusive subject of a separate section (*Section 5.2*).

2.2 The effectiveness of prevention

Key findings

- In 2005, the participation rate of the national breast cancer screening programme further increased to 81.7% and the participation rate of the national cervical cancer screening programme stabilized at 65.5%. The participation rate of the heel prick test is 99.9%
- In 2005, the vaccination rate in the Netherlands for all vaccines from the National Vaccination Programme was above 95%
- In 2007, 28% of the Dutch population smoked and, in 2006, 10% of the Dutch population drank too much and 44% did not exercise enough; these figures have been stable over the last few years
- In 2007, almost half of the Dutch population went to the dentist for a regular check-up
- During the first few years of life, the percentage of children who have contact with preventive child health care (child health centre) is high; 100% during the first year of life to 79% in the fifth year of life
- One-quarter of patients indicate that they have received lifestyle counselling or coaching from the GP

- In 2005, infant mortality in the Netherlands was higher than the European Union average. In recent years infant mortality in the Netherlands has slowly decreased to 4.4 per 1000 live births in 2006
- 16% of schools in secondary education have formulated a health policy in writing

How we determine the effectiveness of prevention

The aim of prevention is to ensure that people remain healthy by promoting health on the one hand and protecting health on the other. A further aim of prevention is to prevent diseases and disorders or to detect them as early as possible, so that treatment can be started sooner. Prevention also includes the prevention of disease complications. The priorities of the prevention policy are described in the prevention memorandum "Opting for a healthy life" (VWS, 2007a) and the vision report on prevention "Being healthy and staying healthy" (VWS, 2007b). The greatest health effects are expected for the subjects that were chosen as spearheads: smoking, harmful alcohol use, obesity, diabetes and depression. These subjects make a significant contribution to the health problems in the Netherlands. The vision on prevention report states that the importance of prevention is not just to be found in health gains but also in making a positive contribution to society. A second point is that prevention ensures the viability of the health care system. In the vision on prevention report, four policy themes that require extra attention are stated: valuing and facilitating prevention measures already in place, effecting a coherent and integrated health policy, integrating prevention into the mainstream health care system and effecting greater coherence, cooperation and modernization in the administrative setting.

Indicators

The effectiveness of prevention is expressed using eight indicators. Indicators in the area of health promotion and disease prevention have been included.

- Participation rates of population-based breast and cervical cancer screening programmes and the heel prick test
- Vaccination rates of the National Vaccination Programme
- Trends in lifestyle
- Annual check-ups at the dentist
- Coverage of preventive child health care
- Lifestyle counselling by the GP
- Infant mortality
- Health policy in schools

The percentage of overweight people is a good indicator for the effectiveness of primary prevention of diabetes. This is included under the indicator 'trend in lifestyle'.

Elsewhere in the DHCPR, several other indicators that provide an insight into the effectiveness of prevention in certain areas are discussed. For example, *Section 2.5* includes indicators about the effectiveness of care for mood disorders.

The current state of affairs

In 2005, the participation rate of the national breast cancer screening programme further increased to 81.7% and the participation rate of the national cervical cancer screening programme stabilized at 65.5%. The participation rate of the heel prick test is 99.9%

The participation rate of breast cancer screening programmes increased slightly (see *Table 2.2.1*). The Ministry of Health's goal for the participation rate of this screening programme is 80% in 2008 and 2011 (Rijksbegroting, 2008). The EU has set a turnout of 75% or more as the standard for breast cancer screening (Perry et al., 2006). Both standards are achieved by the Netherlands.

The screening for cervical cancer had a turnout of 65.5% in 2005. The increase in participation during the period 2000-2003 appears to have stabilized. The Ministry of Health's goal for the participation rate is more than 65.6% in 2008 and 2011 (Rijksbegroting, 2008).

In 2006, 99.9% of neonates underwent a heel prick test (detection of diseases PKU, AGS, and CHT). The Ministry of Health's target value for the coverage of the heel prick test is 99% in 2011 (Tweede Kamer, 2008). This percentage has already been amply achieved. According to the guideline for the heel prick, at least 90% of children must receive a heel prick on or before the age of 8 days. In 2006, the heel prick was taken before the eighth day in 98% of the children (Lanting et al., in print). On 1 January 2007, the heel prick was extended and now screens for 17 diseases.

Table 2.2.1: Participation rate of population screening programmes, 2001-2006 (%) (Source: LETB, 2006; Van Leerdam and Ploeg, 2004; Erasmus MC, in print; Lanting and Verkerk, 2005; Lanting et al., in print).

	2001	2002	2003	2004	2005	2006
Participation rate breast cancer screening (women aged 50-75 years)	78.7	79.1	80.8	80.8	81.7	-
Participation rate cervical cancer screening (women aged 30-60 years)	62	64	66	-	65.5	-
Heel prick test (all neonates)	-	-	99.8	-	-	99.9

In 2005, the vaccination rate in the Netherlands for all vaccines from the National Vaccination Programme was above 95%

In 2005, the national average vaccination percentages for each vaccine in the National Vaccination Programme (RVP) were once again over 95% (DTP-Hib-HepB (since 1 June 2006), MMR, MenC, pneumococci (since 1 April 2006)). Thereby the Netherlands meets the existing WHO standard of a vaccination rate of 90%. In 2005, the national vaccination rate for all vaccinations increased. In 2004, the upward trend was explained by the increased attention for the correct implementation and registration of the RVP (Abbink, 2006). The Netherlands shares a high vaccination rate with several other countries. *Figure 2.2.1* shows an international comparison of the vaccination rate of the third vaccination with the DTP vaccine.

The vaccination rate can be used as a measure for the effectiveness of the RVP because for each vaccine its level of protection and therefore its effect are known. With the exception of the whooping cough vaccine (pertussis), all vaccines have a high level of protection (Isken, 2005). The RVP's goal is not just the individual protection of children but also to further the collective interest by providing protection at the population level.

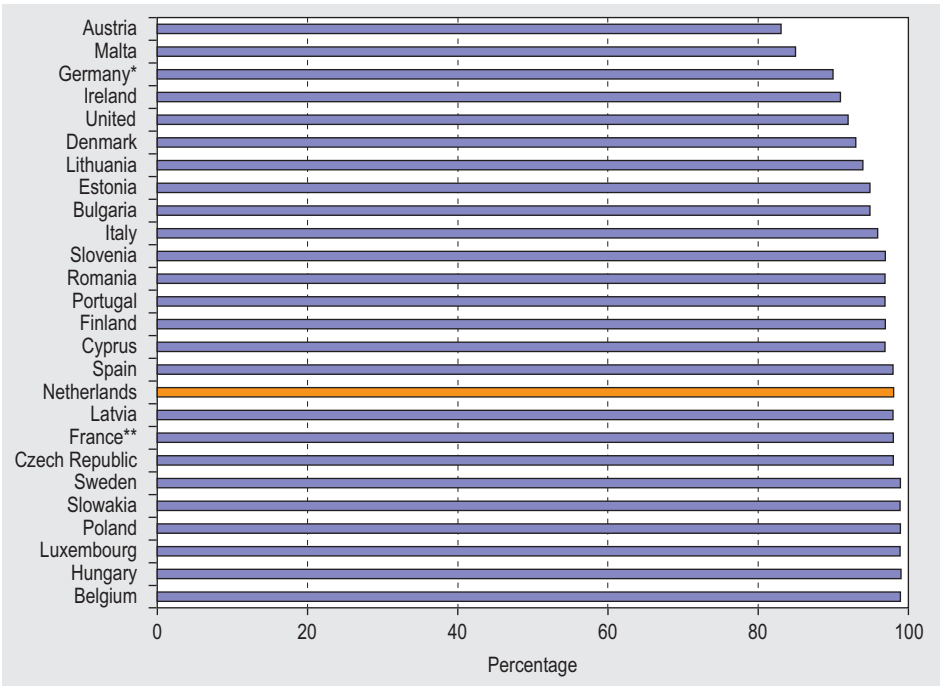


Figure 2.2.1: Vaccination rate of DTP-3 (diphtheria, tetanus and whole cell pertussis) vaccination, per country, in 2006 (%) (Source: WHO, 2007).

** 2005, ** 2004, # In the Netherlands polio is often vaccinated against as well. In the Netherlands the third vaccination is given at the age of 4 months.*

In 2007, 28% of the Dutch population smoked and, in 2006, 10% of the Dutch population drank too much and 44% did not exercise enough; these figures have been stable over the last few years

When viewed over a longer time period, a decreasing trend in the number of smokers is evident. Since 2004, the percentage of smokers has stabilized. In 2007, 28% of all adults in the Netherlands smoked (Stivoro, 2008). Tobacco use is the most important single cause of disease and mortality and is responsible for 13% of the disease burden in DALYs (Disability-Adjusted Life-Years) (Hollander et al., 2006).

Between 1981 and 2007, there was a large increase in the percentages of adults and children with obesity. The percentage of people who are overweight has remained constant in recent years. In the period 2005-2006, about 45% of the Dutch population aged 18 to 70 years suffered from obesity to a certain extent. Men are more frequently overweight than women (see *Figure 2.2.2*) (CBS, 2007a). Obesity is responsible for the 9.7% of the disease burden in the Netherlands (Hollander et al., 2006).

The percentage of people with high blood pressure appears to be increasing slightly. About one-third of the Dutch population suffers from high blood pressure; it is responsible for 7.6% of the disease burden in the Netherlands (Hollander et al., 2006).

In recent years, harmful alcohol consumption among adults has remained fairly constant. Alcohol use among school pupils increased between 1999 and 2003, especially among young girls aged 12 to 14 years (Trimbos, 2008). Since 2003, however, there has been a slight decrease in the percentage of drinkers (Monshouwer et al., 2007; Van Dorsselaer et al., 2007). Roughly speaking, about 10% of the Dutch population has a level of alcohol use that is detrimental to their health. Excessive alcohol use is responsible for 4.5% of the disease burden in the Netherlands (Hollander et al., 2006).

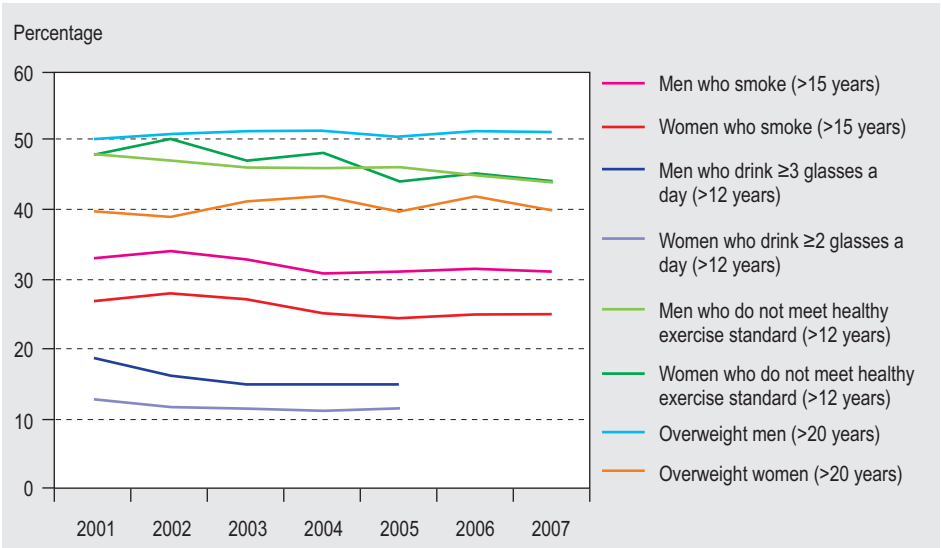


Figure 2.2.2: Risk behaviour of adults, 2001-2007 (%) (Source: Stivoro 2008; CBS, 2007a; Hollander et al., 2006).

The percentage of people that do not exercise enough has remained constant in recent years. In 2007, 44% of the Dutch population over the age of 12 years did not meet the Dutch standard for healthy exercise (Nederlandse Norm Gezond Bewegen). Physical inactivity is responsible for 4.1% of the disease burden in the Netherlands (CBS Statline, 2007a. Hollander et al., 2006).

In 2007, almost half of the Dutch population went to the dentist for a regular check-up

In 2007, 48.3% of the total population went to the dentist for a regular check-up (see *Figure 2.2.3*). In children aged 0-12 years that percentage was 55.1% in 2007, for young people aged 12-18 years it was 64.7% and for young adults aged 18-25 years it was 52.6% (CBS, 2008b). Three-quarters of the people can make an appointment for a regular check-up within four weeks (Schaub, 2007). In 2007, almost 78% of the Dutch population went to the dentist for a regular check-up, treatment or pain control. This percentage is fairly stable. If we only analyse the people who have a full or partial set of their own dentures then, in 2007, almost 85% went to the dentist at least once per year. In 2007, patients had an average of 2.5 contact moments (Schaub, 2007; CBS, 2008b).

Internationally, the average percentage for dental visits is 62% for the EU 25. Together with Slovakia, the Netherlands has the highest percentage of dental visits (EC, 2007).

Since 2004, the regular preventive check-up is no longer being included in the insurance package with the exception of young people aged under 18 years (CVZ, 2007b). Since 1 January 2008, the annual regular preventive check-up has once again been included in the insurance package for young people aged under 22 years.

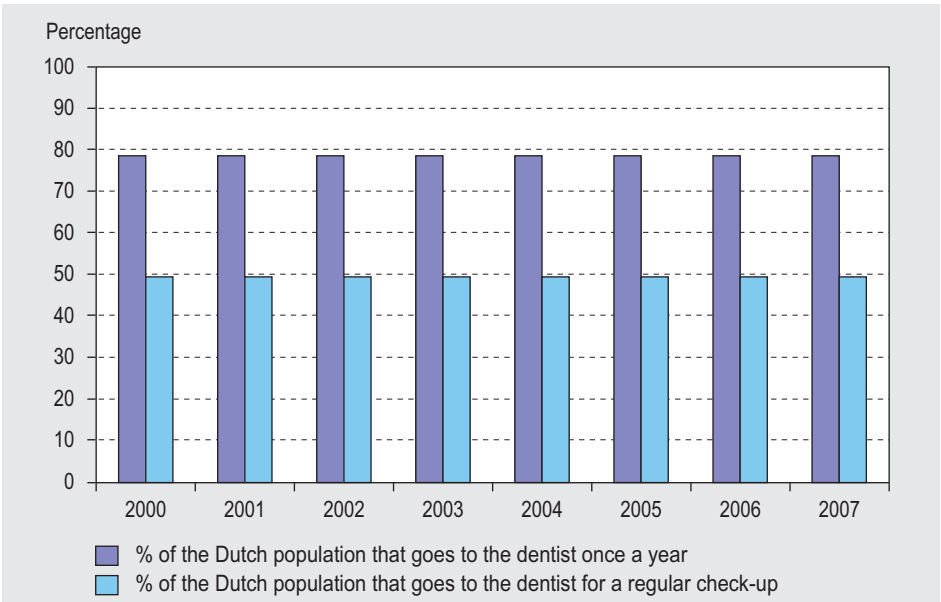


Figure 2.2.3: Number of visitors to the dentist as a percentage of the total population, 2000-2006 (%) (CBS, 2007b).

During the first few years of life, the percentage of children who have contact with preventive child health care (child health centre) is high; 100% during the first year of life to 79% in the fifth year of life

During the first year of life, all children in the Netherlands are seen by preventive child health care at the child health centre. Thereafter, this percentage decreases (see *Table 2.2.2*). For children older than 4 years it is not known what their frequency of contact is with preventive child health care. For the 'uniform part' of preventive child health care (i.e. activities that should be offered to all children of a certain age) a guideline was compiled in 2003. Some 91-100% of the organizations offering this care adhere to the contact moments of this guideline with the exception of special education, the contact moment at two years and several contact moments which involve external organizations (Dijs-Halfwerk, 2005). Data about the average number of contact moments per child, per year of life do not agree with the number of contact moments prescribed in the guideline. The total number of contact moments does, however, agree with the guideline (see *Table 2.2.2*). The percentage of preventive child health care organizations that offer the activities during a contact moment in accordance with the guidelines varies from 64% to 100% (Dijs-Halfwerk, 2005).

Table 2.2.2: Visits to preventive child health care (child health centre) during the first four years of life, in 2006 (%) (Source: CBS, 2007c; Platform Jeugdgezondheidszorg, 2003).

Age	Coverage	Number of visits of children to the child health centre	Number of contact moments according to guideline
0 year	100	5.4	10
1 year	98.6	4.8	2
2 years	92.2	1.8	1
3 years	88.2	1.5	2
4 years	78.8	1.5	0

One-quarter of patients indicate that they have received lifestyle counselling or coaching from the GP

Compared to physicians in many other countries, Dutch GPs do not give lifestyle counselling or coaching that often. About 25% of patients indicate that they have received lifestyle counselling or coaching within the past two years (see *Figure 2.2.4*). In other countries, such as the United States, this figure can be as high as 56% (Grol and Faber, 2007). Research into the subjects discussed during a visit to the GP reveals that the subject lifestyle is discussed during 40% of the visits. The subject lifestyle takes up less than one-quarter of the consultation time in 81% of cases. The GP often initiates the conversation about smoking and weight. The patient often initiates the conversation about nutrition and physical activity (Milder et al., submitted).

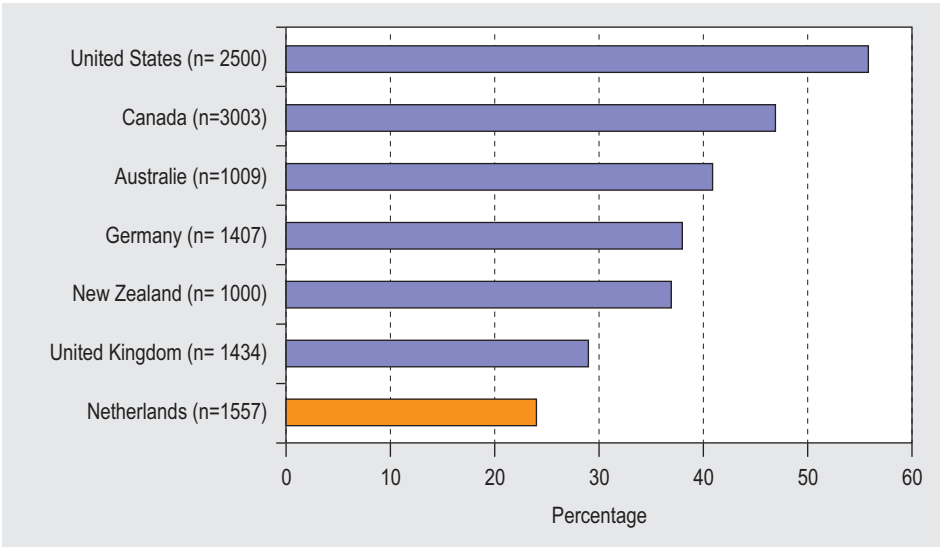


Figure 2.2.4: Percentage of people who indicate that they have received lifestyle counselling or coaching (weight, nutrition and exercise) from GPs during the past two years (%) (Source: Grol and Faber, 2007; Schoen et al., 2007).

In 2005, infant mortality in the Netherlands was higher than the European Union average. In recent years infant mortality in the Netherlands has slowly decreased to 4.4 per 1000 live births in 2006

In 2006, there were 185,057 live births in the Netherlands. Of these, 820 children died during the first year of life (CBS Statline, 2007a; b). This number is higher than the average of EU countries for which data are known (see *Figure 2.2.5*) (OECD, 2007a). The Netherlands has exchanged its former top position in the EU, with a low infant mortality (number of mortalities during the first year of life) and a low perinatal mortality (number of the stillborns after a pregnancy of more than 24 or 28 weeks and the number of mortalities during the first week of life), for a position that is under the EU average (Waelput, 2006). In recent years infant mortality in the Netherlands has gradually decreased to 4.4 per 1000 live births in 2006 (CBS Statline, 2007b). Perinatal mortality in the Netherlands levelled off during the second half of the 1990s. This levelling off in the decrease is visible in several high-income countries. Some factors increase the risk of perinatal mortality. The importance of several of these factors has recently either increased or not fallen in the Netherlands: the relatively high age of mothers at the birth of their child and the increased chance of multiple births associated with this; the proportion of births among non-native Dutch mothers; and the smoking by mothers (Waelput and Achterberg, 2006b). In the Netherlands, improvements are possible in the care and prevention related to pregnancy and birth, for example, in the advice and information given to expectant mothers about the risk factors for perinatal mortality. This especially applies to the care of women from non-native Dutch populations. The infant mortality provides an indication of the effects of the economic and social situation (Masuy-Stroobant and Gourbin, 1995) on the health of mothers and newborn

babies. In addition to this, it is also an indicator for the effectiveness of the health care system (Hollander et al., 2006).

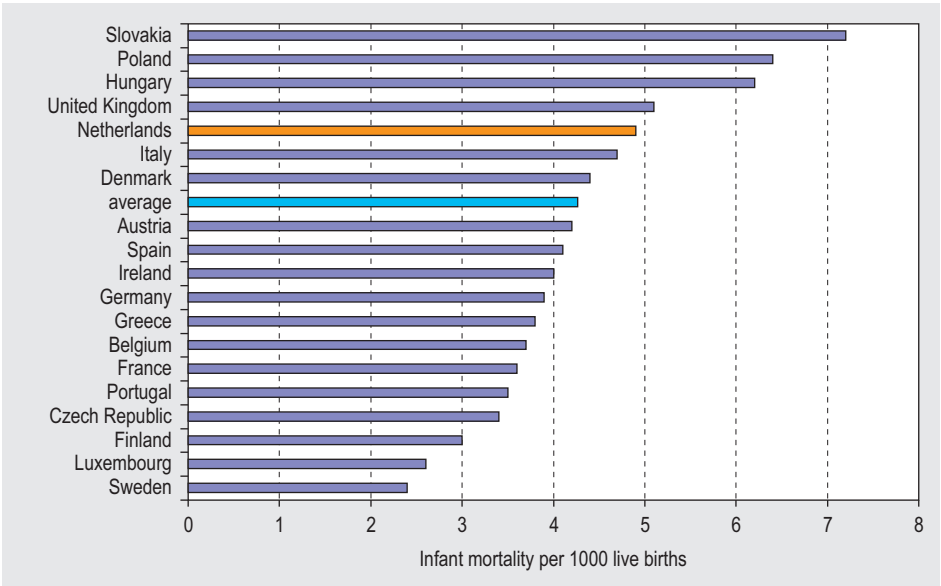


Figure 2.2.5: Infant mortality per 1000 live births in EU countries, in 2005 (Source: OECD Health Data 2007).

16% of schools in secondary education have formulated a health policy in writing

Approximately 16% of schools indicate that they have formulated a health policy in writing. These schools mainly give priority to alcohol use (91% of schools), drug use (87%), smoking prevention (82%) and healthy eating (53%). There are also schools that have a health policy, but without agreements in writing. Their main priorities are healthy eating (45%), exercise (58%) and obesity (17%). One-quarter of the schools state that their health policy is under development (Middelbeek et al, 2007).

Conclusion

Prevention focused on diseases and conditions is quite successful in the Netherlands. That was already clear from the previous DHCPR and it is once again confirmed in this DHCPR. The screening and vaccination programmes have a good coverage and achieve the standards that have been set at both national and international levels. From an international perspective the Netherlands is doing well in these areas, without losing sight of the possible disadvantages of preventive interventions. Van der Wilk et al., (2007) state that compared with many other countries, the Netherlands carefully considers the advantages and disadvantages of screening programmes before imple-

menting these. Another plus point is that child health centres see virtually all children aged 0-4 years.

Interventions that focus on positively influencing health and lifestyle exhibit less favourable results. Smoking, obesity and diabetes have been spearheads of policy since 2003. Although considerable attention is being paid to these issues, their prevalence among adults has remained stable in recent years. Indicators about attention for lifestyle and lifestyle counselling reveal that the extent to which these are actually offered to the public at a local level is limited. For example, only 16% of schools have formulated a health policy on paper and just one-quarter of patients indicate that they have received lifestyle counselling from their GP.

Infant mortality in the Netherlands is higher than the EU average but has been slowly decreasing in recent years.

2.3 The effectiveness of curative care

Key findings

- For the twenty most common conditions for which GPs prescribe medication, Dutch GPs will, on average, choose a drug in accordance with guidelines in two-thirds of cases
- Between 2001 and 2006, the number of referrals to secondary care increased
- More than nine out of ten people in the Netherlands were satisfied with the health care that they had received over the past 12 months
- Six out of ten people in the Netherlands are very confident that, should they require it, the medical care will be both safe and of high quality
- The management of medication use is poorer in the Netherlands compared with many other countries; only 44% of people using one or more prescribed medicines have discussed the use of these drugs with a health care provider in the past 12 months
- The 30-day hospital mortality rate for acute conditions is decreasing; in 2005, the Netherlands still belonged to the middle bracket internationally
- The five-year survival rate for cancer in the Netherlands is above average internationally, but countries such as Finland, Norway and Switzerland show that there is room for improvement
- In 2005, the mortality rate for asthma in the Netherlands was 0.11 per 100,000 people, which is considerably lower than the OECD average of 0.18
- Some 80% of hip fractures are operated on within 48 hours, which is 10% above the OECD average

How we determine the effectiveness of curative care

Curative care is aimed at recovery or, if this is not feasible, at alleviating pain or delaying the disease process. Curative care forms the largest sector within the health care system. The majority of the population comes into contact with it occasionally. In most cases this implies the GP, hospital, dentist, physiotherapist or the pharmacist. Since curative care makes up such a large part of health care, it is also where most money is spent, about 52% of the total health care budget according to the Health Care Budgetary Framework (BKZ). The majority of this budget is spent on hospital and specialist care, followed by medicines and GP care. Combined, these four categories take up more than 90% of the curative care budget (VWS, 2005a). In addition, most health care covered by the basic health insurance falls into the category of curative care.

Indicators
In this section we confine ourselves to the most common forms of curative care: hospital care, specialist care, GP care and medicines.

- Prescribing percentage in general practice according to the Dutch College of General Practitioners (NHG) formulary
- Number of referrals to secondary care
- Opinion of general public on curative care
- Experienced coordination of medication use
- Number of people who die within 30 days of being admitted to hospital for an acute myocardial infarction, stroke or brain haemorrhage
- Mortality due to breast cancer, colon cancer or cervical cancer
- Mortality due to asthma
- Number of hip fractures that are operated on within 48 hours

The current state of affairs

For the twenty most common conditions for which GPs prescribe medication, Dutch GPs will, on average, choose a drug in accordance with guidelines in two-thirds of cases
A formulary is an advice system that GPs have on their computer or on paper. It gives clinical advice on the use of medicines for a particular condition or indication. This advice is founded where possible on evidence-based guidelines.

Figure 2.3.1 shows that when prescribing medication, GPs will, on average, choose a medicine according to the NHG-formulary in two-thirds of cases (66%). The graph only shows data for the twenty most common conditions or indications for which medicines are prescribed. The analyses are based on more than 1.9 million prescriptions (Van Dijk et al., 2008).

From 2003 to 2006, this percentage stayed fairly constant. However, the large differences between practices are striking. The range of values around the average is shown

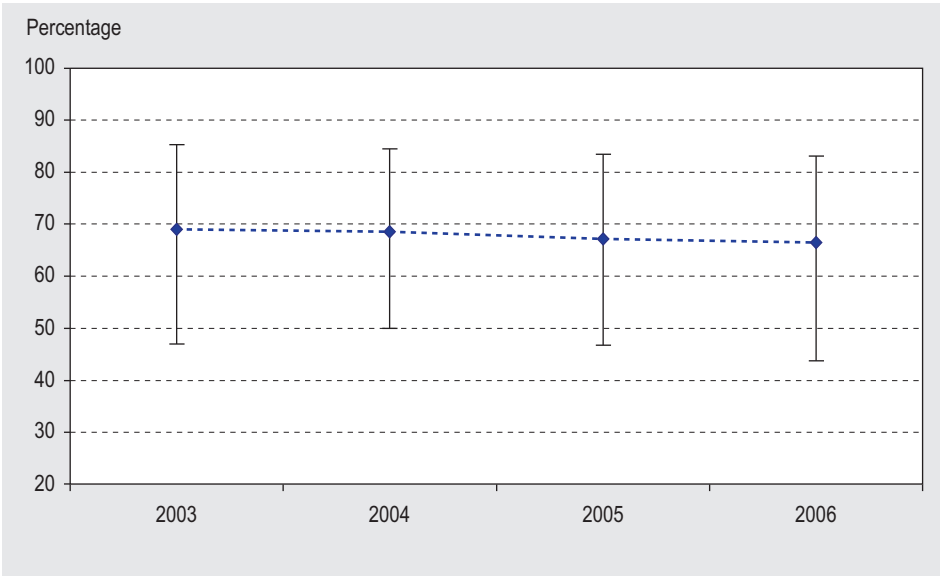


Figure 2.3.1: Percentage of prescriptions whereby a medicine is chosen according to general practice guidelines for the twenty most common conditions for which medicines are prescribed, 2003-2006 (upper and lower limits for 95% of the practices and average of all practices) (Source: LINH; data processed by NIVEL).

for 95% of the practices in the graph. The prescribing percentage according to the formulary varies between 44% and 83% in 2006.

In addition to differences between practices there are also large differences in the percentages of formulary-approved prescriptions between diagnoses. These percentages are shown in *Table 2.3.1* for each condition, per year. Diagnoses for which medicines are most often prescribed according to the formulary are urinary tract infections, insomnia and constipation (around 88%). A condition for which the formulary is seldom followed is acute bronchitis: only 2.3% in 2006. Antibiotics are often prescribed for this condition, against the advice of the formulary. Medicines other than those advised by the formulary are also prescribed for other respiratory conditions such as cough and respiratory infections.

In the period 2003-2006, there were both positive and negative trends. For lower back pain without radicular symptoms and urinary tract infections, an increase is observed in the number of formulary-approved prescriptions. For five conditions there is a decrease, namely for depression, emphysema / COPD, dermatomycosis, diabetes and oral contraceptives. The decrease of more than 13% for diabetes is the most striking.

Between 2001 and 2006, the number of referrals to secondary care increased

Dutch GPs have a so-called 'gatekeeper' role. This means that the main bulk (about 95%) of care demands is dealt with in primary care. It must be noted, however, that the number of referrals per patient has risen somewhat over time.

Table 2.3.1: Average percentage of prescriptions that follow the advice of the NHG-formulary for the twenty most common conditions for which medicines are prescribed, 2003-2006 (Source: LINH, data processed by NIVEL).

	2003	2004	2005	2006	Linear trend
Constipation	86.7	85.6	86.6	87.7	
Angina pectoris	77.2	76.4	76.8	76.7	
Essential hypertension without organ damage	73.3	74.5	73.0	72.8	
Hypertension with organ damage	65.7	65.7	62.9	61.8	
Lower back pain without radicular symptoms	78.3	77.3	77.6	81.2	+ **
Feeling anxious / nervous / tense	84.3	85.5	85.3	83.0	
Insomnia	88.5	88.6	89.2	88	
Depression	72.5	71.6	69.3	66.4	- *
Cough	43.0	45.7	46.9	44.1	
Acute infection of the upper airways	33.5	34.3	32.9	34.0	
Acute bronchitis / bronchiolitis	2.2	1.9	2.0	2.3	
Emphysema / COPD	69.6	66.9	64.0	62.7	- **
Asthma	72.6	71.7	67.4	64.5	
Hay fever / allergic rhinitis	77.8	76.8	77.7	76.1	
Dermatomycosis	86.6	86.3	85.2	83.8	- *
Eczema	62.5	63.9	63.6	63.9	
Diabetes mellitus	64.7	63.2	57.8	51.5	- **
Lipid metabolism disorder	86.7	85.8	84.6	85	
Urinary tract infection	85.7	87.5	87.9	88.5	+ *
Oral contraceptives	79.7	75.8	68.6	68.9	- **
Total	69.0	68.4	67.1	66.4	-**

** p<0.01; ** p<0.001 positive / negative trend mentioned when statistically significant*

For every 1000 listed patients, GPs referred 155 times to secondary care in 2001. In 2006, this figure rose to 171 per 1000 listed patients (see *Figure 2.3.2*). This increase over the period 2001-2006 totals approximately 10%. The actual number of people referred will be lower than these figures due to the fact that one person can be referred more than once. The average total number of consultations that people have with their GP has also risen marginally since 2005 (LINH, 2008).

More than nine out of ten people in the Netherlands were satisfied with the health care that they had received over the past 12 months

On a scale of 0 to 10, more than nine out of ten people (92%) rate the health care they received with a 7 or higher. Furthermore, *Figure 2.3.3* demonstrates that in the period 2005-2007 the public became slightly more positive in their judgments. These differences between 2007 and the previous years appear to be statistically significant. Generally, people are also very positive about their GP and specialist: 87% gave a rating of 7 or higher for either profession.

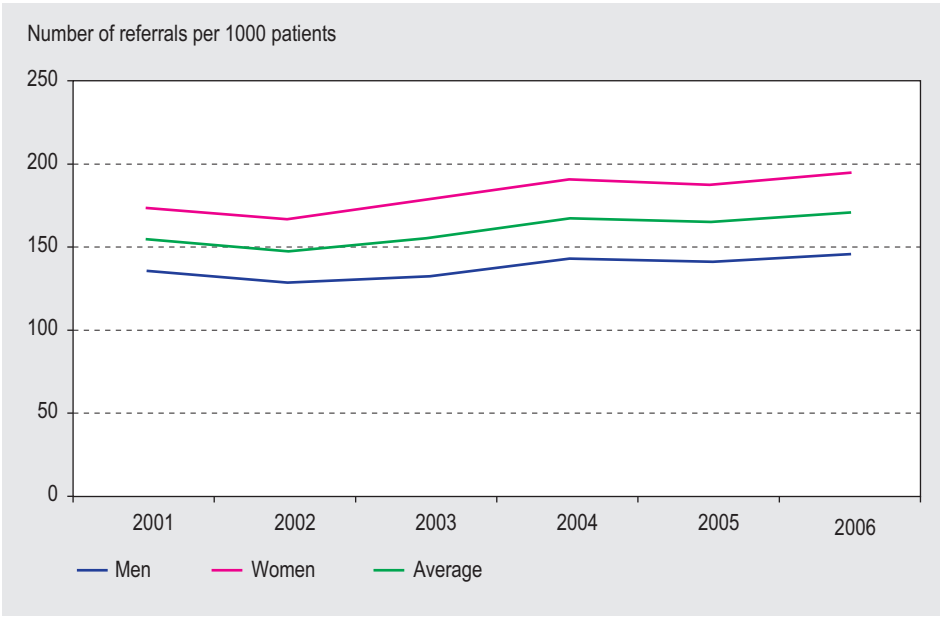


Figure 2.3.2: Number of referrals to secondary care per 1000 listed patients, by gender, 2001-2006 (Source: LINH, 2001 to 2006).

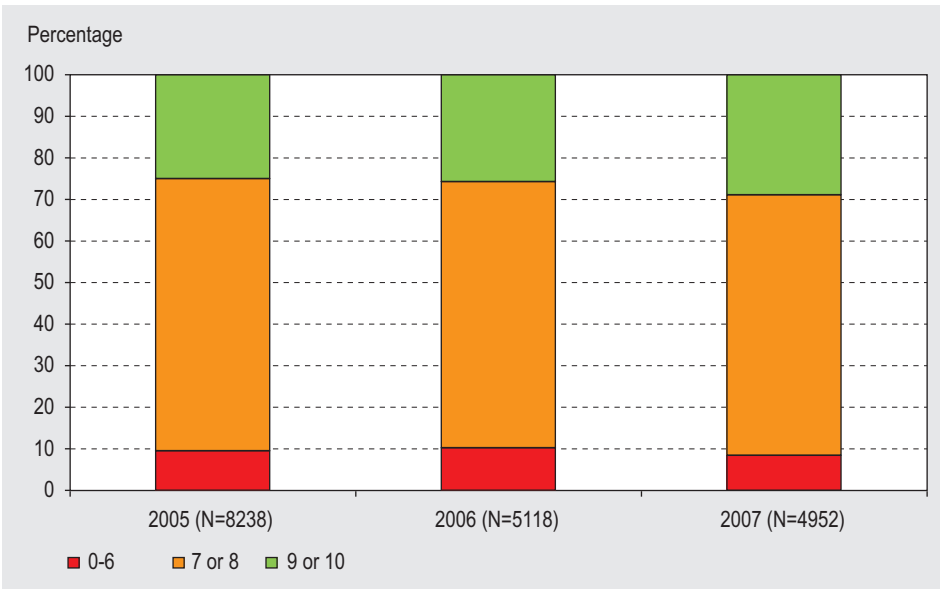


Figure 2.3.3: Ratings of the health system by the general public (0=worst system, 10=best system), 2005-2007 (Source: Hendriks et al., 2005; Damman et al., 2006; De Boer et al., 2007b).

Six out of ten people in the Netherlands are very confident that, should they require it, the medical care will be both safe and of high quality

How confident are you that if you become seriously ill, you will receive safe medical care of a high quality? Approximately six out of ten Dutch respondents (59%) answered this question with 'very confident', 5% were not very confident or not at all confident (Grol and Faber, 2007; Schoen et al., 2007). Other countries that participated in CMWF's international survey did not score higher than 35% (see *Figure 2.3.4*). In Germany, for example, confidence is considerably lower, only 24% have 'much confidence' in medical care. Furthermore, 45% of people in the Netherlands are very confident that they will receive the most effective drugs and 47% that they will receive the best medical technology. The Netherlands once again scores far better than the other countries.

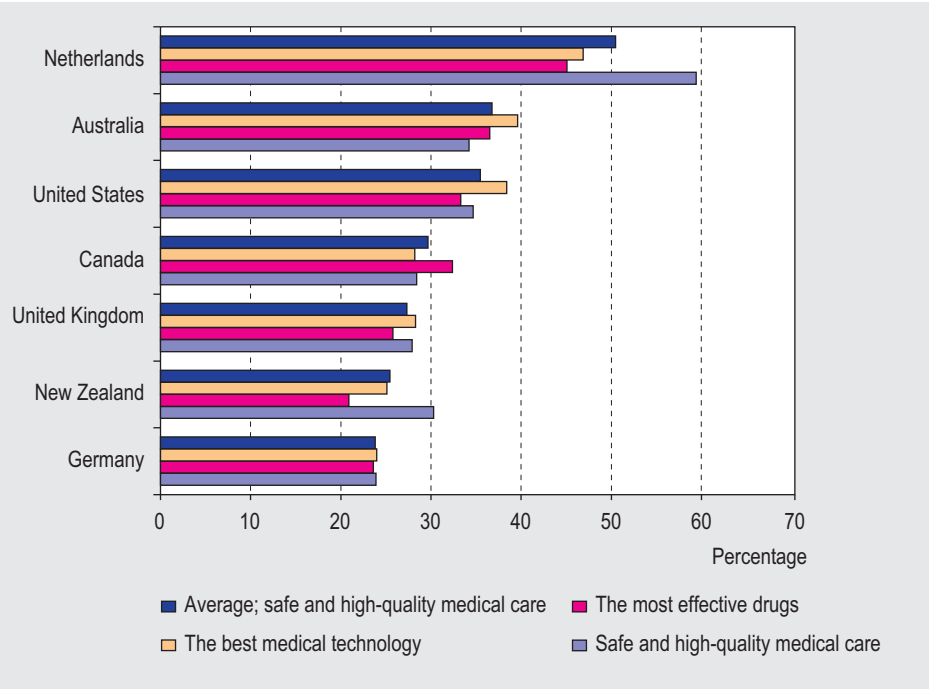


Figure 2.3.4: How confident are you that if you become seriously ill, you will: receive safe and high-quality medical care / the most effective drugs / the best medical technology during your treatment? (% very confident) (Source: Grol and Faber, 2007; Schoen et al., 2007).

The management of medication use is poorer in the Netherlands compared with many other countries; only 44% of people using one or more prescribed medicines have discussed the use of these drugs with a health care provider in the past 12 months

The Netherlands scores 69% for a combined indicator for coordination of medication use. Of all countries participating in the CMWF-survey, the Netherlands has the lowest score. On admission to hospital, patients are asked about their medication in 9 out of 10 cases. However, less discussion (in 72% of cases) regarding medication use takes place at discharge. Only 44% of Dutch respondents have discussed the medication he or she uses with a GP, nurse or pharmacist in the past 12 months (see *Figure 2.3.5*).

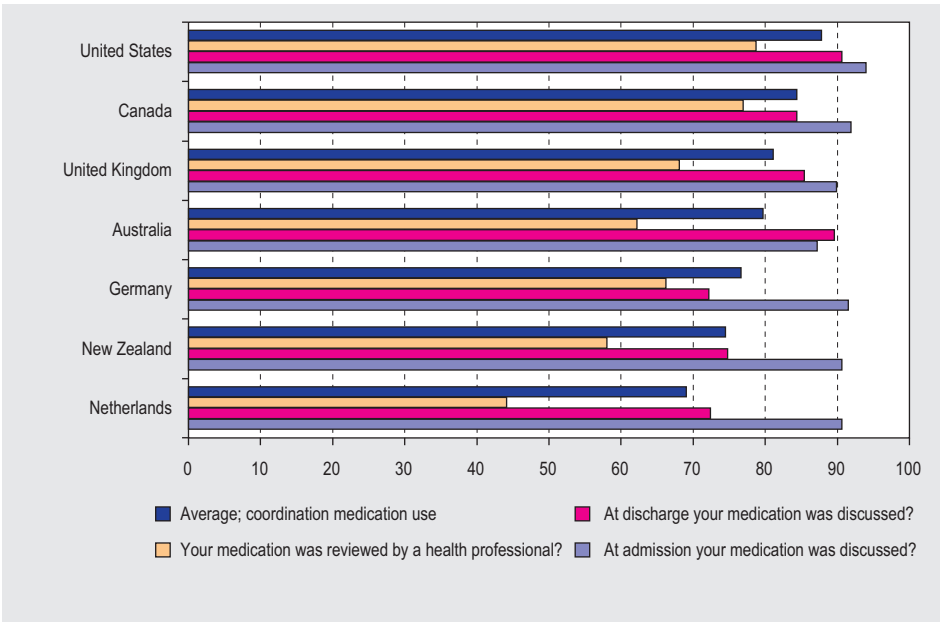


Figure 2.3.5: Coordination of medication use for people who were admitted to a hospital (%) (Source: Grol and Faber, 2007; Schoen et al., 2007).

The finding that the review of medication is lacking is in line with the results of previous studies. A study by Heijmans et al. (2004) found that nine out of ten chronically ill patients used more than two prescription drugs. Forty percent of these patients said that they never experienced any kind of review. The fact that nearly a quarter of them deviate from the prescription at their own discretion, for example by taking more or fewer pills than recommended or by not taking them at all, suggests that a periodical review could be useful.

The 30-day hospital mortality rate for acute conditions is decreasing; in 2005, the Netherlands still belonged to the middle bracket internationally

When the survival rate upon admission for a number of acute, life-threatening conditions (myocardial infarction, cerebral haemorrhage and cerebral infarction) is compared between different OECD countries, the Netherlands is found in the middle bracket. The Netherlands fares better than countries such as Poland, Spain and Portugal, but worse than Finland, Norway and Sweden. *Figure 2.3.6* shows a composite, relative measure for the survival rate during the first 30 days following admission. The measure is compiled so that the country with the highest 30-day mortality rate scores 1 and the country with the lowest 30-day mortality rate scores 0. The Netherlands has a score of 0.62, which is just above the OECD average of 0.60.

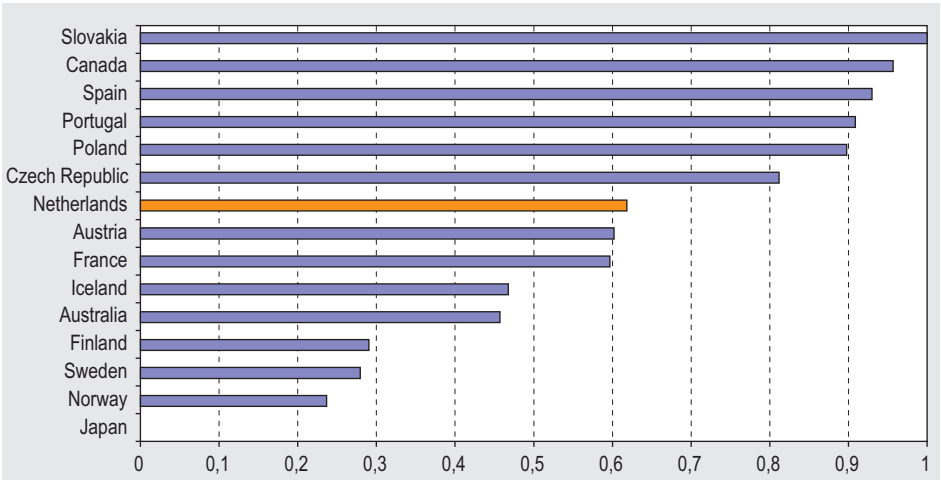


Figure 2.3.6: 30-day hospital mortality rate for acute myocardial infarction, cerebral haemorrhage and cerebral infarction, composite measure (0 = lowest mortality, 1 = highest mortality) (Source: OECD Health Data 2007; data processed by RIVM).

Figure 2.3.7 provides a more specific overview of the position of the Netherlands for the different conditions. The 30-day mortality rate for the Netherlands is shown here per condition, together with the average from the quarter of countries with the lowest mortality rate and the highest mortality rate.

Cerebral haemorrhage

In particular, the 30-day mortality rate for a cerebral haemorrhage is fairly high in the Netherlands; 29.9% do not survive. The average for the OECD countries is 25.4% and mortality rates in European countries such as Finland (12.5%), Austria (17%) and Sweden (18.6%) are much lower.

There is, however, a favourable trend: between 2001 and 2005, the 30-day mortality rate for cerebral infarction in the Netherlands decreased by more than 5 percent (from 35% to 29.9%).

Acute myocardial infarction

Mortality due to an acute myocardial infarction has also decreased since 2001. In 2001, 11.3% died within thirty days, while in 2005 this figure was 8.4%. Furthermore, the 30-day mortality rate in the Netherlands is somewhat lower than the OECD average (10.2%). This trend in decreasing mortality is also apparent in other countries (Deckers et al., 2006). CBS and RIVM give a number of possible explanations for the decrease in the mortality rate for an acute myocardial infarction: improved diagnostics and treatment during the acute stage of the disease. Factors to be taken into consideration are rapid recognition, resuscitation and defibrillation, more efficient transport to a hospital with interventional cardiology facilities, and more frequent use of thrombolysis and

emergency angioplasty. In addition, it is possible that more sensitive blood tests now allow less serious heart attacks to be recognized more often (CBS, 2007c).

Cerebral infarction

The Netherlands has caught up with respect to the 30-day mortality rate following a cerebral infarction. In 2001, 16% of patients with a cerebral infarction died within 30 days. This was considerably higher than the OECD average of 9.8% in 2001. In 2005 the percentage had decreased considerably to 9.2%. This is even below the OECD average of 10.2%.

A possible explanation for the marked reduction of mortality following cerebral haemorrhages and infarctions is that a lot more attention is now being paid to care following a stroke (Verschoor et al, 2004; CBS, 2007). For example, the number of stroke units in the Netherlands has risen considerably from 13 in 1997 to 69 in 2003 (CBS, 2007c).

Despite these positive developments, a number of Scandinavian countries again show that there is still room for improvement. The mortality rate after a cerebral infarction in Iceland and Finland is about 6% and in Norway and Sweden approximately 8%.

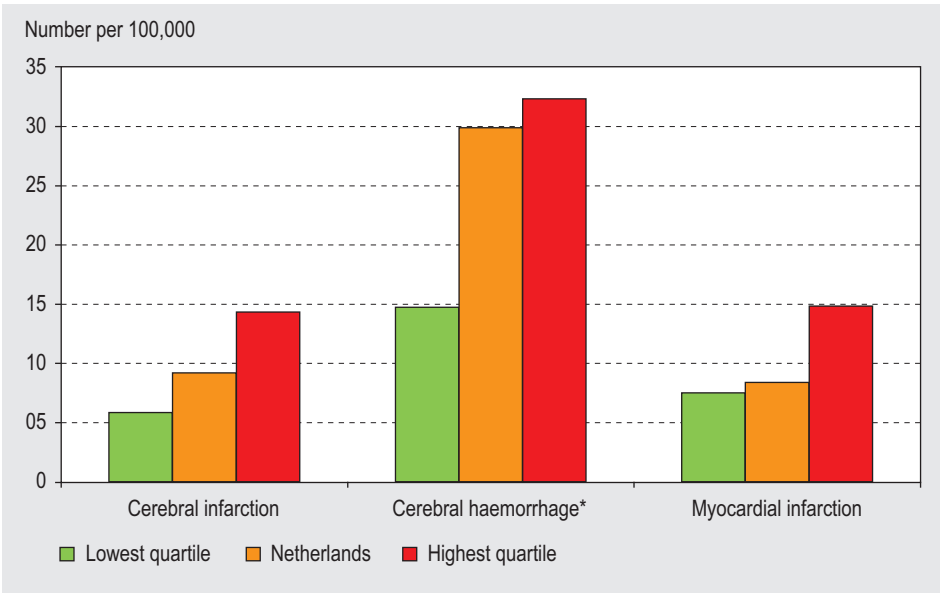


Figure 2.3.7: 30-day mortality rate per 100,000 people, the lowest and highest quartile and the Netherlands, in 2005 (Source: OECD Health Data 2007; data processed by RIVM).
** The Netherlands falls within the highest quartile*

The five-year survival rate for cancer in the Netherlands is above average internationally, but countries such as Finland, Norway and Switzerland show that there is room for improvement

The five-year survival rate for different types of cancer is above average in the Netherlands. *Figure 2.3.8* shows a combined, relative indicator for the five-year survival rate for breast cancer, cervical cancer and colon cancer. The country with the highest survival rate has a score of 1. The country with the lowest survival rate scores 0. The Netherlands has a score of 0.61, whereas the average is 0.50. The survival rate in the Netherlands is higher than in Germany, France and the United Kingdom but lower than in Finland, Norway and Switzerland.

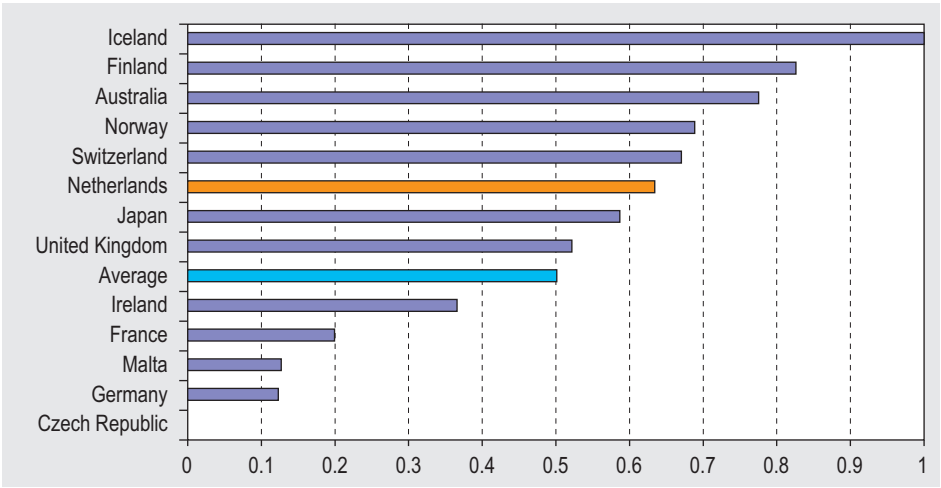


Figure 2.3.8: Five-year survival rate for breast cancer, cervical cancer or colon cancer, composite measure (Source: OECD Health Data 2007; data processed by RIVM).

Figure 2.3.9 shows the five-year survival rate for the different types of cancer. The five-year survival rate for the Netherlands is shown here, together with the average of the quartile of countries with the lowest five-year survival rate and the quartile with the highest five-year survival rate.

Breast cancer

Of women diagnosed with breast cancer in the Netherlands, 83.3% were still alive after five years (period 2000-2005). Five years earlier the figure was somewhat lower at 82%. Internationally this percentage is above average. Of the countries shown here, only Finland (88.4%) and Iceland (89.4%) have higher percentages of survival.

Cervical cancer

The five-year survival rate for cervical cancer in the Netherlands is 71.1%. This places the Netherlands in the middle bracket; better than Germany and France, but not as good as Switzerland, Norway and Iceland.

Colon cancer

The five-year survival rate for colon cancer in the Netherlands is slightly above average: 56.7%. Australia, Finland and Switzerland show higher percentages, between 58% and 60%.

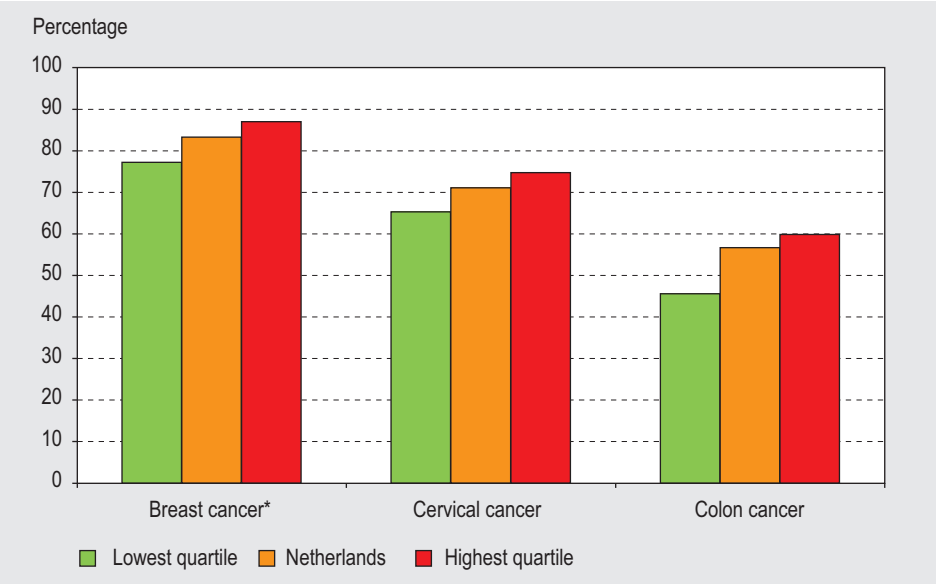


Figure 2.3.9: Five-year survival rate for breast cancer, cervical cancer and colon cancer, the lowest and highest quartile and the Netherlands (Source: OECD Health Data 2007; data processed by RIVM)

** The Netherlands falls within the highest quartile*

In 2005, the mortality rate for asthma in the Netherlands was 0.11 per 100,000 people, which is considerably lower than the OECD average of 0.18

The mortality rate for asthma in the age group 5 to 39 years is low in the Netherlands compared with most other countries. In 2005, 0.11 per 100,000 people died of asthma in the Netherlands, compared with an average of 0.18 in the OECD countries. In the previous DHCPR we reported the asthma mortality rate as being lower than the OECD average. The Dutch mortality rate reduced slightly from 0.13 in 2001 to 0.11 in 2005. Since the OECD average improved even more (from 0.25 to 0.18), the figures are now nearer to each other.

Some 80% of hip fractures are operated on within 48 hours, which is 10% above the OECD average

Nearly eight out of ten hip fractures (79.6%) are operated on within 48 hours in the Netherlands. The average of the countries presented below is 67% (see *Figure 2.3.10*). Only Sweden, Norway and Finland operate on more hip fractures within 48 hours (about 90%).

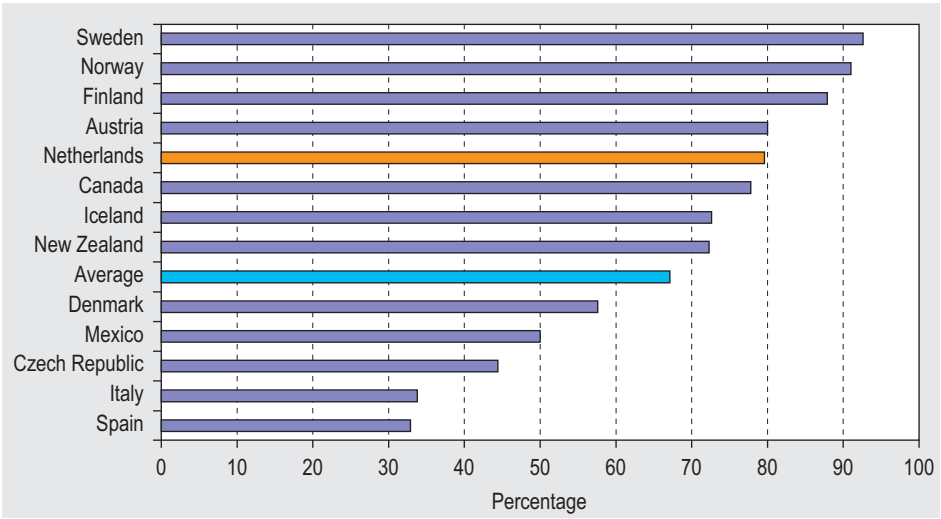


Figure 2.3.10: Hip fractures that are operated on within 48 hours (%) (Source: OECD Health Data 2007; data processed by RIVM).

Conclusion

The majority of the Dutch people feel that they are in good hands in the Dutch health care system. Nine out of ten people are very positive in their opinions of doctors and of health care in general. Nearly 30% of them give it a score of 9 out of 10. Furthermore, six out of ten people are very confident that should they become seriously ill, they will receive treatment that is both safe and of high quality.

International comparisons of certain 'stronger' outcome indicators show that the Netherlands, as already concluded in the previous DHCPR, can be considered 'middle bracket'. We do see a number of positive developments however: the 30-day mortality rate for all conditions considered is decreasing. The mortality rate for asthma has also decreased and can now be considered a rarity. Other indicators are stable, with no negative trends to be found. The coordination of medication use is still limited in the Netherlands, as an earlier study has already shown.

In particular the Scandinavian countries score better on many of the 'strong' indicators and form the international elite. They show that there is room for improvement in the Netherlands.

2.4 The effectiveness of long-term care

Key findings

- Residential homes receive better ratings from clients compared to nursing homes; there is much room for improvement in relation to provision of information, participation and staff availability in particular
- The vast majority (84%) of AWBZ-care applicants are satisfied with the National Care Assessment Centre
- Promoting social contacts in residential homes and nursing homes can considerably improve the clients' quality of life
- Home care receives an average mark of 8 out of 10
- Nurses and care workers are increasingly unhappy about the quality of care
- Two-thirds of people using a medical aid indicate that the aid solved the problem for which it was prescribed; this figure remained stable in the period 2001 to 2005
- Since 2003, the prevalence of pressure sores has fallen in nursing homes, residential homes and home care. Compared to 2006 it has fallen sharply in nursing homes in particular: from 10.3% to 6.9%
- In 2007, nearly a quarter of patients in long-term care were malnourished; this number is decreasing
- In a period of 30 days, one in ten home care patients has a fall; in nearly half of these incidents the patient suffers an injury
- The number of places in small-scale residential care facilities for people with dementia more than doubled between 2005 and 2007
- The health risk for clients in nursing homes, residential homes and home care appears to be decreasing slightly
- According to the Dutch Health Care Inspectorate, responsible care for people with disabilities is lacking in a quarter of institutions
- Both clients and their representatives give positive ratings for care institutions that cater for people with disabilities

How we determine the effectiveness of long-term care

Ten to twenty percent of people in the Netherlands are chronically ill and a large number of people suffer from long-term disabilities, varying from mild to very serious. These people often make use of medical aids, home care, general care, nursing care or (help from) care for the disabled. The use of such long-term care is expected to increase in the future. This is mainly caused by an ageing population and the subsequent increase in people who have a chronic illness or disability.

The effectiveness of care is about providing 'responsible care'. Responsible care is understood to involve supporting people so that they can live the life they wish to lead and are used to living and it allows them to do the things they consider important and meaningful, given their abilities and limitations (Arcares et al, 2005a). Agreements have been made with all long-term care sectors on how to quantify responsible

care (VWS, 2006). Parties in the field, patient organizations and the government have set out a number of indicators for long-term care. These indicators relate to nursing, general care and home care and are presented in the report *Evaluation Framework for Responsible Care (Toetsingskader voor verantwoorde zorg)* (Arcares et al., 2005b). The first set of evaluation data is expected in 2008. For the present DHCPR, indicators have mainly been selected according to the Evaluation Framework for Responsible Care. Since most of the data from the indicators that are part of the evaluation framework are not yet available, a short description of future additions to the indicators will be given at the end of this section. The evaluation framework is supplemented by the use of the CQ index and the National Prevalence Survey of Care Incidents.

Indicators

- Client judgements of residential homes and nursing homes
- Judgment of AWBZ-care applicants of the National Care Assessment Centre (CIZ)
- Quality of life of patients in residential homes and nursing homes
- Client judgements of care for the physically disabled
- Client judgements of home care
- Satisfaction of nurses and care workers with the quality of care
- Effectiveness of medical aids
- Preventable health care problems among residents in residential homes, nursing homes and care for the disabled (pressure sores, malnutrition, falls)
- Number of places in small-scale residential care facilities for people with dementia
- Judgement of the Dutch Health Care Inspectorate (IGZ) on the quality of long-term care

The current state of affairs

Residential homes receive better ratings from clients compared to nursing homes; there is much room for improvement in relation to provision of information, participation and staff availability in particular

Up until 2006, the Client & Quality Foundation (SCK) conducted annual surveys into the satisfaction among residential and nursing home residents concerning the care and service provided. Since 2006, client judgement has been investigated using the CQ index (Wiegers et al., 2007). The SCK set out total client judgement on residential and nursing homes in a four-point satisfaction scale, varying from 0 (very unsatisfied) to 4 (very satisfied). However, in the CQ index, clients are asked to rate their facility on a score of 0 (worst possible facility) to 10 (best possible facility). *Figure 2.4.1* shows a time trend in client experiences since 2002. To enable a comparison of the different scores, the ratings are calculated as a percentage of the maximum possible score.

The time trend will be continued with data from the CQ index, but since the survey results from 2006 overlap, both sets of data are shown. It is clear that the CQ index yields a higher score.

In 2006, clients gave residential homes an average mark of 7.8 and nursing homes received an average mark of 7.4. Generally, care users tend to give high marks. Compared with other areas of health care, the rating for nursing homes in particular is on the low side (see also *Section 5.2*).

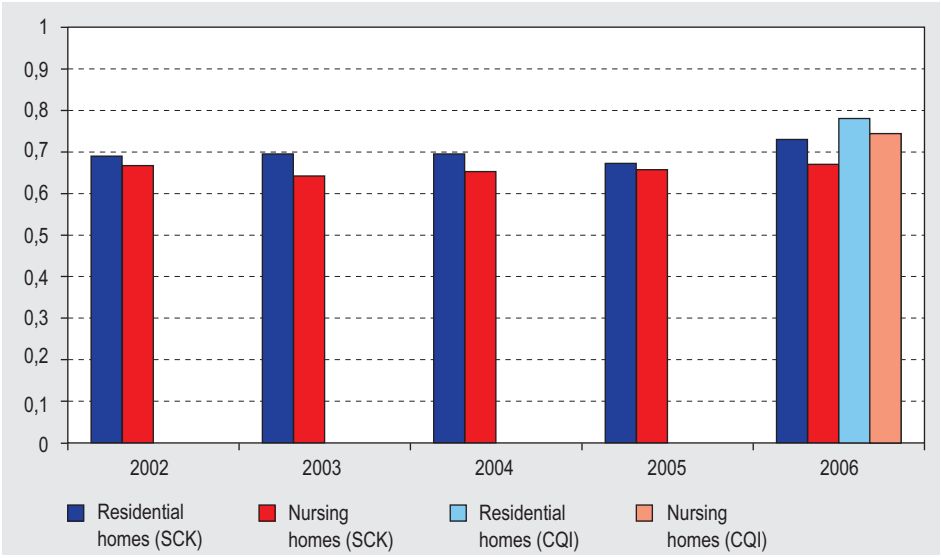


Figure 2.4.1: Overall client ratings of residential homes and nursing homes, 2002-2006 (scale 0-1) (Source: SCK, 2005; Wiegers et al., 2007)

Little change is seen over the years with respect to the separate aspects of quality that patients were asked about (see *Table 2.4.1*). Again, the figures have been converted to a scale of 0 to 1 in order to make comparison between the years possible. Not all issues asked about in the CQ index came up in the SCK survey and vice versa. For this reason, a comparison between the years is not possible for all aspects.

Again, both sets of results are shown where possible. Provision of information and participation has been rated particularly low by clients for a number of years now. In the CQ index, a lack of sufficient staff is clearly the most important aspect requiring improvement. The aspects requiring improvement are determined on the basis of a combination of two factors: the importance attached to each aspect and the percentage of negative experiences. The aspect 'evaluation of health care' shows a striking improvement in nursing homes.

Table 2.4.1: Average score for different quality aspects of residential homes and nursing homes, 2005-2006 (Source for 2005: SCK, 2005; Source for 2006: Wiegers et al., 2007; data provided by SCK).

	Residential homes			Nursing homes		
	SCK 2005	SCK 2006	CQ 2006	SCK 2005	SCK 2006	CQ 2006
Information	0.63	0.64	0.59	0.54	0.55	0.49
Client-initiated client participation *	0.52	0.57	0.54	0.59	0.58	0.44
Organization-initiated client participation	0.47	0.53		0.50	0.53	
Evaluation	0.75	0.77		0.53	0.69	
Expertise	0.76	0.77		0.74	0.72	
Organization	0.71	0.71		0.66	0.63	
Interpersonal conduct	0.75	0.75	0.81	0.72	0.7	0.74
Autonomy	0.83	0.83	0.88	0.73	0.73	0.64
Staff availability			0.63			0.55
Professionalism and safety of care			0.79			0.76
Personal care			0.80			0.74

* *Expressed for 2006 as 'participation and consultation'*

The vast majority (84%) of AWBZ-care applicants are satisfied with the National Care Assessment Centre

The National Care Assessment Centre (CIZ) has been commissioned by the government to carry out assessment for the Exceptional Medical Expenses Act (AWBZ). Care applicants coming into contact with the CIZ are satisfied with the service provided. The CIZ is given an average mark of 7.5 out of 10. Almost 16% give the CIZ a mark 6 out of 10 or lower.

When considering the different aspects about which respondents were asked to give their judgement, it becomes apparent that there is particular room for improvement with regard to quality of information and accessibility. For these aspects 29% and 25%, respectively, of respondents are not completely satisfied. Indicated care and professional expertise are rated the highest. Thus almost nine out of ten people are satisfied with the decisions made for them by the CIZ (Jedeeloo and Schrijvers, 2007).

Promoting social contacts in residential and nursing homes can considerably improve the clients' quality of life

In 2005 and 2006, the Netherlands Institute for Health Services Research (NIVEL) investigated the quality of life of clients in nursing and residential homes. Clients were asked questions relating to four aspects of quality of life; the same as those used in the Evaluation Framework for Responsible Care: physical welfare, living conditions, participation and mental welfare. The research resulted in a score on a scale of 1 to 10 for each aspect. The figures are shown in *Table 2.4.2*.

Table 2.4.2: Average scores for quality of life aspects in 22 residential homes and nursing homes, in 2007 (Source: Poortvliet et al., 2007).

	Average	Standard deviation
Physical welfare / health	7.1	1.12
Housing / Living conditions	7.6	1.11
Participation	7.4	1.09
Mental welfare	7.0	1.09

When interpreting the scores is it important to bear in mind the method used to obtain the study population. The participating institutions were approached by branch organization Actiz. Twenty-two health care organizations, i.e. six nursing homes, fifteen residential homes and one combined organization, agreed to take part in the first round of the benchmark study in this sector. 18% of the sample had to be excluded due to the fact that the study would be too much of a burden on the residents or because they were 'disorientated in time and place'. Consequently the figures relate to the organizations that are more 'quality-aware' and the excluded patients will most probably have a lower level of quality of life.

The research also shows that quality of life is strongly associated with opportunities for social contact. A higher quality of life was reported by those patients whose care providers occasionally stop for a chat, irrespective of whether health care matters are discussed, and by those patients who are occasionally visited by volunteers. There appear to be enormous differences between organizations regarding these aspects. Fewer than four out of ten clients indicated that a member of staff would occasionally just stop for a chat. This varies between organizations from 8% to 79%. Four out of ten patients are occasionally visited by a volunteer; this varies between organizations from 22% to 79% (Poortvliet et al., 2007).

Home care receives an average mark of 8 out of 10

Clients of home care organizations gave high marks for home care in 2006; an average of 8 out of 10 (Wiegers et al., 2007). According to the home care benchmark in 2004, the marks for home care were higher then, namely 8.3 out of 10 (PWC, 2005). The main aspects requiring improvement were related to the patients' role in making decisions regarding the care received, evaluation of care and cooperation with other care providers. By evaluation we mean that the care provided may be adjusted following a care review.

Nurses and care workers are increasingly unhappy about the quality of care

Since 2003, in each (biennial) survey, nurses and care workers are becoming slightly more negative in the scores they give to the quality of care in their own organization. Satisfaction with the quality of care is measured every two years among a panel of nurses and carers. The results from 2001 to 2007 are shown in *Figure 2.4.2*. The score for satisfaction with quality of care is compiled from three questions using a scale of 1 (very unsatisfied) to 5 (very satisfied). In 2007, the average score was 3.45, compared

with 3.6 in 2003. The trend shows a statistically significant, slight decrease. Considerable differences between the different fields of work are noticeable. Employees in home care are the most positive, whereas nursing home personnel are the least satisfied with the quality of care.

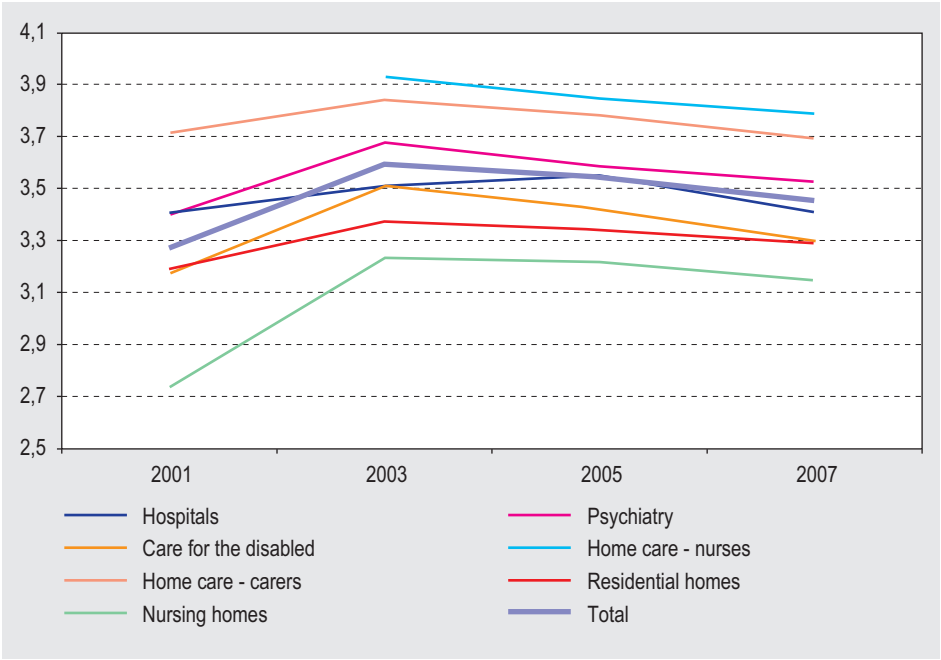


Figure 2.4.2: Satisfaction of nurses and carers with the quality of care, by field of work, 2001-2007 (scale 1-5) (Source: NIVEL Panel of nurses & carers, 2007)

Two-thirds of people using a medical aid indicate that the aid solved the problem for which it was prescribed; this figure remained stable in the period 2001 to 2005

In 2005, 64% of people using a medical aid indicated that the aid provided solved the problem for which it was prescribed. This figure has remained around 65% for a number of years (see *Table 2.4.3*).

Unfortunately, the Medical Aids Monitor was not repeated after 2005.

Table 2.4.3: Percentage of people indicating that the medical aid provided solved the problem, 2001-2005 (Source: De Wit, 2005-2007).

	2001[1]	2003 [1]	2004 [2]	2005 [2]
Solved to a large extent / entirely (% of patients)	64	67	65	64

[1] *Figures based on 9 health insurers,* [2] *Figures based on 19 health insurers*

Since 2003, the prevalence of pressure sores has fallen in nursing homes, residential homes and home care. Compared to 2006 it has fallen sharply in nursing homes in particular: from 10.3% to 6.9%

Between 2000 and 2007, the prevalence of pressure sores in nursing homes, residential homes and home care has decreased (see *Figure 2.4.3*). The figures relate only to cases of facility-acquired pressure sores. This decrease is not due to a lower percentage of patients at risk but most likely due to an increased awareness of this particular problem.

Strikingly, the nursing homes with the highest prevalence show the strongest decrease in relation to 2006, from 10.3% to 6.9%.

Figure 2.4.3: Prevalence of facility-acquired pressure sores, excluding stage 1, in nursing homes, residential homes and home care, in risk groups, 2000-2005 (%) (Source: Halfens et al., 2007).

In 2007, nearly a quarter of patients in long-term care were malnourished; this number is decreasing

Since 2004, malnutrition has been determined in the annual National Prevalence Survey of Care Incidents. Whether or not someone is suffering from malnutrition is determined using a combination of the body mass index (BMI) related to age, eating habits in the past week and weight loss. *Figure 2.4.4* shows the percentages of malnourished patients.

Almost a quarter (approximately 24%) of patients in long-term care (excluding care for the disabled) were malnourished in 2007. There are considerable differences between the three categories, varying from 19.1% for home care clients to 27.8% for residential

homes. The figures for 2006 and 2007 are more reliable than those for the previous years. This is due to the fact that the number of participants that were weighed has risen considerably (from about 50% in 2004-2005 to 88% in 2007).

Less malnutrition is observed in nursing homes and home care compared to 2006, while in residential homes the number of malnourished clients is comparable to that for 2006. Increased awareness and the development of concrete measures for the prevention of malnutrition have been most likely beneficial (Halfens et al., 2007).

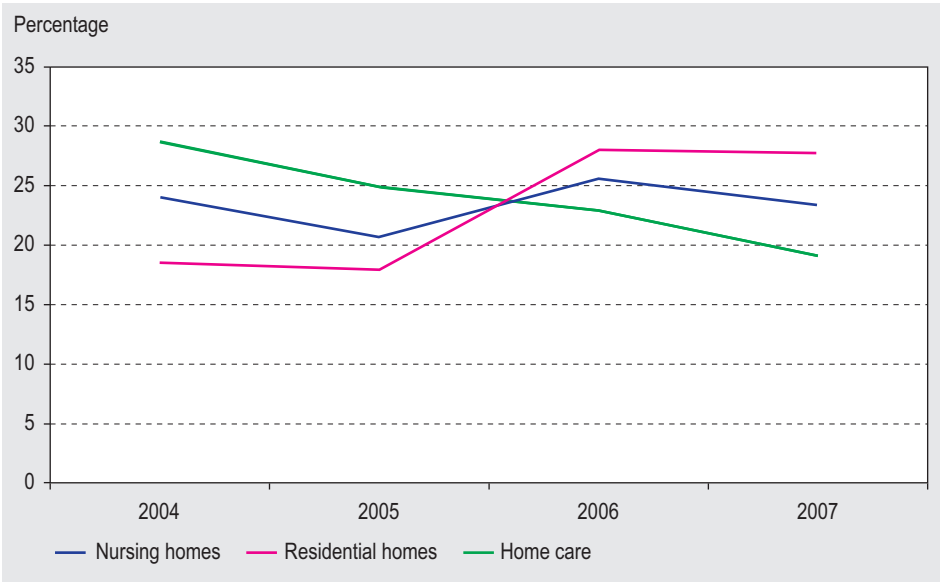


Figure 2.4.4: Prevalence of malnutrition in nursing homes, residential homes and home care, 2004-2007 (%) (Source: Halfens et al., 2007).

In a period of 30 days, one in ten home care patients has a fall; in nearly half of these incidents the patient suffers an injury

Earlier studies have shown that approximately 30% of people over 65 years of age living independently and 50% of nursing home clients and clients of residential homes have a fall at least once a year (CBO, 2004; LPZ, 2007). Therefore, the number of falls in people over 65 totals more than a million per year in the Netherlands. Falls are the most common cause of accidental death for people over the age of 65 (Murray et al., 1996; Halfens et al., 2007).

In 2007, falls were incorporated for the first time into the National Prevalence Survey of Care Incidents. The incidence is determined over a period of 30 days prior to the survey. The number of 'fallers' is shown in *Figure 2.4.5*, for three sectors. Falls in home care totalled 11.7% of clients, in residential homes 8.6% of clients, and in nursing homes 7.5% of clients had a fall. In all three categories, approximately one in four patients fell more than once.

Fall accidents often lead to injuries. In nursing and residential homes this is the case in about 36.5% of falls, in home care patients the figure is even higher with 48% of falls resulting in injury.

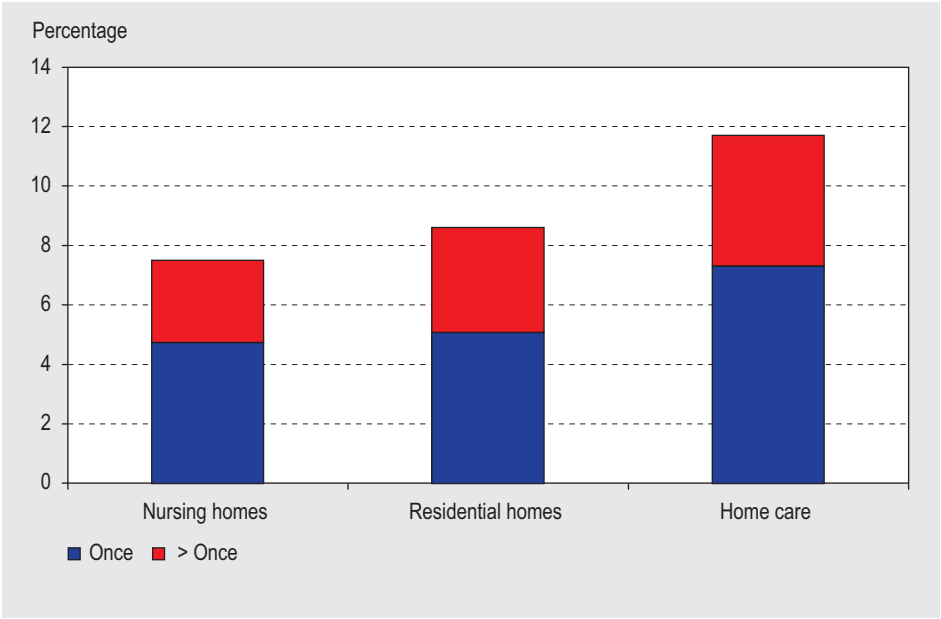


Figure 2.4.5: The number of people that fell in the 30-day period prior to the assessment, in 2007 (Source: Halfens et al., 2007).

The number of places in small-scale residential care facilities for people with dementia more than doubled between 2005 and 2007

Small-scale residential places doubled from 2005 to 2007 (KCWZ, 2007). Expectations are that the implementation of current plans will lead to an increase in the number of places from 4346 in 2005 to 12,087 in 2010 (see *Figure 2.4.6*). This is an increase of 178%. There were approximately 193,000 people with dementia in the Netherlands in 2005, with 4442 places in small-scale residential care, on 349 different locations. Between 2005 and 2030, the number of people with dementia in the Netherlands is expected to increase by 65%, from 193,000 to 319,000. In 2010, 24.8% of the estimated needs for psychogeriatric care in nursing homes are expected to be met by small-scale residential care facilities (KCWZ, 2007).

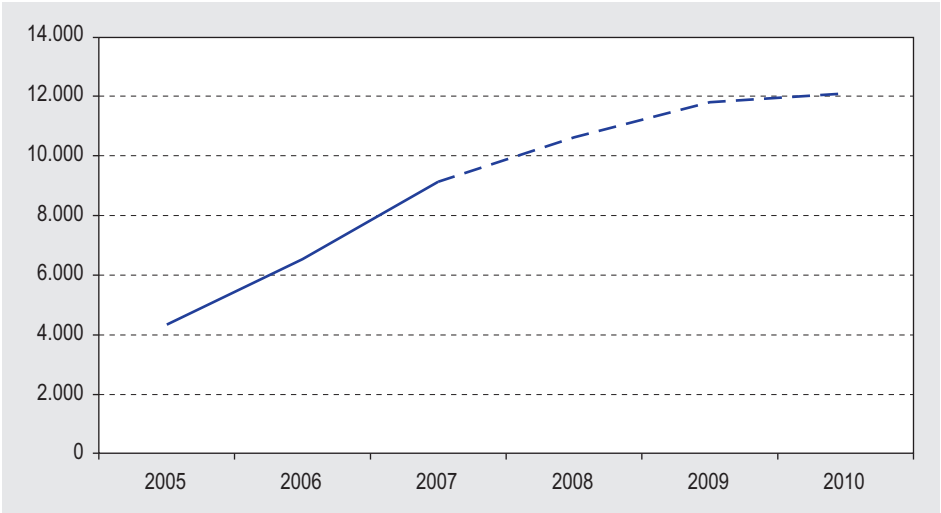


Figure 2.4.6: Number of places in small-scale residential facilities for people with dementia, 2005-2010 (Source: KCWZ, 2007).
(solid line=places provided; dotted line=places planned)

The health risk for clients in nursing homes, residential homes and home care appears to be decreasing slightly

The health risk for clients in long-term care facilities is decreasing slightly. During risk assessment, factors such as medication errors, pressure sores, depression, urinary incontinence and falls are considered at the client level. At the facility level, the assessment covers factors such as the presence of appropriate protocols and guidelines. The Dutch Health Care Inspectorate (IGZ) points out such risk factors using the so-called Inspection Form (*Inspectie Formulier,* IF). The IF is used by the IGZ to calculate the so-called IF-score, which varies from 0% to 100%; the higher the score, the higher the risk. The average IF-score reduced between 2004 and 2006 (see *Table 2.4.4*). This decrease indicates a similar decrease in the number of risky situations. The reduction is seen in both residential and extramural care (IGZ, 2006). The decrease is less marked for home care. However, the average IF-score was already fairly low in 2005 for home care (IGZ, 2006a, 2007a).

According to the Dutch Health Care Inspectorate, responsible care for people with disabilities is lacking in a quarter of institutions

A risk assessment was also carried out in the care for the disabled during 2006-2007 on the basis of eight risk factors; these included mobility restrictions, care continuity, staff expertise, and participation and consultation (IGZ, 2007a).
Based on inspections, the IGZ concluded that the situation is worrying in a quarter of the field. Inspections took place in residential/care facilities of 96 organizational units. An action plan was required when one or more risk factors had a score of moderate to very high risk. Fifteen units were not required to develop an action plan and 41 units were required to develop an action plan for three to eight risk factors (IGZ, 2007a).

Table 2.4.4: Average risk (IF-scores) in nursing homes, residential homes and home care, 2004-2006 (Source: IGZ, 2006a).

Organization	Measurement	Inspection Forms					
		Residential care			Non-residential care		
		2004	2005	2006	2004	2005	2006
Nursing homes	Number	377	393	385		229	201
	Average	43%	37%	34%		35%	32%
Residential homes	Number	1134	1110	1053		965	910
	Average	45%	45%	40%		41%	37%
Residential homes with nursing unit	Number	253	240	228		207	193
	Average	44%	41%	37%		39%	36%
Home care services	Number		8	11		259	250
	Average		48%	37%		35%	34%

Both clients and their representatives give positive ratings for care institutions that cater for people with disabilities

According to a substantial benchmark study carried out by PWC (2007) under care facilities for people with disabilities, clients and their representatives generally had a positive opinion of the care facility. Client opinions were investigated for four main areas: housing, daytime activities, interpersonal conduct and participation. The scores were assessed on a scale of 1 (most negative) to 100 (most positive). The average of all scores from clients and their representatives combined totalled 78.7.

Table 2.4.5 shows the scores (clients only) for all four areas. In addition to the average score, the score from the highest and lowest scoring facility is also shown. The average scores vary from 75.5 for participation to 80.9 for interpersonal conduct. The most variation is seen in the area of participation. The difference between the best and the worst scoring facility is no less than 30%.

Table 2.4.5: Client scores for care for the disabled, in 2007 (Source: PWC, 2007).

	Average	Highest	Lowest
Housing	79.4	86.0	71.9
Daytime activities	80.7	84.7	74.5
Interpersonal conduct	80.9	85.3	75.1
Participation	75.5	88.4	56.1

Conclusion

The field of long-term care is both substantial and diverse. The picture presented in this section is therefore also varied and often leads to different conclusions for the different areas within long-term care. Several general conclusions can de drawn. Some of these give rise to optimism while others are a cause for concern.

Favourable signs are the decreasing prevalence of care problems such as pressure sores and malnutrition. The IGZ also notes a slight reduction in health care risks, particularly in clients of residential homes and nursing homes. Clients themselves are fairly positive in their overall opinion of the care provided, although considerable differences are noted between different types of care. Home care clients are, for example, more positive than those in residential homes. Moreover, care workers in home care were more positive about the quality of care than their colleagues in nursing homes and residential homes.

There are also matters that give cause for concern. The prevalence of malnutrition may well be on the decrease, but this is not the case in residential care homes, where more than a quarter of clients are still malnourished. The opinions of staff in residential homes and nursing homes regarding the quality of care are certainly food for thought. After all, they are the ones that see what is happening on a daily basis and their verdict is not the most enthusiastic. The scaled scores deliver a 'neutral' rating. They moreover appear to notice a decrease in quality. Clients are also critical on a number of points. When client experiences are studied, it is the shortage of staff that emerges as the most important aspect requiring improvement; according to many nurses and care workers this compromises safety (see also *Section 3.8*). Client participation and provision of information also remain critical points. The Client and Quality Foundation stated back in 2006 that quality improvement had still not been achieved for these points (SCK, 2006) and these aspects were also rated fairly low on the CQ index, carried out for the first time in 2006.

As mentioned in the introduction, the government has come together with patient organizations and parties in the field to agree on a set of norms for responsible care. A number of indicators forming part of this evaluation framework have been presented in this section: pressure sores, malnutrition, falls and client ratings.

We would have liked in this report to present the results for a number of indicators relating to the quality in care facilities, but unfortunately the results are not yet available. Results from the following indicators are missing:

- Availability of doctors and nurses
  - having a nurse at a certain location within ten minutes at all times of the day or night
  - having a doctor who can be easily reached and paged at all times of the day or night
  - this doctor will react within ten minutes and is at a certain location within 30 minutes
- The degree to which staff are competent to carry out reserved and risky procedures.

2.5 The effectiveness of mental health care and addiction care

Key findings

- In the Netherlands half of the adults with a severe anxiety, mood or addiction disorder receive care for this; that is average compared to four similar EU countries
- Almost all of the adults (97%) who are under care for a severe anxiety, mood or addiction disorder receive at least one follow-up contact; that is more than in four similar EU countries
- Of all adults who are under care for a severe anxiety, mood or addiction disorder, 67% receive a satisfactory form of care; that is a higher percentage than in four similar EU countries
- Two-thirds of secondary mental health treatments (70%) are ended in joint consultation between the client and the therapist; that percentage has been constant since 2002
- One-quarter (26%) of the people who end up at a hospital accident and emergency department following a suicide attempt, receive a psychiatric consultation there

How we determine the effectiveness of mental health care and addiction care

The number of potential clients of mental health care and addiction care is large. Each year 16% (2.6 million people) of the Dutch population suffer from a psychiatric disorder, excluding disorders related to alcohol or drugs (Vollebergh et al., 2003; Van Ginneken and Schoemaker, 2005). However, the vast majority of people with such disorders do not seek help for these. The minority that do seek help turn to a range of regular and private providers in both primary and secondary care

Due to this somewhat limited, and yet on the other hand, diverse use of care, the care registration of secondary mental health care fails to provide a complete picture of the quality of care received by people with psychiatric disorders (Vollebergh et al., 2003). Consequently this second DHCPR places less emphasis on the care registration in mental health care and addiction care.

The data mainly originate from a large-scale representative study into the care received by adults with an anxiety, mood or addiction disorder (Wang et al., 2007). These are the three most prevalent psychiatric disorders (Vollebergh et al., 2003). In this section we limit ourselves to the care for adults who suffer from a severe form of these disorders.

The WHO study this section is based on, was carried out in the period 2001-2005 and included all forms of primary and secondary care (Wang et al., 2007). These are the most recent data available with this level of quality. As the study methodology applied was the same for the several European countries involved, interesting international comparisons can be made.

The first indicator is the use of care. Not all patients receive care and therefore the health effect at the population level is not optimal. That is why the proportion receiving care is taken as an indicator. In addition to this, two other indicators have been included for the quality of care: adequacy of care and continuity of care. In both cases it concerns minimum requirements based on international evidence-based guidelines (Wang et al., 2007).

Another indicator that we report on is the ending of the treatment in joint consultation between therapist and patient; this can be regarded as a measure of the relationship and communication between therapist and client. This indicator is based on the care registration of the Netherlands Association for Mental Health and Addiction Care. An indicator has also been included for suicide prevention based on the National Medical Registration (LMR). It is presumed that prompt and good support of people, who are admitted to a hospital's accident and emergency department, could prevent a repeat attempt (Bool et al., 2007; Verweij, 2007).

Indicators

- Proportion of adults with a *severe* anxiety, mood or addiction disorder who receive care for this
- Proportion of adults with a *severe* anxiety, mood or addiction disorder under care who receive at least one follow-up contact
- Proportion of adults with a *severe* anxiety, mood or addiction disorder under care who receive a satisfactory form of care
- Proportion of secondary mental health treatments that are ended in joint consultation between the therapist and the client/patient
- Proportion of people who end up at the accident and emergency department after a suicide attempt and are seen by a psychiatrist there

The current state of affairs

In the Netherlands half of the adults with a* severe *anxiety, mood or addiction disorder receive care for this; that is average compared to four similar EU countries

Of all adults in the Netherlands who, according to the official psychiatric diagnostic criteria (DSM-IV), have a severe anxiety, mood or addiction disorder (alcohol and/or drugs), half (50%) receive a form of care for this (Wang et al., 2007). This percentage is of course far lower for adults with the mild variants of these disorders (16%).

The Dutch percentage of 50% is average compared with the care use percentages in four similar European countries: Germany (40%), France (48%), Spain (59%) and Belgium (61%). In less wealthy countries this percentage is far lower (Wang et al., 2007).

Of all adults in the Netherlands with severe disorders, about one-third (32%) receive specialized mental health care or addiction care. With this percentage the Netherlands, together with Spain (39%) and Belgium (36%), scores the highest of the previously mentioned European countries; the percentages in France (24%) and Germany (19%) are lower.

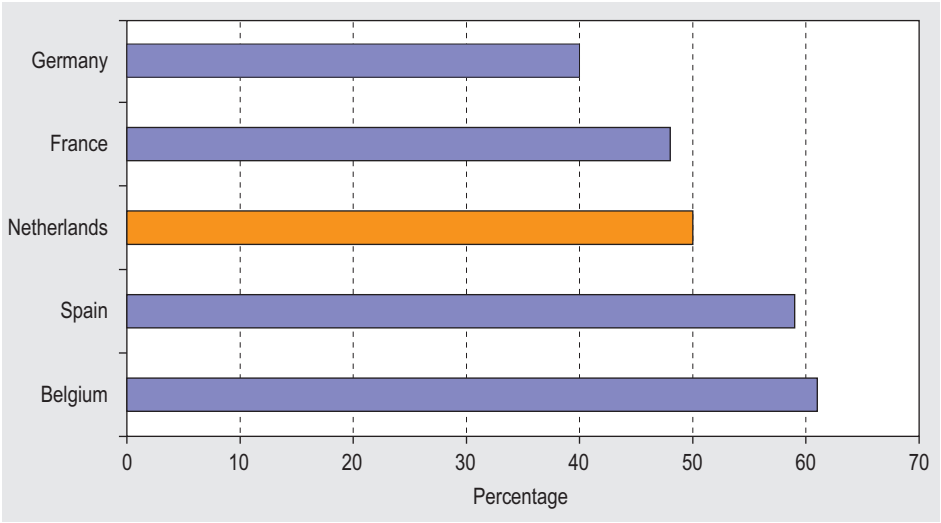


Figure 2.5.1: The percentage of adults with a severe anxiety, mood or addiction disorder who receive care for this, 2001-2003 (Source: Wang et al., 2007).

Almost all of the adults (97%) who are under care for a severe anxiety, mood or addiction disorder receive at least one follow-up contact; that is more than in four similar EU countries

Nearly all adults (97%) in the Netherlands with a *severe* anxiety, mood or addiction disorder -who receive help for this - have a least one follow-up contact (Wang et al., 2007). This is higher than the percentages in four similar European countries: Belgium (84%), France (88%), Germany (89%) and Spain (95%). In less wealthy countries this figure is about as high. For all adults with an anxiety, mood or addiction disorder in care, *irrespective of the severity,* this follow-up percentage is 86% in the Netherlands. With this the Netherlands, along with Spain, Belgium and France, occupies the median of the six European countries, between Germany (70%) on the one hand and Italy (95%) on the other (see *Figure 2.5.2*).

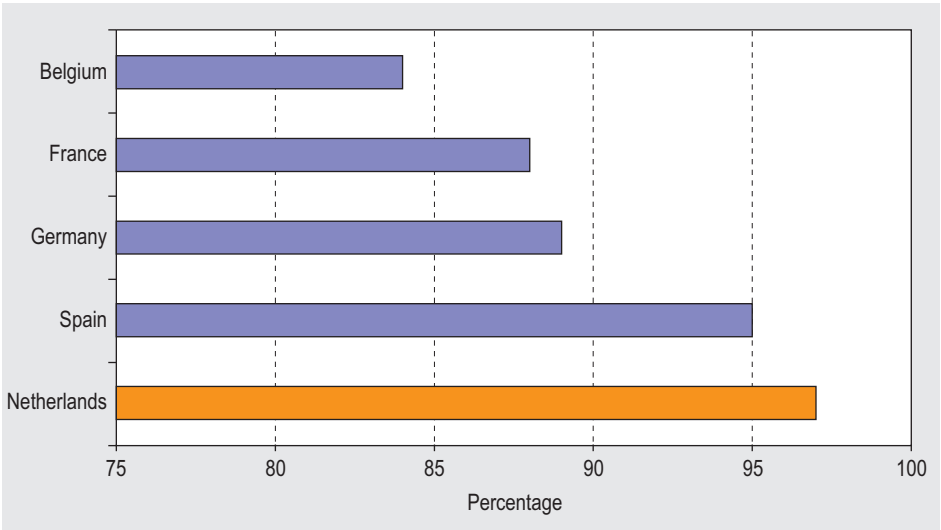


Figure 2.5.2: The percentage of adults with a severe anxiety, mood or addiction disorder under care who receive at least one follow-up contact, 2001-2003 (Source: Wang et al., 2007).

Of all adults who are under care for a severe anxiety, mood or addiction disorder, 67% receive a satisfactory form of care; that is a higher percentage than in four similar EU countries

Two-thirds (67%) of adults in the Netherlands with a *severe* anxiety, mood or addiction disorder, who are under care, receive care that satisfies several minimum requirements for adequacy (Wang et al., 2007). This is comparable to the situation in Germany (67%) and higher than percentages in Belgium (43%), France (58%) and Spain (48%). It is much higher than in non-developed countries. Minimum adequate care is understood to mean: at least eight visits to any given care sector (including primary care), or four visits with at least one month of medication or continuous care at the time of the interviews (see *Figure 2.5.3*).

For all adults under care for an anxiety, mood or addiction disorder, *irrespective of the severity*, this percentage is much lower in the Netherlands: 34%. With this the Netherlands, together with Spain and Belgium, occupies a position lower than Germany and France (both 42%).

Two-thirds of secondary mental health treatments (70%) are ended in joint consultation between the client and the therapist; that percentage has been constant since 2002

In 2006, 70% of the deregistrations in secondary mental health care took place in joint consultation (GGZ Nederland, 2007). That percentage has been almost constant since 2001. In 2006, mutual ending of the treatment occurred most frequently for young people (79%), followed by adults (69%) and the elderly (68%), and the least in regional institutions for sheltered housing (RIBWs) (48%). Also the percentage of one-sided end-

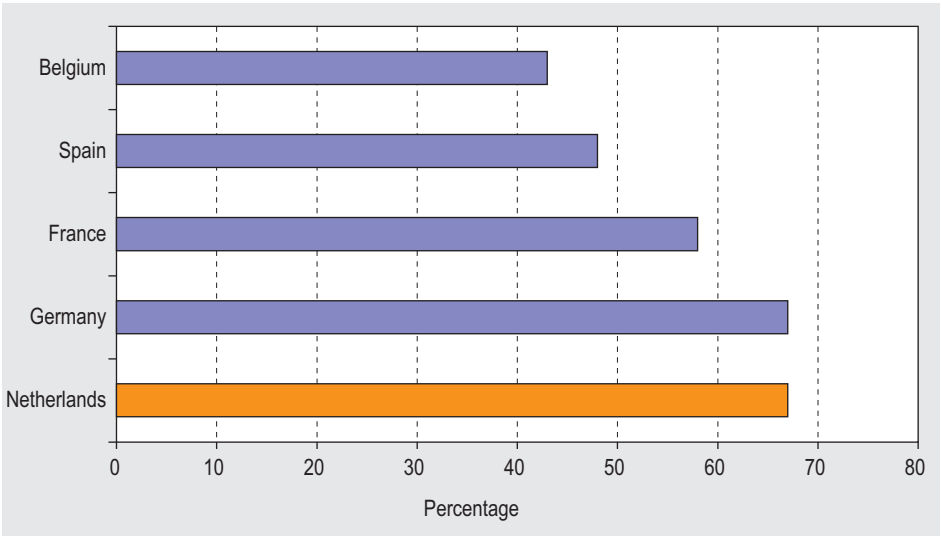


Figure 2.5.3: The percentage of adults with a severe anxiety, mood or addiction disorder under care who receive a satisfactory form of care for this, 2001-2003 (Source: Wang et al., 2007).

ing of the treatment by a patient/client is almost constant: 13%. In 2006, one-sided ending of the treatment by the client/patient occurred more for adults (15%) and in the RIBWs (15%) than for children (10%) and the elderly (5%) (see *Figure 2.5.4*).

This indicator particularly says something about the communication between therapist and client and whether the client has a say in important treatment decisions (in this case ending of the treatment). It is definitely not an indicator for the effect of the treatment. An ending of treatment can mean that the need for care has been met, but it is also possible that the therapist and client have together decided that the treatment is not leading to sufficient results. Other reasons for ending the treatment included death and one-sided ending by the therapist.

One-quarter (26%) of the people who end up at a hospital accident and emergency department following a suicide attempt, receive a psychiatric consultation there

In the period 2001-2005, one-quarter (26%) of people who ended up at an accident and emergency department following a suicide attempt, were seen by a psychiatrist during their stay there (Kerkhof et al., 2007). As the risk of a repeated suicide attempt is high, a CBO guideline from 1991 and several, more recent, internal hospital guidelines advise that people who have attempted suicide should be seen by a psychiatrist as quickly as possible (Verwey, 2007). Hence, these guidelines are only complied with in one-quarter of the cases. If people are admitted to another department in the hospital then a psychiatrist nearly always sees these patients as a matter of course (Bool et al., 2007). The follow-up care and the referral to other mental health services are not yet sufficiently organized (Bool et al., 2007).

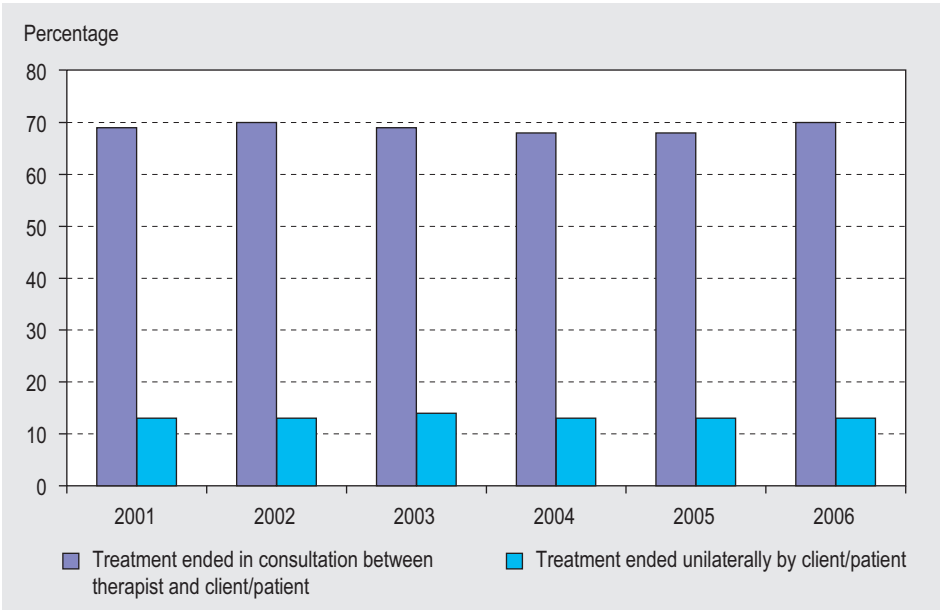


Figure 2.5.4: The proportion of mental health care treatments that are ended in consultation between therapist and client/patient, and the proportion of treatments ended unilaterally by patient/client, 2001-2006 (Source: GGZ Nederland, 2007).

Conclusion

The care use of adults with a *severe* anxiety, mood or addiction disorder is about as high in the Netherlands as it is in other European countries such as Germany, Belgium, Spain and France. The continuity of care – defined as at least one follow-up contact – is better for this group in the Netherlands than in the majority of other European countries. That also applies to the adequacy of the treatment offered. Therefore in general, care for adults with psychiatric disorders in the Netherlands is at least as good as in other European countries, and even better in some respects (Cuijpers, 2008).

However, there are various aspects that can be improved upon. The care practices at hospital accident and emergency departments for people who have attempted suicide are not always up to standard. For example, in the guidelines it is recommended that all people admitted to an accident and emergency department following a suicide attempt should be seen by a psychiatrist as soon as possible. However, that only happens in one-quarter of cases. When such patients are subsequently admitted to another department of the hospital, they mostly receive a psychiatric consultation.

Over the next few years, measurements for the three indicators that were derived from the study by Wang et al. (2007) will almost certainly be repeated in the framework of the NEMESIS study. However, the results of this study are not expected until 2010. A sector-wide basic set of performance indicators have been drawn up for the mental

health care sector (IGZ, 2006b). In 2007, the data supplied by mental health care organizations for 2006 were investigated (Van Ham et al., 2007). The researchers regrettably concluded that for 2006 no reliable picture of mental health care could be given yet. The researchers expressed the expectation that this would be possible in the future.

2.6 Patient safety

Key findings

- 5% of Dutch patients reported having experienced a medical error during treatment; this is a low level from an international perspective
- The hospital standardized mortality rate decreased in the period 2003-2005; in 2005 the mortality risk in hospitals with the highest rate was still 45% higher than in hospitals with an average rate
- 5.7% of patients admitted to a hospital in 2004 experienced an adverse event during their hospital stay; in 40% of these cases the adverse events were potentially preventable
- The prevalence of hospital-acquired pressure sores in general hospitals decreased from 14.8% to 6.9% in the period 1998-2007; in university hospitals the prevalence decreased from 13.2% to 11.2%
- At the start of 2007, an average of 6.9% of hospital patients had a hospital-acquired infection
- The percentage of serious blood transfusion reactions per 1000 blood products fluctuated around 0.13% in the period 2004-2006
- In 2006, only 44% of hospital pharmacies had on-line access to information on medication prescribed outside the hospital
- 10% of hospitals performed less abdominal aortic aneurysm operations than is the norm in 2006; for oesophageal and cardiac resections this was 15% of hospitals
- 2.4% of all hospitalizations and 5.6% of acute hospitalizations were medication-related in 2005-2006; 46% of the acute hospitalizations were supposed to be potentially preventable
- Over 90% of pharmacists and GPs participate in Pharmacotherapeutic Consultations

How we determine patient safety

Patient safety can be defined as 'the (near) absence of (the risk of) patient injury due to the substandard performance of health care professionals and/or shortcomings in the health care system' (De Bruijne et al., 2007). The injury may be physical as well as psychological and result in temporary or permanent disability or death of the patient.

In the first DHCPR attention for patient safety was said to be on the increase and since then it has been booming. Numerous initiatives have been developed or are being developed to promote patient safety. All of the health care sectors have designed or are

in the process of designing indicators with the aim of monitoring their performance. Safeguarding patient safety is an essential aspect of this. In addition branch organizations and professional organizations of medical specialists, long-term care, care for the disabled and mental health care have drawn up safety plans. Major topics in these plans are registration, monitoring and evaluation.

National data on all indicators and for all health care branches are not available yet. Little can be said about patient safety in mental health care and care for the disabled. Patient safety in nursing homes, care homes and home care are dealt with in *Section 2.4*. Hence the indicators below mainly concern hospitals.

Indicators of patient safety

- Patient experiences with
  - Medication errors
  - Medical errors
  - Laboratory or diagnostic test errors
- Hospital standardized mortality rate
- Percentage of patients that sustained medical injury during hospitalization
- Prevalence of hospital-acquired pressure sores
- Prevalence of hospital-acquired infections
- Incidence of transfusion-related adverse events
- Percentage of hospitals where information on medication prescribed in hospital and elsewhere is electronically accessible at hospital wards and elsewhere
- Volume of high-risk surgery in hospitals
- Prevalence of medication-related hospital admissions
- Percentage of Pharmacotherapeutic Consultations that function at levels 3 or 4

The current state of affairs

5% of Dutch patients reported having experienced a medical error during treatment; this is a low level from an international perspective

In the Netherlands 5% of patients reported having experienced a medical error while being treated or cared for in the past two years (see *Table 2.6.1*). Compared to six other Western countries this percentage is low. Another 6% of Dutch patients indicated that they had been prescribed wrong medication or a wrong dose; this percentage is of a comparable level to that for other countries. Two percent of Dutch patients reported incorrect laboratory test results; in three other countries this percentage is two to three time as high. Finally, 7% of Dutch patients reported delays in being notified about abnormal test results; only in Germany is this percentage significantly lower.

Table 2.6.1: Unsafety in curative care - medical errors as experienced by patients, by country, in 2007 (Source: Grol and Faber, 2007; Schoen et al., 2007; data processed by RIVM).

	NL	AU	CAN	GER	NZ	UK	US
In past 2 years have you been given the wrong medication or wrong dose? (% yes)	6	8	6	5	6	6	7
In past 2 years was there a time when you thought a medical mistake was made in your treatment or care? (% yes)	5[a]	11	7	6	8	5	9
In past 2 years have you been given incorrect results for diagnostic or lab test? (% yes)	2	5	4	2	3	2	6
In past 2 years have you experienced delays in being notified about abnormal results? (% yes)	7	7	9	2	7	8	11

[a] $p<0.05$.

The hospital standardized mortality rate decreased in the period 2003-2005; in 2005 the mortality risk in hospitals with the highest rate was still 45% higher than in hospitals with an average rate

The hospital standardized mortality rate (HSMR) aims to compare hospitals for the outcome measure hospital mortality. The HSMR of a hospital is a measure that enables the mortality risk in a hospital to be expressed in relation to other hospitals (Jarman et al., 1999; Heijink et al., 2008). This measure concerns total mortality and not just avoidable mortality. Calculations include corrections for differences in age, gender, main diagnosis and length of hospital stay between patient populations in Dutch hospitals. Thus measured, the HSMR steadily decreased in the period 2003-2005. The spread between hospitals also decreased, by about 35%. In 2005, the HSMR still showed excess mortality in some Dutch hospitals (see *Figure 2.6.1*). The mortality risk in the hospital with the highest HSMR was 45% higher than in hospitals with an average risk score.

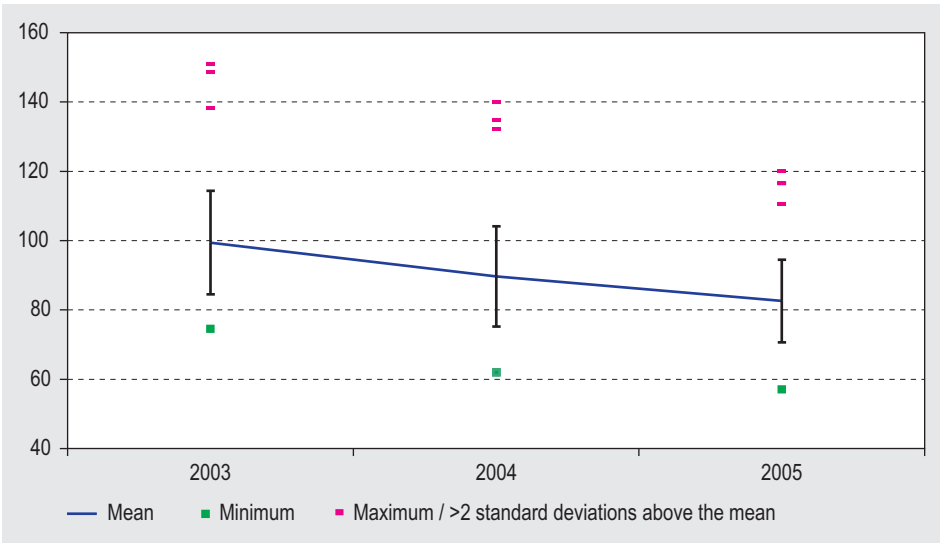


Figure 2.6.1: Hospital standardized mortality rate in Dutch hospitals, 2003-2005 (Source: Prismant; data processed by RIVM).

5.7% of patients admitted to a hospital in 2004 experienced an adverse event during their hospital stay; in 40% of these cases the adverse events were potentially preventable

In 2004, over 1.3 million people were admitted to a hospital. An adverse event was estimated to have occurred in 76,000 patients (5.7%) during their stay in hospital. Four out of ten of the adverse events were estimated to have been potentially preventable (De Bruijne et al., 2007).

The severity of the unintended injuries ranges from minor consequences that have disappeared at discharge to patients dying due to these injuries. *Figure 2.6.2* shows the percentages of patients with adverse events and the resulting levels of injury. The majority of cases of unintended injury lead to temporary limitations that disappear within one year. However, 5% may result in permanent limitations and 8% may contribute to a fatal outcome.

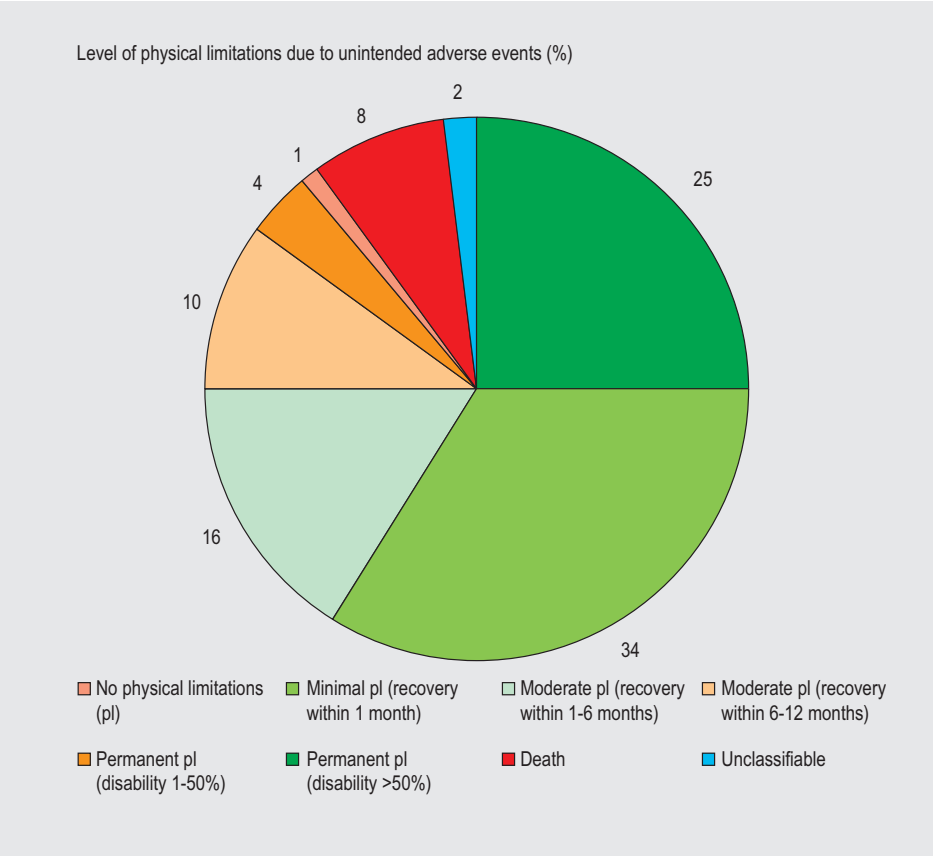


Figure 2.6.2: Level of physical limitations due to unintended adverse events (n=76,000) (Source: De Bruijne et al., 2007; data processed by NIVEL).

These results have led the government to set a norm for avoidable adverse events in hospitals: a reduction of the number of cases with 50% in the period 2008-2011 (Rijksbegroting, 2007).

The data above are derived from the EMGO/NIVEL study into adverse events in Dutch hospitals (De Bruijne et al., 2007). In follow-up to this study good practices will be detailed for ten safety issues in the framework of the hospital safety campaign "Prevent harm, work safely". The good practices are a tool for hospitals to meet the norm and the effectiveness of the good practices will be evaluated.

The study also included an international review of retrospective patient chart studies into adverse events in hospitals. A comparison of the outcome of these studies is hampered by the fact that they differ in definitions used and in reference year. However, with some caution it can be concluded that the number of adverse events in Dutch hospitals is quite low compared to other countries.

The prevalence of hospital-acquired pressure sores in general hospitals decreased from 14.8% to 6.9% in the period 1998-2007; in university hospitals the prevalence decreased from 13.2% to 11.2%

In 2007, the prevalence of pressure sores among patients admitted to a general hospital was 11.8% and among patients admitted to a university hospital 15.4% (Halfens *et al.*, 2007). These prevalences include all levels of severity (1-4) and all cases of pressure wounds irrespective of whether these are hospital-acquired (nosocomial) or not. For the prevention of pressure sores it is important to know which patients are at an elevated risk. Risk groups are defined by scores on the Braden scale; the lower the score, the higher the risk. Measured by this scale, the percentages of patients at risk differ little between university hospitals and general hospitals; 53.4% and 53.1% respectively in 2007 (Halfens et al., 2007). It should be noted, however, that a little elevated risk is far more common than a highly elevated risk and that the risk of acquiring decubitus also depends on the length of stay (Both and Halfens, 2008). As the lowest level of decubitus, stage 1, is hard to diagnose, it is often excluded (Halfens et al., 2001).

Figure 2.6.3 shows the prevalence of hospital-acquired pressure sores (stage 1 excluded) in risk groups. In general hospitals the prevalence of hospital-acquired pressure sores in risk groups fell steeply, from 13.8% in 2001 to 6.9% in 2007. The prevalence in university hospitals fluctuated more and showed little decrease, from 13.2 to 11.2%, over the same period.

A study that compared decubitus prevalence in risk groups in German and Dutch hospitals revealed that in the period 2002-2005, the prevalence was higher in the Netherlands than in Germany (Tannen et al., 2006).

The prevalence of decubitus in long-term care facilities and home care is dealt with in *Section 2.4*.

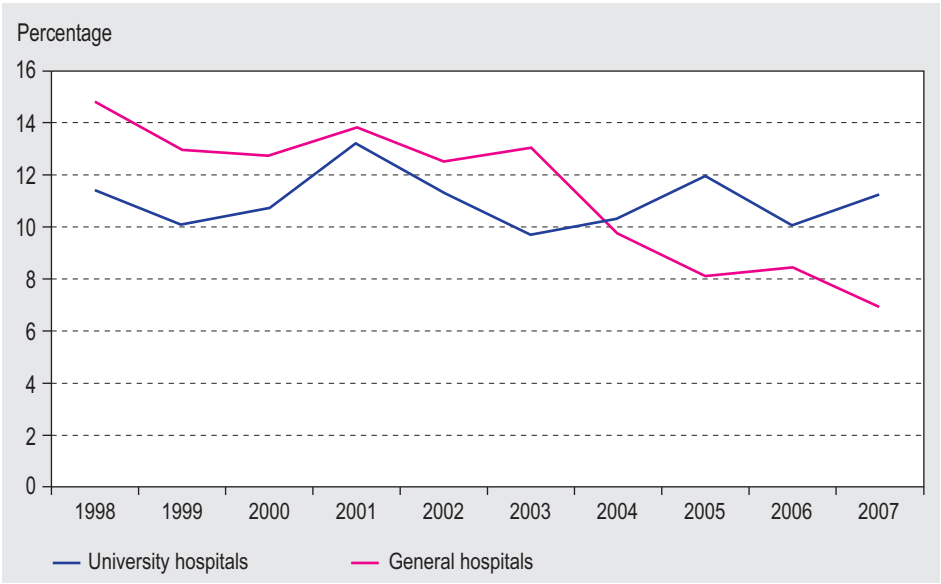


Figure 2.6.3: Prevalence of hospital-acquired pressure sores, excluding stage 1, in risk groups, 1998-2007 (%) (Halfens et al., 2005; 2006; 2007).

At the start of 2007, an average of 6.9% of hospital patients had a hospital-acquired infection

In March 2007, the average percentage of hospital patients with a hospital-acquired infection was 6.9% (CI 6.4% - 7.4%). However, the variation between hospitals is large: it ranges from 3% to 15%. Symptomatic urinary tract infection is most common (2.2%), followed by pneumonia (1.1%) and sepsis (0.9%). Of all people who had surgery, 4.6% had a surgical site infection (PREZIES, 2007).

The risk of incurring a surgical site infection differs strongly per surgical procedure. Consequently it makes sense to investigate differences between hospitals within a cluster of procedures. *Table 2.6.2* presents the percentage of surgical site infections for three CTG-main groups of the initial operating theatre. These three groups have been selected because they cover the largest number of patients. Surgical site infections occur most frequently with surgery of the digestive system. The figures are derived from the first national prevalence study of hospital-acquired infections, which will be carried out yearly by PREZIES (PREZIES, 2007).

The percentage of serious blood transfusion reactions per 1000 blood products fluctuated around 0.13% in the period 2004-2006

Blood transfusion reactions can be distinguished by level of severity. They are considered serious if they lead to a patient's death (level 4) or to a life-threatening, disabling or incapacitating condition (level 3) or if they result in, or prolong hospitalization or

Table 2.6.2: Patients with surgical site infections, within three CTG main groups (%) (Source: PREZIES, 2007).

	Patients with surgical site infection	95% Confidence interval
Musculoskeletal system (n=1014)	2.8	1.9 - 4.0
Digestive system (n=640)	12.0	9.7 - 14.8
Cardiovascular system (n=321)	4.4	2.6 - 7.2

morbidity (level 2) (EU, 2002). With the lowest level of severity (level 1), clinical reactions do occur, but they are not serious and do not prolong hospitalization.

Since 2003 the National Bureau for Haemovigilance TRIP (Transfusion Reactions in Patients) has been in charge of the national registration of transfusion reactions. In 2006, TRIP registered 2.9 transfusion reactions per 1000 blood products, with 0.18/1000 reactions being serious. Although the total number of transfusion reactions is still increasing each year, the number of serious reactions is quite stable (0.12 in 2004, 0.13 in 2005 and 0.18 in 2006) (see *Figure 2.6.4*). The increase in serious reactions in 2006 can be attributed to the definition of level 2 being extended to include 'prolongation of hospitalization' in line with the EU definition.

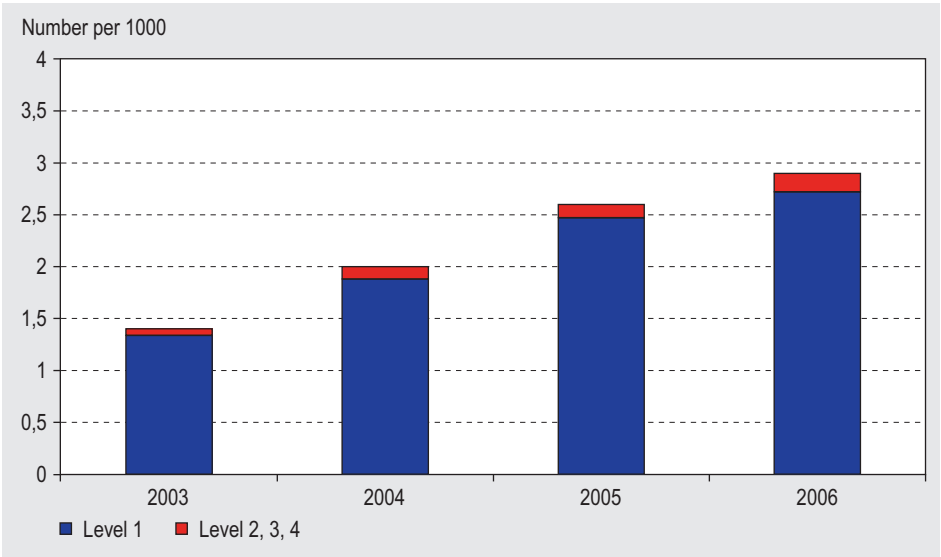


Figure 2.6.4: Number of (serious) transfusion reactions per 1000 blood products, 2003-2006 (Source: TRIP, 2004; 2005; 2006; 2007).

In 2006, only 44% of hospital pharmacies had on-line access to information on medication prescribed outside the hospital

In the process of prescribing, preparing, dispensing and administering medication there are many moments of risk, even more so when this process takes place both

within and outside hospital. On-line availability and exchange of data on patient medication can help to prevent medication errors.

The proportion of hospitals where information on medication prescribed on the wards is accessible on-line in the hospital pharmacy is close to 100%. This is by no means the case with medication prescribed at outpatient clinics or outside the hospital. Strikingly, information on medication prescribed at an outpatient clinic is accessible on-line in fewer hospital pharmacies than information on medication prescribed outside the hospital (see *Table 2.6.3*). Electronic access to information on medication prescribed outside the hospital is limited everywhere in the hospital. This is quite a concern, as over 80% of the medication is prescribed by GPs (Vandermeulen et al., 1999). An electronic health or medication record system may contribute to solving this problem. Yet in September 2007, only five general practices and one general practice cooperative were linked up to the National Exchange Point for Electronic Patient Records (see *Section 2.7*).

Table 2.6.3: Hospitals where information on medication prescribed in a (outpatient) clinic and outside the hospital is on line accessible in all outpatient clinics, wards, hospital pharmacy and outside the hospital (%) (Source: IGZ, 2004; 2005; 2006c; 2007).

Electronically accessible at	Medication prescribed at the hospital ward %			Medication prescribed at the outpatient clinic %			Medication prescribed outside the hospital %		
	2004 n=105	2005 n=97	2006 n=99	2004 n=105	2005 n=97	2006 n=99	2004 n=105	2005 n=97	2006 n=99
Hospital pharmacy	83	93	96	22	34	36	21	39	44
Ward	35	34	50	3	8	12	5	5	3
Outpatient clinic	24	30	44	6	6	13	4	1	3
Outside the hospital	8	14	16	17	33	26	a	a	a

a = 100% by definition

10% of hospitals performed less abdominal aortic aneurysm operations than is the norm in 2006; for oesophageal and cardiac resections this was 15% of hospitals

To keep surgical expertise up to standard and to promote safety, surgeons and hospitals should perform a minimum volume of surgical procedures, in particular high-risk procedures. For the two procedures abdominal aortic aneurysm (AAA) surgery and oesophageal and cardiac resections (OCR) the literature reveals that the mortality rate is lower in high-volume hospitals (IGZ, 2005). For both procedures, hospitals are required to perform a minimum number of interventions per year. For OCR this norm is 10 (up to 2003: 15) and for AAA this norm is 15 (up to 2003: 30).

In 2006, the percentage of hospitals that performed fewer procedures than the norm was 10% for AAA procedures and 15% for OCR procedures. Since 2003, the proportion of low-volume hospitals has decreased for both procedures (see *Figure 2.6.5*). This is partly due to a lowering of the minimum number required. In addition, an increasing number of hospitals refer patients to other hospitals for OCR.

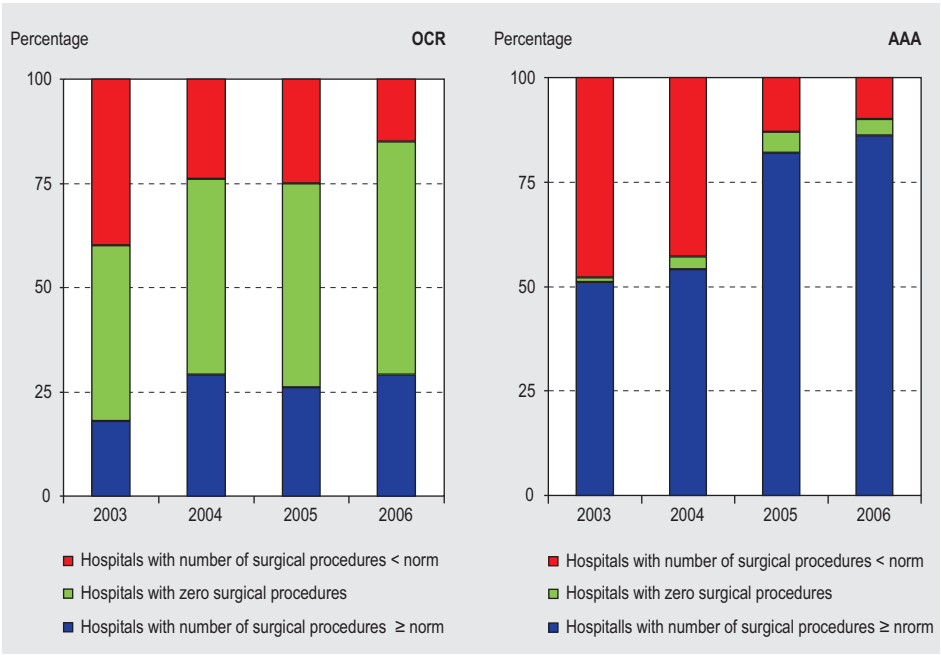


Figure 2.6.5: General and university hospitals that performed zero, or less or more than the minimum number of AAA (abdominal aortic aneurysm) and OCR (oesophageal and cardiac resection) procedures, 2003-2006 (%) (Source: IGZ, 2005; 2006c; 2007).

2.4% of all hospitalizations and 5.6% of acute hospitalizations were medication-related in 2005-2006; 46% of the acute hospitalizations were supposed to be potentially preventable

Medication errors can lead to hospitalization or prolongation of hospitalization and can result in temporary or lasting harm or even death. The HARM study, performed in 2005 and 2006, showed that in 21 hospitals 2.4% (n=714) of hospitalizations and 5.6% of all acute hospitalizations were medication related. Forty-six percent of these hospitalizations were considered potentially preventable (Van den Bemt and Egberts, 2006). Extrapolation to all Dutch hospitals results in a total number of 41,000 medication-related hospitalizations, 19,000 of which are potentially avoidable. In particular, therapeutic prescription errors, like indications, contra-indications and interactions, lead to hospitalization (see *Table 2.6.4*).

Table 2.6.4: Type of errors in the medication process that led to hospitalization, in 2005/6 (%) (Source: Van den Bemt and Egberts, 2006).

Type of error made	2005/6 (n=509)
Prescribing (therapeutic errors)	66.6
Prescribing (dose errors)	7.5
Administration errors	22.4
Other	3.5

The majority of the medication-related hospitalized patients (72.4%) recovered completely of the consequences of medication errors, but 9.8% experienced lasting harm and 5.0% died. Of patients with a preventable medication-related hospitalization, 9.3% experienced lasting harm and 6.6% died.

The ICPC study into hospitalizations due to the side effects of medications revealed more or less the same picture: 3.5% (n=36,000) of all hospitalizations and 5.1% of all acute hospitalizations were related to medication side effects. Thirty percent of the medication side effects were considered to be potentially avoidable. Six percent of the patients died because of the side effects and for another 6% of the patients the situation was life-threatening (ICPC, 2006).

Assumedly, a better coordination of medication use and in particular a regular review by a health care professional of medication used would promote medication safety (see *Section 2.3*).

Over 90% of pharmacists and GPs participate in Pharmacotherapeutic Consultations

A Pharmacotherapeutic Consultation (FTO) is a local consultation between pharmacists and GPs with the aim of promoting the quality and safety of medication dispensing (DGV, 2007). For both pharmacists and GPs participation in FTOs is an accredited form of continuing education. FTO groups are classified by level of functioning, with level 4 being highest and level 1 being lowest. Level 1 involves irregular consultations, level 2 regular consultations but no clear agreements, level 3 regular consultations and concrete agreements, and level 4 regular consultations and evaluation of agreements. Important subjects of FTOs are medication for a wide variety of disorders, polypharmacy, new medicines and patient compliance. The Ministry of Health considers the performance of these groups to be an important indicator of the regional efficiency of medication dispensing and aimed for at least 80% of the FTO groups to function at level 3 or 4 in 2007 (Rijksbegroting, 2007). *Table 2.6.5* shows that the number of FTO groups functioning at level 3 or 4 increased slowly but surely from 40% in 2003 to 49% in 2006.

Table 2.6.5: Pharmacotherapeutic Consultation (FTO) groups functioning at level 3 or 4, 2003–2006 (%) (Source: DGV, 2005; 2006; 2007).

	2003	2004	2005	2006
Number of FTO groups	823	824	819	829
FTO groups of level 3 or 4[a]	40%	43%	47%	49%

[a] FTO groups that participated in the DGV-FTO survey. Participation in the period 2003-2006 was 78%, 78%, 69% and 80%, respectively.

Conclusion

Safety in hospitals appears to be improving as figures of high-risk surgical procedures, hospital mortality and decubitus seem to suggest. Internationally, the Netherlands also appears to do well. Yet, many adverse events that are potentially preventable still occur. In 2004, 5.7% of hospitalized patients experienced adverse events, 40% of which was considered potentially preventable. Internationally, though, this does not appear to be a bad score. Five percent of Dutch patients in curative care reported that they had been subject to a medical error during the past year and 6% indicated that they had received an incorrect medicine or dosage. Again, this is a favourable result form an international perspective.

Medication safety is a matter of concern. In 2005-2006, 5.6% of all acute hospitalizations were medication related and 46% of these hospitalizations were considered potentially avoidable. In hospitals, electronic accessibility of data about medication prescribed outside the hospital is limited, even though 80% of all medicines are prescribed by GPs. Forty-four percent of Dutch patients reported having discussed medication use with a health care provider during the past year. This figure is significantly lower than in a number of other countries.

In recent years the prevalence of facility-acquired decubitus in nursing homes and residential homes as well as in general hospitals fell sharply. The decline in university hospitals was less steep.

The first annual hospital-acquired infection prevalence study was carried out in 2007. It showed that 6.9% of patients acquired an infection during their stay in hospital. A 50% reduction of hospital-acquired infections and sepsis are the first two goals of the hospital campaign ‘Prevent harm, work safely’. The initial results of this campaign might be reported in the next DHCPR. Results of a similar campaign in the United States are promising.

Some safety matters could not be discussed in this section, because nationally representative data are lacking. Such matters include disease complications in hospitals, medication safety in mental health care, nursing homes and residential homes, and off-label prescribing. A number of data registrations are promising for the future, however. In 2008, a safety management system will be introduced in hospitals that

will oblige them to register and analyze adverse events. The care and nursing sector recently designed a safety programme 'Programme safety 2008 and beyond', and the set of performance indicators for mental health care includes several indicators related to safety. These potential data sources could be deployed in the next DHCPR to fill in some of the above-mentioned gaps.

2.7 Innovation in health care

Key findings

- Between 1995 and 2005, the availability of minimal-invasive techniques in the Netherlands fluctuated around the EU-15 average
- In the Netherlands, surgical interventions are more often performed in day surgery compared to other European countries
- About 25% of renal dialysis patients dialyse at home; this proportion has been decreasing since 2002
- Currently there are more than 100 telecare projects ongoing in the Netherlands, mostly in the area of e-domotics and personal alarms
- Limited information is available regarding the effects of Breakthrough Projects
- E-health increases the coverage of mental health care
- 98% of GPs use an electronic file
- Five Dutch general practices and one general practice cooperative are connected to the National Exchange Point for the Electronic Health Records
- 17% of health care related patent applications by Dutch applicants arise from cooperation with foreign researchers and developers
- The Netherlands submitted 2.2% of the world's health care related patent applications; this places the Netherlands amongst the world top
- In 2004, the pharmaceutical industry in the Netherlands spent 0.1% of the gross domestic product on health care related Research & Development

How we determine innovation in health care

Innovations in health care can contribute to a decrease in illness, pain and disabilities and can therefore lead to significant health gain (OECD, 2005a). In addition, waiting times can be reduced and efficiency increased by improving the organization of processes. Innovations depend on the creation, development and dissemination of new products or processes.

These three aspects are expressed as indicators in this section. We consider these aspects in reverse order: how well disseminated are minimal-invasive techniques and what proportion of interventions at Dutch hospitals is performed in day surgery? We will then consider process innovations: how widespread is the use of ICT in health care and what do we know about Breakthrough Projects and Best Practices? We then present the indicators that paint a picture of the essentials for progress: how many new

products are being developed in the Netherlands and how successful are we at acquiring knowledge cheaply from abroad? Finally, we consider the investments in Research & Development (R&D).

Indicators

Since innovation is such a broad subject, we cannot cover everything. The innovations that are selected from the many initiatives, projects and improvements, implemented in health care, provide an impression of important current developments. For this the following indicators are applied:

- International score for availability of minimal-invasive techniques
- Number of day surgery interventions as a proportion of all surgical interventions
- Use of home care technology and proportion of renal dialysis patients using home dialysis
- Use of telecare
- Supply of e-health in mental health care
- Evaluation of Breakthrough Projects
- ICT applications as process support: use of the Electronic Health Records, Electronic Medication Records and Electronic Locum File
- Number of patent applications by Dutch people together with foreigners, as a proportion of the total number of patent applications by Dutch people
- Number of patent applications by Dutch partnerships, as a proportion of the total number of Dutch patent applications
- Expenditure of a country's pharmaceutical industry on health care related Research & Development as a proportion of its gross domestic product

The current state of affairs

Between 1995 and 2005, the availability of minimal-invasive techniques in the Netherlands fluctuated around the EU-15 average

RIVM has developed an indicator that expresses a country's position relative to other countries with regards to the use and availability of new techniques. These new techniques include keyhole operations (proportion of the total number of gall bladder operations), radiation therapy, and for diagnostic purposes the MRI scan, CT scan and mammogram unit (Lambooij and Westert, 2007). The score is calculated by dividing the availability or the use of an innovation in a country by the availability or use of an innovation in all OECD countries. Consequently, the value can only be interpreted in relation to the score of other countries. A higher score means that a country makes more frequent use of the named techniques than countries with a lower score.

The availability and use of minimal-invasive techniques in the Netherlands is about average for both the OECD countries and the EU-15 (see *Figure 2.7.1*). Although the Netherlands is at a similar level to many other Western countries, these techniques are already used far more frequently in the United States, Japan and Belgium.

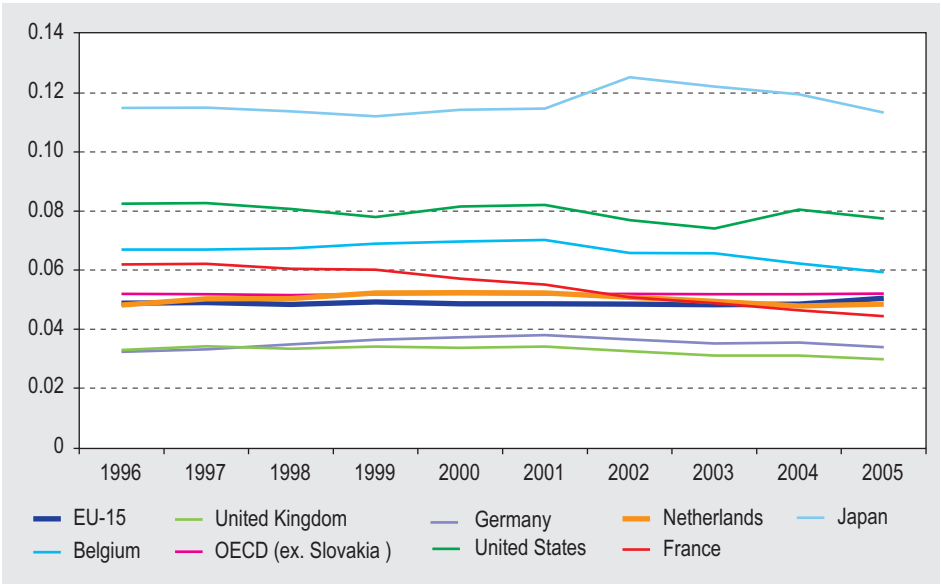


Figure 2.7.1: Composite score for availability of minimal-invasive techniques in OECD countries, 1996-2005 (Source: OECD Health Data 2007; data processed by RIVM).

In the Netherlands, surgical interventions are more often performed in day surgery compared to other European countries

Surgical interventions can be carried out in day surgery (outpatients) or during hospitalization. For these techniques a relative score between OECD countries has also been calculated (Lambooij and Westert, 2007). This score is based on the proportion of all interventions performed in day surgery in a country for procedures involving cataract, tonsils, fractures and the stripping of varicose veins. In the Netherlands, more of these interventions are performed in day surgery than in other countries (see *Figure 2.7.2*). In the list of OECD countries, the Netherlands has occupied second place since 2004 with respect to the use of day surgery. Only Canada scores higher. On the scale developed, the Netherlands, Sweden and Norway had scores that were very close together during the period 1996-2005 and they vied for second, third and fourth place.

About 25% of renal dialysis patients dialyse at home; this proportion has been decreasing since 2002

Kidney patients are highly dependent on dialysis. This procedure often requires three periods of four hours each week. Dialysis can take place at a hospital or dialysis centre, but also at home. Prior to home dialysis, the patient, and if present the partner, takes part in a training programme that lasts about 11 weeks (Hollestelle et al., 2005). There are two techniques suitable for home dialysis: peritoneal dialysis and home haemodialysis. In the case of peritoneal dialysis the peritoneum is used as a filter (Hollestelle et al., 2005). Home haemodialysis uses amongst other things an artificial kidney with which the patient is rinsed via a shunt (connector between vein and artery in the forearm through an own blood vessel or an artificial blood vessel).

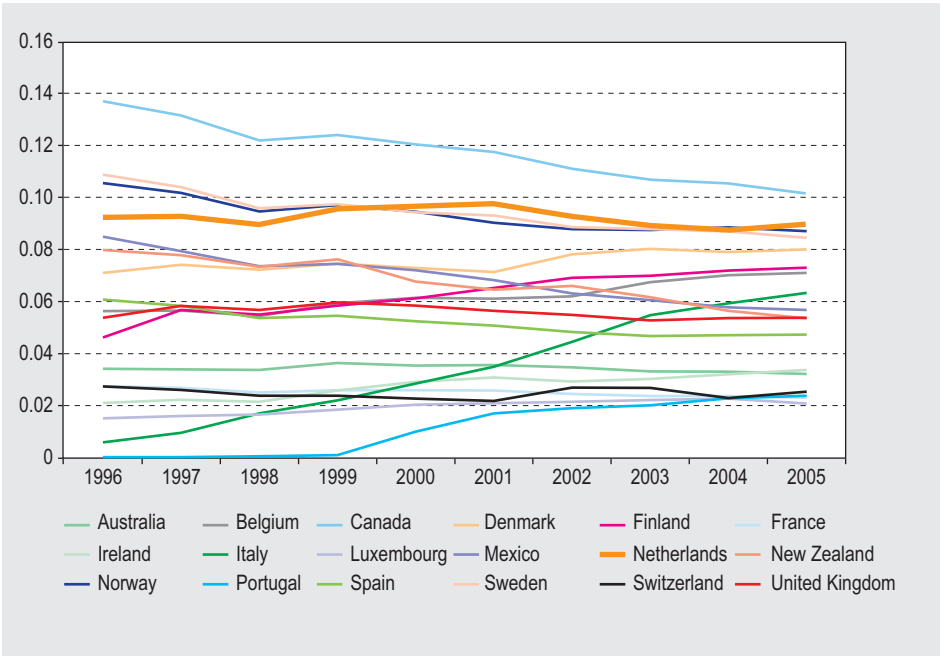


Figure 2.7.2: Composite score for use of day surgery in OECD countries, 1996-2005 (Source: OECD Health Data 2007; data processed by RIVM).

Figure 2.7.3 clearly shows that in 2007 a quarter of renal dialysis patients performed dialysis at home, whereas in 2002 this was still 33%. The relative decrease is mainly due to a drop in the number of peritoneal dialysis patients. The number of home haemodialysis patients rose between 1997 and 2007 from 91 to 128 respectively.

Currently there are more than 100 telecare projects ongoing in the Netherlands, mostly in the area of e-domotics and personal alarms

Table 2.7.1 shows the number of telecare projects in the Netherlands at the start of 2007. There are more than 100 projects, some in progress and some still under development. The table is not exhaustive, as not all projects are centrally managed. The projects are divided into five categories: e-domotics and personal alarms, personal alarms plus, video communication, ICT domotics and telemedicine in the domestic setting.

Projects concerning e-domotics and personal alarms are the most prevalent: 60 projects reaching some 3000 homes. Together, the other categories cover at least 43 projects that together reach more than 10,000 people.

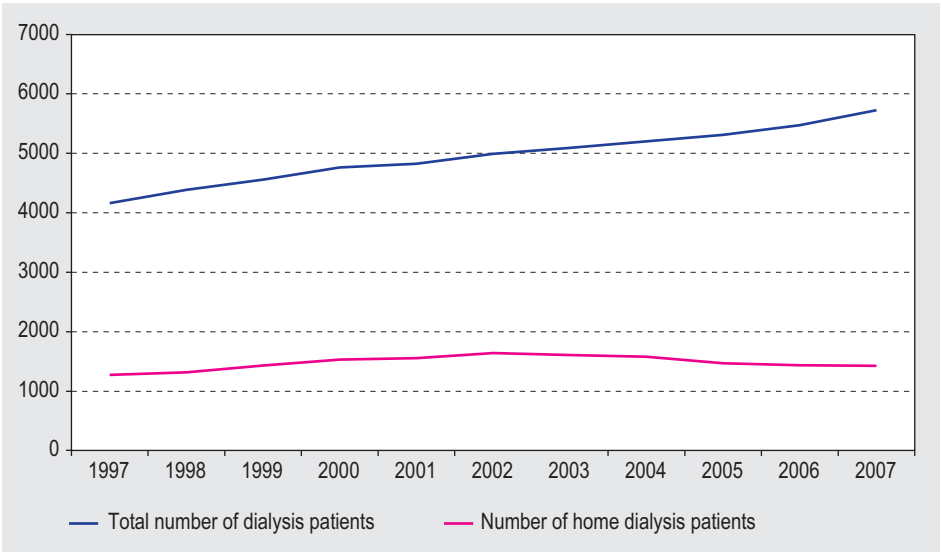


Figure 2.7.3: Number of home dialysis patients (peritoneal dialysis and home haemodialysis) on 1 January, 1997-2007 (Source: Renine, 2007).

Table 2.7.1: Number of telecare projects in the Netherlands, at the beginning of 2007 (Source: Van Houwelingen and Lambooij, 2007).

Type	Purpose	Phase of development	Number of projects	Number of homes/users
E-domotics and personal alarms	Care	In use	60	3000 homes
Personal alarm plus	Care	Under development	10	600 users
Video communication	Information, diagnosis, care	Under development	15	2500 users
ICT domotics	Information, diagnosis, care, administration	Under development	3	250 users
Telemedicine in a domestic setting	Information, diagnosis, cure, administration	Under development	> 15	7000 users

On 1 January 2007, there were 1.7 million people in the Netherlands aged 65 years and older and more than 600,000 people aged over 80 years (CBS Statline, 2007d). Some of these people belong to the target group for this category of facilities. However, which part of the target group telecare applications will be helpful for, cannot be stated.

Limited information is available about the effects of Breakthrough projects

Process innovations can result in health care services becoming more efficient, faster and better. The programme Better Faster (Sneller Beter) exists to facilitate the dissemi-

nation of process innovations. In Better Faster, efforts are made to encourage the dissemination of Best Practices by means of so-called 'Breakthrough Projects' or improvement projects. The Dutch Institute for Healthcare Improvement (CBO) reported that 11 Breakthrough Projects had been completed at the start of 2008.
In 2007, Netherlands Institute for Health Services Research (NIVEL) evaluated a number of completed Breakthrough Projects. A total of 400 projects had started. For 65 improvement projects, data about their implementation and effectiveness were collected in the second year. An improvement was noted for 40 projects, but a deterioration for 22 (Dückers and Wagner, 2007).

E-health increases the coverage of mental health care

E-health in mental health care consists of a number of different forms of help, including chat sessions, self tests, courses and screening questions via e-mail. One important positive consequence of e-health applications is that groups that were scarcely reached in the past are now reached better (Riper et al., 2007). In 2007, there were 65 projects in the area of depression, anxiety disorders, "miscellaneous" psychological complaints and problematic alcohol use. *Table 2.7.2* details the number of projects according to the type of condition (Riper et al., 2007).

Table 2.7.2: Number of e-health interventions in mental health care, in 2007 (Source: Riper et al., 2007).

	Selective prevention	Indicated prevention	Treatment	E-consultation	Care/Follow-up care	Total
Depression	5	7	2	-	-	14
Anxiety disorders	-	1	5	-	-	6
'Miscellaneous' psychological complaints	13	4	-	9	1	27
Problematic alcohol use	2	10	2	-	4	18

98% of GPs use an electronic medical file

The use of electronic files in general practice can increase both the quality and efficiency of the care provided (Schoen et al., 2006). *Table 2.7.3* provides an international comparison of the use of electronic health records by GPs. In the Netherlands, 98% of GPs use an electronic medical file. With this the Netherlands leads the world.

Five Dutch general practices and one general practice cooperative are connected to the National Exchange Point for Electronic Health Records

Despite the considerable coverage of the GPs' computerized systems, connection to the National Exchange Point for Electronic Health Records (EPD) is proceeding slower than expected. In the national budget for 2007, the Ministry of Health formulated the ambition that by mid-2008 all general practice cooperatives and half to three-quarters

Table 2.7.3: GPs with an electronic health file (%) (Source: Schoen et al, 2006).

	%
Netherlands	98
New Zealand	92
United Kingdom	89
Australia	79
Germany	42
United States	28
Canada	23

of pharmacies will be connected to the EDP national information system. *Table 2.7.4* shows that in September 2007, the coverage was 0.1% for GPs and 0.8% for general practice cooperatives.

Table 2.7.4: Number of GPs and general practice cooperatives connected to the National Exchange Point Electronic Health Records, in September 2007 (Source: VWS, 2007d).

Type of health care provider	Number connected	Total number	%
General practices	5	4455 [a]	0.1
General practice cooperatives	1	130 [b]	0.8

[a] NIVEL, 2007; [b] De huisartsenpost, 2007.

17% of health care related patent applications by Dutch applicants arise from cooperation with foreign researchers and developers

Is the Netherlands successful at developing innovations in an efficient manner? Participating in international networks allows both a good use of knowledge from other countries and for knowledge developed elsewhere to reach us sooner. The number of patent applications that are the result of Dutch-foreign cooperation provides an indication of the degree to which the Dutch participate in international networks. Of all the Dutch patent applications for health care related products, 17% are the result of international cooperation between the Netherlands and a foreign partner (see *Table 2.7.5*). The majority of patents within health care are applied for by Dutch companies who have developed the new product by themselves (70%).

The Dutch innovation partners cooperate mostly with Germany, the United States and the United Kingdom (not in table). The US is the largest producer of patent applications in the health care sector and Germany is the biggest player in Europe. Dutch researchers therefore have contact with the richest sources of new developments in health care.

Table 2.7.5: Number of patent applications by type of partnership, 1995-2005 (Source: Octrooicentrum Nederland, 2007).

Total [a]	Absolute	%
Dutch applicants without partner	603	70
Dutch applicants with Dutch partner	117	13
Dutch applicants with foreign partner	147	17

[a] Categories are non-invasive, gen-bio, pharmaceuticals, medical ICT, instruments and artificial organs.

The Netherlands submitted 2.2% of the world's health care related patent applications; this places the Netherlands amongst the world top

Figure 2.7.4 states the absolute number of health care related patents per country between 1995 and 2005. The figures for 2005 are based on two-thirds of the world's patents. It takes between 18 months and three years for all patent applications to be registered. Consequently, not all of the data are available for this DHCPR.

In 2004, the Netherlands generated 2.4% of the health related patent applications (see *Figure 2.7.4*). Although this might not seem much, if the figure is calculated per head of population then the Netherlands performs far better than its neighbours (see *Figure 2.7.5*).

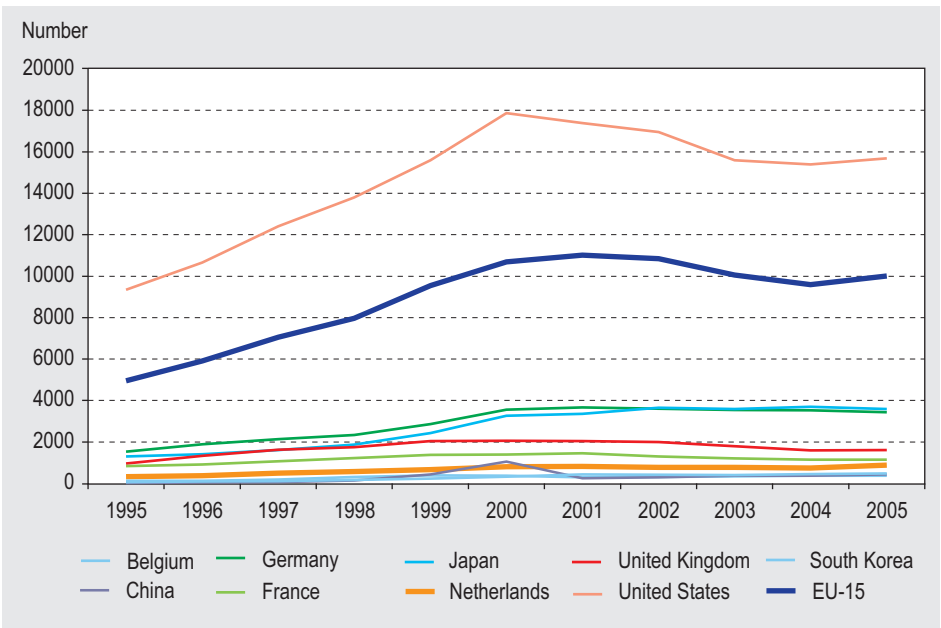


Figure 2.7.4: : Number of patent applications, per country, 1995-2005 (Source: Octrooicentrum Nederland, 2007).

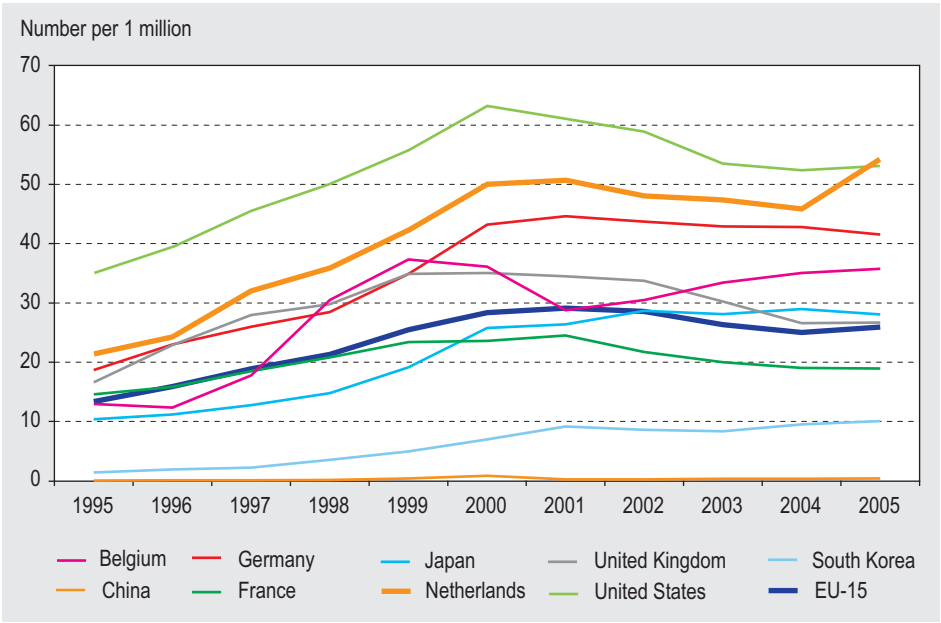


Figure 2.7.5: Number of patent applications per million population, per country, 1995-2005 (Source: Octrooicentrum Nederland, 2007).

The majority of Dutch patents are related to pharmaceuticals. An increasing number of patents are being requested for medical instruments and relatively few are related to the areas of non-invasive techniques and ICT. The commercial sector submits the most patent applications, followed at a distance by universities and innovation centres.

In 2004, the pharmaceutical industry in the Netherlands spent 0.1% of the gross domestic product on health care related Research & Development

It would be preferable to report a country's expenditure on health care related R&D (therefore including players other than just the pharmaceutical industry), as an indicator for investments in innovative developments. However, following the report of Statistics Netherlands (CBS, 2006a) it has been decided to report only the expenditure of the pharmaceutical industry in a country, as these figures are the most convenient for making comparisons.

In 2004, the Netherlands-based pharmaceutical industry spent an amount that is equivalent to 0.1% of the Dutch GDP on health care related R&D (see *Figure 2.7.6*). That is comparable with Germany, Finland, Spain and Canada but is less than Denmark and Sweden. This percentage has been stable for several years. Neither are major changes observed in other countries (OECD Health Data 2007).

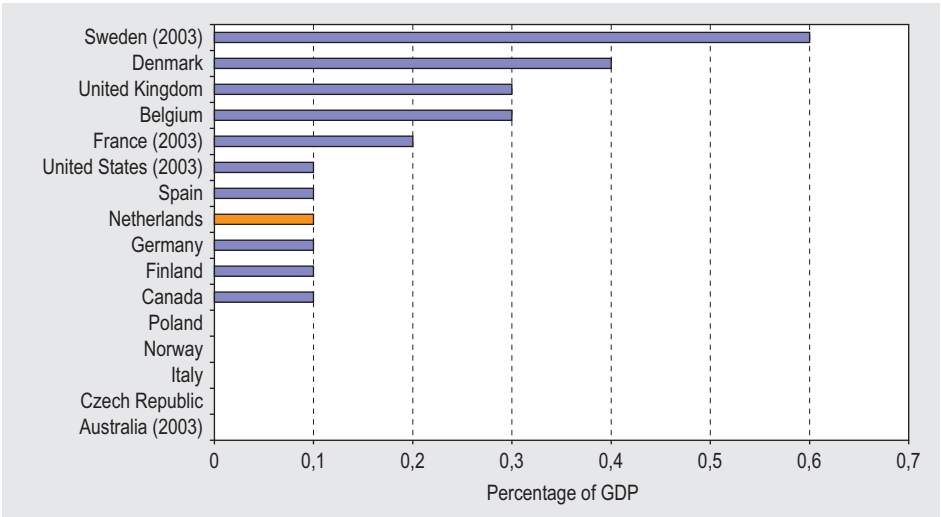


Figure 2.7.6: Expenditure on Research & Development by the pharmaceutical industry as a proportion of the gross domestic product, per country, in 2004 (unless stated otherwise) (Source: OECD Health Data 2007).

Conclusion

Since the last DHCPR, no drastic shifts have occurred with respect to innovation in health care. The Netherlands is still a worthy competitor to the most innovative countries when it comes to developing medical technology products. Many patients still undergo day surgery in hospitals, which can be indicative of an efficient way of working. A development picked up on for the first time in this DHCPR is e-health. We can already observe that this has led to an increase in the coverage of mental health care. Many health care organizations already use the electronic health records (EPD) but these records are not being connected to the central network as fast as had been hoped for.

The Netherlands is developing many new products. Calculated per head of population, the Netherlands produce the most patent applications. This knowledge, combined with the average investments in R&D, shows that products can be developed more efficiently in the Netherlands compared to other countries.

Innovation is difficult to describe in terms of policy norms. For example, if the progress of the EPD is linked to policy norms then this could give the impression that the Netherlands is seriously failing to make sufficient progress. However, it should be remembered that Dutch GPs lead the pack when it comes to implementing electronic files. These observations reinforce the fact that 'appropriate measuring' is vital for obtaining a correct picture of innovation in health care. Although the expectations for various process innovations are high, national data about the effects of this process reorganization on the efficiency of health care is still lacking.

3 ACCESS TO HEALTH CARE

The central theme of this chapter is access to health care. There is broad social consensus that health care must be accessible. Indeed, what value does a health care system have when people in need of care cannot access it? This chapter first describes the different aspects of accessibility and concludes with a discussion of two topics that are closely related to access: the availability of personnel in the health care sector and freedom of choice.

3.1 Accessibility of care

Access to care implies the following: *'people, who need care, can access care in a timely manner and without great barriers'* (Smits et al., 2002). A number of aspects can often be found in the literature that together determine accessibility. These aspects usually relate to factors that can restrict access to health care, such as cost, geographical distance, waiting times and the extent to which supply meets the people's demands and needs.

The attention given to each of these four aspects differs between academic publications, as does the sequence in which they are discussed in overview reports and the links that are made between them. The sequence often depends on the countries or subjects the studies concern. The expected or actual extent of the negative consequences of the different barriers can also play a role. This second DHCPR follows a systematic structure that was also used in recent EU publications (Busse et al., in preparation; Tamsma, 2008) without expressing or implying an opinion on the significance of the four aspects upfront.

A shortage of personnel can affect every aspect of accessibility of health care and create problems (higher costs, gaps in geographical distribution, long waiting times or less variety in care supply). Sufficient personnel is a *prerequisite* for access.

Freedom of choice in health care is considered important for a number of reasons (Westert and Verkleij, 2006). The Dutch Consumer Association defines freedom of choice as *the extent to which people themselves can choose the way they want to be insured against health care costs and how or by whom care is provided* (Consumentenbond, 2005). Freedom of choice is closely related to access to available care. A prerequisite for freedom of choice is that statutory and financial schemes enable choices to be made. There must also be sufficient variety in available care so that people can weigh the quality of the care against the 'costs'.

Outline of this chapter

3.2 Financial access to care

Key findings

- Approximately 1.5% of the Dutch population is not insured
- In the Netherlands, confidence in the affordability of necessary care is high
- In the Netherlands, only a small minority of people forego a visit to the doctor or the dentist because of the costs

How we determine financial access to care

Financial access is a basic condition for a functional health care system. Foregoing necessary treatment because of its cost can be detrimental to a person's health. High out of pocket payments that affect other necessary expenses are also considered undesirable (Murray et al., 2003). Guaranteeing financial access to care has been an important goal of Dutch government policy for many years. Differences in income should not create unacceptable differences in access to care. At the same time, the cost of health care should not be too heavy a burden on the economy or the citizens' purchasing power. In recent years, the government has increasingly asked citizens to limit their demand for health care in order to curb the rising costs. A measure to achieve this is the implementation and increase of out of pocket payments. An undesirable side effect of such a measure may be that it creates financial barriers to the use of care, thereby increasing the need for monitoring financial accessibility. According to international definitions, care is generally considered financially inaccessible when people limit or postpone the use of necessary care because of (excessively) high costs, or when they have to relinquish other basic necessities because they need care (Schoen et al., 2005; Salganicoff et al., 2005).

The first indicator of financial accessibility is the percentage of people who have health insurance. The second indicator shows how much confidence people have in the affordability of care when they need it. The third, internationally commonly used indicator is the extent to which (groups of) people experience the costs of medical care as a barrier to obtaining necessary care. The fourth indicator relates to chronically ill patients and maps out their additional illness-related expenses. The last two indicators show how out of pocket payments are distributed across households and income groups.

Indicators

Financial accessibility is measured using the following indicators:

- Percentage of people who do not have health insurance
- Percentage of people who have confidence in the affordability of necessary health care
- Percentage of people who forego necessary health care
- Additional health-related expenses for people with chronic illnesses and disabilities
- Distribution of out of pocket payments across households
- Share of disposable income that is spent on health care by different income groups

The first three indicators are based on data from 2006/2007, and older data were used for the other three indicators. These data are presented, but not included in the key findings.

The current state of affairs

Approximately 1.5% of the Dutch population is not insured

During the first six months following 1 May 2006, some 241,000 people who were legally obliged to have health insurance were not insured (CBS Statline, 2007e). This is about 1.5% of the Dutch population. In 2004, 225,000 people were not insured and in 2005, the figure rose to 242,000 people (CBS Statline, 2007e). A direct comparison between 2005 and 2006 is, however, not possible because the calculation method is very different. The number of people without health insurance was 50% lower among people receiving benefits than the average for the total Dutch population. This is probably due to the additional efforts of the local authorities and the Ministry of Health. For example, local authorities exercised their right to deduct health care premiums from benefits.

There was a big difference in age and country of origin between insured and uninsured people. In 2006, half of the uninsured were people in their twenties and thirties, the age group that uses relatively little health care. First-generation migrants are eight times more likely to be uninsured (6.6%) than natives (0.8%), while second-generation migrants are only twice as likely to be uninsured (1.6%) (CBS Statline, 2007e). These differences may be due to a less effective information campaign on the system reform targeted at first-generation migrants.

Alongside the people who should be insured but are not, there is a category of the insured who failed to pay their premium for at least six months (so-called defaulters). On 31 December 2006, just over 190,000 people had arrears of at least six months (CBS, Statline, 2007e). The characteristics of the group of defaulters also differ from those of the payers: people receiving social security benefits are three times more likely to belong to the group of defaulters. The differences between countries of origin are larger. Migrants are three times more likely to belong to the group of defaulters

than natives. There are also groups of migrants that are nine times more likely to have arrears. It would appear that these premium arrears are less the result of poor information than is the case for uninsured people, as it concerns a group of relatively easily accessible people originating from Aruba, the Netherlands Antilles and Suriname. The extent to which the group of defaulters relinquishes health care for financial reasons is not known.

In the Netherlands, confidence in the affordability of necessary care is high

In 2007, 41% of Dutch said they were very confident that necessary care would be affordable and another 41% said they were fairly confident (combined 82%). Compared with six other countries, this is by far the highest percentage and the difference is statistically significant compared to other countries. In Germany, the United Kingdom and the United States, the lowest proportion of people are confident in the affordability of health care (58-60%) (see *Figure 3.2.1*).

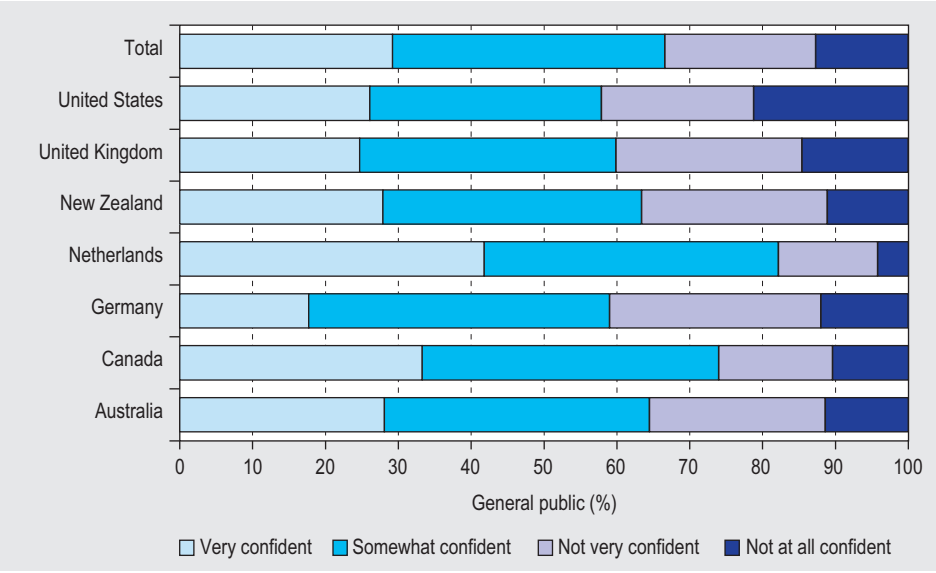


Figure 3.2.1: Confidence in the affordability of necessary care, in 2007 (Source: Grol and Faber, 2007; Schoen et al., 2007).

In the Netherlands, only a small minority of people forego a visit to the doctor or the dentist because of the costs

About 1% of Dutch stated that they forewent a visit to the GP in the last year because of the costs. That is less than in the six other countries studied. The percentage is the highest in the United States (25%). With 12%, Germany is in the middle bracket; the percentage is low in the United Kingdom (2%), but nevertheless still higher than in the Netherlands. For other care aspects too, it is striking that only a small proportion of respondents in the Netherlands regard affordability as a problem. Only 6% of Dutch stated that they forewent a visit to the dentist in the last year because of the costs. This

percentage is considerably higher in the other countries (see *Table 3.2.1*) (Grol and Faber, 2007). The questions in the survey were of a general nature, thereby ignoring the level of severity of the health complaints, the reasons why help was requested or the reasons why help was postponed. The percentages are also low in relation to the number of people among the Dutch population that are not insured or do not have supplementary dentist insurance.

Table 3.2.1: Affordability of care, in 2007 (%) (Source: Grol and Faber, 2007; Schoen et al., 2007).

	NL	AUS	CAN	GER	NZ	UK	US
During the past 12 months, was there a time when because of cost you (%):							
• did not visit a doctor	1*	13	4	12	19	2	25
• skipped a medical test or (follow-up)-treatment recommended by a doctor	2*	17	5	8	13	3	23
• did not collect a prescription for medicine, or skipped doses of your medicine	2*	13	8	12	10	5	23
• did not see a dentist	6*	35	21	9	42	18	33
During the past 12 months, was there a time when you could not afford medical treatment at all or only with difficulty	5	8	5	4	8	1	19

* *is significant ($p < 0.05$)*

Increase in additional chronic-illness-related expenses

In 2005, 87% of people with chronic illnesses and disabilities had, in addition to their health insurance premium (basic and supplementary insurance), additional illness-related expenses such as co-payments, over-the-counter drugs, medical aids, transport, special diets, additional energy, and tokens for informal caregivers (Van den Brink-Muinen et al., 2007). The average amount of additional expenses per month in 2005 was €73 for every person with a chronic illness or disability (including those who did not have additional expenses). For the category that did have additional expenses, the average amount per month was €81. This amount does not include any fiscal compensation that this category received. On average the additional expenses increase with increasing physical limitations. Data over a longer period are only available for chronically ill people and then only for the additional expenses, excluding medical aids and adaptations. *Figure 3.2.2* shows the additional expenses (not corrected for inflation). The expenses increased in the period between 1997 and 2005.

Like every other citizen, and providing they meet certain criteria, people with a chronic illness or disability can apply for a (partial) tax allowance for their (additional) medical expenses. The previous DHCPR reported that the macro-amount that the *Belastingdienst* (Dutch Tax and Customs Administration) had approved as tax rebate for exceptional expenses in the period between 1998 and 2001 had considerably increased, and that although the knowledge and use of the scheme had increased among chronically ill people in 2003, it was not yet optimal (Westert and Verkleij, 2006). Use of the scheme

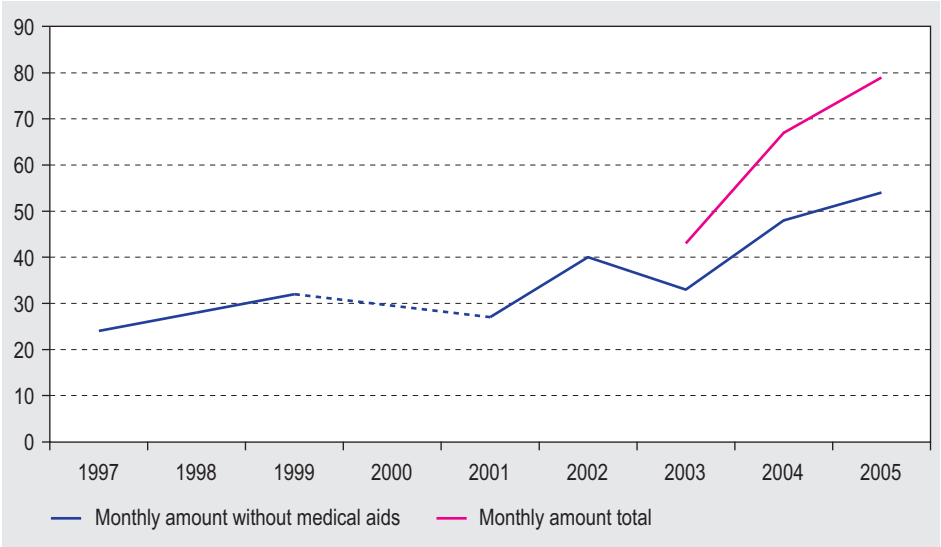


Figure 3.2.2: Additional chronic illness-related expenses, 1997-2005 (Source: NIVEL, NPCG).

has continued to increase since 2003: In 2005, 44% of people with a chronic illness or disability used the scheme for exceptional expenses (BU 2005); in 2004 only 35% used it (Pannekeet et al., 2006).

Distribution of out of pocket payments by household

In addition to health care premiums, households also spend money on 'uninsured' health care. 'Uninsured' care expenses consist of co-payments and deductibles for items such as over-the-counter medication and co-payments for a stay in an AWBZ institution. Co-payments are commonly linked to a person's health, which is why they can have an undesirable effect on purchasing power. These effects on purchasing power are felt mainly by lower-income groups because they are, on average, less healthy.

In 2004, out of pocket expenditure constituted 7.8% of the total health care expenditure. From an international perspective, the Netherlands is one of the countries with the lowest share of out of pocket expenses (OECD Health Data 2007). These expenses are not equally distributed across households. In 2004, the amount of out of pocket expenses in 90% of the households was limited to a maximum of 5% of their disposable income, and just 3% of households spent more than 10% of their disposable income. The effect of out of pocket payments on relative poverty is limited. The percentage of families that fall below 60% of the median family income because of these payments is a little less than 1% (data CBS Budget Survey, 2004).

Share of disposable income that goes towards health care for different income groups

Financial access to care is partly determined by the amount of disposable income spent on health care. In the Netherlands, a large part of financial accessibility of care (and income solidarity) is determined by the tax system. All premiums for the mandatory

insurance are considered acceptable in the context of income redistribution. However, redistribution considerations also require data on co-payments and deductibles. In the budget survey of CBS, a representative sample of the population is asked how much they spend on out of pocket payments. In 2004, the households in the lowest income quartile spent 3.4% of their disposable income on these payments; in the highest income quartile, this was 2%. Compared with 2003, out of pocket expenses took up a higher share of household income; the increase was the highest for the lowest income quartile (see *Table 3.2.2.*). A substantial share of out of pocket expenses in the lowest income groups consists of the co-payments of senior citizens in residential and nursing homes and of people with disabilities who live in an institution. People who pay these co-payments may spend a substantial amount of their income on it, but they do not have any housing expenses, which do make up a substantial share of the outgoings in other groups.

Table 3.2.2: Share of out of pocket expenditure in the household income per income quartile, in 2003 and 2004 (Source: CBS Budget Survey 2003; 2004).

	First quartile	Second quartile	Third quartile	Fourth quartile
2004	3.4	2.7	2.5	2.0
2003	1.8	2.0	1.9	1.6

The so-called CBS correction was applied to correct incomes for differences in family composition.

Conclusion

Although total health care expenditure is comparable with that of neighbouring countries (see *Section 4.2*), financial accessibility of Dutch health care is relatively good. This is a result of the mandatory health insurance and a relatively small share of out of pocket expenses. Since the system reform in 2006, people who had a private insurance now have a mandatory insurance. The number of uninsured people has barely changed, but more is now known about the composition of this group. Some population groups are over-represented and it is possible that relatively healthy groups that are insured more often than others but do not pay premiums are hitching a ride. Out of pocket payments are small because a large portion of care is financed through collective funds. The additional chronic illness-related expenses (excluding fiscal compensations) increased in the period between 1997 and 2005, as did the familiarity with and the use of tax allowance schemes for health expenses (BU scheme). Out of pocket expenses are not equally distributed and weigh heavier on the disposable income of households with lower incomes. The assessment of financial accessibility is complex and the data for various indicators are outdated. Further analysis is needed to assess for which specific population groups financial access is problematic.

3.3 Geographical access to care

Key findings
- The average distance to the nearest GP is 1.1 kilometres; the average distance to the nearest clinical hospital is 7 kilometres
- 80% of the Dutch population is within 1.6 kilometres of a GP and within 11.7 kilometres of a clinical hospital
- The average distance to the nearest GP or clinical hospital has remained stable
- The Randstad and large cities have the highest density of care services and care providers
- Some 90% of patients do not have a problem travelling to a care service
- In the Netherlands, the percentage of people who can reach a hospital within 20 minutes is far above the EU-25 average

How we determine geographical access to care

In order for care to be accessible, care services must be within a reasonable distance. This applies in particular to acute care (which is covered in *Section 3.4*), but also to other care services. Care services that are most often used must be within a shorter distance than care services that are used less often. GPs form a tighter network than clinical hospitals, and tertiary clinical care (highly specialized care, such as cardiac surgery, IVF, etc.) facilities have a larger catchment area and are preferably located centrally in relation to the patients they serve. The more a person's transport options are limited or his/her health deteriorates, the more troublesome the journey distance becomes. This is not only true for the patients themselves, but also for their visitors. Too great a distance can have negative effects and be perceived by the patient as an inconvenience or even result in the patient postponing or foregoing care.

There are social developments that make distance less of an issue in certain cases. ICT and communication applications, for example, enable specific types of care to be carried out remotely. Such care could, for example, be suitable for patients with heart failure who are able to send information regarding their health status to the hospital or GP from home via the Internet.

For seven types of care services geographical distance is determined. They consist of five primary and two secondary care services:
- GPs
- physiotherapists
- pharmacies (including dispensing GPs)
- primary care midwives
- child health centres
- clinical hospitals
- nursing homes and residential homes (excluding home care services).

These indicators do not provide a complete picture, but they do provide a good overview of the distribution of a number of care services.

The average distance that every Dutch person has to travel to reach the nearest care service was calculated for each of the services. In addition, a so-called ‘catchment profile’ was used to determine what percentage of people live within what distance from a care service. Unlike acute care services, there are no 'proximity norms' for non-acute care services. Their catchment profile is a good alternative to gain insight into geographical accessibility.

The analyses are based solely on proximity measured in kilometres. Questions as to whether the closest care service had sufficient capacity or the desired opening times, or met any of the patients' other potential preferences, were ignored. The distance was calculated based on the assumption that every patient goes to the closest care service. However, the closest GP may have stopped accepting new patients, who are then forced to use a service that is further away. Moreover, the closest hospital may not always have the required specialism. The calculations for pharmacies include regular pharmacies and dispensing GPs. Areas with few public pharmacies have more dispensing GPs.

A number of care services targets a specific group of patients. The calculations for the average distance to these services and the catchment profile include only these target groups. Midwives help pregnant women (or broader: women of fertile age). Child health centres are intended for (parents of) children between 0 and 4 years of age, and nursing and residential homes are mainly intended for people aged 75 years and over.

In addition to the quantitative analysis for the above-mentioned care services, patients' experiences of the proximity of care services are taken into account and data regarding the distance to hospitals in EU countries are also stated.

Indicators

- Average distance for every inhabitant of the Netherlands to the nearest specific care service
- Catchment profile by care service
- Trend of average distance and catchment profile for GPs and hospitals
- Patients' experiences: was it a problem for you to travel for your care, examination or treatment?
- Percentage of people who had to travel more than 20 minutes to a hospital, compared with other EU countries

The current state of affairs

The average distance to the nearest GP is 1.1 kilometres; the average distance to the nearest clinical hospital is 7 kilometres

Table 3.3.1 shows the average distance for each type of care. Excluding midwives, nursing homes and residential homes and clinical hospitals, the average distance is less than 3 kilometres. The average distance to the nearest GP is 1.1 kilometres. For the other primary care services studied, the distance increases to 3.6 kilometres. The average distance to the nearest clinical hospital is 7.0 kilometres. For nursing and residential homes, the average distance is 3.7 kilometres.

Table 3.3.1: Average distance in kilometres to the nearest care service (Source: [1]NIVEL, 2006; [2]IGZ, 2004; [3] RIVM, 2006; [4] RIVM, 2007; [5]Actiz, 2007).

	Distance in kilometres
Primary care	
– GPs[1]	1.1
– Physiotherapists[1]	2.2
– Pharmacies[2]	1.3
– Midwives[1]	3.6
– Child health centres[3]	1.7
Secondary care	
– Clinical hospitals[4]	7.0
– Nursing homes and residential homes[5]	3.7

80% of the Dutch population is within 1.6 kilometres of a GP and within 11.7 kilometres of a clinical hospital

The average distances provide a picture of the geographical access. It is, however, equally important to look at the distribution of the average travel distance. This is done by calculating the percentage of the population living within a specific distance from the selected types of service. Since there are no norms, the catchment profile is used (see *Figure 3.3.1*). Any random percentage can be read from the graph. The cut-off point for the key findings is 80%. They are also included in *Table 3.3.2*.

Figure 3.3.1 displays the catchment profiles for the seven mentioned care services. This figure reveals that a large part of the population lives close to primary care services. Eighty percent of the population live within 1.6 kilometres of a GP, 1.7 kilometres of a pharmacy, 2.4 kilometres of a health centre, and 5.2 kilometres of a nursing or residential home. Eighty percent of the population live no further than 11.7 kilometres from a clinical hospital. For physiotherapists and midwives, the distances are 3.1 kilometres and 5.5 kilometres respectively.

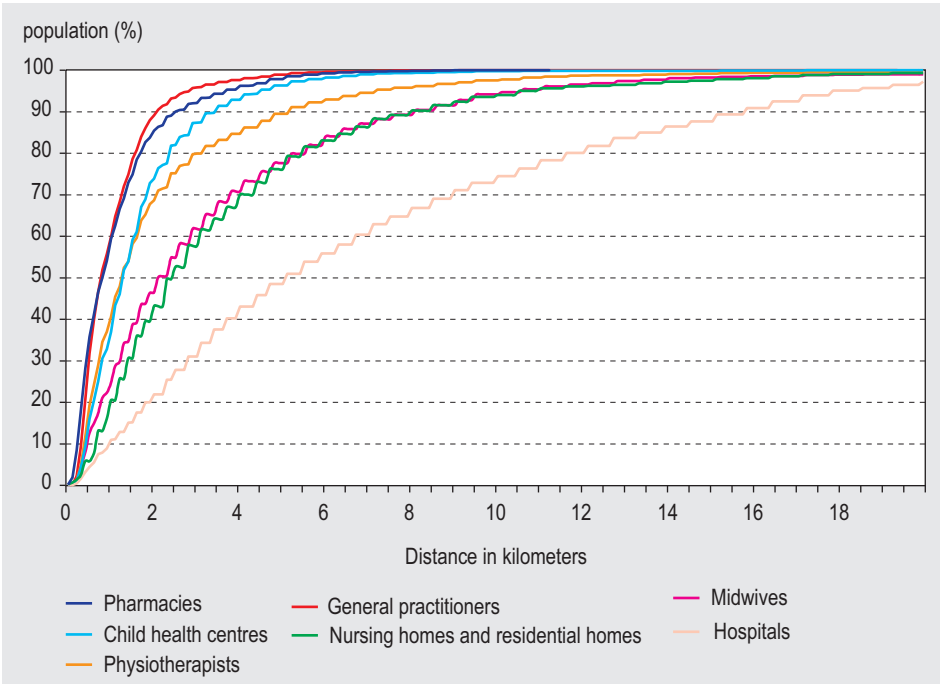


Figure 3.3.1: Catchment profiles: percentage of population living within a certain distance of a care service (Source: NIVEL, 2006; IGZ, 2004; RIVM, 2007; Actiz, 2007; AND, 2007; data processed by RIVM).

Table 3.3.2: Distance in kilometres within which 80% of the population is served by a type of care service (Source: [1] NIVEL, 2006; [2] IGZ, 2004; [3] RIVM, 2006; [4] RIVM, 2007; [5] Actiz, 2007; AND, 2007; data processed by RIVM).

	Distance in kilometres
Primary care	
– GP[1]	1.6
– Physiotherapists[1]	3.1
– Pharmacies[2]	1.7
– Midwives[1]	5.5
– Child health centres[3]	2.4
Secondary care	
– Clinical hospitals[4]	11.7
– Nursing homes and residential homes[5]	5.2

The average distance to the nearest GP or clinical hospital has remained stable

For GPs and clinical hospitals, data over the spread are available from 1998 and 2001 respectively. The average distance to the nearest GP remained stable in the period between 2001 and 2006. Geographical access to clinical hospitals has also remained unchanged (see *Table 3.3.3a* and *b*). The number of clinical hospitals decreased by some 3% in the period between 2001 and 2006, but the number of peripheral outpatient clin-

ics doubled. Including these in the analysis would considerably improve the picture of geographical access and spread.

Table 3.3.3a: Distance in kilometres to the nearest GP, in 1998 and 2006 (Source: NIVEL, 1998; 2006).

	1998	2006
Average distance	1.1	1.1
Distance that 80% of the population must travel	1.5	1.6

Table 3.3.3b: Distance in kilometres to the nearest hospital, in 2001 and 2006 (Source: RIVM, 2001; 2006).

	2001	2006
Average distance	6.9	7.0
Distance that 80% of the population must travel	11.7	11.7

The Randstad and large cities have the highest density of care services and care providers

Figure 3.3.2 shows where the care services are located. Viewed together, they show a higher density of care services in the Randstad and large cities. This means that the average distance to care services in the Randstad will be shorter than in the more northerly and rural provinces.

Some 90% of patients do not have a problem travelling to a care service

In addition to the actual distance patients have to travel, how patients experience the proximity of care services was also examined. Of the people who reported that they had required care, an examination or treatment over the last 12 months, 88.5% stated that travelling was not a problem; 9.9% stated that travelling was a small problem, and 1.6% thought it was a large problem (De Boer et al., 2007a).

In the Netherlands, the percentage of people who can reach a hospital within 20 minutes is far above the EU-25 average

Geographical access to hospitals is not a big problem in the EU-25 countries (Busse et al., in preparation). About 48% of the total EU-25 population indicated that they can reach a hospital within 20 minutes. However, there are large differences between the EU-25 countries. With 70%, the Netherlands is far above the average. The percentage of people who are hindered by the distance is fairly small. About 6% of the EU-25 population has to travel at least one hour to get to a hospital.

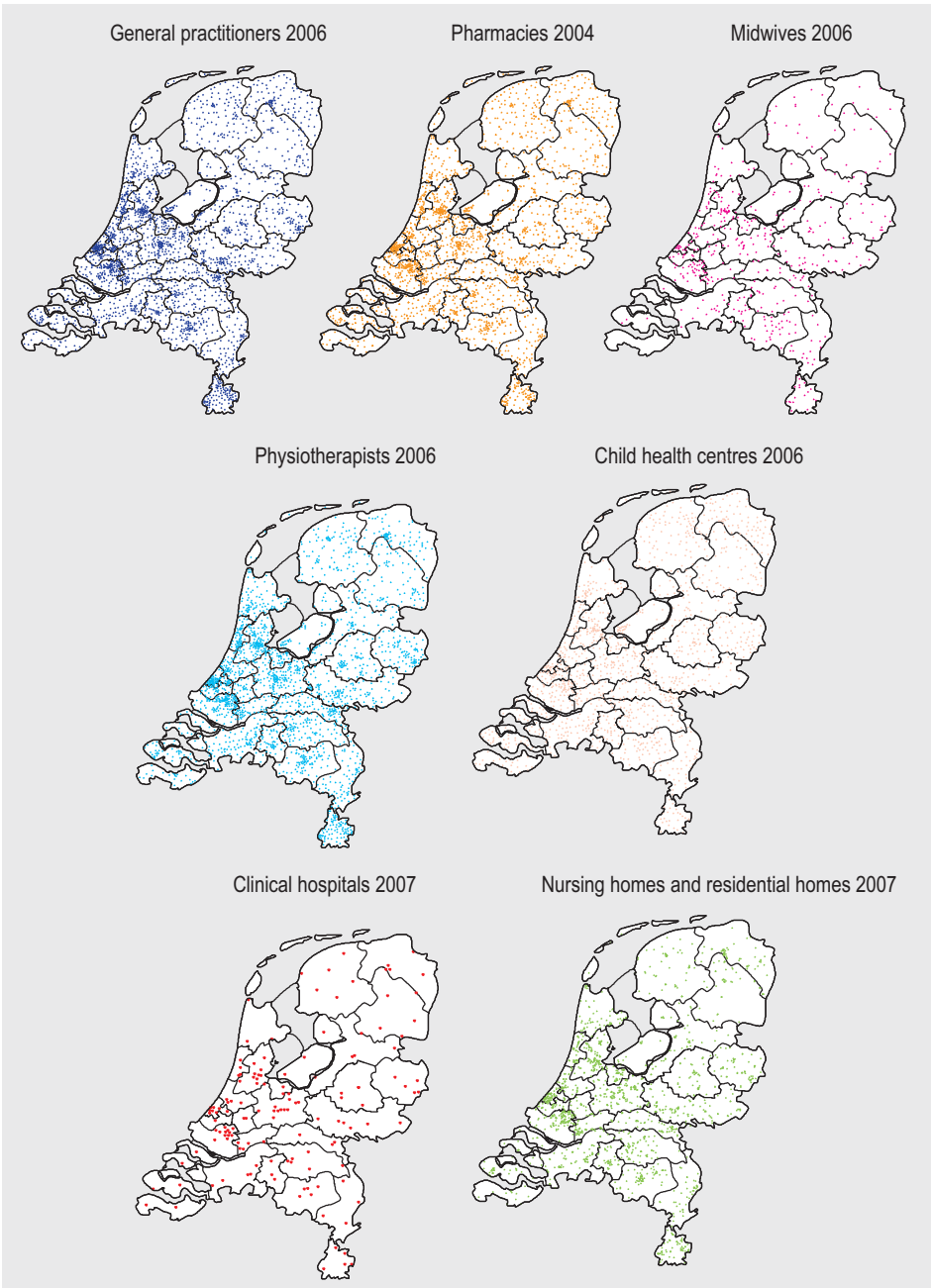


Figure 3.3.2: Location of care services (Source: NIVEL, 2006; IGZ, 2004; RIVM, 2007; Actiz, 2007).

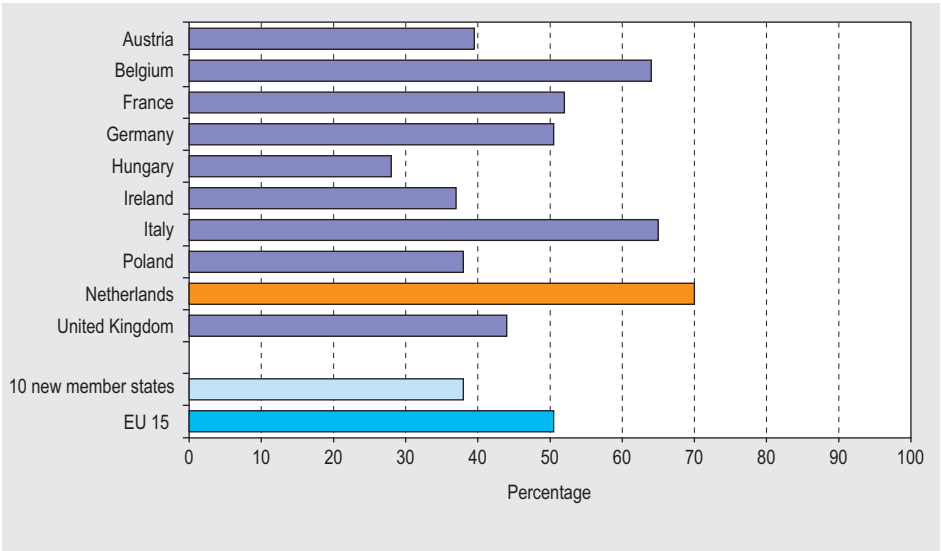


Figure 3.3.3: Percentage of people who can reach a hospital within 20 minutes, by country (Source: Busse et al., in preparation).

Conclusion

How good geographical access to care is depends on the type of care. The indicators presented here provide a concise picture. More detailed data is required to evaluate the negative effects that too great a distance can have and for which population groups in particular. The distance to those care services that are used most often should be shorter than the distance to care services that are used less often, which is, in fact, the case. The average distance to the nearest GP is 1.1 kilometres, whereas the average distance to the nearest clinical hospital is 7.0 kilometres. The proximity of care services in the Randstad and large cities is higher than in the rest of the country. Comparing the distribution of GPs (1998-2006) and clinical hospitals (2001-2006) with previous figures shows that the distance to both services has remained stable. The qualitative analysis and the patient experience study both show that geographical access in the Netherlands and the EU-25 countries is not a major problem for the (large) majority of the population.

3.4 Timeliness of acute care

Key findings

- In 2006, 91% of the ambulances were on site within the 15-minute norm
- In 2007, mobile medical teams were able to reach 98.2% of the population within 30 minutes during the day
- In 2006, 0.6% (96,920 people) of the population lived further than a 30-minute drive from emergency services

- In the period between 2003 and 2005, the number of people who travelled more than 30 minutes to reach a general practice cooperative decreased by 11.8%
- In 2005 and 2006, approximately 90% of the emergency calls to general practice cooperatives were answered by a person within 60 seconds
- Of the Dutch people who needed acute medical attention, 5.6% did not get the care they needed, and 9.5% did not get the care as quickly as they wanted to

How we determine timeliness of acute care

The importance of access to acute care mainly stems from the negative effects that delaying acute can have on the patient. Negative effects could be a longer rehabilitation time, permanent invalidity, and in the worst case, even death. Hence, the policy of the Ministry of Health is aimed at ensuring that patients in need of acute medical care quickly get the right care at the right place (AZN, 2007).

This DHCPR looks at the timeliness of four basic acute care services: ambulance care, mobile medical teams (MMT), emergency services (ES) and general practice cooperatives (GPC). Together, they provide a good insight into acute care. Most of the people who need acute care will come into contact with these services. In addition to a quantitative analysis of the timeliness of acute care, patient experiences are also examined.

Because acute care is so important, a lot of emphasis is put on timeliness and accessibility. That is why response-time norms have been put in place for different areas of acute care:

- Policy rules dictate that an ambulance should not take longer than 15 minutes to reach an emergency site. The assumption made for calculations is a two-minute response and call-out time; the net travel time is 13 minutes (RIVM, Dutch National Atlas of Public Health, 2007). The generally accepted norm is that 95% of emergency rides have to be within the norm.
- In its policy vision on trauma care, the Ministry of Health indicated that a trauma team (MMT) only has added value if it can be on site within 30 minutes (VWS, 2005a). This field value will serve as benchmark.
- For emergency services, a norm time of 30 minutes by car is used. This is not an official norm.
- The Dutch Health Care Inspectorate uses two field values for the time it takes to reach a general practice cooperative: 15 and 30 (car) minutes (IGZ, 2006d). In addition, the Inspectorate also indicates that telephone access to general practice cooperatives is important: an emergency call must be answered within 30 seconds (IGZ, 2006d).

Indicators

- Number of emergency ambulance rides that exceed the 15-minute norm
- Number of people who can be reached by a mobile medical team within 30 minutes
- Number of people who can reach the nearest emergency services by car within 30 minutes
- Number of people who can reach the nearest general practice cooperative by car within 30 minutes
- Number of people who place an emergency call to general practice cooperatives and are helped by a care professional within one minute
- Percentage of people with a need for acute care who did not get the care they needed and wanted

The current state of affairs

In 2006, 91% of the ambulances were on site within the 15-minute norm

Nine per cent of the emergency ambulance rides (A1-rides) in 2006 were not on site within the specified 15-minute norm. This means that the sector is still 4 percentage points away from the generally accepted norm that states that for A1-rides, 95% of the ambulances must reach the patient within 15 minutes (AZN, 2007). An ambulance ride is defined as an A1-ride if the situation is life threatening (RIVM, National Public Health Compass, 2007). A combination of factors such as insufficient availability, insufficient spread of ambulance stations and force majeure can cause norm times to be exceeded (RIVM, National Public Health Compass, 2007).

In 2006, data on a sector level were collected for the first time on the basis of national definitions and measurement plans. The AZN (Ambulance Care in the Netherlands) report from 2006 therefore differs from the previous reports, making it impossible to compare it with the DHCPR from 2006. Moreover, due to the suboptimal quality of the current data, conclusions must be drawn with caution.

In 2007, mobile medical teams were able to reach 98.2% of the population within 30 minutes during the day

Ten trauma centres have MMTs. Six of these centres only have vehicles; the other four also have a helicopter. Moreover, two German and one Belgian helicopter are available in the border regions. Together, this network enables 98.2% of the population to be reached within 30 minutes. This calculation accounts for the time the helicopter is grounded due to technical or weather problems. The coverage percentage is lower at night because the helicopters are grounded; one exception is the helicopter at Traumacentrum Oost in Volkel, which currently is available 24 hours a day as part of a trial (Zwakhals et al., 2008).

In 2006, 0.6% (96,920 people) of the population lived further than a 30-minute drive from emergency services

Some 0.6% of Dutch population (96,920 people) lived further than a 30-minute drive from an ES (see *Table 3.4.1* and *Figure 3.4.1*). The areas concerned are the West Frisian Islands, Zeeland-Flanders, Schouwen-Duiveland, North-East Polder and a few areas in Friesland and North Groningen. *Table 3.4.1* shows that the percentage of people who theoretically live further than a 30-minute drive away from an ES fluctuated between 0.6 and 2% in the period between 2001 and 2006.

Table 3.4.1: Percentage of the population that theoretically lives further than a 30-minute car drive from an emergency service, 2001-2006 (Source: RIVM, Dutch National Atlas of Public Health, 2007).

	2001	2005	2006
Population (%)	0.8	2.0	0.6
Population (number)	128,000	318,500	96,920

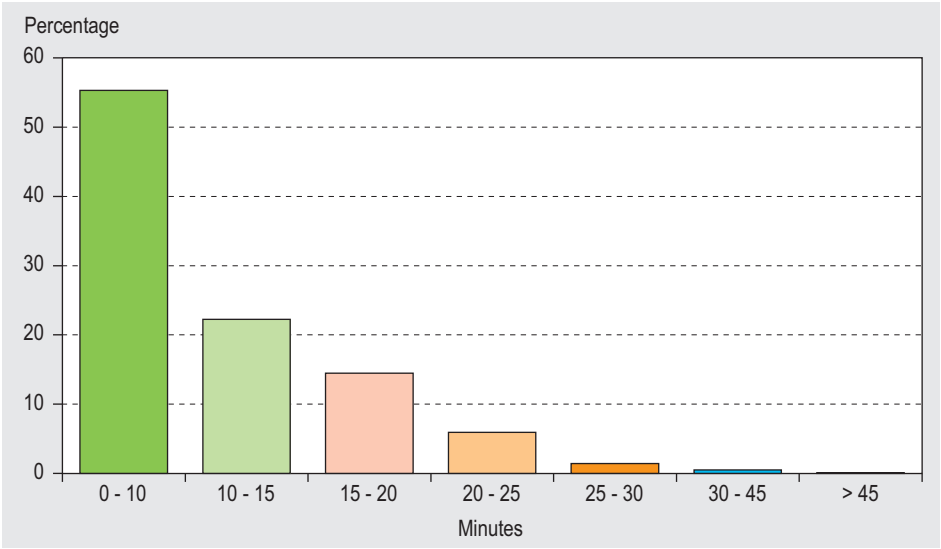


Figure 3.4.1: Percentage of the population that can get to an emergency service by car within a certain time, in 2006 (Source: RIVM, Dutch National Atlas of Public Health, 2007).

In the period 2003-2005, the number of people who travelled more than 30 minutes to reach a general practice cooperative decreased by 11.8%

The number of people having to travel more than 30 minutes to a general practice cooperative decreased from 340,000 in 2003 to 300,000 in 2005 (see *Table 3.4.2*). People having to travel longer than 30 minutes generally live in a few areas in the north of the Netherlands (IGZ, 2006d).

Table 3.4.2: Percentage of the population that theoretically lives further than a 30-minute car drive from a general practice cooperative, in 2003 and 2005 (Source: IGZ, 2006d).

	2003	2005	Difference
Population (%)	2.1	1.8	
Population (number)	340,000	300,000	-11.8%

In 2005 and 2006, approximately 90% of the emergency calls to general practice cooperatives were answered by a person within 60 seconds

In 2006, 90% of the emergency calls to general practice cooperatives were answered by a person within 60 seconds, compared with 89% in 2005 (see *Table 3.4.3*). In 2005, 11% the emergency calls were not answered by a person within one minute. Of the 10% of emergency calls that were not answered within one minute in 2006, 4% percentage points of the emergency calls were not answered by a person at all. In 2005, this was the case for 1 percentage point of the emergency calls. These incidences are related to the patient being referred to another telephone number. *Table 3.4.3* shows that in 2006, 61% of emergency calls were answered within 30 seconds versus 51% in 2005.

Table 3.4.3: Waiting times emergency calls to general practice cooperatives, 2005-2006 (%) (Source: IGZ, 2006).

Waiting time	2005	2006
Less than 30 seconds	51	61
Less than 60 seconds	89	90
Not answered	1	4

Of the Dutch people who needed acute medical attention, 5.6% did not get the care they needed, and 9.5% did not get the care as quickly as they wanted to

Of the people who were ill or wounded on one or more occasions in the last 12 months and who required acute care from a GP, general practice cooperative or ES, 5.6% indicated that they (almost) never received the help they needed; of the 94.4% who received care, 21.7% usually received the care they needed and 72.7% always received the care they needed. Of the people who needed acute care on one or more occasions, 9.5% indicated that they (almost) never received care from a GP, a general practice cooperative or an ES as quickly as they wanted to (De Boer et al., 2007a).

Conclusion

In so far as a comparison with the DHCPR from 2006 is possible, it appears that access to acute care has slightly improved. However, a few critical remarks need to be made. The norm for the ambulance call-out time is still not being met for 95% of the emergencies. In 2005, the Health Care Inspectorate deemed it irresponsible that 11% of the emergency calls to general practice cooperatives were not answered by a person within one minute. In 2006, this percentage remained pretty much the same, although the number of unanswered emergency calls to general practice cooperatives increased.

3.5 Waiting for regular care

Key findings

- The percentage of care users who think that waiting times in curative care are long, increased by 1-3% in the period 2002 to 2007
- Between 2005 and 2007, the number of hospital departments (specialties) indicating that people should expect a long waiting time decreased by 14% to 32%
- The total number of patients waiting for a donor organ has been stable since 2004
- The number of patients waiting for mental health care increased by 6% in 2005-2006; the average waiting times remained unchanged
- At the beginning of 2007, an estimated 75,000 people were waiting for long-term care
- According to estimates, the waiting list for problematic patients contained no more than 5000 patients at the beginning of 2007

How we determine waiting for regular care

Long waiting lists indicate shortages, less freedom of choice and decreased accessibility. Long waiting times can prevent appropriate care from being provided and sometimes even endanger the health and well-being of patients, for example, in the case of certain heart operations. They can also lower the patients' and citizens' levels of satisfaction. Waiting times do not have to pose a problem as long as they remain within a certain norm, and can even be beneficial for patients (time to think) and logistics (efficient use of resources).

In this second DHCPR, the timeliness of care is determined primarily on the basis of data from surveys conducted among citizens. In addition, registration data are presented for waiting lists and waiting times for hospital care, mental health care and long-term care. One of the measures against which registration data are evaluated is the so-called Treek norm. During the Treek debate in January 2000, consensus was reached on the target norms and the maximum waiting times for non-acute care (ZN, 2000). A second measure is the length of the waiting lists for *problematic* patients. Due to a lack of data in other sectors, this DHCPR discusses these waiting lists only for long-term care. Policymakers see them as an important indication for real and serious personnel shortages in care (Westert and Verkleij, 2006). For waiting times in hospital care, the particular focus is on waiting times for donor organs.

Indicators

Patient opinion

- Percentage of care users who are of the opinion that waiting times in care are long or short

Hospital care, mental health care and long-term care
- Number of people who are waiting for health care by type (the length of the waiting list)
- (Expected) time until treatment (waiting time)
- Number of people who have to wait longer for care than the agreed Treek norm
- Number of problematic patients who are waiting for long-term care

Waiting for donor organs
- Number of people who are waiting for a donor organ

The current state of affairs

The percentage of care users who think that waiting times in curative care are long, increased by 1-3% in the period 2002 to 2006

In 2002 and 2006, SCP enquired about the perception of waiting lists for care. During this period, the percentage of respondents who believed that waiting times are (very) long increased for GP care from 6.7% to 10.1%, for specialist care from 24.6% to 28% and for hospital care (admissions) from 23.5% to 24.8%. The percentage of people who believed that waiting times are very short decreased dramatically (SCP, 2007) (see *Figure 3.5.1.).*

For the majority of the people surveyed (95.9%), waiting for care, an examination or a treatment in the last 12 months, was either not a problem or only a small problem. For one in twenty-five (4.1%) it was a large problem (De Boer et al., 2007a).

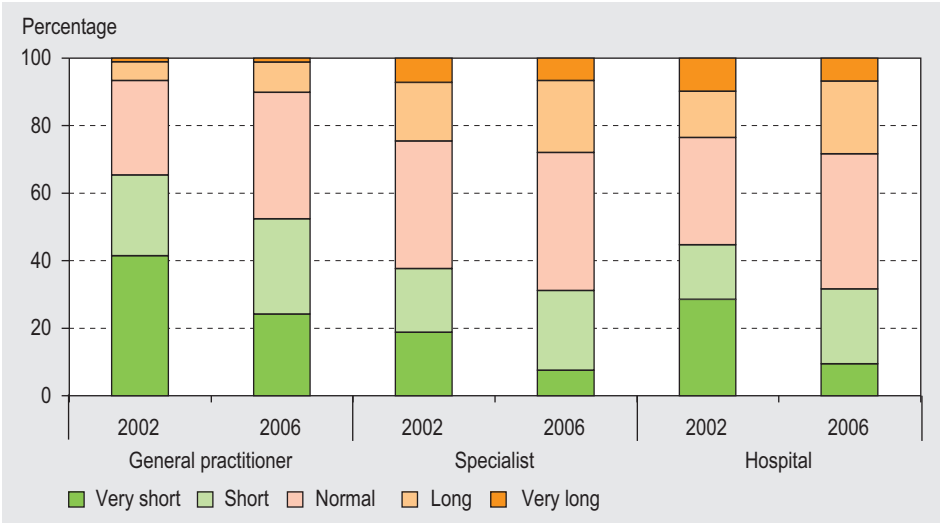


Figure 3.5.1: Experienced waiting times by care service, in 2002 and 2006 (Source: SCP, 2007).

From an international perspective, patients' experiences of waiting times for GP care in the Netherlands are sometimes better and sometimes worse than in other countries. The CMWF study in 2007, in which the Netherlands was compared with the United States, Canada, Australia, New Zealand, the United Kingdom and Germany (Grol and Faber, 2007; Schoen et al., 2007) revealed the following:

- Seventy percent of patients in the Netherlands are seen by a GP on the same or the next day. This percentage is higher than in most other countries. Canada comes in last at 36%.
- Compared with the other countries, the Dutch believe that the opening times of GP surgeries are better in the morning, but much worse in the evening and that it is more difficult to make an appointment with one's own GP at the weekend.
- A relatively high percentage of Dutch respondents (40%) indicated that it is easy to receive care outside office hours. In absolute terms, this score is not very good.
- Compared with the other countries, it is more difficult in the Netherlands to speak to the GP by phone to discuss a health problem; 26% of the Dutch people think this is easy.

Between 2005 and 2007, the number of hospital departments (specialties) indicating that people should expect a long waiting time decreased by 14% to 32%

During the so-called Treek debate in 2000, target norms were set for non-emergency care provided by hospitals, GPs and medical specialists. The number of times the Treek norm was exceeded for the *average* expected waiting time for non-emergency care in hospitals decreased by 14% to 32% in the period 2005 to 2007 (see *Table 3.5.1*). On 1 January 2007, 19.7% of the hospital departments (specialties) indicated that patients must expect to wait longer than the Treek norm for their first visit to the outpatient clinic. For clinical treatment and day nursing, the norm was exceeded by 6.4% and 5.5% respectively.

Table 3.5.1: Percentage of hospital departments for which the average waiting time exceeded the Treek norm, reference date 1 January (Source: DIS; data processed by RIVM).

	2005	2006	2007
Outpatient clinic	22.8	18.0	19.7
Clinic	9.1	7.4	6.4
Day nursing	8.1	6.9	5.5

Similar to previous years, there were big discrepancies in the waiting times for specialist care on the reference date of 1 January 2007. In 55% of rheumatology clinics, the average expected waiting time is above the Treek norm as opposed to 0% in outpatient clinics and radiotherapy. These results are based on the DIS (DBC information system). However, DIS data are not complete and it is not clear how the missing data impacts on the presented results. The average expected waiting times do not provide insight into the number of people who wait longer than the Treek norm.

The waiting times for six frequently performed operations, including cataract, hernia and total knee replacement, decreased in the period 2005 to 2006. During this period, a number of hospitals had waiting times for stays of *multiple days* that were higher than the Treek norm. There was also a large discrepancy in the waiting times between the hospitals for most of the six operations stated (NZa, 2007d).

The total number of patients waiting for a donor organ has been stable since 2004
Since 2004, the number of patients waiting for a donor organ has remained stable. By 1 March 2004, 1381 Dutch people were waiting for a donor organ and by 1 June 2007, 1364 patients were waiting. A subdivision by organ shows that the number of patients waiting for a lung between 2004 and 2007 increased from 63 to 144 and that the number of patients waiting for a kidney during the same period decreased from 1156 to 1037 (see *Table 3.5.2*).

Table 3.5.2: Number of Dutch patients waiting for a donor organ, by organ, 2004-2007 (Source: NTS, 2007).

	01-03-2004	01-03-2005	01-06-2006	01-06-2007
Kidney	1156	1143	1023	1037
Liver	127	156	140	145
Heart	35	37	44	38
Lung	63	85	128	144
Total	1381	1421	1335	1364

The average waiting time (time registered on the waiting list) in days varied strongly by organ in 2006. At 1235 days (3.4 years), the average registration time for a donor kidney is the longest. At 329 days, the registration time for a donor liver is the shortest (see *Table 3.5.3*).

Table 3.5.3: Registration time in days for patients who received a post-mortem organ, in 2006 (Source: NTS, 2007).

Registration time in days	Kidney only (n=340)	Heart only (n=37)	Lung only (n=52)	Liver only (n=89)
Average registration time	1235	337	449	329
Median registration time	1100	303	368	291

In 2006, the number of effectuated post-mortem donations, at 200, was still 20% below the target of 250 for 2008 (Rijksbegroting, 2007). In 2006, 200 post-mortem organ donations were actually effectuated versus 217 in 2005. This is a decrease of 7.8% (see *Table 3.5.4*).

Table 3.5.4: Effectuated post-mortem organ donations, 2002-2006 (Source: NTS, 2007).

	2002	2003	2004	2005	2006
Organ donors	202	223	228	217	200

Compared with other European countries (Eurotransplant countries), the number of effectuated post-mortem organ donations in the Netherlands is, at 12.1 per million inhabitants, below the average of 16.1. Between 2000 and 2006, Austria and Belgium had the highest number of effectuated post-mortem organ donations by million inhabitants (see *Figure 3.5.2*). The low number of road accident deaths in the Netherlands is one of the causes (Westert and Verkleij, 2006).

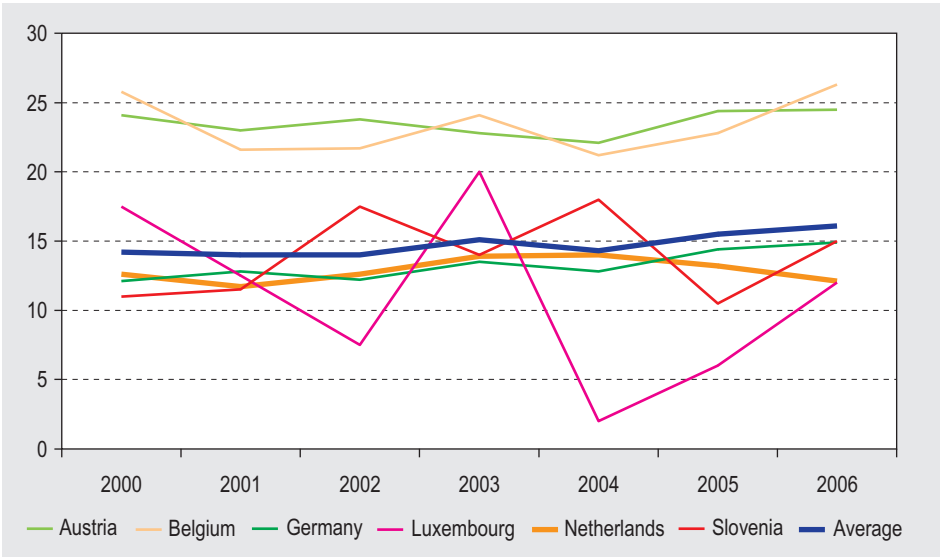


Figure 3.5.2: Effectuated post-mortem organ donations, per million inhabitants, by country, 2000-2006 (Source: Eurotransplant, 2000-2006).

The number of patients waiting for mental health care increased by 6% in 2005-2006; the average waiting times remained unchanged

The number of youths, adults and senior citizens waiting for registration, assessment or treatment by mental health care services increased in the period 2005 to 2006 by about 4000. This means that the number of people waiting on 1 January 2007 was 6% higher than on 1 January 2005 (see *Table 3.5.5*). Although the number of people waiting for care has slightly increased in the last few years, the average waiting time of those who received care in the period between 2004 and 2006 was stable. The average waiting time for each of the three waiting phases is 3 to 4 weeks; at the time the (next phase of the) care was started, 20% to 30% had waited longer than the Treek norm (see *Table 3.5.5*). The cumulated patient waiting time is not known.

Table 3.5.5: Waiting list data for mental health care, reference date 1 January, 2004-2007 (Source: GGZ Nederland, 2005; 2007).

	2004	2005	2006	2007
Number of people waiting				
- registration phase	10,500	21,400	20,500	22,000
- intake phase	37,700	34,000	33,500	32,000
- treatment phase	18,000	15,000	19,600	20,700
Total	66,300	70,400	73,600	74,700
Actual waiting times of people who were finally treated in the corresponding year (in weeks) [a]				
- registration phase	3	3	3	-
- intake phase	4	4	4	-
- treatment phase	4	4	4	-
Percentage of clients who waited longer than the Treek norm based on actual waiting times				
- registration phase [b]	-	23	26	-
- intake phase [b]	-	31	28	-
- treatment phase [c]	-	19	19	-

[a] This may be an underestimation, in particular if the group of people having to wait for a very long time, increases; [b] Norm 4 weeks; [c] Norm outpatient: 6 weeks, inpatient: 7 weeks, sheltered housing: 13 weeks.

At the start of 2007, an estimated 75,000 people were waiting for long-term care

Changes in registers and clearing methods have created a lot of uncertainty regarding size and severity of waiting lists in long-term care (nursing and care, and care for the disabled).

Table 3.5.6: Number of people waiting for long-term care, reference date 1 January, 2003-2007 (Source: CVZ, 2005, 2007a; HHM, 2007)

	2003	2004	2005	2006	2007
Nursing and care					
- Residential care	42,500	35,000	34,500	n.m.	36,800
- Non-residential care	32,000	19,500	17,500	n.m.	24,900
Care for the disabled					
- Residential care	9500	9000	7000	n.m.	5800
- Non-residential care	8000	8500	7500	n.m.	7700
Total	92,000	71,000	66,500	68,000	75,000

n.m.: not measured

According to best estimates by the research agencies, the number of people waiting for long-term care was 68,000 on 1 January 2006 and 75,000 on 1 January 2007 (CVZ, 2007a; HHM, 2007). The figures cannot be directly compared with each other due to

differences in the estimation method. It is assumed that the number of people waiting has increased rather than decreased, for in 2007, this number was 7000 people higher than in 2006 (see *Table 3.5.6*), and according to estimates by RIVM, more administrative corrections were applied in 2007.

According to estimates, the waiting list for problematic patients contained no more than 5000 patients at the beginning of 2007

'Problematic waiting' refers to patients who are referred through care administration offices and who cannot receive the appropriate care within a reasonable period of time. In the period between 2005 and 2007, Bureau HHM asked the care administration offices to map out this group's size and composition. The estimate only concerned patients in the category 'residential care'. In both 2005 and 2007, the care administration offices estimated that the number of problematic patients on the waiting list was 5% to 10% of the number of people waiting for residential care (HHM, 2007). Almost all of these cases relate to clients with multiple problems and/or a very specific group of clients. According to the care administration offices, the most important group of problematic patients in nursing and care consist of patients with dementia waiting for a place in a nursing home and people with disabilities in particular young people who are slightly mentally disabled with or without behavioural problems. This last group is growing and the care providers are not prepared to deal with this increase (CVZ, 2006; HHM, 2007).

Waiting for long-term care is not limited to the above-mentioned group of problematic patients. The situation, however, is not clear: more than half of people on the waiting list have been waiting for more than 6 months, but the general assumption is that there are many reasons why the registered waiting time for those who are on the waiting list does not provide a good picture. Reasons are administrative pollution, a lot of the people are getting interim care, and a proportion of the waiting patients are not considered as 'urgent' because they are waiting for preferred care and refuse any other care offered (CVZ, 2007a).

A higher importance is attached to the average waiting time of those people who have received care. The waiting time for nursing and care is between 13 and 48 days (13 days for activating assistance and 48 days for long-term residential care). Concerning care for the disabled, these waiting times were 20 days for activating assistance and 76 days for household help. In the period between October 2004 and January 2007, the actual waiting time for people who received some kind of long-term care was within the Treek norm for 80% of the cases (see *Table 3.5.7*). Due to changes to, and the incompleteness of the register, it is not clear whether the average waiting time has increased or decreased since 2005 (CVZ, 2007a).

Table 3.5.7: Actual waiting times in long-term care, October 2004 - January 2007 (Source: CVZ, 2007c)

	Percentage within 100% of the Treek norm
Nursing and care	
- Home care	95
- Nursing	82
- Care	87
Care for the disabled	
- Supporting daytime activities	89
- Home support	92

Conclusion

Since the previous DHCPR, not much has changed in terms of the extent to which people wait for regular care. Some sectors have improved, while others have worsened. A slightly higher percentage of patients thought the waiting times for curative care were higher in 2006 than in 2002. The indicators do not provide a systematic overview of bottlenecks, but they do provide a few indications of long waiting times and hence of potential shortcomings in care (among others, mental health care and long-term residential care for people with dementia and young people with a slight mental disability). Hospitals show big discrepancies between their waiting times for frequently performed operations.

Most of the waiting lists data is inadequate. In recent years, hospitals have limited themselves to presenting the *expected* waiting time and no longer present the actual waiting time or the length of the waiting lists. The waiting lists for long-term care are not accurate, partly because health care providers often fail to report that clients have received the care they were waiting for, which is why a lot of assumptions have to be made. It cannot be ruled out that the data presented for a number of waiting lists undermine the real extent and severity. The cumulated waiting time for clients for each of the phases between registration and the actual treatment(s) is not known.

3.6 Access according to needs

Key findings

- There is little difference in the use of care between people with a high educational level and those with a low educational level when their health differences are taken into account; people with a low educational level do not visit the dentist as much as those with a high educational level
- Differences in hospital admission between non-Western migrants and natives were fairly stable between 1995 and 2005; migrants use mental health care

and addiction services more than natives, but less than would be expected from their problems
- Mortality following hospital admission for a heart attack is comparable between migrants and natives
- According to the homeless people themselves, they need more help with housing, employment, managing their finances and dental care and to a lesser extent with their physical health
- The quality of the medical health services for asylum seekers is good but could be improved

How we determine access according to needs

The question whether care is accessible for everyone when they need it (social access) is important in terms of equity and effectiveness. This DHCPR focuses on equity in particular. In the Netherlands, there are large and increasing differences in health status between population groups. People with a low educational level and various migrant groups are, for example, generally not as healthy as those with a high educational level and natives (Hollander et al., 2006). People with the highest education live 3.5 years longer than those with the lowest education; they even feel healthier for an average of 16 more years (Van Herten et al., 2002). Good access to health care can have a positive influence on diminishing health differences. There are even more groups whose health status is worse or more vulnerable on average, such as single senior citizens, people living in disadvantaged neighbourhoods, homeless people, asylum seekers and illegal immigrants. Where possible, the use of, and access to, health care by these groups will be discussed.

Whitehead (1991) describes equal accessibility as follows: equal access to available care for equal need, equal utilization of care for equal need, and equal quality of care for all. Equal quality of care implies that it may not vary because of personal characteristics such as age, ethnicity, socio-economic status or geographical location (Whitehead, 1992); AHRQ, 2004). Good quality care means that the care is adapted to the patient's circumstances and capacities. This can mean that specific groups of patients may require, for example, more assistance and explanation to achieve the same goal. In line with this definition, this section focuses on the extent to which there is an equal use of care for people with an equal health status. The health status is mainly determined on the basis of the experienced health status and the number of self-reported chronic illnesses. In addition, equal quality of care for different population groups, even though only based on one indicator, is also discussed.

In terms of effectiveness, a lot of potential health gain for the population is lost if effective medical treatment is not used by everyone it could benefit. This is true in general and not only for vulnerable groups. In somatic care, for example, there is a large group of people with undiagnosed and untreated diabetes. A different kind of example is provided in *Section 2.5*: half of the people with a serious anxiety, mood or addiction disorder do not receive any treatment although there are effective therapies from which

at least some of them would benefit. There is definitely a loss in equity (and effectiveness) when vulnerable groups do not have access to or use care as much as they should based on their health status.

Indicators

The following indicators are discussed in this section:

- Differences in the use of care between people with a high educational level and those with a low educational level, whereby a correction for health differences is applied
- Differences in hospital admission and the use of mental health care and addiction services between migrants and natives
- Differences in mortality following hospital admission for a heart attack between migrants and natives
- Care needs of homeless people
- Quality of medical health services for asylum seekers

The current state of affairs

There is little difference in the use of care between people with a high educational level and those with a low educational level when their health differences are taken into account; people with a low educational level do not go to the dentist as much as those with a high educational level

In general, the health status is worse among people with a low educational level than among those with a high educational level (Hollander et al., 2006). When the differences in health status experienced and the number of chronic illnesses are taken into account, the differences in use between people with a low educational level and those with a high educational level are not statistically significant for most care services in the period 2000-2005 (see *Figure 3.6.1*). There is, however, one exception: people with a low educational level go to the dentist significantly less than those with a high educational level. A few other non-significant differences are worth mentioning. In each of the six years, people with a low educational level visited a specialist (somewhat) less often than those with a high educational level, but went to the Regional Institute for Ambulatory Mental Health Care (RIAGG) more often. The influenza vaccination rate is somewhat lower for people with a low educational level aged between 45 and 65 years, but for 65- to 74-year-olds it is lower for people with a higher educational level. People with a low educational level are more inclined to attend breast cancer prevention check-ups than those with a high educational level. Between 2000 and 2005, there were no clear changes in the difference in the use of care between low and high educated people.

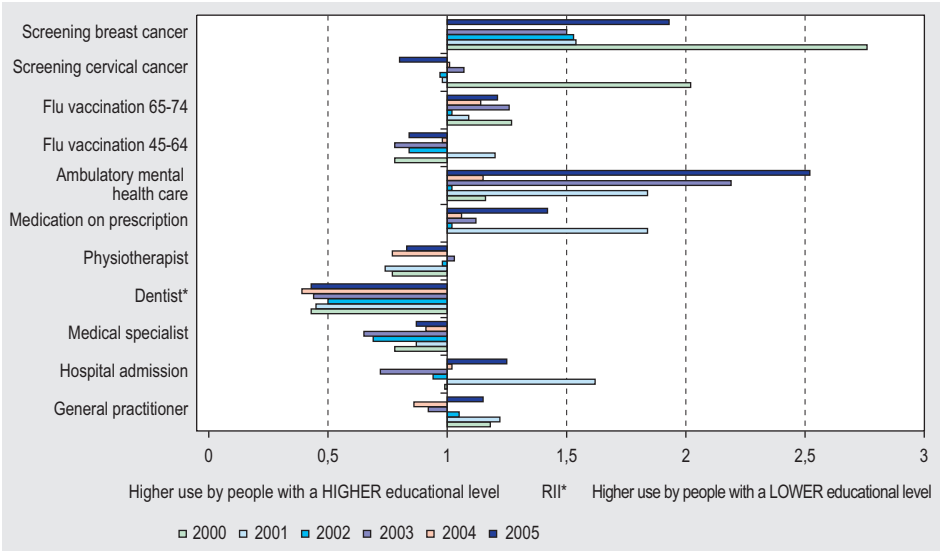


Figure 3.6.1: Use of care by level of education measured with the Relative Index of Inequality (RII), 2000-2005 (Source: CBS, Pols-Gezondheid en Arbeid, 2000-2005).*

** RII = Relative Index of Inequality, corrected for age, gender, chronic illnesses and experienced health; the RRI index also weighs differences in the use of care between population groups for the (changing) size of these groups; RII > 1: higher use among people with a low educational level versus people with a high educational level, RII < 1: lower use among people with a low educational level versus people with a high educational level.*

Differences in hospital admission between non-Western migrants and natives were fairly stable between 1995 and 2005; migrants use mental health care and addiction services more than natives, but less than would be expected from their problems

The average number of hospital admissions (not corrected for health differences) was higher among migrants than natives in the period between 1995 and 2005. However, there are also differences within the groups of migrants. The number of hospital admissions is highest among Turks and lowest among Moroccans, Surinamese and inhabitants of the Dutch West-Indies. The differences were fairly stable in the period 1995 to 2001 (Verweij et al., 2004), and changed little in the years thereafter (2001-2005) (see *Figure 3.6.2*). There are a variety of reasons for the differences: differences in health status play an important role, as do sociocultural differences.

Data from the Netherlands Association for Mental Health and Addiction Care (GGZ Nederland) reveal that 56.4% of clients registered with mental health care services are of native Dutch origin, 8.8% are from non-Western countries (in particular Surinam, Turkey and Morocco) and that the origin of a third share of clients is unknown (Zorgis, 2006). Since migrants have a higher incidence of psychiatric disorder when compared with natives, one would expect this group to use mental health services more than the natives. After 15 years of mental health service monitoring in Rotterdam (1990-2004), the conclusion is that compared to native Dutch people, Moroccan and Turkish men have similar levels of mental health service utilization, and Surinamese and

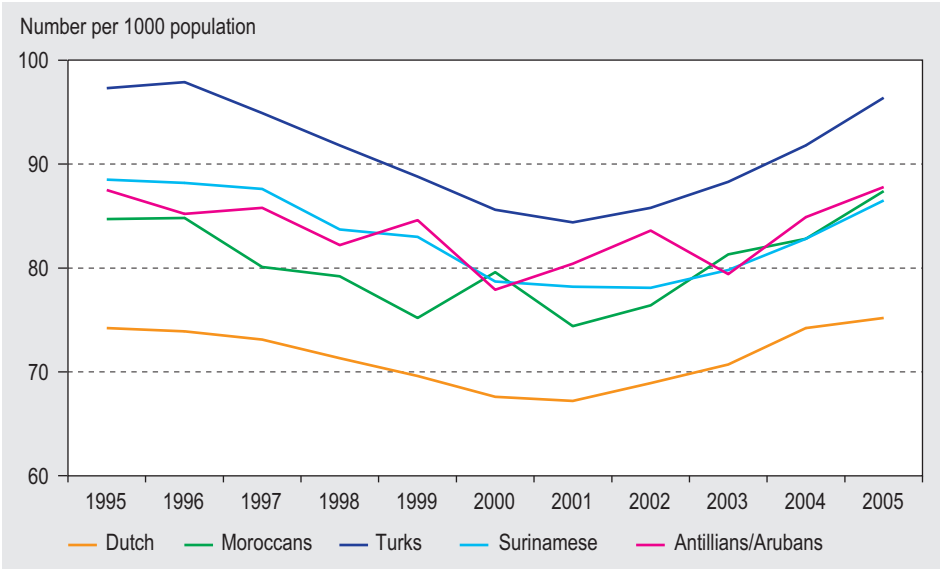


Figure 3.6.2: Hospital admissions by country of origin, 1995-2005 (Source: CBS Statline, 2007b).

inhabitants of Cape Verde and the Dutch West-Indies have lower levels of utilization (Dieperink et al., 2007). It is possible that the latter groups look for help outside of the mental health services (Soares de Freitas, 2005).

The proportion of migrants who use addiction services has increased from 19% in 1996 to 23% in 2004 (SIVZ, 2005). This is comparable with an increase in the share of this population group in Dutch society. Relatively less migrants use addiction services than native Dutch people: one-quarter of the clients are migrants, whereas half of the addicts are migrants (SIVZ, 2005).

The first DHCPR stated that migrants (especially Moroccans) use physiotherapy, home care and medicines less than natives. Older Turks and Moroccans consult medical specialists less often than Dutch people aged 55 years and older when differences in age, gender, education, income and health are taken into account. No data are available to determine whether the situation has changed in recent years.

Mortality following hospital admission for a heart attack is comparable between migrants and natives

Hospital mortality within 30 days following admission for a heart attack scarcely differs between natives and migrants (see *Figure 3.6.3*). There was a downward trend for all groups in the period between 1998 and 2005. Noteworthy are the big fluctuations within the group of non-Western migrants, which is related to the relatively small number of people in this group who were admitted to hospital. The figures imply

that the quality of hospital care in this area differs little between the different ethnic groups.

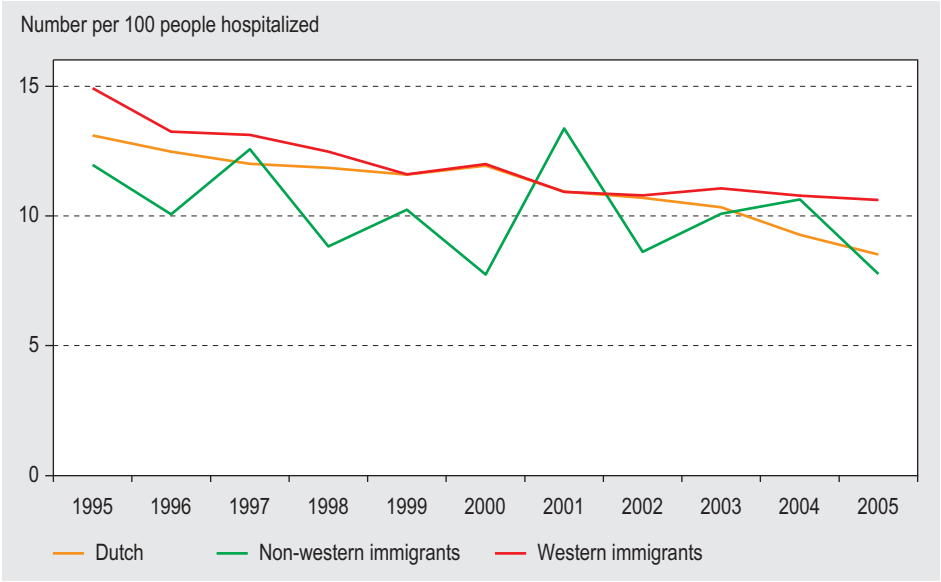


Figure 3.6.3: 30-day hospital mortality for acute myocardial infarction, per 100 people hospitalized, standardized by age, 1995-2005 (Source: Verweij et al., 2007; data processed by CBS).

According to the homeless people themselves, they need more help with housing, employment, managing their finances and dental care and to a lesser extent with their physical health

In a study in 2005 among 110 homeless people in Leiden, the homeless people stated that they mainly needed help with housing (65%), managing their finances (47%), solving their dental problems (36%), finding work (33%) and with their physical health (23%) (Hulsbosch et al., 2005). The alignment between the demand for and the provision of help is complex. The least fulfilled needs are in the areas of housing, employment, managing finances and dental care.

The first DHCPR also reported on the use of care by illegal immigrants and people in disadvantaged neighbourhoods. These were incidental studies. The Netherlands Association for Mental Health and Addiction Care and other parties are planning the creation of a Public Mental Health Care Monitor. This will enable the use of care by such groups to be monitored. Moreover, it may be possible to say more about access to care in disadvantaged neighbourhoods in the future, if communities in the 40 designated 'strong neighbourhoods' start monitoring a number of specific health and care aspects.

The quality of medical health services for asylum seekers is good but could be improved

Based on a study conducted according to the HKZ certification scheme, the Health Care Inspectorate established that the quality of the medical health services for asylum seekers (MOA) was generally good (IGZ, 2006e). Health care organizations find it easy to reach MOA employees when necessary. However, a care plan is not put in place for every asylum seeker. As far as the immigration chain is concerned, the exchange of information between the MOA and the Dutch Immigration and Naturalisation Service and the registration and deportation centres is suboptimal. Consequently, it takes too long to transfer medical files and the subsequent continuity of care is impeded. Asylum seekers appear to be receiving enough information, but not every asylum seeker is aware of the complaints procedure. MOA's use of interpreters has greatly improved compared to 2003. MOA is alarmed by the failure or insufficient use of interpreters by specialists in particular (IGZ, 2006e).

Conclusion

As was concluded in the previous DHCPR, this DHCPR shows again that there is little difference in the use of care between people with a low educational level and those with a high educational level for most of the services. The largest difference is found in the use of dental care, which is used less often by people with a low educational level. The differences have remained fairly stable over time. As far as ethnicity is concerned, the results vary for the different care services and subgroups; both more and less care utilization has been observed. The differences in hospital admissions between ethnic groups remain fairly stable. Migrants use mental health care and addiction services more than natives, but less than would be expected from their underlying problems. Overall, these data show that people with a low educational level and migrant population groups have good access to care, although there are clear exceptions. Overall, little is known about the ensuing question as to whether the care for these population groups is satisfactory and in line with their needs. Whether and how the quality of hospital care potentially differs between native and migrant groups cannot be determined based on the one indicator (mortality following hospital admission for a heart attack) used in this section. More research is needed to make more robust statements.

Due to the lack of new studies, this DHCPR cannot make a clear statement on the accessibility of care for marginal groups. A study conducted in Leiden among homeless people revealed that the least fulfilled needs are those relating to housing, employment, managing finances and dental care. A new study by the Health Care Inspectorate shows that the quality of MOA is generally good. The Inspectorate also rated access to MOA as positive. The creation of a Public Mental Health Care Monitor will enable the use of care by such groups to be monitored. No or very little additional empirical data on health care for illegal immigrants has become available in the last few years.

3.7 Personnel availability

Key findings

- Between 2004 and 2006, the number of vacancies per 1000 jobs in the health care sector increased by 42% and by 61% for the entire labour market
- One-quarter of the vacancies in health care are difficult to fill; in 2004, this was true for 14% of the vacancies
- In 2005, 4.2% of nursing and care personnel left the care sector; that was less than in previous years
- Absenteeism has decreased in recent years and was 5% in 2006
- Almost 15% of the people who wanted to register with a GP in the last two years had trouble finding one
- In 2007, 56% of nurses and carers thought there was enough personnel to assure patients' safety; in 2004, 70% of nurses and carers thought the same
- The shortages found in almost all of the specialties have further decreased; there are shortages in only a few medical specialties
- Compared with six other countries, patients believe more nurses are available in Dutch hospitals
- Clients believe that personnel availability is a key point for improvement in residential homes and nursing homes
- Compared with most of the other countries, the Netherlands has many nurses
- Higher educated nurses mainly work in hospitals and in mental health services. In home care, half of the workforce consists of carers of the lowest two qualification levels

How we determine personnel availability

Personnel availability is a prerequisite for providing good health care. Shortages can give rise to quality and access problems, such as longer waiting times or care providers who do not have enough time to provide adequate care.

Reports on the current or expected personnel shortage frequently appear in the media (RVZ, 2006a; RVZ 2006b). Solving this shortage is one of the items at the top of the political agenda (VWS, 2007). Shortages are expected to occur in the future, especially in the area of nursing and care (Van der Windt et al., 2007). The shrinking workforce and the so-called 'double ageing' of the population are considered important causes of the rising shortages.

The availability of personnel can be viewed from different 'perspectives', which can be divided into four groups:

- Macro-level labour market indicators such as the number of vacancies, turnover and absenteeism. These data provide information on the development of the actual availability of personnel. These figures are strongly objective in character, but do not say much about the degree to which the shortages are experienced.

- The users' perspective; the degree to which care users experience a shortage of personnel.
- The care providers' perspective; the degree to which care providers experience that there is not enough personnel to provide the right care.
- The employers' perspective; the degree to which employers are able to attract enough personnel to provide good care.

These perspectives are obviously connected, but they also complement each other to a large degree.

Indicators

The following indicators are discussed:

- Number of vacancies per 1000 jobs in health care
- Share of vacancies that are difficult to fill
- Percentage of nursing and care personnel that are leaving the sector (net turnover)
- Percentage of work hours lost to absenteeism
- Number of people who have (had) problems finding a GP
- Percentage of care users who believe enough personnel is available during a stay in the hospital or nursing home
- Percentage of nurses and carers who believe that enough personnel is on duty to assure the patients' safety
- Unfilled demand for medical specialist care
- Number of doctors and nurses per 1000 inhabitants
- Qualification levels of care workers and nurses

The current state of affairs

Between 2004 and 2006, the number of vacancies per 1000 jobs in the health care sector increased by 42% and by 61% for the entire labour market

In 2006, the number of vacancies per 1000 jobs in health care was 19.25. In 2004, there were only 13.5 vacancies per 1000 jobs in health care. This represents an increase of 42%. The number of vacancies per 1000 jobs in the combined labour market was a bit higher, namely 29. Compared with 2004, this represents an increase of 61%. The development of the number of vacancies since 2000 is shown in *Figure 3.7.1*. Although the number of vacancies is low compared with most of the other sectors, it is increasing. Fluctuations on the labour market are slow to affect the health care sector; increases and decreases reach the health care sector about a year later.

One-quarter of the vacancies in health care are difficult to fill; in 2004, this was true for 14% of the vacancies

In 2006, 24% of the vacancies in health care were difficult to fill, compared to 31% for the combined labour market. *Figure 3.7.2* shows the development of the share of vacan-

cies that are difficult to fill in health care. By way of comparison, the development for the entire labour market is also shown. The development is similar to that of the vacancy rate: the curb starts declining after 2001, and increases again after 2004.

Figure 3.7.1: Vacancies in the health care sector and all of the sectors combined, 2000-2006 (Source: CBS Kwartaalenquête vacatures and Enquête Werkgelegenheid en Lonen).

Figure 3.7.2: Vacancies that are difficult to fill in health care and in all sectors combined, 2000-2006 (Source: CBS Kwartaalenquête vacatures and Enquête Werkgelegenheid en Lonen).
[a] Data from 2005 are estimates based on 2004 and 2006, as no measurements were carried out in 2005

In 2005, 4.2% of nursing and care personnel left the care sector; that was less than in previous years

In 2005, net turnover was 4.2%. *Figure 3.7.3* shows the net turnover in the period 2000 to 2005. The total percentage is shown as well as a breakdown for the different branches. Turnover has sharply decreased since 2000, and has been at a stable 4% since 2002. According to the prognoses, the turnover is likely to increase again soon (Van der Windt et al., 2007). One of the main reasons is that the economy is picking up and employment is increasing across the whole labour market. This is why health care has to compete more with other sectors.

Turnover is the highest in home care and the lowest in hospitals.

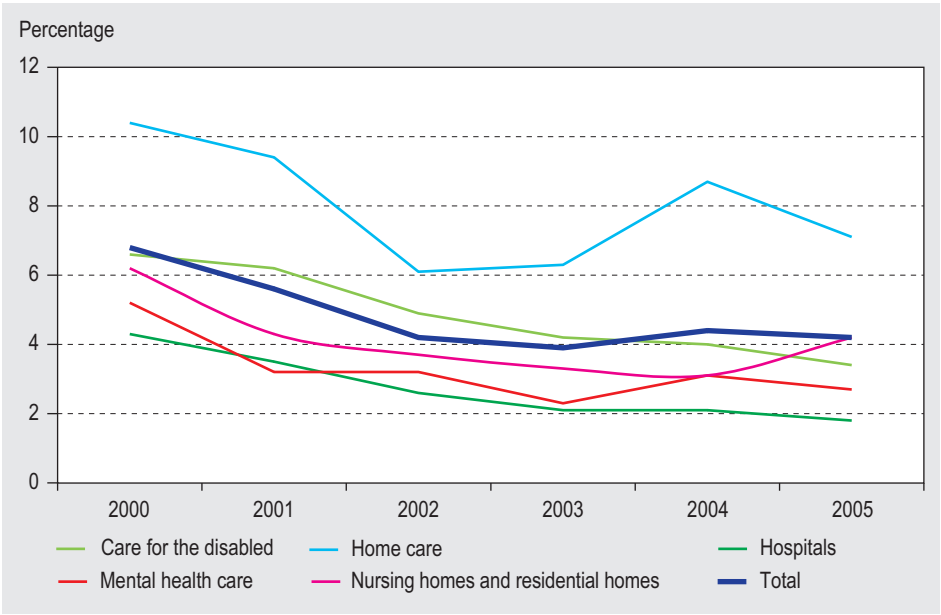


Figure 3.7.3: Net turnover of nurses, carers and social-pedagogic workers in health care, 2000-2005 (Source: Van der Windt et al., 2007).

Absenteeism has decreased in recent years and was 5% in 2006

Figure 3.7.4 shows the percentage of absenteeism in health care in the period 2003 to 2006. The total percentage is shown as well as a breakdown for the five sectors. In 2006, the percentage of absenteeism in health care was 5%. Absenteeism has decreased in recent years. In the period between 2003 and 2006, it decreased by about 18%. There is more absenteeism in some care sectors than in others. The highest percentage of absentees is in home care (6%), the lowest in general hospitals (4.4%).

Across the combined labour market, absenteeism is slightly lower, and was an average of 4% in 2005 (latest figures) (CBS, 2007g).

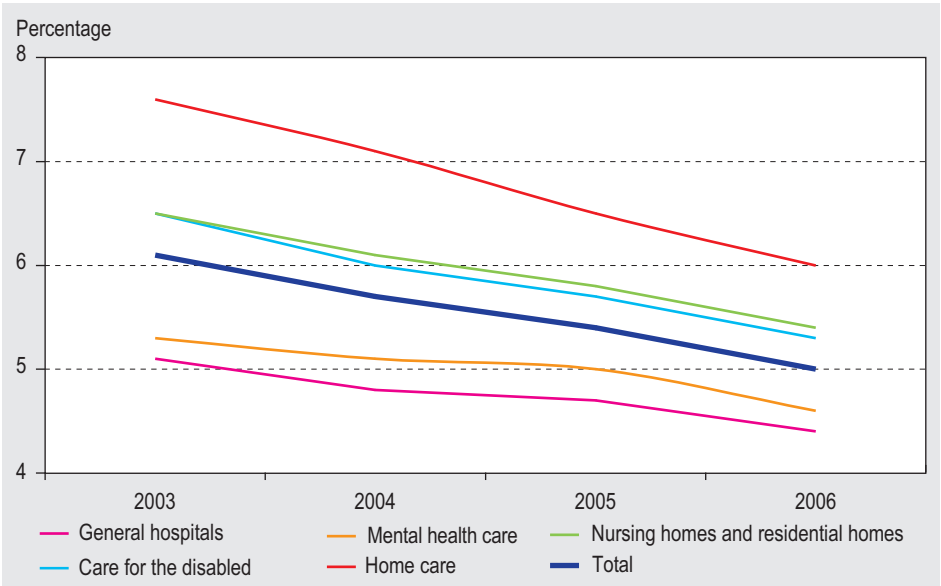


Figure 3.7.4: Absenteeism in health care, 2003-2006 (Source: Vernet 2007).

Almost 15% of the people who wanted to register with a GP in the last two years had trouble finding one

In a survey that was conducted among care consumers, 14.5% indicated that they had problems finding a GP they could register with (De Boer et al., 2007a). These were all people who had been registered with their current GP for less than two years. Of the group of people who had problems finding a GP, one-fifth qualified registration as a 'big problem', the rest referred to it as a minor issue. Although it is not always easy to find a GP, the same survey revealed that almost everyone is registered with one (99.5%). This is probably a slight overestimation.

The shortages found in almost all of the specialties have further decreased; there are shortages in only a few medical specialties

In 2000, there was still a substantial shortage of GPs and medical specialists across the board. In 2007, these shortages had almost disappeared for all medical professions (see *Table 3.7.1*). The unfilled demand is around 1 to 2%.

There are, however, a few exceptions: there is a substantial shortage of doctors for people with an intellectual disability, of orthodontists, gastrointestinal and liver specialists, nuclear medicine physicians and rehabilitation physicians.

Compared with six other countries, patients believe more nurses are available in Dutch hospitals

Of the Dutch people who indicated that they had been admitted to a hospital in the last two years, 84% indicated that there were always enough nurses on duty. Compared

Table 3.7.1: Development of unfilled demand, (beginning of the year) 2000, 2005 and 2007 (%) (Source: Capaciteitsorgaan, 2008).

	2000	2005	2007
Medical specialists	5	3	1
General practitioners	5	2	1
Social healthcare professional (child and adolescent care)	5	-	2
Nursing home physicians	5	1	2
Dental specialists	4	3	2
Doctors for the mentally disabled	-	2	7
Total	5	3	1

with six other countries in the CMWF survey, this is the highest percentage. In the United Kingdom it is the lowest (69%) (Grol and Faber, 2007).

Clients believe that personnel availability is a key point for improvement in residential homes and nursing homes

In the CQ index for nursing homes and residential homes (Wiegers et al., 2007) clients were asked about their experiences with the availability of personnel and how important they think it is. The experience scores found in this study are displayed in *Table 3.7.2*. The scores vary from 1 to 4, whereby 1 is for negative experiences and 4 for positive experiences.

This issue was revealed as one of most important points for improvement in the study by Wiegers et al. (2007). Obviously, clients attach a lot of importance to this issue, whereas it scores low when compared with other issues.

Table 3.7.2: Average experience scores of clients in nursing homes and residential homes for the issue 'insufficient staff' (scale 1 (negative) - 4 (positive)) (Source: Wiegers et al., 2007).

	Nursing homes	Residential homes	Others or unknown	Total
Availability of staff	2.67	2.90	3.05	2.86

In 2007, 56% of nurses and carers thought there was enough personnel to assure patients' safety; in 2004, 70% of nurses and carers thought the same

Almost three in ten nurses and carers (29%) believe that not enough personnel is on duty to assure safety. Fifty-six per cent disagree and 15% is unsure (see *Figure 3.7.5*). Compared with 2004, the number of nurses and carers who believe enough personnel is on duty has decreased; then, 70% believed that enough personnel was on duty. There are also visible differences between the different sectors. In nursing homes, only 39% believe there is enough personnel, whereas in mental health care, 64% believe there is enough personnel.

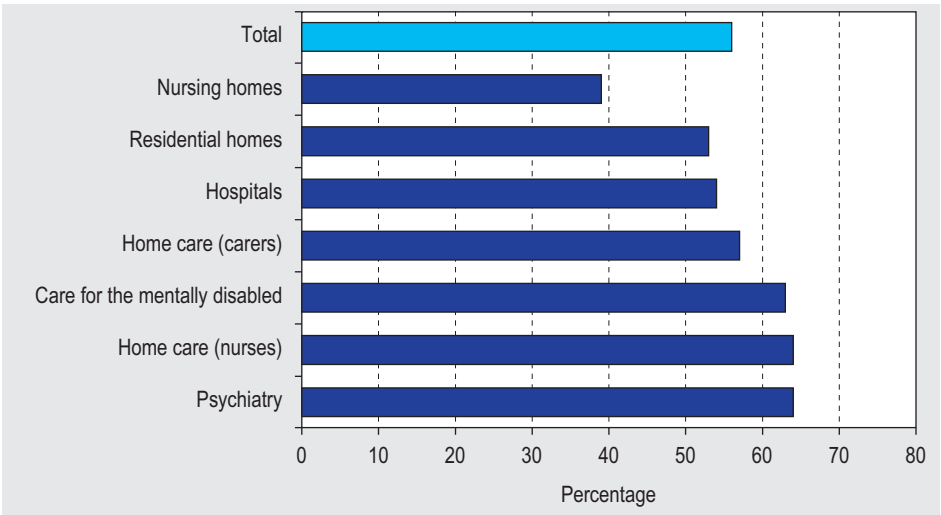


Figure 3.7.5: Percentage of nurses and carers who believe enough personnel is on duty to assure patients' safety, by care sector (Source: De Veer et al., 2007).

Compared with most of the other countries, the Netherlands has many nurses

In 2005, the Dutch health care professionals register (BIG register) contained 3.7 doctors and 14.5 nurses per 1000 inhabitants. It is not known how many of these doctors and nurses actually carry out their profession. Noteworthy is the high number of nurses compared with other European countries (see *Figure 3.7.6*). Converted to 1000 inhabitants, the number of nurses is some 60% above the EU-15 average, and only one country has more nurses, namely Ireland. The ratio between nurses/doctors is also high: 3.9; the average for the EU-15 countries is 2.8.

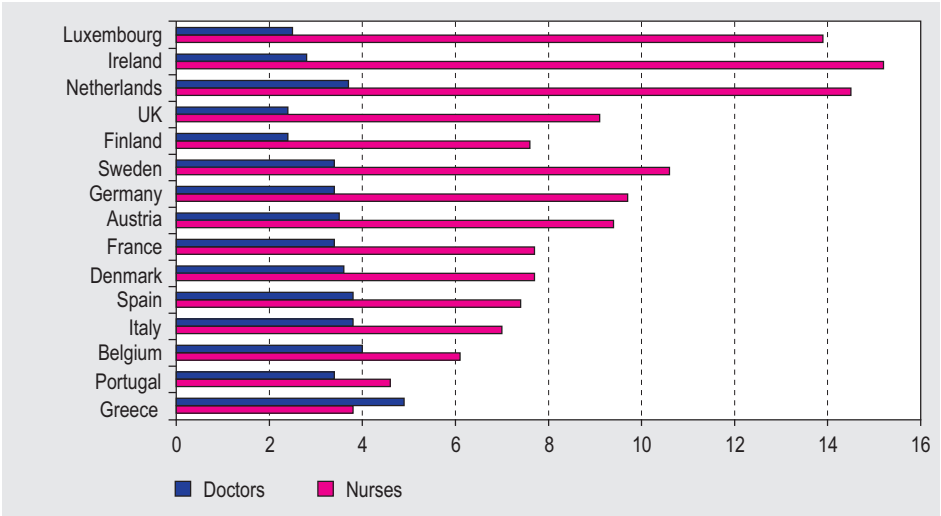


Figure 3.7.6: Number of registered doctors and nurses per 1000 inhabitants, in 2005 (Source: OECD Health Data 2007; data processed by RIVM).

In the last ten years, both the number of doctors and nurses has grown considerably; compared with 1996, by about one-fourth (see *Figure 3.7.7).*

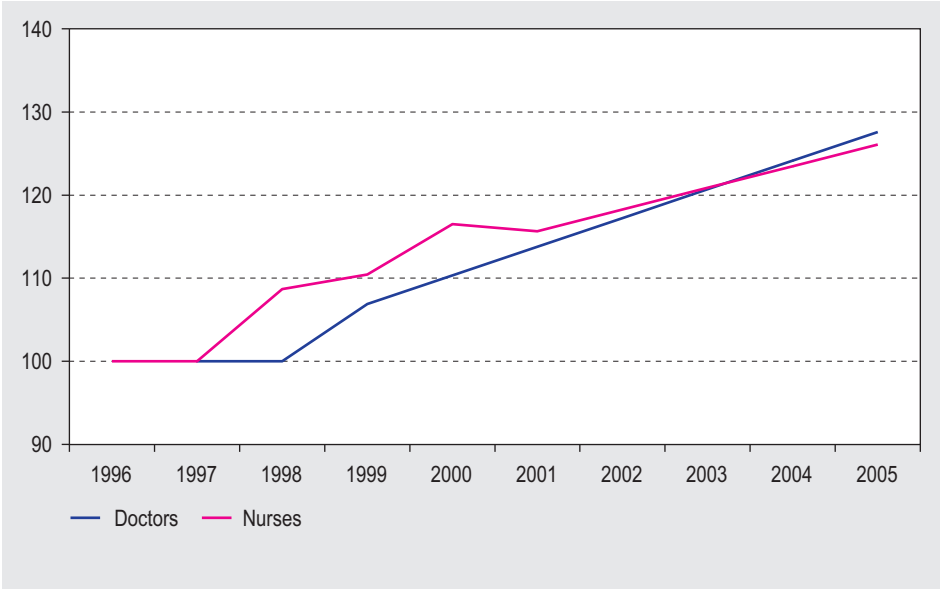


Figure 3.7.7: Number of doctors and nurses in the Netherlands, 1996 – 2005, index figures (index year = 1996) (Source: OECD Health Data 2007; data processed by RIVM).

Higher educated nurses mainly work in hospitals and in mental health services. In home care, half of the workforce consists of carers of the lowest two qualification levels

There are five qualification levels for nurses and caregivers. The highest levels, level 4 and 5, form the nursing professions; levels 1, 2 and 3 comprise the caring or aid professions. *Figure 3.7.8* shows the qualification levels by sector. Experts in applied social studies are also shown. The latter category works mainly in disability care.

There are big differences between the different sectors. In hospitals, the biggest group of nurses are level 4 and level 5. In nursing homes and residential homes, the biggest group of care workers are level 3. In home care, the biggest group of care workers are level 1 and level 2. Help directly contracted by clients was not taken into account.

The figures are not entirely comparable with the figures in the previous DHCPR because our source, RegioMarge, changed data sources (Van der Windt et al., 2007).

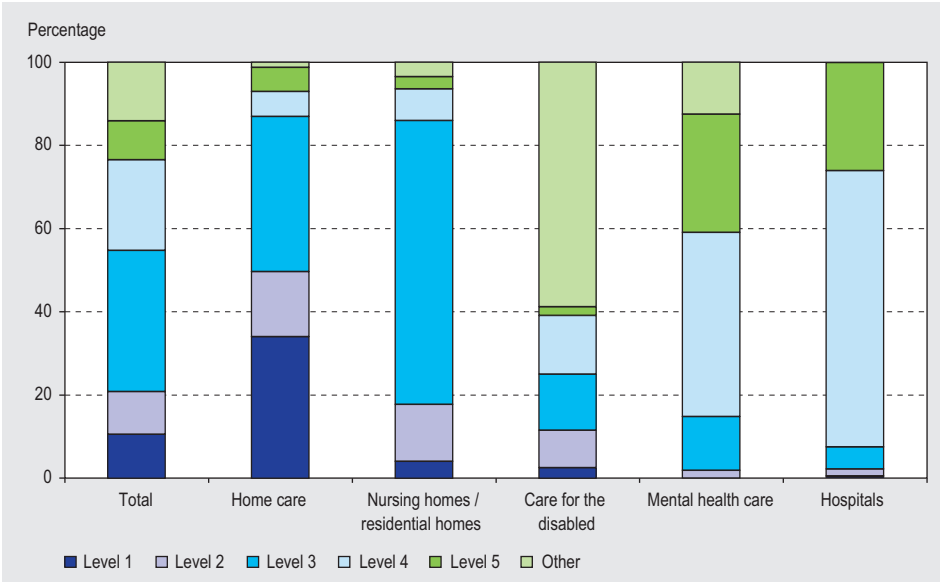


Figure 3.7.8: Percentage of people working in nursing and care by qualification level by sector, in 2006 (Source: Van der Windt et al., 2007).

Conclusion

The answer to the question whether there is sufficient personnel strongly depends on the perspective and the sector under examination. At the moment, problems finding the right personnel seem to occur mainly in long-term care. Absenteeism and turnover are significantly higher in home care than in the other care sectors.

Data on vacancies in health care show that there is an urgent need for personnel; the number of vacancies is growing, and more and more vacancies are harder to fill.

In contrast to these rather abstract indicators there is the *experience* of shortages. The finding that three in ten nurses indicated that they cannot assure the safety of their patients because of a shortage of personnel is alarming. A client consultation also revealed personnel availability as one of the most important points for improvement.

Although the DHCPR mainly describes the current state of affairs, it is important to look to the future for issues concerning personnel shortage. A number of advanced and carefully considered models have been developed to do this (RegioMarge, capacity plan, SCP). So far, much less attention has been given to issues that are more closely related to the health care system. For example, the Netherlands has a higher share of nurses than most of the other countries while population ageing is still very much lagging compared to countries such as Germany and Italy.

3.8 Freedom of choice

Key findings
- Almost 15% of the people who wanted to register with a GP in the last two years had trouble finding one
- The number of users with a personal care budget is increasing
- The policyholders' mobility increased in 2006 to 18% and decreased again in 2007 to 4.4%
- Ninety-one percent of the policyholders did not experience any limitations to their freedom to choose a health insurer
- In the period between 2005 and 2007, 18% of the Dutch population looked for quality information on hospitals and 13% for quality information on individual doctors

How we determine freedom of choice

Freedom of choice means that people have free access to the health insurer and health care provider they want and that they can choose from different options. Freedom of choice also relates to the individual's *ability* to make *conscious* choices. This means that people know which care and insurance supplied best meets their needs. The availability of adequate 'choice information' is important to *be able* to use the available options meaningfully.

Over the last twenty years, increasing freedom of choice in care has been a major policy goal to strengthen the position of care users. Freedom of choice is first and foremost seen as intrinsically valuable because of the right to self-determination (Stüssgen, 1997). In 2004, almost all Dutch citizens (95%) wanted to choose their practitioner themselves and wanted the practitioner to discuss the different therapies with them (90%) (Westert and Verkleij, 2006). Secondly, freedom of choice is seen as a means to create free market economy and competition. This can only be done if the care user can take on the role of 'choosing consumer'. Finally, freedom of choice is seen as a means to improve quality. It has been shown that health care providers are stimulated to improve their quality when their performance is publicly compared to that of other health care providers (Groenewoud et al., 2006; Lugtenberg and Westert, 2007). Whether this has a positive effect on the actual quality of health care is not yet clear. The patients' use of information on quality is also still limited (Fung et al., 2006).

The state of affairs is gauged according to the following questions:
- To which extent do people experience limitations in their freedom of choice, particularly when looking for a GP or changing health care insurer?
- How many people use the current options, in particular the personal care budget (PGB), in long-term care and the extended health care insurance options since the acceptance obligation for the basic insurance package was enforced in 2006?
- How many people (successfully) are finding information on care since the new health care system was implemented?

Indicators

- Number of people who experienced problems finding a GP (see *Section 3.7*)
- Number of people who have a personal care budget
- Share of insured people who have switched health insurer
- Share of insured people who did not experience any limitations to their freedom to choose a health insurer
- Share of Dutch population that looked for information on quality with regards to hospitals and doctors

The current state of affairs

Almost 15% of the people who wanted to register with a GP in the last two years had trouble finding one

The free choice for a GP is under pressure if some people have no alternatives to choose from. This indicator is further described in *Section 3.7*.

The number of users with a personal care budget is increasing

Any person who is receiving care under the Exceptional Medical Expenses Act (AWBZ care) because of an illness, disability or age, is eligible for an AWBZ personal care budget (PGB) (VWS, 2005c). This PGB enables clients to choose their health care provider themselves and to determine when the care is provided. The client can also determine what AWBZ functions he or she buys and whether these are indicated or not. On 1 January 2007, the coverage of the AWBZ was reduced. Among other things, the funding for household help was transferred from the AWBZ to the Social Support Act (WMO).

Between 1998 and July 2006, the number of PGB recipients for AWBZ care rose from 10,000 to almost 95,000. In 2007, this number (excluding PGBs for household help) shrunk to almost 90,000 (see *Figure 3.8.1)*.

When, however, the budget owners who were transitioned to the WMO are taken into account, this number is about 30,000 higher (VWS, 2007f). The underlying increase in PGB use (excluding household help) therefore continued in 2007. This continuing growth is expressed by the sharp rise in the monthly increase in the number of new budget recipients in 2007 (see *Table 3.8.1*).

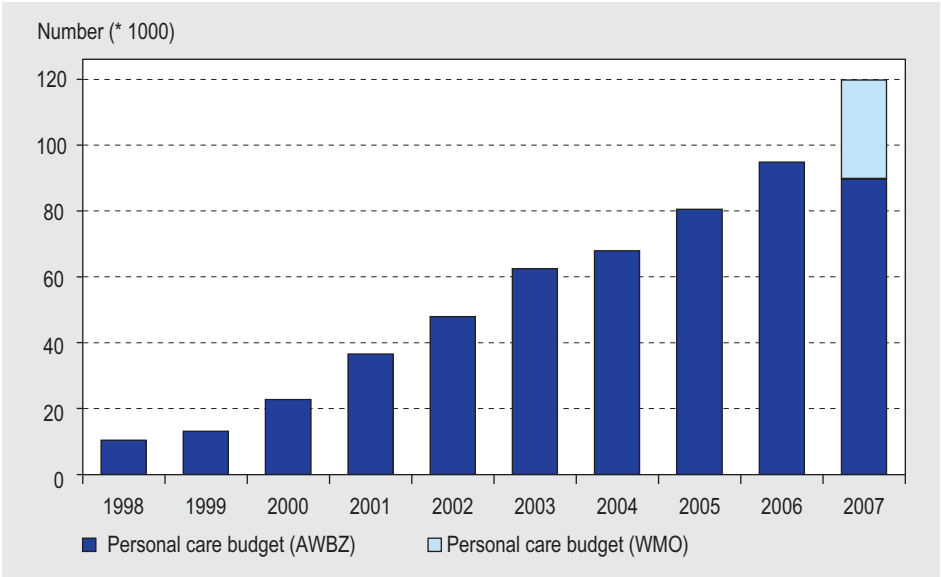


Figure 3.8.1: Number of people with a personal care budget by type of care, 1998-2007 (Source: VWS, 2007; CVZ data, 2008).

Table 3.8.1: Increase in the number of new personal care budget recipients, 2003-2007 (Source: VWS, 2007f; CVZ data, 2008)

	2003	2004	2005	2006	2007
Increase per year (%)	25	11	16	18	26 [a]
Average increase per month (number)	1,042	583	917	1,208	2,200 [b]

[a] *Including household help;* [b] *Excluding household help.*

Of the total number of AWBZ users (approx 750,000) in 2007, some 495,000 extramural care users were eligible for a PGB. Over 18% actually took advantage of it.

Eighty-eight percent of the budget recipients indicated that they were (very) happy with the PGB as a means to personally buy and organize care; 10% indicated they were fairly happy and 2% indicated they were (very) unhappy. One in five (21%) thought the PGB scheme was complicated to very complicated, and almost half (48%) thought it was a little complicated. As the most important advantage of the PGB, 42% indicated the freedom to choose health care professionals, followed by own responsibility (37%) and supervision of the care provided (31%). For 46% of the budget recipients, the biggest disadvantage is the bureaucracy and the vast amount of information. Nine in ten budget owners would definitely opt for a PGB again (Ramakers et al., 2007).

The policyholders' mobility increased in 2006 to 18% and decreased again in 2007 to 4.4%

In 2006 (the year the new system was implemented), the policyholders' mobility was high at 18%, both when compared with the previous years as well as with 2007. In 2007, mobility decreased again to 4.4% (see *Figure 3.8.2*).

In 2007, a collective contract with another insurer was the main reason for people to switch insurance (41%). This already applied to people who were privately insured between 2001 and 2005 and now applies to all policyholders. In 2006, just after the implementation of the new system, this reason was (temporarily) less important (19%), and the premium (33%) and coverage (23%) of the supplementary package were considered more important reasons to switch. Besides a lower premium, the advantage of a collective contract was that it could be tailored to the specific needs of the collective.

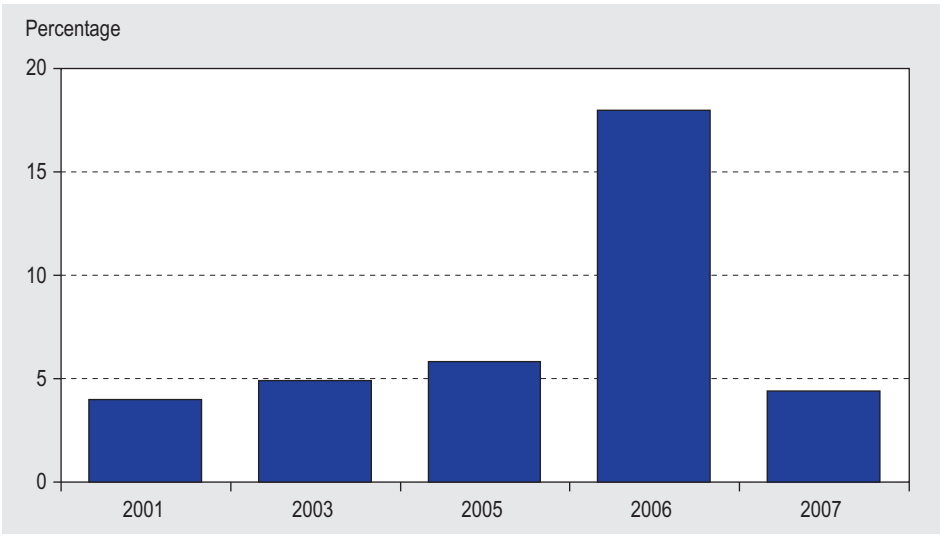


Figure 3.8.2: Percentage policyholders that switched health insurer, 2001, 2003, 2005-2007 (Source: Laske-Aldershof and Schut, 2005; NZa, 2006-2007; Vektis, 2003-2006).

Ninety-one percent of the policyholders did not experience any limitations to their freedom to choose a health insurer

Ninety-one per cent of the policyholders did not experience any limitations to their freedom to choose a health care insurer (see *Table 3.8.2*). Examined more closely, 95% of the policyholders indicated they had sufficient opportunity to choose from the different insurances and policies, 98% had no or only a small problem *registering* with their new health care insurer, and 92% had no or only a small problem *deregistering* with their previous health care insurer (De Boer et al., 2007a).

Table 3.8.2: Peoples' experience of freedom of choice regarding health insurers, in 2007 (%) (Source: De Boer et al., 2007a)

Sufficient choice of different types of insurances and policies	95
Registering with a health insurer was not or was only a small problem	98
Deregistering with a health insurer was not or was only a small problem	92
Did not experience any of the three problems	91
Experienced one of the three problems	8.6
Experienced two of the three problems	0.5

In the period between 2005 and 2007, 18% of the Dutch population looked for quality information on hospitals and 13% for quality information on individual doctors

In 2007, 18% of the Dutch population had tried in the last two years, in one way or another, to find out more about the quality of hospitals when making a health care choice. Comparing the Netherlands with six other Western countries shows that this percentage is higher in Germany and the United States, and lower in the other countries (see *Table 3.8.3*). The percentage of Dutch people who in some way looked for quality information on individual doctors is 13%. This percentage is also higher in Germany and the United States. The percentages for the other four countries are between 11% and 17%. Of the Dutch who looked for information, 78% found useful information on hospitals and 66% on doctors. In the Netherlands, 35% indicated that their GP helped them choose a specialist. This percentage is low compared with the other countries: in Australia, Canada and the United States, the percentage is higher than 60.

Table 3.8.3: Looking for and finding choice information and getting help choosing (%) (Source: Grol and Faber, 2007; Schoen et al., 2007)

Percentage of respondents that	NL	AUS	CAN	GER	NZ	UK	US
looked for quality information on:							
– Hospitals	18	16	14	32	11	12	27
– Doctors	13	15	17	35	12	11	32
found useful information on:							
– Hospitals	78	69	72	83	59	72	74
– Doctors	66	67	68	83	62	64	76
their GP helped choose a specialist	35	65	65	57	57	45	64

NL = Netherlands, AUS = Australia, CAN = Canada, GER = Germany, NZ = New Zealand, UK = United Kingdom, US = United States.

When making a choice, people with a low educational level look less often for information on the quality of doctors than people with a high educational level (15% versus 20%). They also less frequently find the information they are looking for on the quality of hospitals compared to people with a high educational level (63% versus 81%) (Grol and Faber, 2007; Schoen et al., 2007).

A different study revealed that about half (56%) of the respondents who had experience with hospital care (for themselves or for their children) in the last three years, had gathered information about the hospital beforehand. These people mainly consulted their GP (42%) and to a lesser extent family and friends (11.4%), booklets and leaflets (7.8%), the hospital website (7.5%), the specialist (3.4%) or the evaluation lists on the Internet (3%) (Halkes, 2007).

The Internet is used very infrequently for choosing a hospital (by 10% sometimes, by 1% predominantly) or a medical specialist (by 12% sometimes, by 1% predominantly). It is most often used to find information on a medical treatment (by 11% sometimes, by 48% predominantly). The stated percentages relate to the 81% of Dutch who have access to the Internet from home. Thirty-eight percent of the respondents who received information on possible alternative treatments at the hospital evaluate this as fair or poor (SCP, KQS 2006).

Dutch people are of the growing opinion that information on the quality and performance of hospitals should be publicly available (see *Figure 3.8.3*). In 2006, seven in ten Dutch thought that too little information on the quality of hospitals was available to patients; this was 5% less than in 2002. In 2006, 96% of the people thought that information on the performance of the different hospitals must be public. This was an increase of 2% compared with 2002 (SCP, KQS 2002; 2006).

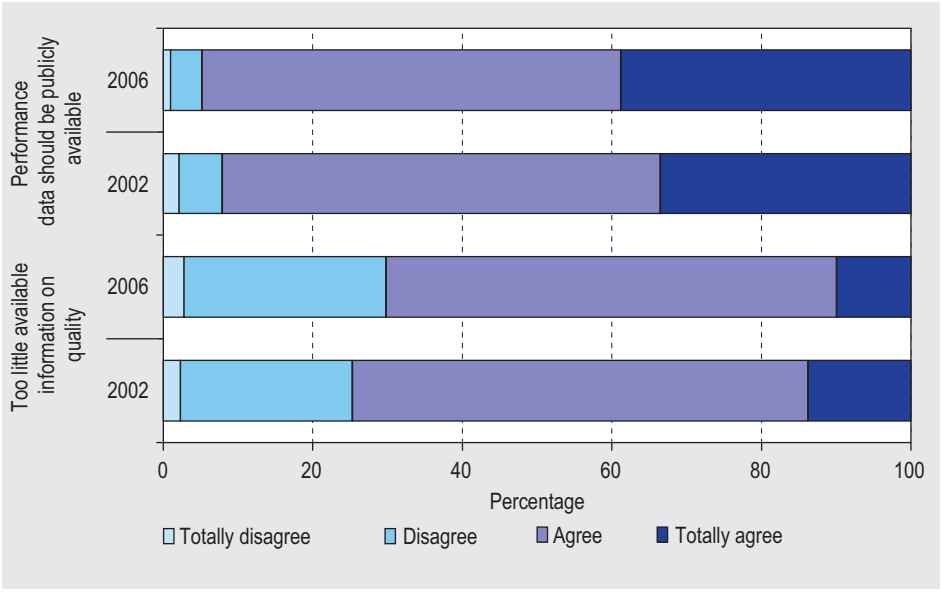


Figure 3.8.3: Opinions on the availability and publication of performance and quality data for hospitals, in 2002 and 2006 (%) (Source: SCP: KQS, 2002; 2006; data processed by RIVM).

As a reason for choosing a hospital, the people's own good experience with a hospital gained in importance (38% in 2006 versus 30% in 2002), while the waiting time for an appointment or admission lost in importance (21% in 2006 versus 28% in 2002) (SCP, KQS 2002; 2006).

Conclusion

The extended freedom of choice the new health care system offers (combined with the competition between the insurers) increased the mobility of the policyholders in 2006. Policyholders generally experience few limitations to their freedom of choice in terms of health care insurer and type of insurance. Comparative studies reveal that Dutch people do not look for quality information on hospitals or doctors as much as people in Germany and the United States. In long-term care (AWBZ), freedom of choice has gained considerable importance. Compared with the previous DHCPR, there has been a sharp rise in the number of people who opt for a PGB. One in six Dutch who need long-term care now opt for a PGB.

A number of points in the area of freedom of choice have developed positively since the last DHCPR. However, many of the available studies restrict themselves to freedom of choice *within* the current care supply; there is still very little insight into people's preferences for existing and new forms of care that have yet to be developed (preference and market research). There is also little insight into what the different groups of people consider to be an optimal mix of options and associated choice information.

4 COSTS OF HEALTH CARE

4.1 Affordability of care

Affordability is an important theme in the health care debate. Trends in health care expenditure provide insight into the affordability of the health care system. Affordability can become a real issue if health care costs rise considerably. However, measuring affordability is far from easy. This requires a generally accepted norm that establishes what proportion of the national income may be spent on health care, yet such a standard does not exist. Judgements about the affordability of health care are frequently the outcome of a political deliberation and therefore have a normative character. This outcome may change over the course of time and with successive cabinets. Policymakers and politicians can draw upon various indicators when making their decisions, namely: trends in health expenditure, the financial position of health care providers and health insurers, and trends in labour productivity.

Health expenditure

Trends in health expenditure are an important indicator of affordability. The lack of a norm means that health expenditure is mainly compared with that of other countries over the course of time to check if it remains within reasonable limits. This comparison is based on the use of various definitions of health expenditure – viewed from different perspectives. The government uses the Health Care Budgetary Framework (Budgettair Kader Zorg, BKZ) that includes health expenditure funded by health insurance premiums (Rijksbegroting, 2007). There is also the National Health Accounts definition (Zorgrekeningen) of Statistics Netherlands (CBS) that includes a number of extra health care and welfare functions (CBS, 2006b). Examples are out-of-pocket expenditures and expenditures covered by supplementary insurance, but also a number of facilities considered by the Ministry of Health to fall under welfare and social support, such as child care. For international comparisons, the best option is to use the standard international definitions for health care and health care expenditure of the OECD's System of Health Accounts (SHA) (OECD, 2000; OECD Health Data 2007). The total health expenditure is broken down by health care sectors and funding sources for the purpose of monitoring health care costs within different groups. The proportion of gross domestic expenditure devoted to health care and how this proportion changes over the course of time are also monitored.

Further insights into the affordability of health care can be gained by studying the burden of health care costs on public expenditure. Health care costs make up about 20% of the total public expenditure (CPB, 2007c). A strong increase in health care costs can cause a considerable rise in public expenditure, premiums and labour costs. This can exert a negative impact on the competitive position of a country which in turn can put the affordability of the health care system at risk. Since public (health) expenditure is funded out of labour, public expenditure on health care is measured per working person to provide an indication of its burden on labour costs.

Financial position of health care organizations and health care insurers
There is a growing interest in the financial position of health care organizations, as the financial support by the government is now gradually being withdrawn, in the future health care institutions are also required to bear liability for capital costs (VWS, 2007g) and competition within the health care sector is increasing. Consequently, health care organizations are bearing more financial risks.

The financial position of health care institutions is indicative of the affordability of health care. Financial indicators provide information about the financial vulnerability of organizations. A worsening of the financial position of health care organizations and health insurers, for example, would indicate that it is more difficult to fund health care at a macro-level. It may also endanger and affect the continuity of the care provided and have consequences for the long-term financial resilience of organizations. A stable financial resilience, which can be strengthened by increasing profits, is necessary for ensuring continuity of care. Additionally, the increasing financial risks require organizations to strengthen their financial position. Therefore, besides profitability, insight into the capital of health care organizations needs to be obtained.

Unlike in the previous DHCPR, the financial position of health insurers is now described as well. This mainly draws upon data provided by The Dutch Central Bank (De Nederlandsche Bank, DNB) that has acted as the supervisory body for the health insurers since 2006.

Labour productivity
Increasing labour productivity in health care may be one way of keeping health care affordable (Rijksbegroting, 2007). The labour-intensive health care sector could provide the same care at lower costs if the labour productivity were to be increased. This can be realised in various ways. A frequently stated practice is the implementation of labour-saving innovations. However, technological developments also have a price tag and are often considered to be the number one cause of increases in health expenditure. Whether or not this approach leads to an improvement in the affordability at the macro-level depends, therefore, on the costs of the innovations concerned.

Labour productivity also depends on the quality of care provided. Higher quality increases the added value of care provided and with this, the true labour productivity. However, this approach to increasing productivity is not a direct solution for maintaining the affordability. An increase in labour productivity can also affect expected personnel shortages within the health care sector. Increasing productivity by improving the quality does not, however, reduce the expected shortages, and may even exacerbate these. Shortages are mainly expected in long-term care, the very sector where it is most difficult to improve labour productivity (RVZ, 2006).

Chapter outline

- Health expenditure (*4.2)*
- The financial position of health care organizations and health insurers (*4.3*)
- Labour productivity (*4.4*)

4.2 Trends in health expenditure

Key findings

- According to the Health Care Budgetary Framework, health expenditure rose in 2006 by 4.3% to € 48.6 billion
- According to the Health Accounts, health expenditure rose in 2006 by 5.4% to € 72.2 billion
- According to the System of Health Accounts, the per capita health expenditure in the Netherlands is consistently higher than the EU-15 average
- Public health expenditure per working person has been around the EU-15 average since the mid-1990s
- Hospital care and care for the elderly account for most of the health expenditure. Noteworthy are the increase in expenditure on GPs and the overfunding of hospitals in 2006
- In 2006, considerable changes were made to the funding structure of health care. The personal care budget was assigned an increasingly larger share of AWBZ funding
- Health expenditure, expressed as a percentage of gross domestic product, is around the EU-15 average; it is over 9%, according to the System of Health Accounts definition
- According to the Health Accounts, there was a volume growth of 36% and a price increase of 31% between 1998 and 2006. The volume growth had slackened since 2001, but grew stronger again in 2006

How we determine trends in health expenditure

Health expenditure is compared across countries as well as over time, using various definitions. In the Health Care Budgetary Framework (BKZ) definition, a distinction is made between a gross and net part. The net BKZ is the gross BKZ minus out of pocket payments. Since 2006, the net BKZ contains the tax and premium burden of public health expenditure (up until 2006, private insurance was also included in the BKZ). Apart from the BKZ, health expenditure is also examined using the Health Accounts. For the international comparison, use is made of the internationally accepted definitions of health care and health expenditure, as applied in the OECD's System of Health Accounts (SHA) (OECD, 2000; OECD Health Data 2007). Health expenditure is further explored by means of the following indicators: health expenditure per capita, health expenditure per working person, health expenditure as percentage of gross domestic product (GDP), and health expenditure per sector. It is also investigated which part of the increase in costs arises from an increase in care use (volume), and which part is down to price increases.

Indicators

- Health expenditure according to the Health Care Budgetary Framework (Ministry of Health)
- Health expenditure according to the Health Accounts (Statistics Netherlands)
- Health expenditure per capita according to the System of Health Accounts (OECD)

- Public health expenditure per working person according to the System of Health Accounts
- Health expenditure per health care sector according to the Health Care Budgetary Framework
- Health expenditure by source of funding
- Share of health care costs in gross domestic product
- Price and volume trends in health expenditure

The current state of affairs

According to the Health Care Budgetary Framework, health expenditure rose in 2006 by 4.3% to € 48.6 billion

According to the gross BKZ, health expenditure in 2006 rose to € 48.6 billion. After 2003, the growth rate in health expenditure decreased to about 3% in 2004 in 2005. This decrease can partly be explained by measures taken in 2004, such as the rationalization of the basic health care package (for example, physiotherapy and dental care were largely removed from the package) (Rijksbegroting, 2003) and covenants made, for example, for pharmaceuticals (VWS, 2005b). The actual figures for 2006 indicate a slight increase in expenditure growth (see *Table 4.2.1*).

Estimates for 2007 indicate that health expenditure will be about € 1.2 billion higher than budgeted for (VWS, 2008a). Besides the expenditure funded by health insurance premiums, the Minister is also responsible for the government funded expenditure, which was just under € 13 billion in 2006 (Rijksbegroting, 2006). This includes the government contribution for children under 18 years of age, expenditure on prevention, and expenditure that supports the organization of the health care system such as the health care allowance, contribution to the costs of discounts, the provision of information, monitoring and research programmes.

Table 4.2.1: Total health expenditure according to the Health Care Budgetary Framework, € billion, 2003-2007[a,b,c] (Source: VWS, 2005b; Rijksbegroting, 2005; VWS, 2006b; Rijksbegroting, 2006; VWS, 2007b; Rijksbegroting, 2007; VWS, 2008a).

	2003	2004	2005	2006	2007
Annual budgeted expenditure	41.9	44.1	45.8	47.6	50.1
Actual expenditure	43.7	45.0	46.6	48.6	51.3
Budget overspending	1.7	0.9	0.8	1.0	1.2
Increase actual expenditure	7.4%	3.0%	3.6%	4.3%	5.5%

Health Care Budgetary Framework (Budgettair Kader Zorg (BKZ))

[a] *BKZ = gross BKZ = net BKZ + co-payments.*

[b] *Budgeted expenditure = gross BKZ expenditure according to annual budget. For 2003 this is the gross BKZ expenditure according to the Zorgnota.*

[c] *The actual expenditure for 2007 is provisional and contains in part agreements that have not yet been realized.*

According to the Health Accounts, health expenditure in 2006 rose by 5.4% to € 72.2 billion

Due to the broader definition of health care, the expenditure according to the Health Accounts is higher than that according to the BKZ. For example, the Health Accounts include facilities the Ministry of Health considers to fall under welfare and social support, such as occupational health and safety services and childcare, but also health care facilities that are paid for through supplementary health insurance. In contrast to the previous DHCPR, the Health Accounts have been retrospectively enlarged to incorporate a number of facilities and now cover a 'more complete' area of health care (the enlargement amounted to € 5.7 billion in 2006) (CBS, 2007c). According to the Health Accounts, health expenditure in 2006 was more than € 72 billion. The growth in expenditure between 2003 and 2006 is higher according to the Health Accounts than claimed by the BKZ. Just as in the previous DHCPR, health expenditure outside of the BKZ seems to have risen faster than expenditure within the BKZ. This has partly been caused by removing items from the BKZ, as previously mentioned. Consequently, the trends in health expenditure according to these definitions are difficult to compare.

Table 4.2.2: Total health expenditure according to the Health Accounts, € billion, 2000, 2004-2006 (Source: CBS, 2007c).

	2000	2004	2005	2006	Increase 2004-2005	Increase 2005-2006
Total expenditure	50.0	65.6	68.5	72.2	4.5%	5.4%

According to the System of Health Accounts, the per capita health expenditure in the Netherlands is consistently higher than the EU-15 average

We compare the health expenditure per capita from an international perspective. For international comparisons the international SHA definitions of health care and health expenditure must be used for the sake of uniformity. As a result of this, expenditure for residential homes, home care and care for the disabled are not considered. *Figure 4.2.1* shows that the per capita health expenditure between 1990 and 2005 was consistently higher than the EU-15 average. However it should be noted that in recent years, Luxembourg has strongly pulled the average upwards. The Dutch level of health expenditure is similar to that of Germany and France, for example.

Public health expenditure per working person has been around the EU-15 average since the mid-1990s

The part of the health expenditure that is publicly funded and thus is paid for via mandatory premiums is part of the total tax and premium burden. Rises in public health expenditure can cause increases in premiums and wage costs and put the affordability of care at risk. An international comparison can reveal whether the burden of health expenditure on premiums and wage costs in the Netherlands is relatively large or small. Once again, the international SHA definition is used. *Figure 4.2.2* shows the pub-

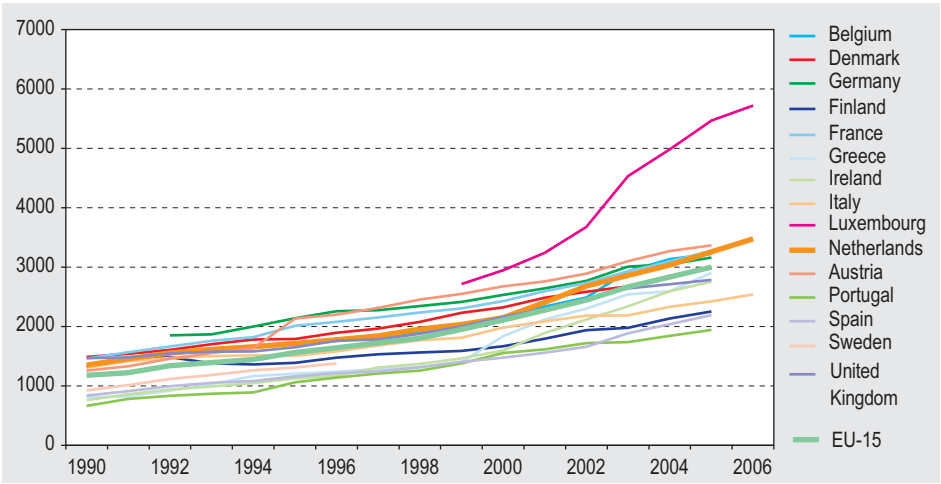


Figure 4.2.1: Health expenditure per capita according to the System of Health Accounts, US$ PPP [a], EU-15 countries, 1990-2006 (Source: OECD Health Data 2007).

[a] US$ Purchasing Power Parities (PPP) is an exchange rate that corrects for differences in purchasing power between countries.

lic health expenditure (according to SHA) per working person in the EU-15 countries. Public health expenditure per working person has fluctuated around the EU-15 average since the mid-1990s (see *Figure 4.2.2)*.

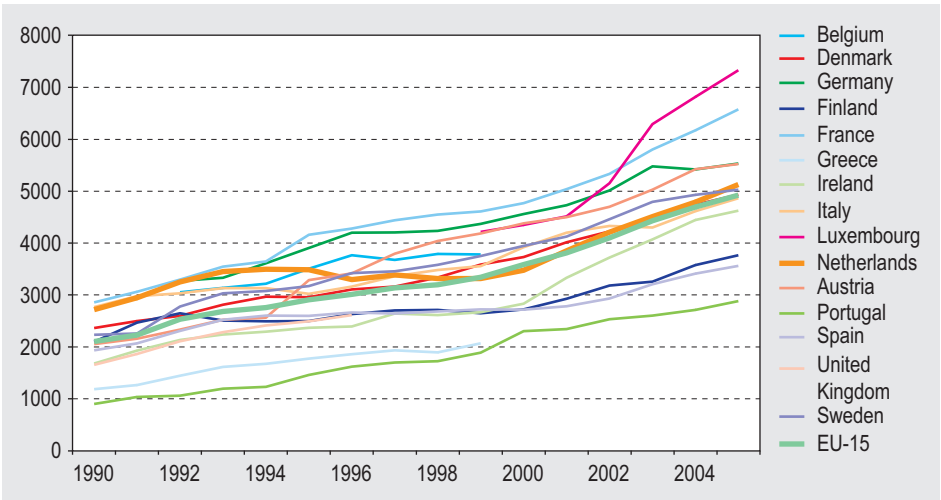


Figure 4.2.2: Public health expenditure per working person according to the System of Health Accounts, US$ PPP, EU-15 countries, 1990-2005 (Source: OECD Health Data 2007).

Hospital care and care for the elderly account for most of the health expenditure. Noteworthy are the increase in expenditure on GPs and the overfunding of hospitals in 2006

The classification into sectors has been modified since the last DHCPR in accordance with the new classification of the Dutch national budget. The amounts in *Table 4.2.3* are strongly influenced by the transfer of expenditure items: for example, part of the public health expenditure as well as part of the AWBZ administration costs were transferred from the BKZ to the Ministry of Health's budget in 2006. The hospital sector (about 30% of the BKZ) and the nursing and care sector (about 25% of the BKZ) are still the most extensive. A notable development was a considerable overfunding of hospitals (about € 1.8 billion in 2006), due to the introduction of the Diagnosis Treatment Combination (DBC) system (Rijksbegroting, 2007; CBS, 2007c). The DBC tariffs were set at too high a level, resulting in hospitals inadvertently declaring too much (CBS, 2007c). This amount will be paid back to the health insurers. Furthermore, in the freely negotiable part of hospital care (B segment) costs rose by about 12% in 2006 (De Boo and Kuenen, 2008) and a new funding system gave rise to an unexpected increase in expenditure on general practice care of about 17% (CBS, 2007c; Te Brake et al., 2007).

Table 4.2.3: Health expenditure per health care sector according to the Health Care Budgetary Framework (€ millions) and annual growth (%), 2004-2007 (Source: VWS, 2006b; Rijksbegroting, 2007; VWS, 2007b; VWS, 2008a).

	2004	2005	2006	2007	Annual growth
Public health	234	195	86	110	–17.2
Health care	23,020	23,555	25,841	26,444	3.5
Long-term care	21,566	22,647	22,476	22,455	1.0
Social support	159	160	162	166	1.1
Other [a]	–	–	–	2,000	–

[a] *'Other' includes the Social Support Act (Wmo) expenditure (from local authority funds) and unexpected expenditure; the amount has been rounded off at € 2 billion.*

In 2006, considerable changes were made to the funding structure of health care. The personal care budget was assigned an increasingly larger share of AWBZ funding

In 2006, considerable changes were made to the funding structure of health care. In 2006, the Health Insurance Act came into force, as a result of which the distinction between the former *ziekenfonds* (mutual health insurance fund) and private health insurance (for the basic insurance) ceased to be. The most striking change has been the increase in the proportion of co-payments in the total BKZ expenditure since 2005. This is partly due to the introduction of the no-claim discount. Changes in the care package supplied under the mandatory basic insurance can also influence the outcomes. In the health expenditure according to the Health Accounts the proportion of co-payments decreased in 2006. This is ascribed to a lower use of deductibles in health

insurance policies (CBS, 2007c). A recent change is the increase in health care funding via the personal care budget (PGB) (as part of AWBZ funding). In 2006, € 1.1 billion was spent on the PGB, to increase to about € 1.5 billion in 2007 (VWS, 2008b).

Table 4.2.4: Health expenditure according to the Health Care Budgetary Framework by funding source, € billion, and proportion of the total health expenditure (%), 2004-2007 (Source: VWS, 2005b; VWS, 2006b; VWS, 2007h; VWS, 2008a) [a].

	2004		2005		2006		2007	
	€	%	€	%	€	%	€	%
Health insurance	23.2	51.8	20.3	44.0	23.1	47.9	24.2	47.2
AWBZ	19.4	43.3	22	47.7	21.2	44.0	21.4	41.7
Co-payments	2.2	4.9	3.8	8.2	3.9	8.1	3.7	7.2
Other [b]	-	-	-	-	-	-	2.0	3.9

[a] *The annual sum of the expenditures does not completely correspond to the total actual expenditures in Table 4.2.1. The above amounts are based on annual reports. The total actual expenditures, as given in Table 4.2.1, have been adjusted in later years.*

[b] *'Other' includes the budgeted expenditure for the local authority fund (Social Support Act) and the training fund.*

Health expenditure, expressed as a percentage of gross domestic product, is around the EU-15 average; it is over 9%, according to the System of Health Accounts definition

Health expenditure expressed as a percentage of GDP is around the average level for the EU-15 countries (see *Figure 4.2.3*). According to the international SHA definition, health expenditure accounted for a good 9% of GDP in the Netherlands in 2004 and 2005. That is around the EU-15 average. In 2006 the percentage was 9.4%.

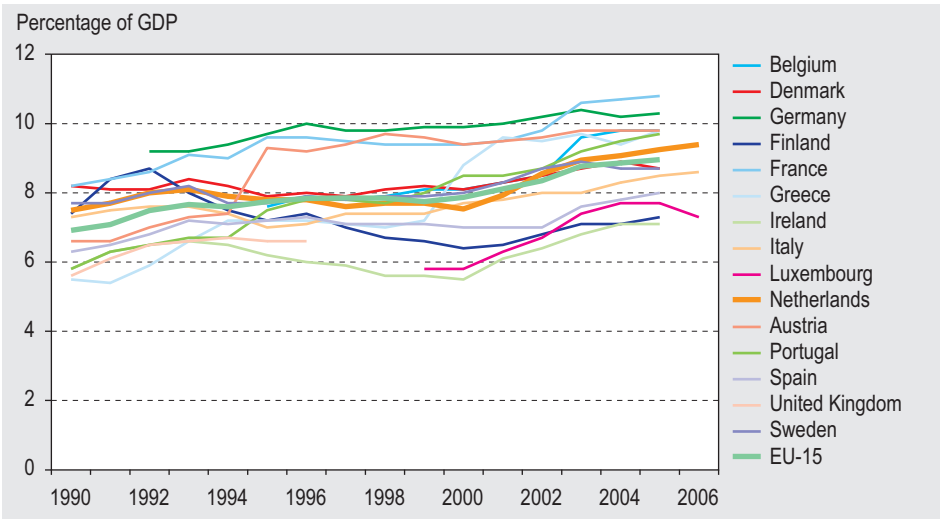


Figure 4.2.3: Health expenditure according to the System of Health Accounts as a percentage of gross domestic product, 1990-2006 (Source: OECD Health Data 2007).

According to the broader definition of the Health Accounts, the percentage of GDP is higher; between 13.4% and 13.6% of Dutch national income for the period 2004 to 2006. Since 2004, health expenditure as a proportion of GDP has scarcely increased. Between 2000 and 2003 this percentage showed a marked increase, partly due to the economic recession. After 2003, the economy started to recover and between 2004 and 2006 just about kept pace with the health expenditure (see *Table 4.2.5)*.

Table 4.2.5: Gross domestic product (GDP), health expenditure as a proportion of GDP and growth in health expenditure as a proportion of growth in GDP, 2004-2006 (%) (Source: CBS, 2007c; Rijksbegroting, 2007; OECD Health Data 2007).

	2004	2005	2006
GDP in € billion	491.2	509.0	534.3
Growth in GDP	3.0	3.6	5.0
Health expenditure as a proportion of GDP			
• Health Care Budgetary Framework	9.2	9.1	9.1
• Health Accounts	13.4	13.5	13.6
• System of Health Accounts	9.1	9.3	9.4
Growth in health expenditure as a proportion of growth in GDP			
• Health Care Budgetary Framework	9.1	8.4	8.7
• Health Accounts	-	16.3	14.6
• System of Health Accounts	12.6	12.9	11.0

According to the Health Accounts, there was a volume growth of 36% and a price increase of 31% between 1998 and 2006. The volume growth had slackened since 2001, but grew stronger again in 2006

Price and volume trends for health expenditure are calculated according to the Health Accounts. In the period 1998-2006, the volume growth in the entire health care sector was 36%. The price increase for the same period was about 31% (CBS, 2007c). Since 2001, the volume growth in health care has slackened somewhat. In 2006, the volume growth increased once again, due to among others the larger volume growth among GPs, paramedical practices and care for the elderly. The previously stated cost increases in the B-segment of hospital care were mainly caused by volume growth (about 10% of the total 12%) (De Boo and Kuenen, 2008). Price increases in 2006 were mainly due to increased labour costs for health care organizations. In addition to this, the tariffs for professional practitioners, in particular physiotherapists, increased (CBS, 2007c).

Conclusion

Compared to the previous DHCPR, the growth in health expenditure has continued. After the strong growth years 2001 to 2003, with annual growth percentages of up to a good 12%, the growth in expenditure in recent years has been less high. In 2006, the growth seems to have increased slightly again. From an international perspective,

the Netherlands has followed most other Western countries in the rate of growth, in general just above the EU-15 average.

The growth in expenditure is partly a consequence of the effects of the new funding system in hospital care and general practice care; these two sectors exhibited a striking growth in 2006. The care volume increased mainly in general practice care, care for the elderly and paramedical care. In addition to this, the growth in costs in the freely negotiable B segment was higher than average in 2006, mainly due to the high volume growth.

Health expenditure forms a significant part of the total public expenditure, about 20% (CPB, 2007c). According to CPB estimates, this proportion will increase by a further 2% between 2008 and 2011 (CPB, 2007c). The burden of public health expenditure on labour and labour costs lies around the EU average. In the coming years, the rise in health expenditure is not expected to lead to a rise in the total tax and premium burden due to a simultaneous decrease of other public expenditure (CPB, 2007c). However, due to the ageing population and a tighter labour market, the pressure of health expenditure on labour costs could increase further in the future. Furthermore, economic growth affects affordability: the favourable economic growth of recent years has ensured that health expenditure as a proportion of GDP scarcely rose between 2004 and 2006.

4.3 The financial position of health care organizations and health insurers

Key findings

- In 2006, the profitability of organizations in curative care and long-term care decreased on average by 0.4% and 1.4% respectively
- In 2006, the solvency of organizations in curative care and long-term care increased on average by 0.3% and 4.5% respectively, but for the majority of organizations this does not meet the 'market-consistent' solvency requirement
- In 2006, the reserve for acceptable costs rose on average by 0.4% in curative care and long-term care
- The solvency position of health insurers was twice the required level in 2006 and 2007
- In 2006, the health insurers booked a negative result for the mandatory basic insurance of about € 560 million

How we determine the financial position of health care organizations and health insurers

Financial indicators reflect the financial vulnerability of organizations. They provide insight regarding the extent to which organizations and insurers have difficulties fund-

ing care. A stable financial resilience is necessary to ensure continuity of care, certainly in periods when the financial risks borne by organizations are increasing. In contrast to the previous DHCPR, the financial position of health insurers is now included. Consequently, fewer indicators have been included for the financial position of health care organizations. The profitability, solvency and reserve for acceptable costs (RAK) have been retained, as these provide the most useful insight into the financial resilience of health care organizations, in both the short and long term. For health insurers the financial result and the financial position (solvency) have been investigated.

Indicators
Health care suppliers
- Profitability
- Solvency
- Reserve for acceptable costs

Health insurers
- Result
- Solvency

Information about the financial position of organizations is collected using a dataset from Netherlands Health Care Authority (NZa) (NZa, 2007h) and annual reports of health care institutions (CIBG, 2007). Not all institutions could be included; the dataset covers 94% of hospitals and more than 70% of long-term care facilities (nursing and residential care, home care, mental health care and care for the disabled) (NZa, 2007g). Due to the rising number of large organizations within long-term care that overlap different sectors, it is difficult to classify organizations as nursing, residential care, home care, et cetera. Consequently, unlike in the last DHCPR, this classification is no longer used but instead all organizations are included in the category long-term care.

The current state of affairs

In 2006, the profitability of organizations in curative care and long-term care decreased on average by 0.4% and 1.4% respectively
The profitability is indicative of the rate of return of organizations. At the organizational level, this indicator is defined as the ratio of profits to turnover. The profitability of a sector is the average profitability per organization, weighted against turnover.

In 2006, the profitability decreased by an average of 0.4% in curative care and 1.4% in long-term care. For 62% of the organizations in curative care, and 63% of the organizations in long-term care, the profitability in 2006 was lower than that in 2005 (see *Table 4.3.1*). Furthermore, in 2006, 20% of the organizations in curative care had a negative operating result, which is 10% more than in the previous year. There is considerable variation in profitability between organizations (WfZ, 2007).

Table 4.3.1: Profitability of health care organizations, 2005 and 2006 (%) (Source: NZa, 2007h; CIBG, 2007; data processed by RIVM).

	2005	2006
Hospitals	1.3	0.9
Curative care [a]	1.3	0.9
Long-term care [b]	2.5	1.1

[a] *Curative care = hospitals, epilepsy centre, dialysis centres, radiotherapeutic centres, rehabilitation centres.*
[b] *Long-term care = nursing and care, mental health care and care for the disabled.*

Price Waterhouse Coopers (PWC) recently investigated the 100 largest health care organizations in the Netherlands. Also within this group, 20% of the organizations operated with a loss in 2006, compared to 10% in 2005 (PWC, 2007). Gupta (Gupta, 2007) and Roland Berger (Roland Berger, 2007) came up with similar results for the hospital sector, based on the annual reports of hospitals.

In 2006, the solvency of organizations in curative care and long-term care increased on average by 0.3% and 0.5% respectively, but for the majority of organizations this does not meet the 'market-consistent' solvency requirement

The solvency is indicative of the ability of organizations to meet their financial obligations in the long term. At an organization level, this indicator is defined as the ratio of equity capital to turnover. The solvency of a sector is the average solvency for all of the organizations weighted against turnover.

Table 4.3.2: Solvency of health care organizations, 2005 and 2006 (%) (Source: NZa, 2007h; CIBG, 2007; data processed by RIVM).

	2005	2006
Hospitals	9.7	10.0
Curative care [a]	9.9	10.2
Long-term care [b]	12.7	13.2

[a] *Curative care = hospitals, epilepsy centres and dialysis centres, radiotherapeutic centres and rehabilitation centres.*
[b] *Long-term care = nursing and care, mental health care and care for the disabled.*

Table 4.3.2 reveals that the solvency of organizations increased slightly in 2006. However, as *Figure 4.3.1* shows, there are considerable differences in solvency between health care organizations. In the past, the WfZ adopted a solvency requirement of 8%. In the present and future situation the requirement will rise towards the (market-consistent) level of 25%, due to the increase in financial risks borne by the organizations (WfZ, 2007). The majority of health care organizations are currently under this level. This is equally true for the average of the different sectors (see *Table 4.3.2*).

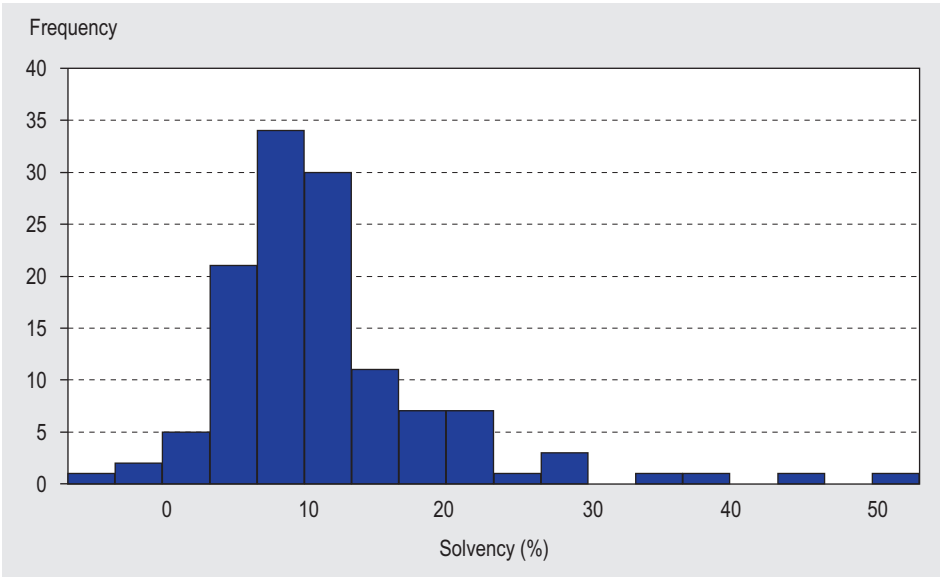


Figure 4.3.1: Distribution in solvency for organizations in curative care, in 2006 (Source: NZa, 2007h; CIBG, 2007; data processed by RIVM).

In 2006, the reserve for acceptable costs rose on average by 0.4% for curative care and long-term care

Health care organizations can lay down financial reserves, for example, with an eye to future expenditure or unforeseen circumstances. In the past, the government bore the financial risk for organizations, and the maximum size of the reserve for acceptable costs (RAK) was limited. At the organization level, the RAK is defined as the ratio of the collectively financed tied-up capital to the Health Care Tariffs Act budget. The RAK of a sector is the average RAK per organization weighted against the Health Care Tariffs Act budget.

Table 4.3.3 shows that the RAK has risen by an average of 0.4% for both curative and long-term care. About 71% of the long-term care organizations had an increasing RAK compared to 2005.

Table 4.3.3: Reserve for acceptable costs, 2005 and 2006 (%) (Source: NZa, 2007h; data processed by RIVM).

	2005	2006
Hospitals	8.6	9.0
Curative care [a]	8.7	9.1
Long-term care [b]	11.4	11.8

[a] *Curative care = hospitals, epilepsy centres and dialysis centres, radiotherapeutic centres and rehabilitation centres.*
[b] *Long-term care = nursing and care, mental health care and care for the disabled.*

The solvency position of health insurers was twice the required level in 2006 and 2007

The results of health insurers presented here have not been finalized, because of the uncertainties concerning current and future payments of DBCs and the risk equalization (that has not been finalized either). Additionally, the figures are difficult to compare with previous years, due to the considerable changes that have taken place in the funding structure and the structure of the health insurers.

The solvency of health insurers was tested by the DNB against the required solvency margin. Since 2006, this required solvency margin has been calculated per insurer in a prospective manner. Before 2006, the required margin was determined retrospectively based on the average costs in the previous three years. Due to the changes within health insurers since 2006, this was no longer possible. The required solvency should be about 8% of the total costs. *Figure 4.3.2* shows that the current solvency is still more than twice the required level. The margin, however, is decreasing.

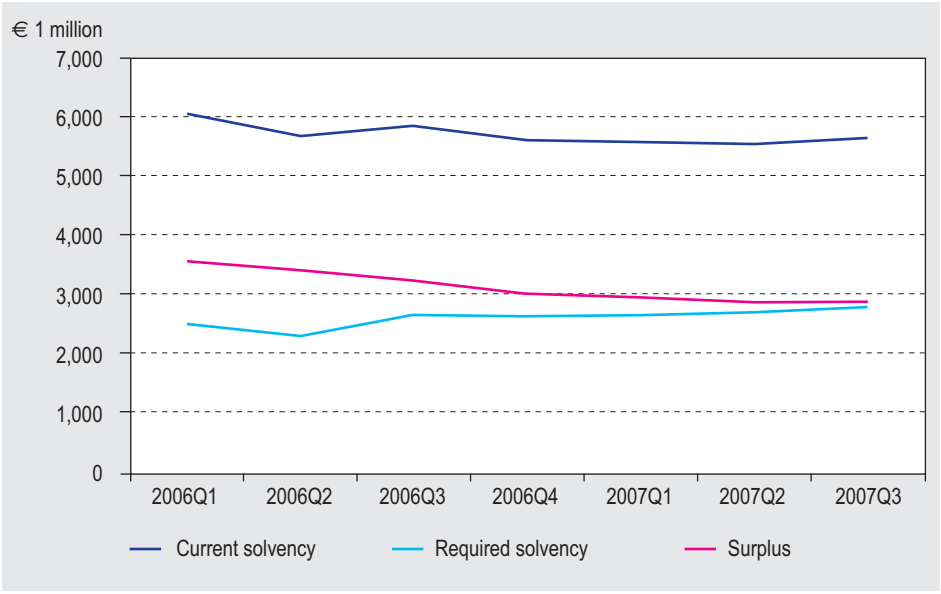


Figure 4.3.2: Current and required solvency of health insurers, € million, per quarter (Q1-Q4), 2006-2007 (Source: DNB, 2007b).

In 2006, the health insurers booked a negative result for the mandatory basic insurance of about € 560 million

Table 4.3.4 shows the trend in the (financial) result of the total health insurance sector over 2006 and the first three quarters of 2007.

Table 4.3.4: Accumulated result technical account of mandatory insurance and supplementary insurance and pre-tax total result, € million, 2006-2007 (Source: DNB, 2007b).

	2006 Q1	2006 Q2	2006 Q3	2006 Q4	2007 Q1	2007 Q2	2007 Q3
Mandatory insurance	-64.5	-242.1	-254.8	-563.1	-130.9	-271.1	-297.7
Supplementary insurance	-0.08	-25.2	75.7	-23.6	49.7	-32.8	29.2
Total pre-tax	79.7	83.3	214.0	-187.0	-58.0	-47.3	140.9

Table 4.3.4 shows that the health insurance sector is incurring a loss on the mandatory insurance. This loss amounted to more than € 560 million at the end of 2006. The result for the supplementary insurance is also negative, albeit less than that of the mandatory insurance. The total result includes not just the mandatory and supplementary insurance but also other returns and losses, such as returns on investments. The total result for 2006 was also negative. At the end of 2006, health insurers took extra measures for an expected loss in 2007. This almost certainly explains the considerable dip at the end of 2006 (DNB, 2007a). In 2007, the results for the mandatory insurance were also negative.

Conclusion

The financial position of health care organizations improved little between 2004 and 2006. From the profit and loss accounts it can be concluded that the profitability of health care organizations decreased on average. A small two-thirds of the health care organizations experienced a profitability decrease in 2006. This could be indicative of a strong competition between health care suppliers.

The solvency positions of organizations have scarcely increased and this is, in part, attributable to the small margins. The financial position is generally well under the 'market-consistent' solvency requirement. This can make it harder for organizations to bear more risk and to acquire loans in the private market (with banks, for example) if desired.

On balance, the health insurers suffered a loss on the mandatory insurance and on the supplementary insurance as well. However, in general the health insurers have an equity capital that is higher than required (yet the margin is decreasing). Recently, however, the DNB reported that there are continuing uncertainties about the financial position of health insurers and that it is difficult for them to draw conclusions about this issue (DNB, 2008). This is due to administrative uncertainties, shortcomings in the risk equalization and considerable uncertainty due to policy changes (for example, the possible expansion of the mandatory insurance package to include mental health care, the replacement of the no-claim by deductibles and the possible introduction of yardstick competition) (DNB, 2008).

By setting 'more competitive' premiums, the increased competition in the health insurance market has put pressure on the profits of the health insurers. In the short term, this will not endanger the affordability of health care as health insurers have a strong capital position. However, in the long term insurers cannot continue to incur losses (in a free market). Attention will need to be paid to the efficiency of care purchase and in addition to this premiums or the proportion of co-payments might also increase further.

4.4 Labour productivity in health care

Key findings
- Leaving the quality of care to one side, the labour productivity in hospitals has been increasing since 2001
- Leaving the quality of care to one side, the labour productivity in care for the elderly rose on average by 1.4% each year between 2000 and 2005
- Improvements in the quality of care increase the actual labour productivity

How we determine labour productivity in health care

Labour productivity is defined as the output per unit of labour (input). Improving health is an important objective of health care and ideally, the output of health care should also be measured in terms of health. As it is difficult to measure the exact health gain from a unit of labour (Westert and Verkleij, 2006), output in health care is often calculated in terms of number of treatments, number of patients treated or hours of care supplied. In this DHCPR we will also assess labour productivity using these particular output measures. On the basis of data from CBS and Prismant, amongst others, the labour productivity will be calculated with the number of patients, admissions or hours of care as the output. A distinction will be made here between hospital care and care for the elderly.

To measure the actual labour productivity, it is important to assess the added value of care (Atkinson, 2005; Bloor, 2006). In the United Kingdom, for example, the quality of care and health care outcomes are included in calculations of output measures (Atkinson, 2005). Following on from this, an initial effort has been made to determine the value of the quality of care for care for the elderly and to include this in the labour productivity.

Indicators
- Labour productivity in hospitals
- Labour productivity in care for the elderly
- Quality and labour productivity in residential homes

The current state of affairs

Leaving the quality of care to one side, the labour productivity in hospitals has been increasing since 2001

The output of hospitals is measured in various ways (see for example, Vandermeulen, 2005). Several years ago, Eurostat proposed using complete treatments as the output measure, i.e. the treatment of a disease from the beginning to the end (Eurostat, 2001). However, this definition is difficult to use in practice (Van Hilten et al., 2005). Results of alternative measures are given in *Figure 4.4.1*. Here output is measured in terms of number of patients, admissions and discharges and treatments, whereas the input is calculated on the basis of full-time equivalents (fte) and a weighted fte (weighting of different professional categories according to salary). From *Figure 4.4.1* it can be concluded that there has been a rise in labour productivity in hospitals between 1998 and 2005, which clearly started in 2001. A similar trend is found for the different definitions. In all cases the trend has been rising since 2001.

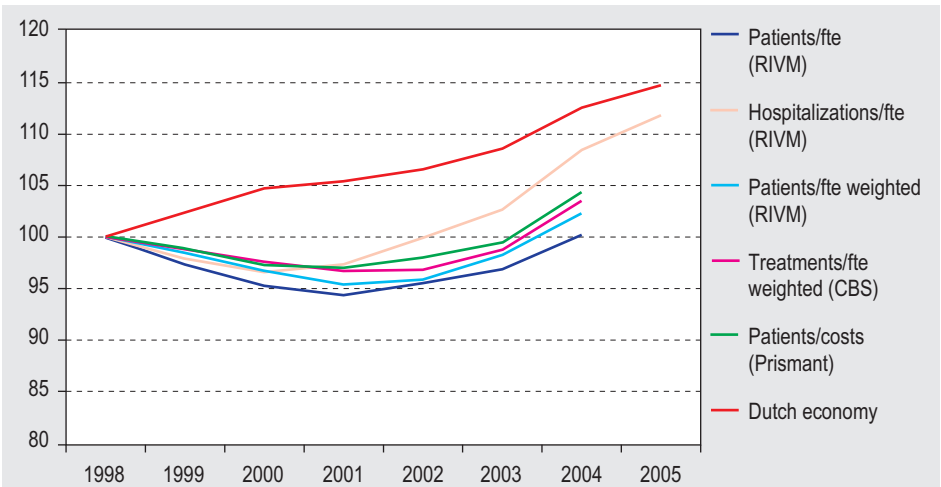


Figure 4.4.1: Labour productivity of hospitals and the Dutch economy, 1998-2005 (1998=100) (Source: CBS, 2006a; RIVM, 2008).

Leaving the quality of care to one side, the labour productivity in care for the elderly rose on average by 1.4% each year between 2000 and 2005

The labour productivity in care for the elderly (nursing, residential, home care) rose by an average of 1.4% per year between 2000 and 2005. Between 2001 and 2003 the labour productivity stabilized and then rose again in 2004 and 2005. For intramural care for the elderly, nursing and care days are counted as output and for extramural care for the elderly the output measure is the number of hours of care. The quantity of intramural and extramural care are weighted (weighting on the basis of tariffs) and added together (CBS, 2007c).

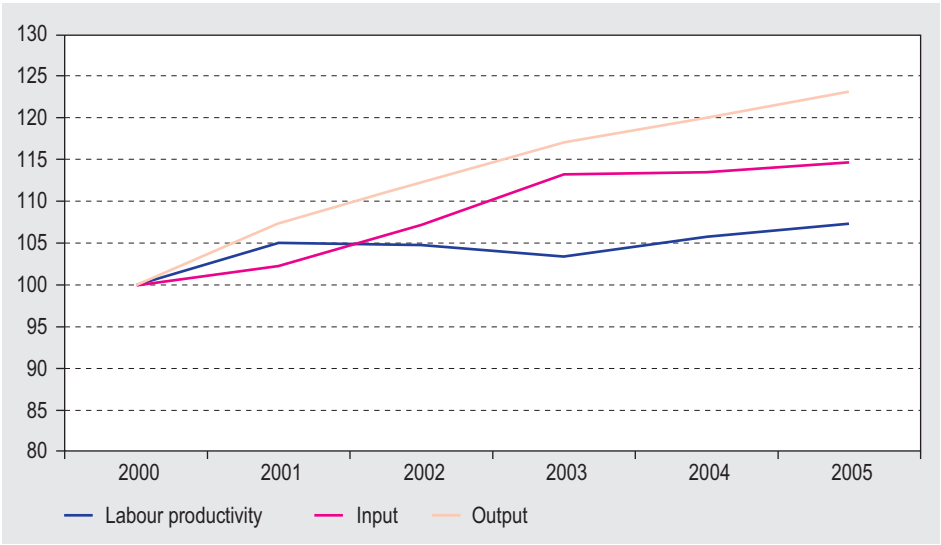


Figure 4.4.2: Labour productivity of care for the elderly, 2000-2005 (2000=100) (Source: CBS, 2007c; CBS Statline, 2007h; data processed by RIVM).

There has been a marked increase in the care supplied per patient in recent years. This effect was particularly strong in extramural care. The increase in volume of extramural care is partly correlated with a decrease in the quantity of care in residential homes. At the same time, the input (number fte) in residential homes increased by about 15% between 2000 and 2003. This contributed to the stabilization of the labour productivity in these years.

Improvements in the quality of care increase the actual labour productivity

Ideally, the measurement of labour productivity in health care should include the added value (health gain) per unit of labour measured. This added value is not only made up of the number of care days or hours of care supplied, but also by the (value of the) quality of care supplied.

RIVM carried out a pilot study into the value of care and the influence of this on labour productivity. In this study, the value of various quality aspects could be ascertained by allowing respondents to trade off different aspects of care. From the quality criteria autonomy, number of people per room, waiting time, number of people per residential home and percentage of patients with pressure sores, respondents were found to attach the highest value to waiting time and the number of people per room (criteria chosen on the basis of kiesBeter.nl, 2007 and Wiegers et al., 2007). These quality criteria therefore provide the most added value. If we include only the aforementioned quality criteria then the labour productivity increases by 0.5%.

Conclusion

Based on the number of patients or admissions, the labour productivity in hospital care has risen since 2001. In care for the elderly the labour productivity, measured on the basis of days and hours of care, has risen by 1.4% per year between 2000 and 2005. These measures of labour productivity can be influenced in various ways. For example, policy developments such as budget increases and waiting lists reduction, have temporarily increased the output. In addition to this, personnel policy and general developments on the labour market are important. The strongest rise in personnel numbers in hospital care and care for the elderly took place between 2001 and 2003. After this the growth in personnel decreased strongly. This could indicate that during recession the health care sector is able to realize a larger growth in personnel than in times of economic growth. The slack in personnel growth could be influenced by an increasing shortage on the labour market.

The observed rise in labour productivity can have favourable effects on the affordability of care. However, a rise in labour productivity is not the only factor affecting affordability of care. How the costs and productivity of other production factors (for example, capital) develop, is also important. For example, innovations are often seen as the driving force behind the growth in labour productivity on the one hand and as the most important determinant of rises in both care demand and health expenditure on the other (Newhouse, 1992). It is therefore not immediately obvious whether affordability is positively or negatively influenced by an increase in labour productivity. Of key importance is the growth in *total* productivity.

Also in the light of the current and expected shortages on the labour market (see *Section 3.8*), an increase in the labour productivity can be important. Personnel problems are likely to occur in long-term care in particular. In this section it has become clear that considerable progress has been made in the hours of care provided per patient. As a result of this, labour productivity increased by an average of 1.4% per year. Furthermore, an improvement in the quality of care ensures further growth in labour productivity. Whether this will contribute to solving the labour market problems remains to be seen. After all, this is not the direct solution for the rising *number* of people that need long-term care. Consequently it will be difficult to treat more people per working person without incurring a loss in the quality of the care provided, particularly in long-term care (RVZ, 2006b).

5 CONNECTING THEMES

5.1 Introduction

This second DHCPR presents three connecting themes for the first time, with the aim of relating, from a certain perspective, the findings about quality, accessibility and costs. The first theme is about the opinion and experiences of the general public, patients and care users with respect to Dutch health care. In the previous DHCPR this important theme was announced with a quotation by Schoen et al., (2005): *patient voices can provide policy leaders with a window onto what is happening at the front lines of care*. Since the first DHCPR far more data has become available from the general public, patients and care users about health care, although the ideal situation has yet to be reached. Trend data are still scarce. However, based on available surveys a reasonably satisfactory impression can be gained about how well various aspects of health care score in the eyes of the public. Generally, people who use care are slightly more positive in their judgements than the general public.

The second theme is health care efficiency and addresses the question whether an optimal output is realized from the resources invested. Accordingly, this theme attempts to link the public objectives of 'costs' and 'quality'. Are the Dutch *getting value for money?* This theme reveals that efficiency gains can still be made in various parts of the health care system.

The third theme considers recent health care system reforms. In principle, this DHCPR can measure the initial effects of the reforms of the health care insurance system implemented on 1 January 2006, since the first DHCPR described the situation in 2004 and this second report (2008) describes the situation in 2006/2007. Therefore this DHCPR can provide answers about what effects these reforms have had to date on the quality, accessibility and costs of the *entire* health care system, seen from a macro-perspective. Clear effects of the reforms are visible in parts of the health care system, but the effects on the *total* health care system are either still not visible or only partly so. The reforms were introduced only recently and are part of a previously initiated (and not yet completed) series of measures aimed at introducing more market forces into the health care system. Therefore clear cause and effect conclusions cannot always be drawn.

5.2 Health care ratings of the general public and care users

Key findings

General public

- As previously in 2002, the general public were critical about the health care system in 2007, but positive about the actual care provided
- In comparison to 2004, the confidence of the general public in health care organizations has decreased slightly; people have more confidence in curative care than in long-term care (including mental health care)
- The general public have much confidence in health care professionals, but less in specific aspects such as patient-centredness and communication; confidence in cooperation within health care is low, but has increased since 2004

Patients and clients (care users)

- Patients and clients experience health care to be accessible: costs, distance or waiting times rarely are a major problem
- A lack of personnel in hospitals was not experienced as a problem by care users, but in nursing homes and residential homes this was, however, the case
- According to patients, the GP is particularly good at coordinating within primary care, but less good in relation to the specialist and the hospital
- According to patients, there is little coordination of medicine use in the Netherlands compared to six other countries
- Most health care users are positive about how health care professionals behave towards them; this applies to both curative care and long-term care

Introduction

Health care is ultimately about the people who utilize health care: the patients or clients. They are the people who personally experience the quality and accessibility of health care. Since everyone is a patient occasionally, or can potentially become one, most people have an opinion about what constitutes good care.

In recent years, attention for the user's perspective has increased. This is reflected, for example, in the development of a patient policy aimed at strengthening the position of the patient. This policy has resulted in a number of laws that have formalized the patient's position, such as the Participation of Clients in Care Institutions Act (Wet medezeggenschap cliënten zorginstellingen, Wmcz), the Medical Treatment Act (Wet op de geneeskundige behandelingsovereenkomst, WGBO), the Quality of Care Institutions Act (Kwaliteitswet zorginstellingen) and the Complaints Act (Klachtwet) (Stüssgen, 1997). An increasing amount of research is also being carried out into the wishes, satisfaction and experiences of care users. In 2006, the Centre for Consumer Experiences in Care (Centrum Klantenervaring Zorg, CKZ) was founded with the mission of systematically investigating customer experiences with health care.

Broadly speaking, research into the user's perspective can be split into two categories. Firstly, there are studies in which the *general public* are asked to express their opinion about health care. The outcomes of these studies do not necessarily say much about the respondents' own experiences, but mainly something about the image or confidence that people have as *potential* care users. Such an image can arise from personal experiences but also from the stories of others and/or reports in the media. Secondly, there are studies in which actual *health care users* (or their next of kin) are asked about their experiences with the care provided.

Data from studies into patient experiences can be used in many different ways. For example, when choosing a health care provider or health insurer, care users can take the experiences of other people into account. Of course this is only possible if the data are made public. Furthermore, health care organizations and their active user committees can utilize data about patient experiences and opinions as management information to ensure that the service provided better meets user demands. Health insurers can use figures about patient experiences as a basis for the health care they purchase and the Health Care Inspectorate (IGZ) can use such figures for inspection purposes. Finally, information about patient experiences as well as the opinion of the general public is important for the development of government policy. In this case it mainly concerns information at a more general, macro-level.

In the DHCPR we mainly examine, from an eagle-eyed perspective, information about the user's perspective. The key questions are: How do the Dutch public view the health care system? How do patients and clients *experience* and *evaluate* the health care system? And finally: What are the differences between different health care sectors or different types of care? Wherever possible, data from other countries are used to help put Dutch health care into perspective. We also examine whether significant developments can be observed over the course of time.

Health care ratings of the general public

As previously in 2002, the general public were critical about the health care system in 2007, but positive about the actual care provided

An international survey by the Commonwealth Fund (CMWF) revealed that in 2007 more than four in ten Dutch people believed that the health care system functioned well. Although this score might not seem particularly high, other countries that participated in this survey did not score higher than 26% (see *Figure 5.2.1*). In 2002, the same question was also posed to inhabitants of 15 EU countries. The results for the Netherlands were comparable (45% were positive) to those in 2007, but the Netherlands fared worse compared to some other countries: more than 60% of the inhabitants of France, Finland, Belgium, Austria and Luxembourg were positive about their own health care system (OECD, 2005b).

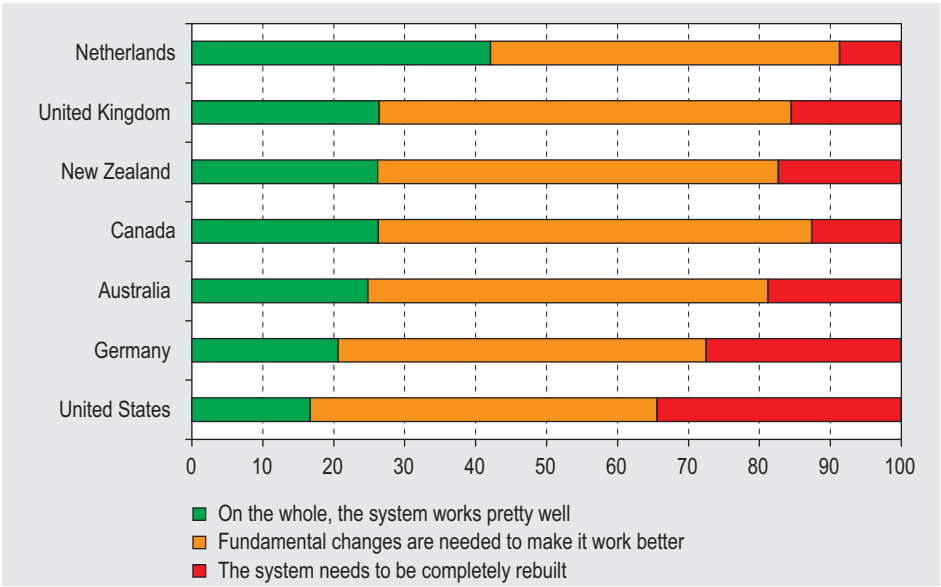


Figure 5.2.1: Overall view of the general public on the health care system, in 2007 (%) (Source: Grol and Faber, 2007; Schoen et al., 2007).

Although people are critical about 'health care' as a system, they have more confidence in the actual care provided. This is evident from answers to the question: "*how much confidence do you have in receiving excellent and safe medical care should you become seriously ill?*" posed in the same CMWF survey. In 2007, six out of ten people answered this question with 'much confidence', a much higher percentage than in the other countries. Moreover, we saw in *Section 2.3* that the Dutch frequently expect to obtain the best medicines and that the best technology will be used.

The figures above reveal interesting differences between countries, but are also very general in nature. They are often based on a single question that covers a variety of aspects. The competence of the health care professionals, as well as the organization of care facilities and the confidence in politicians and policy (in the area of health care) play a role in this. If more specific questions are posed about the various subareas, the existence of large differences between these becomes apparent.

In comparison to 2004, the confidence of the general public in health care organizations has decreased slightly; people have more confidence in curative care than in long-term care (including mental health care)

Figure 5.2.2 reveals large differences in consumer confidence between different types of care. Seven out of ten people have confidence in hospitals, but for home care this figure is 44% and it is considerably lower still for other types of care. Interestingly, the confidence in all types of care has decreased since 2004, especially confidence in residential homes and nursing homes (Van der Maat et al., 2008).

Figures from SCP draw a similar picture (see *Figure 5.2.3*). Medical care (GPs, medical specialists and hospitals) was assessed positively in 2006, but the opinions on long-term care and mental health care were markedly less positive (SCP, 2007).

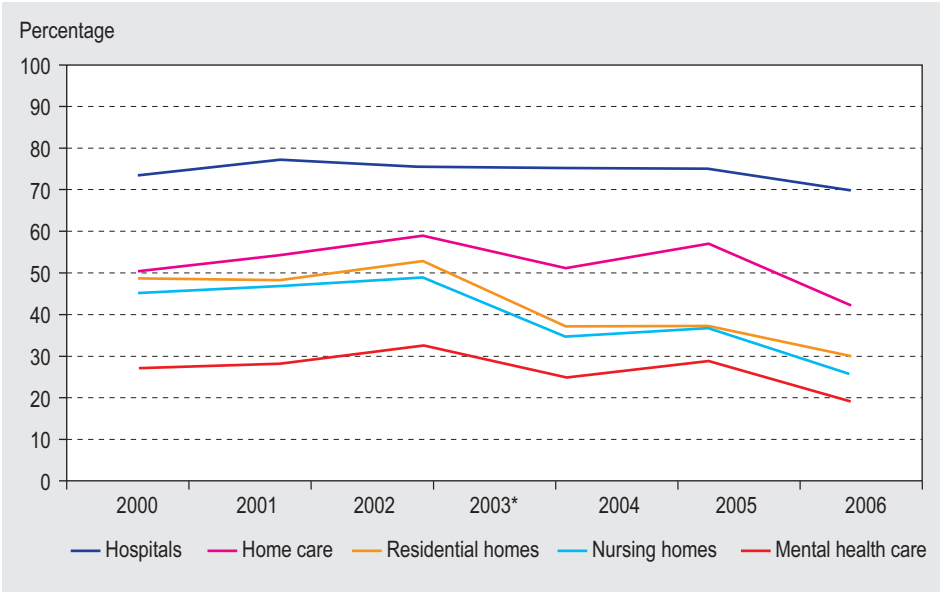


Figure 5.2.2: Confidence of the general public in various types of care, 2000-2006 (Source: Van der Maat et al., 2008).

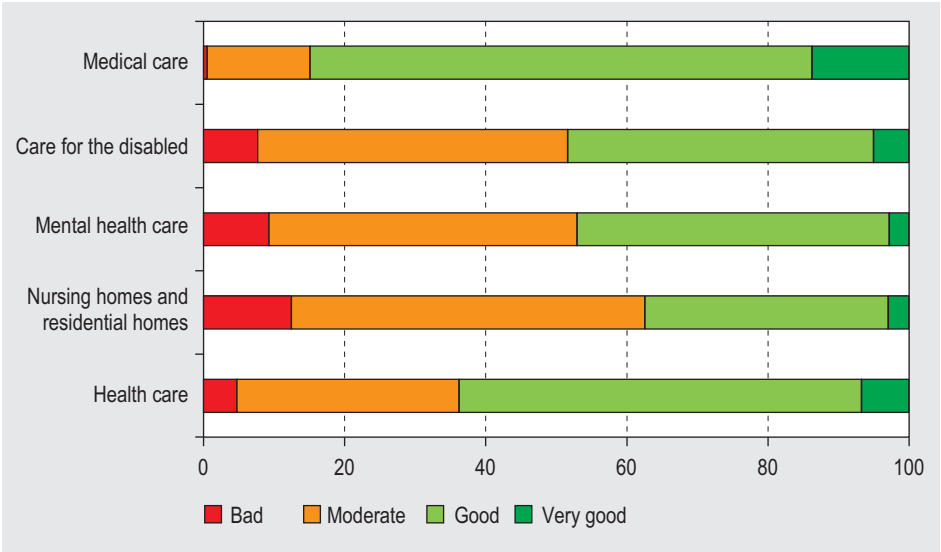


Figure 5.2.3: Opinion of the general public about various health care sectors, in 2006 (%) (Source: SCP, 2007).

The general public have much confidence in health care professionals, but less in specific aspects such as patient-centredness and communication; confidence in cooperation within health care is low, but has increased since 2004

The public's confidence in individual care professionals is far greater than in the types of care or the health care system. The GP, specialist and pharmacist enjoy the most confidence (90% or more). Confidence in nurses and physiotherapists is slightly less, but is nevertheless some 82% (see *Figure 5.2.4*).

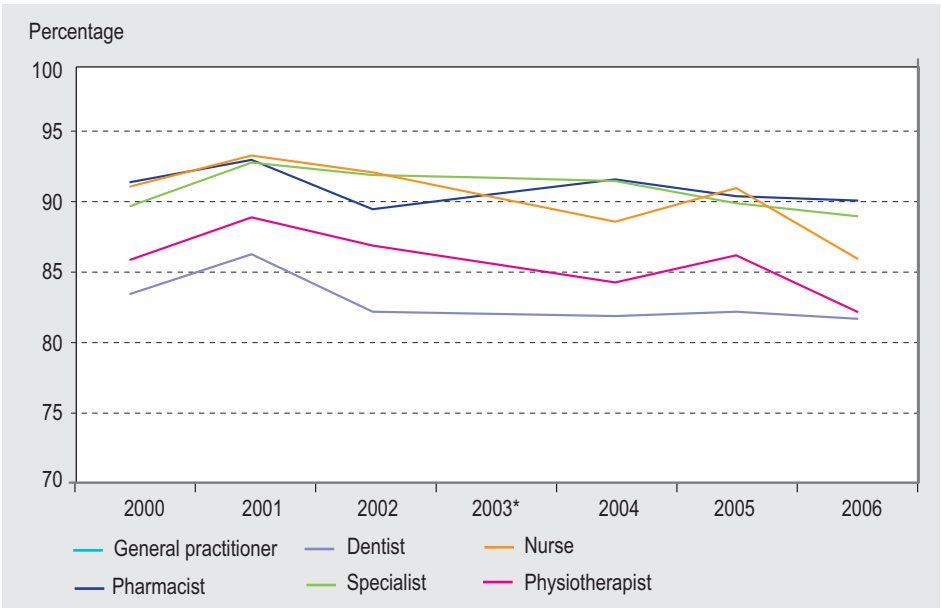


Figure 5.2.4: Confidence of the general public in various health care professionals, 2000-2006 (Source: Van der Maat et al., 2008).

Surveys among the Health Care Consumer Panel also revealed several differences (see *Figure 5.2.5*). A majority of the public have confidence in patient-centredness and professionalism of care providers, as well as communication and information. Confidence in the cooperation between health care professionals is, however, limited, although this has increased considerably since 2004. Compared to the clear trust in health care professionals (see *Figure 5.2.3*), the far smaller confidence in the aspects of health care mentioned is striking.

The confidence in politicians and policy in relation to health care is strikingly limited: 11%. This very low confidence in politicians and policy is consistent and has not been affected or improved by either the health care system reforms or the change of cabinets (Van der Maat et al., 2008).

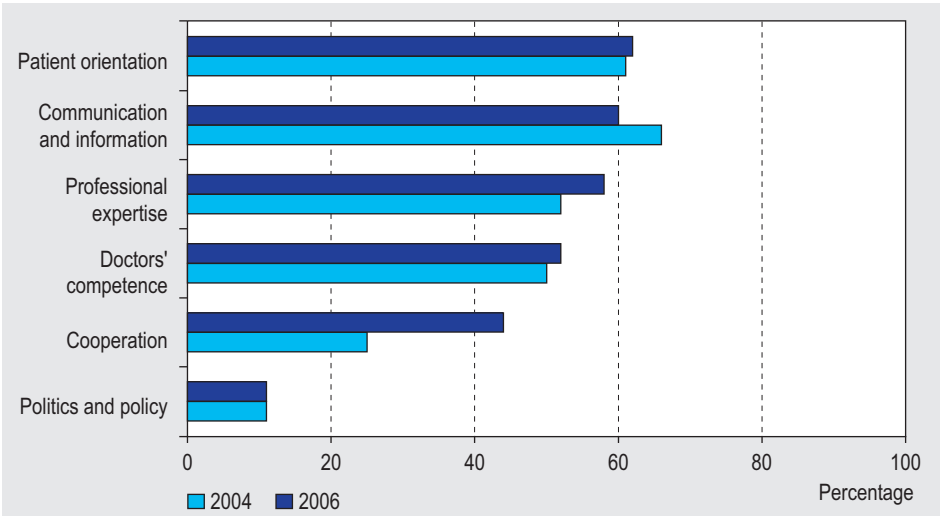


Figure 5.2.5: Confidence of the general public in various aspects of care, in 2004 and 2006 (Source: Van der Maat et al., 2008).

Most people are positive about health insurers. On average they gave their own health insurer a score of 7.9 out of 10. Nine of the ten policyholders gave a score of 7 or higher and 26% gave a score as high as 9 or 10 (De Boer et al., 2007).

The Dutch general public are, therefore, predominantly positive about health care. Confidence appears to be decreasing, however, and there are considerable differences between various elements of health care. The picture of curative care is far more positive than that of long-term care.

Health care ratings of care users

In this section we will first consider the general opinions of care users on health care and the various aspects of this. We will then consider several themes in more detail: accessibility of care, coordination of care and interpersonal conduct. This choice of themes was primarily based on the value that care users attach to these, but also the indispensability of care users as a source of information for these particular aspects. After all, the patient is the main objective of care provision and is the person who actually experiences (a lack of) interpersonal conduct or coordination. For the evaluation of these aspects, patients are ultimately the most important source of information. The same also applies to experiences of the affordability, accessibility and timeliness of care provided.

Dutch health care is more patient-centred than the health care provided in most European countries

Based on the World Health Survey 2002 by the WHO, a score was calculated for 15 European countries that expresses the '*responsiveness'* of the health care in that country (Kok, 2008). The term 'responsiveness' can be freely interpreted as patient-centredness and can be subdivided into: prompt attention (limited travelling time and waiting time); dignity (respectful interpersonal conduct); communication (clear explanation and time to pose questions); autonomy (information about treatment and involvement in taking medical decisions); confidentiality (private consultations and confidentiality of files); freedom to choose health care provider; good basic amenities (sufficient and clean accommodation); access to social support (with visits and external contact). The final score of a country is a weighted average of the scores for these separate dimensions. An aspect carries greater weight if more importance is attached to it. Although the responsiveness data originate from 2002, these are nonetheless presented here due to the considerable relevance of the information and the possibility for international comparison.

Figure 5.2.6 shows the results from 15 European countries. The score ranges from 0 to 1, and a high score indicates a high level of patient-centredness. In the list of countries, ordered according to their *responsiveness*, the Netherlands occupies sixth position. Sweden, France and Finland have the highest scores. If we examine the separate dimensions for the Netherlands, it is clear that patients are least positive about the travelling and waiting times (0.57) and that accommodation in extramural care scores particularly high (0.84). The scores for the other individual dimensions are 0.05 higher or lower than the total score.

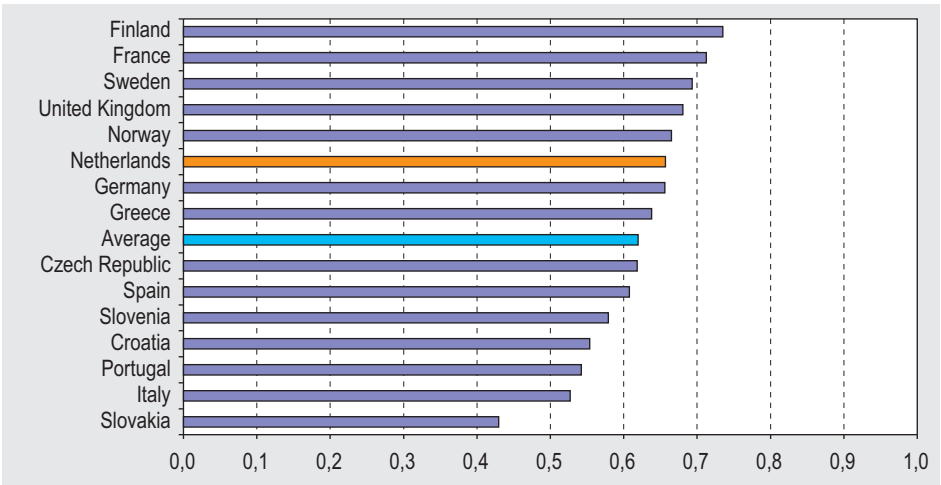


Figure 5.2.6: Responsiveness score, per country (scale 0-1), in 2002 (Source: Kok, 2008).

For various health care organizations, health care professionals and care pathways, research has been done into patient experiences using so-called CQ indexes (http://www.centrumklantervaringzorg.nl). Since people are asked about experiences in a standardized manner when using these indexes, various types of care, professionals and care pathways can be compared with each other. In each CQ questionnaire an appreciation figure is asked for, ranging from scale of 0 (worst conceivable) to 10 (best conceivable).

A series of these appreciation figures is shown in *Figure 5.2.7*. This figure reveals that again health care professionals score, on average, slightly higher than health care organizations. For both health care professionals and health care organizations, home care personnel score the highest: 8.36, and personnel in nursing homes the lowest: 7.44. For the condition-specific 'care pathways' we can see that the care related to cataract surgery score the highest: 8.80 and that for rheumatism care the lowest: 7.86. Appreciation figures generated at this general level reveal only small differences between professionals or care pathways: unsatisfactory marks are rare and the differences between health care suppliers or specialist care providers are at most one point. The differences found in appreciation figures are also correlated with differences in age between the various patient groups: older people generally give higher marks. However, in general this age effect is small. If, for comparability purposes, a correction for age were to be applied, then the appreciation figures for care related to cataract operations and hip/knee operations for instance would have had to be adjusted slightly downwards and the figure for breast cancer care slightly upwards.

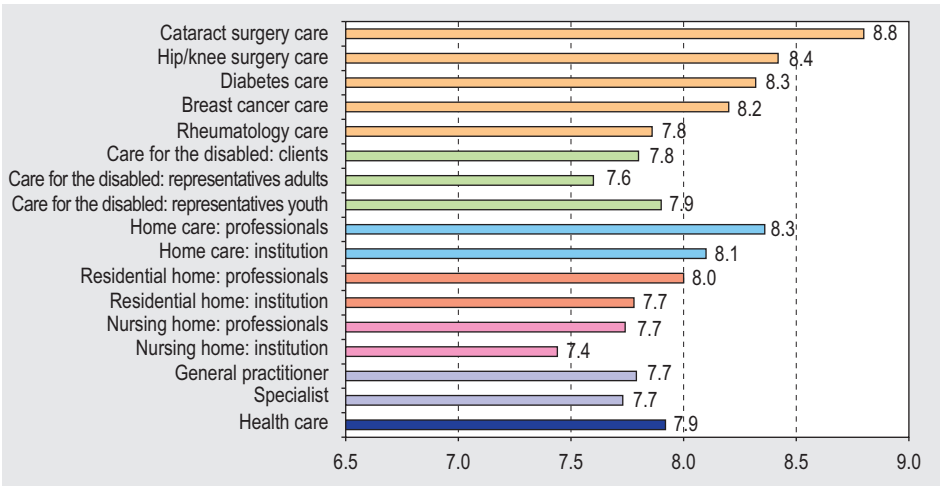


Figure 5.2.7: Care user ratings of condition-specific care, health care organizations, health care providers and health care in general (scale 1-10), 2005-2007 (Source: Brouwer et al., 2007; De Boer et al., 2007a; Damman et al., 2007; Gelsema et al., 2006; PWC, 2007; Rupp et al., 2007; Wiegers et al., 2007; Zuidgeest et al., 2007).

Accessibility of care

Patients and clients experience health care to be accessible: costs, distance or waiting times rarely are a major problem

Accessible care implies that '*for people who need care, access to it is timely and without major barriers'* (Smits et al., 2002). There are a number of aspects that keep recurring in the scientific literature, which together determine accessibility. This most often occurs in the form of barriers that hinder the use of care such as costs, travelling distances, waiting times and the degree to which the supply meets the demand.

Dutch care users generally experience health care as accessible. This is clear from the data presented in Chapter 3. For example, the costs of care do not usually act as a barrier to utilizing care. Compared to the six other countries, confidence in the affordability of the necessary care is high in the Netherlands (see *Section 3.2*). Moreover, a large majority (about 95%) received the help they needed when it was required urgently. Furthermore, people rarely have to travel far for care; therefore nine out of ten people do not experience this as a problem. People can usually make an appointment reasonably quickly with care providers and although people sometimes have to wait a while (14% believe it takes too long) this is rarely considered to be a major problem. However, the proportion of care users in 2006 who felt they had to wait for a long or very long time before they could see their GP, a specialist or could go to a hospital, rose by 4 to 5% when compared to 2002.

A lack of personnel in hospitals was not experienced as a problem by care users, but in nursing homes and residential homes this was, however, the case

Residents of nursing homes and residential homes do experience the availability of personnel to be an issue. In concrete terms this means that relatively *few* residents believe that enough personnel are available, that staff respond within five minutes if the resident rings, that care professionals devote enough time to them, that they are assisted properly and in a timely fashion if they need to go to the toilet, and that they quickly receive the correct help if they experience pain or are ill. In contrast, in hospitals patients believe that there are sufficient nurses to provide the care they need. When the CMWF compared different countries, the Netherlands was found to score better in this respect than six other countries (see *Section 3.7)* (Grol and Faber, 2007; Schoen et al., 2007).

Coordination of care

Care users often have to deal with different care professionals. Poor coordination can lead to unsafe, inefficient and ineffective care being provided. We now describe how patients experience the coordination using examples that are important in this context such as a 'medical home' and a good coordination of the medicines used.

According to patients, the GP is particularly good at coordinating within primary care, but less good in relation to the specialist and the hospital

To promote the coordination of care a central point or 'medical home' is important. For the Dutch that is general practice. As reported in the first DHCPR, almost everyone in the Netherlands is registered with a GP. In the CMWF study, 100% of the Dutch respondents also reported having a fixed address for medical care. In the six other countries that percentage was lower. According to 93% of Dutch patients, the GP knows the patient's medical history, which forms a good basis for a coordinating role (see *Table 5.2.1*).

According to patients, the GP performs this coordinating role particularly well in primary care, but less so in secondary care. A study of GP patients in the province of Drenthe and in Rotterdam revealed that 87% experienced a good cooperation between the GP and other care professionals (such as the practice nurse, physiotherapist, home care, district nurse, specialist, etc.) (Meuwissen et al., 2008). Yet if we take a closer look at the coordinating role of general practice in relation to other doctors in particular, then it is clear from the CMWF survey that Dutch patients experience less coordination than the respondents in the six other countries (see *Table 5.2.1*). Compared to the six other countries, the Dutch GP (or member of staff) helps less frequently with the coordination of care that the patient receives from other doctors and at other locations. Furthermore, the Dutch GP provides the specialist with relevant medical information less frequently than in the other countries (except for Germany). The Dutch GP is nevertheless reasonably informed of the follow-up care after hospital discharge compared to GPs in six other countries (Source: Grol and Faber, 2007; Schoen et al., 2007).

Table 5.2.1: Patients with a regular general practitioner/doctor who knows their medical history and helps coordinating care, in 2007 (%) (Source: Grol and Faber, 2007; Schoen et al., 2007).

	NL	AUS	CAN	GER	NZ	UK	US
Patient has a regular GP/doctor for medical care (% yes)	100	88	85	92	89	89	80
GP knows important information about patient's medical background (% often/always)	93	87	86	94	89	83	83
GP (or member of staff) helps with coordinating care patient receives from other doctors and places (% of patients who often/always consider this to be applicable for their situation)	61	73	69	72	73	65	70
With respect to the last visit to specialist: GP provided specialist with information about state of health or medical problem? (% yes)	70	85	80	60	76	73	74
GP knew of the follow-up care planned after discharge from hospital? (% yes of the patients who had been hospitalized in the past two years and who subsequently consulted their GP)	79	76	75	87	73	79	81

According to patients, there is little coordination of medicine use in the Netherlands compared to six other countries

On a composite measure for coordination of medicine use, the Netherlands scores 64%. With this the Netherlands has the lowest score of the six countries who participated in the CMWF survey (Grol and Faber, 2007; Schoen et al., 2007*)*.

Upon admission to hospital, people are asked about medicine use in nine out of ten cases. On discharge, medicine use is discussed much less (60%) and in the past year, 43% have discussed the prescription medicines they use with a GP, nurse or pharmacist (see *Section 2.3*).

One in six residents of a nursing home or residential home experiences poor coordination between health care professionals

Approximately 17% of nursing home and residential home residents experience insufficient coordination between care professionals (carers, nurses, doctors, physiotherapists, etc.). For representatives of psychogeriatric residents and users of home care (through a home care organization or residential home) this figure is 15%. Of home care clients, 42% were negative about the coordination between care professionals (Wiegers et al., 2007).

At least one in five patients misses out on sufficient coordination in the case of condition-specific care pathways

Of the patients who receive care from different health care professionals for a certain condition (breast cancer, rheumatism or a cataract), about one-fifth state that there is either never or only occasional coordination within the care pathway. There are, however, small differences: people who undergo a cataract operation are the most positive and rheumatoid arthritis patients are slightly more negative about the coordination (see *Table 5.2.2*).

Table 5.2.2: Coordination/cooperation in condition-specific care, in 2007 (%) (Source: Damman et al., 2007; Zuidgeest et al., 2007; Brouwer et al., 2007).

	Never/ occasionally (%)	Often (%)	Always (%)
Breast cancer care (scaled score of 5 items)	17.8	40.9	41.3
Rheumatology care (scaled score of 5 items)	23.2	36.5	40.2
Cataract surgery care (1 item)	21.7	31.1	47.2

The proportion of diabetes patients, who miss out on coordination or cooperation within diabetes care, is larger and also differs somewhat between the care providers involved. One-quarter of patients experience poor coordination and cooperation by their GP; with the nurse the figure is slightly higher, and in the case of the physician and the dietician it is considerably higher (see *Table 5.2.3*). These evaluations cannot be seen separately from the role of the care professional concerned in the coordination of care.

Table 5.2.3: Coordination/cooperation in diabetes care, in 2005 (%) (Source: Rupp et al., 2006)

Coordination of care received from other care professionals (1 item):	No	Yes
By general practitioner	26.8	73.2
By internist	70.4	29.6
By nurse	37.1	62.9
By dietician	74.1	25.9

Interpersonal conduct towards patients

Most health care users are positive about how care professionals behave towards them; this applies to both curative care and long-term care

'Interpersonal conduct towards patients' means how health care professionals behave towards the patient. Interpersonal conduct is always directly or indirectly related to communication: does the care professional treat patients respectfully, does he/she provide them with a clear explanation, and does he/she take sufficient time? Here, we consider in greater detail the interpersonal conduct towards patients in general practice, hospitals, and long-term care.

Nine out of ten people are positive about how the general practitioner behaves towards them

Compared to six other countries, the Dutch are most positive about how their GP behaves towards them, but other countries also have a high score here (see *Figure 5.2.8*). The majority of people believe that the GP explains things clearly, usually takes sufficient time, and involves them in decision making. However, people are most critical about this last aspect.

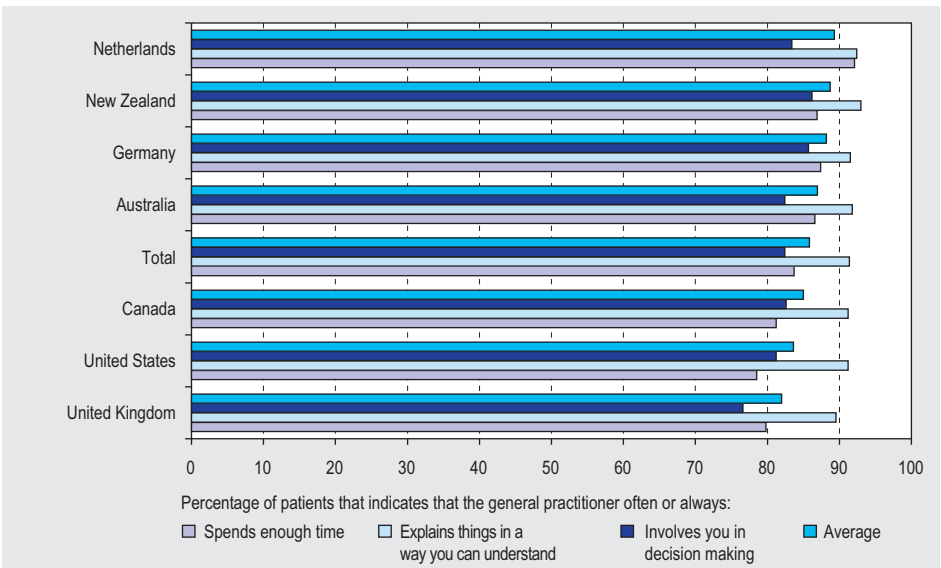


Figure 5.2.8: General practitioners patient-centred interpersonal conduct according to patients, per country, in 2007 (%) (Source: Grol and Faber, 2007; Schoen et al., 2007).

A regional Dutch study of general practices also revealed that patients have highly positive experiences concerning the interpersonal conduct and communication of their GP (Meuwissen et al., 2008). More than 95% reported positive experiences (see *Figure 5.2.9)*. More than nine out of ten patients felt that they are taken seriously, indicate that the GP listens carefully and that he/she explains matters in a clear manner.

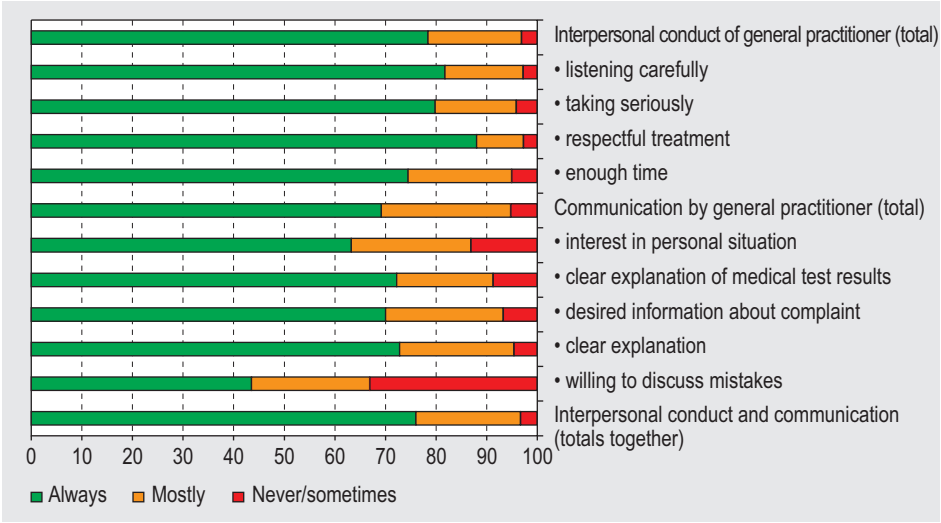


Figure 5.2.9: Experiences of patients with general practitioner's patient-centred interpersonal conduct and communication, in 2007 (%) (Source: Meuwissen et al., 2008).

Patients are satisfied about the personal attention received in hospitals

A study into the personal attention received in hospitals during the period 2004-2007, revealed that patients are on average 'clearly satisfied' (scale score 4). This applies for the interpersonal conduct by both physicians and nurses/outpatient staff in both clinics and outpatient clinics. Satisfaction levels of different subgroups scarcely changed in the years 2004-2007 (see *Figure 5.2.10*). The size of the hospital and the patient's gender did not affect the level of satisfaction. However, people aged 60 years and older were slightly more positive than younger people, but these differences were minimal. In the clinic, young people are slightly more satisfied about the nurses than about the physicians, whereas in the outpatient clinics, both older and younger patients are slightly more satisfied about the physicians than about outpatient staff (Prismant, 2007).

(Representatives of) care users in long-term care are positive about how care professionals behave towards them

Residents of nursing and residential homes, their representatives and clients who receive care at home (by a home care organization or a residential home) generally have positive experiences about the behaviour of care professionals towards them (see *Table 5.2.4*). Experience scores for the three groups lie between 3.38 and 3.53,

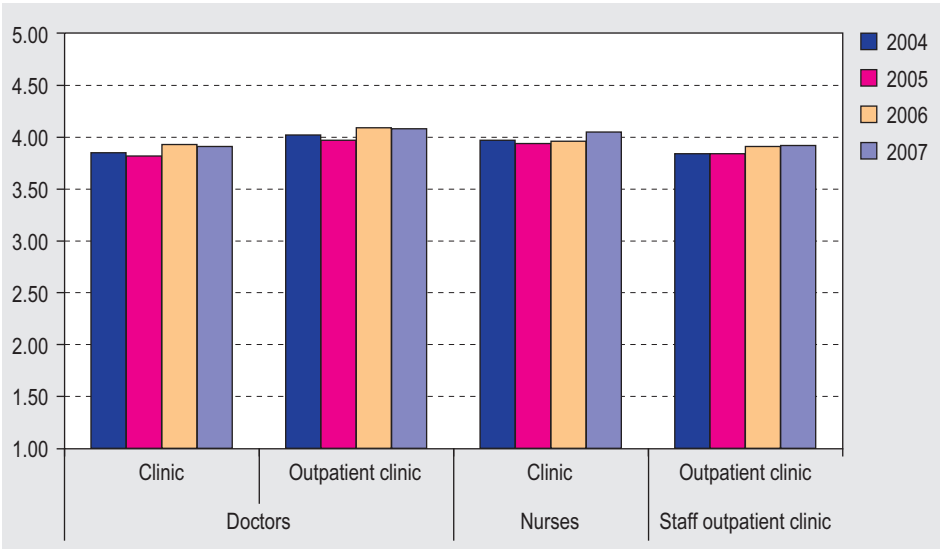


Figure 5.2.10: Average satisfaction scores of patients for the attention they received from care professionals (scale 1-5), 2004-2007 (Source: Prismant, 2007).

which is equivalent to an average between mostly (3), and always (4) (Wiegers et al., 2007). Residents of nursing homes and residential homes and home care clients were asked whether care professionals listen carefully, are prepared to talk, give satisfactory answers to questions, explain things in a clear manner and whether they treated the resident politely and with respect. Representatives were asked whether care professionals treat the resident with respect, are prepared to talk with the representative and whether care professionals give satisfactory answers to questions.

Table 5.2.4: Average experience scores for interpersonal conduct of care professional in nursing homes, residential homes and home care (scale 1-4), in 2006 (Source: Wiegers et al., 2007).

	Average experience score
Residents of nursing homes and residential homes	3.38
Representatives of psychogeriatric residents in nursing homes and residential homes	3.44
Home care clients	3.53

Disabled clients and their representatives also reported mainly positive experiences regarding their care (PWC, 2007). Here, a good level of interpersonal conduct means that: clients and their representatives are taken seriously, their wishes are sufficiently taken into consideration and staff have enough time for them and keep to agreements. For clients this means, moreover, that staff explain things in a clear manner and that they keep to the agreements stated in the care plan. The average benchmark scores for interpersonal conduct (on a scale of 1-100) are far above the average total scores of the organizations. The average scores for interpersonal conduct also deviate little from the highest and lowest individual scores for interpersonal conduct (see *Table 5.2.5*).

Table 5.2.5: Experience scores for interpersonal conduct in care for the disabled (benchmark scores; scale 1-100), in 2006 (Source: PWC, 2007).

	Average	Highest	Lowest	Average total scores of organizations
Clients	80.9	85.3	75.1	77.3
Representatives of adults	84.3	91.7	79.4	79.4
Representatives of young people	87.4	91.1	80.7	82.2

Conclusion

Health care according to the general public

The Dutch public are predominantly positive about health care, although their confidence differs considerably between the various types of care. For example, the picture of curative care is much more positive than that of long-term care. People are very positive about care professionals, less positive about health care organizations and the least positive about the health care system. Interestingly, although people express a critical opinion about the health care system, they do, however, have confidence in the affordability of care.

Health care according to care users

Dutch health care is more patient-centred than in most European countries. This is apparent from an international study into *'responsiveness'*. In this chapter we then considered three areas for which patient experiences are known in greater detail: accessibility, interpersonal conduct and coordination. Care users assess the accessibility and interpersonal conduct very positively, but are clearly less positive about coordination.

Accessibility

The Dutch generally experience health care as being accessible; waiting times, costs or distance are rarely a major problem. The majority of people are quickly and satisfactorily helped in the event of an urgent need for help and people can usually make an appointment with a care professional quickly. Moreover, as the Netherlands is densely populated, people rarely have to travel far for care; nine out of ten people do not experience the travelling time as a problem. In hospitals, the majority of patients do not experience a shortage of personnel, but in nursing homes and residential homes residents consider the availability of personnel something that can be improved.

Interpersonal conduct
Care users are generally positive about how care professionals behave towards them. Nine out of ten people are positive about the interpersonal conduct of their GP. Patients in hospitals are also predominantly positive. Care users in long-term care (and their representatives) also had positive experiences about their care providers' interpersonal behaviour.

Coordination
The coordination of care can clearly be improved. According to patients, the GP is particularly good at cooperating with care professionals in primary care, but less good with the specialist and the hospital. Compared to the six other countries, in the Netherlands, the GP or general practice assists less frequently with the coordination of care that the patient receives from other doctors, and provides the specialist with relevant medical information less frequently. Furthermore, patients in the Netherlands experience little coordination regarding the use of medicines when compared to other countries: on discharge from hospital, only six out of ten patients report to have discussed medication use and just over four in ten patients report to have discussed their medication with a care professional during the past year. Upon hospital admission, medication use is usually enquired about.

In nursing homes and residential homes, residents have to deal with different care professionals (such as nurses, physicians and physiotherapists); one in six residents experiences a lack of coordination between these care professionals.

Different specialist care professionals are involved in the care of specific conditions; good coordination and cooperation are particularly important here. However, at least one in five patients does not receive sufficient coordination.

Finally
A large quantity of information has been presented in this chapter from which a variable picture emerges. Conclusions about patient experiences differ according to the setting and the subject that care users express an opinion about. Although the opinions given were generally positive, there is, of course, room for improvement. This room for improvement mainly appears to be at a higher level; the organizational level (meso) and the system level (macro). It concerns, for example, the functioning of the organization and the coordination of care within, but also between, organizations. Coordination with respect to medication use requires particular attention.

5.3 The efficiency of the Dutch health care system

Key findings

- A number of countries with lower health care expenditure than the Netherlands achieve similar health outcomes
- There are countries with significantly lower health care expenditure that achieve similar levels of avoidable mortality
- There is still limited insight into the extent to which and the rate at which the health care system is able to apply new cost-effective methods
- In the Netherlands, the average length of stay for acute care is above the average for Western OECD countries
- A comparison between health care organizations within the Netherlands reveals that an approximate 14% to 15% reduction in length of stay is achievable. In 2006 there was considerable variation in the length of stay both between hospitals and between specialties
- Roughly 3% of hospital admissions are avoidable; this percentage fell between 1995 and 2005
- The percentage of hospital beds occupied by patients waiting for follow-up care decreased from 6.1% in 2001 to 2.9% in 2004 and has stabilised since
- The shortfall in hours of care provided in nursing homes can be reduced from an average of 15% (in 2005) to just 10%, if all homes manage to reach an average efficiency
- International differences in costs for a number of specific treatments are barely influenced by differences in efficiency

Following a period of cost control in health care, there is presently increasing interest in efficiency. This trend is visible both inside and outside of the Netherlands (Cutler, 2002). The 2008 Policy Agenda from the Ministry of Health [VWS Beleidsagenda] recommends that from 2008 onwards the mutual efficiency of AWBZ health care organizations is to be measured and that efficient institutions should become the norm. The use of medicines is also being subjected to efficiency tests (VWS, 2007a). The recent health care system reforms (see *Section 5.4*) have also been deployed to improve efficiency. Efficiency becomes ever more important as the share of the GDP spent on health care increases.

What is efficiency?

Efficiency is often described as the relationship between the means invested and the gains made with these means. It expresses the relationship between the input and output of health care. This is not the same as the concept of cost control, the latter having the sole aim of reducing input, even if this leads to an impaired ratio between input and output. Ideally, the output is measured in terms of health improvements (Rijksbe-

groting, 2007). There are various definitions of efficiency that differ between scientific disciplines. The definitions used in this chapter are therefore presented below.

Technical efficiency	The maximum output for a given use of resources, or minimum use of resources for a given output (Jacobs, 2006). For example: maximum health at a given use of resources.
Allocative efficiency	Optimal mix of resources given the values of the resources at a given output. Or conversely: the optimal mix of outputs given the values of the outputs and at a given use of resources (Coelli, 2005; Jacobs, 2006). For example, *Table 5.3.1* shows a number of different outputs and their values at system level.
Dynamic efficiency	The degree to which health care systems are able to apply new cost-effective methods, measured, for example, by means of the dissemination rate of innovations in the health care system.

The following questions are essential in order to study efficiency: 'what are the goals of health care?', 'what is the performance for each of these goals?' and 'what is the relative value of each of these goals?' (Jacobs, 2006). Recent research into different goals is summarized in the first part of this chapter. Here we make use of the best possible international data as well as state-of-the-art analysis techniques.

The research into the performance on goals such as health is supplemented with research whereby the relationship between resources and output may be less disrupted by external factors. An advantage of this type of research is that it can help to identify areas where possible improvements in efficiency can be made. In addition, the results can be more easily translated into policy. We shall explore research within specific sectors (such as the hospital sector and care for the elderly) and thereby also study different indicators, such as length of stay. The length of stay in hospitals is sometimes used as an indicator of hospital efficiency (OECD, 2004). Another example is avoidable hospitalizations (i.e. the inpatient treatment of conditions that should have been treated within primary care). Treating patients in the appropriate place within the health care system and avoiding unnecessary hospitalizations, for example, can be one of the ways to improve efficiency.

Improved performance on an efficiency indicator or even an increased efficiency within the hospital sector, for example, does not necessarily lead to an improved efficiency at the macro-level. Efficiency at the macro-level is also influenced by the connection between sectors and choices/substitution of expenditure between sectors; after all, low expenditure in one sector may lead to higher expenditure in another. For this reason, assessment of the goals at the macro-level remains indispensable.

Efficiency at the macro-level

A number of countries with lower health care expenditure than the Netherlands achieve similar health outcomes

The raison d'etre of the Dutch health care system is the improvement of public health. This objective can be studied with a composite public health indicator that combines life expectancy (mortality) with quality of life throughout life (WHO, 2003). The aim here is to increase the number of life years and to improve the health-related quality of life during those years.

Figure 5.3.1. shows the relationship between life expectancy, corrected for health-related quality of life, and health care expenditure for a number of countries. The 'limit curve' gives an indication of the maximum achievable state of health depending on the health care expenditure per capita. The curve can also be used to determine whether the same level of health can be achieved with a lower level of care expenditure. The curve is based on the performance of the best performing health care system. Since the choice of countries depends on the availability of data, the actual position of the curve could in fact be higher or lie more to the left. Compared to the limit curve, the Netherlands should be able to 'produce' better health with comparable resources and to achieve the same health with lower expenditure. This gives an indication of the degree of technical efficiency.

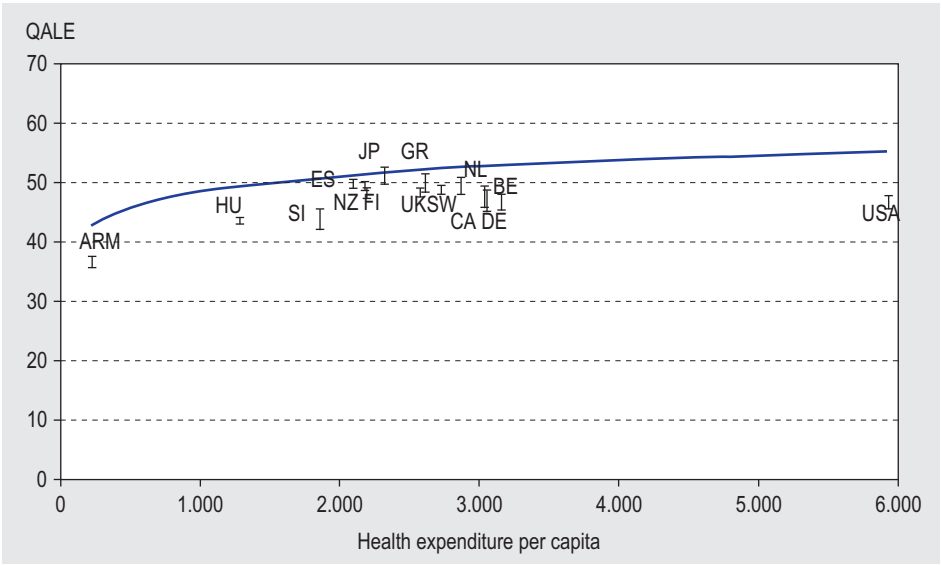


Figure 5.3.1: Life expectancy corrected for health-related quality of life (at the age of 20, QALE) and health expenditure per capita (US$, adjusted for cross-country price differences), in 2004 (Source: WHO, 2007b; EuroQoL, 2007; data processed by RIVM).

There are countries with significantly lower health care expenditure that achieve similar levels of avoidable mortality

A disadvantage of using a general health indicator like life expectancy is that it is partly determined by factors outside of the health care system, such as environmental factors, genetic factors and lifestyle (Lalonde, 1974). Avoidable mortality is an indicator for which the influence of health care is more prominent. In response to the World Health Report of 2000, in which a healthy life expectancy was used as an output indicator (WHO, 2000), avoidable mortality was named as a more suitable indicator for measuring the degree to which health care contributes to health (Nolte, 2003). Avoidable mortality gives insight into mortality due to conditions that can be treated effectively and no patient should die of within the current state of health care and medical science. In this study, a definition of avoidable mortality was used that is widely accepted in the literature (Nolte, 2004). Developments in avoidable mortality were measured for 14 countries between 1996 and 2004 (based on WHO, 2007b, data processing by RIVM). No corrections were made for the prevalence of conditions in a particular country and indeed the question arises as to whether it is necessary to apply such a correction. According to the definition of avoidable mortality, these conditions are curable (and this is not dependent on the prevalence).

Eventually, this score is indicative of the technical efficiency. *Figures 5.3.2* and *5.3.3* show the scores for avoidable mortality (standardized for age) in relation to health care expenditure. From *figures 5.3.2* and *5.3.3* it appears that countries with a higher health expenditure do not always achieve a lower avoidable mortality. Again, the technical efficiency for the Netherlands does not appear to be optimal. *Figure 5.3.2* demonstrates that there are countries that obtain a comparable avoidable mortality with fewer resources as well as countries that obtain a lower avoidable mortality with comparable resources.

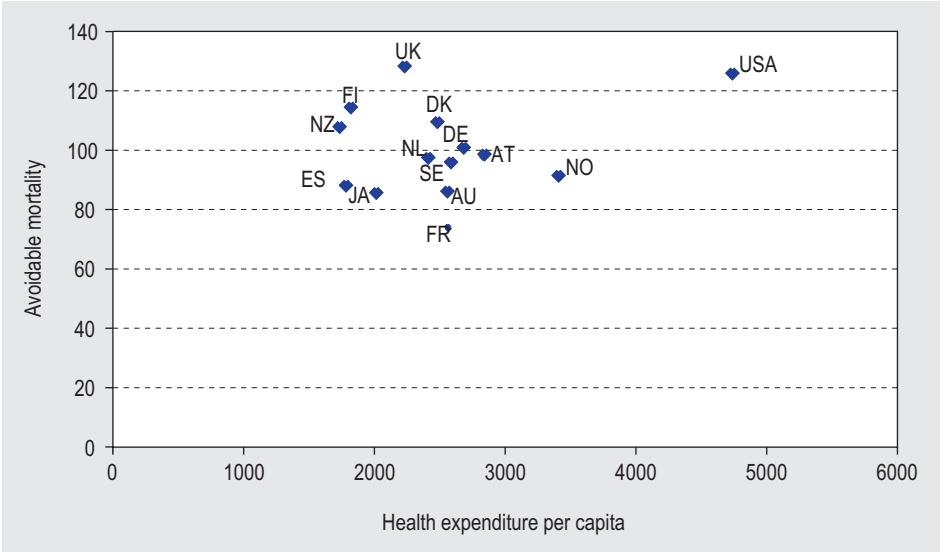


Figure 5.3.2: Health expenditure per capita (US$, adjusted for cross-country price differences) and avoidable mortality (per 100,000 population under the age of 75), in 2003 (Source: WHO, 2007b; OECD Health Data 2007; data processed by RIVM).

Figure 5.3.3 demonstrates how the average annual decrease in avoidable mortality compares to the average annual increase in health expenditure (between 1996 and 2004). Here we see that avoidable mortality decreases with time for all these countries. Once more, the average increase in health expenditure in the Netherlands does not appear to be applied optimally for a decrease in the average avoidable mortality: the decrease in avoidable mortality is slightly lower than average. Countries such as Germany, Finland and Denmark achieve a comparable decrease in avoidable mortality with a lower increase in health expenditure.

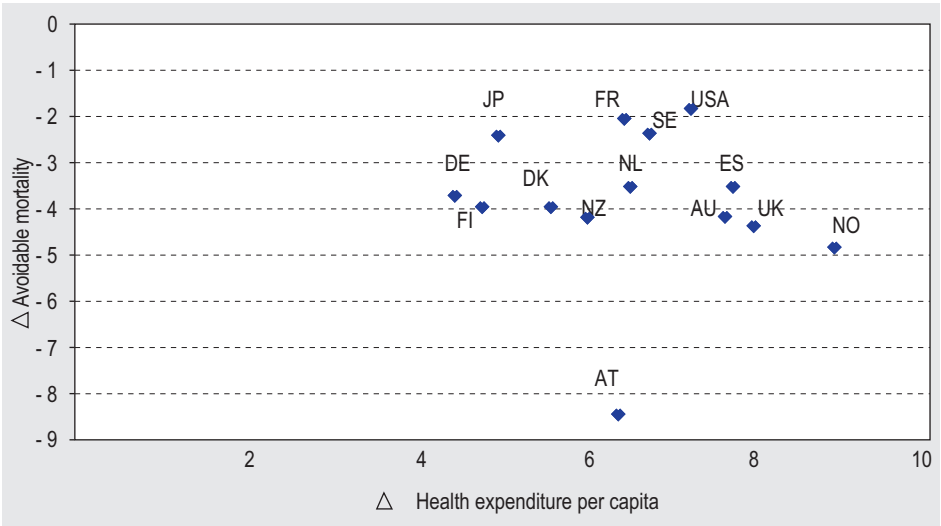


Figure 5.3.3: Average annual increase in avoidable mortality and health expenditure, 1996-2004 (%) (Source: WHO, 2007; OECD Health Data 2007; data processed by RIVM).

More specific output indicators for health care can be found in *Section 2.3*. One of these indicators, the score per country for 30-day hospital mortality, is plotted against the health care expenditure (see *Figure 5.3.4*). This score lies between zero (lowest possible mortality) and one (highest possible mortality), and comprises the 30-day hospital mortality rate for a number of highly prevalent life-threatening conditions (myocardial infarction, brain haemorrhage and stroke). Only expenditure for hospital care is shown in the figure. Selecting this specific group of costs allows for an improved estimation of the efficiency within curative care. *Figure 5.3.4* demonstrates that Australia, Japan, Norway and, to a lesser extent, France have the higher scores, while only Norway has significantly higher costs.

Although improvement in public health is the raison d'etre of the health care system, this is not to say that the health care system does not have other objectives (WHO, 2003). Besides the average level of health, an equitable distribution of health is an important goal. For each person, health is an important prerequisite for that person to be able to fulfil his or her capacities and to accomplish his or her goals. A (socially)

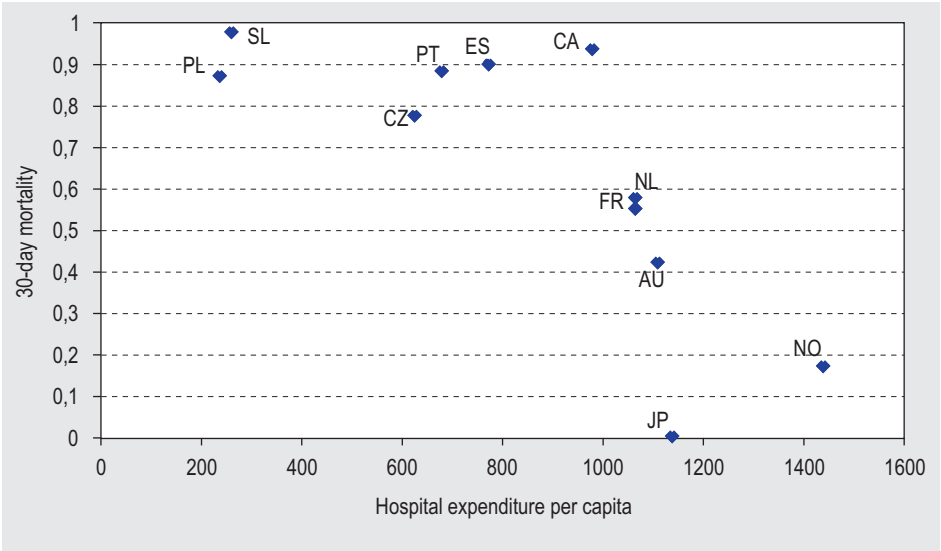


Figure 5.3.4: 30-day hospital mortality rate and hospital expenditure per capita (US$, adjusted for cross-country price differences), in 2004 (Source: OECD Health Data 2007; data processed by RIVM).

fair society should therefore not only pay attention to the average level of health, but also to the distribution of health (Sen, 2002). Apart from health targets, the health care system also has objectives that bear more relation to the care process. Not only the outcome but also the health care process itself produces benefit (by providing trust, good communication, dignity during treatment and prompt response to care demands). Positive user experiences are beneficial, even if they have no positive effect on the health outcome. Furthermore, the consequences of health care funding itself can be unfair. It is generally accepted as unfair for people to get into financial difficulties due to their inability to pay their financial contributions to the health care system (WHO, 2003).

As described in the text box, *allocative efficiency* refers to the optimal mix of outputs. The optimal mix is dependent on the relative values given to the different goals. In a recent pilot-study carried out by RIVM, respondents were asked to trade off the goals mentioned above.

Table 5.3.1: Relative value of health care system goals (%) (Source: Franken, 2008).

	Level	Distribution
Health	29	34
Responsiveness	7	6
Fairness in financial contribution	-	24

Table 5.3.1 demonstrates that the distribution of health is assigned the highest weight, followed by the level of health and financial equity. Responsiveness receives a lower weight. The respondents in this study were mainly experts (highly-qualified employees in the health care sector). Although this selection may bias the results, other studies show that there is little difference between the preferences of the general public and a select group of 'experts' (Gakidou, 2003). Future research will determine whether this is also true for the preferences of Dutch experts and the Dutch general public.

Table 5.3.2 shows the life expectancy of men and women, the disparity in life expectancy and the average responsiveness. The life expectancy for women in the Netherlands is relatively low and for men it is average (WHO, 2007b). The differences in disparity are relatively small and the level of responsiveness is just above average for the Netherlands (WHO, 2002; data processing by RIVM). The scores for responsiveness have been corrected for response heterogeneity.

Table 5.3.2: Life expectancy, disparity in life expectancy and responsiveness, in 2002 and 2005 (Source: WHO, 2002; WHO, 2007b; data processed by RIVM).

	Life expectancy (2005)		Disparity (2002)	Responsiveness (2002)
	Women	Men		
Finland	82.4	75.7	0.090	0.740
France	83.9	76.8	0.092	0.711
Germany	82.0	76.5	0.085	0.655
Greece	82.1	76.9	0.082	0.637
Israel	82.2	78.1	0.083	0.620
Italy	83.8	77.9	0.083	0.526
Netherlands	81.3	76.9	0.082	0.658
Norway	82.4	77.5	0.082	0.674
Portugal	81.5	74.9	0.091	0.540
Spain	83.6	76.9	0.085	0.611
Sweden	83.0	78.7	0.077	0.696
United Kingdom	81.1	76.6	0.087	0.679

There is still limited insight into the extent to which and the rate at which the health care system is able to apply new cost-effective methods

The previously discussed forms of efficiency were primarily static; they measure the efficiency at a single moment in time. Over time, health care systems can adapt to changing technologies and insights. The degree to which health care systems are able to adopt and apply new cost-effective technologies is expressed in terms of *dynamic efficiency*. The degree of dynamic efficiency can be studied by the investments in R&D, but more especially by the dissemination rate of innovations. In *Section 2.7* we saw that the Netherlands spends 0.1% of its GDP on pharmaceutical R&D and that its use of minimal-invasive techniques is at an average EU-15 level. However, this does not say

much about the dissemination rate of innovations. *Figure 5.3.5* serves as an example. It demonstrates the use of MRI scanners over the years. A sharp increase in the use of MRI scanners is an improvement if MRI scanners are a cost-effective application.

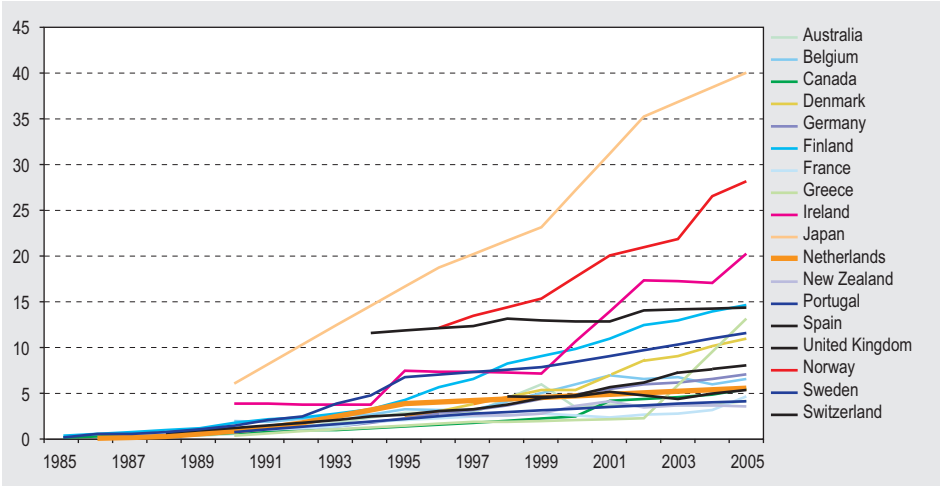


Figure 5.3.5: Use of MRI scanners per million people, 1985-2005 (Source: OECD Health Data 2007; data processed by RIVM).

There may be a trade-off between dynamic and static efficiency (Jena, 2007). When investments in new improving technologies give rise to higher prices (related to high R&D costs), the static efficiency changes for the worse. These higher prices are, however, necessary to induce investments and to improve the dynamic efficiency in the long term. In this way, maximum prices for new medicines can enhance the static efficiency, but incentives for innovation and dynamic efficiency may well be slowed down. Such policy can also lead to 'free-rider behaviour': a country may profit from the development of new medicines but lets other countries pay for the development costs. It is also possible for a trade-off to occur between generations: present investments in research can occur at the expense of current spending on health care for current patients but provide benefit for future patients (Jena, 2007).

Efficiency of health care providers

The efficiency at system level can be increased by improving the efficiency at the meso-level, i.e. the level of health care providers. Therefore below, we set out the differences in efficiency between health care providers. However in doing this it is important to note that an increase in the efficiency of health care providers does not necessarily lead to an increased efficiency at system level, due to poor collaboration between health care providers or exclusion of certain patients, for example.

In general, an average inefficiency of 10 to 20% can be identified within the hospital sector

Various studies have been conducted in the Netherlands concerning the efficiency within health care sectors, such as hospitals (Blank, 1998; Blank, 2004), nursing homes and residential homes (Eggink and Blank, 2001) and the ambulance service (Van der Veen, 2001). For hospitals, an average inefficiency of about 10 to 20% is usually found. Often only a small part of the detected inefficiency can be explained by hospital characteristics. In addition, the output in such studies is often measured in terms of the number of hospitalizations and/or the levels of intermediate products (such as length of stay, number of medical activities), but it bears little relation to the quality or outcome of care. The actual outcome of care can be either higher or lower when the quality and the actual added value of care is more adequately quantified (Atkinson, 2005).

In the Netherlands, the average length of stay for acute care is above the average for Western OECD countries

In the hospital sector, the length of stay is sometimes used as an indicator of efficiency (OECD, 2004). *Figure 5.3.6* demonstrates that the length of stay for acute care in hospitals decreased between 2000 and 2005 in most OECD countries. The Netherlands scores above average. The OECD mentions, however, that such an international comparison should be interpreted with some caution, due to possible differences in the definitions of acute care. The actual influence of reduction in length of stay on efficiency is ultimately dependent not only on any raised intensity of care (and expenditure) during shorter lengths of stay, but also on the outcomes of care involving shorter lengths of stay. At the system level it must also be mentioned that reducing the length of stay in hospitals can result in greater pressure upon other health care sectors, especially when patients are (unnecessarily) discharged too early.

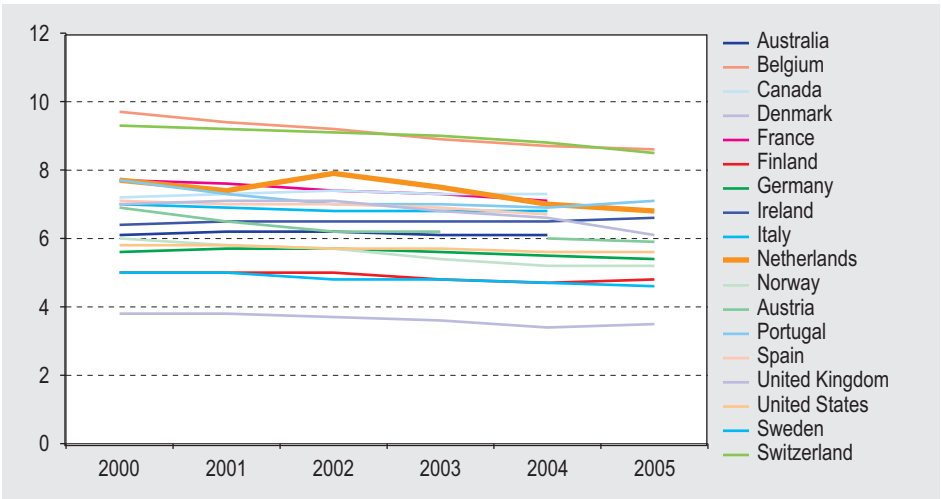


Figure 5.3.6: Average length of stay in days for acute hospital care, 2000-2005 (Source: OECD Health Data 2007).

The OECD indicators also specifically mention length of stay following admission for acute myocardial infarction (OECD, 2007b). *Figure 5.3.7* demonstrates that this specific length of stay was somewhat above the average of other OECD countries between 2000 and 2005, but that the difference is decreasing.

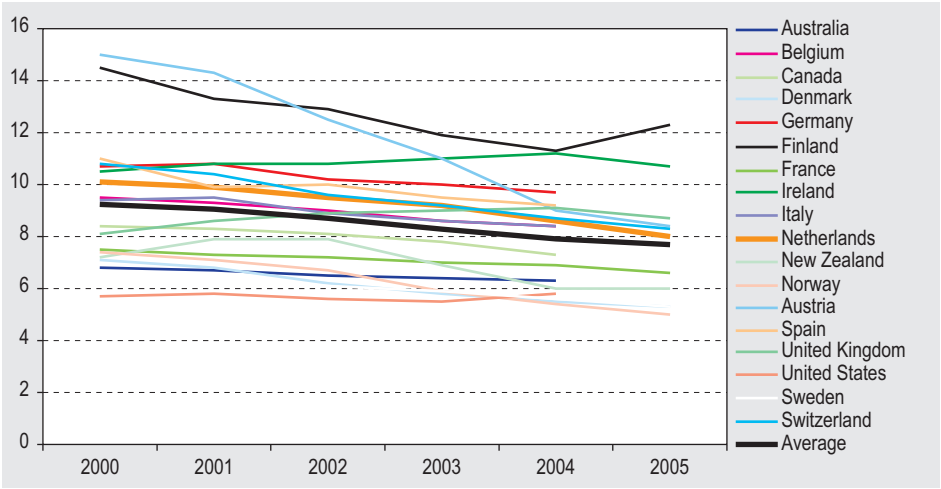


Figure 5.3.7: Length of hospital stay in days for acute myocardial infarction, 2000-2005 (Source: OECD Health Data 2007).

A comparison between health care organizations within the Netherlands reveals that an approximate 14% to 15% reduction in length of stay is achievable. In 2006 there was considerable variation in the length of stay both between hospitals and between specialties

A reduction in length of stay per patient can lead to an improvement in the efficiency and an increase in the treatment capacity of hospitals. Calculations by Prismant demonstrate that in the Netherlands there is considerable variation between hospitals and between specialties concerning patients' length of stay. In 2006 (2000) the average length of stay in the hospital with the longest length of stay is 1.7 (2.5) times higher than in the hospital with the shortest length of stay (corrected for case mix). The length of stay can be reduced by about 15% through:

- reduction of the length of stay in hospital to that observed in hospitals with shortest length of stay (15th percentile hospital), and
- treating in-patients, who potentially could have qualified for day treatment, in day treatment.

Roughly 3% of hospital admissions are avoidable; this figure fell between 1995 and 2005

Avoidable admissions can also be an indicator of inefficient health care. An admission is avoidable when a relatively expensive hospital admission for a certain condition could have been prevented by effective or accessible primary health care. Hospital

admissions for a number of conditions (twelve) are described in the literature as 'avoidable' (Weissman, 1992), for example asthma, gangrene and pneumonia. Between 1995 and 2005, the percentage of avoidable admissions decreased from 3% to 2.5% of the total hospital admissions. In absolute terms, the number of avoidable hospitalizations rose from 65,000 in 1995 to about 83,000 in 2005. However, the share of the total number decreased due to a relatively higher increase in the total number of admissions. Studies in the USA and Canada demonstrate a higher percentage of avoidable admissions (between 5% and 12%) (Kozak, 2001; Cloutier-Fisher, 2006). The differences with the Netherlands may be influenced by methodological differences.

The Netherlands Institute for Health Services Research (NIVEL) has studied procedures that from 2006 should have increasingly been carried out within primary care. Since 2006, a module called Modernisation & Innovation (M&I) has been introduced into the funding of GP care in order to stimulate GPs to carry out small surgical procedures, for example. The expenditure on these procedures is between €80 and €130 million (Te Brake et al., 2007). This substitution of secondary care with primary care can improve efficiency. A preliminary evaluation demonstrates, however, that the increase in small surgical procedures in primary care has not led to a decrease in referrals to secondary care (Te Brake et al., 2007).

The percentage of hospital beds occupied by patients waiting for follow-up care decreased from 6.1% in 2001 to 2.9% in 2004 and has stabilised since

Blocked beds are hospital beds being occupied by patients waiting for follow-up care. Nothing more can be done for these patients in terms of specialist care and they are waiting for follow-up care in a nursing home or elsewhere. Efficiency can be improved by an increased throughput of patients, as then the unnecessary occupation of hospital beds by patients is less long.

Calculations by Prismant show that the percentage of blocked beds fell from 6.1% in 2001 to 2.9% in 2004 and subsequently rose to 3.1% in 2006 (see *Figure 5.3.8*). The reduction was most probably influenced by the implementation of departments for transmural care in a number of hospitals (in collaboration with nursing homes) to improve the flow of patients towards follow-up care (Borghans and Van Hartingsveld, 2007).

The shortfall in hours of care provided in nursing homes can be reduced from an average of 15% (in 2005) to just 10%, if all homes manage to reach an average efficiency

Less research into the efficiency of long-term care has been undertaken in comparison to curative care. This is partly due to the fact that the actual output in long-term care is more difficult to quantify. The Dutch Healthcare Authority (NZa) (NZa, 2006b) studied the efficiency of nursing homes in 2005 according to the number of hours of care provided per patient per week. Quality of care was not addressed in this study. The actual number of hours of care provided was on average 15% lower that the number of hours of clinically indicated care. If all health care organizations would reach an average efficiency (number of hours of patient-related care per employee), then this percentage

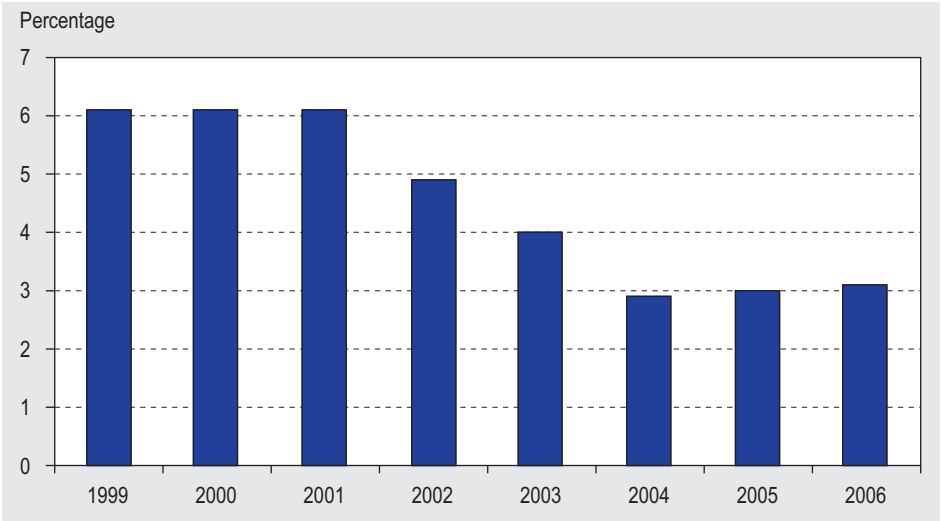


Figure 5.3.8: Blocked beds as a proportion of the total number of hospital beds, 1999-2006 (%) (Source: Prismant, 2007).

would be reduced to just 10%. Efficiency improvement still appears possible in terms of the number of hours of care provided.

International differences in costs for a number of specific treatments are barely influenced by differences in efficiency

Individual medical interventions can also be assessed on their efficiency. To this end, the so-called cost-effectiveness analyses (CEAs) are carried out regularly. The CEAs play only a minor role in the approval of new medicines and new medical technology, however (CPB, 2007b).

An alternative method of assessing the efficiency of specific medical interventions is to compare the cost prices. International differences have been studied in this way in the HealthBASKET project (Busse, 2008). In this project, the cost prices of twelve procedures were compared in nine EU countries. Differences in cost prices can be indicative of technical and/or allocative inefficiency (with respect to resources used) both between countries and within countries. Although the study draws no conclusions on efficiency, the differences in cost prices are certainly useful. The differences in cost price were mainly caused by differences in the choice of treatment and/or technology and differences in price levels. The differences were less influenced by whether or not personnel, beds or materials were efficiently utilized. The influence on the ultimate efficiency can be determined when more is known about the effects and outcomes and about the differences in treatment methods. Apart from international differences there were also considerable differences within countries.

Table 5.3.3: Average expenditure per procedure per condition, in nine countries (€, adjusted for cross-country price differences), in 2005 (Source: Busse, 2008).

	Hip replacement	Stroke	Acute myocardial infarction	Appen-dectomy	Cataract
Denmark	4401	2501	-	2011	602
England	5274	5674	4647	1888	623
France	5680	4038	5508	1887	909
Germany	6047	3283	2723	1826	741
Italy	6795	4465	7251	1589	1087
Netherlands	5328	6533	5323	1804	500
Spain	3965	2128	2050	654	611

Conclusion

The theme of efficiency examines the relation between the invested resources and the related output in health care. At the macro-level it would appear that advances in technical efficiency are possible in the Dutch health care system; there are countries that obtain comparable health outcomes with lower health care expenditure and there are also countries that achieve better health outcomes with comparable resources. This is valid for global indicators, but also for more 'health care-specific' indicators such as avoidable mortality. In addition to an improvement in average health, there are other goals that are pursued. The allocative efficiency can be improved by allocating resources cost-effectively across the different goals. It appears that what matters is not only a high average level of health, but also an equal distribution of health, responsiveness and an equitable financial distribution. With respect to dynamic efficiency, we still know too little about the dissemination rate of new methods and technologies in the Netherlands.

Within the Dutch health care system there are several indications pointing to inefficiency. In general, an average inefficiency of 10% to 20% can be found within the hospital sector. Moreover, the average length of stay for acute care in the Netherlands is higher than the average for Western OECD countries and there is considerable variation in the length of stay between health care organizations and between specialties (corrected for differences in case mix). A comparison between health care organizations within the Netherlands reveals that a 14% to 15% reduction in length of stay is possible. This produces an improvement in efficiency as long as health outcomes remain the same (or improve) and a shorter length of stay is not relatively expensive. Furthermore, it appears that about 3% of hospital admissions are avoidable for certain conditions, although there was a decrease between 1995 and 2005. In long-term care, the differences found in the number of hours of care provided (on average 15% below the number of hours of clinically indicated care) appear to be partly related to differences in efficiency.

Many of the recent reforms in the Dutch health care system were also designed to improve the efficiency of the system: in other words, more value for money. As mentioned in *Section 5.4*, it is still too early to tell whether or not the reforms have actually resulted in improvements in outcome, including the area of efficiency. What is known, however, is that the reforms have not yet resulted, for example, in the purchasing of health care aimed at efficiency. It has led mainly to health care purchasing aimed at low expenditure (possibly at the cost of efficiency). In addition, at present there is still not enough information available regarding the quality and outcomes of health care (where regulated competition occurs) for any judgments to be made on the influence on efficiency.

5.4 Market forces and the effects of the health system reform

Key findings

- In 2006 and 2007, health insurers competed strongly on premiums
- The quality of hospital care scarcely plays any role in contracting care
- The lack of substantial financial risks reduces competition in the contracting of hospital care
- The volume of contracted hospital care (B segment) increased by about 10% in 2006
- Sufficient systematic information enabling quality assessment of health care suppliers was still lacking in 2006
- Prices for contracted hospital care (B segment) are lower for the independent treatment centres
- Health insurers and health care organizations had negative operating results in 2006 and 2007
- The number of people who switched to a different health insurer in 2007 was the same as pre-2006
- There are no indications that health insurers select lower risk clients for the mandatory health insurance
- There is little evidence of competition in the contracting of general practice care
- Fifteen percent of physiotherapists sell new care products to health insurers
- Competition between providers of AWBZ care is limited
- Expenditure on personal care budgets increased by almost 50% between 2004 and 2006
- The Dutch remain positive about the health care received

Introduction

Since 2005, the government has taken a number of important measures to stimulate market forces in the health care sector. With these changes the government wants to ensure that the price-quality ratio of health care improves and that the care user can choose which care is received from which provider (VWS, 2001).

In this section we describe the current state of the health care market. Prior to this description, we will provide a brief explanation of what exactly we mean by market forces and which policy developments have been important in this respect.

Market forces in health care

Three 'market parties' can be distinguished within health care: care suppliers, health insurers and care users. With this, markets can be divided into three subsidiary markets (see *Figure 5.4.1*). Just like every other market, supply and demand exists in the health care market:

- in the *health care delivery market*, patients demand care and care suppliers offer care;
- in the *health care purchasing market*, the health insurer purchases care from care suppliers;
- in the *health insurance market*, patients take out insurance policies and health insurers offer insurance packages.

Health insurers are active in the market as both a purchaser and a supplier.

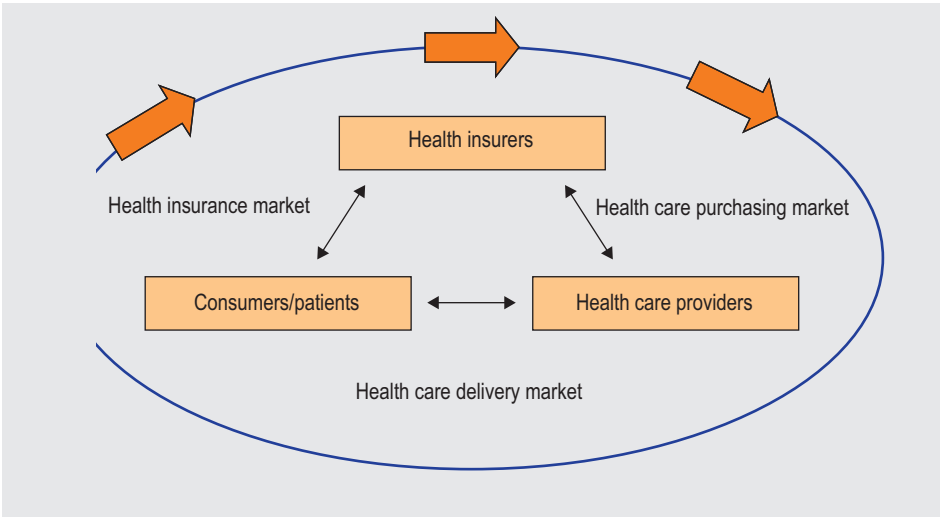


Figure 5.4.1: Schematic representation of the subsidiary markets in the health care market.

The arrows in *figure 5.4.1* indicate the direction in which the health care market develops. Progress depends on the role quality of care will play in this market.

A characteristic of market forces is that *purchasers* are free to choose where they purchase a product and *suppliers* are free regarding the nature of the product offered and its price. Purchasers and suppliers can negotiate with each other and suppliers compete with each other to gain the purchaser's custom. If we translate this to health care, then market forces are present if patients are free to choose where they purchase care or take out health insurance, and health insurers are free to choose who they purchase care from. Care suppliers are in turn free regarding the care they supply and its price and health insurers are free regarding the insurance they offer and its price. Suppliers (care suppliers and health insurers) compete with each other by offering products that are better and/or cheaper than those of their competitors.
In health care, there is not an entirely free market but instead a *regulated* market and managed competition. This means that although purchasers and suppliers have some freedom, this is limited by laws and rules. This regulation is there to prevent undesired effects and to safeguard the public objectives of quality, accessibility and affordability. Examples of this are that everyone is required to take out insurance for a basic package and that health insurers are obliged to accept anyone for the basic package.

Important policy changes

After the publication of the memorandum 'Vraag aan bod' (Focus on demand) (VWS, 2001) the government has implemented a number of policy changes with the objective of stimulating market forces. We will limit our discussion to a number of milestones. These are highlighted on a timeline in *Figure 5.4.2*.

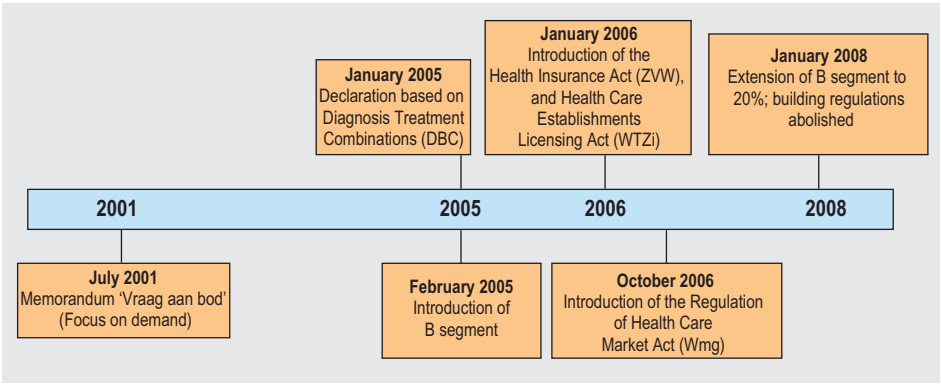


Figure 5.4.2: Relevant policy changes (Source: EZ, 2008).

Declaration based on Diagnosis Treatment Combinations
Diagnosis Treatment Combinations (Diagnose Behandeling Combinaties, DBCs) define the products in hospital care and therefore also form the basis for performance costing. Since 2005, hospitals have been obliged to declare costs on the basis of DBCs.

Introduction B segment
Since 2005, about 7% of hospital care (the so-called B segment) has been subject to free prices. Health insurers negotiate with health care suppliers in this segment about the prices, volume and quality of DBCs and within this segment they have the freedom to play a stronger role as purchasers of care. For the remainder of hospital care (A segment), prices are determined by the NZa; Health care suppliers and health insurers only negotiate about volume and quality in the A segment. In 2008, the B segment will be extended to 20% of hospital care.

In 2005, the tariffs for physiotherapy were also liberalized. In general practice, a small proportion of the care has also been negotiable since 2006, the so-called M&I (modernization and innovation) procedures.

Introduction of the Health Insurance Act and Health Care Allowance Act
The Health Insurance Act (Zorgverzekeringswet) and Health Care Allowance Act (Wet zorgtoeslag) came into effect in the Netherlands on 1 January 2006. With the advent of these Acts, major changes were made to the funding of curative care. This change to the health insurance system is generally referred to by the term system revision or system reform. In the rest of this section we will use the term system reform.
What exactly changed with the health system reform? Below the most important changes are summarized.

- The distinction between public and private insurance ceased to be. This was replaced by a single standard mandatory health insurance for everyone and, if so desired, supplementary insurances.
- Everybody is free to choose the health insurer that they are insured with for the basic insurance.
- Health insurers have an obligation to accept anyone for the mandatory health insurance.
- Risk equalization for health insurers compensates for differences in expected health consumption.
- Citizens are legally obliged to take out the mandatory health insurance.
- Health insurers no longer have a contractual obligation towards care suppliers. They are free to determine the care suppliers with whom they conclude contracts.
- Policyholders of below a certain income level have the right to a care allowance. This income-dependent allowance compensates for part of health insurance premium costs.

Introduction of the Health Care Establishments Licensing Act
The introduction of the Health Care Establishments Licensing Act (Wet toelating zorginstellingen) has liberalized the possibilities for new care suppliers to be admitted

since January 2006. Admittance has been made independent of a building permit. Independent treatment centres (Zelfstandige behandelcentra, ZBCs) are free to supply all care contained in the B segment (in addition to all non-clinical care in the A segment). This liberalization ensures greater competition on the care purchasing market.

Introduction of the Health Care Market Regulation Act
The Health Care Market Regulation Act (Wet marktordening gezondheidszorg, Wmg) came into effect on 1 October 2006. The Wmg includes, amongst other things, the performances and tariffs formerly included in the Health Care Tariffs Act (Wet tarieven gezondheidszorg, Wtg), and the tasks and competencies of the newly founded Dutch HealthCare Authority (NZa).

Structure of the section

The changes described above influence the various subsidiary markets. In this section we describe the effect of the above-mentioned measures on quality, accessibility and costs in health care. To this end, the indicators discussed elsewhere in the DHCPR are evaluated once more in relation to the health system reform. We describe these issues per subsidiary market: firstly the health insurance market, then the care purchasing market and finally the care delivery market. A well-functioning market is necessary to achieve the results as intended in the system reform, hence, our additional focus on the functioning of the market. We complete the section with a brief conclusion and discussion.

The health insurance market

In the ideal health insurance market, health insurers compete for the consumer's custom. They do that by providing good service and offering competitive prices. As every health insurer attempts to do that better than his competitors, this leads to affordable health policies of good quality. Patients compare the different health insurances on offer and make their choice accordingly.

The health insurance market mainly concerns the so-called second compartment of care (care accessible to everyone, such as the general practice and hospital care) and the third compartment (voluntary supplementary insurances). In the first compartment (long-term care and uninsurable risks, such as in the AWBZ) the care user's choice for a health insurer does not play a role.

A number of conditions are important for promoting competition between insurers: policyholders must be able to switch easily, the information on which a choice can be based must be simply accessible and policyholders must be able to use this information to make an actual choice. This encourages competition between health insurers.

The number of people who switched to a different health insurer in 2007 was the same as pre-2006

At the start of 2006, many people switched health insurance; 18% of policyholders switched to a different health insurer. In many cases it concerned people who switched to collective policies, for example, through their employer. In 2007, the number of people who switched was again roughly at the old (pre-2006) level; 4.4% of policyholders switched (NZa, 2007c). Although in 2007 switching levels returned to the level prior to the introduction of the mandatory health insurance, there was still movement in terms of the number of policyholders with a collective contract. In 2007, 57% of policyholders were included in a collective contract and, based on this trend, this number could increase to about 70% at the start of 2008 (Vektis, 2007a).

In 2007, research was performed into people's motives for staying with their present insurer (De Jong and Groenewegen, 2007). A clear majority indicated a reason that can be considered 'legitimate' from the perspective of market forces (satisfaction about quality, price, coverage, etc.). About 13% of the answers concerned reasons unrelated to the health care market: (administrative) problems were expected or people thought that they be refused by the insurer. About half of the policyholders indicated that the differences in premiums were minimal and that the most important reason for switching insurer was joining a collective (NZa, 2007c). However, the choice for a collective can also be motivated by differences in premium. A small proportion of policyholders experienced thresholds during switching. Almost 6% of the people who have been insured for less than two years with their current insurer had experienced difficulty in registering with this insurer. This was a 'major problem' for just 1.7%; the rest referred to it as a small problem. Deregistering is a problem that occurs slightly more frequently: almost 11% stated that they had experienced problems with this, more than one-third of which stated that there was a 'major problem' (CQ index Z&Z) (De Boer et al., 2007a).

'Choice' information about the price and range of policies is available via a number of websites and from the individual health insurers. KiesBeter.nl and Independer.nl provide an overview of products, premiums and service level and try to match the supply to the visitors of the sites. The choice seems to be influenced by the premium and the service level in particular. Health insurers with a low premium acquired more clients in 2006 (Deloitte, 2006) and equally health insurers with a good rating also obtained more clients (CPB, 2007a).

Although people are free to choose any health insurer in the Netherlands, local differences in market concentrations are still visible. This is due to, for example, historical differences in concentrations, the local familiarity and local activities by insurers. In the period 2005-2007, the market concentration of health insurers in the Netherlands

[1] Market concentration is measured by means of the HHI (Herfindahl-Hirschman Index). This is the sum of the squared market shares of all suppliers. The value varies from 0 to 10,000, where higher values indicate a higher concentration. Roughly speaking a value of 1800 or higher indicates a high market concentration with an increased risk of impeding competition.

increased slightly from 1349 (HHI[1]) to 1425 (NZa, 2007c). This change is minimal and consequently the market remains moderately concentrated. No new insurers entered the market in 2006 and a number of mergers took place, which further increased the market share of a number of large insurers. *Figure 5.4.3* shows the differences in market concentration between the Dutch provinces (NZa, 2007c). The market concentrations are particularly high in Friesland, Groningen and Zeeland.

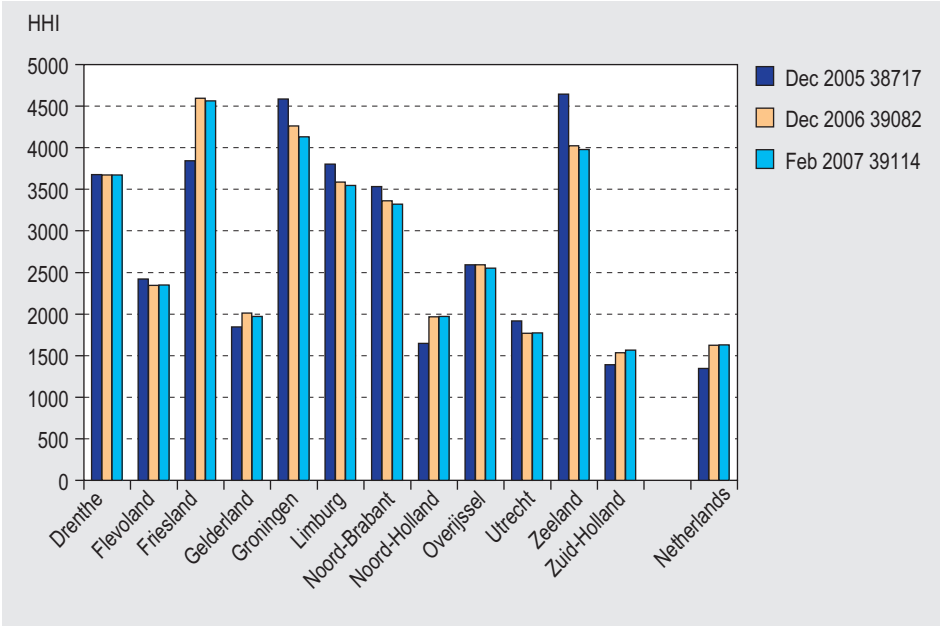


Figure 5.4.3: Market concentration of health insurers, per province, expressed as HHI (note), 2005-2007 (Source: NZa, 2007c).

In 2006 and 2007, health insurers competed strongly on premiums

The introduction of the Health Insurance Act in 2006 led to a fierce competition between health insurers to attract policyholders. This competition continued into 2007. This can be seen, for example, from the decrease in the variation in premiums between insurers in combination with premiums that on average are loss leaders.

In 2006, the premiums for the mandatory insurance (excluding possible collective discounts) varied between €990 and €1172 per year. The average annual premium was €1028, whereas this had been budgeted at €1106. In 2007, the average annual premium had risen by €75. From 2006 to 2007, the range in the premiums had become smaller (see *Figure 5.4.4*) (NZa, 2007c).

Various insurers made use of loss leading premiums for mandatory insurance in 2006 and 2007 (DNB, 2007). A joint negative result is also expected for the supplementary insurances. The financial reserves of the insurers were sufficient to absorb this loss as

a result of which their financial health was not endangered (DNB, 2007). Despite the negative financial result, insurers still offered loss leading premiums in 2007 so as to convince policyholders to sign up with them.

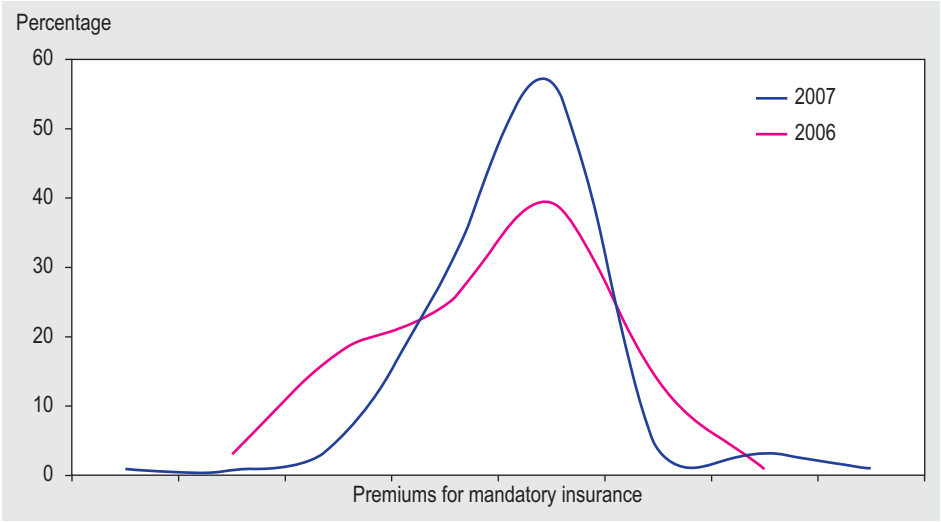


Figure 5.4.4: The distribution of policyholders across premiums paid compared to the average premium paid, 2006-2007 (Source: NZa, 2007c).

There are no indications that health insurers select lower risk clients for the mandatory health insurance

Risk selection by insurers is discouraged in various ways. Insurers have an obligation to accept anyone for the mandatory health insurance and insurers are compensated for patients that have a predictably higher care consumption (risk equalization). Insurers may deploy acceptance rules for supplementary insurances. About 93% of policyholders have taken out a supplementary insurance. Insurers indicate that the acceptance rate in 2006 was high, which concurs with the small number of complaints about risk selection to the NZa (NZa, 2007c).

Despite the risk equalization system, it is still possible for insurers to identify risk groups (Van de Ven et al., 2005; Stam and van de Ven, 2008). Insurers would benefit from attracting clients with a predictable low risk, but this would endanger the solidarity of the health care system and disrupt the balanced competition between insurers. For example, this could be realized by concluding specific collective contracts and by developing policies for specific target groups with a predictable lower health risk. There were no indications for this kind of selection in 2006 and 2007 (NZa, 2007c).

About 53% of policyholders concluded a collective contract in 2006 and the average discount on the collective contracts, compared to a similar product for individual policyholders, was 6.6% in 2006 (NZa, 2007c). In 2007, 57% of people were collectively

insured and if this trend continues, this could increase to about 70% at the start of 2008 (Vektis, 2007a). Although the market provokes risk selection via collective contracts, to date no evidence of this has been found (Schut and de Bruijn, 2007). An important motivation for collective contracts is probably target groups being approached from a marketing perspective.

At the end of 2007, insurer Univé introduced the ZEKUR policy. This health insurance policy is illustrative of possible developments in the health insurance market because a specific target group is approached and selective contracting with hospitals has taken place. The development of policies with selective contracting fits within the development of the health care system in which freedom of choice is encouraged. At €933 per year, the ZEKUR policy is the cheapest mandatory health insurance policy available. The policy focuses on a young target group that does not see access to a limited number of hospitals as being a problem (13 hospitals contracted). Moreover, the insurance of children under the policy is discouraged in the communication (Douven and Mannaerts, 2008). For example, no children's hospital has been contracted. Despite the duty to accept, this policy encourages a *self-selection* of policyholders by means of a low price, discouraging the inclusion of children and a limited number of hospitals contracted. Another aspect is that this policy can be cancelled at any time with a cancellation period of one to two months, depending on when the cancellation is made. This means that in the event of a changed care requirement or an anticipated change in care requirement (for example due to illness) a policyholder can switch policy but can also switch to another insurer.

Shortcomings in the risk equalization system and the cancellation of a policy at any time, as is the case for the ZEKUR policy, are potential avenues for risk selection (Douven and Mannaerts, 2008). It remains to be seen how policies with selective contracting and aimed at specific target groups develop. Insurers will also discover whether such policies are profitable. The NZa is monitoring this development by investigating the limiting conditions and the threat of risk selection.

The health care purchasing market

Health insurers purchase care from health care suppliers on the health care purchasing market. This is the crucial step in the health care market. This is where a favourable price/quality ratio must be contracted. By concluding good contracts, a health insurer can attract more clients who receive better care for a more competitive price. An important question is whether a well-functioning care purchasing market has developed yet, as without it a more favourable price/quality ratio may not be achieved.

Free negotiations regarding price and quality are limited to a small proportion of hospital care (B segment), physiotherapeutic care, and to a small extent general practice care. In other sectors maximum prices often exist and agreement can be reached about the quality. Another form of care procurement is the auctioning of care. This approach

is increasingly being used within maternity care, where care suppliers bid for a care need (mostly posed by the health insurer). In mid-2006 this affected about 20% of the care needs in maternity care (NZa, 2006c). A well-functioning care purchasing market could contribute to the quality, accessibility and efficiency of care. A number of conditions need to be met though, for this to be the case. Health insurers should actively undertake to purchase the best possible care for their clients and to only contract care that satisfies certain quality requirements. This would be an incentive for care suppliers to improve quality and to render this visible.

The negotiations between health insurers and care suppliers can contribute to greater efficiency. Health insurers could, amongst other things, encourage substitution from secondary to primary care. For example, it is cheaper to perform an allergy test or monitor diabetes patients in primary than in secondary care. When agreements are reached during the contracting of care, suppliers in primary care can be encouraged to offer and carry out these treatments so as to prevent higher costs for the same treatment in a hospital.

The lack of substantial financial risks reduces competition in the contracting of hospital care

Since February 2005, the introduction of free price negotiations and the abolition of the duty to contract have created room for market forces in the B segment of hospital care. Health insurers and hospitals reach agreements about price, quality and the volume delivered in terms of DBCs in the B segment.

The NZa has concluded that negotiations in the B segment are still not particularly competitive (NZa, 2007b). As the B segment only constitutes a small proportion of total care, the importance of competitive negotiations is limited. In 2005, the B segment was worth 7.3% of the total turnover of hospitals (varying from 5 to 30%). With effect from 1 January 2008, the cabinet has increased the proportion of DBCs in the B segment to 20% of the turnover.

The financial risks for the health insurers during the contracting of hospital care are partly borne by compensation mechanisms. These compensation mechanisms reduce the risk for health insurers for the hospital costs. The following compensation mechanisms were in force in 2007: the recalculation of hospital costs, the generic equalization, the bandwidth regulation for hospital costs and the high costs equalizer. The government will gradually withdraw these compensation mechanisms over the next few years, thereby encouraging insurers to purchase hospital care efficiently.

For the hospitals, the difference between the available budget and the incomes from the DBCs in the A segment (more than 90% of the care in 2006 and 2007) will be compensated for in the *settlement tariff*. This allowance on the DBC tariff affects the relationship between costs and price for hospital treatments, and can therefore impede the incentive to work efficiently. Due to the increase in the freely negotiable part of hospital care (B segment), the stimulus for competitive negotiations with health insurers is expected to increase over the next few years.

The quality of hospital care hardly plays any role in contracting care

Managing the quality of the care is vital for both good care and a good price/quality ratio. In the last DHCPR, it was already concluded that the quality of care scarcely plays a role in the purchase of care by insurers. The then Health Insurers Supervisory Board (College Toezicht Zorgverzekeringen, CTZ) had already reported this finding in 2003. Based on interviews, the NZa concluded that little had changed in 2006 regarding the availability and use of quality data for care purchasing (NZa, 2007d).

For care contracting, a care purchasing guide is available from Dutch Health Insurers (Zorgverzekeraars Nederland, ZN) that includes indicators for the B segment. Although quantitative data are missing, it would appear from interviews that insurers scarcely set objectives or carry out evaluations in the area of quality (NZa, 2007d). Therefore, the lowering of prices in the B segment could have been accompanied by a decrease in quality or the fall in prices might have been accompanied by a reduced efficiency or price/quality ratio.

Prices for contracted hospital care (B segment) are lower for the independent treatment centres

Prices for the DBCs in the B segment differ considerably between hospitals (NZa, 2007d). The price levels are clearly lower in the independent treatment centres (ZBCs) than in other hospitals. This difference is on average about 20% (see *Figure 5.4.5*). This could be the consequence of an increased efficiency in the care provided. Function-specific budgeting (FB) in hospitals is not used in the ZBCs. Hospitals can use compensation mechanisms to balance the budget, whereas ZBCs must cover their costs. This means that hospitals and ZBCs are not on a level playing field, which in turn affects their competitive positions.

ZBCs probably have a different patient population, which might influence the costs. In ZBCs, the patients treated do not have a substantial length of stay, have a lower risk of complications and little demand for other specialized care. Although systematic information is not directly available, there are signals that patients must satisfy specific medical criteria to be eligible for treatment in a ZBC, due to the limited medical backup available in the event of complications. It is not clear whether such a selection can contribute to the lower costs at ZBCs.

The market concentrations of the hospitals on the care purchasing market (B segment) was influenced by a number of mergers and in particular by the growing number of ZBCs, from 49 in 2004 to 130 in 2006 (NZa, 2007a). These ZBCs operate, however, in a small part of the health care sector. At present, no recent overview is available of the market concentration in the care purchasing market. The concentration of hospitals in the care purchasing market seems to have changed little in recent years. As described in the previous DHCPR, there are high market concentrations (HHI>1800) in a significant proportion of the health care regions. Market concentrations of insurers and suppliers seem to affect the outcome of the negotiations during care procurement (Hal-

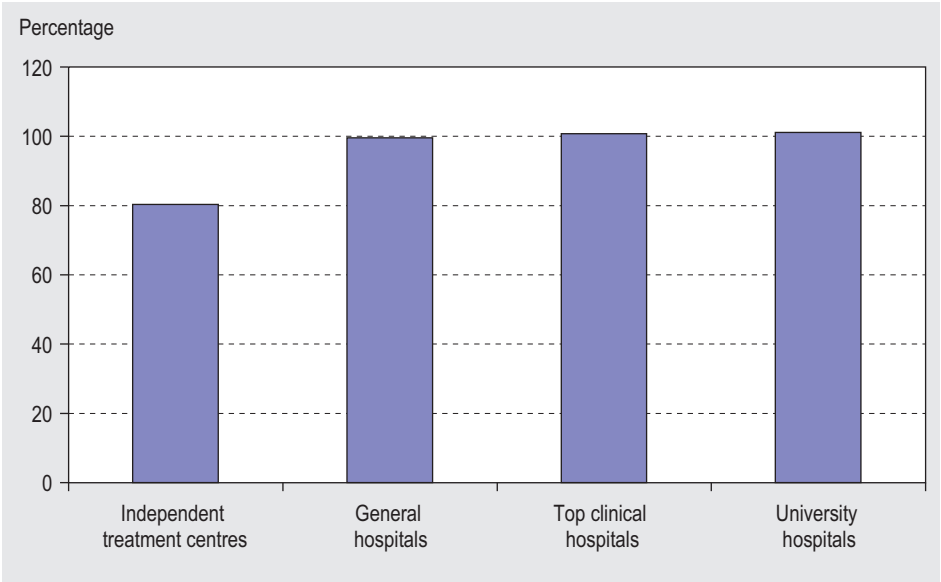


Figure 5.4.5: Price level in B segment for the different types of hospitals, in 2007 (Source: NZa, 2007b).

bersma, 2007). A more concentrated hospital market is associated with higher prices and a higher concentration of insurers is associated with lower prices.

Health insurers and health care organizations had negative operating results in 2006 and 2007

Section 4.3 describes the financial position of health care organizations and health insurers. Between 2005 and 2006 the profitability of health care organizations decreased. Moreover, health care organizations still do not have enough financial reserves to satisfy the generally accepted views concerning the reserves needed for a healthy market position that allows risks to be taken during negotiations. On average, the insurers had a negative operating result. In the future this might play a role in negotiations about care purchasing.

There is little evidence of competition in the contracting of general practice care

The aims of the funding system for general practice care, as established in the Vogelaar agreement, include stimulating more multidisciplinary cooperation in primary care, encouraging innovation in care and reducing referrals to secondary care. The funding can be distinguished into a part for *procedures* and a part *per registered patient*. The tariffs are usually subject to a maximum level. Part of the tariff for *procedures* is formed by the module modernization and innovation (M&I). This part can be negotiated freely and is intended for procedures in primary care that decrease the burden on secondary care. Health insurers can negotiate within the maximum tariffs set, and can agree upon the content and price for the part that falls under M&I. Although only limited research has been conducted, the NZa concluded in its monitor (NZa, 2007f) that the

power in care procurement lies with the general practitioners and that for the negotiations on products and quality, the quality of care is still scarcely transparent. Some 49% of GPs indicated that they negotiate about M&I tariffs (NZa, 2007f). The total costs for the M&I part are higher than budgeted for by the Ministry of Health; they amounted to €101 million in 2006 (about 6% of the costs for general practice care) (Vektis, 2007b). There are no indications of savings being made with respect to secondary care.

Fifteen percent of physiotherapists sell new care products to health insurers

Since 2005, health insurers and physiotherapists have been free to reach agreements about price. Quality is increasingly being included in the contracts. Agreements are not usually made with individual physiotherapists. Prices and products are agreed upon by means of basic contracts that scarcely give room for negotiations (NZa, 2007e). Quality aspects are included in the basic contracts, and there is some differentiation of care products according to price and quality. Entrepreneurialism is most visible among the 15% of physiotherapists who contract new products and care programmes with health insurers (NZa, 2007e). With these new care products efforts are made, for example, to realize greater efficiency and innovation in care pathways. The measure to liberalize the physiotherapy market led to an increase in prices from 2004 onwards. Contract prices rose by 13% between 2004 and 2005 and by another 8% between 2005 and 2006. Between 2006 and 2007 this increase was 2%, which disappears after correcting for inflation (NZa, 2007e). It seems that after several years of rising, the prices have stabilized to a level that covers the costs.

Competition between providers of AWBZ care is limited

Care offices negotiate with AWBZ care (Exceptional Medical Expenses Act) suppliers. The number of new care suppliers in the AWBZ has changed little compared to 2005 (7.2%), with 6.1% in 2006 and 6.2% in 2007 (NZa, 2007b). Compared to 2005, the turnover by new suppliers fell from 1.1% to 0.5%. There appears to be little vitality in the market, which might be due to budget guarantees provided by the care offices. A budget guarantee means that there are no financial risks involved for the AWBZ care supplier. In 2006, the budget guarantee was between 90% and 100% (NZa, 2007b). In 2006, 14 care offices provided a 100% budget guarantee, and in 2007 two offices did this. From interviews it is clear that the budget guarantee is being increasingly linked to a supplier's performance (NZa, 2007b).

In 2006 and 2007 guidelines were drawn up for the contracting policy of care offices regarding care purchasing in the AWBZ. Just 2 of the 32 care offices failed to procure care on the basis of negotiations or public tendering (NZa, 2007b).

The number of health care organizations for extramural AWBZ care is limited in some regions. Here there are one or two dominant suppliers who could use their negotiating power. For the period 2004-2006 it has been demonstrated that organizations with a large market share managed to realize higher prices (Mosca, 2007).

The health care delivery market

In the care delivering market the results of changes in the health care system with respect to quality, accessibility and costs should be visible. The quality of care in these areas is described elsewhere in the DHCPR. In this section we will consider several findings that give a general impression about the care experienced by patients and of the choices for care suppliers.

The Dutch remain positive about the health care received

As a result of the system reforms and other measures to facilitate market forces, the level of the health care provided can change. It is too early yet to relate these changes in health care to the health status of citizens. A number of measures will have a growing influence on the organization of the care, such as an increase in the B segment, the dynamics of care purchasing, et cetera. However based on the experiences of citizens, it is possible to gain an initial impression of the effect of these measures on experiences by citizens. At several points in the DHCPR, the experiences with the health care system are compared both over time and internationally. These comparisons indicate that the Dutch remain positive about health care. More than nine out of ten people (92%) gave the health care they had received in the past 12 months an appreciation figure of 7 or higher on a scale of 0 to 10 (see *Section 2.3, Figure 2.3.3*). People are generally also very positive about the GP and the specialist: in both cases, 87% gave an appreciation figure of 7 or higher. The CMWF survey revealed that the Dutch are more positive about health care compared to six other developed countries (see *Section 5.2, Figure 5.2.1*). These general indicators of citizens' opinions about health care reveal that no marked change has taken place in the perception of the health care received in the years prior to and after the system reforms and that, in general, the Dutch are still satisfied.

Sufficient systematic information enabling quality assessment of health care suppliers was still lacking in 2006

An important condition for a free market is that care users make choices based on the nature and quality of care products. The preference of care users for care suppliers is also related to the preference for health insurers. After all, ideally, care users' wishes are part of the negotiations between care suppliers and health insurers during the care contracting process. Insurers need information about quality to be able to negotiate a good price and quality with care suppliers and to conclude contracts for their policyholders with qualitatively good suppliers. In *Section 3.8* it was stated that in 2007, 18% of the Dutch had at some time over a two-year period tried to find quality information regarding hospitals (see *Table 3.8.3*). This is considerably less than in the United States and in Germany, but several percent higher than in, for example, the United Kingdom (12%) and Australia (15%). *Section 3.8* also states that 13% of the Dutch looked for information on individual physicians in that period. This percentage is lower than in a number of other countries (see *Table 3.8.3*). When it comes to searching for information about quality, the Netherlands differs little from a number of other countries such as the United Kingdom. The intended market forces in the Dutch health care system require an active participation of care users, possibly more so than in the health care

systems of a number of other countries. Based on this, a greater degree of information utilization by care users in the Netherlands is desirable. Unfortunately, systematic information for consumers about the quality of care suppliers is still only available to a limited extent. Little change has occurred in the availability of this information since the previous DHCPR (monitoring year 2004-2005) in 2006.

Information about the quality of care can, broadly speaking, be divided into patient experiences and facts about care. Efforts to develop both sources of information are currently being made in the Netherlands. In 2007, the centre for Transparency of Quality of Care (Zorgbrede Transparantie van Kwaliteit) was launched. The aim of this centre is to establish, in cooperation with the parties involved, which aspects of quality should be measured and to ensure that this information is presented in a valid manner (www.zichtbarezorg.nl). Such information about quality has been recorded by hospitals for a number of conditions and over the next few years this will be extended to other hospital care and other health care sectors.

In 2006, the Centre for Consumer Experience in Health Care (Centrum Klantervaring Zorg, CKZ) was founded with the objective of systematically describing consumer experiences with care using the CQ index. CKZ does not perform the measurements, but coordinates the development of questionnaires and approves their content. The organization also supervises the measurement process and ensures that the measurement outcomes are comparable.

Information about the quality of care suppliers is, for example, presented on the websites kiesBeter.nl and Independer.nl. In 2007, kiesBeter.nl presented information about hospital indicators from the Health Care Inspectorale (IGZ) and information about the quality of hospital treatments for six conditions. Information was also presented about client experiences with health insurers. After 2007, an expansion of the available information is expected with the development of information about the intrinsic quality of care and client experiences regarding different conditions and health care sectors.

The volume of contracted hospital care (B segment) increased by about 10% in 2006
The volume of care in the B segment rose by about 10% in 2006 (De Boo, 2008). As a result of the liberalization of prices and volume in the B segment, this part of hospital care is more demand-oriented. The number of treatments carried out is dependent on patient demand. Unlike the A segment, the number of treatments in the B segment is not limited. So hospital incomes can be increased by allowing more treatments to be carried out in the B segment. In 2006, the costs in the B segment rose by 12%. Most of the rise in costs (10%) could be directly attributed to an increase in the number of treatments (De Boo, 2008). An important question is why the number of treatments has risen and what will happen if the segment is further liberalized. Orthopaedic treatments for knee and hip damage and ophthalmic treatments for cataract accounted for most of the increase in costs in the B segment (De Boo, 2008). This increase could be due to more treatments and more diagnostics. Perhaps insufficient treatments took place before 2006, but equally the increase could be due to hospitals experiencing a

lower treatment threshold. More research is needed to determine why this increase has taken place.

Health insurers can possibly manage the increase in volume by reaching agreements about diagnostics, indications for treatment and volume.

Expenditure on personal care budgets increased by almost 50% between 2004 and 2006

The relationship between the patient and the care supplier is partly dependent on the agreements between the health insurer and the care suppliers. Contracts with hospitals and AWBZ care suppliers significantly limit the patient's responsibility to choose. A personal care budget (PGB) places the responsibility for choosing the correct care in the hands of the patient. There has been a strong increase in the use of PGBs. Between 2004 and 2006, expenditures for PGBs rose by almost 50% from 764 to 1136 million euros and the number of PGB holders by 30,000 to almost 95,000. The growing number of PGBs means that an increasing market can develop between patients and care suppliers. Yet, quality of care is a matter of concern here. In an ideal market, consumers know what their wishes are, but in the case of health care that is not straightforward. This requires transparency about the quality of care suppliers. At present there are no indications that the quality of the care purchased with a PGB is unsatisfactory (Dragt, 2006; Ramakers, 2007).

Conclusion

The health system reforms in 2006 induced many policyholders to switch health insurer. One in five policyholders switched insurer and the competition between health insurers was fierce from the moment the reform was introduced. Premiums failed to cover the costs and the profit margins in the premiums were limited. This picture continued into 2007. In a short space of time, a strongly competitive market has developed to acquire the custom of the policyholder. According to the intended objectives of the health care system, this competition contributes to an efficient operational management by health insurers, yet more importantly, it also encourages the availability of care products with a favourable price/quality ratio. The aim of market forces is to allow a policyholder to choose a health care policy on the basis of quality and price. This choice depends on the insurer purchasing from care suppliers on the basis of price and quality and these choices being made visible to the client. With this, the market forces in health care focus on the functioning of the care purchasing market. The procurement of care should lead to a fine balance between quality and price. However, in 2006 and 2007 hardly any use was made of quality criteria for hospital care during the procurement of care. In the B segment, quality agreements can be linked to price agreements. Yet there is still little evidence that this is happening. Possible explanations for this are the financial compensation mechanisms (limited financial risk) and that the B segment constitutes a relatively small part of hospital care. In AWBZ care, quality of care is becoming an increasingly important factor in the purchase of care by care

offices but budget guarantees appear to get in the way of real competition. The market for physiotherapeutic care has been liberalized since 2005 and price and care products are freely negotiable. A number of interesting developments have taken place during the growth of the physiotherapy market: quality and price are differentiated in basic contracts; only a small proportion (15%) of physiotherapists obtain contracts for new care products; and the prices seem to be stabilising. This suggests a market in which quality plays a role during the purchase of care and in which prices have reached an equilibrium level. In general it can be concluded that the competition on the care purchasing market in terms of price and quality ratio is still limited.

Information about the quality of the care must counteract market forces that are purely price driven. Both care users and health insurers need such information. A lack of such information could lead to quality losing out to competitive prices. In the British National Health Service (NHS) a correlation was found between inter-hospital competition and increased mortality due to heart failure (Propper et al., 2004). Good information about quality is vital for ensuring the quality of care (Gaynor, 2006). However, care is a complex product. Although care users can independently gain some insight into the quality of care, they also need to be assisted by the health insurers who purchase care on an informed and critical basis. Presently, there is still not enough transparency in quality of care. The arrival of the Centre for Transparency in Quality of Care (Zorgbrede Transparantie van Kwalitieit) and the Centre for Consumer Experience in Health Care (Centrum Klantervaring Zorg) will contribute to both health care consumers and health insurers gaining a better understanding of the quality.

A number of new developments indicate that the market is developing. For example, market forces are being stimulated with the growing number of ZBCs. ZBCs ensure an appropriate supply of care for patients with relatively uncomplicated conditions. Thanks to this tailored provision of care, ZBCs can work at lower costs than traditional hospitals. Although at present this only concerns a very limited part of hospital care, ZBCs are nevertheless stimulating competition within the hospital market. Another development is the emergence of policies for specific target groups. The so-called 'Young People policy' from insurer Univé demonstrates that the law allows targeting certain groups while strongly discouraging other groups to take out a certain basic insurance. It is not yet clear whether such policies are attractive for the insurer within the risk equalization system or if targeting specific groups may result in more efficiency and thereby be profitable.

Ultimately the goal is accessible and good quality care. The extent to which the health system reform has contributed to this will become clear over the next few years. For the time being it appears that the transition to a new health care system has taken place without many problems for the care user. There was no increase in the number of uninsured persons and the care users' opinion on health care has not fundamentally changed since 2005.

A number of developments will further stimulate market forces in the near future: transparency in quality, the withdrawal of financial certainties and guarantees for care suppliers, and the expansion of negotiable care. Ensuring that quality of care continues to play a role in the health care market remains a considerable challenge.

6 TOWARDS THE DUTCH HEALTH CARE PERFORMANCE REPORT 2010

6.1 Introduction

The DHCPR is a national monitoring report in which the Netherlands is compared internationally

By means of 110 indicators, the DHCPR attempts to monitor the quality, accessibility and efficiency of Dutch health care. The DHCPR can be compiled thanks to the existence of a large quantity of data sources. Although improvements have been made in this second DHCPR, further developments are still desirable. In this chapter we look forward to the next DHCPR and address two questions:

1. What are the most important improvements in the data used in this second DHCPR and what improvements are sought in terms of information provision for the next DHCPR? (*Section 6.2*)
2. How can the utility of the DHCPR for the strategic policy of the national government and all other interested parties be increased? (*Section 6.3*)

In *Section 6.4* we take a glimpse at the next DHCPR.

6.2 Ambitions, improvements and limitations

Just like its predecessor, this second DHCPR can be rated regarding its ambitions. That gives rise to pluses and minuses:

1st DHCPR	2nd DHCPR	
+	+	The indicator framework developed and used is internationally well accepted.
+	+	The selected system goals and indicator domains are in line with Ministry of Health policy.
+/–	+/–	The empirical results over 2006 show a broader picture compared to 2004.
–	+/–	The comparability of data in terms of time, place and policy standards has improved.
–	+/–	The interpretability of indicators in terms of relevance and expressiveness for policy and practice has increased.

Compared to the first DHCPR this second edition scores better on three points:

- A broader picture of health care is given, particularly due to the expansion with indicators that detail the health care experiences of the public, patients and clients.

- The comparability has been improved because more trend data, international comparisons and benchmarks are presented.
- The interpretability for policy has increased as a result of these two improvements, and due to the presentation of three connecting themes that relate different aspects of health care.

We will now consider the 'minuses' because these provide suggestions for improvements for the next DHCPR.

1 Not all of the desired indicators could be measured

Taken together, the indicators give a broad picture of how well the Dutch health care system is performing. As the Ministry of Health required the indicators to be limited in number, it was impossible to describe the performances of all specific elements of health care. The indicators provide *signals* with respect to the status of Dutch health care in terms of quality, accessibility and costs. A more detailed analysis is required to estimate the real value of the (warning) signals. At the request of the Ministry of Health, the social support sector was not examined. *Table 6.1* broadly indicates the extent to which (more or less) satisfactory data was available for the indicators used.

Table 6.1: Quality of the empirical data for the indicators

Care needs / care sector	Quality			Accessibility	Costs
	Effectiveness	Safety	Responsiveness		
Staying healthy / prevention					
Becoming better / curative care		X	X		
Living with an illness or disability / long-term care					
Care in the final stage of life					

Green: good; Orange: moderate; Red: poor; X: improved in the second DHCPR

Various gaps were filled in this second DHCPR, even though the data concerned often involved first measurements and several gaps still remained. The next DHCPR will need to pay more attention to indicators for care in the final stage of life (terminal phase, palliative care). *Text box 6.1* states which indicators in particular need improvement. The present list is shorter than that in the first DHCPR.

2 The comparability of data is not yet optimal

The ideal scenario is that each indicator in the DHCPR includes not just trend data but also an international comparison and a comparison with a benchmark. This has improved for all three aspects, but further improvement is desirable (see *Table 6.2*).

Text box 6.1: Priorities in indicator domains where improvement is desirable

Some indicator domains require more improvement than others. Priority should be given to the following indicator domains:

General
1) terminal and palliative care
2) experiences and wishes of the public
3) care for vulnerable people (for example, target groups of public mental health care)

Quality
4) prevention in care
5) compliance with guidelines and protocols
6) mental health care
7) long-term care

Accessibility
8) the coverage of care for various patient groups

Costs
9) labour productivity in relation to quality

Interrelatedness
10) relationship with health (Dutch Public Health Status and Forecasts Report)
11) coordination and cooperation between sectors, care pathways

Table 6.2: Comparability of data in the DHCPR

Characteristic	Percentage of indicators satisfying a characteristic		Improvements in the second DHCPR
	1st DHCPR	2nd DHCPR	
Trend over time	50	61	Many indicators have been followed over a longer period of time
International comparison	20	26	In *Health at a glance*, the OECD has now included indicators for the quality of care as well; the Netherlands took part in the Commonwealth Fund survey
Comparison with (policy) standard	<5	21	

Trend data

There are several reasons why the number of trend data do not exceed 61%:

- The continuity of registrations is not guaranteed. The first DHCPR warned about this and in some aspects continuity has become more transparent (Integrated System of Social Surveys, POLS), yet in other aspects it has not. For example, the participation of hospitals in the National Medical Registration (LMR) has decreased in recent years and the quality of data has deteriorated. Consequently there is a risk that insights into the national spread of infectious diseases, causes of hospital mortality

and costs of disease could also decrease. And with the recent focus on monitoring the *results* of care, this deterioration is pernicious. This situation is worrying for the next DHCPR and Dutch Public Health Status and Forecasts Report.

- Furthermore, a number of crucial registrations have been given the status of one-off and discontinued. For example, the National Survey of Primary Care must be started urgently as a follow-up to the two Dutch National Surveys of General Practice that were carried out in 1987 and 2001. In 2007, NIVEL and RIVM drew up a plan for the survey, in which the focus was switched from general practice care to primary care in general (Meuwissen et al., 2007). 'What we measure now determines what we will know in the near future' is true for many themes and indicators in the DHCPR and the Dutch Public Health Status and Forecasts Report, including integrated primary care and the GP's gatekeeping function in the Dutch health care system. A positive development is that the second round of the Netherlands Mental Health Survey and Incidence Study (NEMESIS) into mental health and mental health care is going to take place.
- The newly added indicators often involve only first measurements, as indicator development is a lengthy process. It often takes several years before a set of indicators is established for a certain element of care on the basis of objectives, concepts and available indicators in the literature. Agreement needs to be reached, a pilot has to be carried out in part of the sector concerned, and eventually a first complete measurement is carried out for the entire sector. Palliative and acute care are a case in point, where indicator development is still in its initial phase. And in long-term care the first national measurement of the standards for responsible care are currently being carried out and the outcomes will shortly be presented by the Steering Group Standards Responsible Care.
- Various aspects of registrations change regularly, with respect to both the import of the questions and the methods of data collection or analysis. This hinders the comparison of trends. These changes are partly initiated by the registration holders in order to keep pace with social developments or to increase efficiency, such as the Eurobarometer (OECD).
- Policy changes also frequently lead to changes in registrations, particularly in the operational definitions used. If the underlying trends are to be detected in such cases then the data must be collected according to both the old and new definitions. These administrative corrections are time consuming and require much analytical effort, if at all possible. Examples of changes initiated in registrations due to changes in policy are: 1) the changes in hospital funding that have led to the setting up of the DBC registration. However, this registration does not yet provide the intended insights into the actual costs of treatments; and 2) the transition from supply-focused to function-focussed funding in long-term care has led to the setting up of the AWBZ-wide care registration, but this has as yet to be fully implemented and still does not provide any reliable and valid waiting list figures.
- An associated problem is that *other* registrations - harmonized with the old definitions - are now less well harmonized with the 'revamped' registrations. The holders of these registrations need to consider whether they also will have to adjust their definitions. Failure to do this may make it more difficult to investigate the inter-

relatedness of various elements of care. Examples of this are: 1) the transfer of certain mental health care elements from the AWBZ to the Health Insurance Act not only necessitates a correction of the financial time series for curative and long-term care, but also has consequences for the care-specific mental health care registrations; and 2) the transition of home care from the AWBZ to the Social Support Act (Wmo) necessitates not just the correction of AWBZ and PGB data from previous years with regard to home care, but also calls into question how the interaction between AWBZ and Wmo is proceeding in this regard and how this ought to be investigated.

Taken together, all of these changes conceal the picture of trend developments, as a consequence of which policy decision making is more often based on impressions or inaccurate and difficult to interpret figures about recent developments, rather than accurate trend data. Furthermore, changes in registrations lead to extra costs. During the sometimes long transition period they increase the administrative burden and accordingly the cost of registrations. The costs of reports in which these transitions must be analysed and processed are also higher.

Comparisons with other countries

In this DHCPR more international comparisons could be made. Besides comparisons with OECD countries (*Health at a glance*), data from the Commonwealth Fund survey were also used. The Netherlands participated in this survey for the first time and is compared with the United States, Canada, Australia, Great Britain and Germany in the area of patient experiences. Data from the WHO-Silc were also used. However, different international comparisons often involve different countries and in the area of long-term care, international comparisons are scarcely available. The international comparability can, however, be enhanced with an improved and timely supply of data from the Netherlands to international organizations and an intensive participation of the Netherlands in international programmes for the harmonization of measurement instruments and analyses.

Comparison with (policy) standards

In this DHCPR an effort was made to find meaningful benchmark standards for indicators. For a number of indicators, this proved to be possible, especially for indicators of quality of care and of the accessibility of acute care. This exercise was not carried out for cost indicators, as the assessment of whether a level of costs is to be considered as favourable or unfavourable is often context-dependent and can only take place in relation to other indicators. The introduction of market forces places many old benchmark levels for indicators in a different perspective (for example, the solvency of organizations). Therefore on the website, policy-related users of the DHCPR are offered an instrument that allows them to assess only the findings regarding quality of care for policy relevance.

Conclusion
With the second DHCPR, a firmer foundation has been laid for monitoring the quality, accessibility and costs of health care, which can contribute to strategic policy decisions regarding health care in the coming years. However, we are not there yet. The ambitions of the DHCPR can only be realized in the future if a number of important improvements are made and several important threats are dealt with.

As the DHCPR is primarily a monitoring instrument, the poor continuity of registrations is the greatest source of concern. If the National Medical Registration in hospitals is withdrawn, a significant portion of the DHCPR will also cease to exist. The Ministry of Health has a directive task with respect to this issue. The highest priorities are:
- the continuity of the National Medical Registration in hospitals,
- starting the National Study into Diseases and Care in Primary Care,
- continuing participation in the international comparative survey of the Commonwealth Fund, and
- a good supply of data to international organizations.

6.3 The usefulness of the Dutch Health Care Performance Report

The most important reference point of the DHCPR is the usefulness for strategic policymaking.

The expressiveness for policy has increased
The most important objective of the DHCPR is to create a coherent picture. How successful this is, mainly depends on a good harmonization between indicators and the reference framework within which the assessment takes place. The usefulness for policy has been improved by the benchmark exercise carried out and the detailed presentation of the three themes that present the findings in context. Further improvement is needed to achieve the ultimate goal and to surpass the level of an encyclopaedic reference work, however useful that might be in its own right. Immediately after the publication of the second DHCPR, the key findings will be assessed and interpreted as to their usefulness for strategic policymaking together with the Ministry of Health and other interested parties.

The most important questions from a policy viewpoint that are related to the DHCPR and for which this and future reports can provide data and a (partial) interpretation, are:
- How and where can the quality of care be improved the most?
- How and where can the accessibility of care be improved the most?
- How and where can costs or cost rises be kept within acceptable limits?
- How and where can the efficiency be improved the most?
- What is the optimal balance between solutions within and between these social objectives?

These underlying policy questions also arise at a lower level, for example:

- For a given cost level, can more health gains be realized by improving the acute care or curative care for chronically ill patients?
- Can more health and quality of life be gained by improving the care for people with diabetes, people with depression or people with dementia?
- Is it more important and desirable to shorten waiting lists or travel times?
- Can better health, for as many people as possible, best be achieved by improving the care for the lower educated or for migrant or marginal groups such as the homeless?

In the current report, each indicator in the benchmark exercise was assigned equal weight, thereby assuming that they all carry the same importance. This assumption needs to be rectified as not all indicators carry the same weight. Evidently, long waiting times in waiting rooms are far less serious than long waiting times for acute care in life-threatening situations. Therefore, an important improvement can be made by no longer presenting all of the indicators as having the same value. The next step might be to give each of the separate indicators a weighting factor. These weighting factors will be dependent of the frame of reference. The WHO frame of reference, explained in *Section 5.3*, might be helpful here. It distinguishes five social objectives of the health care system: the improvement of health and quality of life, the enhancement of overall responsiveness, and a fair distribution of health care, responsiveness and costs (WHO, 2000).

6.4 The Dutch Health Care Performance Report continued

The Dutch Health Care Performance Report 2010 and 2014

During the planning stage of the DHCPR, a publication frequency of once every two years was decided upon. This was considered desirable, particularly during the development stage. This second DHCPR reveals that although various improvements have been made, further developments are still required. The next DHCPR is expected to reach its final form and after that the periodicity of the publication can be reduced to once every four years. However, if so, it is important that the information on the website is kept up-to-date during the intervening period. A frequency of once every four years after 2010 has two advantages: 1) it strengthens the depth of reflection about changes in the previous years and consequently provides a better basis for policy development in the subsequent years and the medium term; and 2) the DHCPR can be published in tandem with the Dutch Public Health Status and Forecasts Report. With this, developments in the health and the health care needs of the Dutch population on the one hand, and developments in the quality, accessibility and costs of the health care system (prevention in the broadest sense, curative care and long-term care) on the other hand can be viewed in both their totality and in relation to each other.

The website

For all indicators, the DHCPR website (www.gezondheidszorgbalans.nl) will contain not just the data from the report but also the scientific foundation, i.e. reasons as to why the indicator has been selected, the sources used and a short overview about the reliability of the data. By making use of links with the websites of National Public Health Compass, Dutch National Atlas of Public Health, and Cost of Illness in the Netherlands, this can be done as efficiently as possible and consistency is safeguarded. Just like the National Public Health Compass and the Dutch National Atlas of Public Health, the data on the DHCPR website will be updated during the period between two DHCPR reports. Such an approach also provides an opportunity of including more background data for some indicators, such as splitting up the information according to age, gender, care sectors, region or diagnoses.

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APPENDIX 2 INDICATORS

2 Quality of health care

2.2 The effectiveness of prevention
- Participation rates of population-based breast and cervical cancer screening programmes and the heel prick test
- Vaccination rates of the National Vaccination Programme
- Trends in lifestyle
- Annual check-ups at the dentist
- Coverage of preventive child health care
- Lifestyle counselling by the GP
- Infant mortality
- Health policy in schools

2.3 The effectiveness of curative care
- Prescribing percentage in general practice according to the Dutch College of General Practitioners formulary
- Number of referrals to secondary care
- Opinion of general public on curative care
- Experienced coordination of medication use
- Number of people who die within 30 days of being admitted to hospital for an acute myocardial infarction, stroke or brain haemorrhage
- Mortality due to breast cancer, colon cancer or cervical cancer
- Mortality due to asthma
- Number of hip fractures that are operated on within 48 hours

2.4 The effectiveness of long-term care
- Client judgements of residential homes and nursing homes
- Judgment of AWBZ-care applicants of the National Care Assessment Centre
- Quality of life of patients in residential homes and nursing homes
- Client judgements of care for the physically disabled
- Client judgements of home care
- Satisfaction of nurses and care workers with the quality of care
- Effectiveness of medical aids
- Preventable health care problems among residents in residential homes, nursing homes and care for the disabled (pressure sores, malnutrition, falls)
- Number of places in small-scale residential care facilities for people with dementia
- Judgement of the Dutch Health Care Inspectorate on the quality of long-term care

2.5 The effectiveness of mental health care and addiction care
- Proportion of adults with a severe anxiety, mood or addiction disorder who receive care for this
- Proportion of adults with a severe anxiety, mood or addiction disorder under care who receive at least one follow-up contact
- Proportion of adults with a severe anxiety, mood or addiction disorder under care who receive a satisfactory form of care
- Proportion of secondary mental health treatments that are ended in joint consultation between the therapist and the client/patient
- Proportion of people who end up at the accident and emergency department after a suicide attempt and are seen by a psychiatrist there

2.6 Patient safety
- Patient experiences with
  - Medication errors
  - Medical errors
  - Laboratory or diagnostic test errors
- Hospital standardized mortality rate
- Percentage of patients that sustained medical injury during hospitalization
- Prevalence of hospital-acquired pressure sores
- Prevalence of hospital-acquired infections
- Incidence of transfusion-related adverse events
- Percentage of hospitals where information on medication prescribed in hospital and elsewhere is electronically accessible at hospital wards and elsewhere
- Volume of high-risk surgery in hospitals
- Prevalence of medication-related hospital admissions
- Percentage of Pharmacotherapeutic Consultations that function at levels 3 or 4

2.7 Innovation in health care
- International score for availability of minimal-invasive techniques
- Number of day surgery interventions as a proportion of all surgical interventions
- Use of home care technology and proportion of renal dialysis patients using home dialysis
- Use of telecare
- Supply of e-health in mental health care
- Evaluation of Breakthrough Projects
- ICT applications as process support: use of the Electronic Health Records, Electronic Medication Records and Electronic Locum File
- Number of patent applications by Dutch people together with foreigners, as a proportion of the total number of patent applications by Dutch people
- Number of patent applications by Dutch partnerships, as a proportion of the total number of Dutch patent applications

- Expenditure of a country's pharmaceutical industry on health care related Research & Development as a proportion of its gross domestic product

3 Access to health care

3.2 Financial access to care
- Percentage of people who do not have health insurance
- Percentage of people who have confidence in the affordability of necessary health care
- Percentage of people who forego necessary health care
- Additional health-related expenses for people with chronic illnesses and disabilities
- Distribution of out of pocket payments across households
- Share of disposable income that is spent on health care by different income groups

3.3 Geographical access to care
- Average distance for every inhabitant of the Netherlands to the nearest specific care service
- Range of catchment profile by care service
- Trend of average distance and catchment profile for GPs and hospitals
- Patients' experiences: was it a problem for you to travel for your care, examination or treatment?
- Percentage of people who had to travel more than 20 minutes to a hospital compared with other EU countries

3.4 Timeliness of acute care
- Number of emergency ambulance rides that exceed the 15-minute norm
- Number of people who can be reached by a mobile medical team within 30 minutes
- Number of people who can reach the nearest emergency services by car within 30 minutes
- Number of people who can reach the nearest general practice cooperative by car within 30 minutes
- Number of people who place an emergency call to general practice cooperatives and are helped by a care professional within one minute
- Percentage of people with a need for acute care who did not get the care they needed and wanted

3.5 Waiting for regular care
Patient opinion
- Percentage of care users who are of the opinion that waiting times in care are long or short

Hospital care, mental health care and long-term care
- Number of people who are waiting for health care by type (the length of the waiting list)
- (Expected) time until treatment (waiting time)
- Number of people who have to wait longer for care than the agreed Treek norm
- Number of problematic patients who are waiting for long-term care

Waiting for donor organs
- Number of people who are waiting for a donor organ

3.6 Access according to needs
- Differences in the use of care between people with a high educational level and those with a low educational level, whereby a correction for health differences is applied
- Differences in hospital admission and the use of mental health care and addiction services between migrants and natives
- Differences in mortality following hospital admission for a heart attack between migrants and natives
- Care needs of homeless people
- Quality of medical health services for asylum seekers

3.7 Staff availability
- Number of vacancies per 1000 jobs in health care
- Share of vacancies that are difficult to fill
- Percentage of nursing and care personnel that are leaving the sector (net turnover)
- Percentage of work hours lost to absenteeism
- Number of people who have (had) problems finding a GP
- Percentage of care users who believe enough personnel is available during a stay in the hospital or nursing home
- Percentage of nurses and carers who believe that enough personnel is on duty to assure the patients' safety
- Unfilled demand for medical specialist care
- Number of doctors and nurses per 1000 inhabitants
- Qualification levels of care workers and nurses

3.8 Freedom of choice
- Number of people who experienced problems finding a GP
- Number of people who have a personal care budget
- Share of insured people who have switched health insurer
- Share of insured people who did not experience any limitations to their freedom to choose a health insurer
- Share of Dutch population that looked for information on quality with regards to hospitals and doctors

4 Costs of health care

4.2 Trends in health expenditure
- Health expenditure according to the Health Care Budgetary Framework (Ministry of Health)
- Health expenditure according to the Health Accounts (Statistics Netherlands)
- Health expenditure per capita according to the System of Health Accounts (OECD)
- Public health expenditure per working person according to the System of Health Accounts
- Health expenditure per health care sector according to the Health Care Budgetary Framework
- Health expenditure by source of funding
- Share of health care costs in gross domestic product
- Price and volume trends in health expenditure

4.3 The financial position of health care organizations and health insurers

Health care suppliers
- Profitability
- Solvency
- Reserve for acceptable costs

Health insurers
- Result
- Solvency

4.4 Labour productivity in health care
- Labour productivity in hospitals
- Labour productivity in care for the elderly
- Quality and labour productivity in residential homes

APPENDIX 3 ABBREVIATIONS

AAA	aneurysma van de aorta abdominalis (abdominal aortic aneurysm)
AGS	adrenogenitaal syndroom (adrenogenital syndrome)
AHRQ	Agency for Healthcare Research and Quality
AWBZ	Algemene wet bijzondere ziektekosten (Exceptional Medical Expenses Act)
AZN	AmbulanceZorg Nederland (Ambulance care in The Netherlands)
bbp	bruto binnenlands product (gross national product)
BI	betrouwbaarheids interval (confidence interval)
BIG	Wet beroepen individuele gezondheidszorg (Health Care Professions Act)
BKZ	Budgettair Kader Zorg (Health Care Budgetary Framework)
bmi	body mass index
BMR	bof, mazelen, rode hond (mumps, measles, rubella)
BU-regeling	Buitengewone Uitgaven regeling (Exceptional Expenses regulation)
CBO	CBO Kwaliteitsinstituut voor de Gezondheidszorg (Dutch Institute for Healthcare Improvement)
CBS	Centraal Bureau voor de Statistiek (Statistics Netherlands)
CHT	congenitale hypothyreoïdie (congenital hypothyroidism)
CIZ	Centrum Indicatiestelling Zorg (National Care Assessment Centre)
CKZ	Centrum Klantervaring Zorg (Centre for Consumer Experience in Health Care)
CMWF	Commonwealth Fund
COPD	chronic obstructive pulmonary disease
CPB	Centraal Plan Bureau (Netherlands Bureau for Economic Policy Analysis)
CQ-index	Consumer Quality index
CTG	College Tarieven Gezondheidszorg (Health Care Tariffs Board)
CTZ	College Toezicht Zorgverzekeringen (Health Care Insurance Regulatory Board)
CVA	cardiovascular accident
CVZ	College voor zorgverzekeringen (Health Care Insurance Board)
DALY	disability adjusted life years
DBC	diagnose behandeling combinatie (diagnosis treatment combination)
DGV	DGV Nederlands instituut voor verantwoord medicijngebruik (Dutch Institute for the Proper Use of Medicine)
DHCPR	Dutch Health Care Performance Report
DIS	DBC-informatiesysteem (DBC information system)
DKTP	difterie, kinkhoest, tetanus, polio (diphtheria, pertussis, tetanus, polio)
DNB	De Nederlandsche Bank (Dutch Central Bank)
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders (4th edition)

EC	Europese Commissie (European Commission)
EMGO	Extramuraal Geneeskundig Onderzoek (Institute for Research in Extramural Medicine)
EPD	electronisch patiënten dossier (electronic patient file)
EUR	Erasmus Universiteit Rotterdam (Erasmus University Rotterdam)
EUR/iMTA	EUR/institute for Medical Technology Assessment
EUR/MGZ	EUR/instituut Maatschappelijke Gezondheidszorg (EUR/Department of Public Health)
EZ	Ministerie van Economische Zaken (Ministry of Economic Affairs)
FONA/VIM	fouten, ongevallen en near accidents/veilig incident melden (adverse events, accidents and near accidents/ blame-free adverse events reporting
fte	full-time equivalent
FTO	Farmacotherapeutisch Overleg (Pharmacotherapeutic Consultation)
GGD	Gemeentelijke/Gewestelijke Gezondheidsdienst (Local/Regional Health Service)
GGZ	geestelijke gezondheidszorg (mental health care)
GGZ-Nederland	Branch Organization of Mental Health Care Services
GP	general practitioner
GR	Gezondheidsraad (Health Council)
HA	Health Accounts
HAP	huisartsenpost (general practice cooperative)
HARM	Hospital Admissions Related to Medication
HHI	Herfindahl-Hirschman Index
HCQI	Health Care Quality Indicators
Hib	haemophilus influenzae type b
HKZ	stichting Harmonisatie Kwaliteitsbeoordeling in de Zorgsector (HKZ Expertise Centre on Quality Review in Health Care)
HSMR	Hospital Standardised Mortality Rate
ICT	Information and Communication Technology
IF	Inspectie Formulier (Inspection Form)
IGZ	Inspectie voor de Gezondheidszorg (Health Care Inspectorate)
IOM	Institute of Medicine
IPCI	Integrated Primary Care Information
ivf	in vitro fertilisatie (in vitro fertilisaton)
JGZ	jeugdgezondheidszorg (youth and child health care)
KEA	Kosten Effectiviteit Analyse (Cost-effectiveness analysis)
KQS	Kwaliteit van de Quartaire Sector (SCP) (quality of the fourth sector)
Kzi	Kwaliteitswet zorginstellingen (Quality of Care Institutions Act)
LHV	Landelijke Huisartsen Vereniging (National Association of General Practitioners)
LINH	Landelijk Informatienetwerk Huisartsenzorg (National Information Network of GPs)
LMR	Landelijke Medische Registratie (National Medical Registration)

LPZ	Landelijke Prevalentiemeting Zorgproblemen (Annual Survey of Care Problems)
M%I	Modernisering & Innovatie (modernization & innovation)
mln	miljoen (million)
MOA	Medische Opvang Asielzoekers (medical care for asylum seekers)
MRI	Magnetic Resonance Imaging
NEMESIS	Netherlands Mental Health Survey and Incidence Study
NHG	Nederlands Huisartsen Genootschap (Dutch College of General Practitioners)
NIAZ	Nederlands Instituut voor Accreditatie van Ziekenhuizen (Netherlands Institute for Accreditation of Hospitals)
NIVEL	Nederlands instituut voor onderzoek van de gezondheidszorg (Netherlands Institute for Health Services Research)
NPCF	Nederlandse Patiënten/Consumenten Federatie (Dutch Patients/ Consumers Federation)
NRV	Nationale Raad voor de Volksgezondheid (National Council for Public Health)
NTS	Nederlandse Transplantatie Stichting (Dutch Transplantation Foundation)
NVZ	Nederlandse Vereniging van Ziekenhuizen (Dutch Hospitals Association)
NZa	Nederlandse Zorgautoriteit (Dutch Healthcare Authority)
OCR	oesophaguscardia resectie (oesophagus cardia resection)
OECD	Organization for Economic Co-operation and Development
OSA	Organisatie voor Strategisch Arbeidsmarktonderzoek (Institute for Labour Studies)
PGB	persoonsgebonden budget (personal care budget)
PKU	phenylketonuria (fenylketonurie)
POLS	Permanent Onderzoek LeefSituatie (Integrated System of Social Surveys)
PPP	purchasing power parities
PREZIES	PREventie ZIEkenhuisinfecties door Surveillance (prevention of nosocomial infections by surveillance)
PWC	PriceWaterhouseCoopers
QALY	quality adjusted life years
R&D	Research and Development
rak	reserve voor aanvaardbare kosten (reserve for acceptable costs)
RGO	Raad voor Gezondheidsonderzoek (Advisory Council on Health Research)
RIAGG	Regionaal Instituut voor Ambulante Geestelijke Gezondheidszorg (Regional Institute for Ambulatory Mental Health Care)
RIBW	Regionale Instelling voor Beschermd Wonen (Regional organization for protected and supported living)
RIVM	Rijksinstituut voor Volksgezondheid en Milieu (National Institute of Public Health and the Environment)

RVP	Rijksvaccinatieprogramma (National Vaccination Programme)
RVZ	Raad voor de Volksgezondheid en Zorg (Council for Public Health and Health Care)
SCK	Stichting Cliënt & Kwaliteit (Client & Quality Foundation)
SCP	Sociaal Cultureel Planbureau (Social and Cultural Planning Office)
segv	sociaal-economische gezondheidsverschillen (socio-economic health differences)
SEH	spoedeisende hulp (emergency care)
SER	Sociaal-Economische Raad (Socio-Economic Council)
ses	sociaal-economische status (socio-economic status)
SHA	System of Health Accounts
SIVIS	Verpleeghuis Informatiesysteem (Nursing home information system)
SIVZ	Stichting Informatie Voorziening Zorg (Organization for Information Systems in Care)
STIVORO	Stichting Volksgezondheid en Roken (STIVORO for a Smokefree Future)
TRIP	TRIP (transfusion reactions in patients)
UMC	Universitair Medisch Centrum (University Medical Centre)
VTV	Volksgezondheid Toekomst Verkenningen (Public Health Forecasts)
VWS	Volksgezondheid, Welzijn en Sport (Ministry of Health, Welfare and Sports)
WBMV	Wet op de bijzondere medische verrichtingen (Special Medical Treatments Act)
Wcpv	Wet collectieve preventie volksgezondheid (Public Health Collective Prevention Act)
WfZ	Waarborgfonds voor de Zorgsector (Guarantee Fund for the Health Care Sector)
WGBO	Wet geneeskundige behandelingsovereenkomst (Dutch Medical Treatment Act)
WHO	World Health Organization
Wmcz	Wet medezeggenschap cliënten zorginstellingen (Participation of Clients in Care Institutions Act)
Wmg	Wet marktordening gezondheidszorg (Healthcare Market Regulation Act)
Wmo	Wet maatschappelijke ondersteuning (Social Support Act)
WOK	WOK Centre for Quality of Care Research
Wtg	Wet tarieven gezondheidszorg (Health Care Tariffs Act)
WTZi	Wet toelating zorginstellingen (Health Care Institutions Act)
zbc	zelfstandig behandelcentrum (independent treatment centre)
Zfw	Ziekenfondswet (Compulsory Health Insurance Act)
ZN	Zorgverzekeraars Nederland (Association of Dutch Health Insurers)
Zvw	Zorgverzekeringswet (Health Insurance Act)

This is the second national report on the performance of the Dutch health care system. Its focus is on quality, access and costs in 2006/7. The Dutch Health Care Performance Report presents a broad picture based on 110 indicators. Where possible, comparisons in time and between countries are presented.

Dutch health care is accessible, cost increases are average, but further improvements in quality can be made

The Netherlands has an accessible health care system. Since 2004, health care expenditure has risen annually by 5%. This rate of growth is comparable to that of neighbouring countries. Although for many aspects of care the quality is high, the Netherlands does not excel at an international level. The general public and care users are positive about the care provided, but there are differences between the various types of care. One concern is the availability of nursing and care personnel. Coordination and cooperation in health care and patient safety score relatively low. The efficiency of health care in the Netherlands is not optimal. Quality is not a driving force in the health care market.

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