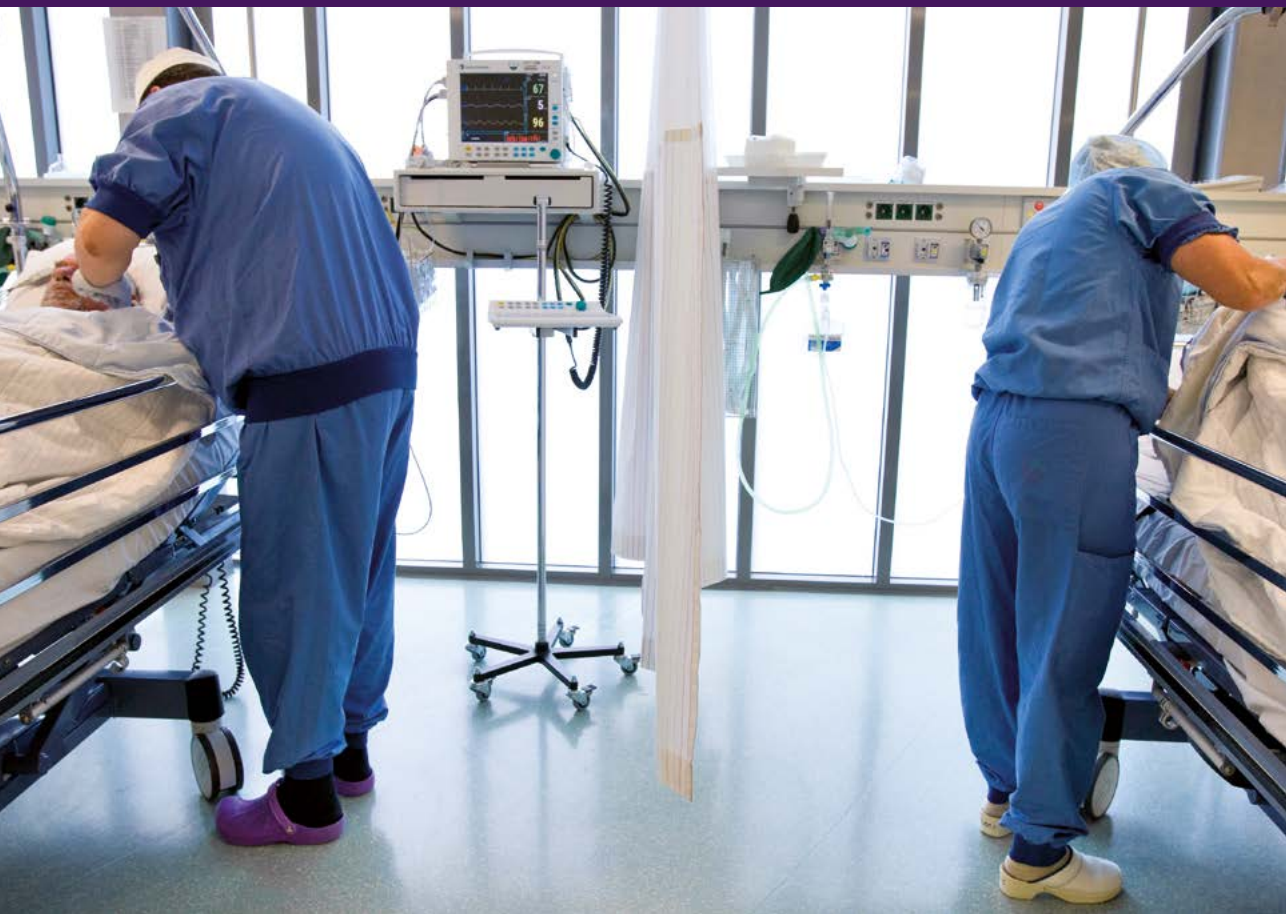




National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

Dutch Health Care Performance Report 2014



Dutch Health Care Performance Report 2014

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Foreword

To keep health care affordable and to drive up the quality of care require continuous improvements. Transparency of costs and quality is crucial here. Progress in these areas is only possible if the people who provide health care services and the people who use them put their backs into it. Currently, improvements are being made, but we are not there yet. You can read this in the Health Care Performance Report 2014. Using a great number of registers, publications and surveys, the National Institute of Public Health and the Environment (RIVM) has succeeded once again in providing a picture of the state of affairs of Dutch health care in terms of accessibility, quality and affordability.

The Performance Report shows that Dutch healthcare stands out positively in a number of ways. Again Dutch healthcare scores above average when compared to other developed countries. Perinatal care has also greatly improved in recent years. And differences in accessibility between demographic and socioeconomic groups appear to be limited.

But there are still many areas that need our attention: there are considerable differences in the quality of medical practices and quality transparency leaves much to be desired. This should be better. The Institute for Health Care Quality, which was established in 2014, is set to play a major role in this.

This Performance Report offers a solid empirical foundation for the policy agenda of the Ministry of Health, Welfare and Sport in the years to come. Making health care more responsive to the needs of people and to developments in society and at the same time improving affordability and quality are major challenges for all of us. Let's face these challenges together.

I thank everyone who contributed to this Performance Report.

The Minister of Health, Welfare and Sport,



Edith Schippers

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Dutch Health Care Performance Report

Executive summary

Quality

Much of the health care is of high quality, and there are many favourable trends

International comparison of quality indicators by the Organisation for Economic Co-operation and Development (OECD) has shown that the Netherlands scored above average on the majority of indicators when compared to other affluent countries. Results for more specific aspects of the system were varied. On some indicators, the Netherlands ranked amongst the best-scoring countries: it had the lowest volume of primary care antibiotic prescription and a higher 48-hour surgery rate for hip fractures in comparison with many other countries. Scores on other indicators were less positive, including higher than desirable rates for mortality following strokes or acute myocardial infarctions and for perinatal mortality.

Many quality indicators revealed favourable trends: 30-day mortality following stroke or acute myocardial infarction declined, and so did the rates of health-care-amenable in-hospital mortality and hospital-acquired infections. The promptness of hip fracture surgery initiation increased, as did the 5-year survival rates for several types of cancer. Favourable trends also emerged in long-term care, including reductions in decubitus ulceration and malnutrition.

Another area that stood out positively was perinatal care. In response to the revelation in 2008 that the Netherlands had slipped from its status among the countries with the lowest rates of perinatal mortality, improvement initiatives were launched by various stakeholders. The Steering Committee Pregnancy and Birth drew up recommendations to improve perinatal care. Several indicators in the present report derive directly from those recommendations and show favourable trends. A tremendous increase was seen, for instance, in the numbers of participants in perinatal audit. Findings from abroad show that perinatal audit leads to real quality improvements. Decreasing numbers of women are now smoking during pregnancy, and increasing numbers of pregnant women, in particular also those in deprived neighbourhoods, give timely notification of their pregnancy to general practitioners or midwives. Although Dutch perinatal mortality is still too high in international comparison, it continues to decrease.

Elder care: heavy workloads with negative consequences for clients

Although some positive developments can be reported in long-term care, there were some less favourable findings about elder care in particular. Older people living in residential and nursing home facilities, and their representatives, were more likely to report negative experiences than clients using other types of care. One particular complaint involved a lack of time and attention on the part of staff: one third of care home residents reported that care staff never, or only occasionally, devotes sufficient time to them. Besides these relatively unfavourable scores, wide variations between facilities were also found. It therefore really matters which facility one is able to move into. When researchers probed further into the sources of dissatisfaction or positive experiences, they found that clients definitely value the work of the care providers. The dissatisfaction hence cannot be attributed to poorly functioning staff members. This is confirmed by the staff members themselves: one third of all care providers in the nursing and residential care sector reported in 2013 that insufficient staff was available to enable good-quality care, a figure that rose to 43% in residential elder care facilities and 53% in nursing homes. Fifteen per cent of nursing home workers rated the care provided within their own units as 'regularly or often inadequate'. Such concerns have been noted in previous editions of the Performance Report, and the 'shortage of hands' has frequently come up in political and public debate. It is not so much a negative trend as a chronic predicament.

Continuing wide differences between health care providers in terms of working practices

Differences between working practices in comparable health care situations (variations in practice) have been a matter of scrutiny in recent years. Such variations may be considerable; that is to say, the treatment that patients receive may differ greatly depending on which health care provider they consult. Some hospitals, for example, induce labour in 40% of low-risk cases (women with full-term first pregnancies in breech presentation), as compared to only

10% in the most circumspect hospitals. There are comparable disparities in terms of assisted and Caesarean deliveries. Further variations are seen in the degree to which general practitioners adhere to recommendations in professional guidelines when they prescribe medicines; for some recommendations, a difference of more than 30% has been found between those who most closely and least closely follow the guidelines. There are hospitals where 100% of the hip fractures are operated on within one calendar day; prompt surgery lowers the risk of complications and mortality. There are also hospitals that manage that in fewer than 80% of the cases.

Accessibility

Dutch health care system is still highly accessible

Previous editions of the Performance Report have shown that accessibility is one of the Dutch health care system's exceptionally strong qualities. Health care resources have a well-balanced geographical coverage: a general practitioner, physiotherapist or midwife can generally be reached by car within a few minutes, and a car journey to a hospital rarely takes more than half an hour. Waiting lists, cited now and then as one of the problem aspects in Dutch health care, have been reduced since 2008 for the vast majority of inpatient and outpatient specialist treatment modalities. For long-term care, waiting lists are considerable, but the number of people involuntarily on waiting lists is very low. Differences in accessibility between demographic or socioeconomic groups also appear to be limited. The only exception is dental care, where people with more education have a higher frequency of dental check-ups. Socioeconomic variations in dental care are a persistent problem in virtually all Western countries, and the Dutch disparities are small in international comparison.

Financial accessibility: no longer a virtual certainty

Until recently, there were few people in the Netherlands who decided to forego curative health care for financial reasons. The tide now seems to be turning. In 2013, 12% of Dutch respondents in the Commonwealth Fund International Health Policy Survey reported having decided one or more times against seeing a doctor in the previous year because of the anticipated costs. That figure was but 2% three years earlier. A similar increase was seen in terms of failure to undergo recommended medical testing or treatment (16%, up from 3%).

It is not by definition considered inappropriate when people forego medical care on cost considerations. The Dutch compulsory excess is in fact designed to discourage the use of non-essential health care. The market research agency Intomart GfK has arrived at lower percentages of people who failed to take up health care in 2013, and it rated a proportion of this as 'appropriate treatment avoidance'. The degree to which health care uptake may or may not be deemed 'appropriate' or 'essential' is, however, a difficult thing to determine. No generally accepted criteria exist.

Possible explanations lie in the increases in the compulsory health insurance excess, the lower numbers of people who purchase supplementary insurance cover, and the effects of economic recession. Additional analysis by the Dutch research institute IQ Healthcare revealed a distinct income effect: the lower the income, the greater the likelihood that people forego health care. In a 2013 survey by the research agency NIPO, two thirds of medical specialists and three quarters of general practitioners reported seeing this in their own practices. In a poll conducted in 2014 by the National Association of General Practitioners (LHV), 94% of GPs indicated that patients sometimes did not follow their recommendations due to cost considerations; 70% saw that occurring daily or weekly. The recommendations reportedly most likely to be foregone for financial reasons were laboratory testing, drug prescriptions, mental health consultations, supplementary examinations such as x-rays, and referrals to other primary care providers such as physiotherapists.

Affordability

Health care expenditures continue to rise, but have stabilised slightly since 2011

One of the most striking trend deviations since previous editions of the Performance Report can unquestionably be seen in the Dutch health care expenditures. Although these were mounting on average by 5.5% a year in the 2000-2013 period, the increase slackened to 2.5%, 4.3% and 2% in 2011, 2012 and 2013. One explanation lies in the economic recession occurring at that time. Economic prosperity and health care expenditures are closely interconnected. Some European countries even saw a dip in health care expenditures in the period following 2009, something hardly seen anywhere before that time. Some of the stabilisation that occurred in the Netherlands can be attributed to cost-curbing policies. The Medicine Prices Act (WGP), for example, and the 'preferred drugs policies' pursued by health insurers have sharply curtailed drug expenditures. The OECD, which investigated how countries responded to the economic recession, found that the growth in spending in many countries, including the Netherlands, was tempered most strongly with regard to pharmaceutical drugs and disease prevention. Within Europe, the Netherlands is still one of the countries with the highest health care spending as a percentage of the gross domestic product; this is attributable mainly to the costs of long-term care.

In the Administrative Outline Agreements on health care, it was agreed to limit the growth in expenditure for hospital care, primary care and mental health care over the 2014-2017 period. Amendment of the Exceptional Medical Expenses Act (AWBZ) will have wide-ranging effects on the system of long-term care. If these measures are successful, this will further curtail the growth of health expenditure.

Transparency in quality of care: many new initiatives

In the 2010 Performance Report, we pointed out that transparency about the quality of care was lacking in many areas. A good deal of change has occurred since then, but much is still to be done. In many respects, the basic prerequisites for obtaining valid, reliable information are still not in place. A key concern lies in the fragmentation, inadequacy, inaccessibility and lack of clarity of record systems. The drive to ensure transparency has by no means faltered. Initiatives have come and gone, and examples of projects where intensive efforts are made towards quality transparency are now more numerous than ever. The recently established Institute for Health Care Quality (Kwaliteitsinstituut) is set to play a major role in those efforts. In the health insurance industry, where the focus used to be mainly on money, we observe that quality now plays an increasing, albeit modest, role in health care purchasing. Many record systems have been implemented by various professional sectors to generate reflective information to help practitioners compare their own working practices to those of others. One development worth noting is the successful health care consumer evaluation website ZorgkaartNederland.nl, which uses a method that many people are already familiar with in sharing information about camping sites or restaurants. This is a sign that patients may often be more interested in the personal reports of other patients than in more abstract, quantitative indicators. Given the many new initiatives aiming at quality transparency in health care, it is still early days to draw firm conclusions about transparency. The coming years will tell whether new or different approaches, preferably based on reliable records, will help to improve quality transparency.

Managed competition now more apparent

With the passage of the 2006 Health Insurance Act, the Dutch government revamped the curative health care system in line with a model of managed competition. In the 2010 Performance Report, we concluded, partly on the basis of a report entitled *Evaluatie Zorgverzekeringswet en Wet op de Zorgtoeslag* (Evaluation of the Health Insurance Act and the Health Care Allowance Act), that there was still a long way to go before all the necessary conditions for managed competition would be satisfied. Consequently, few effects of the policy were discernible then, and it may have been still too early to identify effects arising from such a wide-ranging health system overhaul. In the present report, we observe that the conditions in question have come closer to fulfilment. Health insurers are putting forth clearer profiles and have taken the first steps towards selective contracting. A number of policy measures, such as the widening of the domain of services with freely negotiable fees (the 'B-segment'), have afforded insurers and health care providers more latitude in contracting for services. Purchasing strategies based on critical appraisals of health care quality are still rare in health insurance companies. But the numbers of clients now switching insurers, totalling 1.2 million in 2013, are evidence that actual competition does exist between insurance companies. The nominal health insurance premiums, which companies may determine themselves, have decreased slightly in 2014.

The future

Information in the *Dutch Health Care Performance Report* is always based on matters that can be quantitatively assessed. By definition, then, that data says nothing about the future. Yet we do take certain anticipated developments into account. One major change will be the transfer of the funding of long-term care from the Exceptional Medical Expenses Act (AWBZ) to the Social Support Act (WMO) and the Health Insurance Act (ZVW). We shall be monitoring that process closely and are currently designing still more accurate indicators to evaluate it. Transparency in health care quality will definitely continue to be an issue in the foreseeable future. Especially in times like these, when the health care system is in such a high state of flux, we need robust instruments for the ongoing assessment of quality, accessibility and costs. New developments often necessitate new and different indicators. In the years to come, the Performance Report will accommodate to this wide range of new developments, and the central focus will still be on evaluating quality, accessibility and affordability.

1

Dutch Health Care Performance Report: background and approach

The Dutch Health Care Performance Report

The Dutch Health Care Performance Report (DH CPR) reviews the functioning of the health care system in the Netherlands. The first Performance Report was commissioned by the Ministry of Health, Welfare and Sport in 2006. Since then four reports have been published, in 2006, 2008, 2010 and the present report in 2014. The notion of performance, as used in this report, is consistent with the so-called 'system goals' of Dutch health care for which the minister of health is responsible. The system goals are quality, accessibility and affordability.

Next to the Dutch Health Care Performance Report, results are presented on the Dutch website <https://www.volksgezondheidenzorg.info/>.

At the core of the report and the website are a set of about 140 indicators that collectively document the functioning of health care and the health care system. The indicators are regularly updated on the website, which therefore provides a current picture of the state of affairs. The report also looks back at the past four years by answering the questions: What major changes have been going on? What works well and what works less well?

The definition of health care

Health care is defined as ‘the entire field of health care providers, supporting staff, institutions, resources and activities whose direct aim is to maintain or improve people’s health status or self-reliance and to prevent, resolve, alleviate or offset deficiencies in health and personal functioning’ (based on Van der Meer & Schouten, 1997). Central to the definition is the provision of health care by the health care provider to the individual patient or client, although activities of supporting staff, like physician assistants, laboratory personnel and management, are also considered part of health care. Health care providers have completed a medical, nursing or nursing care training that allows them to practice their profession.

Compared to the previous editions of the Performance Report, the definition of health care has been tightened up.

The system goals of Dutch health care: quality, accessibility and affordability

Quality

There are various definitions of the concept of quality. The Institute of Medicine (IOM) defines quality as “doing the right thing, at the right time, in the right way, for the right person, and having the best possible results” (IOM, 2001). This definition refers to a number of concepts, which are considered in the literature as essential to quality: effectiveness, safety, timeliness and responsiveness (Arah, 2005). The Care Institutions Quality Act (Kwaliteitswet Zorginstellingen (KWZ)) also uses concepts like effectiveness (efficacy) and patient-centredness.

In the present Performance Report quality has three dimensions: effectiveness, safety and patient-centredness.

Accessibility

Accessible care implies that ‘people, who need care, can access care in a timely manner and without great barriers’ (Smits et al., 2002). Several aspects keep recurring in the literature that together determine accessibility of care and may limit it. These aspects include costs, travel distance, waiting times and the extent to which the supply of care is responsive to the needs and demands of people.

Various chapters address the following types of accessibility:

- geographical access
- financial access
- timely access
- access according to needs

Affordability

Controlled cost development and an efficient health care system are central to the Health Care Market Regulation Act (Wet marktordening gezondheidszorg (WMO)), introduced in 2006. A contained growth in expenditure ensures that health care remains affordable for society and does not heap pressure on public resources and the national income. In other words, it keeps health care affordable at the macro level. As there is no universally accepted standard for affordability of health care, any judgement on this matter is political in nature. Affordability of health care at the individual or household level is categorised as financial accessibility. Improved efficiency can help control expenditure, but it goes beyond that. Efficiency is about the relationship between the costs and revenues of the care provided. A further increase in expenditure can be effective, provided the yields are accordingly. In the new health care system the insured and insurers have important roles to play in the area of efficiency: they are expected to choose care with the most favourable price-quality ratio.

The approach

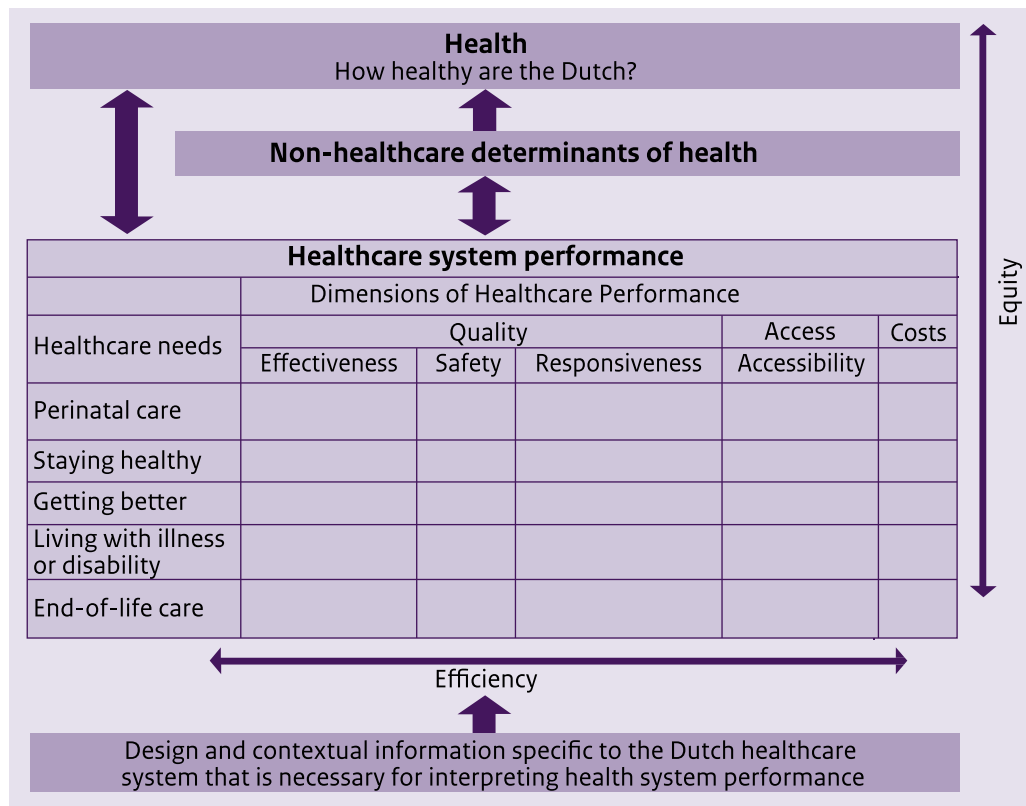
For the purpose of the DHCPR-series, the Ministry of Health formulated indicator domains that are crucial to assessing the performance of health care. RIVM has developed and ranked a set of indicators across these domains. Thus the system goal 'quality of care' encompasses the domains effectiveness, safety and client-centredness.

We make use of the same conceptual framework for performance indicators (figure 1.1) as in the previous Performance Reports. In the 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. In the present Performance Report, perinatal care has been added. A complete list of indicator domains and indicators is presented in Appendix 2.

The indicator domains and indicators are the backbone of the Performance Report. The structure of the present report has been slightly adapted to allow for a better match with the actual problems policy makers are confronted with and the ways in which these can be solved. Quality, accessibility and affordability remain central concepts, but in reality such issues cannot always be easily separated and policy issues are likely to be related to various system goals.

The process of selecting and developing indicators involves many steps, in which experts, scientists and policy makers each have a role to play (Van den Berg et al., 2011).

Figure 1.1: Conceptual framework of healthcare system performance (source: Arah et al., 2006).



The purpose of the Dutch Health Care Performance Report

The aim of the Performance Report 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 Performance Report attempts, in accordance with its commission, to present a broad picture of the entire health care system. Those who are looking for detailed information about a specific health care sector will probably not find it in the Performance Report. They do, however, find the way to underlying sources that provide more information.

The added value of the Performance Report lies in particular in the integration and linking of information from a multitude of sources, thereby revealing underlying issues at the system level. The Performance Report also has a signalling function by identifying knowledge gaps and as such functions as a knowledge agenda.

Van den Berg and colleagues (2014) provide a more detailed description of the history and function of the Performance Report in the context of the policy process.

Outline of the Dutch Health Care Performance Report

The Performance Report starts with an executive summary that highlights a number of prominent health care issues against the backdrop of recent developments and ongoing discussions.

Chapters 2 to 10 present the indicators. Each chapter starts with a list of key findings, followed by an elaboration of the findings on the basis of indicators, and ends with overall conclusions. Chapters 3 to 7 are more or less structured along health care needs in the different stages of life, from prenatal care to end-of-life care. Obviously, some types of care are not limited to a specific stage of life. Chapters 8 to 10 deal with subjects that are found elsewhere in the framework: care expenditures and efficiency, the relationship between care and health, and equity.

In the concluding chapter, chapter 11, we look at what information was available to the present Performance Report and what information was lacking, and to what extent we managed to 'fill' the framework. By discussing which issues we were able or unable to address or to provide useful information about, we provide input and recommendations for the knowledge agenda.

2

Antenatal, perinatal and postpartum care

Key findings

- In 2012, 90.3% of women of child-bearing age could reach the nearest midwife practice within 10 minutes by car.
- In 2011, 99.7% of women of child-bearing age could be transported to hospital within 45 minutes by ambulance.
- In 2011, 97.9% of women of child-bearing age could reach a hospital maternity unit within 30 minutes by car.
- The percentage of pregnant women that had their first prenatal visit before 10 weeks of pregnancy has risen from 35% to 81%. This percentage has risen from 28% to 76% for women from deprived areas.
- The percentage of women that smoked during pregnancy was reduced by half between 2001 and 2010; 6.3% of pregnant women still smoked in 2010.
- The episiotomy rate among homebirths decreased to 12% in the 2005-2012 period.
- The percentage of perineal tears after vaginal birth (without instrument) rose slightly from 2.2% in 2005 to 2.9% in 2012.
- In 2012, 0.42% of live births at home had an Apgar score at 5 minutes of less than 7.
- In 2010, 74% of mothers breast fed their babies within 48 hours after birth. This is a slight decrease since 2005.
- The percentages of spontaneous deliveries in hospital rose among both the total number of women delivered and the nulliparous term singleton vertex group in the 2005-2012 period.
- After a rise in the 2007-2010 period, the percentage of induced labours remained stable at around 24%. The variation among hospitals was considerable.

- The percentage of instrumental deliveries carried out by vacuum extraction decreased slightly between 2005 and 2012. The variation among hospitals was considerable.
- Between 2005 and 2012 the percentage of emergency caesarean sections remained relatively stable among the total number of women delivered, and rose slightly in the nulliparous term singleton vertex group. The variation among hospitals was considerable.
- The percentage of elective caesarean sections among both the total number of women delivered and the nulliparous term singleton vertex group remained stable between 2005 and 2012.
- The episiotomy rate in spontaneous deliveries in hospital decreased from 31% in 2005 to 28% in 2012. The episiotomy rate in induced deliveries is higher and increased slightly from 84% in 2005 to 87% in 2012.
- The rate of perineal tears among unassisted vaginal deliveries in hospital was around 3% and among instrumental deliveries (vacuum extraction) around 3.5%. In the Netherlands, the rate of perineal tears among unassisted vaginal deliveries was relatively high compared to other OECD-countries, while this rate was relatively low among instrumental deliveries.
- The patient-reported experiences with communication and information with maternity care providers were very positive in 2010. Variations between maternity care providers were minimal.
- The fetal mortality rate decreased from 7.7 per 1,000 live births and stillbirths in 2000 to 5.5 in 2012. The neonatal mortality rate decreased from 4.2 per 1,000 live births and stillbirths in 2000 to 3.0 in 2012.
- Compared to other Western European countries, the fetal mortality rate decreased considerably in the 2004-2010 period. Despite the decrease, the fetal mortality rate in 2010 was still higher than in other Western European countries.
- The neonatal mortality rate in the Netherlands decreased considerably between 2004 and 2010, but was still high compared to other Western European countries. In 2010 the mortality rate in the Netherlands was second-highest of 13 countries.
- Almost all midwives and gynaecologists participated at least once in a perinatal audit in the 2010-2012 period. In this period the number of participants rose with 61%.
- The percentage of preterm births delivered in maternity units without an on-site neonatal intensive care unit (NICU) decreased in the 2005-2012 period.
- The total expenditure for primary obstetric care covered by health insurance rose from €133 million in 2007 to €188 million in 2011.
- The total expenditure for hospital obstetric care covered by health insurance rose from €537 million in 2008 to €578 million in 2011.
- The total health expenditure for obstetric care services has risen, especially in 2008.

2.1 Background

In the Dutch system of obstetric and perinatal care there is a clear division between primary, secondary and tertiary care. Primary care midwives assist women during pregnancy and childbirth when these proceed normally. In case of (expected) complications, the midwives refer the pregnant women to secondary care. They do so on the basis of guidelines (CVZ, 2003;

revision in preparation). Gynaecologists in secondary and tertiary obstetric care help pregnant women at increased risk, sometimes from the beginning of pregnancy, but usually after referral by the midwife.

In 2012, 173,500 women gave birth, 29.6% in primary care: 27,633 (15.9%) children were born at home, 2,654 (1.5%) in a birth centre and 21,843 (12.5%) in an outpatient department under supervision of a midwife or gynaecologist. 123,633 (70.2%) children were born in a consultant-led hospital maternity unit (PRN, 2013d).

The first Euro-Peristat study (2003) revealed that in international perspective the Netherlands had one of the highest perinatal mortality rates of all countries participating in the study (Buitendijk et al., 2003; Buitendijk & Nijhuis, 2004). Since then, perinatal mortality has been high on the political and public agenda in the Netherlands. The second Euro-Peristat study (2008) found that the Netherlands, again after France, still had one of the highest mortality rates (Mohangoo et al., 2008). Various measures have been taken to improve and guarantee the quality of care during pregnancy and childbirth, including the introduction of preconception visits, establishing the Steering Committee Pregnancy and Birth and the Foundation Perinatal Audit in The Netherlands (PAN), and the introduction of the 20-week ultrasound (anomaly scan) (VWS, 2008a).

In 2009, the Steering Committee Pregnancy and Birth reviewed the state of affairs of pregnancy and birth in the Netherlands from four perspectives: quality, organisation, deprived groups, and transparency. The Steering Committee made a number of recommendations to reduce the number of maternal and perinatal deaths due to substandard (care) factors by 50% within five years. Its most important recommendation was that the quality of perinatal care has to be improved by close co-operation and better communication between all care professionals involved, and between care professionals and pregnant women and their families (Stuurgroep zwangerschap en geboorte, 2009).

In 2010, the perinatal audit was implemented in all perinatal care collaboratives through the work of PAN. The audit serves as an instrument to guarantee and improve the quality of perinatal care. Subsequently, the College for Perinatal Care (CPZ) was set up in January 2011 to implement the recommendations of the Steering group. CPZ consists of representatives of pregnant women, of all types of health care professions involved, of hospitals, of maternity care organisations, and of health insurers. An important task of CPZ is to promote and improve cooperation between the various health care professionals involved in obstetric care. In addition, there are several initiatives underway to improve the quality of obstetric care. An example is the development of a Standard for Integrated Obstetric Care by CPZ in close cooperation with the Institute for Health Care Quality.

Netherlands Organisation for Health Research and Development (ZonMw) initiated the research programme 'Pregnancy and Birth' in 2012. Under this programme grants are allocated to national studies, including the evaluation of birth centre care and the study into the effectiveness of third trimester ultrasound screening to detect small-for-gestational-age

babies. In addition, regional consortia are being set up that are jointly responsible for research into perinatal and maternal morbidity and mortality in the Netherlands (ZonMw, 2013).

Finally, the Health Care Inspectorate (IGZ) performed a theme study in 2012-2013 into the quality and safety of primary and secondary perinatal care (IGZ, 2012a). The latest Euro-Peristat report, (Euro-Peristat, 2013) presenting figures for 2010, showed a marked decrease in perinatal mortality in the Netherlands. However, since mortality also declined in other countries, the Netherlands' ranking relative to other countries showed only modest improvement.

2.2 Indicators for antenatal, perinatal and postpartum care

Antenatal, perinatal and postpartum care include all care related to pregnancy, labour and childbirth; in fact from the desire to have a child (preconception care) to the transfer to youth health care.

We describe the accessibility, quality and costs of antenatal, perinatal and postpartum care across the continuum of care. Antenatal, perinatal and postpartum care encompass prevention, primary obstetrics, secondary obstetrics, maternity care and the continuum of care. This chapter focuses in particular on pregnancy, birth and postpartum period (one week after birth).

We selected 26 indicators to assess the accessibility, quality and costs of antenatal, perinatal and postpartum care. These indicators are derived from existing national and / or international data sources. National data come from research or perinatal registers and are routinely collected for research purposes or to self-monitor the quality of care by professional groups. The international data come partly from international research or from databases of international organisations, such as Euro-Peristat and OECD. These data are used to compare trends and differences between countries.

Accessibility

- Percentage of pregnant women that can reach the nearest midwife practice within 10 minutes
- Percentage of pregnant women that can reach a hospital maternity unit by car within 30 minutes
- Percentage of pregnant women that can be transported to a hospital maternity unit by ambulance within 45 minutes

Quality

Preventive care

- Percentages of pregnant women (all pregnant women and pregnant women from deprived areas) that have their first prenatal visit before 10 weeks of pregnancy
- Percentage of women that smokes during pregnancy

Midwifery

- Episiotomy rate among homebirths
- Rate of perineal tears after vaginal birth without instrument
- Percentage of live births at home with an Apgar score at 5 minutes of less than 7
- Percentage of babies that is breast fed within 48 hours after birth

Secondary and tertiary obstetric care

- Mode of delivery
 - Percentage of spontaneous deliveries in the nulliparous term singleton vertex group
 - Percentage of induced deliveries in the nulliparous term singleton vertex group
 - Percentage of instrumental deliveries in the nulliparous term singleton vertex group
 - Percentage of emergency caesarean deliveries in the nulliparous term singleton vertex group
 - Percentage of elective caesarean deliveries in the nulliparous term singleton vertex group
- Episiotomy rate among spontaneous deliveries
- Episiotomy rate among instrumental deliveries
- Rate of perineal tears among instrumental vaginal deliveries
- Rate of perineal tears among unassisted vaginal deliveries

Maternity care

- Percentages of women who reported to have usually or always good experiences with maternity care

Integrated care

- Fetal mortality rate per 1,000 live births and stillbirths
- Neonatal mortality rate per 1,000 live births and stillbirths
- Percentage of attended perinatal audits
- Percentage of preterm births delivered in maternity units without an on-site neonatal intensive care unit

Costs

- Total expenditure for midwifery
- Total expenditure for hospital obstetric care
- Total expenditure for maternity care

2.3 State of affairs

2.3.1 Accessibility

In 2012, 90.3% of women of child-bearing age could reach the nearest midwife practice within 10 minutes by car

Geographical accessibility of primary midwife practices is better in the Randstad than in Zeeland and the northernmost provinces. The low population density and the on average older population make it harder for midwives to build a profitable practice in rural areas (NIVEL, 2008). Potentially dangerous situations for mother and / or child and deliveries make midwife travel times an issue. However, data to measure this indicator are lacking.

In 2011, 99.7% of women of child-bearing age could be transported to hospital within 45 minutes by ambulance

In the Netherlands, 99.7% of women of child-bearing age can be transported by ambulance to a hospital maternity unit within 45 minutes (Giesbers et al., 2012). The longer travel times accrue mainly on the Frisian Islands and in northern Friesland and Groningen. Although the number of operational ambulance stand-by points is smaller at night, accessibility is slightly better than during the day (99.8%), because there is less traffic.

Obstetric care is an acute care service. Irrespective of the demand, gynaecologists, obstetricians, paediatricians, nurses and other hospital staff must be on call 24 hours a day. When a hospital organisation has multiple locations, obstetrics is often concentrated in one location. In 2011, there were 92 locations with an obstetric unit that was open 24 hours a day (Giesbers et al., 2012). Policy rules dictate that the spread of acute obstetrics departments should be such that everybody can be transported to an obstetric unit within 45 minutes of an emergency call. The accessibility of obstetric services is especially important for women of childbearing age (15 to 45 years).

In 2011, 97.9% of women of child-bearing age could reach a hospital maternity unit within 30 minutes by car

97.9% of women of child-bearing age (15 to 45 years) can reach a hospital maternity unit within 30 minutes by car. About 2% (66,715) of women of child-bearing age lives more than a 30-minute car ride from a hospital maternity unit, especially on the Frisian Islands, Zeeuws-Vlaanderen, Schouwen-Duiveland, Noordoostpolder and parts of Friesland and northern Groningen.

2.3.2 Quality

The percentage of pregnant women that had their first prenatal visit before 10 weeks of pregnancy has risen from 35% to 81%. This percentage has risen from 28% to 76% for women from deprived areas

To carry out prenatal screening as early as possible in the pregnancy, it is recommended that the first contact of a pregnant woman with an obstetrician or GP takes place preferably within 8 to 10 weeks after the first day of the last menstrual period. The earlier in the pregnancy an increased risk of congenital anomalies is known, the more time the parents-to-be have to make choices about prenatal diagnosis. In addition, some tests are done early in pregnancy (KNOV, 2005). The goal is to detect potential complications in pregnancy as early as possible and to prevent them or to initiate timely treatment (KNOV, 2008; Euro-Peristat, 2013). Midwives, municipal government and national government can promote a timely visit to a midwife practice through targeted information for different populations. Perinatal prevention and care can greatly improve the outcome of pregnancy as well as the life chances of new-born babies and their mothers. Low-educated women have higher rates of complications during pregnancy and childbirth. Hence in this group the most health benefits can be achieved. However, this group of women is known to be hard to reach.

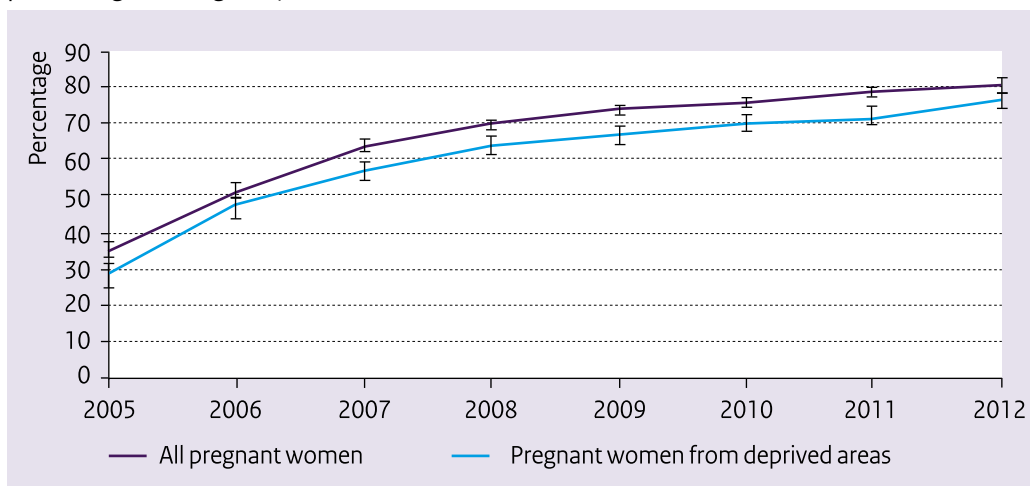
Since 2005, the percentage of women that reports to the midwifery practice before the tenth week after the first day of the last menstrual period has increased (figure 2.1). In 2005 this was 35%, to rise to 81% by 2012. These percentages are slightly lower in deprived areas, but they show a similar increase from 28% in 2005 to 76% in 2012. The figures may not be completely accurate, because the method of recording has changed over time. Previously, the appointment date was often registered as the date of the first contact, while at present the date of the first phone call is registered as such. The increase may also be the result of increased attention of midwives for a timely contact (KNOV, 2008), and a greater propensity of pregnant women (perhaps influenced by the media) to make an appointment with the midwife early in pregnancy. Even so, the date of the first contact is not completely straightforward, as the main recommendations (folic acid supplementation, quitting smoking and alcohol) are not always mentioned during the phone call. These are often part of the first visit.

The percentage of women that smoked during pregnancy was reduced by half between 2001 and 2010; 6.3% of pregnant women still smoked in 2010

In the period 2001-2010, the percentage of women that smoked during pregnancy was reduced by half. In 2010, 6.3% of pregnant women smoked daily during pregnancy, versus 13% in 2001. Smoking rates fell irrespective of educational level (figure 2.2). They are still highest among women with low levels of education.

Smoking during pregnancy is harmful not only to the mother but also to the unborn child. It increases the risk of premature birth, low birth weight and perinatal mortality. Interventions to make pregnant women stop smoking have proven effective and reduce the risk of low birth

Figure 2.1: Mean percentage of women (with 95% confidence intervals) who had their first prenatal visit before 10 weeks of pregnancy, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).



weight and preterm birth (Lumley et al., 2009). If more women were to stop smoking prior to pregnancy or in early pregnancy, substantial health gains can be achieved (Van den Berg et al., 2013).

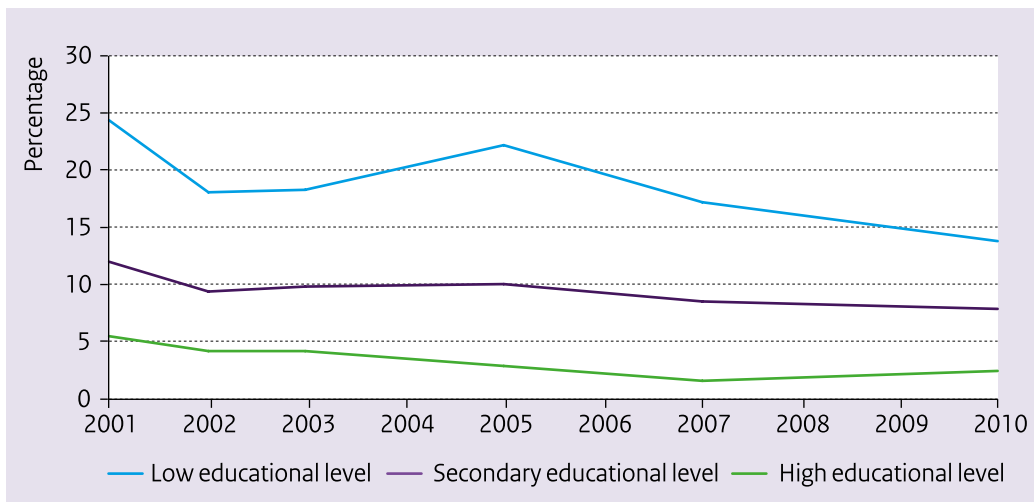
The episiotomy rate among homebirths decreased to 12% in the 2005-2012 period

To speed delivery, an episiotomy may be performed. An episiotomy is a surgical cut to the perineum (the area between the vaginal opening and the anus) and the muscles beneath it to widen the opening of the birth canal. When labour fails to progress, this may cause fetal distress. Another important reason for doing an episiotomy is to prevent the perineum from tearing (partial or total tears).

A lot of research has been done in the relationship between episiotomy and perineal tears (Steiner et al, 2012; Carroli & Mignini, 2009). However, routine episiotomy is discouraged and a conservative approach is recommended with the aim to minimize episiotomy rates and partial or total tears (Carroli & Mignini, 2009). The main risk factors for getting an episiotomy are fetal distress, having a first child (nulliparity), prolonged labour (shoulder getting stuck behind the pubic bone), a deviant position of the child in the womb (occiput-posterior presentation), and high birth weight (> 4000 g) (Steiner et al., 2012).

In 2005, the incidence of episiotomies among homebirths was 14%. By 2012, this percentage had decreased to 12% (figure 2.3). It may be that the profession performs an episiotomy ‘more deliberately’. In addition, there was a shift in the percentage of home births in the period 2005-2012. More low-risk women give birth in hospital because of a referral to secondary care. Reasons for doing so include a growing preference among women for pain relief through an epidural and a growing tendency to initiate labour (in case of a pregnancy longer than 41

Figure 2.2: Smoking prevalences during pregnancy by level of education of the mother, 2001-2010 (source: Lanting et al., 2012).



weeks, or high blood pressure of the mother) to prevent complications. This reduces the denominator resulting in lower percentages.

The percentage of perineal tears after vaginal birth (without instrument) rose slightly from 2.2% in 2005 to 2.9% in 2012

In the period 2005-2012, the percentage of perineal tears after vaginal birth (without instrument) rose slightly from 2.2% to 2.9% (figure 2.4). There are four degrees of trauma to the perineum. Third degree trauma (injury to anal sphincter muscle) and fourth degree trauma (injury to both anal sphincter muscle and rectal soft tissue) may cause a lot of pain, distress, incontinence (bladder and rectum), and anxiety about a next pregnancy. Third and fourth degree tears need to be sutured under (complete) anaesthesia. Anaesthesia can cause unpleasant side effects or complications and may lead to a prolonged hospital stay.

Perineal tears can often be prevented by performing an episiotomy. However, the routine use of episiotomy may have adverse effects. The health professional needs to find a balance between preventing tears and performing unnecessary cuts (Carroli & Mignini, 2009). Therefore, this indicator is informative about the safety of obstetric care (AHRQ, 2006). Although there is no obvious causal relationship, it appears that in that same period (2005-2012) the number of episiotomies in home births decreased (figure 2.3).

Recent studies show a rise in the percentages of third and fourth degree tears in various European countries (Gurol-Urganci et al., 2013; Baghestan et al., 2010; Raisanen et al., 2009). An explanation might be that an increasing number of women has their first baby at an older age. Next to that, there is an increase in overweight mothers. Both a higher age and overweight are related to a higher birthweight and hence to an increased risk of perineal tears (Baghestan et al., 2010; Raisanen et al., 2009). Other risk factors for perineal tears include

Figure 2.3: Mean percentage of episiotomies (with 95% confidence intervals) in home births, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).

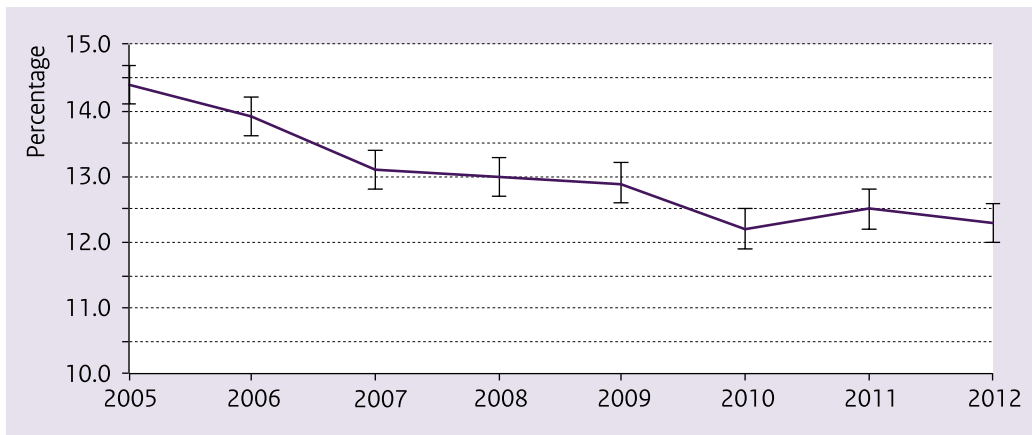
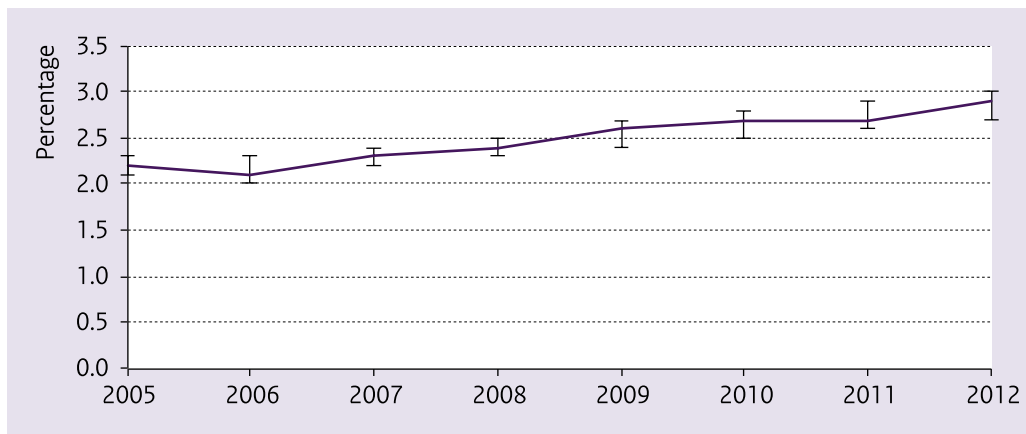


Figure 2.4: Percentage of women (with 95% confidence intervals) with perineal tears in home births, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).



having a first child (nulliparity), a deviant position of the child during labour (occiput-posterior presentation), and prolonged labour (De Leeuw et al., 2001; De Leeuw et al., 2008). Yet another explanation for the rise in high degree tears may be a better recognition and hence registration by health professionals (GuroI-Urganci et al., 2013). Finally, the fall in episiotomy rates may have caused a rise in perinatal tear rates.

In 2012, 0.42% of live births at home had an Apgar score at 5 minutes of less than 7

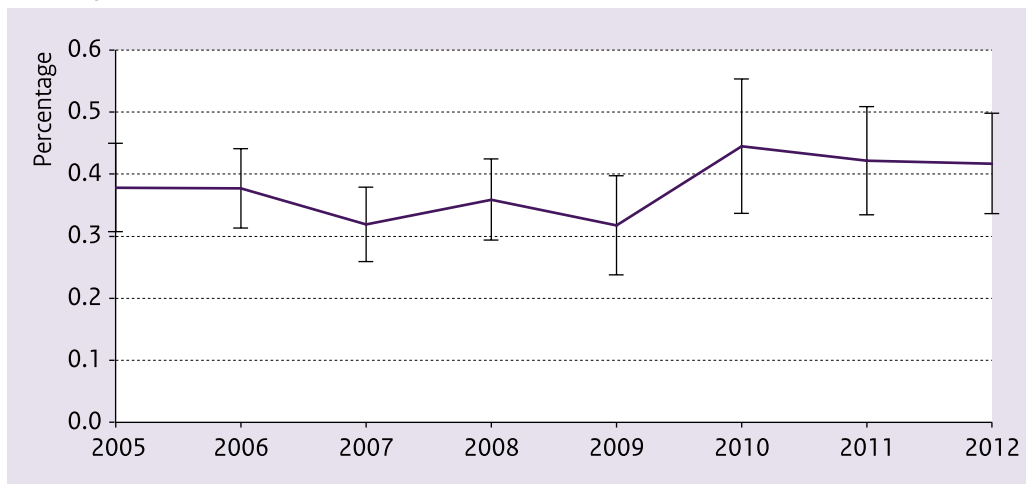
In the period 2005-2012 the percentage of live births with an Apgar-score at 5 minutes of below 7 fluctuated between 0.32 and 0.42%. There is no clear rising or falling trend (figure 2.5). In 2012 27,633 children were born at home, 0.52% of whom had an Apgar score at 5 minutes of less than 7. That is 122 children, or about 1 in every 4 midwife practices (in 2012 there were 511 midwife practices).

The Apgar-score gives an impression of the health of a new-born baby by scoring five clinical factors. In particular, the Apgar score at five minutes after birth is of prognostic value for the course of the baby's health. Usually, low Apgar scores in primary care can be prevented, because prior to the birth the risk of a birth with complications for mother and / or child is assessed. In other words, this indicator tells us something about risk selection in primary obstetric care (ZiZo, 2011).

In 2010, 74% of mothers breast fed their babies within 48 hours after birth. This is a slight decrease since 2005

The percentage of babies that was breast fed from birth, decreased slightly, and was 74% in 2010 (figure 2.6). Breastfeeding has important benefits for baby and mother. That's the reason

Figure 2.5: Percentage (with 95% confidence intervals) of live births at home with an Apgar score at 5 minutes of less than 7, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).



why the World Health Organisation (WHO) strongly promotes it (WHO, 1998). There is an extensive body of research that shows that there is a relationship between breastfeeding and a reduced risk of the baby getting airway infections, gastro-intestinal infections, ear infections, overweight, diabetes mellitus type 2, high blood pressure later in life, and atopic dermatitis.

Breastfeeding has also important implications for the health of the mother, like a reduced risk of getting rheumatoid arthritis, and losing weight more quickly. The longer the mother breastfeeds, the larger the health effects (Van Bakel, 2014).

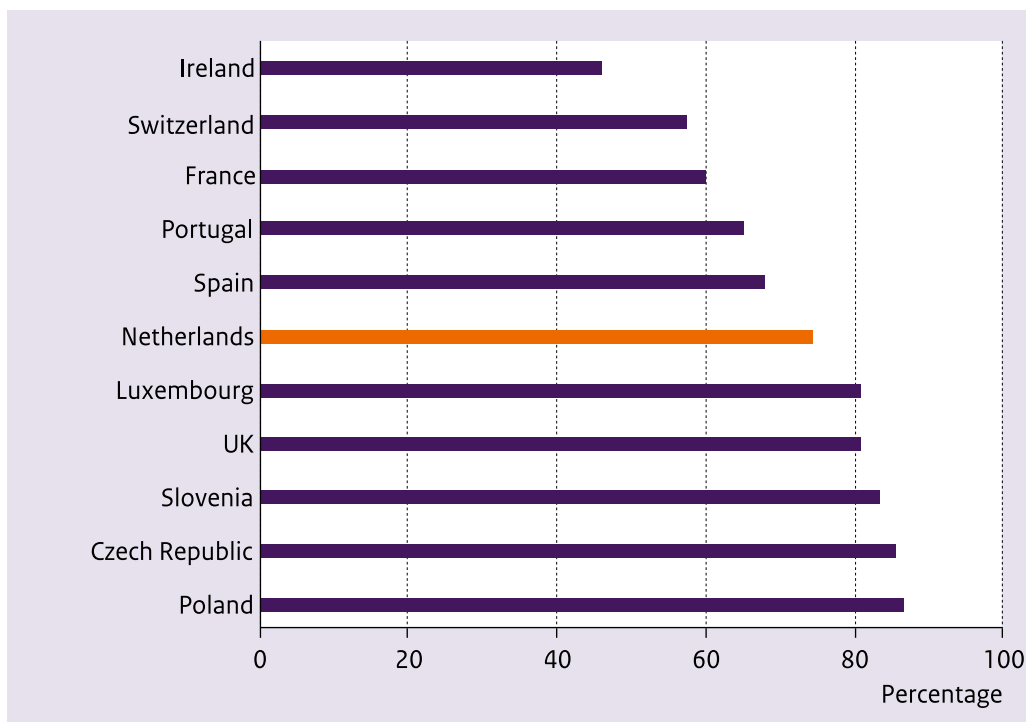
Giving assistance and support during pregnancy, the postpartum period and the period thereafter is an important condition for the success of breastfeeding. This involves providing information on breastfeeding, teaching skills as well as strengthening the confidence of breastfeeding mothers. Preparing the mother and providing information and education by the midwife during pregnancy play an important role (Renfrew, 2012; Yngve & Sjöström, 2001; WHO, 1998).

The percentage of mothers that gives exclusive breastfeeding is higher in the Netherlands than in many other Western European countries, but lower than in Central European countries (figure 2.7). The international comparison shows differences in initiating exclusive breastfeeding during the first 48 hours after birth. Dutch data was obtained from CBS (CBS StatLine, 2014a). Data from Belgium, Germany, Italy, Denmark, Norway, Sweden and Finland was not available.

Figure 2.6: Percentage of babies that were breast fed from birth, 2005-2010 (source: CBS Gezondheidsenquête (CBS Statline, 2014a)).



Figure 2.7: Percentages of babies that were breast fed within 48 hours after birth in 11 European countries, 2010 (source: Euro-Peristat, 2013).



United Kingdom (UK): including babies who are breastfed supplemented with milk formula
 Portugal and Switzerland: only full-term babies included.

Worldwide, there is an increase in the number of obstetric interventions such as caesarean section (by vacuum extractor or forceps) and induced deliveries. Research has shown that medical interventions may affect the health of both mother and child (RCOG, 2013). Therefore, we analyse the modes of delivery in the so-called nulliparous term singleton vertex (NTSV) or low-risk group (textbox 2.1). We look at spontaneous deliveries, induced labours, assisted deliveries and caesarean sections.

Textbox 2.1: The nulliparous term singleton vertex or low-risk group.

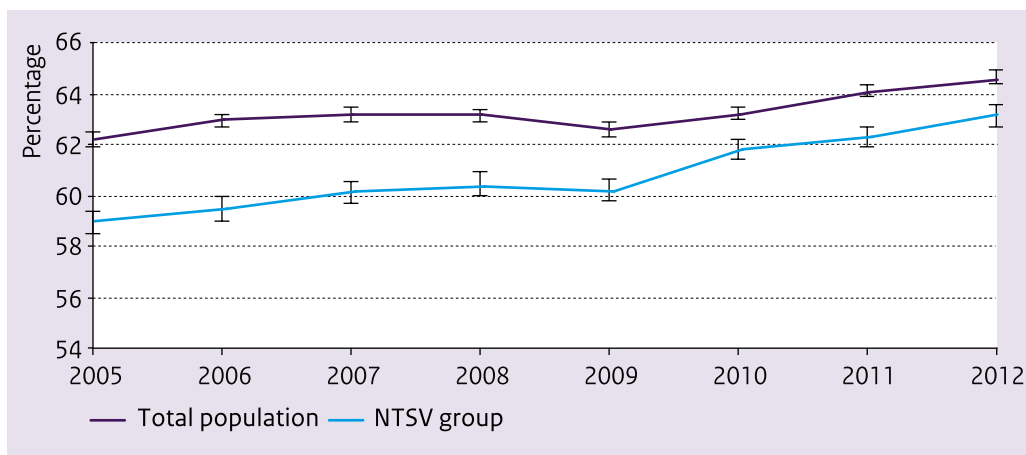
NTSV or low-risk group.

To assess the quality of secondary obstetrics, we concentrate on the low-risk group. Selecting a homogeneous (low risk) group is a better way to analyse quality than focusing on the entire group of pregnant women and their new-borns. This way the differences between hospitals are much less affected by individual differences the hospital has no control over (Bailit & Garrett, 2003; Bailit et al., 2006; Main et al., 2006; Coonrod et al., 2008).

Deliveries in this low-risk group have the following characteristics: it is a first-time pregnancy (nulliparous), it is a singleton pregnancy, the baby is full-term (≥ 37 weeks) and in a head-down position. In the international literature the term 'nulliparous term singleton vertex' (NTSV) is often used. These low-risk women are expected to need fewer interventions, such as induced labour, assisted delivery, and caesarean sections. However, some risks can be higher for women who give birth to their first child (Gardosi, 2013).

More and more low-risk women are referred to hospitals to deliver there. Important reasons for hospital referral (during labour) are pain relief and a growing tendency to induce labour to prevent complications. The increase in referrals of low-risk women decreases the 'case mix' in secondary care: the risk of complications and interventions is reduced. As a consequence the total number of births in secondary care increases as well as the number of 'normal' deliveries without complicating factors in hospital maternity units.

Figure 2.8: Percentage (with 95% confidence intervals) of spontaneous deliveries in hospital in both the total population of women delivered and the nulliparous term singleton vertex group, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).



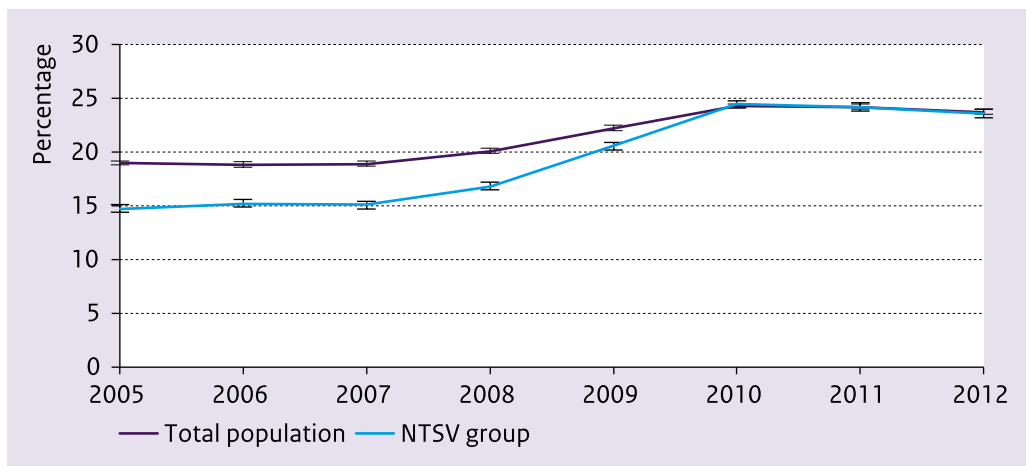
The percentages of spontaneous deliveries in hospital rose among both the total number of women delivered and the nulliparous term singleton vertex group in the 2005-2012 period

In the period 2005-2012, the percentage of spontaneous hospital deliveries increased among both the total number of women delivered and the NTSV group. In the first group this percentage rose from 62% in 2005 to 65% in 2012. The increase in the second group was slightly larger, with the percentage rising from 59% in 2005 to 63% in 2012 (figure 2.8).

In the Netherlands, following international recommendations, women should be allowed to have a spontaneous birth as much as possible and caesarean sections should be performed exclusively on medical grounds (NVOG, 2011a; WHO, 1996). Both caesarean sections and operative vaginal deliveries pose risks to mother and child, but should the need arise they ought to be used.

The increase in spontaneous births is not only due to a more expectant policy, but can also be explained by an increasing number of low-risk women giving birth in hospital.

Figure 2.9: Percentage (with 95% confidence intervals) of induced labours in both the total population of women delivered and the nulliparous term singleton vertex group, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).



After a rise in the 2007-2010 period, the percentage of induced labours remained stable at around 24%. The variation among hospitals was considerable

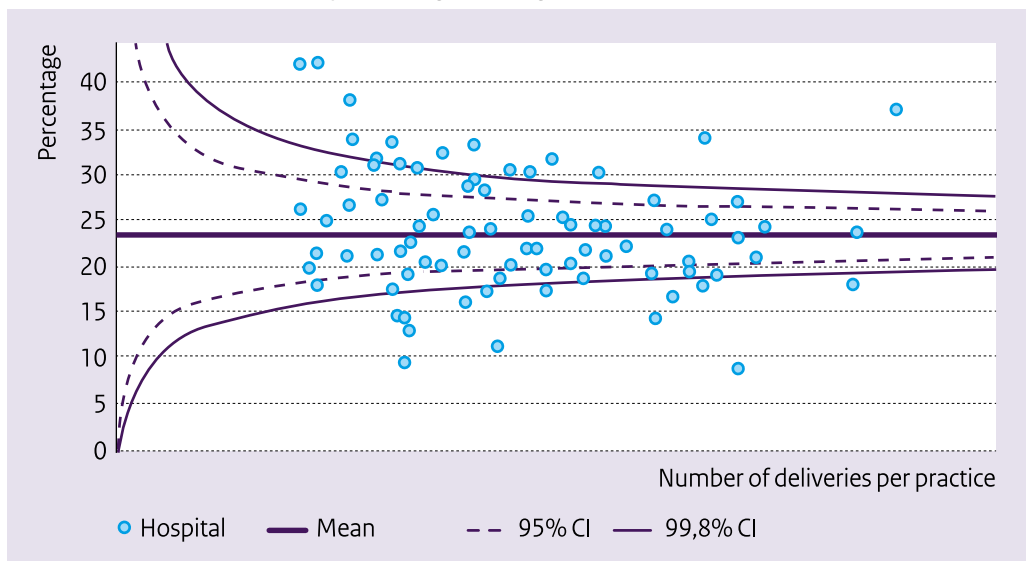
In the period 2007-2012, the percentage of induced labours in the total population of women delivered increased from 19% to 24%. The rise in the NTSV group was slightly higher, from 15% in 2005 to 24% in 2013 (figure 2.9). The highest rise occurred between 2007 and 2010.

Induction of labour means that labour is started artificially. There are important reasons for inducing labour, but complications may occur. In a small proportion of women, inducing labour is associated with an increased risk of emergency caesarean, severe blood loss, operative delivery and need of incubator care (Ehrenthal et al, 2010; Cammu et al, 2002; Heffner et al. 2003). Hence it is important, when considering induction, to carefully assess its advantages and disadvantages in each individual case (NVOG, 2006).

In countries like England, Scotland, the United States and Australia the induced delivery rates have gone up (RCOG, 2013).

Figure 2.10 shows the percentage of induced births in the NTSV group per hospital. The vertical axis measures the percentage of induced births, and each dot represents a hospital. The hospitals are arranged according to the number of deliveries (horizontal axis). Smaller numbers increase the chance of random deviations from the mean. The line in the centre represents the national mean. The dotted lines are the inner funnel limits and indicate the standard deviations from the mean, i.e. the 95% and 99.8% confidence intervals. For hospitals outside these lines, it is certain by 95% and 99.8%, respectively, that this position is not due to chance alone.

Figure 2.10: Percentage of induced labours in the nulliparous term singleton vertex group, 2012 (source: PRN, 2012; data processing Stichting PRN).



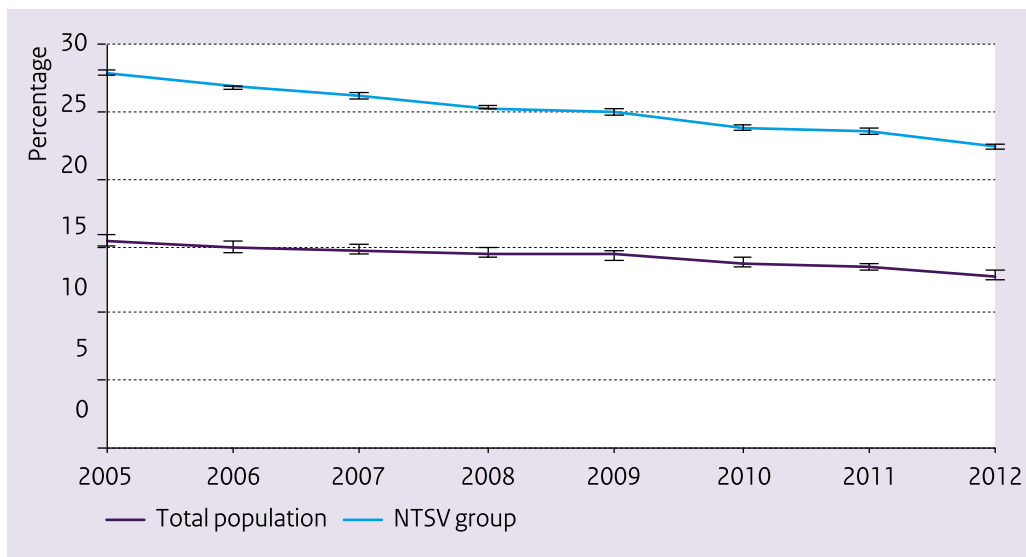
To prevent identification of hospitals, data from the 5% largest and 5% smallest hospitals as well as exact numbers of deliveries were not supplied. The latter are therefore lacking on the X-axis.

There are large differences between hospitals. There are hospitals with a 40% induced delivery rate (top left in figure 2.10), and hospitals with induced delivery rates of below 10% (bottom right). Fifteen hospitals have rates that exceed the 99.8% confidence interval; there the induction rate exceeded the mean. These differences may be explained by differences in hospital policy; in some hospitals it is standard procedure to induce labour after 41 weeks, while other hospitals are more reluctant to do so.

Currently a national randomised INDEX trial into the induction of labour is being carried out. Almost 40% of all midwife practices and half of all Dutch hospitals with a maternity unit participate in this study (www.studies-obsgyn.nl). Once a pregnant woman has consented to participation, she is randomly allocated to a group with: 1) labour induction at 41 weeks, or 2) expectant management until 42 weeks. The midwives and gynaecologist involved will closely monitor the baby's condition after 41 weeks.

Another reason for the variation between hospitals may be that women increasingly request induction of labour (without medical ground). It depends to a large extent on the gynaecologist whether this request is being met.

Figure 2.11: Percentage (with 95% confidence intervals) of instrumental deliveries (vacuum extraction) in both the total population of women delivered and the nulliparous term single-
ton vertex group, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).



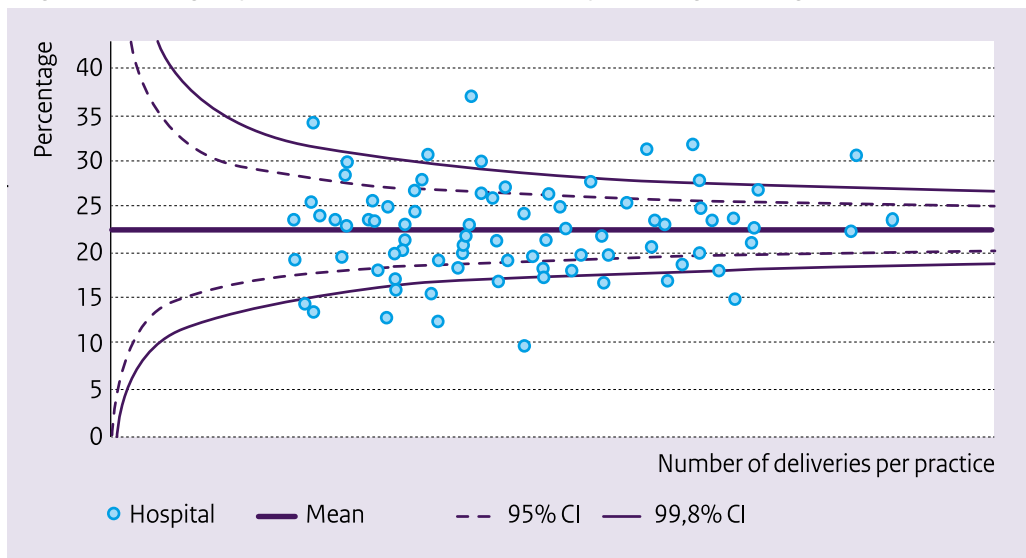
As data of the 5% largest and the 5% smallest hospitals had not been made available for publication, the actual spread may be larger than is shown in figure 2.10.

The percentage of instrumental deliveries carried out by vacuum extraction decreased slightly between 2005 and 2012. The variation among hospitals was considerable

In the period 2005-2012, the instrumental delivery rates declined. For the entire group of women delivered, the rate fell from 15% in 2005 to 13% in 2012. In the NTSV group the instrumental delivery rates are almost twice as high as in the entire group of women delivered, that is 28% in 2005 and 22% in 2012 (figure 2.11). This difference may be attributed to the fact that the women in the low-risk group are at greater risk of induced labour, because of being first-time (nulliparity) mothers. In addition, overall hospital delivery rates in low-risk women are going up because they are more often referred to hospital for pain relief by epidural or induction on request. Both an epidural (Jones et al., 2012) and induction of labour (Ehrenthal et al., 2010) increase the chance of an instrumental delivery.

An instrumental delivery means that an instrument, like a forceps or vacuum extractor, is used to deliver the baby (NVOG, 2005). When a delivery fails to progress, thereby causing fetal distress or exhaustion in the mother, an instrumental delivery may be indicated. Instrumental deliveries increase the risk of maternal pelvic floor injuries (Gurol-Urganci et al., 2013).

Figure 2.12: Percentage of instrumental deliveries (vacuum extraction) in the nulliparous term singleton vertex group, 2012 (source: PRN, 2012; data processing Stichting PRN).



To prevent identification of hospitals, data from the 5% largest and 5% smallest hospitals as well as exact numbers of deliveries were not supplied. The latter are therefore lacking on the X-axis.

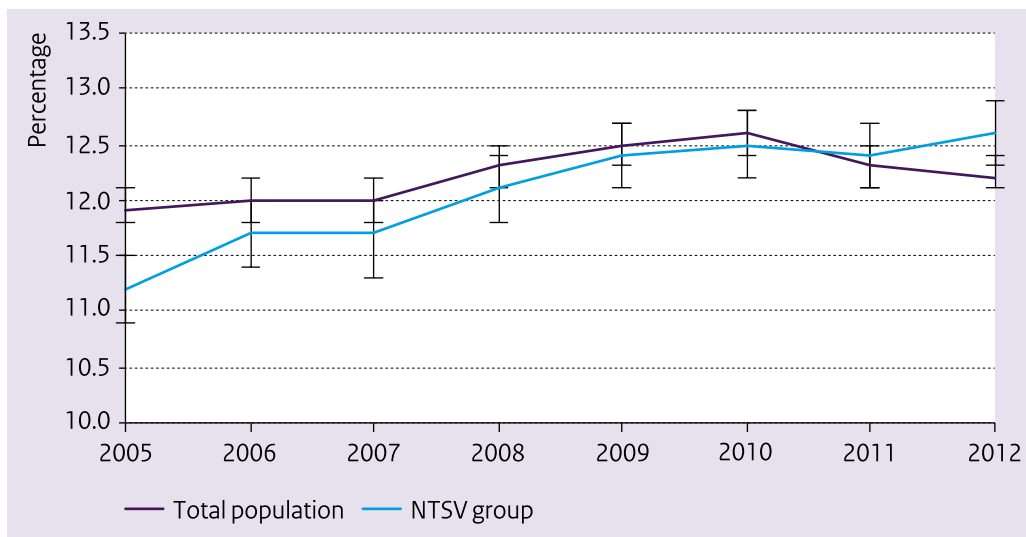
There is considerable variation across hospitals in instrumental delivery rates. In figure 2.12 the hospital volume is plotted against the instrumental delivery rate in the NTSV group. The mean is about 22%, but 16 hospitals show a statistically significant deviation from the mean. There are hospitals that perform instrumental deliveries in over 34% of the total number of deliveries (top left in figure 2.12) and hospitals with instrumental delivery rates of 10 to 15%.

Between 2005 and 2012 the percentage of emergency caesarean sections remained relatively stable among the total number of women delivered, and rose slightly in the nulliparous term singleton vertex group. The variation among hospitals was considerable

Between 2005 and 2012, the mean emergency caesarean section rate in the total group of delivered women was more or less stable at around 12%, with a slight increase in 2010 (figure 2.13). In the low-risk group this rate rose slightly from 11% in 2005 to 13% in 2012.

A caesarean section is major abdominal surgery that may carry risks. Before proceeding to a caesarean, a careful weighing of the benefits and risks is indicated. In some cases, a caesarean section is inevitable, for example because of maternal or fetal health problems (emergency caesarean).

Figure 2.13: Percentage (with 95% confidence intervals) of emergency caesarean sections in both the total population of women delivered and the nulliparous term singleton vertex group, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).

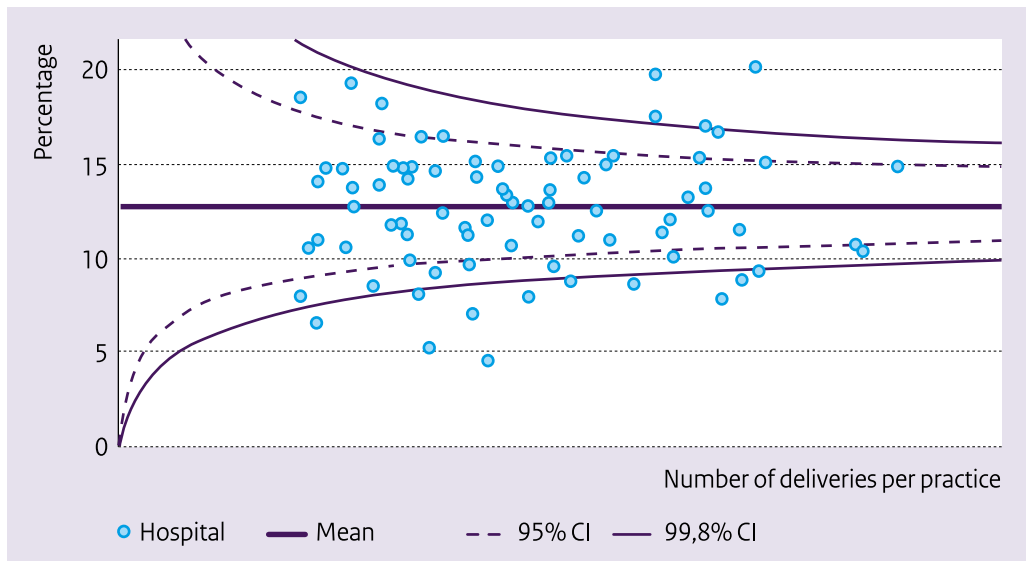


Although the total number of caesarean sections in the Netherlands is low by international standards, research has shown that the increase was relatively largest for breech presentation, multiple pregnancies and extreme prematurity. However, the increase in absolute numbers was largest for women with full-term singleton pregnancy with the child in head position (Kwee et al., 2007).

In some hospitals, the caesarean section rates are significantly higher than in other hospitals. In figure 2.14 the size of the hospital is plotted against the percentage of non-elective caesareans in the NTSV group. The percentages of non-elective caesarean sections per hospital vary between 4.8% and 21%. Two high-volume hospitals at the top of figure have the greatest percentages of unplanned caesareans. The percentages of 11 hospitals are significantly lower than the national average.

Data from the 5% largest and the 5% smallest hospitals had not been made available for publication, hence the actual spread may be larger than shown in figure 2.13. Presumably, that's why variations are also smaller than presented in 2010 Performance Report, which reported rates of over 30%.

Figure 2.14: Percentage of emergency caesarean sections in the nulliparous term singleton vertex group, 2012 (source: PRN, 2012; data processing Stichting PRN).



To prevent identification of hospitals, data from the 5% largest and 5% smallest hospitals as well as exact numbers of deliveries were not supplied. The latter are therefore lacking on the X-axis.

The percentage of elective caesarean sections among both the total number of women delivered and the nulliparous term singleton vertex group remained stable between 2005 and 2012

In the period 2005-2012, the percentage of elective caesarean sections in both the total number of deliveries and the NTSV group remained stable. The percentage in the total group of delivered women fluctuated around 10% and in the NTSV group around 1.7% in 2012 (figure 2.15).

An elective caesarean section is scheduled before the onset of labour because of a specific clinical indication (NICE, 2004). In 2011, the Dutch Society of Obstetrics & Gynaecology (NVOG) developed the indication for performing elective and emergency caesarean sections (NVOG, 2011a). Before performing a caesarean, the indication and the pros and cons of the procedure require careful deliberation.

The episiotomy rate in spontaneous deliveries in hospital decreased from 31% in 2005 to 28% in 2012. The episiotomy rate in induced deliveries is higher and increased slightly from 84% in 2005 to 87% in 2012

To augment the delivery, an episiotomy may be performed (see also the paragraph above on the quality of midwifery). Besides the risk factors mentioned in that paragraph, assisted

Figure 2.15: Percentage (with 95% confidence intervals) of elective caesarean sections in both the total population of women delivered and the nulliparous term singleton vertex group, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).

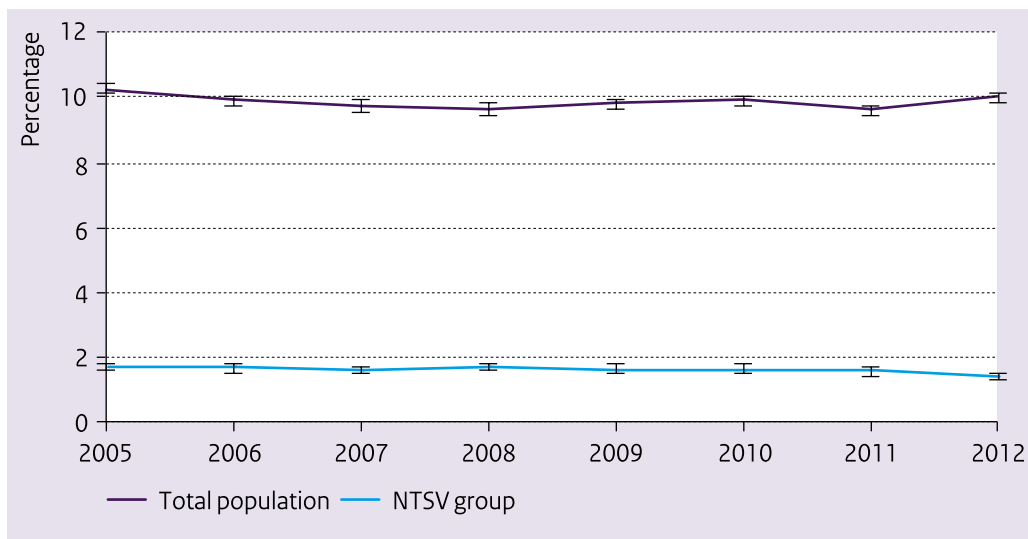


Figure 2.16: Episiotomy rates (with 95% confidence intervals) in both spontaneous and instrumental (vacuum extraction) deliveries, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).

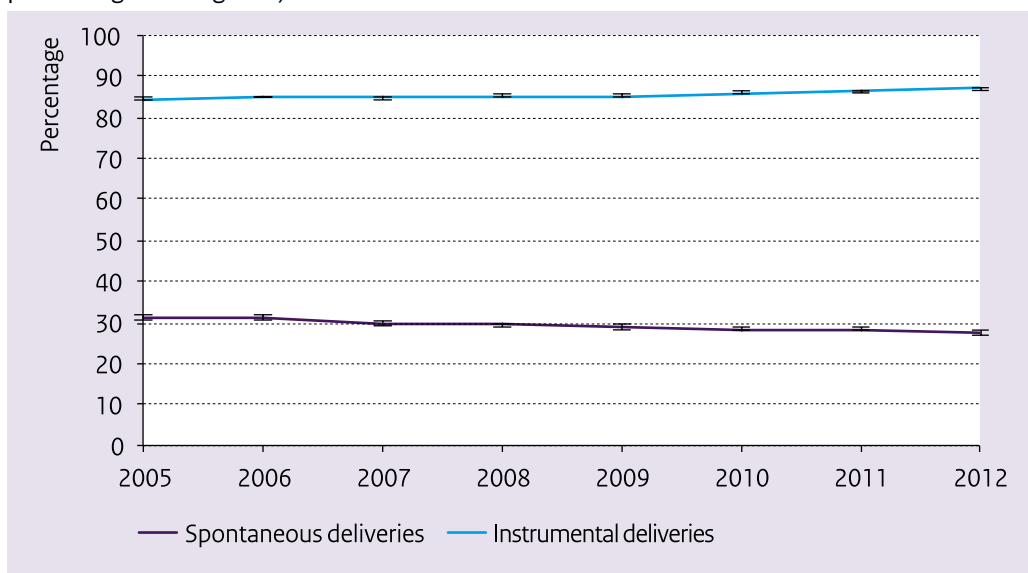
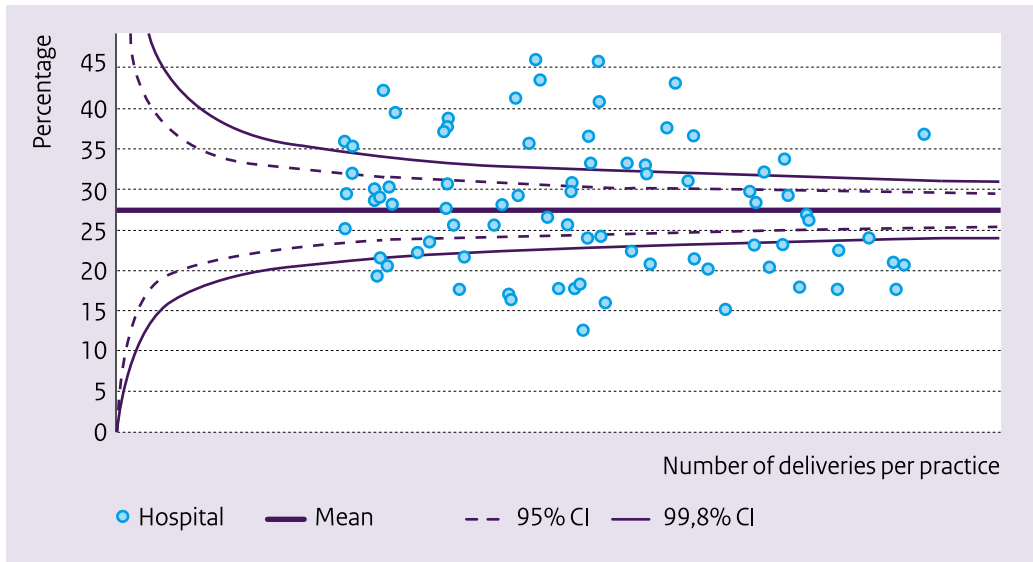


Figure 2.17: Episiotomy rate (with 95% confidence intervals) in spontaneous hospital deliveries, 2012 (source: PRN, 2012; data processing Stichting PRN).



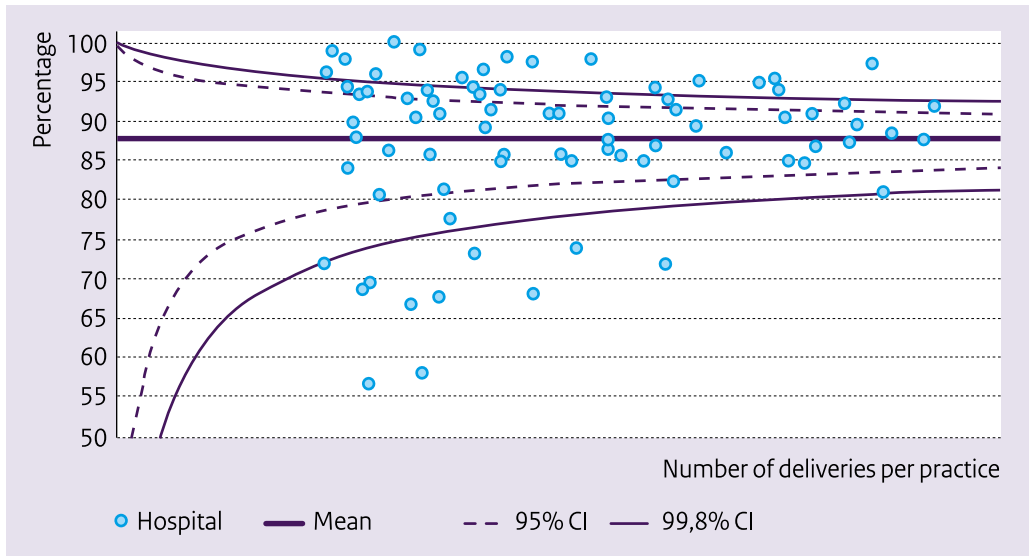
To prevent identification of hospitals, data from the 5% largest and 5% smallest hospitals as well as exact numbers of deliveries were not supplied. The latter are therefore lacking on the X-axis.

delivery (with forceps or vacuum extractor) is also a risk factor for getting an episiotomy (Gurol-Urganci et al., 2013). Figure 2.16 shows that the percentage of episiotomies in spontaneous deliveries decreased slightly in the years 2005-2012. In 2005, the rate was 31% and in 2012 it amounted to 28%. The percentage of episiotomy in assisted deliveries is higher, and increased slightly from 84% in 2005 to 87% in 2012.

In figure 2.17 the hospital volume is plotted against the episiotomy rate in spontaneous deliveries in the NTSV group. It shows that the variation between hospitals in performing an episiotomy is significant, ranging from 11% to 46%.

This might be due to the absence of a protocol or of agreements about when to do an episiotomy. In addition, cultural differences (in gynaecologist training) between hospitals may play a role. There seems to be no relationship with hospital volume.

Figure 2.18: Episiotomy rate (with 95% confidence intervals) in instrumental hospital deliveries (vacuum extraction), 2012 (source: PRN, 2012; data processing Stichting PRN).

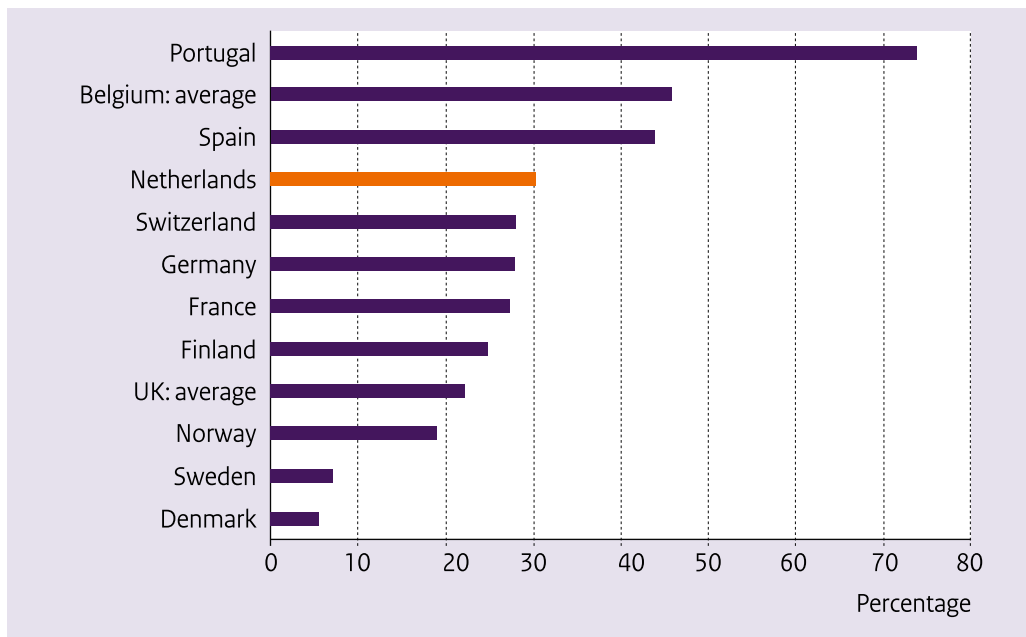


To prevent identification of hospitals, data from the 5% largest and 5% smallest hospitals as well as exact numbers of deliveries were not supplied. The latter are therefore lacking on the X-axis.

The variation between hospitals in the episiotomy rates in assisted deliveries is even more substantial, it ranges from 56% to 100% (figure 2.18).

In 2010, the episiotomy rates in unassisted deliveries varied considerably between 12 European countries: ranging from 4.9% in Denmark to 73% in Portugal (figure 2.19). The Dutch rate is somewhere in the middle with 30%. De percentages for the Netherlands have been calculated for women with spontaneous deliveries with an episiotomy in both primary and secondary care.

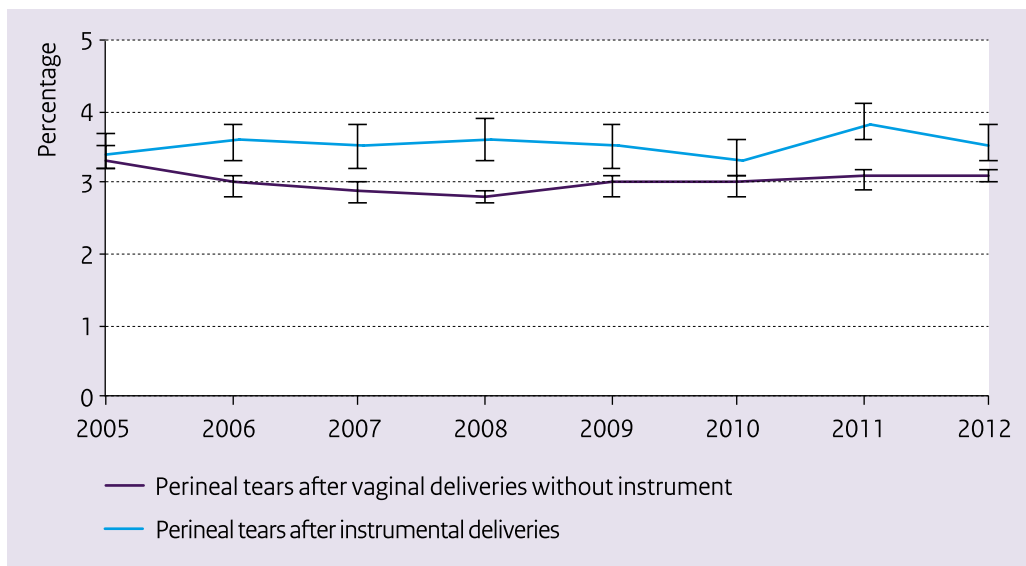
Figure 2.19: Episiotomy rate in women with vaginal deliveries in 12 European countries, 2010 (source: Euro-Peristat, 2013).



The rate of perineal tears among unassisted vaginal deliveries in hospital fluctuated around 3% and among instrumental deliveries (vacuum extraction) around 3.5%. In the Netherlands, the rate of perineal tears among unassisted vaginal deliveries was relatively high compared to other OECD-countries, while this rate was relatively low among instrumental deliveries

In the period 2005-2012 the rates of perineal tears in women with spontaneous deliveries in secondary care fluctuated around the 3 per cent mark and in women with assisted deliveries around the 3,5 per cent mark (figure 2.20).

Figure 2.20: Percentage (with 95% confidence intervals) of perineal tears in vaginal and instrumental deliveries (vacuum extraction), 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).



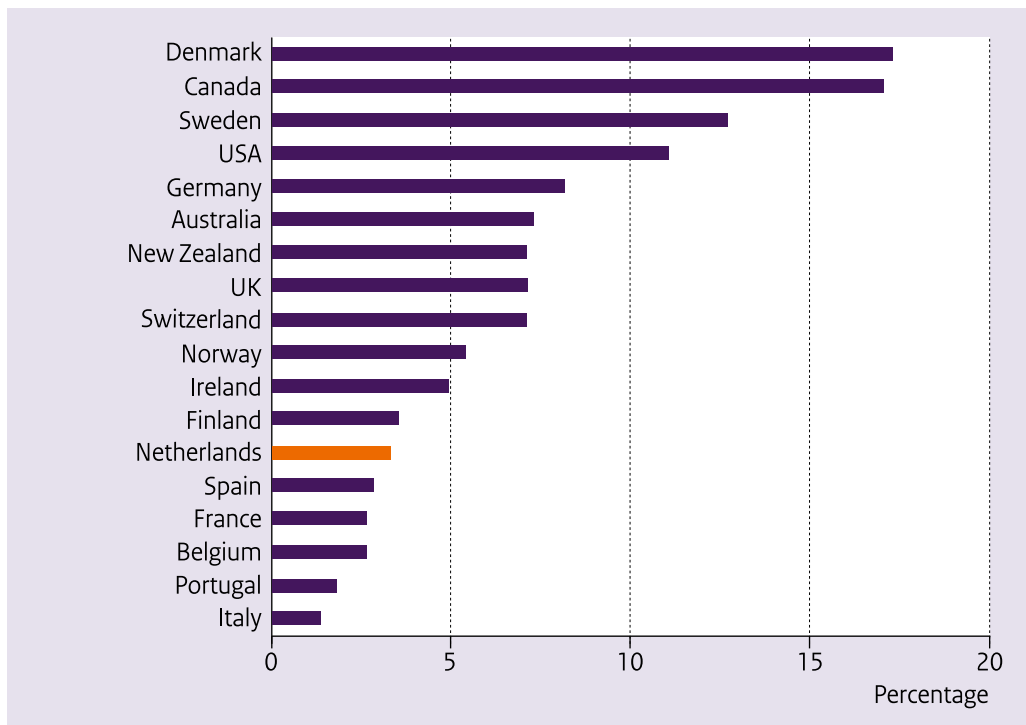
As was mentioned earlier, perineal tears can often be prevented by the deliberate use of an episiotomy (cut) (see above, the indicator ‘tears in women giving birth in primary care’). Damage to the perineum, such as a partial or total tear, is a complication of childbirth and can occur in varying degrees. In addition to the above-mentioned risks, the use of forceps or vacuum extractor is a risk factor for perineal tears (Gurol-Urganci et al., 2013; Laine et al., 2009; De Leeuw et al., 2001; De Leeuw et al., 2008)

Figure 2.21: Percentage of perineal tears among women with vaginal deliveries in 18 OECD-countries, 2011 (source: OECD, 2013a).



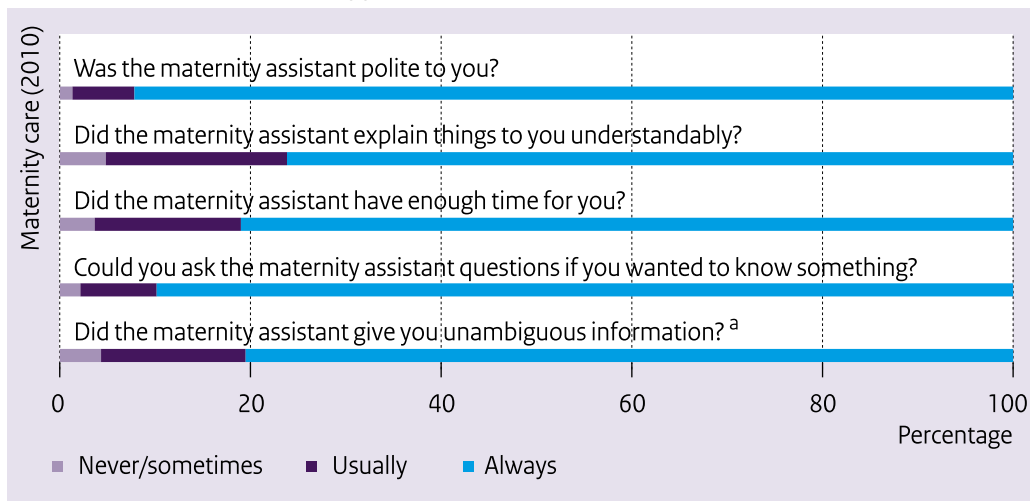
The international comparison shows that in 2011 the perineal tear rate in non-instrumental deliveries was high in the Netherlands relative to many other countries (2.5%) (figure 2.21). The tear rate in non-instrumental vaginal deliveries ranged from less than 0.4% in Italy to over 3.5% in Sweden and Switzerland.

Figure 2.22: Percentage of perineal tears in instrumental deliveries in 18 OECD-countries, 2011 (source: OECD, 2013a).



The perineal tear rate in assisted deliveries was relatively low in the Netherlands in 2011 (3.3%) (figure 2.22). This rate varied considerably between countries: from less than 2% in Italy and Portugal to over 17% in Canada and Denmark.

Figure 2.23: Patient-reported experiences with communication in maternity care, 2010 (source: NIVEL, CQ-index; see Appendix 3).

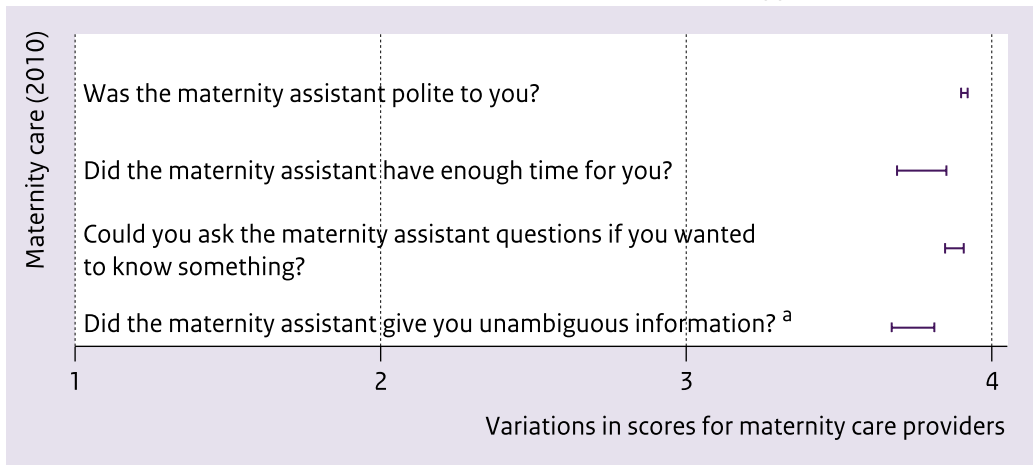


^a The original question was ‘Did the maternity assistant give you contradictory information?’ To maintain consistency of presentation, we have reworded the question here.

The patient-reported experiences with communication and information with maternity care providers were very positive in 2010. Variations between maternity care providers were minimal

Figure 2.23 presents user-reported experiences with communication and information with maternity care providers in 2010. The majority of service users reported that they always had good experiences. In particular the aspects ‘being treated politely’ and ‘having the opportunity to ask questions’ scored well; approximately 90% of service users reported that their experiences had always been good. A small group of health care users reported that they had bad experiences with aspects of communication and information at least once.

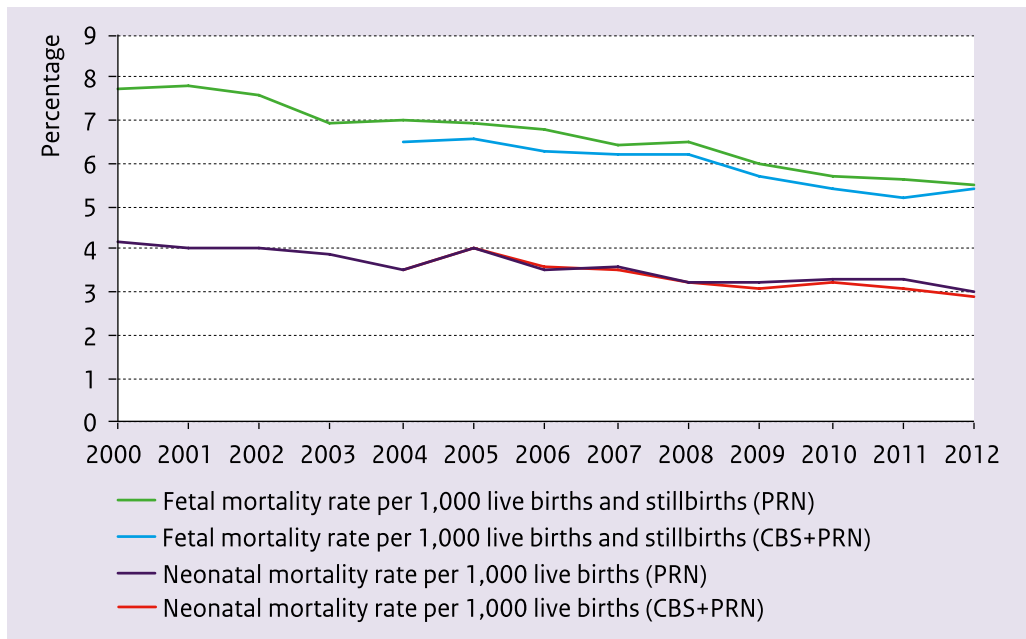
Figure 2.24: Variations between maternity care providers in patient satisfaction with communication and information, 2010 (source: NIVEL, CQ-index; see Appendix 3).



^a The original question was ‘Did the maternity assistant give you contradictory information?’ To maintain consistency of presentation, we have reworded the question here.

Figure 2.23 shows differences between aspects of communication and information. Care users reported better experiences with the aspects ‘understandable explanation’ and ‘opportunity to ask questions’ than with the other aspects. Figure 2.24 depicts the variation in scores between providers for the same aspects of communication and information. The aspect ‘comprehensibility of explanation’ is not displayed, because no variation between providers was found. The longer the horizontal line in the figure, the greater the differences between health care providers for that aspect. The differences between providers are generally limited, with the line occupying only a small range in the X-axis scale. For the aspects ‘enough time for you’ and ‘unambiguous information’ the variation is slightly larger than for the other aspects. However, the differences are still (very) limited.

Figure 2.25: Fetal and neonatal mortality rates after 22+ weeks of gestation per 1,000 live births and stillbirths, 2000-2012 (sources: Stichting PRN, 2000-2012; CBS Statline, 2014b).

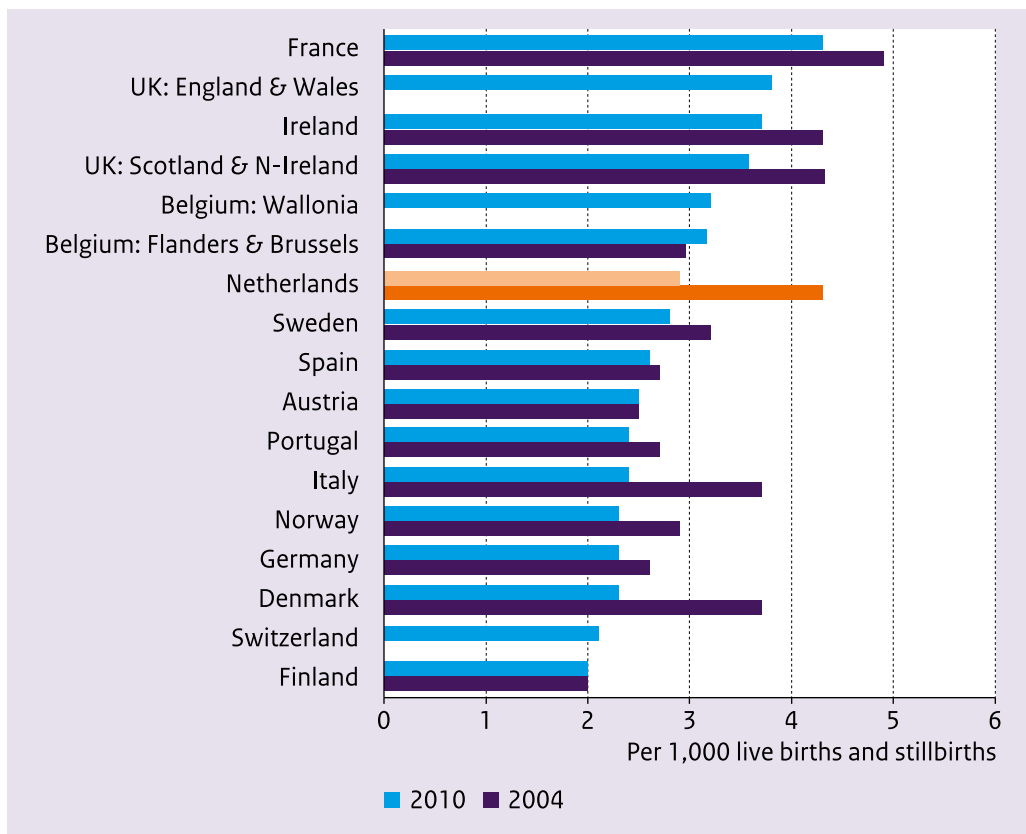


The fetal mortality rate decreased from 7.7 per 1,000 live births and stillbirths in 2000 to 5.5 in 2012. The neonatal mortality rate decreased from 4.2 per 1,000 live births and stillbirths in 2000 to 3.0 in 2012

Fetal (or stillbirth) and neonatal mortality have decreased. In 2000, the fetal death rate was 7.7 children per 1,000 live births and stillbirths, by 2012 the rate had fallen to 5.5 per 1,000 (figure 2.25). In absolute terms the Netherlands Perinatal Registry (PRN) registered 971 stillbirths with a gestational age of 22 weeks or more in 2012. The neonatal mortality rate decreased from 4.2 children per 1,000 live births in 2000 to 3.0 children per 1,000 live births in 2012 (PRN, 2013). Neonatal mortality is mortality in the first four weeks after birth after at least 22 weeks of gestation.

Data on perinatal mortality in the Netherlands come from two national registers: Netherlands Perinatal Registry (PRN), a joint effort of four professional organisations that provide perinatal care in the Netherlands, and Statistics Netherlands (CBS). Since 2004, a common dataset has been created by linking data from these sources through probabilistic linkage methods (CBS, 2009). The perinatal mortality figures in the linked CBS / PRN file are lower than the figures from PRN alone (CBS StatLine, 2014b).

Figure 2.26: Fetal mortality rates after 28+ weeks of gestation per 1,000 live births and stillbirths in 15 European countries, in 2004 and 2010 (source: Euro-Peristat, 2013; Euro-Peristat, 2008).

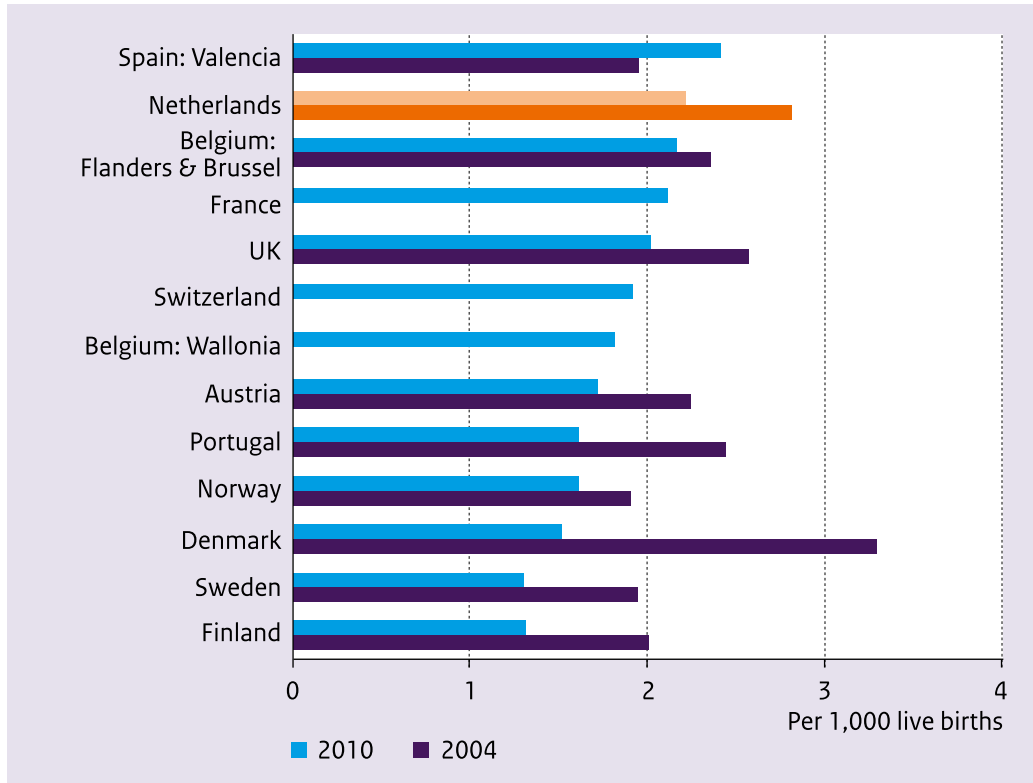


Compared to other Western European countries, the fetal mortality rate in the Netherlands decreased considerably in the 2004-2010 period. Despite the decrease, the fetal mortality rate in 2010 was still higher than in other Western European countries

The European Peristat project defined fetal mortality as the number of deaths before or during birth per 1,000 live births and stillbirths at a gestational age of 28 weeks or more. In the Netherlands the decrease in fetal mortality between 2004 and 2010 was larger than in many other countries. Nevertheless, from an international perspective Dutch fetal mortality rates in 2010 were still rather high (figure 2.26).

Although fetal mortality has declined in recent decades in many countries, this decline has slowed or stalled in high-income countries (Flenady et al., 2011a). In Austria and Finland, for example, mortality remained at approximately the same level.

Figure 2.27: Neonatal mortality rates after 24+ weeks of gestation per 1,000 live births in 12 European countries, in 2004 and 2010 (source: Euro-Peristat, 2010).



Main causes of fetal death are congenital anomalies, fetal growth restriction, placental pathologies and infections. Modifiable risk factors include (severe) obesity, smoking, and higher maternal age (Flenady et al., 2011b). Also, primiparous women are at a higher risk than multiparous women (Gardosi et al., 2013). Early detection and monitoring of fetal growth restriction is an effective way to reduce mortality risks (Gardosi et al., 2013).

Finally, to compare fetal and neonatal mortality rates properly, the mortality rates should be corrected for gestational age. The risk of fetal and neonatal deaths is strongly associated with gestational age. Especially with a gestational age of less than 28 weeks, mortality is very high. Preterm birth rates differ between countries, and this variation should be taken into account when comparing countries by neonatal and infant mortality for each category of gestation or by the standardized mortality rate. Also, live births with a gestational age of less than 22 weeks and / or a birth weight of less than 500 grams are advised to be excluded from international comparisons, because of possible differences in registration of deceased children at early gestational age and / or with extremely low birth weight (Euro-Peristat, 2008).

The neonatal mortality rate in the Netherlands decreased considerably between 2004 and 2010, but was still high compared to other Western European countries. In 2010 the mortality rate in the Netherlands was second-highest of 13 countries

The European Peristat project defined neonatal mortality as the number of deaths during the neonatal period (up to 28 days after birth) after live birth at or after 22 completed weeks of gestation. Neonatal mortality in the Netherlands declined dramatically in the period 2004-2010, but it is still high relative to 12 other Western European countries. Only Spain (Valencia region) had higher rates (figure 2.27). Neonatal mortality in the Netherlands is higher by 70% than in the country with the lowest rate, Finland.

Risk factors for neonatal mortality are congenital anomalies, prematurity, low birth weight by gestational age, and a low Apgar-score at birth (Bonsel et al., 2010).

Advanced maternal age at delivery and the related risk of multiple pregnancies, the large proportion of non-western migrant women giving birth, and smoking by expecting mothers can explain the high neonatal mortality rate in the Netherlands. These factors are less favourable in the Netherlands than in many other countries. The effect of the Dutch screening policy, the extent to which mothers have an abortion because of anomalies found through prenatal screening, the policy regarding early preterm babies at the limit of viability, and overall care at birth remain largely unexplained.

Almost all midwives and gynaecologists participated at least once in a perinatal audit in the 2010-2012 period. In this period the number of participants rose with 61%

In 2010, the perinatal audit was introduced with the aim to monitor and improve the quality of integrated care. In subsequent years, the participation of primary participants in these audits has greatly increased. In 2010, 3,140 health care professionals participated in PAN. In 2012, this number had increased by 61% to 5,065 (PAN, 2014). Up to almost 100% of primary care midwives, clinical obstetricians and gynaecologists in the Netherlands has participated at least once and about 20% of obstetric general practitioners. All perinatal care collaboratives have participated in an audit (PAN, 2014).

The aim of a perinatal audit is twofold. First, to determine to what extent the actual care provided did meet the accepted standards by a critical and systematic analysis. Second, to identify substandard factors and to determine to what extent they contributed to health outcomes including death. In England and Norway, the introduction of a national audit system improved the quality and the continuity of perinatal care. It also led to recommendations for guideline development and training (PAN, 2013).

A local audit involves health care professionals united in a specific perinatal care collaborative (PCC). Usually, the entire PCC team participates in an audit, but sometimes it is a core team of PCC representatives. Regional audits involve health care professionals in the catchment area of a perinatal centre.

The primary participants are obstetric GPs, midwives, gynaecologists, paediatricians and pathologists. Nurses, midwife trainees and perinatal professionals in training are often

Table 2.1: Percentage of health care professionals that participated in the perinatal audit, 2010-2012 (N=8,296) (source: Van Dillen et al., 2013; PAN, 2014).

Health care professional	Percentage
GP	1
Primary care midwife	27
Hospital midwife	10
Nurse	19
Gynaecologist	9
Paediatrician	8
Nurse/Nurse in training / Foundation doctor	7
Doctor not in training	5
GP trainee / Specialist trainee	5
Other	7

present, and if required, ambulance staff, maternity nurses, clinical geneticists and / or anaesthesiologist and microbiologists are invited to participate. All of them bring their specific expertise to the provision of care and to the evaluation of care.

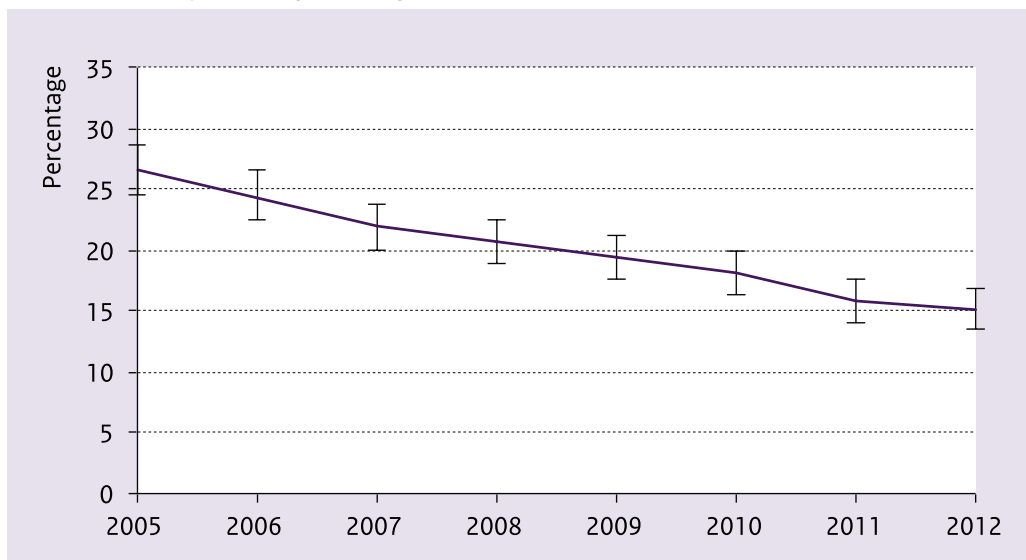
The percentage of preterm births delivered in maternity units without an on-site neonatal intensive care unit (NICU) decreased in the 2005-2012 period

In the Netherlands about 1,500 women have a spontaneous preterm birth before 32 weeks of gestation on a yearly basis. The risk of perinatal problems and mortality is greatly increased in this group. This makes spontaneous preterm birth in the Netherlands the leading cause of neonatal mortality, morbidity and the consequent neurological damage in children (NVOG, 2011b).

In case of an imminent preterm birth of between 24 and 32 weeks of gestation, the pregnant woman should be transferred to a perinatal centre with a neonatal intensive care unit (NICU) on site (NVOG, 2011b). Research has shown that children of this gestational age born in such a unit have a better chance of survival (Warner et al., 2004; Rauvata et al., 2007).

In the period 2005-2012, the rate of preterm babies born in a hospital without an on-site NICU, steadily decreased from 27% in 2005 to 15% in 2012 (figure 2.28).

Figure 2.28: Percentage (with 95% confidence intervals) of preterm births delivered in maternity units without an on-site neonatal intensive care unit, 2005-2012 (source: PRN, 2005-2012; data processing Stichting PRN).



2.3.3 Costs

In its 2010 Market Scan 'Perinatal care', the Dutch Healthcare Authority (NZa) investigated the affordability and costs of perinatal care. This paragraph is largely based on the market scan (NZa, 2012a).

The total expenditure for primary obstetric care covered by health insurance rose from €133 million in 2007 to €188 million in 2011

The total expenditure for insured primary obstetric care increased from €133 million in 2007 to €188 million in 2011 (NZa, 2012a) (table 2.2). These figures are based on data from the National Health Care Institute (Zorginstituut Nederland) and Vektis and reflect the costs of care covered by the basic health insurance package. Obstetric care is (largely) reimbursed under the basic package, hence the analyses produce a good picture of the overall market.

The increase in total expenditure is partly due to increases in maximum service rates. In the years 2010-2012, these rates increased by 26%. In addition, more additional services have become billable in recent years, and the basic package cover has been extended to include a basic fee for the second trimester ultrasound. As pregnant women are more easily referred to secondary care, primary care expenditures have on average decreased and hence the increase in spending per insured person has also decreased.

Table 2.2: Total expenditure for primary obstetric care (in million euros), 2007-2011 (source: NZa, 2012a).

Primary obstetric care	2007	2008	2009	2010	2011
Obstetric GP care	3.3	2.8	2.4	2.4	2.3
Midwifery care	130.0	140.0	157.8	171.1	186.1
Total expenditure	133.3	142.8	160.2	173.6	188.4

Table 2.3: Volume and total expenditure for secondary obstetric care (in million euros), 2008-2011 (source: NZa, 2012a).

Secondary obstetric care	2008	2009	2010	2011
Number of diagnosis-treatment combinations (DBC)	390,872	379,497	386,831	380,751
Fees	101.1	103.2	93.7	78.2
Hospitals	435.7	454.1	490.8	499.8
Total expenditure	536.8	557.3	584.4	578.0

The total expenditure for hospital obstetric care covered by health insurance rose from €537 million in 2008 to €578 million in 2011

The analyses use data from Vektis and the DBC Information System (DIS) and reflect expenses for care insured under the basic package. Funding of secondary obstetric care is based on diagnosis-treatment combinations (DBCs in Dutch) Gynaecology. Paediatrics and anaesthesiology were not included in the analyses. The total expenditure for insured secondary obstetric care increased from €537 million in 2008 to €578 million in 2011 (NZa, 2012a) (table 2.3).

The total health expenditure for maternity care services has risen, especially in 2008

The analyses use data from Vektis and the DBC Information System (DIS) and reflect expenses for care insured under the basic package. The total expenditure for insured maternity care increased from €228 million in 2007 to €289 million in 2011 (table 2.4). In the year 2008, expenditures for maternity care rose fast relative to other years (NZa, 2012a).

Table 2.4: Total expenditure for maternity care (in million euros), 2007-2011 (source: NZa, 2012a).

Maternity care	2007	2008	2009	2010	2011
Total expenditure	228.0	268.1	270.1	279.0	288.5

The increase in total expenditure for obstetric care can be explained by the following measurements:

- Increasing the maximum rates for primary obstetric care services. In the years 2010, 2011 and 2012, maximum service rates increased overall by 26%;
- Extending the cover of the basic health insurance package by including the second term ultrasound in primary midwifery in 2006;
- Extending billable primary obstetric care services, like the diagnostic ultrasound in 2008 and the deprivation payment in 2009;
- Transferring primary obstetric care services to secondary care. The number of pregnant women receiving both primary and secondary obstetric care is growing. The expenditure for pregnant women receiving both primary and secondary obstetric care is highest;
- Extending the cover of the basic health insurance package by increasing maternity care reimbursement by 5 hours to 49 hours in 2008 (NZa, 2012a).

2.4 Conclusions

The first Euro-Peristat report (2004) rocked obstetric care in the Netherlands (Euro-Peristat, 2004). That report found that the Netherlands held a rather unfavourable position with regard to perinatal mortality relative to other countries. As a result, numerous measures have been taken to improve the quality of obstetric care (VWS, 2008a); examples are the introduction of preconception visits (2008), the establishment of the Steering Committee Pregnancy and Birth 2008), the introduction of the 20-week ultrasound (2008), the establishment of the Foundation Perinatal Audit in The Netherlands (2010), and the establishment of the College for Perinatal Care (2011). Also, regional midwife consortia have been established to promote cooperation between obstetric caregivers. In addition, obstetric partnerships have been established that unite GPs, obstetricians, gynecologists, maternity nurses, pediatricians and anesthesiologists.

Many of the indicators that are reported on in this chapter show favourable trends. Pregnant women, including those from deprived areas, tend to find their way to the midwife before the tenth week of pregnancy. Fewer pregnant women smoke and fetal and neonatal mortality have fallen. Fewer premature babies are born in hospitals without an on-site neonatal intensive care unit and the participation of care professionals in perinatal audits has increased significantly in a short time. Causal relationships cannot be determined, but it seems plausible that some of these positive developments are the result of the joint actions to improve quality taken by the parties in the field.

In recent years there has been a shift in the place of delivery, with rising rates of hospital births, and lower rates of home births. One reason for the shift is that more women are referred to a hospital as they request pain relief by an epidural. In addition, there is an increasing tendency to induce births (pregnancies of over 41 weeks, or women with high blood pressure) in order to prevent complications. Home deliveries under supervision of a midwife account for 14% of all deliveries and first-time pregnancies for 8%.

Notwithstanding a rise in the percentage of spontaneous births supervised by a gynaecologist, the percentages of induced deliveries and emergency caesarean sections also increased in the 2005-2012 period. In addition, the percentage of assisted deliveries fell and the percentage of elective caesarean sections remained stable.

There are large differences between hospitals in the extent to which they perform interventions such as induction of labour, assisted deliveries, caesarean sections, or episiotomies. Even after correcting for relevant characteristics of these procedures, percentages may still vary between hospitals by a factor of two or three. An optimal score is difficult to determine, but further research is recommended into the extent to which there is overtreatment and / or undertreatment in certain hospitals. In addition, it is noteworthy that there is no recent data on client satisfaction with obstetrical care.

Finally, there was much to do about the increases in overall expenditure for obstetric care. The current funding system leads to double reimbursements of deliveries due to referral from primary to secondary care during labor (VWS, 2014b). The NZa analysed how bundled payment could be implemented in obstetric care, but discouraged it because of insufficient support and the lack of a national care standard (NZa, 2012b).

The College for Perinatal Care is currently developing a national standard for Integrated Obstetric Care. This national standard will serve as a basis for regional obstetric care. In accordance with the standard, all future actions in obstetric care at a regional level must be matched with each other and they must be integrated in protocols and care pathways (VWS, 2014a). The first version of the standard for Integrated Obstetric Care is expected to be established in the second half of 2014.

3

Staying healthy

Key findings

- Participation by pregnant women in infectious disease and antibody screening and by newborn infants in screening for hearing loss and rare disorders continues to be high; lower percentages of women take part in population screening for breast cancer and cervical cancer, with rates slightly declining since 2007.
- Blood spot screening enables detection of 99.1% of all children who have one of the rare serious disorders being screened, with variations from 97.8% to 100.0% over the period 2002–2011.
- About 0.9% of Dutch 2-year-olds are unvaccinated or inadequately immunised against diphtheria, whooping cough, tetanus and polio whilst residing in communities with unmet immunisation coverage targets for those diseases (as set by the WHO and the National Vaccination Programme); for mumps, measles and rubella, the percentage is 1.5%.
- In 2012, 274 people in the Netherlands contracted bacterial meningitis; a steep drop has occurred since 1995 in the yearly numbers of meningitis cases caused by the kinds of bacteria targeted by vaccination.
- In 2012, flu vaccination coverage was 62% in the population targeted by the National Influenza Prevention Programme.
- In 2013, 21% of Dutch smokers who visited a GP received smoking cessation advice there, more than in 2001 but fewer than in 2011.
- Reasonable to good client experiences with paediatricians in child health centres are reported.
- The proportion of health expenditure devoted to prevention decreased in the period 2005–2013

3.1 Background

Everyone would say it is important to be healthy – and to stay healthy. Those are concerns at all stages of life, even though the focus varies for infants, adolescents, middle-aged adults and older people. National and local authorities, health care providers, social welfare organisations and a range of other stakeholders undertake prevention efforts to try to keep people healthy. Some activities are aimed at promoting and protecting health, and others at the prevention or early detection of diseases or their complications. The Dutch government has set out the priorities for preventive care in its national policy paper entitled *Gezondheid Dichtbij* ('Health Nearby'; VWS, 2011a). The prime focuses are on overweight, diabetes, depression, smoking, harmful alcohol use and exercise.

The paper also zeroes in on four specific health issues: new and existing health risks in local environments, the high Dutch rate of perinatal mortality, the widening prevalence of chronic diseases and the high burden of mental illness. The government vision on prevention stresses the particular importance of actively maintaining and promoting one's own state of health. Engagement by industry, civic organisations, schools and health care providers is also desired. Central and local government can support this with effective information provision to help people choose pathways to more healthy lives (VWS, 2011a).

In 2013, the Dutch cabinet announced its National Prevention Programme (NPP), a 3-year scheme from 2014 to 2016 in which six government ministries, local authorities, private sector enterprises and large numbers of organisations work together to give a more prominent place to preventive care. It brings together activities in the fields of health promotion and disease prevention, both in people's living environments and within the health care and health protection systems. Specific attention is devoted to reducing health deficits. The central theme is 'moving with self-directing individuals from treatment and illness to health and behaviour' (VWS, 2013a). A glance in the financial appendix of that report shows that existing budgets for prevention efforts have been continued but that only limited funds are earmarked to boost prevention. The added benefit of the programme will have to derive mainly from the consolidation of forces (see also Mackenbach, 2013).

The indicators in this Performance Report focus on disease prevention and health promotion. Disease prevention includes measures designed to prevent specific diseases from arising or to detect them at an early stage. Health promotion measures are designed to promote and help maintain healthy lifestyles and healthy social and physical environments. This Performance Report confines itself to preventive measures that relate to the health care sector. Other important activities in the field of preventive care, such as lifestyle interventions in places like schools and neighbourhoods, thereby remain out of scope. Those aspects are dealt with more thoroughly in the RIVM *Public Health Status and Foresight Report* (PHSF; RIVM, 2014a).

3.2 Indicators for disease prevention and health promotion in health care

Most indicators in this chapter provide information on the effectiveness of preventative interventions in health care. Most indicators assess whether the interventions achieve their aims. Some additional indicators assess client-centredness and costs.

Quality

- Percentages of people in target groups that take part in organised population screening schemes
- Percentages of newborn infants with rare serious disorders that are detected in the neonatal blood spot programme
- Percentages of 2-year-old children not having received basic vaccinations and living in communities with below-target immunisation coverage rates (below the critical threshold for herd immunity)
- Yearly numbers of new bacterial meningitis cases
- Percentages of people in target groups of the National Influenza Prevention Programme that have received flu vaccinations
- Percentages of smokers visiting GPs who were given smoking cessation advice
- Percentages of people visiting paediatricians at child health centres who report good experiences with the available time, the explanations received and the opportunity to ask questions

Costs

- Percentage of total health expenditure devoted to prevention
- Per capita percentage of health expenditure devoted to preventive care

3.3 State of affairs

3.3.1 Accessibility

On the whole, the accessibility of prevention activities is not much of a problem. Local residents have access to many preventative services in their own neighbourhoods, including child health centres, midwife practices (see section 2.3) and GP practices (see section 5.3.1), and they can also access online services. No co-payments are required. No specific indicators of accessibility have been included in this chapter.

3.3.2 Quality

This section on the quality of disease prevention and health promotion includes analyses in the indicator domains of effectiveness and client-centredness. The effectiveness indicators we have selected assess the reach of preventative measures and the degree to which aims are achieved. One integral element in the indicators is coordination. In many services such as

screening or immunisation programmes, good coordination is a must for achieving high participation rates. Safety is another element of preventive care. It is important, for instance, that vaccinations have no side-effects, or mild ones at most, and that no incorrect diagnoses or health complications arise from screening. We have, however, included no indicators on the safety of disease prevention measures.

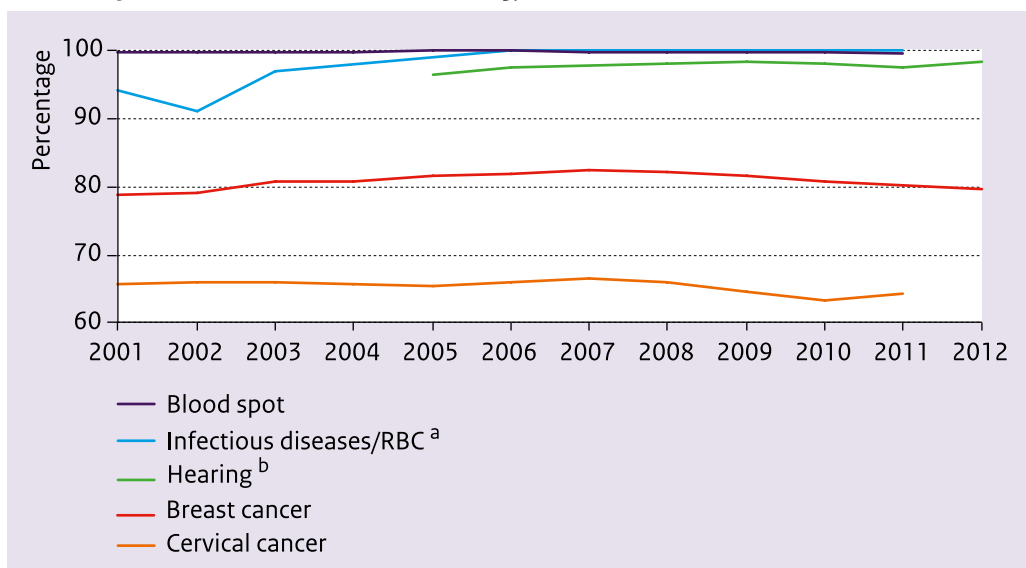
Five indicators assess the reach of preventative interventions. Reach is a meaningful indicator only if strong recent scientific evidence exists for the effectiveness of the intervention. Participation in preventative interventions is people's own free choice. Public health authorities therefore endeavour to ensure that individuals can make well informed choices. A reach of 100% is not always the ambition. Target rates are different, though, for vaccinations against diseases with severe potential consequences, for which herd immunity is essential, than for disease screening programmes with a complicated balance between potential health advantages for participants who are found to have the disease and the risks of harm to participants who do not have it but receive false positive screening results. The reported achievement rates for prevention targets are based on the numbers of disease cases prevented or detected early, the numbers of persons experiencing detrimental health effects and the numbers with low (or high) risks of health effects. The client-centredness of prevention activities was assessed for child health centres only.

Participation by pregnant women in infectious disease and antibody screening and by newborn infants in screening for hearing loss and rare disorders continues to be high; lower percentages of women take part in population screening for breast cancer and cervical cancer, with rates slightly declining since 2007

Participation trends in population and screening studies are depicted in figure 3.1. Screening for infectious diseases and red blood cell (RBC) antibodies in pregnancy and blood spot screening in neonates both show rates of nearly 100%. Three-stage newborn hearing screening has participation rates above 99% per stage. Combined participation rates in these screens came to 96.4% to 98.4% in the 2005–2012 period. Participation in pregnancy and neonatal screening has remained stable over time.

In 2012, 79.6% of the women invited for breast cancer screening (ages 50 to 75) took part in the testing. The EU recommends a participation rate of 75%. The Dutch health ministry set target rates in the past, but ceased to do so in 2011; Dutch rates are comfortably above the EU standard. A slight decline can be seen since 2007 (figure 3.1). The Dutch participation rate is high compared to other Western countries (figure 3.2), with Finland alone having higher rates. Target group age ranges vary, especially in terms of the highest age. The Netherlands is rather exceptional in inviting women up to age 75 for the breast cancer screening programme. France and one Swedish region have age limits of 74, but most other countries include women up to age 69.

Figure 3.1: Population screening participation rates, 2001–2012 (%) (sources: for screening for infectious diseases and RBCs: van der Ploeg et al., 2010; van der Ploeg et al., 2012; for blood spot screening: TNO, 2004–2013; for hearing screening: van der Ploeg et al., 2013; for breast cancer population screening: LETB; 2009, LETB, 2014; for cervical cancer population screening: LEBA, 2009; LEBA, 2010; LEBA, 2012; LEBA, 2013).



^a RBC = red blood cell antibodies; the 2001 and 2008–2012 rates involve 2000/01 and 2007/08–2011/12.

^b Newborn hearing screening includes three stages; shown here are the combined rates (1st- x 2nd- x 3rd-stage participation). The 2005 rate actually represents participation from the first year after implementation (which occurred gradually from 2002 to 2006); screening was performed by child and adolescent health care agencies on children not in treatment in neonatal intensive care units.

Some 64% of women (aged 30–60) invited for the cervical cancer population screening programme in 2011 had the testing performed. The yearly rate increased that year for the first time since 2007 (figure 3.1). In European comparison, the Dutch participation rate is rather lower than those in the UK, Norway and Finland, but higher than those in four other countries (figure 3.3).

Figure 3.2: Participation rates in breast cancer population screening for women aged 50–69, based on data collected by OECD^a and EUNICE^b (sources: OECD, 2013^b; Giordano et al., 2012).

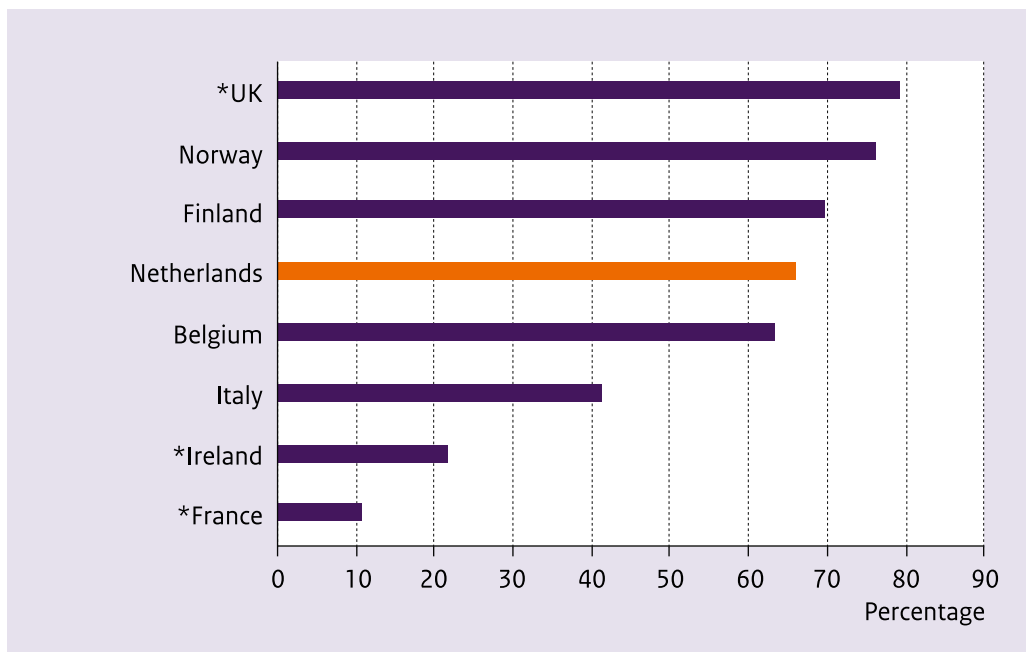


^a Data collection by the OECD in or around 2011. About half of the countries calculate the screening rate as a percentage of the women invited that year, and the other half as a percentage of the women invited in the past two years. German figures also include women applying for screening independently (about 2 percentage points). New Zealand figures include women already diagnosed for breast cancer and women who declined to participate; Danish, Dutch and Norwegian figures exclude those two groups; and for other countries they are either partially excluded or this is unknown.

^b For the countries marked with an asterisk (*), the situation was assessed in or around 2005 via the European Network for Information on Cancer (EUNICE). The Portuguese figures refer to central and northern Portugal, the Spanish figures involve six regions and the Swedish figures three regions.

* EUNICE data

Figure 3.3: Participation rates in cervical cancer population screening, based on data collected by OECD^a and EUNICE^b (sources: OECD, 2013^b; Bastos et al., 2010).



^a Data collection by the OECD, for Norway and Italy in 2011, for Finland in 2009, and for the Netherlands and Belgium in 2008. Dutch and Norwegian figures exclude women who have had hysterectomies; Norwegian figures additionally exclude women diagnosed with cervical cancer.

^b For the countries marked with an asterisk (*), the situation was assessed early 2008 via the European Network for Information on Cancer (EUNICE). French figures are the average of figures from the Departments of Bas-Rhin and Haut-Rhin.

* EUNICE data

International comparisons of cancer screening participation are difficult to make due to differences between countries in how this indicator is calculated. Figures 3.2 and 3.3 therefore reflect sources and countries selected partly on considerations of comparability of target groups in terms of age, year of assessment and method of analysis. Notwithstanding this careful selection, some uncertainty remains.

Information on differences between socioeconomic groups in terms of participation in cancer screening is included in section 10.3.

Starting in 2014, the Netherlands is implementing population screening for colorectal cancer. Thirteen of the 28 EU countries now conduct organised screening (Altobelli et al., 2014), and in the 15 other countries screening is available but not on an organised basis, or it is performed in regional projects or pilot projects. In the 13 countries with organised screening, wide variations exist in terms of detection methods, targeted age groups and screening intervals. Rates of participation have varied from 2% in Poland to 71% in Finland. The Dutch rate was 68% over the first five months of 2014; since the programme is still in the rollout stage, only those aged 63, 65, 67, 75 and 76 have been invited so far (van Veldhuizen et al., 2014).

Blood spot screening enables detection of 99.1% of all children who have one of the rare serious disorders being screened, with variations from 97.8% to 100.0% over the period 2002–2011

Failure to detect screenable serious disorders in newborn infants can have major consequences, because early treatment can be crucial to limiting or preventing serious impairment in their physical or mental development.

Some 1,519 of the nearly 1.9 million Dutch children born from 2002 to 2011 were found to have one of the 18 screened disorders. Timely detection was made in 99.1% of cases, meaning that 0.9%, or 14 children, were not detected early. Nine of these had been tested, but lab analysis of the blood sample had shown no abnormalities. For five children, one of the following errors occurred in the screening process: tardy screening, excessive delay in blood sample delivery to lab, no test result received by the Regional Coordination Programme (RCP), incorrect code recorded in lab, or possible faulty communication between lab and RCP. In those five cases, parents did not receive the information about the abnormal test results in time.

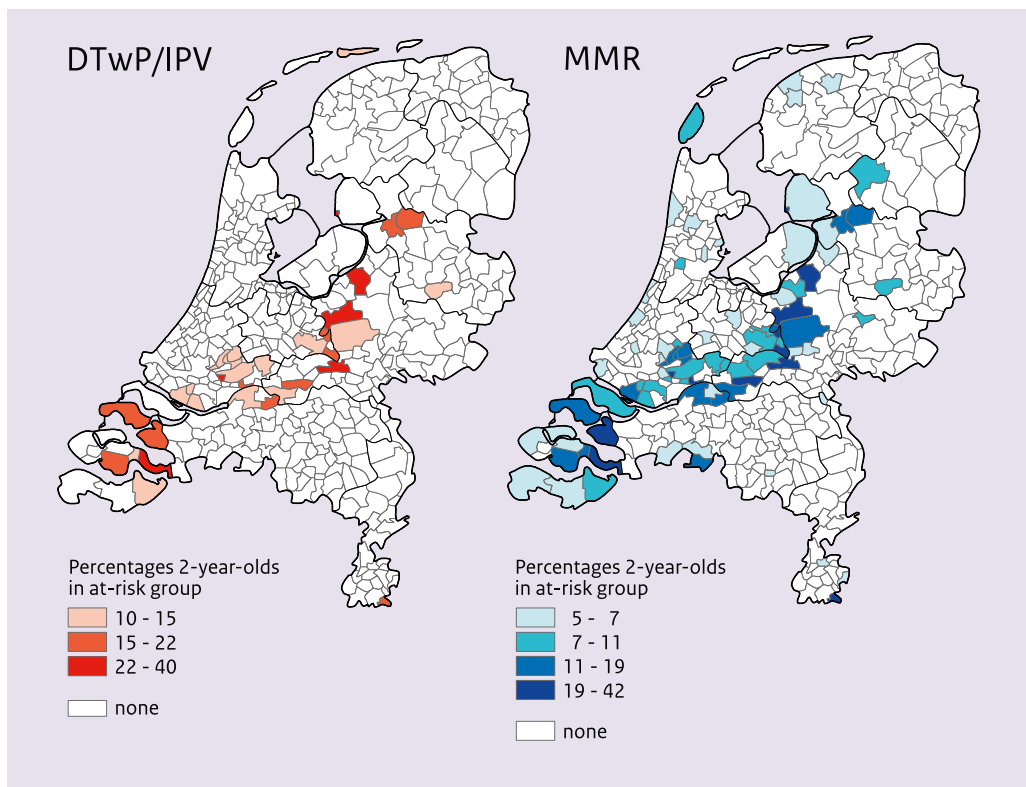
Detection rates for rare disorders in the 2002–2011 period varied from 97.8% (2008) to 100% (2004, 2005, 2007, 2010). The trend remained stable throughout the period, even though the numbers of disorders screened for was expanded over the years.

About 0.9% of Dutch 2-year-olds are unvaccinated or inadequately immunised against diphtheria, whooping cough, tetanus and polio whilst residing in communities with unmet immunisation coverage targets for those diseases (as set by the WHO and the National Vaccination Programme); for mumps, measles and rubella, the percentage is 1.5%

The Dutch National Vaccination Programme (RVP) provides children with a range of vaccinations to prevent infectious diseases and their complications. In 2013, the nationwide vaccination rate for 2-year-old children was 95.4% for diphtheria, tetanus, whooping cough and polio (the DTwP/IVP vaccination) and 96.0% for measles, mumps and rubella (MMR vaccination) (van Lier et al., 2014). In international perspective, the high Dutch vaccination rates are no exception; the rates for measles, for example, range from 76% in Austria to 99% in Greece and Hungary (OECD, 2013a).

In view of the high communicability of the diseases, the geographical distribution of unvaccinated people is also a factor of importance. If immunisation coverage in a particular

Figure 3.4: Percentages of 2-year-olds in at-risk groups^a for DTwP/IPV and MMR, by Dutch local authority^{b,c}, in 2013 (source: van Lier et al., 2014; data processing by RIVM).



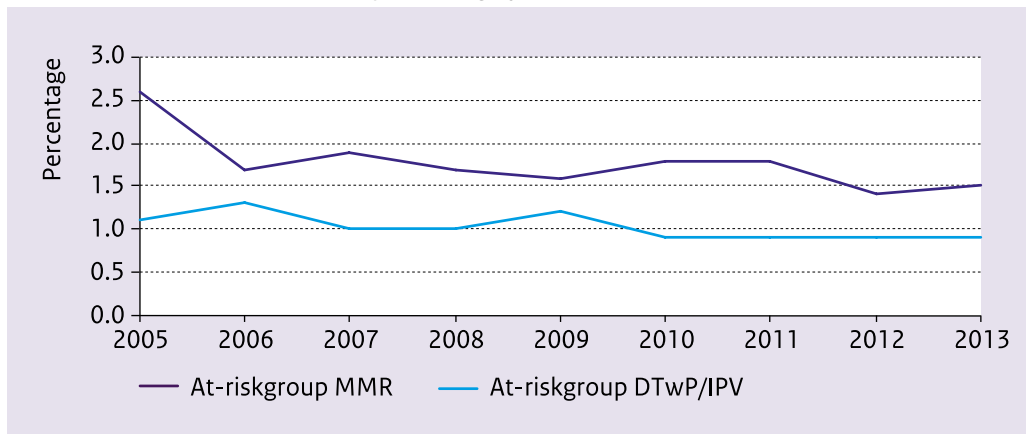
^a Percentages that are unvaccinated or inadequately immunised and live in communities with below-target immunisation coverage rates for DTwP/IPV or MMR.

^b Some children living near national borders receive their vaccinations in the neighbouring country. If this is not reported and registered in the Dutch system, immunisation rates may appear lower there than they actually are (e.g. in Vaals, near the German and Belgian borders).

^c In very small communities, so few children are eligible for vaccination that non-vaccination of one or two children may already cause the percentage of the unvaccinated or inadequately immunised children to rise above 10% (e.g. Ameland, Mook and Middelaar).

region is low, that strongly elevates the risk that children will infect one another. To prevent epidemics, the WHO and the National Vaccination Programme have determined that a local coverage rate of 90% is necessary for DTwP/IPV and a rate of 95% for MMR (the different rates derive from the properties of the viruses). Communities with below-target rates have the highest risk of epidemics. Unvaccinated or inadequately immunised children living there are

Figure 3.5: Percentages of 2-year-olds in at-risk groups^a for DTwP/IPV and MMR, 2005–2013 (source: van Lier et al., 2014; data processing by RIVM).



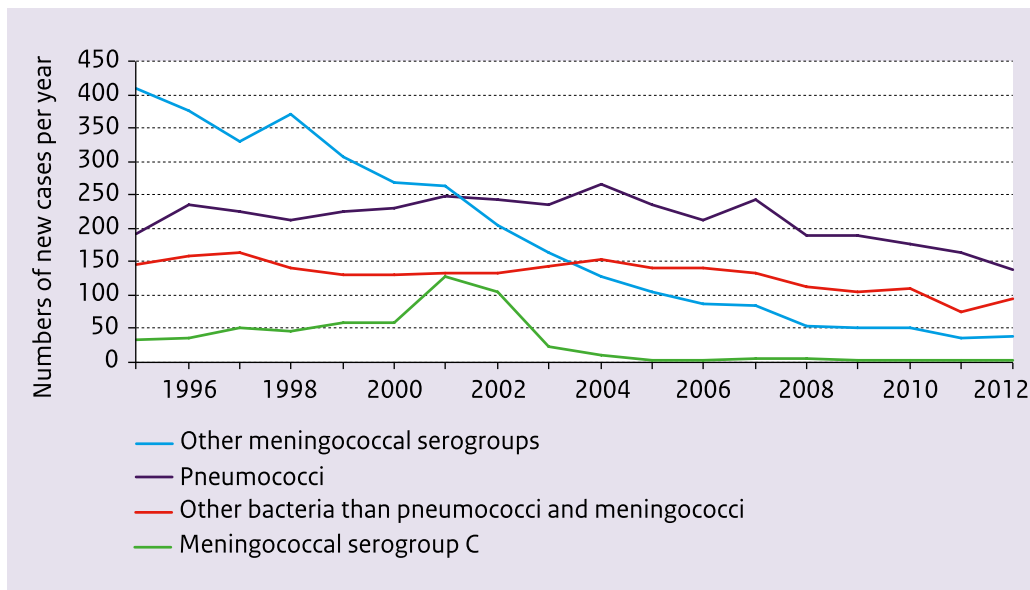
^a Percentages that are unvaccinated or inadequately immunised and live in communities with below-target immunisation coverage for DTwP/IPV and MMR.

the largest at-risk group for contracting one of these diseases. Figure 3.4 shows the 2013 percentages of 2-year-olds in the groups at risk for DTwP/IPV and for MMR.

Figure 3.5 shows the nationwide percentages of 2-year-old children who were unvaccinated or inadequately immunised and lived in local authorities with below-target vaccination coverage in the period 2005–2013. In 2013, 1,687 children were at risk for DTwP/IPV (0.9% of the total Dutch population of 2-year-olds) and 2,653 children (1.5%) were at risk for MMR. Those children are hence at higher risk of contracting one of those diseases, were an epidemic to break out. The percentages were relatively steady in the preceding years, except in 2005, when several larger cities were just under the MMR vaccination threshold, significantly expanding the at-risk group. The differing sizes of the at-risk groups for DTwP/IPV and MMR are attributable primarily to the differing target thresholds (90% for DTwP/IPV, 95% for MMR).

The total Dutch at-risk population is not confined to the 2-year-old children assessed here. Children of other ages as well as adults are also at risk. The relative at-risk population of 2-year-olds does reliably reflect the at-risk population of other young children, since vaccination rates have remained fairly constant in recent years. We do make the assumption that residential relocation behaviour has only limited influence on the size of at-risk populations. A very small proportion of vaccinated children may also belong to at-risk populations, because some vaccinations do not take. That is one reason for vaccinating more than once (which also extends the duration of protection). About 5% of children vaccinated against MMR at the age of about 14 months receive no booster before age 10; they are therefore not protected if the primary vaccination failed to take.

Figure 3.6: Yearly numbers of new bacterial meningitis cases by causal bacterium and serogroup, 1995–2012 (source: NRBM, 1996–2013).



In 2012, 274 people in the Netherlands contracted bacterial meningitis; a steep drop has occurred since 1995 in the yearly numbers of meningitis cases caused by the kinds of bacteria targeted by vaccination

In 2012, some 274 people contracted bacterial meningitis in the Netherlands. The incidence of bacterial meningitis declined by 69% from 1995 to 2012.

Meningococci and pneumococci are the two most common pathogens for bacterial meningitis. The decrease in yearly numbers of meningitis cases is largely attributable to a precipitous drop in meningococcal meningitis (figure 3.6). As a result, pneumococci, and no longer meningococci, have been the chief cause of bacterial meningitis since 2003. Meningococci may be distinguished into several serogroups, and pneumococci into several serotypes. The National Vaccination Programme has been inoculating children against meningococcal C infection since June 2002, against seven pneumococcal serotypes since July 2006 and against ten pneumococcal stereotyped since April 2011.

As figure 3.6 shows, a sudden upsurge occurred in 2000–2001 in the number of new meningococcal C meningitis cases. That prompted the authorities to begin vaccinating against that serogroup, after which incidence sharply declined. Only two people contracted bacterial meningitis from that serogroup in 2012. Since the introduction of pneumococcal vaccination in 2006, the yearly numbers of new cases have fallen, but not as steeply as the numbers for meningococcal C. The difference may be explainable by the fact that a catch-up campaign for all children and adolescents was launched for meningococcal C meningitis, but not for pneumococcal.

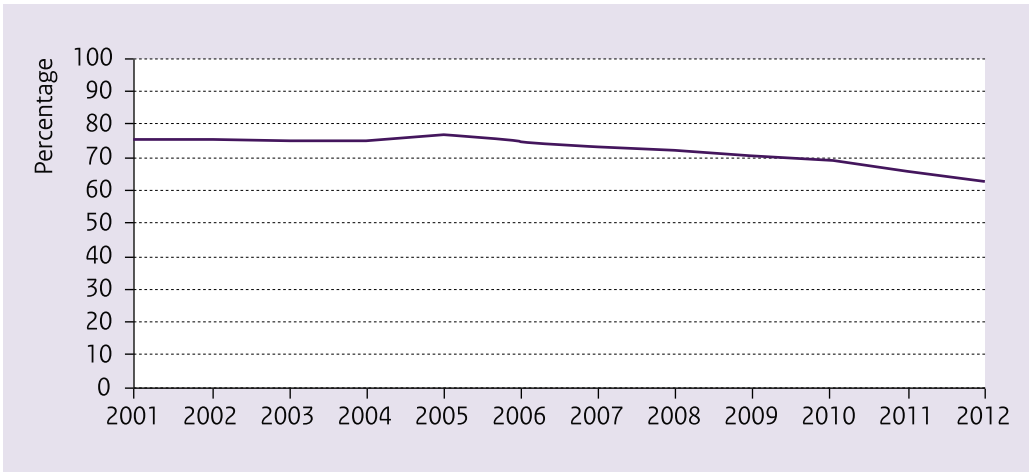
The figure also shows a precipitous fall from 1985 to 2010 in the incidence of meningitis caused by meningococcal serogroups not included in the vaccination programme. It seems probable that the population developed spontaneous immunity to serogroup B meningococci, the most important group in the category of meningococci; that would have made it difficult for the bacterium to maintain itself in the population (van der Ende & Spanjaard, 2011).

In 2012, flu vaccination coverage was 62% in the population targeted by the National Influenza Prevention Programme

In 2012, just under 32% of the Dutch population belonged to one or more of the target groups of the National Influenza Prevention Programme (Jansen et al., 2013). These included people with chronic health conditions, people with lowered resistance, nursing home residents, people with intellectual disabilities staying in residential facilities, and all people aged 60 or older. Within this target group as a whole, the vaccination coverage rate was 62%. For those eligible for the vaccinations on medical grounds, the rates varied from 66% for HIV-positive people to 82% for people with kidney failure. For people aged above 60, coverage was 68%; over-60s with medical eligibility had a rate of 77% and those without had 52%.

Over the 2001–2012 period, vaccination coverage in the target group as a whole sank from 75% to 62% (figure 3.7). The decline occurred in all subgroups, though it was limited in the kidney failure subgroup. In 2008, the influenza prevention programme expanded its target group to

Figure 3.7: Influenza vaccination coverage in the entire target group of the National Influenza Prevention Programme, 2001–2012 (sources: Tacke et al., 2009; Tacke et al., 2010; Jansen et al., 2012; Jansen et al., 2013).

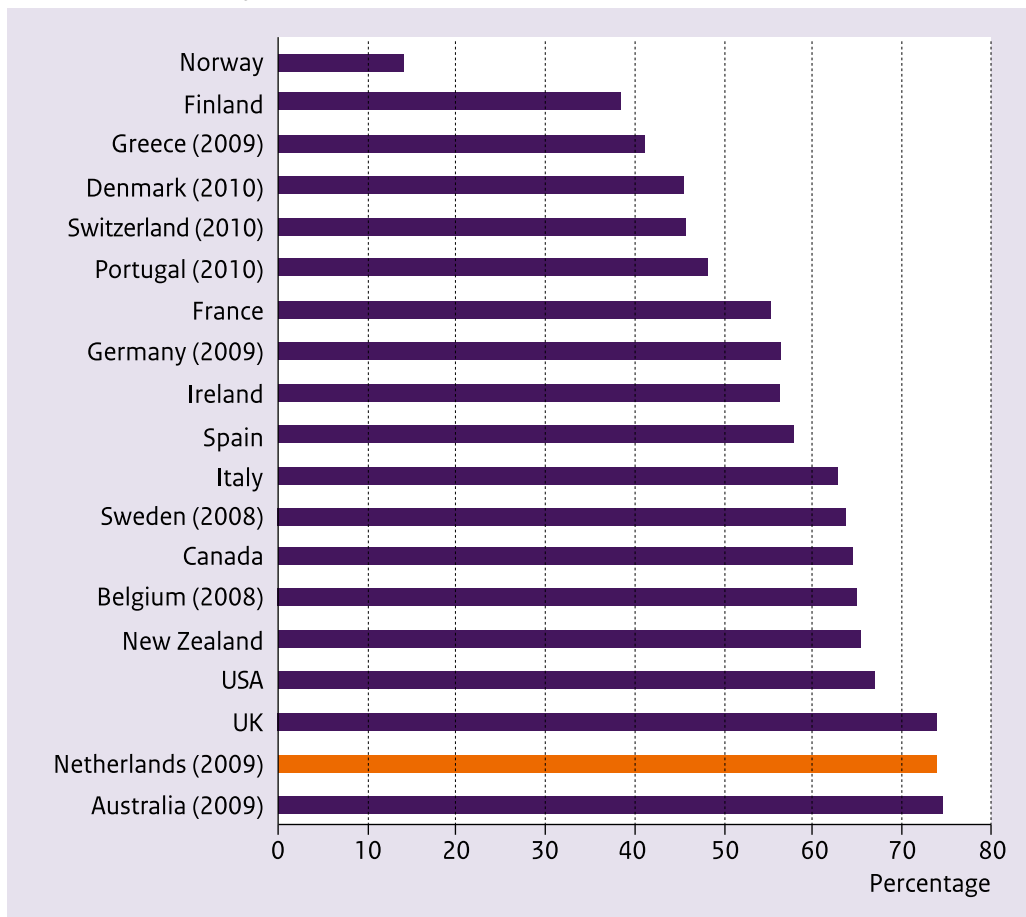


include healthy people aged 60 to 64. By 2009, this group without medical indications had a coverage rate of just under 55%, but it had dropped to 37% by 2012.

The WHO recommends a vaccination coverage rate of 75% (WHA, 2003), and the EU member states endorsed that recommendation in a 2009 resolution (EU, 2009). Neither resolution specified an age threshold. If we take the internationally widely used threshold of age 65, then the target rate was achieved in the Netherlands in 2011 at 77%, but no longer in 2012 (74%).

Figure 3.8 shows the flu vaccination coverage rates for the 65-plus age group in 19 OECD member countries. In the most recent year included, the Netherlands had the second-highest rate (OECD, 2013b).

Figure 3.8: Influenza vaccination coverage rates in 65-plus age group in 19 OECD countries, in 2011 (or last available year) (source: OECD, 2013b).

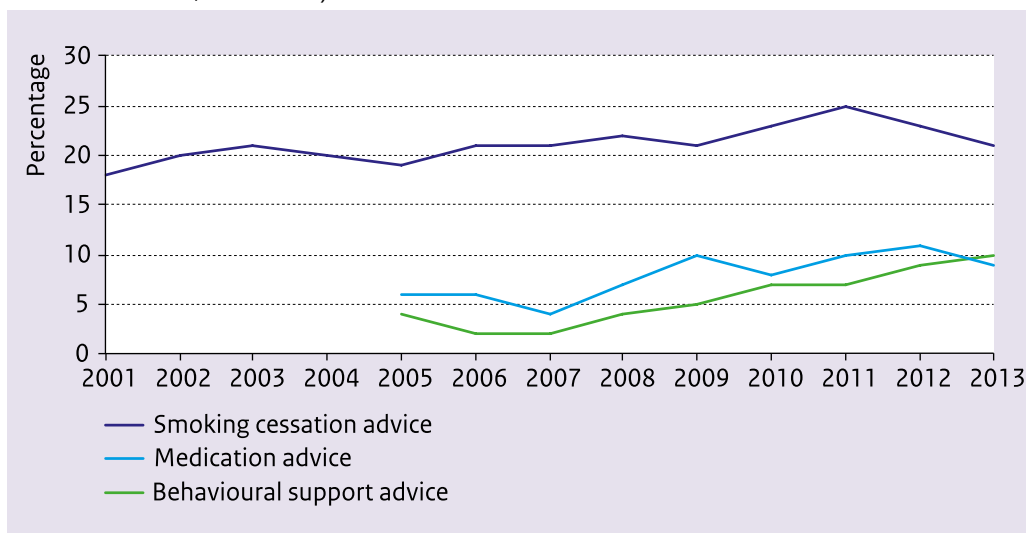


In 2013, 21% of Dutch smokers who visited a GP received smoking cessation advice there, more than in 2001 but fewer than in 2011

Of the tobacco smokers that saw their GPs in 2013, 21% were advised by the GP to stop smoking. That percentage had risen slightly from 18% during the 2001–2013 period, reaching 25% by 2011 (figure 3.9).

The Smoking Cessation Standards from the Dutch College of General Practitioners (NHG) recommend GPs to give certain groups of patients smoking cessation advice during their first consultation, irrespective of the reason for their visit. These groups include patients who request help in stopping smoking as well as patients with a heightened need to quit, such as those with smoking-related symptoms or health conditions, pregnant women, and parents

Figure 3.9: Percentages of Dutch smokers that saw their GPs in the preceding year and were advised to stop smoking, percentages referred for behavioural support and percentages advised to take medication, 2001–2013 (source: Continu Onderzoek Rookgewoonten STIVORO, Trimbos Institute, 2001–2012).

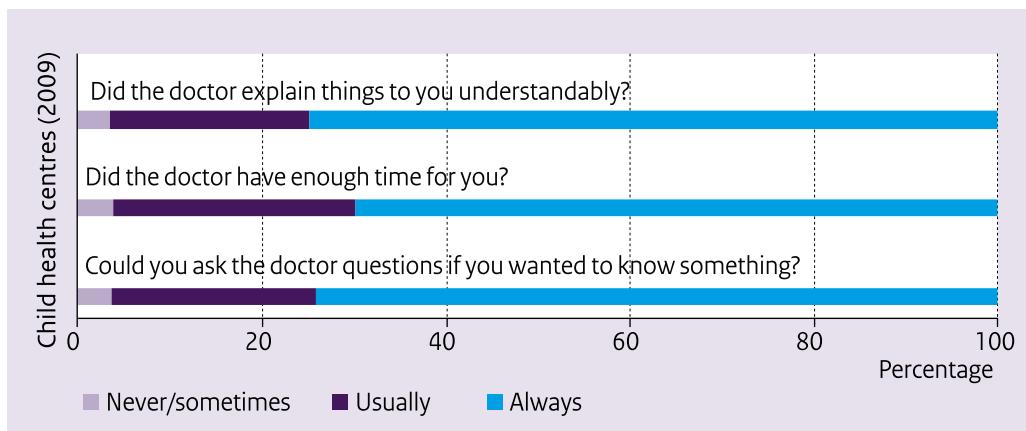


whose children have asthma (Chavannes et al., 2007). Per year, 74% of Dutch smokers see their GPs (de Korte et al., 2010). About 5% of smokers who receive no intervention or support have stopped smoking within one year’s time (van den Berg & Schoemaker, 2010). Doctor’s advice to stop smoking is thought to boost the numbers who quit (Ashenden et al., 1997; Stead et al., 2013).

We also obtained the percentages of smokers who were referred by their GPs for behavioural support or advised to take medication in order to stop smoking. Support delivered through a behavioural intervention may potentially raise the percentage of quitters to 10%, or to 20% if medication is added to the intervention (van den Berg & Schoemaker, 2010). From 2005 to 2013, the percentage of smokers referred for behavioural support increased from 4% to 10%, and the percentage advised to take medication from 6% to 9% (figure 3.9).

The percentages of smokers receiving smoking cessation advice in the preceding year were recorded in the Continuous Survey of Smoking Habits (COR), based on questionnaires about smoking habits completed by approximately 18,000 respondents. The survey was previously commissioned by the STIVORO tobacco control knowledge centre and since 2013 by the Trimbos Institute, Netherlands Institute of Mental Health and Addiction.

Figure 3.10: Client-reported experiences with child health centre paediatricians in terms of understandable explanations, available time and opportunities to ask questions (source: NIVEL, CQ-index; see appendix 3).



Reasonable to good client experiences with paediatricians in child health centres are reported

More than three quarters of parents or other carers who visited child health centre paediatricians reported always having good experiences with the explanations they received, their opportunities to ask questions and the time the doctor had available (figure 3.10). A further 20% usually had good experiences, but 5% reported seldom or never having good experiences. The aspect criticised most was the doctor's available time.

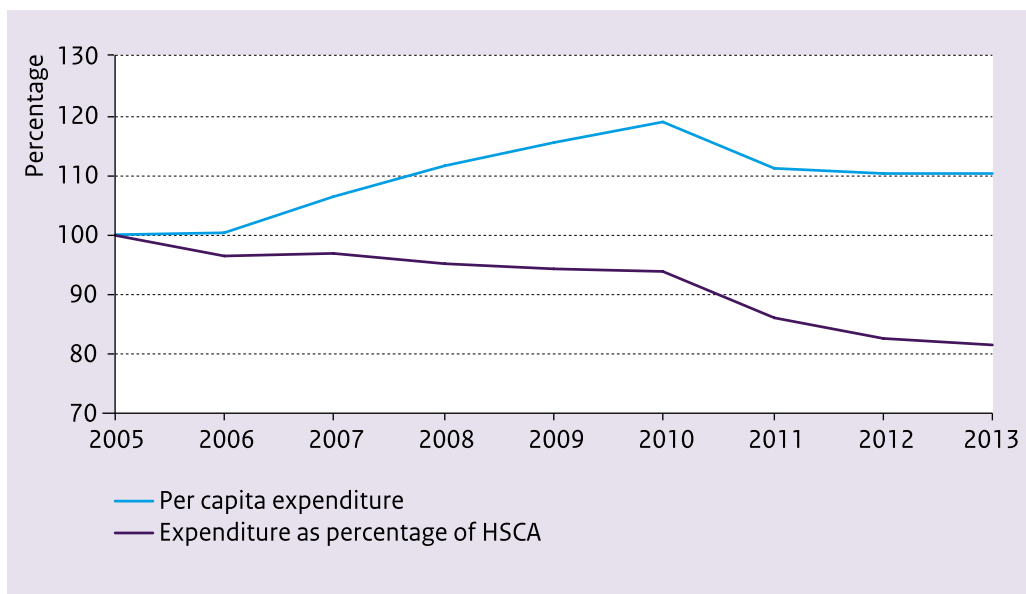
The research in question dates from 2009, and no more recent data are available. About 1,900 parents and other carers were questioned, who were using 13 child health centres. No questions were asked about the care provided by the nurses and assistants working in the centres.

3.3.3 Costs

The proportion of health expenditure devoted to prevention shrank in the period 2005–2013

Dutch expenditure on preventive care increased from €138 to €152 per capita over the 2005–2013 period as a whole, but amounts since 2011 were lower than in 2010 (figure 3.11). If expenditure for prevention is expressed in relation to total health expenditure as defined by the Dutch Health and Social Care Accounts (HSCA, or *Zorgrekeningen*), it turns out to have dropped from over 3.3% in 2005 to around 2.7% in 2012. Spending on prevention is therefore not increasing in tandem with total health expenditure (preventive care, health care and social care). That goes counter to published recommendations and studies, which have urged investment in preventive care in order to avoid or delay the onset of diseases and to enhance

Figure 3.11: Dutch expenditure for preventive care^a, 2005–2013 (inflation-adjusted and indexed), in relation to 2005 per capita expenditure on preventive care and 2005 total health expenditure (preventive care, health care, social care) according to HSCA definitions^b (source: CBS Statline, 2014c).



^a Vaccination programmes, flu shots, parent-and-child health services, breast and cervix cancer screening, occupational health services, occupational health and safety management services, yearly dental check-ups

^b Figures not based on Health Care Budgetary Framework (BKZ), as it excludes some preventive care activities

the well-being, productivity and participation of the Dutch population (Achterberg et al., 2010; Mackenbach et al., 2011; RIVM, 2013a; various Health Council recommendations). It should be noted that not all forms of preventive care are equally effective or evidence-based (van den Berg et al., 2014).

Part of the decline in the ratio of expenditure on preventive care is explained by the rising health and social care expenditures under the Health Care Act (ZVW) and the Exceptional Medical Expenses Act (AWBZ); these are far higher than preventive care spending (see chapter 8). Not included here are the costs of preventative interventions embedded within health care services, such as lifestyle counselling by GPs or the detection and treatment of high blood pressure or high serum cholesterol in people without cardiovascular disease.

3.4 Conclusions

No indicators for the accessibility of disease prevention and health promotion services were included in this chapter, as the availability of such indicators is still limited. We can nevertheless draw some tentative conclusions about access to such services. Health care facilities that also provide preventative care, such as midwife, GP and physiotherapy practices, are available to most residents of the Netherlands within a short travelling distance, except in a few small regions, and the services are also readily accessible (see sections 2.3 and 5.3.1).

Some financial obstacles may exist to some types of preventative services for which co-payments are required. Examples are preventative dental care for adults and preventative physiotherapeutic interventions not covered by the basic health insurance package. Some types of preventive care that are covered must still be paid for as part of the compulsory insurance excess, such as support and medication in smoking cessation or diagnostics and treatment following a positive screening result. The picture is also highly varied when it comes to the prevention of mental illness, where co-payments may be required depending on the health insurance company, the insured package, the type of mental health care provider and the type of intervention.

Participation by Dutch women in breast cancer population screening is high in international comparison (79.6% in 2012); a similar rate prevailed at the start of the 21st century, but it was temporarily higher in the interim. Participation in cervical cancer screening is markedly lower (64.2% in 2011), but nonetheless reasonably high in comparison to other countries; the Dutch rate has declined slightly since 2001. Participation may increase after 2016, when the self-testing kits become available. The Netherlands sets no target rates for population screening, as participation in preventative interventions is a matter of individual choice. The authorities do emphasise the importance of enabling well-informed decisions, and low rates of participation do heighten the programme costs per detected case.

Virtually all newborn Dutch infants are screened shortly after birth to detect hearing loss, and blood spot tests are performed to detect rare serious health disorders. Of all children who have one of the tested diseases, 99.1% were detected through the blood spot screening. Almost full participation (>99%) is also achieved in the screening of pregnant women for infectious diseases and red blood cell antibodies.

Participation in the National Vaccination Programme (RVP) is likewise high. The vaccination coverage rate amongst 2-year-olds for diphtheria, tetanus, whooping cough and polio (DTwP/IVP) is 95.4%, and for measles, mumps and rubella (MMR) it is 96.0%. Some 0.9% of all Dutch children aged 2 live in communities with below-target immunisation coverage for DTwP/IVP and 1.5% live in below-target communities for MMR. The yearly number of new meningococcal C meningitis cases has fallen to practically nil since 2002, when the vaccine was added to the National Vaccination Programme. The decline in cases caused by pneumococci

has gone more slowly. The vaccination coverage rate for influenza was 62% in 2012, calculated for the entire target group, which includes people with health risks and people aged 60 and older. That is a higher percentage than in other Western European countries.

Notwithstanding this series of positive statistics, challenges still remain for vaccination policy. Recent issues are the disappointing uptake rates by 13-year-old girls (56% of girls born in 1997) for the human papillomavirus (HPV) vaccination; a mumps epidemic amongst students that began in 2009; a measles epidemic from May 2013 to March 2014 in regions with large orthodox reformed populations; and the question of whether flu vaccinations are worthwhile for the whole 60-plus age group. HPV vaccination coverage has increased in two years' time to 61% (for girls born in 1999). The Health Council of the Netherlands published recommendations in May 2014 that concluded that sufficient, though limited, evidence is available that flu shots do protect healthy people above 60 against the complications of influenza (GR, 2014). Some 21% of smokers who saw their GPs in 2013 received smoking cessation advice, up from 18% in 2001.

On the basis of the indicators employed in this chapter, we may conclude that participation in Dutch population screening schemes is generally high, although the uptake of cervical cancer screening lags behind. Vaccination rates for newborn and very young children are high, but rates of HPV vaccination in 13-year-old girls and of flu vaccination in older people are considerably lower. The reach of lifestyle interventions, such as those aimed at smoking cessation, is still lower.

Obviously the indicators in this chapter throw light on only a small proportion of the health care-related prevention efforts undertaken in the Netherlands. Many more preventative interventions are delivered by the health care system. To mention just a few, there are the various preventative services in child and adolescent health care, the detection of child maltreatment in emergency departments, needle exchange programmes in community health services, oral health promotion in dental practices, the prevention of cardiometabolic disease and mental health disorders in GP practices, preventative e-health interventions, and the detection of vulnerable elderly people by hospitals and community nurses. From recent reports about the quality and effectiveness of health promotion and disease prevention in the Dutch health care system, we can conclude that general information is available about what services are on offer, but that much less is known about their reach and their actual impact on public health. Estimates of the costs and financial returns of such services are in very short supply (see reports by Koopmans et al., 2012; van den Berg et al., 2013; Hamberg-van Reenen & Meijer, 2014). We refer to these reports for an overall indication of what knowledge is available about the reach, effectiveness and financial returns of several of the examples of preventive care discussed above.

4

Acute care

Key findings

- In 2013, 99.6% of the Dutch population lived within 15 minutes' reach of the nearest ambulance station.
- In 2013, 99.9% of the population could reach an emergency department (ED) by ambulance within 45 minutes in the daytime hours.
- In 2012, 99.5% of the population could reach the nearest out-of-hours GP centre within 30 minutes by car.
- In 2011, 99% of the Dutch population could be reached within 30 minutes by a mobile medical team during daytime hours.
- A growing percentage of emergency ambulance callouts meet the 15-minute standard, but in 2012 that was still 2 percentage points short of the target standard of 95%.
- By year's end 2011, all Dutch GP surgeries met the practice standard of 30 seconds for answering emergency telephone calls.
- The percentage of emergency calls answered by out-of-hours GP centres within the practice standard of 30 seconds had risen to 95% by 2012.
- The percentage of people who die within 30 days after hospital admission for an acute myocardial infarction decreased in the 2000–2010 period; the Dutch rate is in the middle range compared to other Western countries.
- The 30-day mortality rates for ischaemic and haemorrhagic strokes decreased between 2000 and 2010; rates in the Netherlands are average to high compared to other Western countries.
- Most hip fracture operations are performed promptly; the percentages of patients receiving timely surgery increased in the 2005–2012 period.

- Users report positive experiences with communication and information provision in ambulance services; improvements seem possible at emergency departments.
- The costs of acute care in the Netherlands were approximately €3.3 billion in 2011; in recent years, the budget for ambulance services grew at a less rapid pace than previously.
- Variations in consultation fees charged by out-of-hours GP centres are levelling out.

4.1 Background

In acute care, the help-seekers' perceptions are paramount

The term acute care includes 'all health care services that cannot wait until the first available opportunity to consult a GP or other health care provider during office hours'. That is the definition used by the Netherlands Triage System (Drijver & Jochems, 2006) and it was originally formulated by the Federation of Patients and Consumer Organisations in the Netherlands (NPCF, 2006). The Netherlands Ministry of Health, Welfare and Sport concurs with that definition, describing an acute care situation as 'an unforeseen immediate need for diagnosis and treatment as perceived by the help-seeker and/or health care providers' (VWS, 2008b). The emphasis in these definitions is on the perception of the help-seeker. People in danger of death or irreversible health damage will obviously feel a need for acute medical care, but people experiencing intense pain, distress or anxiety may also feel such a need. Under this definition, even telephone advice or reassurance may qualify as acute care.

When life is at stake, time plays a critical role

It is universally recognised in the medical community that prompt treatment is essential in life-threatening situations or when irreparable health damage is likely. For victims of serious accidents, known as trauma or polytrauma patients, the health care provided in the first hour ('the golden hour') following the accident is often decisive for the whole process of recovery. When people suffer acute heart attacks or strokes, the prompt delivery of effective interventions can limit the damage (RVZ, 2003). That said, no clear-cut correlation has been established between brief response times and improved survival chances (RVZ, 2003; Malschaert et al., 2008). Since randomised trials are not possible in acute care, research on that question is rather difficult.

Distinction between acute care in individual cases and after major accidents or disasters

A distinction is made in acute care between the services delivered in individual cases and those delivered after a major accident or disaster. In individual cases, one speaks of standard acute care. In disasters or major accidents with more than five victims, standard care is ramped up to the level of the Regional Medical Emergency Preparedness and Planning Office (GHOR Nederland), operating in 25 public safety regions. The GHOR focuses on the organisation of disaster management and relief and the coordination of medical service delivery in the aftermath of disasters or major accidents. This chapter focuses on standard acute care only.

Scope of acute care in this chapter

We confine ourselves to acute medical care as delivered in the Netherlands under the policy

guidelines set out by the Health Care Institutions Act (WTZI). The vast majority of people who need acute care receive it from a hospital emergency department (ED), an ambulance service, a GP or an out-of-hours GP centre. Out-of-hours GP centres are open only at night and on weekends and holidays; emergency care during office hours is delivered by a client's GP practice. For severe cases, trauma response teams operate from major trauma centres. Our focus will be on these basic services.

There are also other sectors that provide acute care. Acute home care, acute mental health care and acute dental care are not examined separately in this Performance Report. Acute obstetric care is treated in chapter 2 on perinatal care.

4.2 Indicators for acute care

We monitor acute medical care with the aid of 13 indicators, distinguished according to accessibility, quality and cost.

Accessibility

- Percentage of people living within 15 minutes' reach of the nearest ambulance station
- Percentage of people who can be taken by ambulance to the nearest emergency department within 45 minutes
- Percentage of people living more than a 30-minute car journey from the nearest out-of-hours GP centre
- Percentage of people who can be reached within 30 minutes by a mobile medical team in the daytime hours

Quality

- Percentage of emergency ambulance callouts that arrive on the scene within the 15-minute standard
- Percentage of GP practices conforming to the practice standard of 30 seconds for emergency telephone calls
- Percentage of emergency calls to out-of-hours GP centres answered within the practice standard of 30 seconds
- Percentage of patients dying within 30 days of hospital admission for an acute myocardial infarction
- Percentages of patients dying within 30 days of hospital admission for ischaemic and haemorrhagic stroke
- Percentage of patients with hip fractures receiving surgery within 24 hours of presentation
- Percentages of people reporting good experiences with ambulance services and with emergency departments in terms of communication and information provision

Costs

- Costs of acute care (ambulance services, out-of-hours GP centres, emergency departments, major trauma centres)
- Nationwide variations in consultation fees charged by out-of-hours GP centres.

4.3 State of affairs

4.3.1 Accessibility

In 2013, 99.6% of the Dutch population lived within 15 minutes' reach of the nearest ambulance station

The Temporary Ambulance Services Act (TWAZ) stipulates that Dutch ambulances should arrive on the scene within 15 minutes in 97% of emergency callouts (dispatches of 'A1' or blue-light urgency). An important prerequisite is that ambulance stations be sufficiently dispersed throughout the country. Figure 4.1 shows nationwide ambulance accessibility in 2013. On the basis of ambulance speeds recorded in the past, 99.6% of Dutch people currently reside within 15 minutes reach of the nearest ambulance station; this includes a call-handling and dispatch time of 3 minutes, leaving a net driving time of 12 minutes to reach a patient. The orange and red areas in the figure require more than 12 minutes' driving time; these are sparsely populated or border regions housing 0.4% of the Dutch population, or approximately 60,000 residents. This is the daytime situation. Fewer ambulance stations are operational at night, when 0.5% of the population (89,000 people) live outside the 15-minute reach of a station.

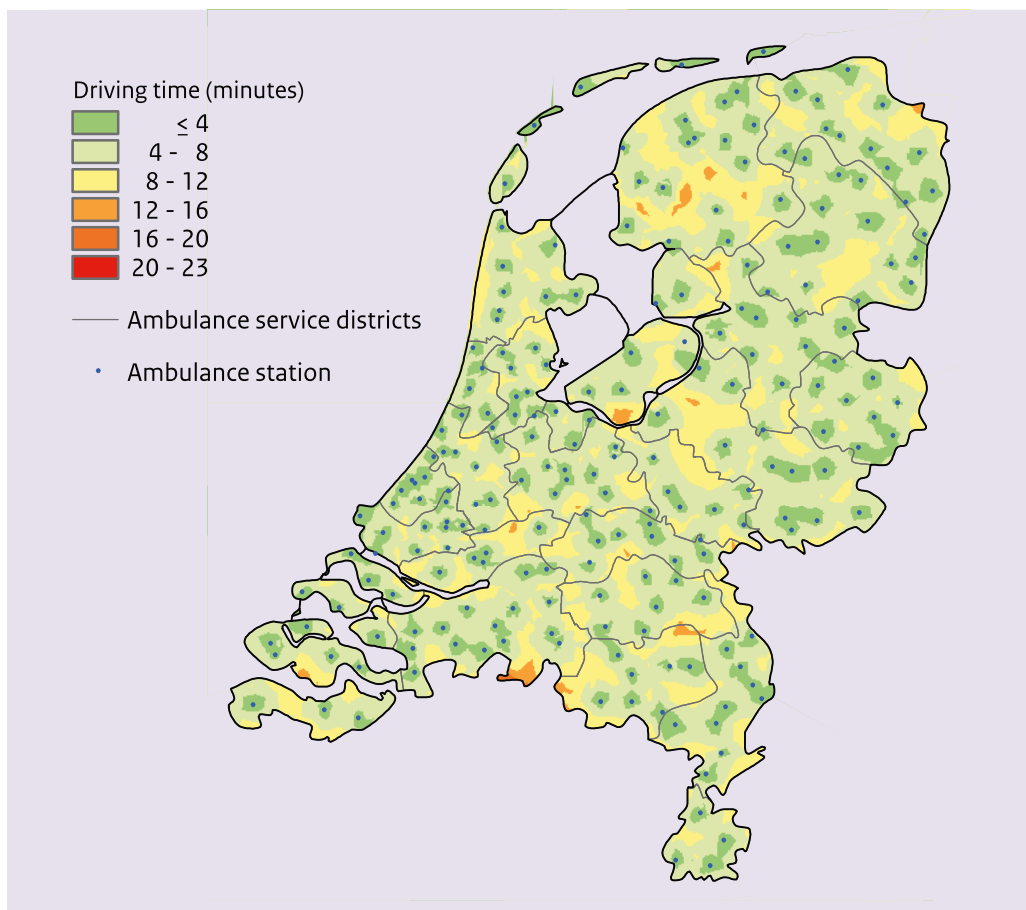
These percentages and numbers are theoretical calculations based on actual recorded ambulance driving speeds. The data provide indications for the quality of ambulance station distribution in the Netherlands from the viewpoint of accessibility. This indicator does not assess the percentages of people who are actually reached within 15 minutes in emergencies; we refer to section 4.3.2 on the quality of acute care.

In 2013, 99.9% of the population could reach an emergency department by ambulance within 45 minutes in the daytime hours

Emergency departments (ED) are specialised sections of hospitals that are designed to provide medical and nursing care to accident victims and patients with acute health conditions (Gijssen et al., 2010a). In serious incidents, the distance to a hospital with ED services is an important factor. Policy guidelines stipulate that EDs are to be distributed in ways to enable all residents of the Netherlands to be transported there by ambulance within 45 minutes of an emergency call. This is a distribution standard, not a performance standard. Speed is essential, but it is not the only measure of quality. Some patients fare better with a tranquil journey to hospital, and ambulance staff sometimes take patients to a hospital slightly further away that can provide the appropriate specialist care straightaway (GR, 2011). The necessary stabilisation of a patient's condition at the scene of an incident must not adversely affect the speed of transport to hospital.

On 1 January 2013, the Netherlands had 94 EDs open 7 days a week, 24 hours a day. Recent analysis of ambulance response times revealed that 99.9% of Dutch residents could reach an ED by ambulance within 45 minutes during daytime hours (Zwakhals & Kommer, 2013); approximately 24,000 (0.15%) could not. The analysis was based on 206 ambulance stations operational 24/7.

Figure 4.1: Ambulance driving times from nearest ambulance station, daytime hours, 2013 (source: Mulder et al., 2013).



Only 10% of ED users arrive there by ambulance; the other 90% arrange other forms of transportation (Gijssen et al., 2010a). In 2013, approximately 0.4% of the Dutch population (67,000 people) lived more than a 30-minute car journey from an ED (table 4.1). As the National Public Health Atlas (<https://www.volksgezondheidenzorg.info>) shows, poorer access exists in particular on the Frisian Islands, in the regions of Zeeuws-Vlaanderen, Schouwen-Duiveland and Noordoostpolder, and in some parts of Friesland and northern Groningen. Total access times, including waiting times, are probably longer for people who depend on public transport or taxis.

Table 4.1: Accessibility of EDs by personal transportation: numbers of people living at more than 30 minutes' distance from an ED, percentages of the population and total numbers of EDs, 2005–2013 (source: Giesbers & Kommer, 2014).

	2005	2008	2011	2013
Number of people	45,000	49,500	49,500	67,000
Percentage of population	0.3	0.3	0.3	0.4
Total EDs	106	104	98	94

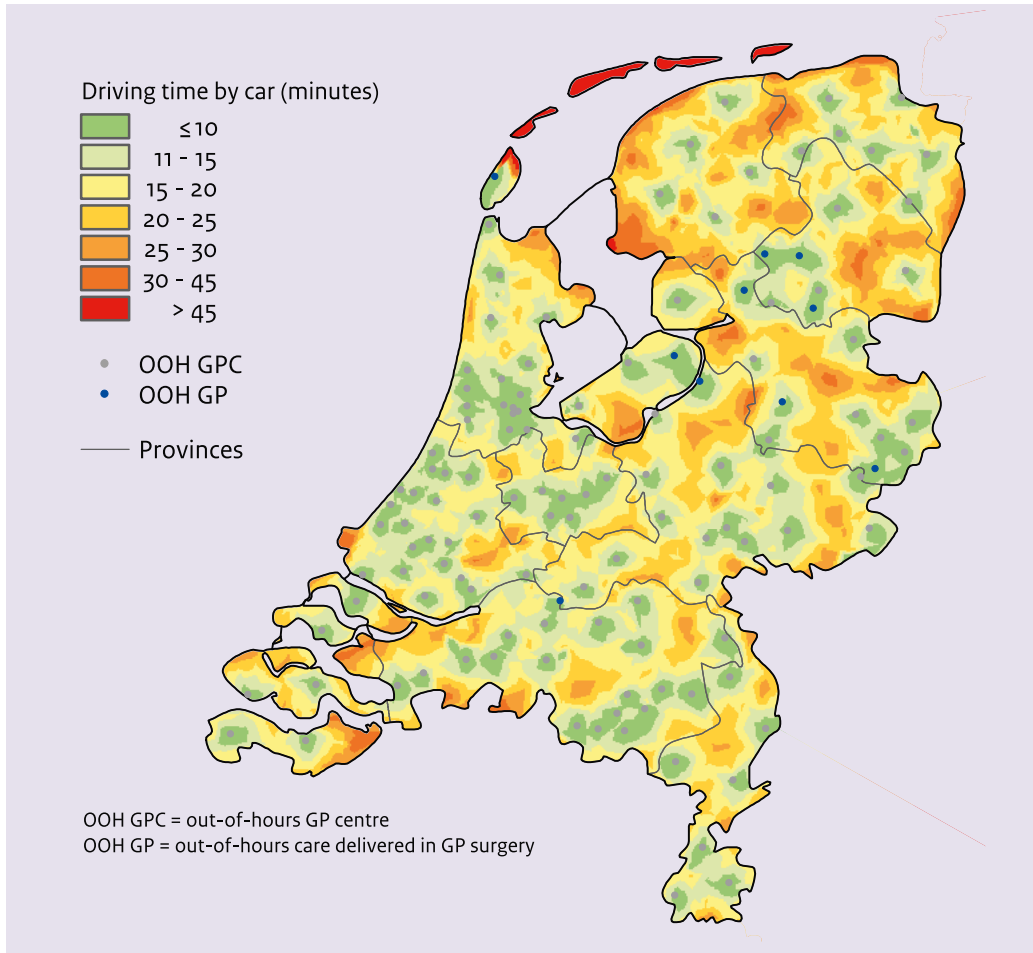
In 2012, 99.5% of the population could reach the nearest out-of-hours GP centre within 30 minutes by car

The purpose of out-of-hours GP centres is to provide medical care outside office hours to patients with acute needs that cannot wait until the next working day. A total of 128 centres were operational in 2012, and nearly 70% of the Dutch population could reach the nearest one within 15 minutes using their own transportation. About 0.5% had longer than 30-minute journeys (Zwakhals, 2013); the longest journeys were mainly in several areas in the north of the country (figure 4.2). There are a few alternative arrangements whereby GPs cooperate in providing evening, night and weekend services from their own practices (blue dots in figure 4.2); in such cases, the exact location varies with the GP on duty. Accessibility of out-of-hours centres has remained steady since 2008.

It is not always clear to individual people which emergency service they should choose outside office hours: an out-of-hours GP centre or an ED. Each forms a link in a continuum of emergency services, and often they complement one another. For that reason, such services are increasingly situated close together, and in some locations they have even been integrated behind a single emergency services desk. A possible drawback to this integration of services is that the out-of-hours GP centres take longer to reach.

Some people do not have access to the closest out-of-hours GP centre, in that they are required to use the centre with which their own GP is affiliated. One location where this is a concern is a region where catchment areas are transected by several large rivers (Lek, Waal and Meuse), making a different centre much quicker to reach. As no recent data were available about catchment areas of out-of-hours GP centres, we could not correct driving times for this. About 98% of all Dutch GPs are affiliated with a GP services structure (HDS), an umbrella organisation performing clerical services for one or more primary care centres. Patients whose GP is not affiliated with an HDS have no access to out-of-hours GP centres; their GPs have arranged the out-of-hours services themselves.

Figure 4.2: Driving times by car to the nearest out-of-hours GP centre, 2012 (source: Zwakhals, 2013).



In 2011, 99% of the Dutch population could be reached within 30 minutes by a mobile medical team during daytime hours

A mobile medical team (MMT) provides specialist medical care at the scene of an incident as a supplement to ambulance services, as when large or complex accidents occur with multiple victims and serious injuries. An MMT includes a doctor (anaesthetist or trauma surgeon), a specialised nursing professional and a driver or pilot. Teams are transported in specially equipped mobile medical vans (MMVs) or medical or trauma helicopters. MMVs and medical helicopters are not meant to transport patients. Ambulances are used for that purpose, except in highly exceptional cases where helicopter transport is allowed.

Figure 4.3: Response times from stations of mobile medical teams using mobile medical vans (MMVs) and helicopters, including three across-border helicopter stations, 2011 (source: Giesbers & Kommer, 2012).

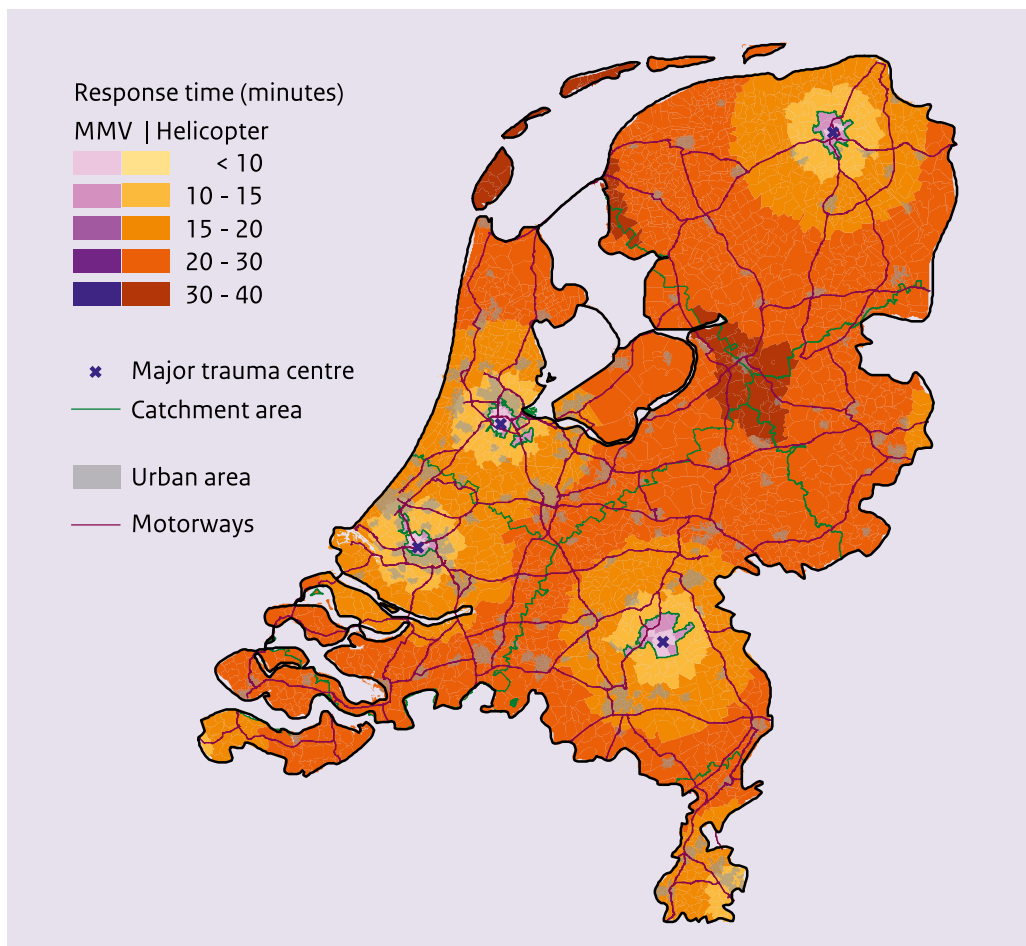


Figure 4.3 depicts the reach of the standard 24/7 MMT services in the Netherlands. Four medical helicopters are on standby in the regions of Nijmegen (Volkel Air Base), Rotterdam (Rotterdam Airport), Amsterdam (VU Medical Centre) and Groningen (University Medical Centre). MMVs are also on standby there. Figure 4.3 takes additional assistance into account from three German or Belgian helicopters, which can reach locations in the regions of South Limburg, Zeeuws-Vlaanderen and Twente within 30 minutes. That leaves three areas of the Netherlands with response times of more than 30 minutes: the western stretch of Friesland, the three westernmost Frisian Islands and the area around the town of Zwolle. Hence, in the 'standard' situation, 99% of the Dutch population can be reached within 30 minutes, or 91% if no foreign assistance were relied on.

In some cases, as in storms or heavy fog, a mobile medical team is not allowed to fly by helicopter, but that would seldom affect all four helicopters at once. Were that to happen, the four MMVs can reach 85% of the Dutch population within 60 minutes.

4.3.2 Quality

A growing percentage of emergency ambulance callouts meet the 15-minute standard, but in 2012 that was still 2 percentage points short of the target standard of 95%

In 2012, there were approximately 501,000 emergency ambulance callouts (under ‘A1’ or blue-light conditions) in the Netherlands (AZN, 2013). Blue-light callouts involve situations whereby a patient’s vital functions may be acutely endangered (Gijsen et al., 2012). In blue-light callouts, ambulance services are legally required to arrive on the scene within 15 minutes at least 95% of the time (St-AB, 2012). Nearly 93% of such callouts met the 15-minute standard in 2012, leaving the sector 2.1 percentage points below target, as compared to 4.1 percentage points in 2007 (table 4.2).

Breaches of the standard may arise from combinations of factors such as insufficient ambulance availability, inadequate geographical distribution of ambulance stations, or force-majeure events such as inclement weather, road congestion or exceptionally high peaks in demand for ambulance services.

Table 4.2: Percentages of emergency ambulance callouts meeting the 15-minute standard, 2006–2012 (source: AZN, 2009; AZN, 2013).

	2006	2007	2008	2009	2010	2011	2012
Percentage within standard	91.3	90.9	92.1	92.0	92.3	93.3	92.9
Percentage points short of standard	3.7	4.1	2.9	3.0	2.7	1.7	2.1

The 15-minute standard has not been empirically validated, nor has a clear-cut connection been established between ambulance response times and patient survival chances. A systematic study of the international literature by Malschaert and colleagues (2008) found that most of the separate studies reported associations but that no association was demonstrated in several, often rigorously performed, studies. The authors concluded that response times were only one of the factors that contribute to patient survival and that more research was needed on other factors, such as the quality of the medical care delivered. They recommended that mortality, pain, quality of life and physical functioning also be included as outcome variables. The Temporary Ambulance Services Act (TWAZ) requires that data on such measures be collected and assessed. Initiatives have meanwhile been launched, and outcome indicators like these are to be published in an annual benchmarking exercise on Dutch ambulance services.

A variety of time standards for ambulance response are in use in Western countries, ranging from 9 to 20 minutes. Some countries have no standards in place.

By year's end 2011, all Dutch GP surgeries met the practice standard of 30 seconds for answering emergency telephone calls

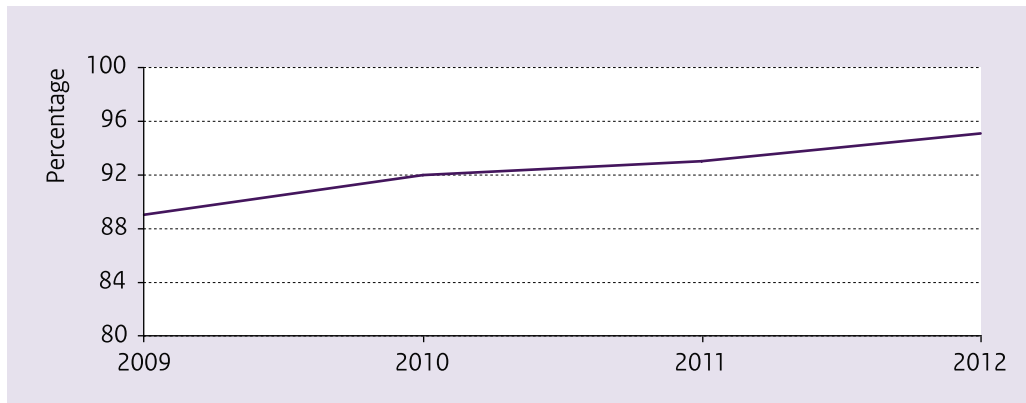
In 2007, the Health Care Inspectorate (IGZ) and the Federation of Patients' and Consumer Organisations in the Netherlands (NPCF) investigated telephone access to GP practices (IGZ & NPCF, 2008). Some 25% of emergency calls were not answered, and 63% were answered after a wait of more than 30 seconds. These alarming findings prompted the National Association of General Practitioners (LHV) to formulate standards for telephone access to GP practices. GPs are required to have separate arrangements for emergency calls and to ensure that these are answered within 30 seconds by a medically trained person.

A follow-up study of 4,378 practices by the IGZ in 2010 found that 30% still failed to satisfy the standard for emergency calls; 42 practices were still not doing so by November 2011. When the exercise was repeated at year's end, all of the latter surgeries were meanwhile meeting the practice standard (IGZ, 2012b).

The percentage of emergency calls answered by out-of-hours GP centres within the practice standard of 30 seconds had risen to 95% by 2012

During office hours, patients have access to their GP or an on-call doctor. At other times, out-of-hours GP centres provide medical care that cannot wait until the next working day. Most contacts with the centres are initiated by telephone. After telephone triage by a general practice assistant, a GP verifies whether the call was correctly assessed and whether the appropriate services were provided. If telephone advice is not enough, the patient may attend the primary care centre or be visited by a GP (Gijssen et al., 2010b).

Figure 4.4: Percentages of emergency telephone calls to out-of-hours GP centres answered within 30 seconds, 2009–2012 (source: VHN, 2010–2013).



It is important that emergency telephone calls to primary care centres be answered as promptly as possible. In 2012, the average wait for emergency callers was 14 seconds, as compared to 19 seconds in 2009 (figure 4.4). In the same period, the percentage of emergency calls answered within 30 seconds increased from 89% to 95%, a clear improvement.

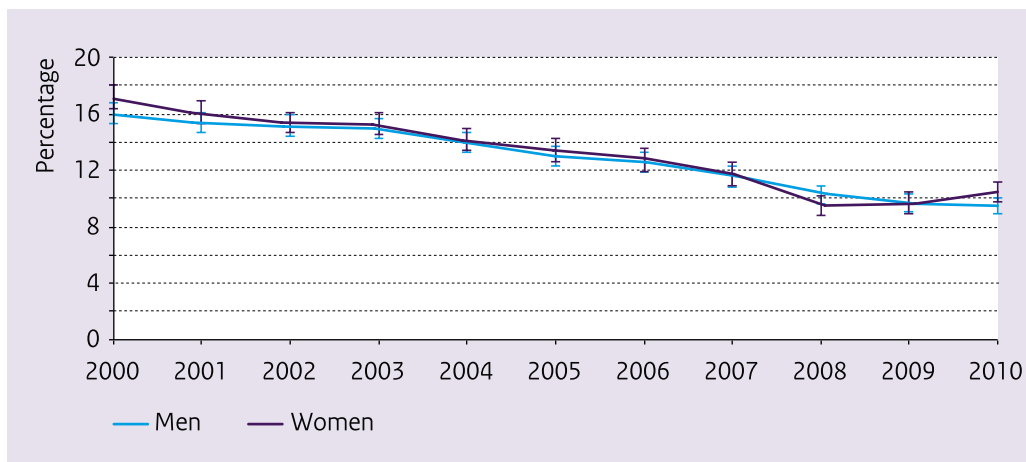
The percentage of people who die within 30 days after hospital admission for an acute myocardial infarction decreased in the 2000–2010 period; the Dutch rate is in the middle range compared to other Western countries

Of the patients aged 45 or older who were admitted to Dutch hospitals with an acute myocardial infarction (AMI) in 2010, 9.8% died within 30 days (either in hospital or after discharge). In-hospital mortality was 6.8%.

Trends

From 2000 to 2010, the overall 30-day mortality rate (in-hospital or post-discharge) for patients admitted to hospital with AMI decreased by 44% (figure 4.5); it sank by 43% for men and 46% for women. For women, the rates in the final two years of the decade were slightly higher than the previous year's figure. The Netherlands was not the only Western country with declining rates of in-hospital mortality for AMI in that period (OECD, 2013a).

Figure 4.5: Percentages of Dutch people aged 45 or older deceased within 30 days of hospital admission (including day-patient admissions) for acute myocardial infarction, 2000–2010, age- and sex-standardised to the 2010 OECD population aged 45+ admitted to hospital for AMI, with 95% confidence intervals (source: datasets provided by Statistics Netherlands with data from the National Medical Register LMR and linkage to population register data; processing by OECD and RIVM).

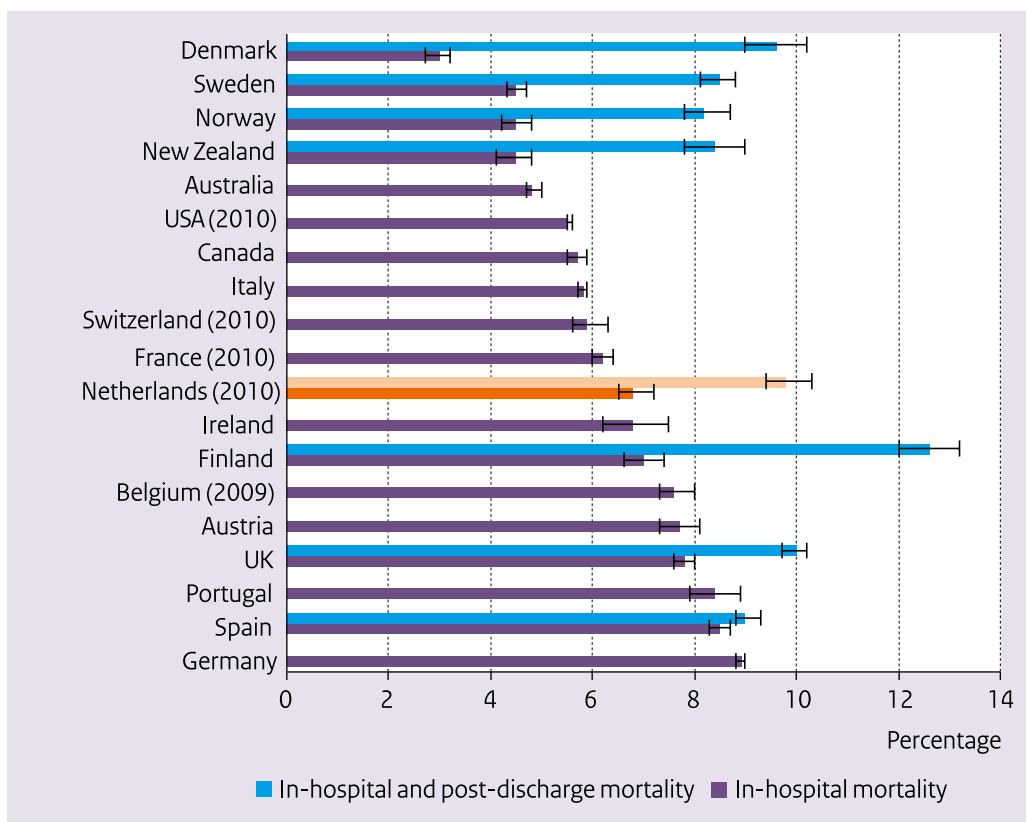


Many treatment modifications have been made in recent decades which may have helped to reduce mortality after hospitalisation for AMI. These include:

- Reperfusion therapy, consisting of thrombolytic therapy or percutaneous coronary intervention (PCI), is increasingly applied during the acute phase to restore blood flow in the coronary arteries.
- Although thrombolysis and PCI were used about equally around the turn of the century, PCI has subsequently become the preferential intervention (Nauta et al., 2011a).
- Diagnostics were performed more rapidly, beginning during the ambulance journey; treatment interventions in ambulances were also improved.
- More hospitals are now equipped with specialised heart emergency and coronary care (cardiac monitoring) units.
- Drug treatment has been altered. Many people with heart disease are now prescribed cholesterol-lowering drugs (statins), aspirin (acetylsalicylic acid) and one or more drugs to lower blood pressure (Kotseva et al., 2009).

Primary and secondary prevention measures for people at higher risk of heart attacks may have also helped to reduce post-AMI mortality. That applies to people either with or without heart conditions in their medical histories. Detection and treatment of high blood pressure and elevated cholesterol levels in people with higher risks of heart attack may have also contributed to the decline in mortality, as appropriate treatment of risk factors can limit the average size of attacks if they do occur. A further factor is that minor cardiac incidents with

Figure 4.6: Percentages of people aged 45 or older deceased within 30 days of hospital admission (including day-patient admissions) for acute myocardial infarction, age- and sex-standardised to the 2010 OECD population aged 45+ admitted to hospital for AMI, with 95% confidence intervals (data for 2011, unless otherwise indicated) (source: OECD, 2013a).



relatively good prognoses are now more likely to be classified as heart attacks, thus ostensibly improving the mortality rate for the ‘average’ heart attack. It is not known which of these changes may have contributed to the mortality reduction and how much.

International picture

Dutch in-hospital mortality following admission for an acute myocardial infarction (AMI) is in the middle range as compared to the rates in other Western countries (figure 4.6). Mortality is markedly lower in the Scandinavian countries Denmark, Norway and Sweden, as well as in New Zealand and Australia (3% to 5% versus the Dutch rate of 6.8 %). The Dutch figures date from 2010 and those from most other countries from 2011. Some countries were also able to calculate overall 30-day mortality rates following hospital admission for AMI, thus taking

deaths into account that occurred after discharge. The latter is a more reliable measure than in-hospital mortality, because it is less dependent on the length of hospital stay. The Dutch rate of in-hospital and post-discharge mortality is comparable to the rates in the UK and Denmark; Finland has a significantly higher rate. The Dutch middle-range position might point to room for improvement in the quality of care for patients in the acute phase of AMI. Remarkably, though, the overall mortality rate in the Netherlands for coronary heart disease and AMI is low in international comparison (Eurostat, 2014; WHO HFA, 2014). That would not seem to suggest that the quality of Dutch prevention and care in these conditions is poor.

One feature that stands out about the best-ranking countries in the table, with the exception of Denmark, is that all of them are thinly populated. Possibly, then, a larger proportion of people who suffer a major AMI in those countries die before reaching a hospital. Other explanations might lie in differences between countries in the characteristics of patient populations. Differences might exist in the location and size of a heart attack, the presence of comorbidity or an exposure to factors that could influence the course of illness. These could be related to differences in risk profiles of patient populations or to differences in indications for admitting patients to hospital. The creation of a nationwide register of heart disease would seem highly advisable in the Netherlands in order to enable more insights into ways of improving the care of patients with AMI. Such registers already exist in Sweden and the UK.

The 30-day mortality rates for ischaemic and haemorrhagic strokes decreased between 2000 and 2010; rates in the Netherlands are average to high compared to other Western countries

Of the patients aged 45 or older who were admitted to Dutch hospitals with an ischaemic stroke in 2010, 10.3% died within 30 days, either in hospital or after discharge (at home or in nursing homes). The 30-day mortality rate for haemorrhagic stroke was much higher at 31.7%. In-hospital mortality for both these conditions was lower (table 4.3).

Table 4.3: Percentages of patients aged 45 or older deceased within 30 days of hospital admission (including day-patient admissions) for ischaemic and haemorrhagic strokes in 2010, age- and sex-standardised to the 2010 OECD population aged 45+ admitted to hospital for strokes of the corresponding type (source: datasets provided by Statistics Netherlands with data from the National Medical Register LMR and linkage to population register data; processing by RIVM).

		Men	Women	Total
Overall mortality within 30 days	Ischaemic stroke	7.9	10.6	10.3
	Haemorrhagic stroke	30.0	33.7	31.7
In-hospital mortality within 30 days	Ischaemic stroke	7.1	7.7	7.5
	Haemorrhagic stroke	24.4	27.2	25.9

Figure 4.7a: Percentages of patients aged 45 or older deceased within 30 days of hospital admission (including day-patient admissions) for ischaemic stroke, 2000–2010, age- and sex-standardised to the 2010 OECD population aged 45+ admitted to hospital for ischaemic stroke, with 95% confidence intervals (source: datasets provided by Statistics Netherlands with data from the National Medical Register LMR and linkage to population register data; processing by RIVM).

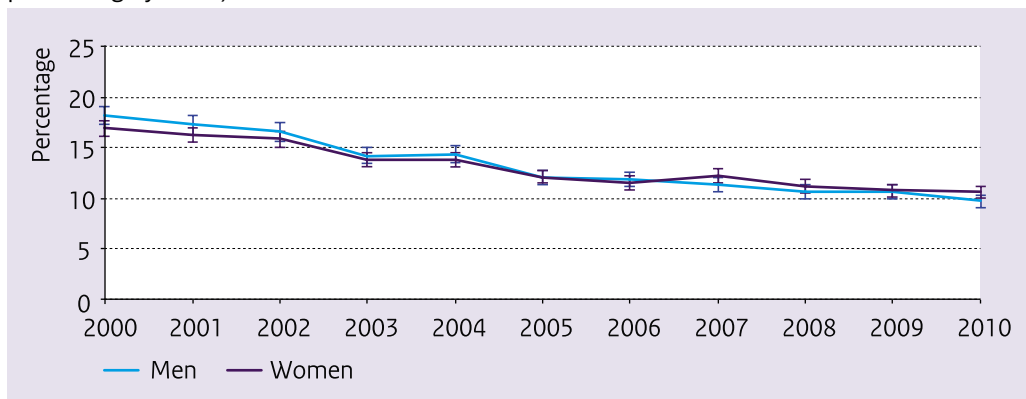


Figure 4.7b: Percentages of patients aged 45 or older deceased within 30 days of hospital admission (including day-patient admissions) for haemorrhagic stroke, 2000–2010, age- and sex-standardised to the 2010 OECD population aged 45+ admitted to hospital for haemorrhagic stroke, with 95% confidence intervals (source: datasets provided by Statistics Netherlands with data from the National Medical Register LMR and linkage to population register data; processing by RIVM).



Trends

In the 2000–2010 period, the overall 30-day mortality rates (in-hospital and post-discharge) declined in the Netherlands for both ischaemic and haemorrhagic stroke (figures 4.7a and 4.7b). For men and women, the rates dropped by 48.5% and 40.1% for ischaemic stroke and 25.8% and 18.2% for haemorrhagic stroke.

Much has changed in the care provided in response to strokes. Some of the most remarkable developments are as follow (Lackland et al., 2014):

- Stroke units in hospitals and integrated stroke services have been created on a large scale.
- Stroke diagnostics have been improved through the prompt use of imaging devices.
- More intensive treatment procedures are being used, including prompt administration of thrombolytic drugs (to some patients with ischaemic stroke), aspirin (to patients with ischaemic stroke only) and drugs to lower blood pressure.
- More attention is now devoted to the prevention of complications (such as pneumonia, urinary tract infections, deep vein thrombosis, AMI, heart failure, digestive problems and hip fractures) and to rapid rehabilitation.

These developments may have helped to reduce mortality following ischaemic and haemorrhagic strokes in the 21st century. Primary and secondary prevention efforts, including those in GP practices, may have also contributed to the lower rates of mortality. Measures to tackle risk factors like high blood pressure, overweight, elevated cholesterol, atrial fibrillation and diabetes mellitus have possibly reduced the severity of stroke and hence also the risk of death (Gulliford et al., 2010; Lee et al., 2011f). Lower mortality rates may have also resulted, however, from changes in how strokes are classified. As the use of magnetic resonance imaging increases, cases formerly labelled as transient ischaemic attacks (TIA) or other conditions may now be classified as mild strokes (Béjot et al., 2010), thus increasing the proportions of people with mild strokes in patient populations.

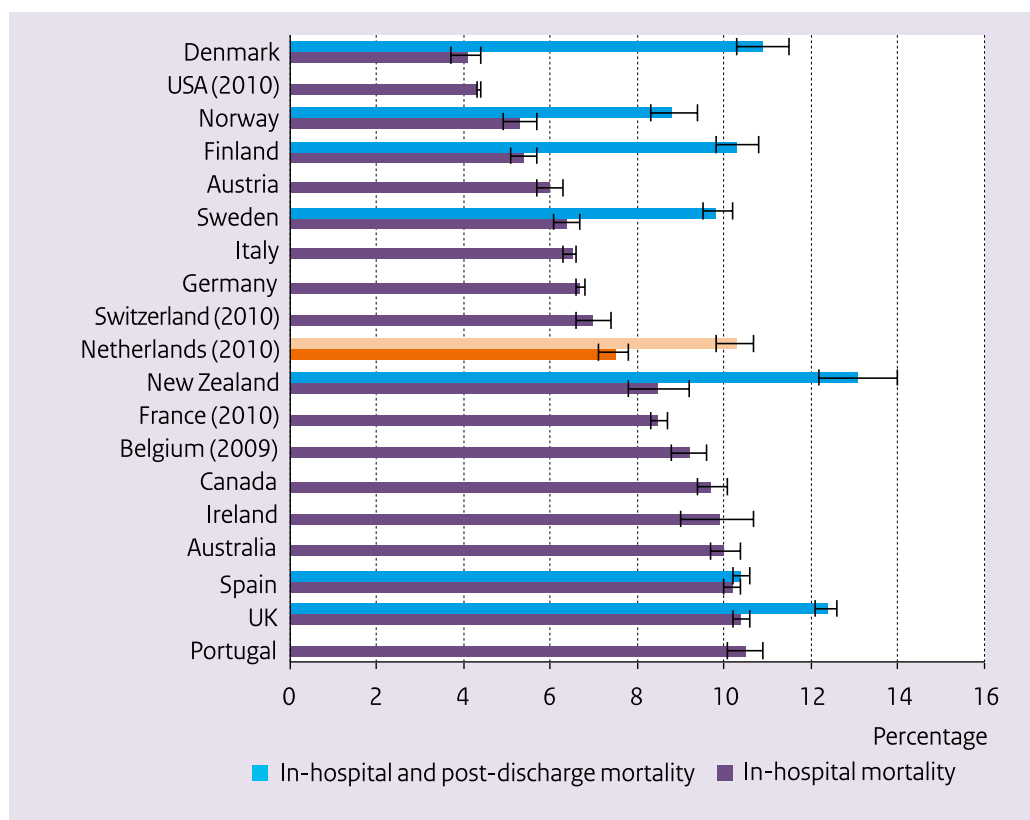
International picture

In comparison with other Western countries, the Netherlands is in the middle range at 7.5% on the indicator for in-hospital mortality after admission for ischaemic stroke (figure 4.8a). Denmark, the USA and Norway are amongst the countries whose rates are several percentage points lower. The Dutch mortality rate for haemorrhagic strokes is still poorer, with Scandinavian countries as well as Austria, Switzerland and Germany reporting lower rates, and Finland showing the lowest figure of 13.1% (figure 4.8b).

Some countries were also able to calculate overall 30-day mortality rates following hospital admission for ischaemic and haemorrhagic strokes, thus also taking deaths into account that occurred after discharge. The latter is a more reliable measure than in-hospital mortality, because it is less dependent on the length of hospital stay. The Dutch rate of in-hospital and post-discharge mortality for ischaemic stroke is comparable to the rates in Sweden, Finland and Spain; Norway has a lower rate (figure 4.8a). Overall 30-day mortality for haemorrhagic stroke is high in the Netherlands in comparison with countries like Sweden, Norway, Finland and Spain (figure 4.8b).

The Dutch 30-day mortality rates are therefore average to high in international comparison. As in the case of heart attack, variations between countries might be attributable to differences in the quality of stroke care. It cannot be ruled out, however, that differences in the characteristics of patient populations, in record-keeping, in definitions or in the use of classification systems exert some influence on the mortality rate differences.

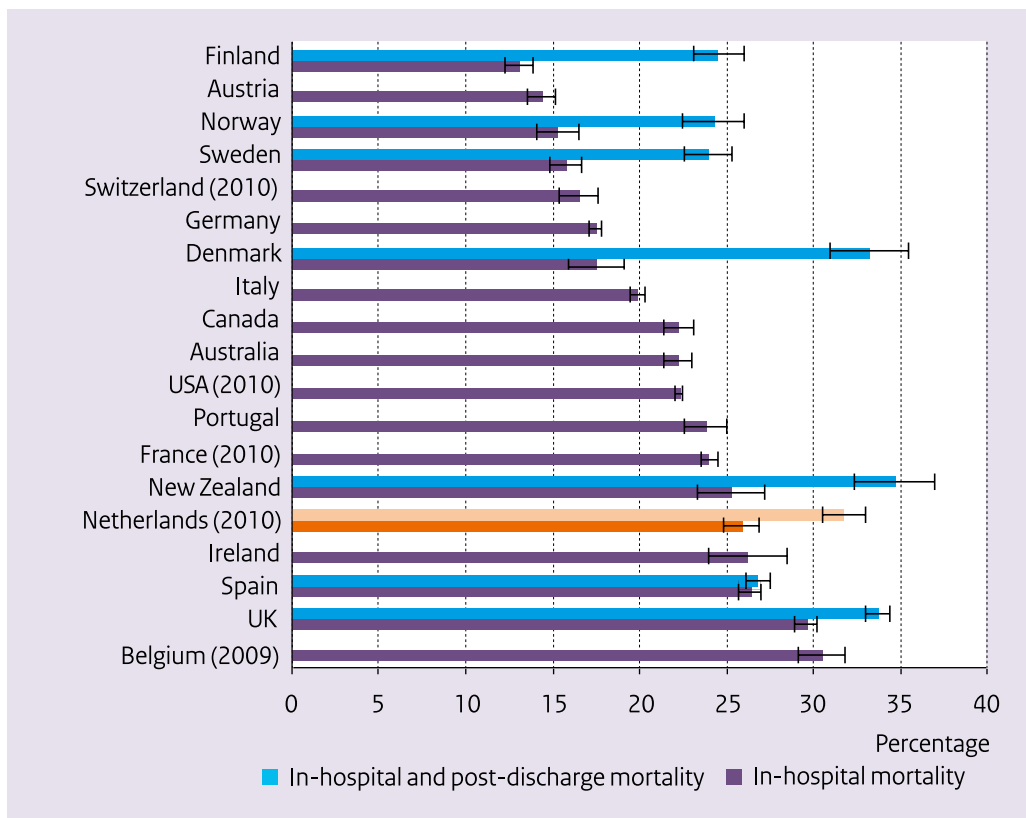
Figure 4.8a: Percentages of people aged 45 or older deceased within 30 days of hospital admission (including day-patient admissions) for ischaemic stroke, age- and sex-standardised to the 2010 OECD population aged 45+ admitted to hospital for ischaemic stroke, with 95% confidence intervals (data for 2011, unless otherwise indicated) (source: OECD, 2013a).



As we have also seen for heart attack, the ratios of in-hospital to overall 30-day mortality may vary widely between countries for both ischaemic and haemorrhagic stroke. In-hospital mortality rates in Spain and the UK are relatively high in relation to overall mortality and in Denmark they are relatively low. The differences could be linked to variations in the lengths of hospital stays.

By and large, countries with more favourable outcomes in terms of ischaemic stroke also show better results for haemorrhagic stroke. That indicates that developments that affect the one type of stroke also have some impact on the other type.

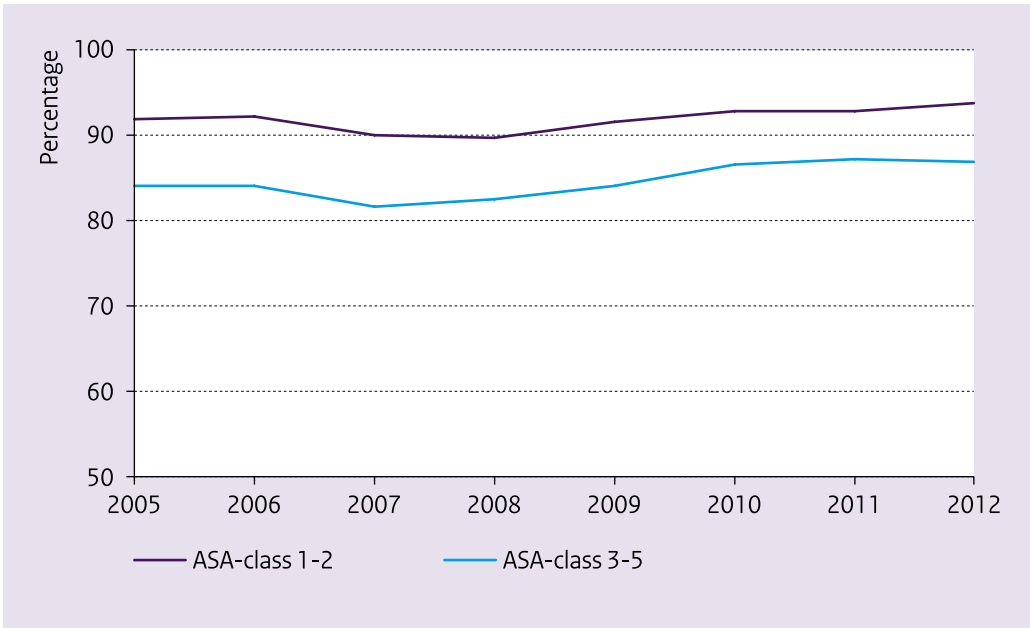
Figure 4.8b: Percentages of people aged 45 or older deceased within 30 days of hospital admission (including day-patient admissions) for haemorrhagic stroke, age- and sex-standardised to the 2010 OECD population aged 45+ admitted to hospital for haemorrhagic stroke, with 95% confidence intervals (data for 2011, unless otherwise indicated) (source: OECD, 2013a).



Most hip fracture operations are performed promptly; the percentages of patients receiving timely surgery increased in the 2005–2012 period

For people with hip fractures, the time that elapses between arrival in hospital and surgical intervention may be critical to the outcome of treatment. Waits of more than 24 hours carry higher risks of complications and mortality. Many patients suffer pain and discomfort whilst waiting for surgery. Treatment plans do differ for patients whose health condition is poor and those whose condition is moderate to good. In our indicator we therefore distinguish two categories of patients, using the ASA classification of physical status. A patient’s ASA class indicates severity of illness and anaesthesia risks. If a hip fracture patient is classified in classes 3 to 5 (seriously ill to moribund), that may give reason to postpone surgery; patients in classes 1 or 2 (otherwise healthy or mildly ill) run lesser risks. That said, the distinction between classes 2 and 3 is rather imprecise.

Figure 4.9: Trends in percentages of patients with hip fractures receiving surgery within one calendar day, by ASA class, 2005–2012 (median percentages across all Dutch hospitals) (source: IGZ, 2007–2014).



In the period from 2005 to 2012, the percentages of class 1–2 hip fracture patients receiving surgery within one calendar day in Dutch hospitals rose slightly from 91.9% to 93.8% and the percentages of class 3–5 patients from 84.1% to 87.0%. Slight dips occurred from 2006 to 2008, followed by upward trends (figure 4.9). On closer analysis, wide variations between hospitals emerge, with some hospitals operating on 100% of patients whilst others fail to reach 80%.

International

The percentages of Dutch patients receiving surgery for hip fractures within 48 hours of admission are high in international comparison (figure 4.10). Only Sweden and Denmark report similar rates above 90%. There are probable variations in the ways percentages are calculated, including differing operational definitions of waiting times (precisely 24 hours, one calendar day, two calendar days).

Figure 4.10: Average percentages of patients aged 65 or older receiving surgery for hip fractures within 48 hours of hospital admission (non-standardised figures; data for 2011, unless otherwise indicated) (source: OECD, 2013a).



^a Surgery within two calendar days

^b Surgery within exactly 48 hours

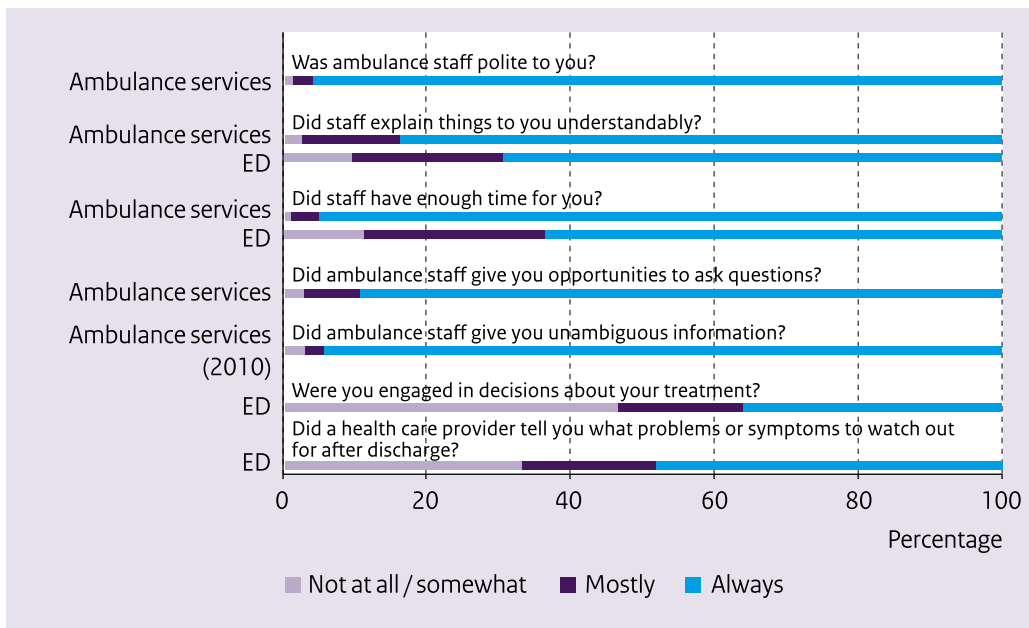
^c Based on survey data rather than hospital records

Users report positive experiences with communication and information provision in ambulance services; improvements seem possible at emergency departments

Figure 4.11 depicts experiences of Dutch users of ambulance services and of hospital emergency (ED) services in terms of communication and information provision in 2013. Experiences with ambulance services were particularly positive, with the vast majority of users rating communication and information as good.

There were more users of ED services that reported at least one negative experience. Questions were posed to both ambulance and ED users about staff time limitations and understandable explanations given. Negative experiences appeared more frequent in EDs, but

Figure 4.11: Patient-reported experiences with communication and information provision in Dutch ambulance services and hospital ED services (data for 2013, unless otherwise indicated) (sources: Krol et al., 2013; Bos & van Stel, 2013).



it is debatable whether that indicates poorer performance. Users may have very different needs to understand explanations by ED staff and may therefore judge these more critically. Time limitations would also be more difficult to avoid at EDs, since users are subject to waiting times.

Improvements do seem possible in EDs in terms of the engagement of patients in treatment decisions and the provision of information at discharge. With regard to involvement in decisions, it is here again debatable whether that is always achievable in an ED, since the care must be delivered promptly and is aimed at resolving or managing acute problems as rapidly as possible, pending more in-depth treatment in which more definite decisions will be made. The frequent reports of a lack of information about problems and symptoms to watch out for after discharge are less easy to justify. Even if there is no need to be alert for such developments, it would be helpful if that were made explicit. Apparently too little attention is devoted to such discharge information, at least in the perception of the users.

4.3.3 Costs

The costs of acute care in the Netherlands were approximately €3.3 billion in 2011; in recent years, the budget for ambulance services grew at a less rapid pace than previously

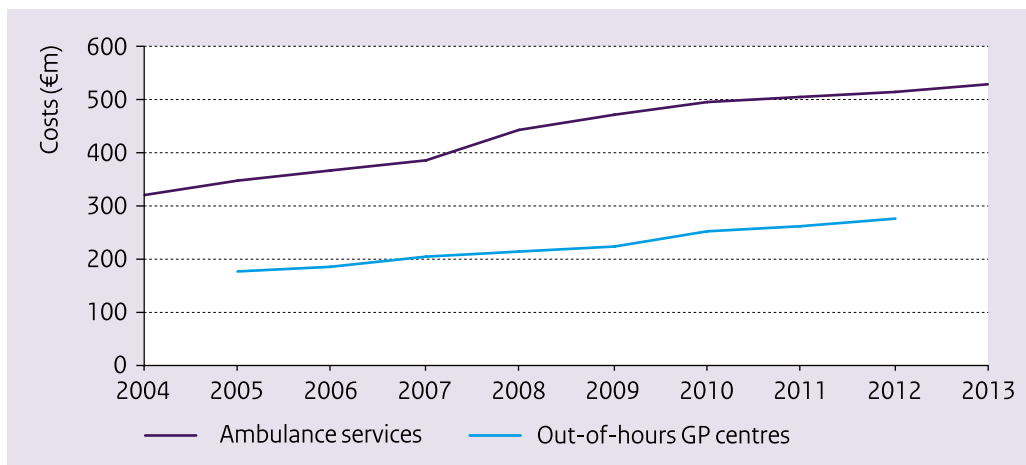
In 2013, the Dutch budget for ambulance services was €446 million and for dispatch centres it was €50 million. The health ministry also appropriated an additional €35 million for an age-related staff retirement scheme (NZa, 2014a), bringing total reimbursements in the ambulance system budget to €531 million. Out-of-hours GP centres cost €276 million in 2012 (VHN, 2013). In 2013, €36 million was spent on trauma services; this included the costs of knowledge management and coordination (in Regional Councils on Acute Care, ROAZ), trauma response services and major trauma centres, mobile medical teams (including helicopters and land vehicles) and resources for training, professional development and exercises (VWS, 2013b).

It is difficult to make clean-cut calculations of the costs of hospital ED services. To arrive at an approximation, we analysed all insurance claims for treatment episodes that used service type code 190015 (emergency services in EDs). For each clinical specialty, we obtained the percentage of treatment episodes bearing this code number and compared it to the total costs for that specialty in 2011. Assuming equal average charges for treatment episodes with and without code 190015, we put the costs of ED services at approximately €2.5 billion (calculations by RIVM based on data from the Vektis health care information centre). No trend data were available.

With the customary note of caution, we therefore estimate the total costs of acute care in the ambulance, out-of-hours and ED sectors at approximately €3.3 billion per year, or about 5% of the total Dutch health care budget.

Figure 4.12 illustrates how the budgets for ambulance services and out-of-hours GP centres have evolved over the past decade. Ambulance costs have grown by an average of 5.8% per year since 2004. In 2010, the health ministry concluded a voluntary agreement with the sector organisation AZN that entailed an effective budget freeze for the period 2011–2013. The effects are evident in the graph, which shows that the annual cost rise remained limited to 2.5% during that time frame. In the preceding period from 2004 to 2011, the average yearly growth came to 7.5%, at a yearly inflation rate of 1.65%. The annual growth in the costs of out-of-hours GP centres averaged 6.6% or 3.1% after inflation adjustment.

Figure 4.12: Costs of ambulance services and out-of-hours GP centres in the Netherlands, 2004–2013 (sources: VHN, 2010–2013; AZN, 2009; AZN, 2013).



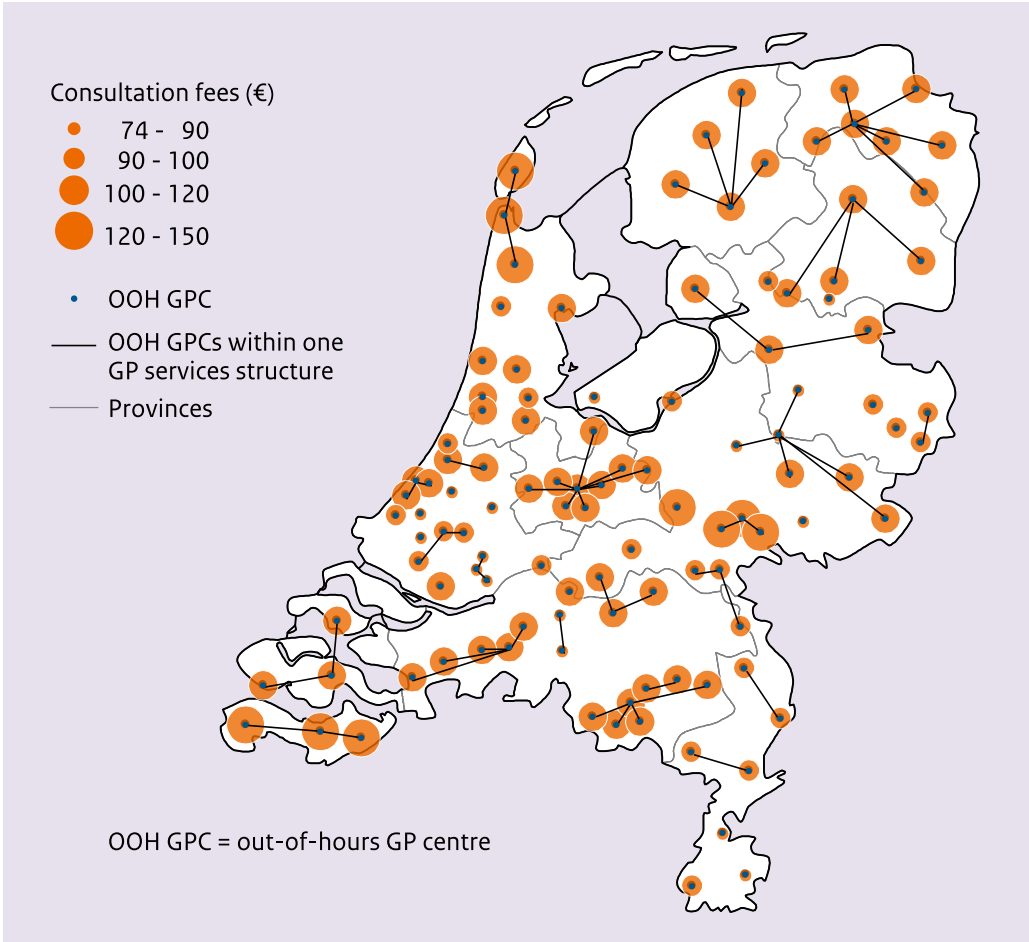
Variations in consultation fees charged by out-of-hours GP centres are levelling out

The funding of GP services is differentiated into a number of components. There are nationally determined fees for services delivered during office hours, such as patient consultations. Consultation fees at out-of-hours GP centres are negotiated by the centres with the regional market-leading insurance company or companies.

Figure 4.13 depicts the consultation fees charged by out-of-hours centres distributed throughout the Netherlands in May 2014. Fees ranged from €74 (in Heerlen in the province of Limburg) to €148 (in the region of Zeeuws-Vlaanderen). The span between the highest and lowest fees was far wider in 2008, ranging from €41 to €170. Fees for home visits similarly narrowed across regions, standing at €100 to €193 in May 2014 as compared to €62 and €255 in 2008. It is not known which components of the price variations might be attributable to local circumstances (such as required levels of accessibility), prevailing local costs, variations in health care intensity between patient populations, the services or quality delivered, or negotiating power.

A levelling trend is also seen in ambulance services. The Dutch Healthcare Authority (NZA) now reports that the fees for emergency ambulance callouts are to be equalised in future (NZA, 2013a).

Figure 4.13: Consultation fees in Dutch out-of-hours GP centres, May 2014 (source: Zwakhals, 2014; NZa, 2014a).



4.4 Conclusions

The geographical accessibility of acute care has remained stable in the Netherlands since 2010. Acute care is readily accessible. Hospital emergency departments (ED) are well dispersed throughout the country. In most areas, it is even possible to reach more than one hospital with ED services within the 45-minute standard. One concern is that the present degree of ED distribution could be jeopardised by hospital mergers, especially in rural areas served by only one ED. Currently there are 94 EDs in the Netherlands, a reduction from 106 in 2005. This ‘thinning out of services’ has been offset by faster ambulance driving times, enabling a sufficient level of acute care services to be maintained. The swifter ambulance times are largely

attributable to improved vehicle models, but one hypothesis is that the speed is partially due to reduced road congestion since the recent economic recession. If so, future economic growth might slow down ambulance journeys, thus increasing the numbers of people that have no ED services within adequate distance.

The target standard that 95% of emergency ambulance dispatches should arrive on the scene within 15 minutes is not yet being achieved. In 2012, the sector still fell 2 percentage points short of the standard, although steady improvement was apparent since 2006.

In our previous Performance Report, we warned that the accessibility of GP practices for emergency telephone calls was in serious need of improvement in order to satisfy standards of good care. The improvement operation has since been completed by the Health Care Inspectorate (IGZ). Telephone access has greatly improved, and all GPs checked during the last inspection at year's end 2011 could be reached in time. Since 2009, the inspectorate has also been checking the emergency telephone accessibility of out-of-hours GP centres. By 2012, 95% were answering within the practice standard of 30 seconds, up from 89% initially.

Some points of concern are the high Dutch levels of mortality within 30 days of hospital admission for heart attacks and ischaemic and haemorrhagic strokes. The Netherlands finds itself in the middle range in comparison with other countries, with figures well above the European average.

Although it is not easy to differentiate between acute and elective care, careful calculations indicate that acute care makes up about 5% of total Dutch health expenditure. Some types of acute care, such as dental, obstetric or mental health care, are not included in that figure.

Fee differentials in emergency health care have narrowed. Consultation charges in out-of-hours GP centres have converged. The highest fees in May 2014 were less than double the lowest fees, as compared to more than fourfold higher fees six years previously. A similar converging trend is seen in ambulance services, and the Dutch Healthcare Authority expects the fees for emergency callouts to equal out in the years to come.

5

Getting better: Non-acute curative health care

Key findings

Accessibility of care

- At year's end 2013, over 316,000 people in the Netherlands were defaulting on their health insurance premiums.
- More Dutch people decided to forego health care in 2013 due to cost.
- The share of out-of-pocket health care expenses in Dutch households was lower than in many OECD countries.
- Fewer than 0.1% of Dutch people live more than a 10-minute journey from the nearest GP practice and the nearest pharmacy.
- In 2013, only a tiny part of the population lived at a problematic distance from a hospital.
- In 2010, 42% of GP practices could not be reached by telephone within two minutes, slightly down from 48% in 2007.
- The percentage of secondary care units with waiting times in excess of Treek standards (four to seven weeks) declined from 2009 to 2014.
- Average waiting times in outpatient units were reduced for virtually all clinical specialties from 2008 to 2013.
- In 2013, the average waiting time for diagnostics was lower than the Treek standard of four weeks.
- Only three types of clinical treatment had average waiting times exceeding the Treek standard in 2013.
- The number of people awaiting organ transplants is declining and the number of transplantations is increasing; in international perspective, the Netherlands scores well in numbers of living donations but poorly on deceased donations.

Quality of care

- Twenty indicators assess whether GPs prescribe drugs according to guidelines; eight of these reveal frequent guideline deviations.
- Antibiotics were prescribed to a lower percentage of people by GPs in 2012 than in 2010; the Dutch rate of antibiotics prescription is low compared to countries abroad.
- An increasing percentage of pharmacotherapy audit groups were functioning more rigorously in 2011 compared to 2004.
- The 5-year relative survival ratio for breast cancer improved in the 2000–2011 period; Dutch survival was in the middle range among Western countries.
- The 5-year relative survival ratio for cervical cancer has remained stable over time, and there are limited differences with other Western countries.
- The 5-year relative survival ratio for colorectal cancer improved from 2000 to 2011; here again, the Dutch ratio was in the middle range.
- In numbers of avoidable hospital admissions, the Netherlands scores average to favourable among Western countries.
- The percentage of mental health interventions assessed for treatment effects and reported for benchmarking purposes increased substantially from 2011 to 2013.
- Reductions in symptoms were seen in more than three quarters of the short-term mental health interventions for adults.
- Patients receiving care from two or more health care providers often report problems in the planning and coordination of the care, but the Netherlands mostly stands up well in international comparison.

Patient safety

- The percentage of patients experiencing adverse events during hospitalisation remained stable in the 2008–2012 period; the rate of potentially avoidable mortality sank from 4.1% to 2.6%.
- The percentage of Dutch patients that experienced medical, medication or diagnostic errors in 2011 was rather high in international comparison at 20%.
- The Hospital standardised mortality ratio (HSMR) dropped by 34% in the 2007–2012 period.
- In 2013, an average of 3.2 health care infections per 100 hospital patients were registered, down from 6.2% in 2008.
- The numbers of hospitals performing surgery for abdominal aortic aneurysms, oesophageal cancer and pancreatic cancer have decreased; fewer hospitals now fall short of volume standards for those operations.
- About 40% of Dutch people who take their own lives are in mental health treatment at the time of their deaths; the absolute number of people committing suicide while in treatment increased in the 2007–2012 period, but less strongly than the number taking their lives while not in treatment.
- The use of coercive measures in psychiatry eased from 2009 to 2012, but measures such as lengthy seclusion and mechanical restraint were still being applied.

Client-centredness

- Although health care patients are treated politely, they are not always engaged in decisions about treatment or other services; patient-centredness varies considerably by treatment type.

- Many Dutch hospital patients receive no written information at discharge; the percentages receiving information vary with the type of treatment.
- More than 85% of people receiving short-term outpatient mental health care feel the therapy was the appropriate response to their problems and express satisfaction with the delivery.

5.1 Background

When people have health problems or fall ill, they often seek help from a health care professional. They want to know what is wrong with them, whether they will get better and whether the health care provider can help them. This chapter analyses whether Dutch people can obtain professional help promptly, whether the treatment helps or harms them, and whether the care they receive is appropriate to their needs and conforms to the best professional standards.

Curative care is health care that is devoted to patient recovery. If recovery is not feasible, the care focuses on rehabilitation, improving quality of life, alleviating symptoms and distress, keeping the illness or its effects from getting worse, or preventing relapse. The curative care sector is the largest in the health care system. The majority of the population has to do with it on occasion. General practice health care, dental care, physiotherapy, pharmaceutical services, primary care psychotherapy, obstetrics, ambulance services, secondary care and shorter-term mental health care are all provided in the curative sector. The Dutch curative health care market is regulated by the Health Insurance Act (ZVW), which we examine in detail in chapter 13. Approximately 58% of the 2014 health care budget will be spent on curative care (Health Care Budgetary Framework or BKZ) (VWS, 2013b).

Areas covered by this chapter

The indicators in this chapter focus on the accessibility and quality of non-acute curative care in the Netherlands. Acute curative care is discussed in chapter 4 and perinatal care in chapter 2. The cost-effectiveness of care is examined in chapter 8. Some indicators do not lend themselves to differentiation between acute and non-acute care, or perinatal and non-perinatal care. Those indicators are discussed in the present chapter. Examples are the hospital standardised mortality ratio indicator, which could be influenced by acute fatal incidents in hospital, and health care infections, whose prevalence figures include cases in neonatology and obstetrics wards.

Given the sheer scale of non-acute health care, it would not be possible to provide a full overview using a limited number of indicators. We therefore shed light on some subsectors using only one or two indicators. At the same time, by employing a broad array of indicators we hope to illuminate many aspects of the curative sector.

5.2 Indicators for non-acute curative health care

Thirty indicators for non-acute curative health care have been selected for the analysis in this chapter. Indicators of costs and efficiency are discussed in chapter 8 for the curative sector as a whole, as it is difficult to differentiate within them between acute, non-acute and perinatal care.

Accessibility

Financial access

- Percentage of people with health insurance who are six months or more in payment arrears
- Percentage of people who forego care due to costs
- Out-of-pocket health care expenses as percentage of disposable household income

Geographical access

- Percentages of people living more than a 10-minute car journey from nearest GP practice and nearest pharmacy
- Percentage of people living more than a 30-minute car journey from nearest hospital

Timeliness

- Percentage of GP practices not accessible by telephone within two minutes for non-urgent calls
- Percentages of secondary care units with waiting times above Treek standards
- Numbers of people awaiting donor organs

Quality

Effectiveness

- Degrees of guideline adherence in GP prescribing behaviour on 20 indicators
- Percentage of pharmacotherapy audit groups functioning at levels 3 and 4
- Percentages of patients with breast, cervical or colorectal cancer still surviving 5 years later in relation to percentage of general population still surviving
- Numbers of hospital admissions per 100,000 population per year for conditions whose prevention and treatment is managed primarily by outpatient services
- Percentages of episodes of care in mental health services whose treatment effects were assessed in routine outcome monitoring (ROM)
- Percentage of short-term episodes of care in mental health services with positive treatment effects
- Percentages of patients perceiving problems with planning and coordination of health care

Patient safety

- Percentages of patients experiencing an adverse event during hospitalisation
- Percentages of patients experiencing medical, medication or diagnostic errors
- Hospital standardised mortality ratio (HSMR) of hospitalised patients
- Number of health care infections among 100 hospitalised patients
- Percentages of hospitals satisfying minimum volume standards for complex surgical interventions
- Percentage of patients committing suicide while in mental health treatment
- Numbers of coercive measures per 1000 psychiatric admissions

Client-centredness

- Degree to which health care users report being able to ask questions of health care providers
- Degree to which health care users report polite treatment by health care providers
- Degree to which health care users report receiving understandable explanations from health care providers
- Degree to which health care users report receiving unambiguous information from health care providers
- Degree to which health care users report being engaged in decisions about treatment
- Degree to which health care users report having sufficient consultation time with health care providers
- Percentages of patients receiving discharge information at hospital discharge
- Percentages of clients receiving short-term outpatient mental health care who were satisfied with the planning and delivery of treatment

5.3 State of affairs

5.3.1 Accessibility

At year's end 2013, over 316,000 people in the Netherlands were defaulting on their health insurance premiums

Insurance defaulters are people who have health insurance but whose premium payments are six months or more in arrears. Table 5.1 shows that there were more than 316,000 defaulters in December 2013, an increase of nearly 50,000 since 2010. Although the number of defaulters in 2012 eased slightly in comparison with the previous year, that was due to the removal of a large group of people from the statistics who were no longer subject to mandatory insurance (VWS, 2012a).

To address the growing numbers of insurance defaulters, the Structural Measures for Defaulters Act (WSMW) took effect on 1 September 2009. It requires health insurance companies to offer defaulters repayment arrangements at early stages, to start direct debit collection and to inform defaulters about debt management services. From 15 March 2011, subsequent legislation called the Detection of Uninsured Persons and Provision of Health Insurance Act (OVOZ) was introduced to curb the numbers of uninsured people. The National Health Care Institute (ZI) tracks down people without mandatory health insurance; if they remain uninsured after two warnings and fines, the ZI takes out a policy in their name and they are billed for it.

The implementation of these regulations and an administrative clean-up have resulted in a substantial drop in the numbers of uninsured. Many 'uninsured' people – most of whom were Dutch residents employed across the border, former residents who had moved abroad without deregistering, or foreign students – could demonstrate they were not subject to the mandatory health insurance because they were not insured under the Exceptional Medical Expenses Act (AWBZ). By December 2013, only 28,740 uninsured people remained, down from 290,000 three years earlier (table 5.1).

Table 5.1: Insurance defaulters and uninsured people at year's end 2010–2013^a (source: Zorginstituut Nederland, 2014).

Year	Defaulters on 31 December	Uninsured people on 31 December
2010	266,587	290,000
2011	303,782	57,965
2012	299,775	31,681
2013	316,378	28,740

^a Pre-2010 data were collected by Statistics Netherlands (CBS). As different definitions applied then, those figures cannot be compared to those in this table

The number of defaulters has increased. Many people who were previously uninsured for financial reasons now have mandatory insurance but fail to pay premiums. Defaulting on insurance does not occur in isolation from other problems; often there are many other debts. Research by the consulting agency Social Force (2014) has shown that defaulters are a difficult-to-reach category of people who tend not to respond to telephone or written messages.

Government has taken steps to ensure that the mandatory health insurance is affordable to all. The most important provision is the health care allowance, a partial compensation for the mandatory insurance premium for policyholders who have incomes below a defined threshold. It has been supplemented by several tax measures (VWS, 2012a). Additional measures have been proposed in a new bill, such as allowing defaulters to make their own repayment arrangements with insurance companies rather than paying the statutory premium required by the ZI, in order to hasten their return to normal insurance status.

More Dutch people decided to forego health care in 2013 due to cost

According to the Commonwealth Fund International Health Policy Survey conducted in 11 countries, 22% of Dutch adults decided to forego health care services one or more times in 2013 because of the costs involved (Faber et al., 2013; Schoen et al., 2013). This includes doctors' consultations, tests or treatments recommended by a doctor, and the purchase of medicines. Although the Dutch percentage was markedly lower than that in the USA (37%), it was the highest of all the other surveyed countries (table 5.2); in Sweden and the UK, only 6% and 4% of adults went without health care on cost considerations.

In a similar earlier study in 2010, only 6% of Dutch adults reported foregoing health care due to cost factors (Faber et al., 2010). No other country showed as sharp an increase in the 2010–2013 period; the percentages in Australia, Germany and Sweden actually declined. In 2013, 12% of Dutch adults reported having decided against a doctor's appointment at least once in the past year due to costs, up from just 2% in 2010. In 2013, some 18% had skipped dental care, placing the Netherlands in the middle range.

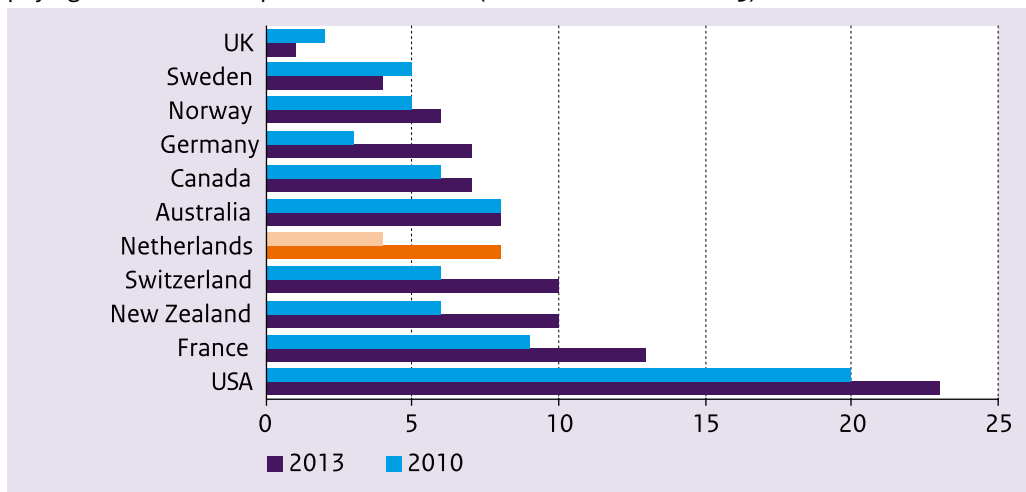
Table 5.2: Percentages^a of people aged 18 and older experiencing various problems with the affordability of health care in Western countries in 2013 (source: Faber et al., 2013; Schoen et al., 2013).

Country	NL	DE	FR	NO	UK	SE	CH	AU	NZ	CA	US
Number of respondents	1000	1125	1406	1000	1000	2400	1500	2200	1000	5412	2002
Respondents reporting the following experiences in previous 12 months											
...having a medical problem but not going to doctor due to cost	12	8	8	5	2	3	7	9	16	5	28
...skipping a medical test, examination, treatment or follow-up recommended by a doctor due to cost	16	5	9	5	2	2	7	10	12	6	21
...not filling a prescription for a medicine or skipping doses due to cost	8	8	8	5	2	4	5	8	6	8	21
Foregoing medical care (subtotal of 3 above categories)	22	18	18	10	4	6	13	16	21	13	37
...postponing dental care or check-up due to cost	18	8	20	24	6	12	11	28	32	20	33
...having serious problems paying a medical bill or being unable to pay at all	8	7	13	6	1	4	10	8	10	7	23

^a Highest percentages in red and lowest in green

NL = Netherlands, DE = Germany, FR = France, NO = Norway, UK = United Kingdom, SE = Sweden, CH = Switzerland, AU = Australia, NZ = New Zealand, CA = Canada, US = United States

Figure 5.1: Percentages of general population (aged 18 and older) reporting serious problems paying a medical bill in previous 12 months (source: Faber et al., 2013).



Additional analysis by the research institute IQ Healthcare pointed to a clear income effect: the lower people’s incomes, the likelier they are to scrimp on health care (Faber et al., 2013). Several Dutch surveys have also asked doctors about their experiences with patients who decide against health care for reasons of cost. In a 2013 study by the Dutch Institute for Public Opinion and Market Research (TNS NIPO), 68% of medical specialists and three quarters of general practitioners reported seeing this in their own practices (van Wensveen, 2013). In a poll conducted in 2014 by the National Association of General Practitioners (LHV), 94% of GPs indicated that patients sometimes did not follow their recommendations due to the costs involved; 70% saw that occurring daily or weekly. The recommendations reportedly most likely to be ignored for financial reasons were laboratory testing, drug prescriptions, mental health consultations, supplementary examinations such as x-rays, and referrals to other primary care providers such as physiotherapists (LHV, 2014).

Eight per cent of Dutch adults in 2013 faced serious problems in paying a medical bill, twice as many as in 2010 (figure 5.1). Here, too, the Netherlands was in the middle range.

The GfK research agency conducted a survey in the Dutch population to further investigate reasons why people forego health care services. It found that more than 20% of the people had decided against health care in the period between January 2012 and August 2013, despite having health problems (Intomart GfK, 2013). Of this group, 41% had shied away mainly due to costs. GfK distinguished in its survey between appropriate and inappropriate decisions to forego health care. Decisions were deemed inappropriate if

- a) the problems worsened and were not just minor symptoms
- b) the person feared having something serious
- c) the person dreaded medical treatment
- d) the person had little confidence in health care.

The conclusion was that approximately 4% of the population had skipped health care for inappropriate reasons, and that the costs of health care had been a key consideration for 48% of that group.

The compulsory excess or deductible for health insurance reimbursement was raised from €220 to €350 on 1 January 2013. Some 14% of the people that inappropriately failed to obtain health care, or 0.5% of the Dutch population, indicated that they would have seen a health care provider had the excess not been increased (Intomart GfK, 2013). Some people harbour misconceptions about health care costs. Many people (1.8% of the population) avoid seeing a GP because they think they will be charged for the consultation, even though GP visits are exempted from the compulsory excess. The excess does apply to any further diagnostic tests and procedures after referral, to specialist care and to prescription drugs.

The share of out-of-pocket health care expenses in Dutch households was smaller than in many OECD countries

The financial accessibility of health care is partly determined by the burden that out-of-pocket health care payments place on the disposable income in households. Figure 5.2 depicts out-of-pocket expenses as a percentage of Dutch disposable incomes. These out-of-pocket costs do not include the mandatory community-rated health insurance premium, nor do they include the compulsory health insurance excess and the income-dependent employer contributions levied for curative and long-term insurance schemes under the Health Insurance Act (ZVW) and the Exceptional Medical Expenses Act (AWBZ). They do include premiums for supplementary voluntary health insurance for care not covered by the ZVW and AWBZ schemes as well as co-payments and other out-of-pocket costs. The share of disposable income made up by out-of-pocket payments grew from 2003 to 2005, then shrank slightly until 2007 (a reversal coinciding with the introduction of the Health Insurance Act in 2006). It increased again in 2008 and then stabilised until 2010 at about 2.7%.

Figure 5.2: Dutch out-of-pocket health care expenses as percentage of disposable household income, 2003–2010 (source: CBS StatLine, 2011).



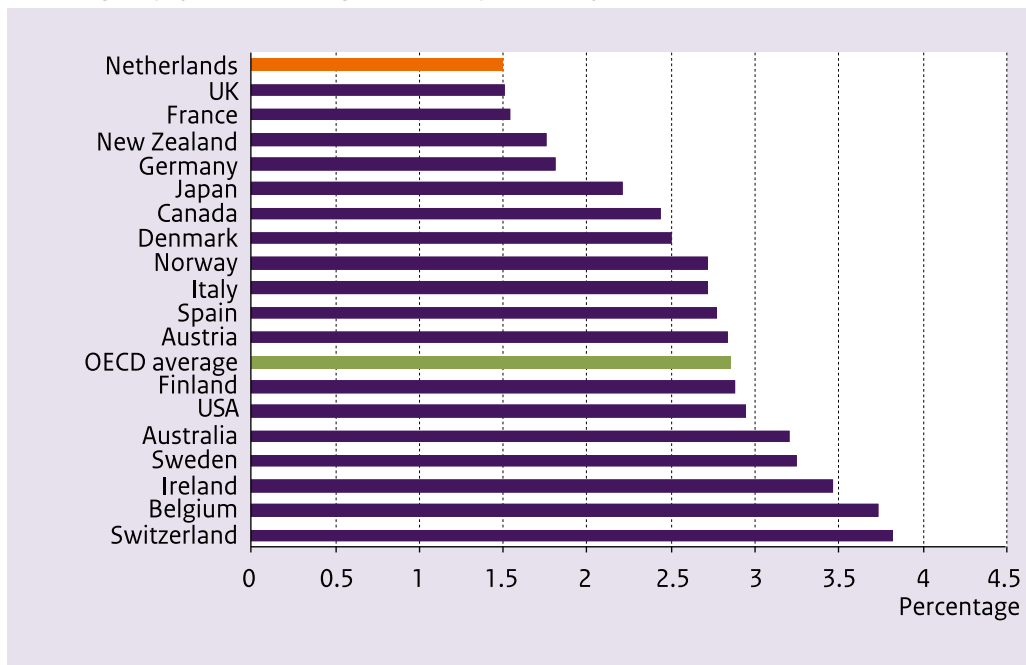
2010: tentative figures

The scale of the out-of-pocket expenses is determined in the annual Household Budget Survey (HBO) by Statistics Netherlands (CBS). A representative population sample is polled on amounts spent on health care, including complementary voluntary health insurance as well as co-payments, over-the-counter medications and other non-insured health care expenses (but not the compulsory nominal health insurance premium and the compulsory deductible). Disposable income consists of gross household income reduced by income transfers, premiums for income protection insurance and compulsory nominal health insurance premium, and taxes on income and wealth; the compulsory nominal health insurance premium is therefore not paid from the disposable income.

According to an international comparison by the OECD, out-of-pocket health care expenses in the Netherlands were the lowest of all the countries studied, claiming 1.5% of total household consumption expenditures (figure 5.3). However, this figure likewise does not allow for the Dutch compulsory deductible, which could also be considered an out-of-pocket expenditure. In 2010 this totalled about 1.4 billion euros (van Ewijk et al., 2013), which would translate into an additional one-half percentage point. That would put the Dutch out-of-pocket expenses at around 2% of total household consumption expenditures, ranking the Netherlands between Germany and Japan, still substantially below the OECD average.

The percentage of 2.7% reported in the Dutch Household Budget Study is higher than those OECD figures for the Netherlands. To a large extent that is because the health care expenses in the international comparison are expressed as a percentage of total household consumption expenditures, whereas in the CBS study they represent a share of disposable income.

Figure 5.3: Out-of-pocket health care expenses as percentage of total household consumption, excluding co-payments for long-term care, per country in 2011 (source: OECD, 2013a).



Fewer than 0.1% of Dutch people live more than a 10-minute journey from the nearest GP practice and the nearest pharmacy

The time it takes to reach primary care services – GP practices, physiotherapists and pharmacies – is a problem for virtually nobody in the Netherlands. In 2012, fewer than 0.1% of Dutch residents lived more than a 10-minute car journey from the nearest GP practice, and 0.51 % from a physiotherapy practice (RIVM, 2014). Prompt access to primary care is one of the health ministry’s policy objectives (VWS, 2011). Travel times for residents of Zeeland and the three northernmost provinces averaged slightly longer than in other regions. The percentages of people with travel times above 10 minutes changed little from 2008 to 2012 (table 5.3).

Table 5.3: Percentages of Dutch population with more than 10 minutes' travel time to three types of primary care providers in 2008, 2010, 2011, 2012 and 2014 (sources: NIVEL, 2013a; IGZ, 2014a; Farmatec, 2014; Geodan, 2013; data processing by RIVM, see www.volksgezondheidenzorg.info).

	2008	2010	2011	2012	2014
GP practice	0.06	0.08		0.08	
Physiotherapy practice	0.45	0.51		0.51	
Pharmacy ^a			0.08		0.07

^a Including dispensing GPs

Community pharmacies dispense prescription and over-the-counter medicines under the auspices of the Medicines Act. General practitioners may also obtain pharmacy permits if at least one of their patients lives over 4.5 kilometres from the nearest pharmacy. Access to pharmacy services are therefore no problem for the vast majority of Dutch people. Only 0.07% of the population lives more than a 10-minute car ride from the nearest community pharmacy or dispensing GP. Here again, some people in Zeeland or the three northern provinces might have slightly longer journeys.

In 2013, only a tiny part of the population lived at a problematic distance from a hospital

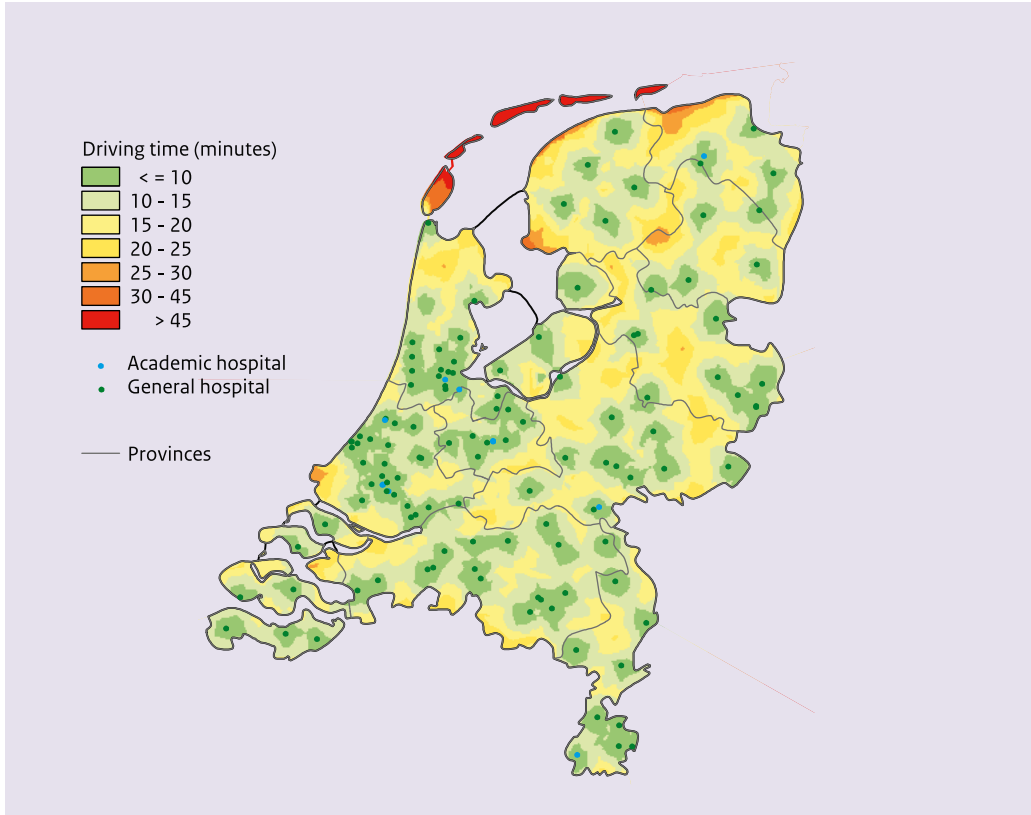
Fewer than 0.1% of Dutch people lived more than a 30-minute car journey from the nearest hospital with inpatient facilities, a rate unchanged since 2008. As figure 5.4 shows, the longer travel times accrue mainly on the Frisian Islands, in southwestern Friesland and in northern Groningen. Some clinical specialties or facilities are not available in all hospitals and hence require longer travel times.

The hospital accessibility indicator is a general indicator of geographical accessibility in a health care system. Travel times to hospitals are obviously less of an issue for elective or non-urgent care than for emergency situations. The acute-care access indicators in chapter 4 are specifically designed to measure accessibility in emergencies.

In 2010, 42% of GP practices could not be reached by telephone within two minutes, slightly down from 48% in 2007

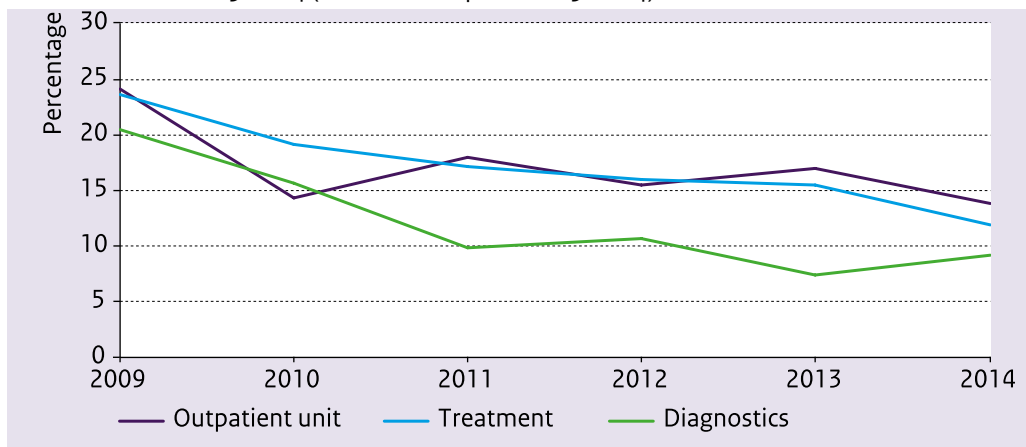
In 2007, the Health Care Inspectorate (IGZ) and the Federation of Patients and Consumer Organisations in the Netherlands (NPCF) investigated telephone access to GP practices for non-urgent calls and emergency calls. The non-urgent sample consisted of 7,588 calls; 48% of practices did not answer in person within two minutes and 41% took more than ten minutes (IGZ & NPCF, 2008). When the Inspectorate repeated the study in 2010 (IGZ, 2011a), 42% did not respond in person within two minutes and 30% took more than ten minutes. GP telephone access hence barely improved in the 2-year period.

Figure 5.4: Travel times to nearest hospital, in 2013 (sources: Deuning, 2013a; Geodan, 2013).



Better access to basic primary health care (GP, community nursing, pharmacy and physiotherapy services) is one of the stated policy objectives of the Dutch minister of health. Ready telephone access to general practitioners is a key part of that. GP practices are to be reached by telephone within two minutes. In response to the 2007 study, the Inspectorate called on the National Association of General Practitioners (LHV) to adopt and implement the ministry's two-minute standard, but the LHV failed to act on the recommendation due to misgivings about feasibility. The LHV guidelines for telephone accessibility do state that patients must always be able to reach a medically trained person (LHV, 2013).

Figure 5.5: Percentages of secondary care units with reported waiting times exceeding the Treek standard^a, 2009–2014 (source: Mediquest, 2009–2014).



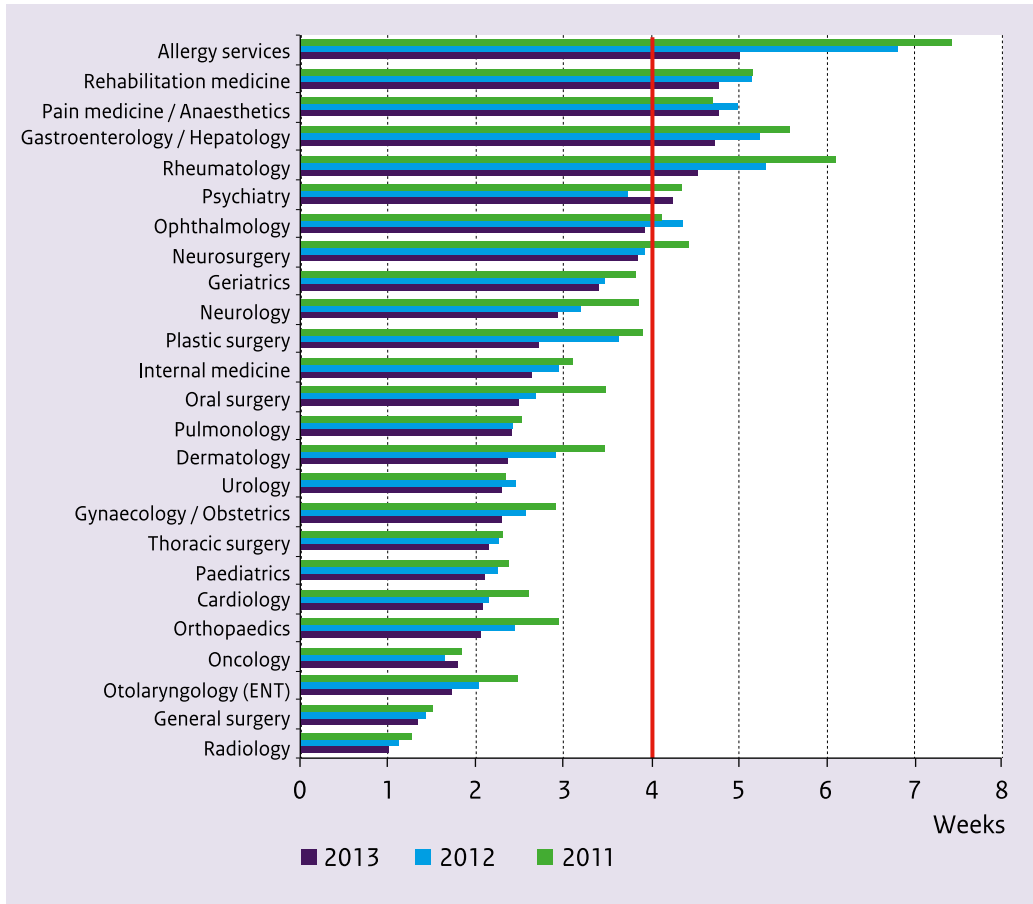
^a The Treek standard is 4 weeks for outpatient consultation, 7 weeks for treatment and 4 weeks for diagnosis.

The percentage of secondary care units with waiting times in excess of Treek standards declined from 2009 to 2014

Health care providers and insurance companies have concluded agreements about acceptable waiting times in the Dutch health care sector. The maximum acceptable waiting times are referred to as the Treek standards. For an initial consultation, 13.8% of secondary care facilities (clinical specialties) reported that patients in late 2013 were subject to waiting times that exceeded the Treek standard of 4 weeks. That figure was lower than the 24.1% in 2009. The percentages exceeding the Treek standards for diagnostics (4 weeks) and for treatment (7 weeks) had likewise been sharply reduced since 2009 (figure 5.5), although the figure for diagnostics did show a slight upturn during 2013.

Since 1 January 2009, all Dutch hospitals have been subject to the Regulations Requiring Publication of Waiting Times for Medical Care, set out by the Dutch Healthcare Authority (NZA) and extended one year later to all specialist medical care providers. They are to make monthly disclosures of their waiting times on their websites. Distinctions are made between waiting times for consultations, for diagnostics and for medical treatment. These apply respectively to waiting times for an initial specialist consultation, for specified diagnostic procedures and for specified therapeutic procedures. Figure 5.5 shows trends in waiting times for specialist consultations, diagnostics and treatment.

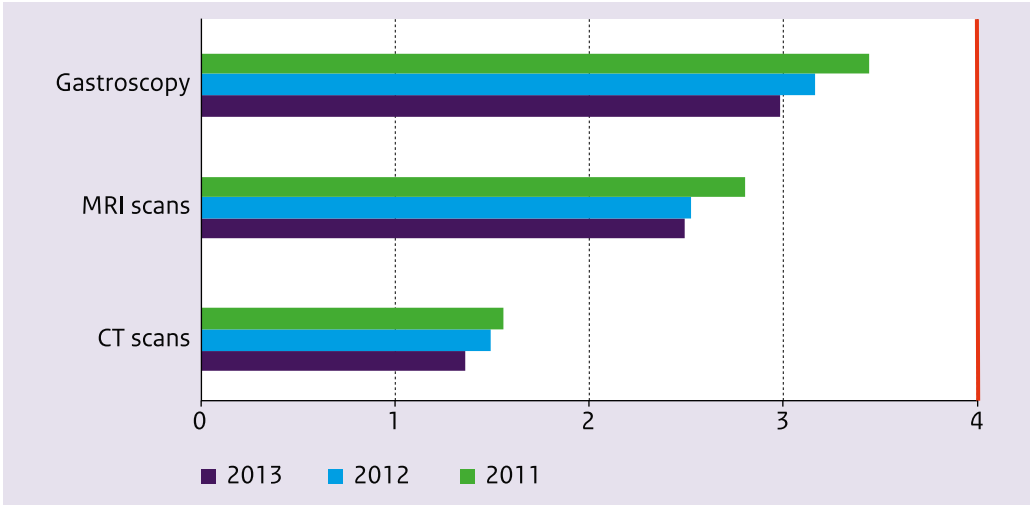
Figure 5.6: Trends in waiting times for outpatient consultations, 2011–2013 (source: NZa, 2013b).



Average waiting times in outpatient units were reduced for virtually all clinical specialties from 2008 to 2013

The Specialist Care Market Scan from the Dutch Healthcare Authority (NZa, 2013b) revealed considerable variations between clinical specialties in relation to the Treek standards. Figure 5.6 shows the average waiting times for outpatient care for a range of specialties. The average waits for allergy services, rehabilitation medicine, pain medicine, gastroenterology and hepatology, rheumatology and psychiatry exceeded the standard of four weeks in 2013. The average waiting time for ophthalmology was reduced to within the standard, while the waits for psychiatry and for oncology showed increases between 2012 and 2013.

Figure 5.7: Trends in waiting times for diagnostics, 2011–2013 (source: NZa, 2013b).



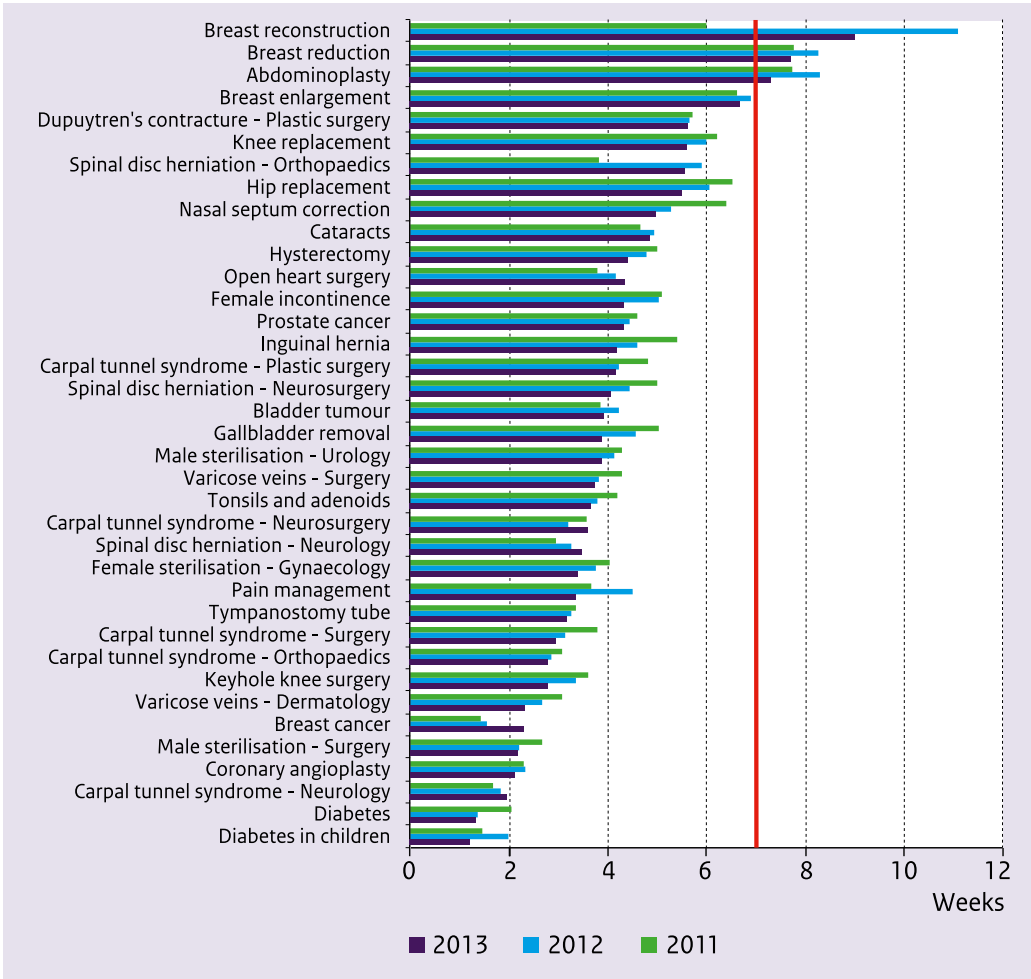
In 2013, the average waiting time for diagnostics was lower than the Treek standard of four weeks

As seen in figure 5.7, the average waiting times for gastroscopy, MRI scans and CT scans in January 2013 were comfortably within the Treek standard of four weeks and were lower than in 2012 and 2011. The longest wait was for gastroscopy (almost 3 weeks). Interestingly, a higher percentage of hospital units exceeded the Treek standard for diagnostics in 2014 than in 2013 (figure 5.5), though the average wait decreased.

Only three types of clinical treatment had average waiting times exceeding the Treek standard in 2013

Figure 5.8 shows that only three treatment types (breast reconstruction, abdominoplasty and breast reduction) exceeded the Treek standard of seven weeks in their average waiting times in early 2013, though those times had been considerably shortened in the two preceding years. Average waiting times for 28 types of treatment receded between 2012 and 2013 and grew for 5 types. Average waits for carpal tunnel syndrome in neurosurgery and for breast cancer showed steep increases but still remained within the standard.

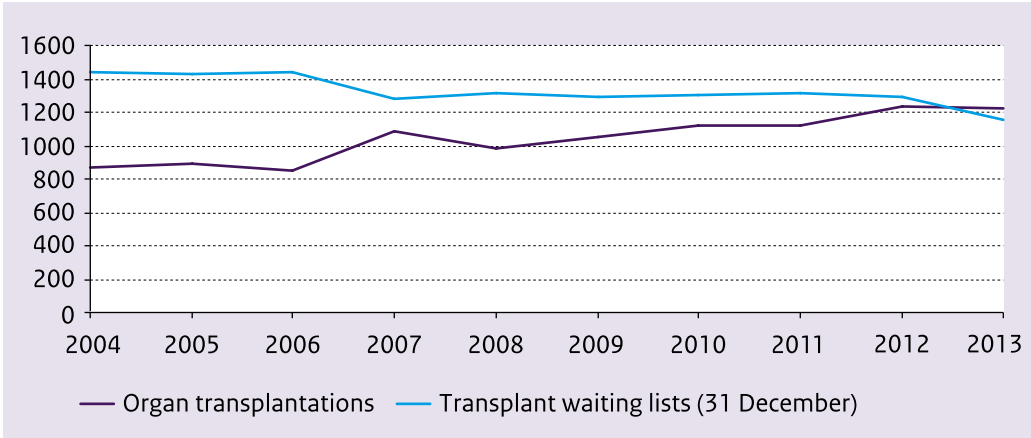
Figure 5.8: Trends in waiting times for treatment, 2011–2013 (source: NZa, 2013b).



The number of people awaiting organ transplants is declining and the number of transplantations is increasing; in international perspective, the Netherlands scores well in numbers of living donations but poorly on deceased donations

On 31 December 2013, there were 1,149 people in the Netherlands waiting for a donor organ; that was a reduction of 11% from the 1,286 one year earlier. Over a 10-year period, waiting lists shrank by 20% (figure 5.9). The numbers refer to people actively awaiting a transplant, who have been approved by a transplantation centre and who are ready to receive the transplant.

Figure 5.9: Numbers of organ transplantations and persons actively awaiting transplants in the Netherlands, 2004–2013 (sources: NTS, 2009; NTS, 2013; NTS, 2014a).



As figure 5.9 also shows, the number of transplantations performed has increased by 40% in the past 10 years, from 865 in 2004 to 1,228 in 2013. One quarter of the increase is attributable to a higher number of deceased donors and three quarters to higher numbers of living donors. The number of living-donor kidney transplants grew from 250 to 520 in that 10-year period.

The decline in the number of people actively awaiting organ transplants (in particular between 2012 and 2013) cannot simply be explained by the increasing number of transplantations. A possible reason for the decline is the increase in living kidney donations. Most patients who receive kidney transplants from a living donor are not registered on active waiting lists because they are not waiting for kidneys from deceased donors (NTS, 2014b). The number of transplantations of living-donor kidneys was 7% higher in 2013 than in 2012.

The numbers of people actively waiting for transplantations vary depending on the organ in question. For kidney and liver transplants, the numbers are on the decline, but there are strong increases for heart and lung transplants (table 5.4). Small intestine and pancreas transplants are so uncommon that any fluctuations would be based on chance. The number waiting for kidneys in 2013 was the largest (735), followed by lung (189) and liver transplants (132).

The average duration of registration (time on a waiting list) for transplantations likewise varied widely in 2013 depending on the organ, as was also the case in preceding years. The average wait was longest for kidney transplants (960 days) and shortest for liver transplants (232 days). The waiting times have decreased for kidney and liver transplants since 2004, but they have increased for heart and lung transplants (figure 5.10).

Table 5.4: Numbers of persons actively awaiting transplants in the Netherlands at year's end 2004–2013 (sources: NTS, 2009; NTS, 2013; NTS, 2014a).

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Change	
											2012-2013	2004-2013 ^e
Kidney ^a	1166	1088	1084	937	952	926	892	883	855	735	-14%	-32%
Liver ^b	151	162	157	131	117	107	116	122	159	132	-17%	-16%
Heart ^c	45	54	46	47	54	60	67	57	64	84	31%	69%
Lung	79	108	141	158	177	183	212	234	193	189	-2%	113%
Total ^d	1443	1425	1440	1284	1316	1288	1300	1311	1286	1149	-11%	-16%

^a Including kidney-pancreas and kidney-liver

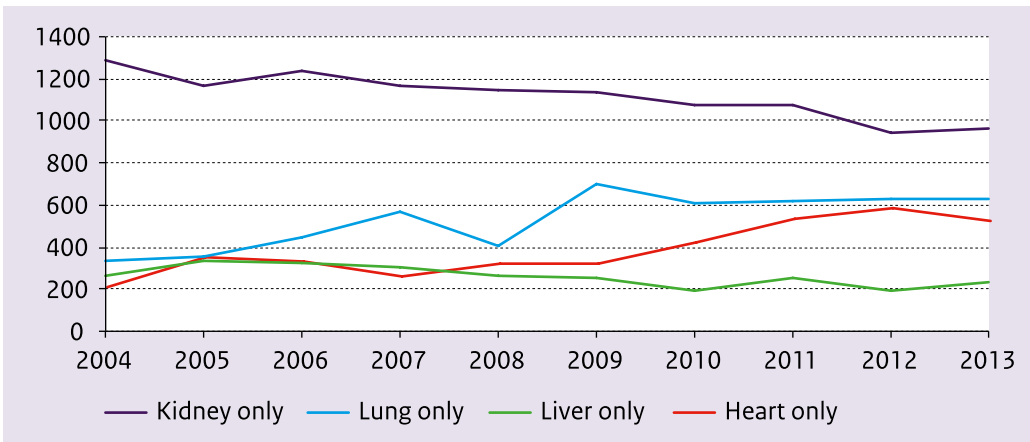
^b Including liver-lung and liver-pancreas

^c Including heart-lung

^d Total includes pancreas and small intestine

^e Calculated using linear regression analysis

Figure 5.10: Average duration in days of registration for organ transplants in the Netherlands, 2004–2013 (sources: NTS, 2005–2011; NTS, 2012–2014a).



For kidney and liver transplants, we observe favourable developments in terms of both the numbers of waitlisted patients and the average waiting times. Unfavourable developments are seen on both these indicators for heart and lung transplants. In absolute numbers, both the waiting lists and the average waiting times for kidneys are still the longest.

A kidney, and in some cases part of a liver, may be donated by a living donor. In international perspective, the Netherlands has the highest number of living donors (29.3) per million population. It is followed by Germany, Belgium and Austria with 9.4, 8.1 and 7.5 living donors respectively (Rahmel, 2012). Even so, the availability of donor organs still depends largely on deceased donors.

The number of deceased donors from whom at least one organ is recovered for successful transplantation (13.3 per million population) is lower in the Netherlands than the 15.2 average in the countries participating in Eurotransplant (Belgium, Germany, Croatia, Hungary, Luxembourg, Netherlands, Austria and Slovenia). The highest numbers per million population in the 2000–2012 period were seen in Austria and Belgium (Rahmel, 2012). The low rate in the Netherlands may be attributable to its low level of donor potential, in that the numbers of eligible donors are limited by the high average age of mortality and by causes of death that disqualify donors. Another factor is the low number of road traffic deaths; together with Sweden and the United Kingdom, the Netherlands has the highest road safety record in the European Union (Harbers, 2013).

More than 40% of the Dutch population have filed statements of will pertaining to organ donation in the central Donor Register (Giesbers, 2014).

5.3.2 Quality

Twenty indicators assess whether GPs prescribe drugs according to guidelines; eight of these reveal frequent guideline deviations

Using twenty pertinent indicators, the Dutch Institute for Rational Use of Medicine (IVM) assesses whether general practitioners adhere to the appropriate professional guidelines in prescribing drugs. For 2012, frequent guideline deviations were found on eight of the twenty indicators, moderate deviations on seven and infrequent deviations on five indicators. Indicator outcomes were assessed using health insurance claims data over 2012 provided by pharmacies and dispensing GPs to the Vektis health care information centre (IVM, 2013a).

The twenty indicators pertain to a range of medical conditions (treatment indications) and drug categories. The indicators assess the clinical effectiveness, safety or cost-effectiveness of GP prescribing behaviour (table 5.5). They reveal the average percentages of users per GP who are prescribed drugs according to the guidelines (figure 5.11). The degree of guideline adherence is based on the nationwide GP mean for that drug or drug category in combination with the range of variation between GPs. The range of variation reported here is the span between the 10th and the 90th percentile scores.

Figure 5.11 shows the nationwide mean and the range of variation for each indicator. The degree of guideline adherence is indicated by the colours red, orange and green. Each rating is based on a combination of the weighted mean of the GP percentages and the amount of variation amongst the GPs for that drug or drug category.

Table 5.5: Summary of indicators of GP prescribing behaviour with information on the quality domain they measure and a brief explanation.

Nr.	Theme	Name indicator	E	S	C	Argumentation
1	Antibiotics	First-line antibiotics		+		If an antibiotic is prescribed, specified types are disadvised as the drugs of first choice, because they heighten the risk of resistance development.
2	Antidepressants	Antidepressant treatment adherence	+		+	In depressive and anxiety disorders, new users of antidepressants must be discouraged from premature discontinuation, as it may take some time for effects to set in.
3	Antidepressants	Preferred antidepressants	+		+	For use in primary care, generic SSRIs are the most effective and least costly.
4	Asthma	ICS for patients with asthma	+			In persistent asthma, inhaled corticosteroids (ICS) are recommended from age 6 onwards. These are the most effective anti-inflammatory drugs.
5	CVRM	Statins for patients with CVD	+			For patients with LDL cholesterol levels >2.5 mmol/L, prescription of a statin is recommended. Statins may also be prescribed to people with lower levels but with high morbidity or mortality risks.
6	CVRM	Preferred RAS inhibitors	+		+	Within the category of RAS inhibitors (for treatment of conditions including high blood pressure and heart failure), an ACE inhibitor is preferred because the most evidence is available about their effectiveness and safety. If not well tolerated (e.g. if coughing develops), an ARB is prescribed.
7	CVRM	Preferred statins	+		+	Within the category of statins, simvastatin is preferred because the most evidence is available that they can prevent CVD and associated mortality. Simvastatin is also the lowest priced.

Table 5.5: continuation

Nr.	Theme	Name indicator	E	S	C	Argumentation
8	CVRM	Simvastatin dosage	+			Initial recommended dosage is 40 mg daily, as that has been shown effective in reducing the risk of CVD-related morbidity and mortality. Lower dosages are recommended only if LDL levels are just above target values.
9	CVRM	Atorvastatin and rosuvastatin dosage	+			The following initial daily dosages are recommended: 20 or 40 mg for atorvastatin and 10 or 20 mg for rosuvastatin (dosage dependent on LDL level).
10	CVRM	Preferred ACE inhibitors			+	There are few differences between the drugs in terms of effectiveness and safety. The lowest-priced are therefore recommended.
11	CVRM	Preferred ARBs			+	There is little difference between the ARBs in terms of effectiveness and safety. The lowest-priced are therefore recommended.
12	Diabetes	Metformin for patients with diabetes	+			For people with type 2 diabetes mellitus, metformin is the first-line blood glucose-lowering drug (excepting insulin). In the event of contraindications or very high fasting blood glucose levels, other drugs are recommended.
13	CVRM/ Diabetes	Statins for patients with diabetes	+			Statins are recommended for virtually all people with type 2 diabetes mellitus and LDL cholesterol levels >2.5 mmol/L.
14	Stomach medications	Preferred proton pump inhibitors (PPIs)			+	There are few differences between the drugs in terms of effectiveness and safety. The lowest-priced are therefore recommended. Higher-priced agents are recommended for some types of gastric ulcers.
15	Pain	Gastroprotective agents for NSAID users			+	For NSAID users above age 70, preventative measures are needed to prevent gastric complications.

Table 5.5: continuation

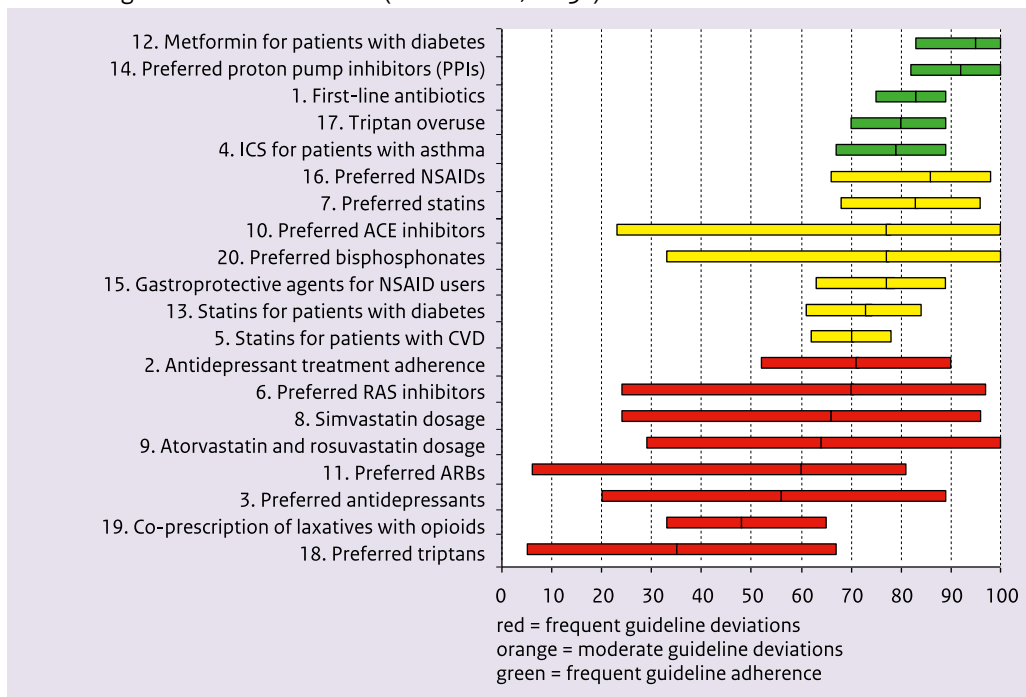
Nr.	Theme	Name indicator	E	S	C	Argumentation
16	Pain	Preferred NSAIDs		+	+	Some drugs within the NSAID category are preferred, mainly due to their low risks of side-effects.
17	Pain	Triptan overuse		+		Triptans may be prescribed if other painkillers provide insufficient relief. If two or more attacks occur per month, preventative prescription of an adjunct beta-blocker may be considered. A maximum of 2 or 3 doses of triptans (depending on the particular drug) per 24 hours is advised, as overuse may cause headaches.
18	Pain	Preferred triptans	+	+	+	Sumatriptan is the most widely tested triptan, has the most available routes of administration, has a long record of clinical use and is the lowest priced.
19	Pain	Co-prescription of laxatives with opioids		+		Co-prescription of a mild laxative prevents constipation.
20	Osteoporosis	Preferred bisphosphonates	+	+	+	Four types have been shown effective, two of which have the longest record of use, have fewer side-effects and are the lowest priced.

Quality domains: E = effectiveness, S = safety; C = cost-effectiveness

ACE = angiotensin-converting enzyme; ARB = angiotensin II receptor blocker (or antagonist);

CVD = cardiovascular disease; CVRM = cardiovascular risk management; ICS = inhaled corticosteroids; LDL = low-density lipoprotein; NSAID = non-steroidal anti-inflammatory drugs; PPI = proton pump inhibitors; RAS = renin-angiotensin system; SSRI = selective serotonin reuptake inhibitor; statin = cholesterol synthesis inhibitor

Figure 5.11: Average percentages per GP of patients who were prescribed drugs in conformity with guidelines, in 2012 (vertical line segments) and ranges of variation between 10% least and 10% most guideline-adherent GPs (source: IVM, 2013a).



For abbreviations and terminology see table 5.5.

The eight indicators that show frequent guideline deviations and the two indicators (numbers 10 and 20) that show very wide variations amongst GPs reflect on the safety, the clinical effectiveness and/or the cost-effectiveness of the GPs' prescribing behaviour. Key concerns are:

- Drugs are prescribed that are known to be less effective or for which evidence was less strong at the time the guidelines were set.
- Drugs are prescribed in insufficient doses.
- Therapies are discontinued before effects can be expected.
- Drugs are prescribed that are too highly priced even though cheaper alternatives are available.
- Drugs are prescribed for which knowledge about efficacy and side-effects is still limited.

Four of the eight indicators that revealed frequent guideline deviations in 2012 (shown in red) involved prescribing behaviour in cardiovascular risk management (CVRM); four of the seven that showed moderate deviations (orange) also involved CVRM. Many GPs failed to prescribe statins to all patients that were indicated for them. Many GPs prescribed expensive variants of some drug categories (ACE inhibitors, statins), initiated prescriptions with insufficiently high dosages (statins) or chose preparations whose effectiveness or safety was less well documented (RAS inhibitors).

In prescribing antidepressants, many GPs chose more costly, non-generic SSRIs or drugs whose effectiveness in primary care was less clearly demonstrated (indicator 3). Prescriptions for antidepressants were often discontinued prematurely (indicator 2). Antidepressants may take time before they have the intended effect; responsibility under this indicator lies with both the GP and the patient.

Three of the eight indicators that gauged safety showed frequent deviations from the relevant guidelines; three showed moderate deviations and two showed infrequent deviations. The greatest deviations pertained to triptans, opioids and RAS inhibitors. When GPs prescribed triptans or RAS inhibitors, they often chose variants for which not much experience had been reported, so that knowledge about safety was limited. When opioids were prescribed, a mild laxative was not always co-prescribed to prevent constipation.

The GP Prescribing Behaviour Monitoring Scheme (MVH) collected data in the current format for the years 2010 to 2012. A number of indicators were measured in the same way each year. Percentages of GPs prescribing in accordance with the guidelines increased on some indicators, but decreased on others (table 5.6). The variation amongst GPs diminished for almost all indicators from 2010 to 2012.

The steepest increase in guideline adherence was seen for simvastatin dosage, and the sharpest decrease occurred for stomach-protecting drugs in the treatment of NSAID users. The improved adherence for simvastatin may be related to the revised Cardiovascular Risk Management Standards from the Dutch College of General Practitioners (NHG), published in 2012 and including stepped treatment recommendations. The reduced figure for gastroprotective medicines prescriptions was likely due to the curtailment of insurance coverage for proton pump inhibitors from 1 January 2012. As prescriptions for gastroprotective medicines paid by patients themselves are not included in the health insurance claims data register, the actual percentage for NSAID users was probably higher than the 77% shown here.

Table 5.6: Mean percentages per GP of users of medications whose prescriptions were in conformity with the professional guidelines in 2010, 2011 and 2012; only the drugs with the sharpest upward and downward changes are listed (sources: IVM, 2012a; IVM, 2012b; IVM, 2013a).

	2010	2011	2012
	Percentages		
Increased adherence			
Simvastatin dosage ^a	57	60	66
Atorvastatin and rosuvastatin dosage	61	60	64
Preferred RAS inhibitors	67	68	70
Preferred ACE inhibitors	72	74	77
Decreased adherence			
Preferred statins ^b	89	88	83
Treatment of NSAID users with stomach protectors	84	87	77
Preferred proton pump inhibitors	95	95	92
Preferred bisphosphonates	81	78	77

^a Definition was modified in 2012, but result was the same using older definition.

^b Indicator was 'tightened' in 2012.

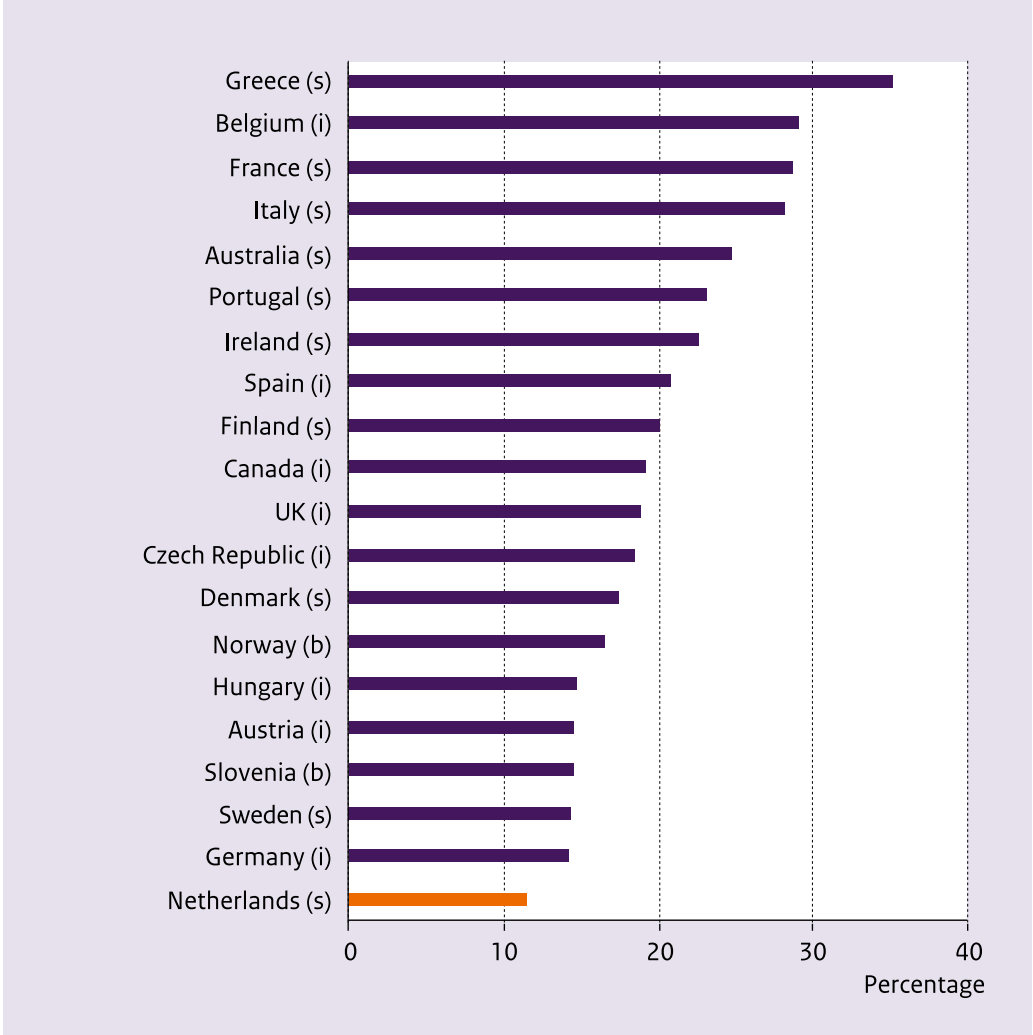
Antibiotics were prescribed to a lower percentage of people by GPs in 2012 than in 2010; the Dutch rate of antibiotics prescription is low compared to countries abroad

In 2012, Dutch GPs prescribed antibiotics at least once to an average of 15% of the people registered in their practices (IVM, 2013a). Figures for 2010 and 2011 were higher at 19%. The variation between GPs narrowed from 2010 to 2012.

Many of the standards of care for GPs recommend restraint in prescribing antibiotics because of the risk of bacterial resistance. The percentage of patients receiving antibiotics should also not be too low, as standards do recommend antibiotics for some groups of patients, including those with urinary tract infections, sexually transmittable diseases or some sort of vulnerability. No conclusion can be reached here about the appropriateness of antibiotics prescriptions because the MVH does not record the clinical indications on which prescriptions were based.

In comparison with other European countries in 2011, the Netherlands had the lowest rate of antibiotics prescription in primary care (figure 5.12). Germany also had a low rate, but in Belgium and France more than twice as many defined daily doses (DDDs) were prescribed per 1000 population as in the Netherlands. The Dutch figures refer to antibiotics prescribed by GPs or specialists and dispensed by community pharmacies. In the Netherlands, 65% of the DDDs

Figure 5.12: Primary-care antibiotic prescribing in 20 countries, in DDD per 1000 population and per day, in 2011 (or nearest available year) (sources: ECDC, 2014b; OECD, 2014).



Data type (in brackets): s = sales figures, I = insurance claims, b = both. Sales data may be more reliable than insurance data because antibiotics obtained without prescriptions or insurance cover will often still be reflected in sales figures.

of antibiotics dispensed in community pharmacies in 2012 were prescribed by GPs and 34% by specialists (GIPdatabank, 2013). The use of antibiotics obtained without prescriptions is highly uncommon in the Netherlands, but it constitutes a substantial share of the total in some other European countries such as Greece and Spain (Safrany & Monnet, 2012).

Other quality indicators for the prescribing of antibiotics by GPs are the percentages of 'other β -lactam antibiotics' and quinolones within the total number of antibiotic DDDs prescribed. The ratio of prescribed DDDs of broad-spectrum to narrow-spectrum antibiotics is a further quality indicator (Coenen et al., 2007; ECDC, 2014a; OECD, 2013a). 'Other β -lactam antibiotics' (including cephalosporins) and quinolones are preparations that are to be used only if others fail. Antibiotics that target a broad array of microorganisms are also not intended to be prescribed too often. Hence, the lower those percentages and ratios, the better, and the Netherlands scores low on these two indicators. Four countries (Sweden, Norway, Denmark and the UK) score even better on the β -lactam and quinolones indicators, and four additional countries (Slovenia, Czech Republic, Germany and Ireland) score better on the broad- to narrow-spectrum ratio.

An increasing percentage of pharmacotherapy audit groups were functioning more rigorously in 2011 compared to 2004

Of the pharmacotherapy audit (FTO) groups assessed in 2011, 60% were found to be functioning at the more rigorous levels of 3 or 4, up from 43% in 2004 (table 5.7). There were wide variations between regions, ranging from 85% in southeastern North Brabant to 31% in the Twente region.

The purpose of these local or regional consulting groups is to promote the quality, and hence the safety, of medicines prescribed and dispensed by GPs and pharmacies (DGV, 2007). Participation by GPs and pharmacists is accredited as a continuing education resource. Some 850 pharmacotherapy audit groups currently operate in the Netherlands, and more than 90% of all GPs and all pharmacies take part.

The IVM rates the quality of audit groups by surveying their liaison officers (Dik et al., 2008). The survey assesses 25 indicators, and on the basis of the resulting data the groups are classified into four quality levels:

1. No regular consultations
2. Regular consultations but no explicit prescribing and dispensing rules
3. Regular consultations and explicit prescribing and dispensing rules
4. Regular consultations and verified prescribing and dispensing rules

The IVM supports pharmacotherapy audit groups during their start-up and professionalisation phases. It also monitors GP prescribing behaviour, enabling it to supply individual GPs with reflective information about their own prescribing behaviour (see the GP prescribing indicator above). That information is also a source of input for consultations and activities of local audit

Table 5.7: Pharmacotherapy audit groups functioning at levels 3 or 4, 2004–2007 and 2011^a (sources: DGV, 2005–2008; IVM, 2013b).

	2004	2005	2006	2007	2011
Total groups contacted	800	804	808	811	789
Number assessed	596	512	629	610	482
Number rated at levels 3 or 4	254	243	306	305	289
Percentage of assessed groups rated 3 or 4	43	47	49	50	60

^a No assessments were made from 2008 to 2010.

groups. Important topics for closer attention are medications for various conditions, new drugs, polypharmacy, treatment adherence, repeat prescriptions and transfer of medication. Rules may be set for issues such as allocation of responsibilities in medication monitoring, preferred medications and repeat prescribing (DGV, 2007; IVM, 2013b).

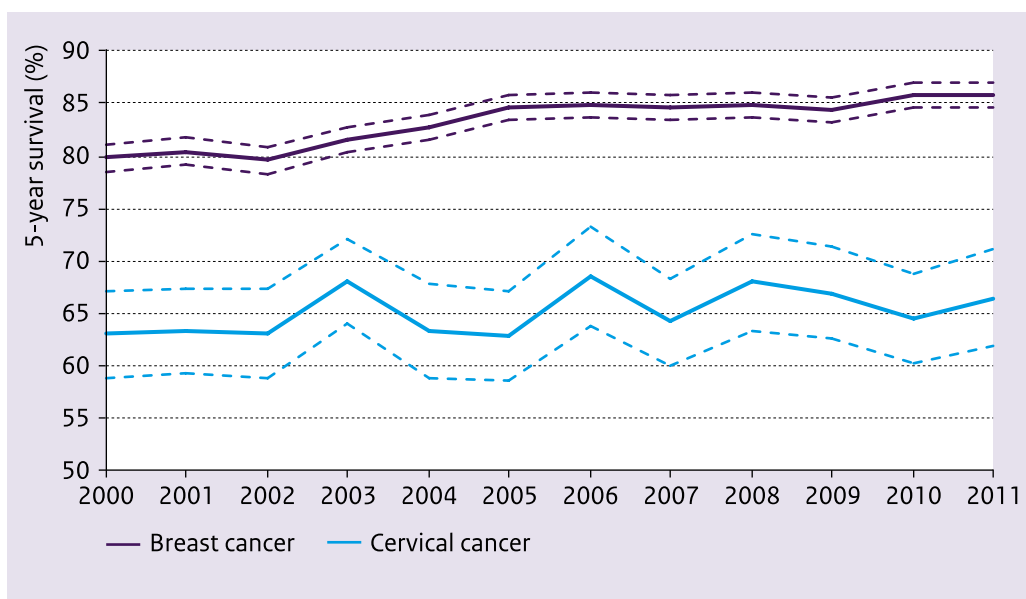
Research on the relationship between pharmacotherapy audit levels and the quality of GP prescribing (Meulepas, 2008) has found associations on 7 of the 25 indicators between the percentage of regional GPs that took part in a level-3 or level-4 audit group and the percentage of regional patients whose prescriptions conformed to the relevant professional guidelines. Nitrate users, for instance, were relatively more likely to have anti-thrombosis medications, bisphosphonate users showed greater treatment adherence, and more asthma patients were being treated with inhaled corticosteroids.

Some Dutch health insurance companies regard participation in a level-3 or level-4 audit group as a quality indicator for health care purchasing (see section 12.5). In 2011, the companies Univé, De Friesland and Zorg en Zekerheid gave compensations to high-level audit participants; the regions where those companies operate also had the relatively greatest numbers of pharmacotherapy audit groups with high-level ratings (IVM, 2013b).

The 5-year relative survival ratio for breast cancer improved in the 2000–2011 period; Dutch survival was in the middle range among Western countries

For Dutch women diagnosed with breast cancer in 2006, the relative 5-year survival ratio was 85.9%; the rates were 88% to 91% for all age categories between 15 and 74. Survival for women over age 75 was 75.5%. Viewing the trend over the 1995–2006 diagnosis time frame (with follow-up in 2000 to 2011), we see that the mean survival ratio improved from 79.8% to 85.9% (figure 5.13). Improvement occurred in all the 15-to-74 age categories, including women aged 15–40 who were not subject to systematic screening. No improvement in relative survival was seen for women aged 75 or older.

Figure 5.13: 5-year relative survival ratios (with 95% confidence intervals) for Dutch women with breast cancer and cervical cancer, age-standardised to the International Cancer Survival Standard (ICSS-2) population, with diagnosis 1995–2006 and follow-up 2000–2011 (source: IKNL, 2013a).



The 5-year relative survival ratios for people with cancer are indicators that combine the effectiveness of early detection (or population screening) and treatment. Survival can be improved by early recognition and appropriate treatment. Greater survival means that growing numbers of patients recover or are able to live longer with cancer. The ratio of survival is relative because the survival of people diagnosed with cancer is assessed in relation to the survival of all people in the general population (of corresponding age and sex).

The improved survival of women with breast cancer in the Netherlands is attributed both to the systematic screening programme introduced in 1990 and to improved treatment. The screening enables the more frequent detection of smaller and less aggressive tumours and an earlier start to treatment. Treatment improvements have been achieved in terms of both surgical procedures and adjuvant therapies (hormonal and chemical). New types of medicines have also been introduced (Siesling et al., 2011a).

For elderly people, the relative 5-year survival ratio is low in comparison with that for younger age groups, and it has not improved over time. This may be partly because cancer is diagnosed at more advanced stages in people aged 75 or older (IKNL, 2014b). It also cannot be ruled out

that doctors apply the treatment guidelines less frequently or less fully for older people because these might be too taxing, especially for those with comorbid conditions or other vulnerabilities. Elderly people less frequently receive surgery, and they are given little radiotherapy and only rarely chemotherapy after surgery. They do frequently receive hormonal therapies such as tamoxifen, which can also be taxing. The use of hormone therapy for elderly people sharply increased in the 1995–2005 period, whilst the frequency of surgical intervention decreased (Bastiaannet et al., 2011; Hamaker et al., 2013).

Because evaluative research on cancer treatment for the elderly is limited, it is not known whether the less aggressive treatment strategies are justified (van de Water et al., 2011; Hamaker et al., 2013). The Dutch Geriatric Oncology Foundation (GeriOnNe) promotes research to determine the most appropriate treatment strategies for older people.

Data from the OECD shows that the Dutch relative 5-year survival ratio for breast cancer is in the middle range (figure 5.14). The EURO CARE-5 study (based on patients diagnosed from 2000 to 2007 and monitored until December 2008) painted a comparable picture, with the Dutch survival ratio in the higher-middle range and Scandinavian countries, France and Italy showing higher rates of survival (De Angelis et al., 2014).

Breast cancer patients in the USA and in Australia showed significantly higher rates of survival in the OECD study, and the high figure for the USA deserves particular attention. Although it might be explained in part by incomplete records of cancer cases (Siesling et al., 2011b), overestimation is thought to be low for breast cancer (Brenner & Hakulinen, 2009; Coleman et al., 2008). The EUNICE Survival Working Group combined the 5-year survival figures for European regions and the USA for women diagnosed from 2000 to 2004. It concluded that the primary explanation for the disparities between Europe and the USA lay in the higher rates of survival for US women above age 70 (Rosso et al., 2010). Although it spoke generally of problems in comparison between countries, it did not point to any poorer follow-up rates in the record-keeping for US elderly in comparison to European records.

Figure 5.14: 5-year relative survival ratios (with 95% confidence intervals) for women with breast cancer, diagnosed in 2006 with follow-up to 2011 (unless otherwise indicated) (source: OECD, 2013a).

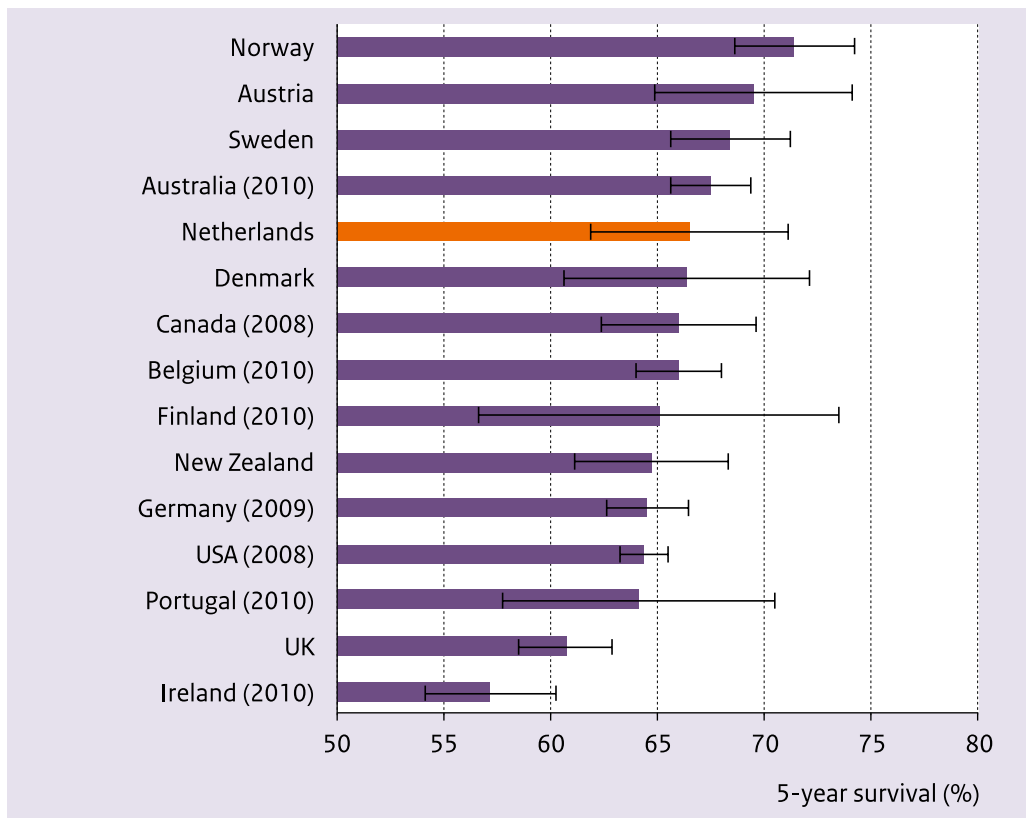


The 5-year relative survival ratio for cervical cancer has remained stable over time, and there are limited differences with other Western countries

For Dutch women diagnosed in 2006 with cervical cancer, the relative 5-year survival ratio was 66.5%. Viewing the survival trend for the diagnosis years 1995 to 2006 (follow-up 2000–2011), we see that the rate stayed virtually the same (figure 5.13). The effects of screening and of treatment improvements such as combined radiotherapy and hyperthermia (de Kok et al., 2011) are not yet reflected in the survival figures.

The Dutch relative 5-year survival ratio is comparable to the ratios in other Western countries (figure 5.15). In view of the low incidence and mortality of cervical cancer, the confidence intervals surrounding the survival ratios are wide and the differences between the Netherlands and other countries are not statistically significant. Only Ireland shows a significantly poorer survival ratio than the Netherlands. The EUROCare-5 study (of patients diagnosed from 2000

Figure 5.15: 5-year relative survival ratios (with 95% confidence intervals) for women with cervical cancer, diagnosed in 2006 with follow-up to 2011 (unless otherwise indicated) (source: OECD, 2013a).



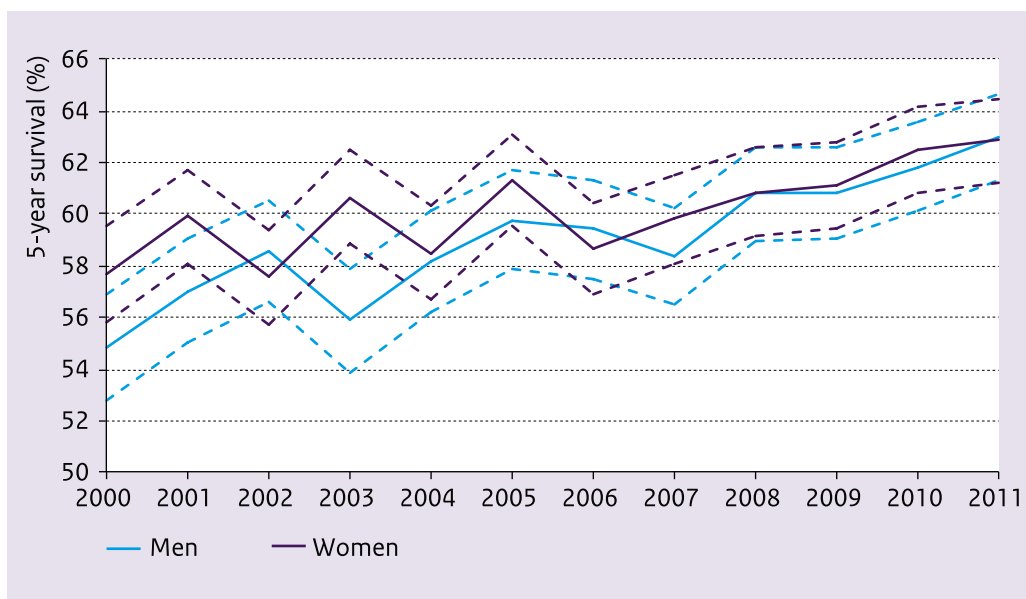
to 2007 and monitored to December 2008) produced a similar picture, albeit with more statistically significant differences; Norway had a better survival ratio than the Netherlands (De Angelis et al., 2014).

The 5-year relative survival ratio for colorectal cancer improved from 2000 to 2011; here again, the Dutch ratio was in the middle range

For Dutch people diagnosed with colorectal cancer in 2006, the 5-year relative survival ratio was 63.0% for men and 62.8% for women. In the diagnosis years 1995 to 2006 (with follow-up to 2000–2011), survival increased for both women and men (figure 5.16). The increase was observable in the 45-to-74 age categories, but not in the youngest and oldest categories.

We analysed the survival trends for both colon and rectal cancer more closely for the diagnosis period 1989–2006, taking the stages at diagnosis into account. For colon cancer, the

Figure 5.16: 5-year relative survival ratios (with 95% confidence intervals) for Dutch women and men with colorectal cancer, age-standardised to the International Cancer Survival Standard (ICSS-2) population, with diagnosis 1995–2006 and follow-up 2000–2011 (source: IKNL, 2013a).

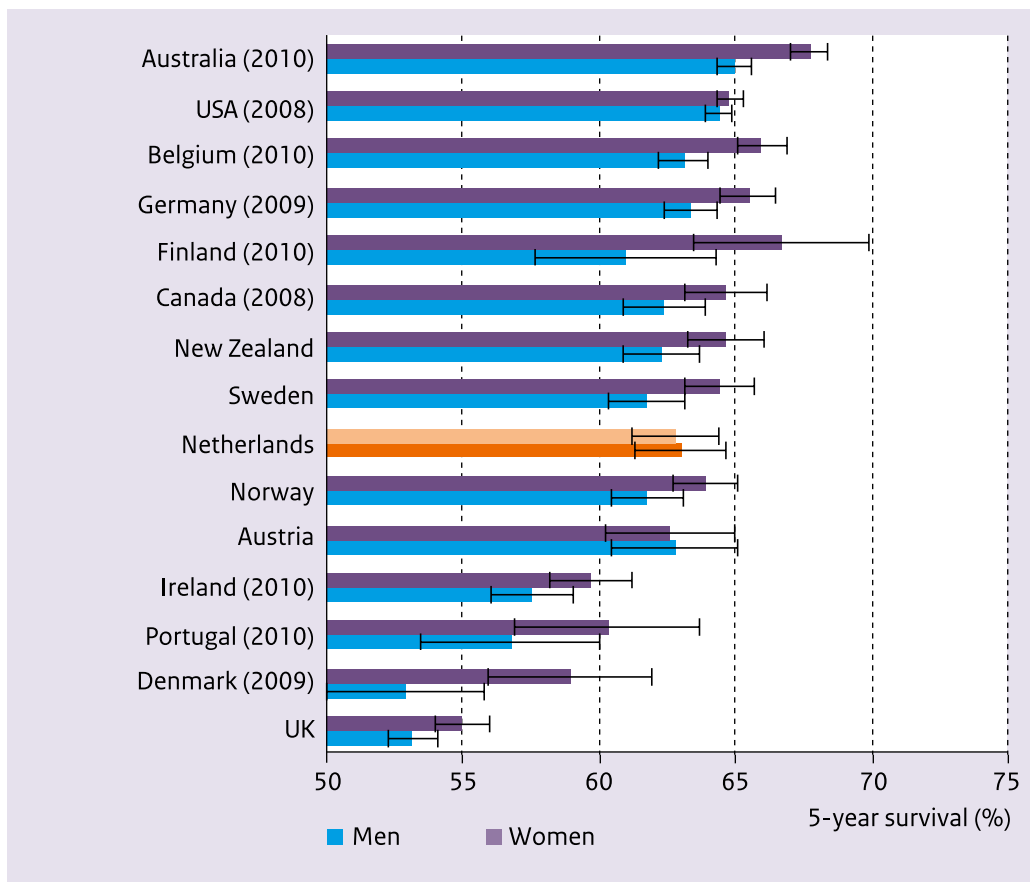


improvement in survival was seen only for tumours that had expanded through the intestinal wall (stages II and III) and not for tumours confined to the intestinal wall (stages 0 and I) (van Steenberg et al., 2010). For rectal cancer, the improvements were seen for cancers diagnosed at stages III and IV, in which metastasis has occurred (Elferink et al., 2010).

Compared to other Western countries, the Netherlands is in the middle range for 5-year colorectal cancer survival (figure 5.17). For women, survival ratios are significantly higher in Australia, Belgium and Germany. The EURO CARE-5 study also placed the Netherlands in the middle range, with Belgium, Germany, Italy, Austria and Switzerland showing better relative survival ratios (De Angelis et al., 2014).

The improved survival for colorectal cancer may relate to changes in treatment strategies, and in particular to the more frequent use of adjuvant chemotherapy, especially in older people with metastasised colorectal cancer (Elferink et al., 2010; van Steenberg et al., 2010; IKNL, 2014c). In rectal cancer, possible additional factors are the more frequent combining of surgery with preoperative radiotherapy and chemotherapy and the use of a new surgical technique (Elferink et al., 2010; IKNL, 2014c). Surgical mortality in elderly people decreased in the 2007–2011 period.

Figure 5.17: 5-year relative survival ratios (with 95% confidence intervals) for women and men with colorectal cancer, diagnosed in 2006 with follow-up to 2011 (unless otherwise indicated) (source: OECD, 2013a).



Early detection may have been another factor in the mildly rising survival ratios (van Steenberg et al., 2009). In the period under study, systematic population screening was not yet underway in the Netherlands, but pilot population screening was already being performed. Growing numbers of people were also undergoing testing on their own initiative (opportunistic screening), prompted by intestinal problems, family members with colorectal cancer or curiosity about their own risk (Terhaar Sive Droste et al., 2009). Before the implementation of nationwide screening in 2014, the numbers of colonoscopies were growing by about 6% per year (Jansen et al., 2009).

An extensive study by the OECD has compared the performance of health care systems in a range of member states in terms of cancer treatment (OECD, 2013c). It showed that the Netherlands can value many aspects of its approach, including its population screening programmes, the assessment and approval of new medicines, the low financial barriers for health care, the availability of PET scanners and the existence of treatment guidelines. That said, there are also issues in which the Netherlands lags behind and needs improvements. These would include a broad-scale national action plan to fight cancer, the dissemination of knowledge about cancer to the general public, the promotion of healthy lifestyles and tobacco control, the assessment of performance in health care, the benchmarking of health care providers and transparency about health care quality, and the duration of the process from the first suspicion of cancer through examinations and diagnosis to the start of treatment. Some issues still need more attention in practically all countries: guideline adherence, reduction of variations between hospitals, adequate outpatient and GP aftercare for cancer patients, assessment of treatment outcomes (using measures such as PROMs) and patient safety.

In numbers of avoidable hospital admissions, the Netherlands scores average to favourable among Western countries

Asthma, COPD, heart failure and diabetes mellitus are widely prevalent chronic diseases that can be effectively managed for the most part in primary care or in outpatient secondary care. When that care is sufficiently accessible and of good quality, inpatient hospital care can be avoided. In an international comparison, the Netherlands scores favourably in the numbers of hospital admissions per 100,000 population for asthma (figure 5.18). The same is true of COPD (data not shown). Italy, Portugal and Switzerland have lower admission rates for both asthma and COPD; the USA, the UK, Australia and Ireland have higher rates. The number of Dutch admissions for heart failure is in the middle range (figure 5.19). Admissions are rare for acute complications in diabetes, such as coma symptoms; for chronic complications the Dutch record is less favourable, although some countries score much worse (figure 5.20). The Netherlands has a middle-range score for partial or full leg amputations in diabetes mellitus (data not shown); Sweden has the lowest rate of 3.3 per 100,000 population, as compared to the Dutch rate of 13.5.

Good-quality outpatient care largely serves to avert hospital admissions. Outpatient care includes care provided by GP practices, outpatient clinics, home care services and local pharmacies. Preventative measures, both within and outside the health care system, also limit the need for hospitalisation. People who live healthier lives and are exposed to fewer risk factors such as indoor and outdoor air pollution run lower risks of contracting one of the chronic diseases in question, and hence of being hospitalised for them. This indicator focuses on avoidable admissions. Hospitalisation can still be necessary in cases such as inadequate response to correctly prescribed and administered medication, severe dysregulations, or comorbid problems or complications.

Figure 5.18: Numbers of hospital admissions with primary diagnosis of asthma per 100,000 population in a selection of OECD member state, in 2011 (unless otherwise indicated) (source: OECD, 2013a).

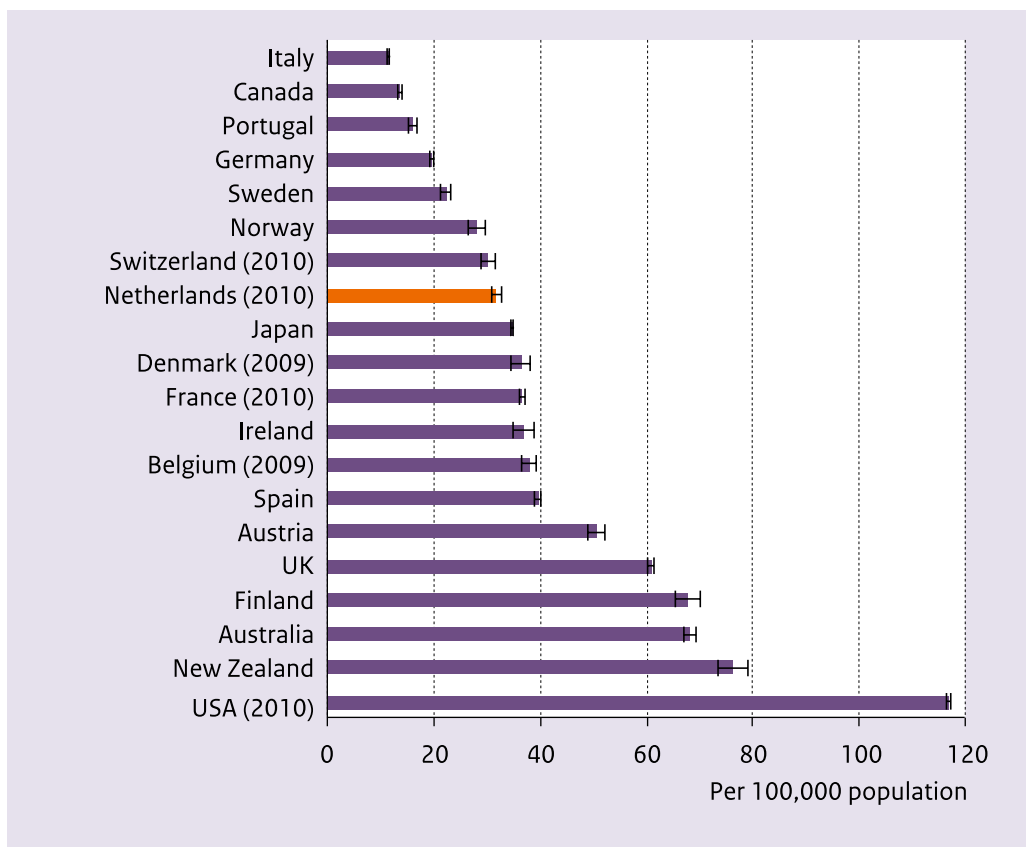
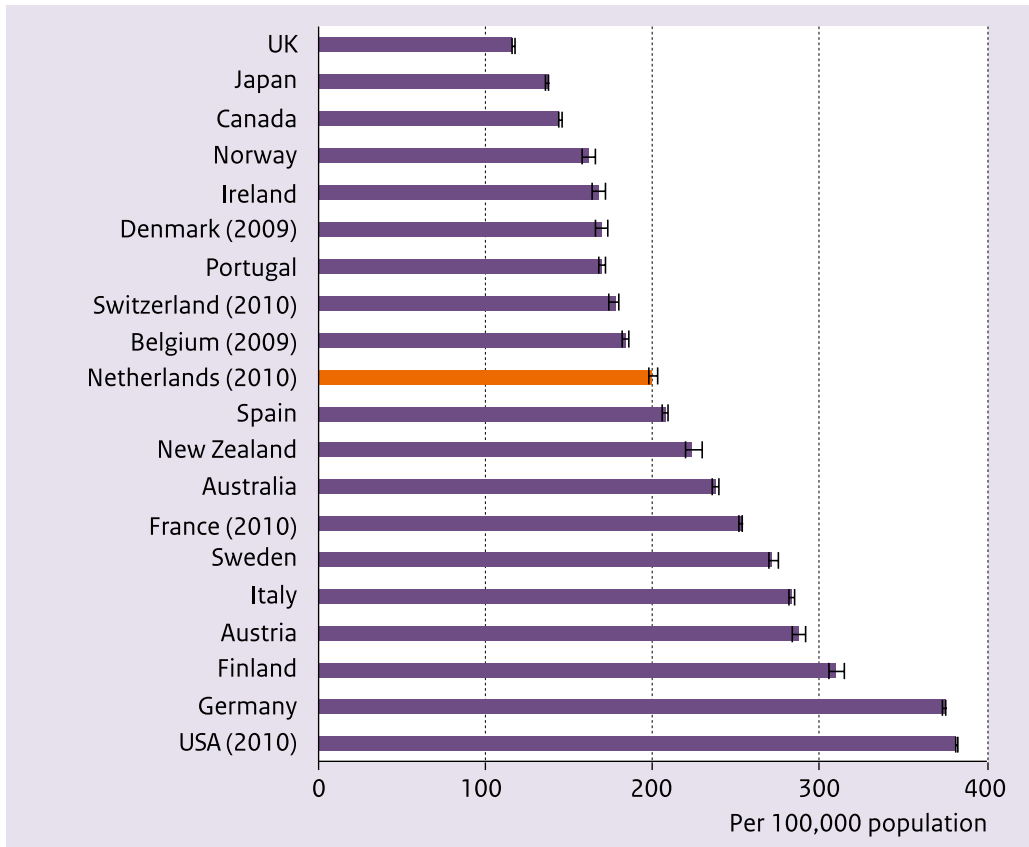


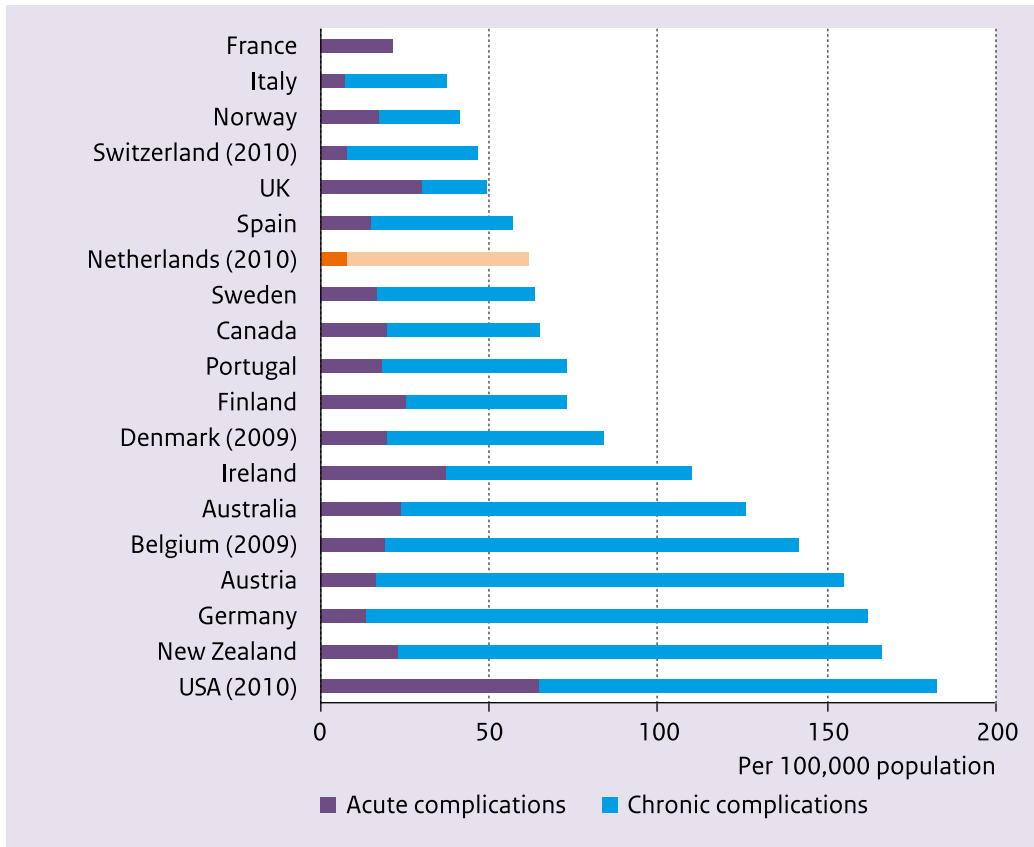
Figure 5.19: Numbers of hospital admissions with primary diagnosis of heart failure per 100,000 population in a selection of OECD member states, in 2011 (unless otherwise indicated) (source: OECD, 2013a).



The percentage of mental health interventions assessed for treatment effects and reported for benchmarking purposes increased substantially from 2011 to 2013

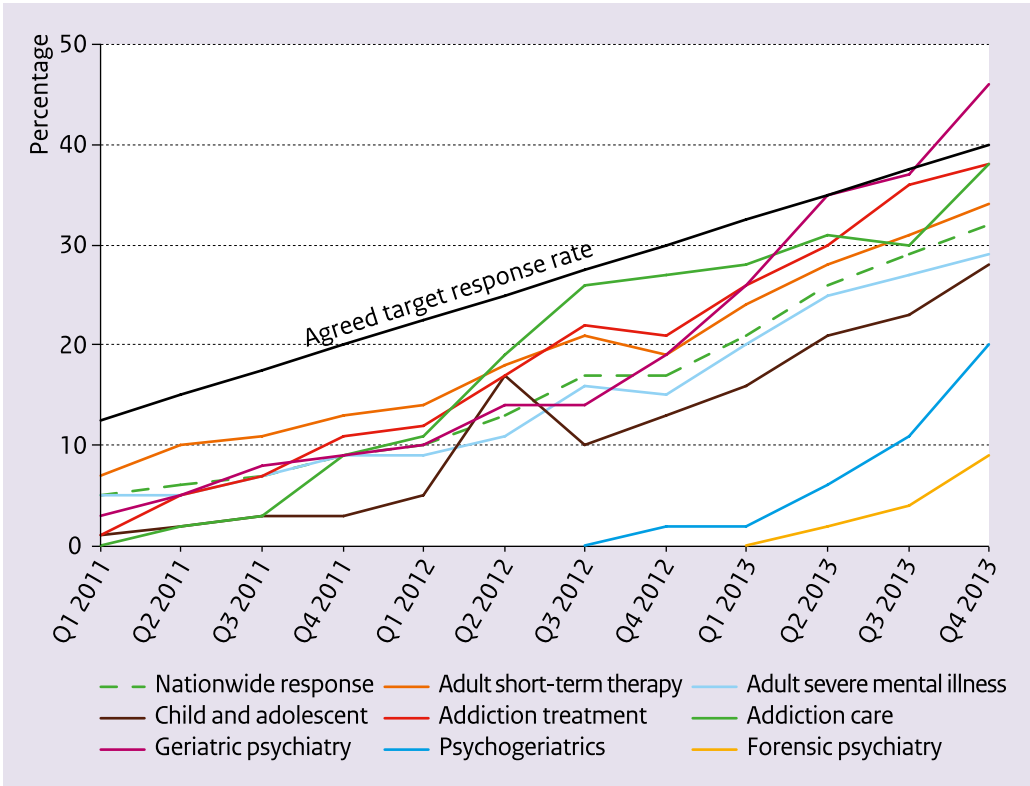
Routine outcome monitoring (ROM) in mental health care provides clarity to both treatment providers and clients about the course of the clients’ symptoms and about their personal functioning and life quality. Outcomes may give reason to adjust or terminate the therapy. The use of ROM can thereby improve the quality and efficiency of mental health care (de Beurs et

Figure 5.20: Numbers of hospital admissions with primary diagnosis of acute or chronic complications of diabetes mellitus per 100,000 population in a selection of OECD member states, in 2011 (unless otherwise indicated) (source: OECD, 2013a).



al., 2011). Clients complete regular questionnaires or therapists fill in assessment scales during the course of treatment. Different questionnaires are available for different categories of clients. Beyond the role of ROM in monitoring the course of treatment, it can also be used in mental health care benchmarking. ROM data can be aggregated to enable comparisons of different departments or health care organisations, thus throwing light on quality variations (see also section 11.5).

Figure 5.21: Three-year trends in response rates^a for routine outcome monitoring (ROM) in Dutch mental health care domains, 2011–2013 (source: SBG, 2014).



^a Percentages of completed episodes of care with pre- and post-assessments

ROM assessments are made in conjunction with episode-based treatment procedures (known in Dutch as diagnosis-treatment combinations or DBCs). In 2010, the Association of Dutch Health Insurers (ZN) and the Dutch Association of Mental Health and Addiction Care (GGZ Nederland) reached an agreement on implementing ROM in the mental health sector (ZN & GGZ Nederland, 2010). Each episode of care is to be accompanied, if possible, by pre- and post-assessment to detect any changes in the client’s symptoms, functioning and quality of life. Such changes are referred to as the treatment effect. According to the agreement, at least 50% of the episodes of care were to be assessed in this manner by year’s end 2014. Full 100% assessment will never be feasible, because some clients are unwilling or unable to take part in ROM assessments, have insufficient language mastery or abandon treatment prematurely.

By 31 December 2013, treatment effects in 32% of the completed initial episodes of care had been assessed and the data submitted to the Mental Health Care Benchmark Foundation (SBG). An initial episode is one in which treatment may take from several weeks to a maximum of one year. Rates of ROM assessment were above 28% in all domains but psychogeriatrics and forensic psychiatry, where ROM was implemented later (figure 5.21). Response rates have been recorded since 1 January 2011, and they have sharply increased in all domains from an average of 5% to 32%. The target rate was roughly achieved in the domains of geriatric psychiatry, addiction treatment, addiction care and adult short-term therapy, with other domains lagging somewhat behind.

The data cover 65% of all episodes of care. Some 25% of organisations, mainly small mental health care providers, had not yet submitted any data, and therapists in private practice (10%) were not required to submit data until 1 January 2014.

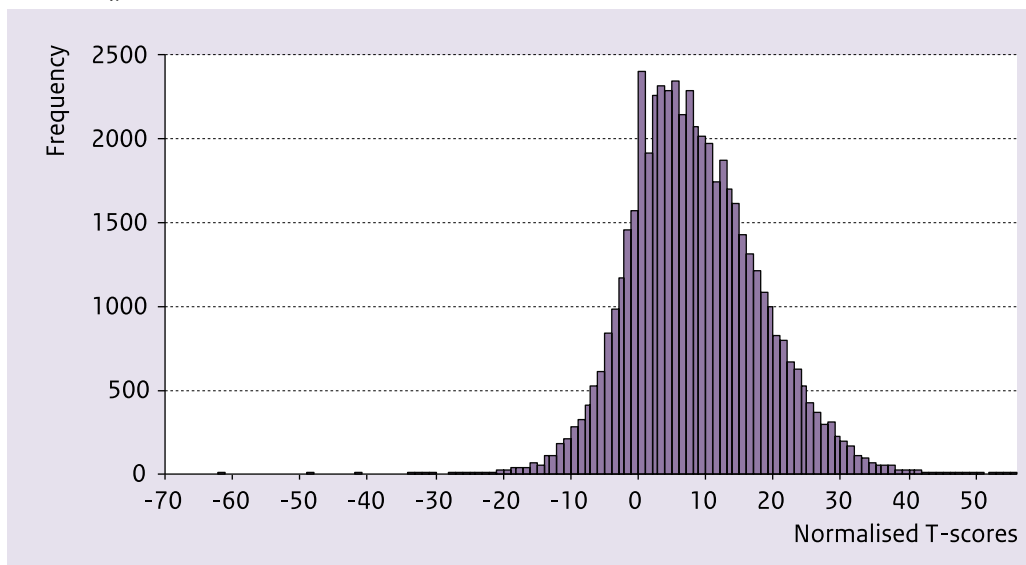
Reductions in symptoms were seen in more than three quarters of the short-term mental health interventions for adults

The greatest number of ROM assessments is available for the adult short-term therapy domain. This involves outpatient treatment for clients with commonly occurring conditions such as mood and anxiety disorders. It serves a large proportion of all mental health care clients, and its response rate was also high. From 1 January 2012 to 30 June 2013, treatment effects were assessed for 52,191 initial episodes of care. A treatment effect is the difference between pre- and post-assessment scores, expressed as normalised T-scores (a measure that enables comparison of scores deriving from different ROM instruments) (de Beurs, 2010). Although the difference score could theoretically have any value at all, in practice it ranged from -20 to +40 (corresponding to two standard deviations of problem exacerbation to four standard deviations of improvement).

As the frequency distribution of treatment effects in figure 5.22 shows, the mean effect was 7.8. Positive treatment effects (difference between normalised T-scores >0) were seen in 78% of the episodes of care. Clients thus showed improvement in a large majority of treatment episodes; in 23% of treatments the normalised pre- to post-treatment differences were 15 points or higher (treatment effects of 8.0 or greater are considered large effects).

An initial comparison of four large Dutch mental health organisations in terms of treatment effects has revealed considerable disparities. For initial episodes of care in the adult short-term therapy domain for clients with mood and anxiety disorders, completed between January 2012 and June 2013, the mean difference score was 7.8, but average scores ranged from 4.7 in the lowest-scoring organisation and 11.7 in the highest-scoring. For follow-up (second-year) episodes, the mean difference score was 3.0, but the range was 2.1 to 5.8. The fact that such differences can be detected between organisations and types of treatment episodes is evidence for the sensitivity of difference scores as a measure.

Figure 5.22: Frequency distribution^a of treatment effects in initial episodes of mental health care in the adult short-term therapy domain completed from 1 January 2012 to 30 June 2013, expressed as differences between pre- and post-assessment normalised T-scores (source: SBG, 2014).



^a Characteristics of the distribution: mean difference score 7.8 (minimum -62, maximum 55); standard deviation 9.5; N = 52191.

Positive treatment effects may arise from spontaneous recovery or pure chance as well as from treatment interventions. Differences between mental health organisations may result from dissimilarities in their clients' characteristics (casemix variations), including sociodemographic disparities, variations in the nature, severity and complexity of illness, and comorbidities. Scores may also be affected by the ways in which organisations collect data, by differential non-response rates and by non-response bias. Researchers are currently investigating to what degree such factors have indeed biased outcome scores and how to address this.

Patients receiving care from two or more health care providers often report problems in the planning and coordination of the care, but the Netherlands mostly stands up well in international comparison

To ensure optimum specialist medical care, both the specialist and the patient's GP need to have accurate information about the patient. That is also in the interest of patient safety. Many patients also dislike having to tell their story twice. An international study asked patients who had received specialist or inpatient hospital care in the previous two years whether they experienced problems in the planning and coordination of the care. From 9% to 27% of the Dutch respondents aged 18 or older affirmed such problems, depending on the topic (table 5.8).

Table 5.8: Percentages^a of persons aged 18 and older that reported experiencing problems with health care coordination in 2011–2013 (source: Faber et al., 2013).

Country	NL	DE	FR	NO	UK	SE	CH	AU	NZ	CA	US
Respondents that saw a specialist in past 2 years	383	824	994	570	323	1068	683	1025	491	2848	1171
...the specialist did not have the patient's basic data available from the GP	10	20	13	15	18	20	24	13	12	16	20
...the GP did not seem informed about the specialist care the patient had received	9	41	23	29	18	30	23	17	18	23	28
...contradictory information was received from different health care providers	19	18	14	17	7	15	12	16	17	15	19
Respondents hospitalised in past 2 years	205	292	347	231	142	483	331	392	191	901	444
...the GP had not arranged aftercare from a doctor or other professional ^b	27	48	42	39	19	37	30	24	26	26	20
Respondents hospitalised in past 2 years	203	286	344	228	136	464	325	388	189	871	419
...after hospital discharge, the GP was not aware of what hospital care had been received ^b	21	25	23	36	19	45	30	29	21	21	21
All respondents	1000	1125	1406	1000	1000	2400	1500	2200	1000	5412	2002
...a doctor did not have test results or medical files available during a consultation	10	7	10	7	6	8	9	7	9	11	17
...a doctor ordered a medical test or examination that was unnecessary because it had already been performed	14	15	11	8	5	4	18	9	6	7	15

^a The grey-shaded rows show the absolute numbers of respondents for that section. The other rows show the percentages, and cells with the highest and lowest values are tinted red and green.

^b This question was posed to respondents with a positive wording; for consistency of presentation in this table, we have subtracted the outcome percentages from 100.

NL = Netherlands, DE = Germany, FR = France, NO = Norway, UK = United Kingdom, SE = Sweden, CH = Switzerland, AU = Australia, NZ = New Zealand, CA = Canada, US = United States

A wider group of respondents, including those with no recent GP or specialist contact, were asked whether they had the experience that medical records or test results were not available during a consultation or that medical examinations or tests were unnecessarily ordered. Some 14% reported that tests or examinations had been ordered which had already been performed.

Planning and coordination problems occurred less frequently in the Netherlands than in many other countries. Fewer problems were reported only in the UK, New Zealand and Australia; levels in Canada and France were similar to the Dutch levels. Rankings were not the same for all problems. Reports that specialists lacked information from GPs were relatively infrequent in the Netherlands, but Dutch respondents reported rather more often that health care providers had imparted contradictory information or ordered unnecessary testing.

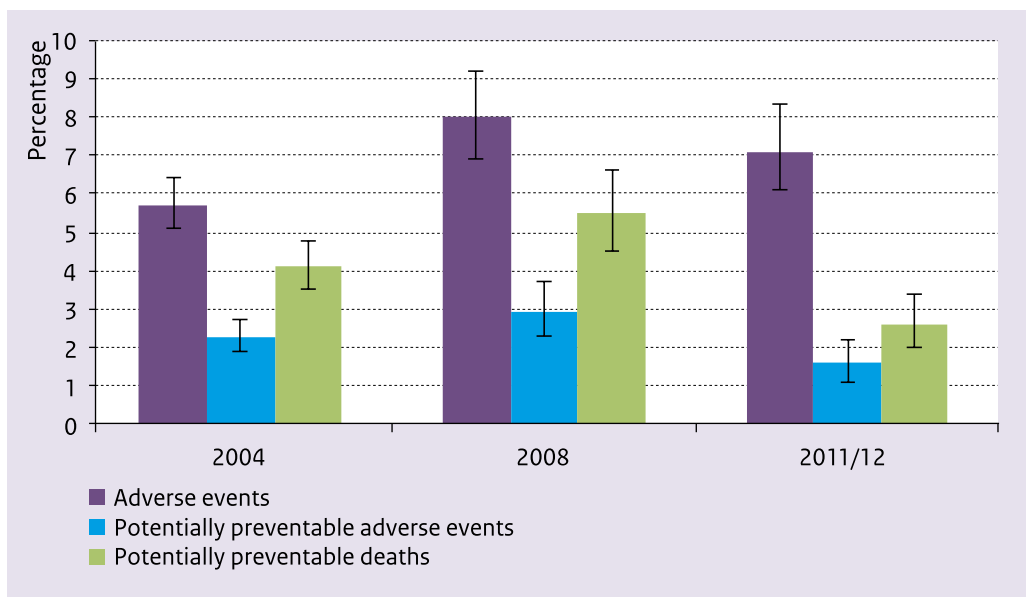
The study was conducted in 2013 in the general population aged 18 or older. Two years earlier, the same group of researchers had carried out a similar study in a sample of people who had moderate-to-poor health or who had utilised health care services in the two years prior to the questioning (Faber et al., 2011). Here, too, the Netherlands scored rather well, surpassed on all topics only by the UK.

The percentage of patients experiencing adverse events during hospitalisation remained stable in the 2008–2012 period; the rate of potentially preventable deaths sank from 4.1% to 2.6%

The Adverse Events Monitoring Study, conducted by the EMGO Institute for Health and Care Research and the Netherlands Institute for Health Services Research (NIVEL), has published three assessments in the course of time of adverse events (treatment-related harm) involving hospital inpatients. The latest study (1 April 2011–31 March 2012) estimated that 7.1% of patients experienced an adverse event during their stay in hospital. Most adverse events are probably attributable to actions, or failures to act, on the part of health care providers. Potentially preventable adverse events occurred in 1.6% of all hospital admissions; probable causes are insufficient adherence to professional standards for health care providers and shortcomings in the health care system. In 0.06% of all hospital admissions, patients died of potentially avoidable causes; of all in-hospital deaths, 2.6% were potentially avoidable. If we extrapolate such figures to the 1.6 million yearly hospital admissions in the Netherlands, that comes to 119,000 adverse events, 27,000 potentially preventable adverse events and 968 potentially preventable in-hospital deaths.

Previous assessments took place in 2004 and 2008. In the latest assessment in 2011–2012, the incidence of adverse events approximately equalled that in 2008 but was higher than in 2004. The rates of preventable adverse events and potentially preventable deaths were lower than in 2008 and 2004 (figure 5.23). The consequences of adverse events for the patients range from no injury at all to death; the consequences in 2011–2012 were less severe than in earlier assessments (table 5.9).

Figure 5.23: Percentages (with 95% confidence intervals) of Dutch hospital patients with adverse events and potentially preventable adverse events, and percentages of potentially preventable in-hospital deaths, in 2004, 2008 and 2011/12 (sources: de Bruijne, 2007; Langelaan et al., 2010; Langelaan et al., 2013).



The Adverse Events Monitoring Study obtains its data by reviewing patient records; the 2004, 2008 and 2011–2012 studies analysed patient files from 21, 20 and 20 Dutch hospitals (de Bruijne et al., 2007; Langelaan et al., 2010; Langelaan et al., 2013). Results from the 2004 study prompted the ministry of health to set a policy target to reduce avoidable harm in hospitals by 50% within five years (VWS, 2007). A patient safety programme entitled Prevent Harm, Work Safely was introduced in hospitals to promote that target. It consisted of a safety management system and ten safety focuses, which included vulnerable elderly, prevention of kidney failure and medication review at admission and discharge. By April 2014, 89 hospitals had certified or accredited safety management systems (VMSzorg, 2014). All Dutch hospitals explored the ten safety focuses from 2008 to 2012. Good practices were proposed for each of the focuses. Some findings of a later evaluation of the programme by NIVEL and EMGO (de Blok et al., 2013) were that there were disparities between hospital departments in implementing the focuses, that not all hospitals had fully addressed all the focuses and that many hospitals scored high on some focuses and lagged behind on others. To help improve and sustain the achievements made so far, the Health Care Inspectorate has included several safety indicators deriving from these focuses in its Basic Set of Hospital Quality Indicators for 2014 (IGZ, 2013a).

Table 5.9: Health impairment after discharge and mortality amongst patients who experienced adverse events in Dutch hospitals in 2004, 2008 and 2011–2012 (sources: de Bruijne et al., 2007; Langelaan et al., 2010; Langelaan et al., 2013).

	2004 (N=663) (%)	2008 (N=467) (%)	2011/2012 (N=390) (%)
No impairment or minor impairments resolved within one year	85.0	81.5	88.8
Persisting impairments or invalidity	5.0	4.9	1.2
Death	8.0	9.7	4.5
Not ascertainable	2.0	4.0	5.5
Total	100	100	100

The EMGO/NIVEL study also compiled data from patient record studies from abroad dealing with preventable adverse events in hospitals. Notwithstanding some dissimilarities between the studies in terms of definitions and reference years, it can be cautiously concluded that the Dutch situation is relatively positive (Langelaan et al., 2013).

The percentage of Dutch patients that experienced medical, medication or diagnostic errors in 2011 was rather high in international comparison at 20%

In an international study conducted in 2011, 20% of interviewed Dutch patients reported that one or more errors had been made during treatment or care they received in the previous two years. Incidents included medical errors, errors in the prescribing or dispensing of medicines, errors in the conduct of medical examinations or testing, communication of erroneous test results and belated communication of abnormal test results. The rate of errors was similar to the rates in Australia, Canada, New Zealand, Norway, Sweden and the USA; considerably lower rates were found in Switzerland and the UK, and Germany and France were in between (table 5.10). In all countries, the numbers of reported errors were higher in treatments involving more than one doctor (Schoen et al., 2011). Distinguishing between the types of errors, we see that Dutch patients were the most frequent to receive erroneous results from medical examinations or testing; relatively few reported being belatedly informed of abnormal results.

Table 5.10: Percentages^a of persons aged 18 and older who were in moderate-to-poor health or utilised health care services that experienced a medical error in 2009–2011 (sources: Faber et al., 2011; Schoen et al., 2011).

Country	NL	DE	FR	NO	UK	SE	CH	AU	NZ	CA	US
Total respondents	1000	1200	1001	753	1001	4804	1500	1500	750	3958	1200
Medical error	11	8	6	17	4	11	4	10	13	11	11
Respondents taking at least one form of medication	737	829	715	593	783	3478	1156	1114	505	2840	914
...received the wrong medication or dosage	6	8	6	8	2	5	2	4	7	5	8
Respondents who underwent a medical test or examination	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.
...received erroneous results	6	2	3	4	2	3	3	4	5	5	5
...were informed belatedly about abnormal results	5	5	3	10	4	9	5	7	8	11	10
Total respondents	1000	1200	1001	753	1001	4804	1500	1500	750	3958	1200
...experienced medical, medication or diagnostic error or belated test results (sum total)	20	16	13	25	8	20	9	19	22	21	22

^a Cells with highest and lowest values are tinted red and green.

n.r. = Numbers of respondents not reported

NL = Netherlands, DE = Germany, FR = France, NO = Norway, UK = United Kingdom, SE = Sweden, CH = Switzerland, AU = Australia, NZ = New Zealand, CA = Canada, US = United States

The hospital standardised mortality ratio (HSMR) dropped by 34% in the 2007–2012 period

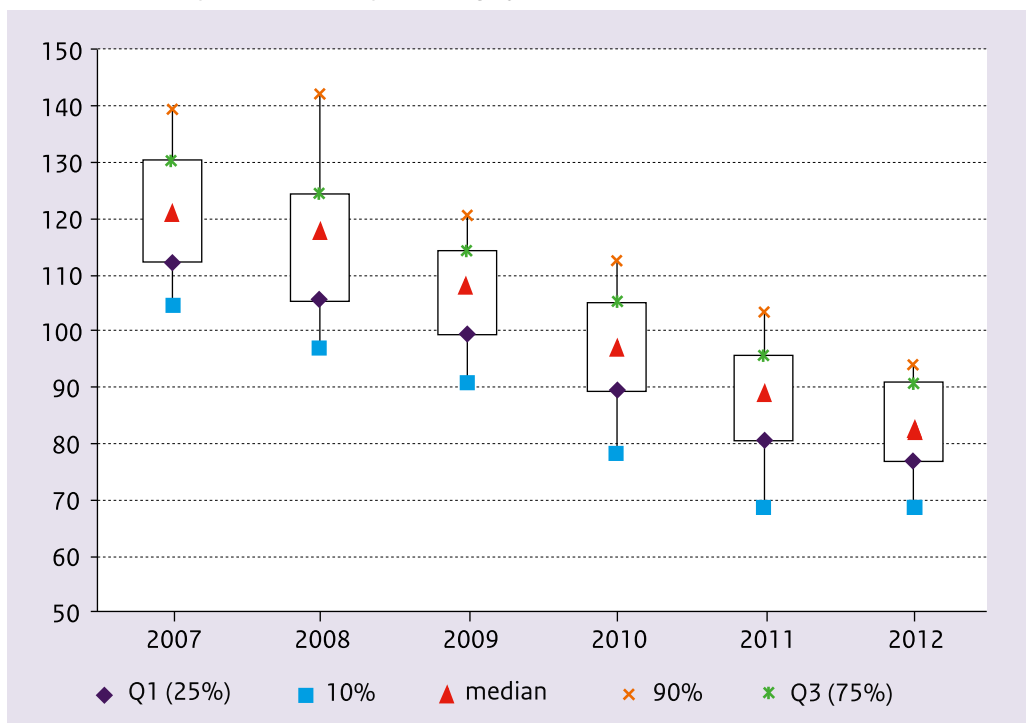
The hospital standardised mortality ratio (HSMR) enables comparison of hospitals in terms of mortality rates. A hospital's HSMR indicates the risk that a patient will die while hospitalised there relative to the risks in other hospitals (Jarman et al., 1999; Heijink et al., 2008).

Of the 100 Dutch hospitals, 61 satisfied the criteria for comparison using the HSMR. The other 39 were excluded from the analysis for various reasons, including insufficient submissions to the National Medical Register (LMR) in one or more years, inadequate data quality, or patient populations too dissimilar from those of other hospitals. For the 61 analysed hospitals, the mean HSMR for the entire period studied was set at 100. If a hospital had an HSMR of 100, that meant its mortality rate precisely equalled the expected rate (calculated with data from all the years included); a higher figure indicated more deaths than expected and a lower figure fewer deaths. In 2007, the median mortality ratio for the 61 hospitals was 21% above the expected rate, but by 2012 it had diminished to 18% below the expected rate. That is a decrease of 34% in the hospitals' median mortality rate in the 5-year period (figure 5.24). The hospitals with the highest mortality in 2012 were at approximately the same level as those with the lowest mortality in 2007. The ranges of variation in HSMR between hospitals did not change systematically during the period studied.

The HSMR allows for a number of factors that influence hospital mortality but lie outside the control of a particular hospital, such as greater numbers of patients with serious medical conditions or with higher ages. In calculations of the HSMR, the actual mortality rate is divided by the mortality that would be expected after a series of characteristics of hospitalised patients have been taken into account. These include age, urgency of admission (acute or planned), primary diagnosis, severity of illness, comorbidity (medical problems in addition to the primary diagnosis), socioeconomic status and provenance of patients (home, other hospital, other institution).

The characteristics urgency of admission, primary diagnosis, severity of illness and comorbidity are sensitive to the manner and thoroughness of record-keeping. If such factors change in the course of time, that can affect HSMR levels. Analysis by Statistics Netherlands (CBS) has shown that record-keeping about comorbidity has improved over time (Israëls et al., 2013); if higher numbers of comorbid conditions are recorded, the HSMR automatically decreases. The HSMR is also sensitive to length of hospital stay; if the duration of stays decreases over time, the mortality rate will most likely also decline, and with it the HSMR. In the 2007–2011 period, the average length of Dutch hospital stays decreased from 6.3 to 5.3 days (CBS StatLine, 2013a).

Figure 5.24: Hospital-standardised mortality ratios (HSMR, with median and percentiles), 2007–2012^a, indexed on the multiple-year mean (N=61) (sources: National Medical Register (LMR), Dutch Hospital Data; data processing by Statistics Netherlands).



^a Decline of 34% in HSMR over 2007–2012 period (determined by linear regression analysis).

Considerable debate exists about whether hospitals with high HSMRs have high numbers of preventable deaths, and thus perform more poorly than those with low HSMRs (Israëls et al., 2013; van Gestel et al., 2012). Critics say the HSMRs of different hospitals are not readily comparable. Besides differences in the methods and rigour of record-keeping, hospitals may have highly dissimilar patient populations. These relate to a hospital's function. Supraregional hospitals that are specialised in particular medical conditions or complex surgical interventions have different patient populations than general hospitals that treat people with less complicated conditions.

The level of availability of hospices and community palliative care in a particular region may be a further factor in the admission and discharge policies of hospitals and in the referral, admission and readmission histories of the patients. For the use we make of HSMRs in this Performance Report, such aspects need to be taken into account only if they have changed over time. That may therefore apply here to comorbidity recording and to admission and discharge policies. If hospitals have altered their range of services over time (as by opening a cardiology unit or discontinuing certain types of surgery), that could also affect HSMR variations over time.

In 2013, an average of 3.2 health care infections per 100 hospital patients were registered, down from 6.2% in 2008

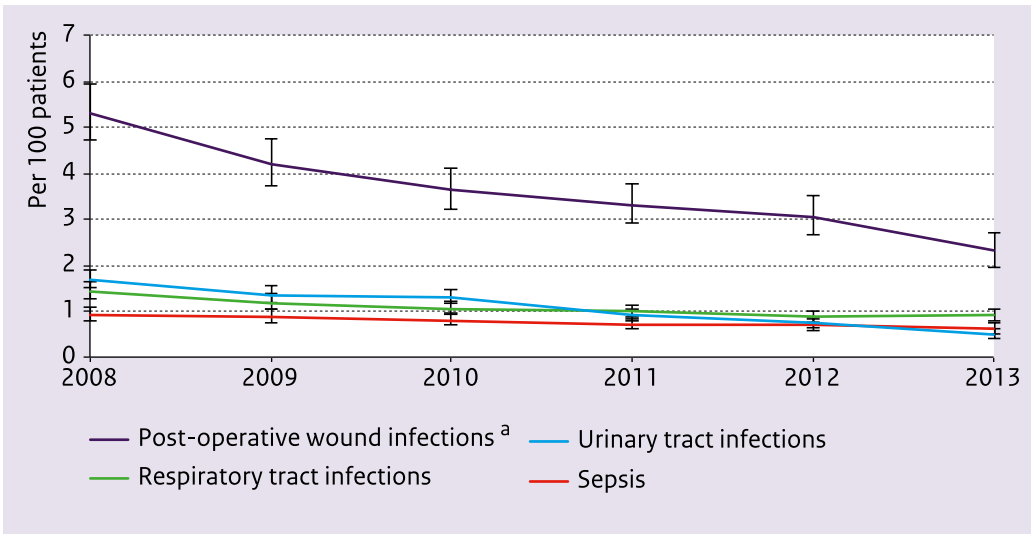
The prevalence of health care-associated infections in Dutch hospitals dropped from 6.2 per 100 hospital patients in 2008 to 3.2 per 100 in 2013. Variations were large, ranging from 0.0 to 6.7 per 100 patients for the 54 evaluated hospitals in 2013; these were attributable in part to the differences in patient populations. The reported figures are point prevalences. A point prevalence is the ratio of the total number of infections to the total number of persons in a hospitalised population at a particular point in time. Any patients with more than one infection are counted more than once.

Hospital-acquired or nosocomial infections develop during hospitalisation or hospital treatment, and they can cause serious complications. Many such infections can be prevented if hospital staff adhere to the guidelines set by the Dutch working parties on infection prevention (WIP) and antibiotic policy (SWAB). Figure 5.25 shows the prevalence of the most common hospital infections over the period from 2008 to 2013. The most frequent infections were post-operative wound infections, and the rates shown for them apply only to the population of patients who had undergone surgery. The other rates apply to the entire hospital patient population at the time of the assessment. The rate of post-operative wound infections decreased significantly ($p < .01$) in the 5-year period, but closer data analysis will be needed to interpret why. Significant declines were also seen for sepsis, urinary tract infections and respiratory tract infections. We have not yet been able to determine reasons for the declining rates of infection; possible factors may be closer adherence to hygiene rules and shorter hospital stays.

Since March 2007, semi-annual nationwide prevalence studies are carried out in hospitals under the auspices of PREZIES, the Dutch surveillance network for nosocomial infections. A total of 70 hospitals, including 7 university medical centres, take part in these assessments.

International comparisons of the prevalence of hospital-acquired infections are not yet feasible, as records are incomplete and poorly comparable. In cooperation with a number of EU countries, European Centre for Disease Prevention and Control (ECDC) designed a standardised protocol in 2010 to guide such prevalence research. All participating countries have since carried out such assessments at least once, but the data are not yet suitable for international comparison.

Figure 5.25: Number of most common hospital-acquired infections per 100 Dutch patients (with 95% confidence intervals), 2008–2013 (source: PREZIES data; data processing by PREZIES).



^a Rates of post-operative wound infections expressed as percentages of surgery patients only

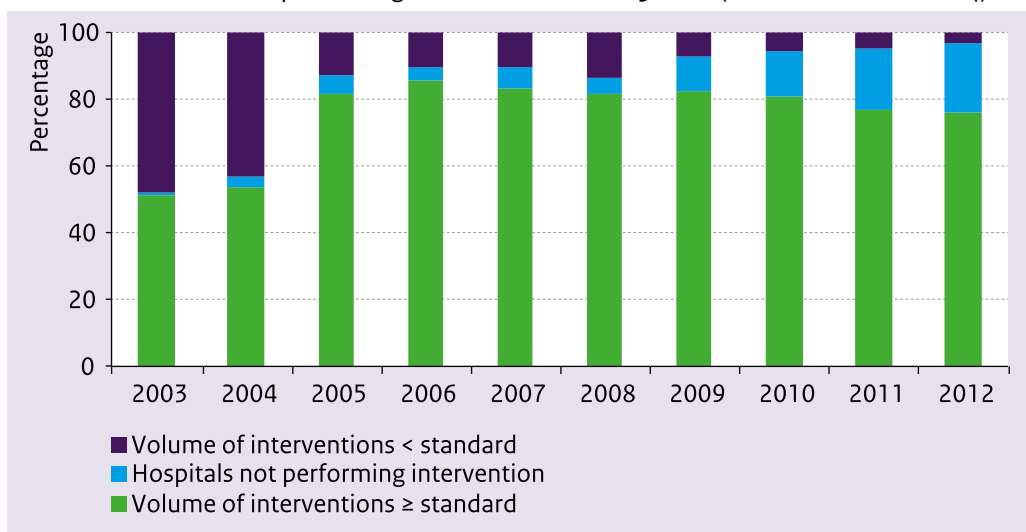
The numbers of hospitals performing surgery for abdominal aortic aneurysms, oesophageal cancer and pancreatic cancer have decreased; fewer hospitals now fall short of volume standards for those operations

To keep expertise up to standard on every type of surgical intervention and to safeguard patient safety, it is important for hospitals to perform operations regularly. Surgical teams require ample experience, especially for interventions with higher risks. Several scientific professional organisations, including the Association of Surgeons of the Netherlands (NVvH) and the Foundation for Cooperation in Oncology (SONCOS), have established quality standards for specific treatment procedures and surgical interventions. Virtually all such standards include a volume component.

Three of the 72 Dutch hospitals that performed elective (non-emergency) repair interventions for abdominal aortic aneurysms (AAA) in 2012 did not meet the minimum volume standard for that intervention. That was a slight decrease compared to previous years. In 2012, 19 hospitals performed no elective AAA interventions at all, up from 17 a year earlier (figure 5.26). The number that performed neither elective nor acute AAA interventions rose from 1 to 13 between 2003 and 2010 (IGZ, 2014b).

The number of hospitals performing fewer than the volume minimum of oesophageal or cardia resections (surgical removal of parts of the oesophagus or the gastric cardia) dropped from 40 in 2003 to 3 in 2012 (IGZ, 2014b), and the number not performing that intervention

Figure 5.26: Percentages of Dutch hospitals satisfying or not satisfying volume standard^a for AAA interventions or not performing the intervention, 2003–2012 (source: IGZ, 2006–2014).



^a Health Care Inspectorate yearly standard: 15 acute and elective AAA interventions altogether before 2009, 20 in 2009–2010, 20 elective interventions from 2011 (IGZ, 2011–2013)

rose from 42 to 69 (figure 5.27). During the period of centralisation of those interventions (1989–2009), both the 6-month mortality rate and the 3-year survival ratio improved (Dikken et al., 2012).

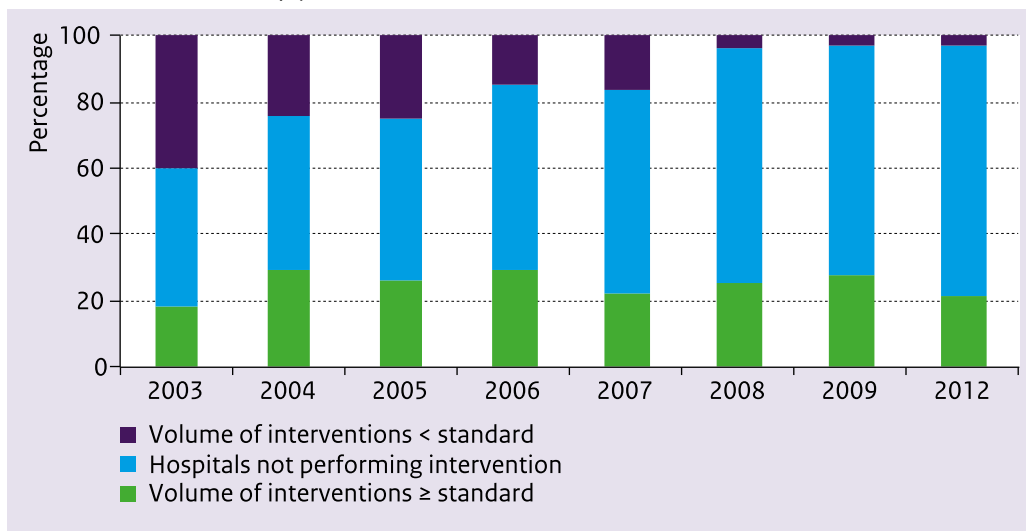
In 2010, there were 27 hospitals that performed pancreatic resection surgery, and 15 of them did not meet the minimum volume standard (IGZ, 2012a); that number sank to 2 of the 21 hospitals performing the operation in 2012 (figure 5.28). As with oesophagogastric surgery, many Dutch hospitals never perform such interventions. The number not performing the operation increased from 67 to 71 in the 2010–2012 period.

Of the 58 hospitals performing bladder resections, 6 failed to meet the volume standard of ten operations per year in 2012, down from 9 hospitals the previous year (figure 5.29); the number not performing the operation decreased from 36 to 34 from 2011 to 2012.

In sum, there is an apparent trend towards concentration of surgical services for abdominal aortic aneurysm repair and oesophagogastric and pancreatic resection. The numbers of hospitals not performing these procedures is increasing and the numbers failing to attain the volume standards is declining. No clear trend is evident yet for bladder resections.

The three former procedures are complex, higher-risk interventions. It is known from the literature that they have better outcomes when hospitals and surgeons perform them more

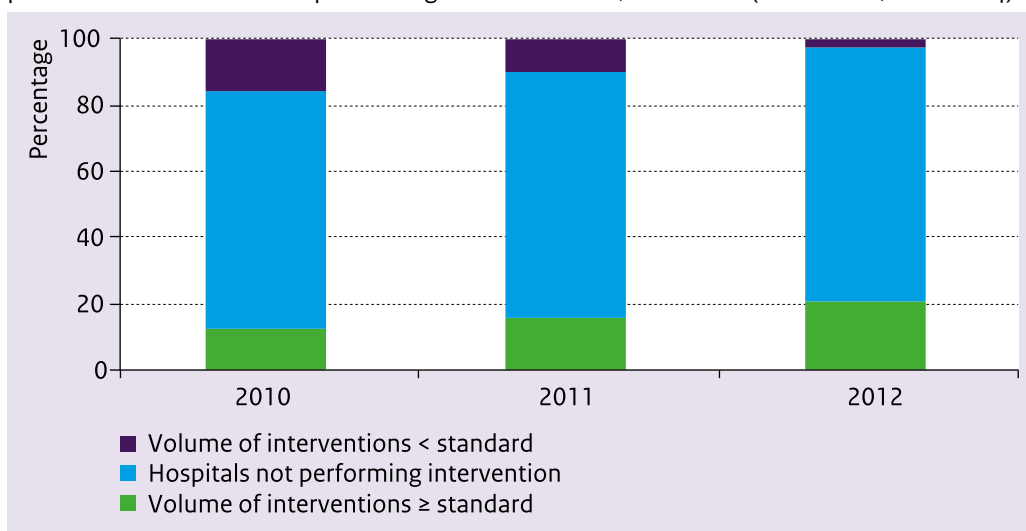
Figure 5.27: Percentages of Dutch hospitals satisfying or not satisfying volume standard^a for oesophageal resections or not performing the intervention, 2003–2009 and 2012^b (sources: IGZ, 2006–2011; IGZ, 2014b).



^a Health Care Inspectorate yearly standard: 10 oesophageal resections before 2010, 20 in 2012 (IGZ, 2011b; IGZ, 2014b)

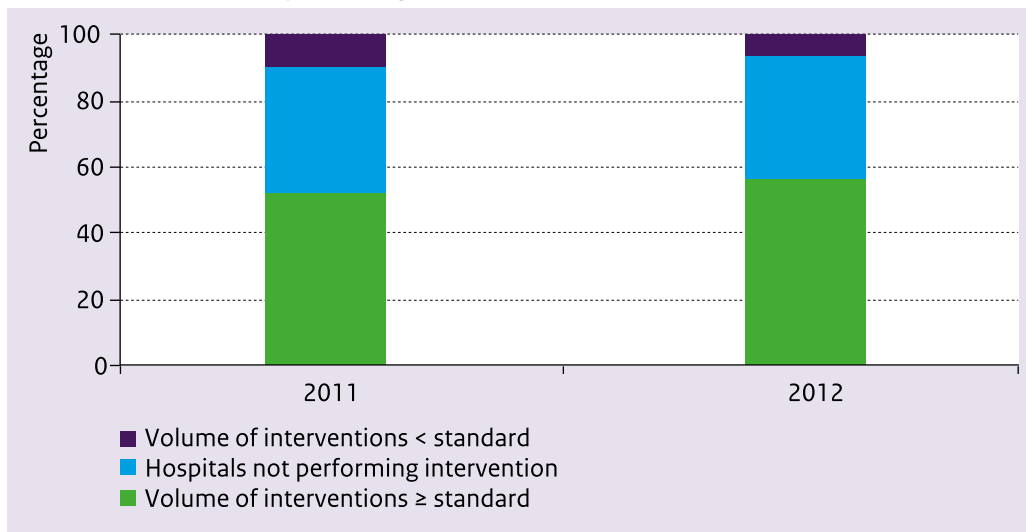
^b Indicator not assessed by Inspectorate in 2010 and 2011

Figure 5.28: Percentages of Dutch hospitals satisfying or not satisfying volume standard^a for pancreatic resections or not performing the intervention, 2010–2012 (source: IGZ, 2012–2014).



^a Health Inspectorate standard: 20 pancreatic resections per year, 2010–2012 (IGZ, 2012–2014)

Figure 5.29: Percentages of Dutch hospitals satisfying or not satisfying volume standard^a for bladder resections or not performing the intervention, 2011–2012 (source: IGZ, 2012–2014).



^a Health Care Inspectorate standard: 10 bladder resections per year 2011–2012 (IGZ, 2013–2014)

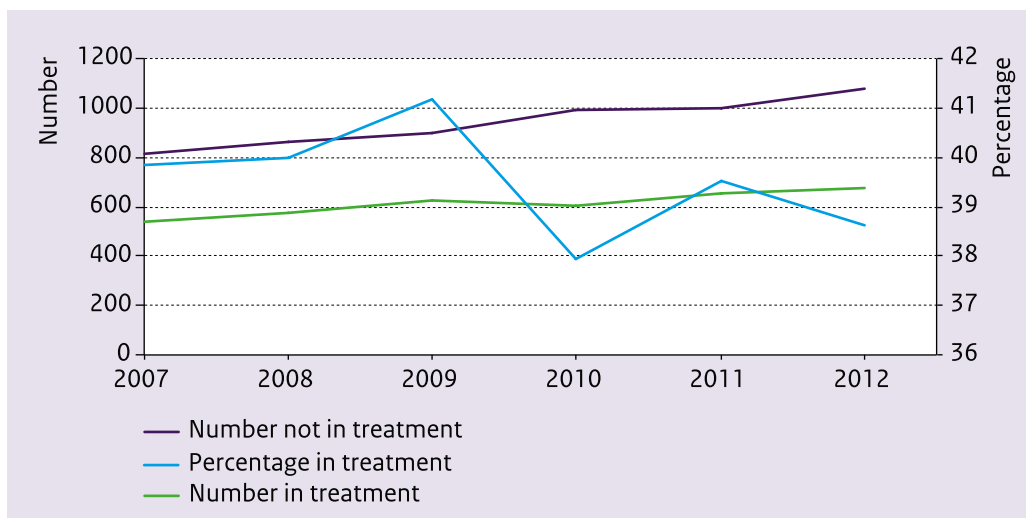
frequently (IGZ, 2005; Hurks, 2011; Dikken et al., 2012; Zuiderent-Jerak et al., 2012; de Wilde et al., 2012). For bladder cancer operations, that association appears to hold for surgeons but not for hospitals (Zuiderent-Jerak et al., 2012).

Research by the Netherlands Integrated Cancer Centre (IKNL) has confirmed the association between volume standards, service concentration and improved patient outcomes in surgical interventions for pancreatic, oesophageal and bladder cancer. The volume effect on post-surgical mortality was clearest for bladder cancer operations; mortality was lower in university medical centres and in hospitals with higher volumes of surgery. The variations found between hospitals were nonetheless much smaller in the 2008–2011 period than in 2004–2007 (IKNL, 2014a).

About 40% of Dutch people who take their own lives are in mental health treatment at the time of their deaths; the absolute number of people committing suicide while in treatment increased in the 2007–2012 period, but less strongly than the number taking their lives while not in treatment

The prevention of suicide and suicide attempts is one of the priority focuses in the Dutch mental health sector. In cooperation with a wide range of stakeholders in the field of mental health, the health minister published a nationwide suicide prevention agenda in January 2014 for the period 2014–2017 (VWS, 2014c). A large percentage of people who commit suicide have mental health problems and are being treated for them professionally. The Multidisciplinary

Figure 5.30: Numbers of suicides in the Netherlands by persons in treatment in a mental health service and those not in treatment, 2007–2012^a, and percentages by persons in treatment in relation to total suicides (sources: IGZ, 2013b; CBS StatLine, 2013b).



^a The Health Care Inspectorate modified its suicide reporting system as from 1 May 2012, possibly causing a minor trend shift.

Diagnosis and Treatment Guidelines for Suicidal Behaviour (Groot & van de Glind, 2012) and the Quality Document on Continuity of Care in Suicidality (Hermens et al., 2010) contain recommendations for averting suicide by people who are receiving mental health treatment.

In 2012, 677 people in mental health treatment committed suicide. That means approximately 78 suicides per 100,000 clients in treatment (calculated from data in GGZ Nederland, 2013a). A further 1,076 suicides were committed by persons who were not in mental health treatment (about 6.5 per 100,000 population). The absolute number of suicides by persons in mental health treatment increased by 23% from 2007 to 2012, and the absolute number by persons not in treatment increased by 32%. Amongst all the people who died of suicide during that period, the percentage who were in treatment diminished slightly, though yearly fluctuations were seen (figure 5.30).

The number of suicides by people in mental health treatment provides some evidence about the implementation and effectiveness of suicide prevention strategies in the mental health sector. If a rise in suicides is reported, that could give cause to review those strategies. The number of suicides during mental health treatment has been designated as a patient safety indicator in Australia and the USA as well (Brickell et al., 2009). About 90% of people who commit suicide have an underlying mental disorder (Gonda et al., 2012). If the percentage of persons committing suicide while in treatment increases over time relative to the total number

who commit suicide, that could be an indication that mental disorders are being recognised more effectively and that individuals with a high suicide risk are at least in contact with mental health treatment providers. For that reason, the relative and absolute indicators must be analysed in conjunction. Comparisons of suicide statistics between different mental health organisations serves little purpose, in view of the wide variations in the size and types of patient populations they have and the very low absolute numbers of suicides per organisation.

The data on the numbers of suicides by people in mental health treatment derive from the reporting system operated by the Health Care Inspectorate. All mental health and addiction services report yearly to the Inspectorate on the numbers of suicides and suicide attempts with serious injury by clients they have in treatment. Treatment providers in independent practice do not take part in the reporting system, nor do forensic psychiatric services. As a rule, such numbers are not made public by the Inspectorate at either the organisation or the aggregate level, because they are considered too sensitive (personal communication).

Suicide statistics became available nonetheless after an application by the Argos radio programme under the Government Information Public Access Act (WOB) (IGZ, 2013b). The number of suicide attempts with serious injury was not disclosed. Suicide statistics for the 2003–2006 period have been published in the *Nederlands Tijdschrift voor Geneeskunde* (van Dishoeck et al., 2013). These fluctuated around 600 per year. The reporting system was modified as from 1 May 2012. Mental health organisations now submit aggregated numbers via a web-based application; previously, background information on the suicidal clients was also submitted.

The use of coercive measures in psychiatry eased from 2009 to 2012, but measures such as lengthy seclusion and mechanical restraint are still being applied

The number of coercive measures applied annually in Dutch mental health institutions decreased in the four years from 2009 to 2012 from 355 to 284 per 1000 admissions (table 5.11), a drop of 22%. Incidence rates declined for all types of coercive measures. Seclusion was the most frequently applied measure. The numbers of hospitalised clients placed in seclusion fell by 38%, from 10.8% to 6.5%; the total episodes of seclusion per 1000 admissions sank by 20%.

The figures were obtained from the Argus Case Register maintained by the Dutch Association of Mental Health and Addiction Care (GGZ Nederland). Seclusion in a high-security room (involuntary confinement in a government-approved seclusion room with dedicated furnishings) is the most frequently applied coercive measure. It is followed by seclusion in a low-security room (involuntary confinement in a non-government-tested room with more ordinary furnishings), seclusion in other spaces (including the client's own room), enforced medication and mechanical restraint. Enforced fluids and feeding and other measures physically resisted by patients were not often administered (to 28 and 17 clients respectively in 2012). Seclusion in a high-security room is applied predominantly to clients with severe mental conditions such as schizophrenia, bipolar disorders or substance dependence. Seclusion in a low-security room and seclusion in another room are relatively more frequent in forensic psychiatry, and mechanical restraint is administered most often in geriatric psychiatry (Janssen et al., 2014).

Table 5.11: Numbers of coercive measures in Dutch mental health institutions^a per 1000 admissions in 2009–2012 and absolute numbers in 2012 (sources: Janssen et al., 2014; Casusregister Argus, 2014).

Year	Number of interventions per 1000 admissions ^b					Absolute numbers ^b
	2009	2010	2011	2012	4-year change (%) ^c	2012
Number of admissions	31,393	39,273	55,824	75,794		75,794
Number of institutions	8	14	31	55		55
Measures						
Seclusion in high-security room	152.5	147.5	133.1	122.7	-20.2	9469
Seclusion in low-security room	64.2	59.1	42.8	56.1	-19.8	4251
Seclusion in other spaces	84.1	46.4	48.6	48.3	-43.5	3647
Enforced medication	96.1	61.0	65.7	52.5	-43.1	3336
Mechanical restraint	^d	59.1	30.6	38.5	-38.8	2928
Enforced fluids or feeding	numbers too small for meaningful presentation					405
Other physically resisted measures	numbers too small for meaningful presentation					55
Total number of measures ^e	354.9	311.9	277.8	283.7	-21.6	20,933

^a Excluding forensic psychiatric services

^b In episodes where several measures were administered simultaneously, these were recorded separately in each appropriate category.

^c Determined using linear regression analysis, with the trend for mechanical restraint assessed over a 2-year time span.

^d No nationwide figures available

^e Total is lower than the sum because more than one measure can take place during a single admission.

The median duration of the interventions in 2012 ranged from 4.2 hours for seclusion in a low-security room to 37.1 hours for confinement in another room (table 5.12). When interventions are interrupted for less than 24 hours, the time spans before and after the interruption are added together; if an interruption lasts longer than 24 hours, the resumption of the intervention counts as a new episode. Interventions in 2012 were frequently enforced for more than one week; that applied to 11% of the seclusions in a low-security room, 17.5% of the seclusions in a high-security room and 28% of the confinements in another room. Wide variations were seen between client categories: the median duration of seclusions in a high-security room was 3.2 hours in child and adolescent psychiatry, 17.7 hours in forensic

Table 5.12: Duration of coercive measures in Dutch mental health care institutions^a, in 2012 (sources: Janssen et al., 2014; Casusregister Argus, 2014).

Interventions	Median number of hours	Distribution (in %) of durations in days					
		<1	1-7	7-21	21-42	42-90	≥ 90
Seclusion in high-security room	17.7	45.3	37.2	13.4	2.7	1.1	0.3
Seclusion in low-security room	4.2	66.6	22.7	7.0	2.2	1.2	0.3
Seclusion in other spaces	37.1	49.2	22.5	11.3	6.4	6.2	4.4
Mechanical restraint	11.5	55.1	19.1	12.1	5.9	4.1	3.8

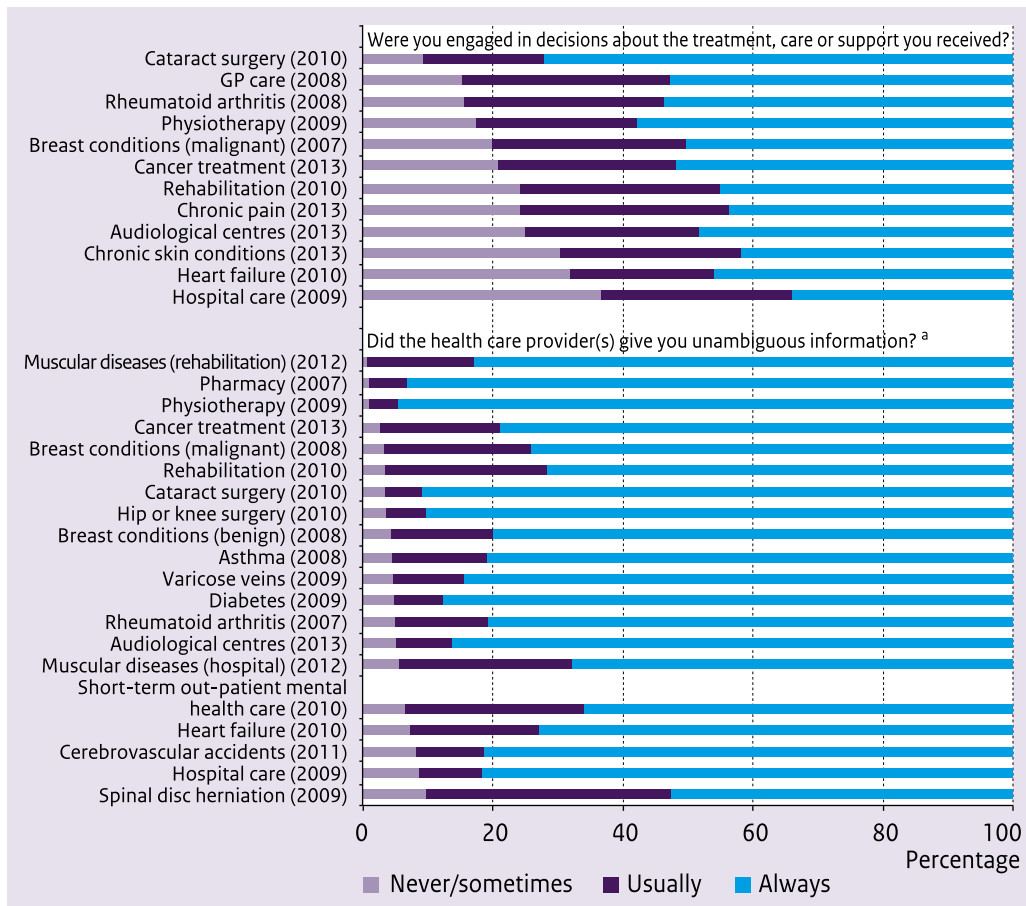
^a Including forensic psychiatric services

psychiatry, 20.0 hours in institutions for clients with severe mental illness and 23.0 hours in geriatric psychiatry.

The observed trends shown in table 5.11 are rough estimates, as increasing numbers of institutions began reporting to the case register over time and the categorisations of ward types were modified. The composition of the client population in 2012 therefore differed from that in 2009.

The international statistics on the use of coercive measures vary sharply. A review that compiled the results of an assortment of studies and registers in 12 different countries found that the numbers of hospitalised clients who were subject to coercive measures varied from 0 per 1000 in Iceland to 360 per 1000 in Austria (Steinert et al., 2010). In comparison to other countries, the Netherlands had relatively high rates of seclusion and low rates of mechanical restraint. The average duration of both seclusion and mechanical restraint was many times higher in the Netherlands than in all other countries. The international study had various limitations. The figures dated from some time ago (2003 for the Netherlands), they were based on 12 separate studies of which each had its own method, the numbers of hospitals involved were limited in some countries, the client populations were possibly dissimilar and the use of enforced medication was not assessed. A more recent comparison indicates that the percentage of hospitalised clients subject to coercive measures in the Netherlands is comparable to those in other Western countries (Janssen et al., 2014). Some cultural differences appear to exist in terms of the types of measures used (Steinert & Lepping, 2009; Janssen et al., 2014). Seclusion in a high-security room is the measure of choice in the Netherlands, Belgium, Finland, Switzerland and New Zealand; in Germany and Austria it is mechanical restraint; and in the UK and Australia it is mechanical restraint in combination with enforced medication.

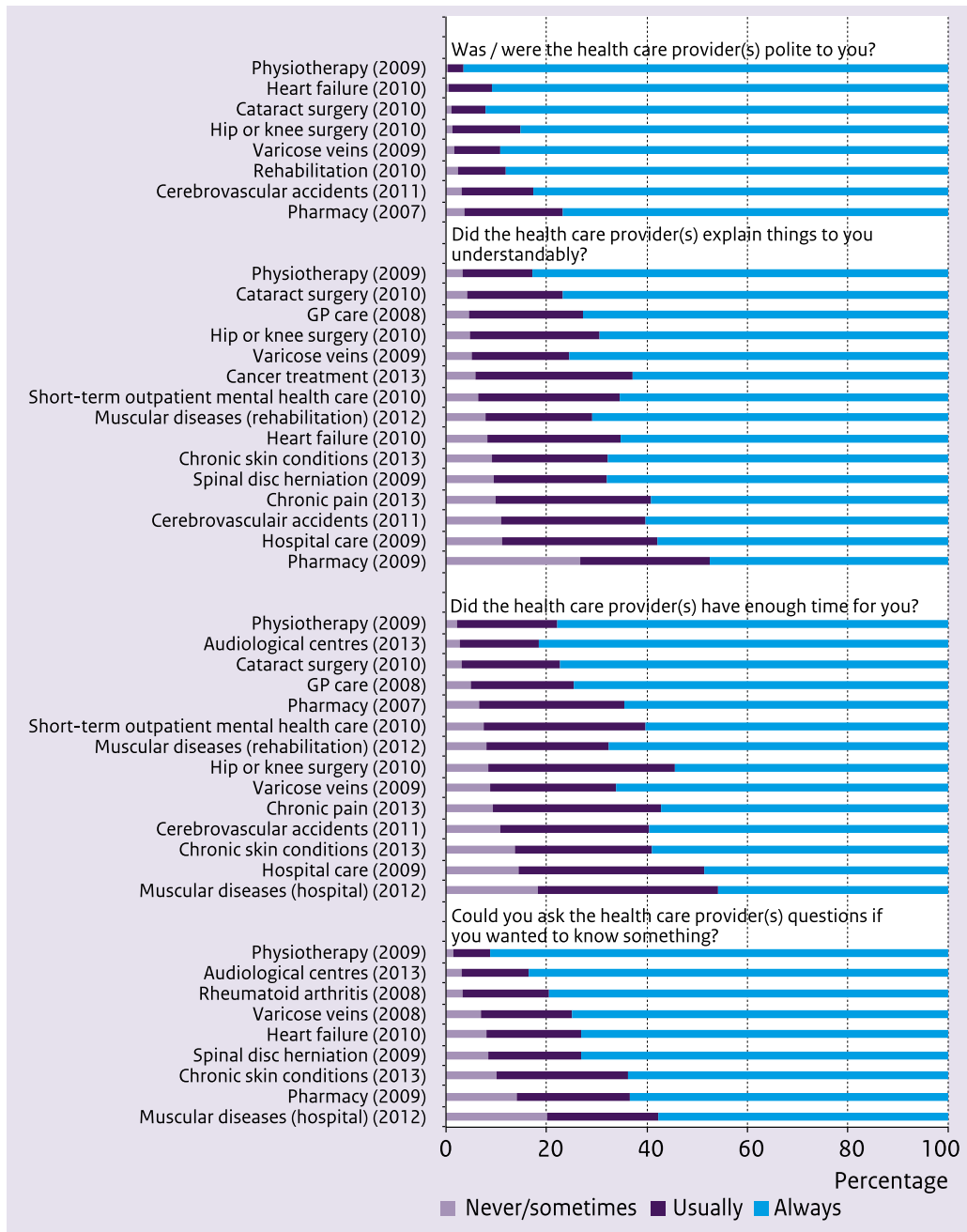
Figure 5.31a: Patient-reported experiences with involvement in decisions and uniformity of information, by type of health care (source: NIVEL, CQ-index; see Appendix 3).



^a The original question was 'Did the <<health care provider(s)>> give you contradictory information?' To maintain consistency of presentation, we have reworded the question here.

Curtailement of the number and duration of measures that restrict freedom of movement has been one of the priority focuses of the Dutch Association of Mental Health and Addiction Care since 2004. Alternative containment strategies are available, but they are possibly not being sufficiently employed. The Health Care Inspectorate carried out an investigation of seclusion in mental health institutions in the period 2008–2011 and concluded that the situation had to be improved (IGZ, 2011c). In 2014, the Inspectorate is again to focus attention on coercive measures (IGZ, 2014c). In their Administrative Agreement on the future of mental health care for 2013 and 2014, the Dutch health ministry, mental health care providers and health insurance companies agreed to curb the numbers of coercive measures (Landelijk Platform

Figure 5.31b: Patient-reported experiences with communication with health care providers, by type of health care (source: NIVEL, CQ-index; see Appendix 3).



GGZ et al., 2012). A particular effort is to be made to reduce the duration of seclusion. The purpose of the Argus Case Register and the Coercion and Compulsion Project (Project Dwang en Drang, GGZ Nederland, 2013) is to provide clarity to institutions and the sector about the frequency of the use of coercive measures. Such knowledge may aid them in evaluating and possibly revising policies.

Although health care patients are treated politely, they are not always engaged in decisions about treatment or other services; patient-centredness varies considerably by treatment type

Most health care patients (80%–90%) say they are always treated politely by health care providers. They are the least positive about the degree to which they are engaged in decisions about the treatment, care or support they are to receive. Some 37% of hospital patients said they were never or only sometimes engaged in decisions. More study is needed as to what they understood by this, as patients tend to interpret the question about involvement in decisions less straightforwardly than other questions. However, patient involvement in decisions is obviously an issue that needs attention. Patients are rather positive about their room to ask questions or the amount of contradictory information they receive. Other results are depicted in figures 5.31a and 5.31b.

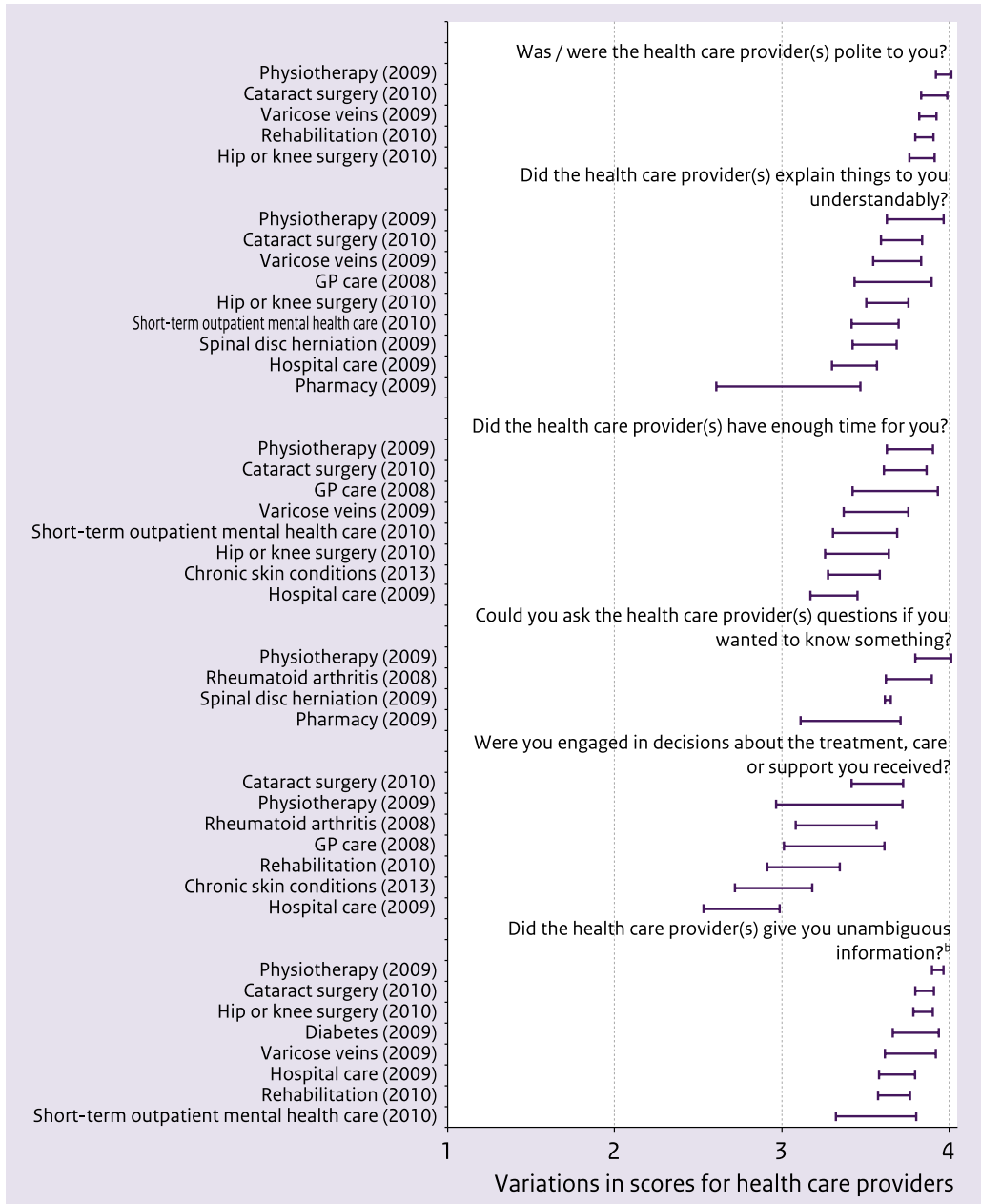
Considerable differences can be seen between the categories of patients. More than 90% of physiotherapy clients reported good experiences with the opportunity to ask questions, compared to only 60% of pharmacy customers or people receiving hospital treatment for muscular disorders. In some respects, such differences may be understandable, as pharmacy contacts are generally brief and infrequent whereas intensive therapeutic relationships often develop with physiotherapists. Hospitals may be experienced as anonymous bureaucracies that are easier to criticise.

It also seems logical that patients judge information they receive in strictly protocol-driven treatments as being clearer than in treatments for which various options are available, as with spinal disc herniation. Additional research might better explain the reasons for the differences between patient categories.

Figures 5.31a and 5.31b show differences between the various types of health care assessed. Patients in some types of care or treatment perceive more opportunities to ask questions than people in other types. Differences are also seen between the various providers within particular types of care. Figure 5.32 shows the ranges of good patient experiences within each type. The longer the bar, the greater the variation in good patient experiences with health care providers in that type of care.

The variations between providers are generally limited, with the bar occupying only a small range in the X-axis scale. One result that again stands out in comparison to other issues is the wider range of variation in the perceived involvement in decision making. On some other items, variation in satisfaction with pharmacies can be seen to be greater than the variations for other types of providers.

Figure 5.32: Variations^a between health care providers in the extent to which patients experienced the quality of communication and information as good (source: NIVEL, CQ-Index; see Appendix 3).



^a The bars depict variations between different health care providers in each type of care in terms of patient-reported satisfaction with aspects of communication and information provision. The variations are expressed as the range in which 95% of provider scores are expected (see appendix 3). The scores 1, 2, 3 and 4 correspond to the answers ‘never’, ‘sometimes’, ‘usually’ and ‘always’.

^b The original question was ‘Did the <<health care provider(s)>> give you contradictory information?’ To maintain consistency of presentation, we have reworded the question here.

Table 5.13: Percentages of hospital patients^a aged 18 and older in 2011 that reported receiving various types of discharge information (source: Faber et al., 2011).

Country	NL	DE	FR	NO	UK	SE	CH	AU	NZ	CA	US
Numbers of hospitalised patients in preceding two-year period	581	634	559	418	563	2811	944	964	489	2116	656
Percentages that											
... received instructions on what symptoms to watch out for and when to contact a doctor	77	70	65	69	88	70	85	82	80	83	92
... knew whom to contact for questions about the medical condition or treatment	90	89	79	87	93	83	90	87	88	88	93
... received a written plan for post-operative care	54	69	62	54	80	48	69	68	66	70	92
... received very clear instructions about what medicines should be taken	77	77	69	77	90	82	85	83	86	86	94

^a Cells with highest and lowest values are tinted green and red.

NL = Netherlands, DE = Germany, FR = France, NO = Norway, UK = United Kingdom, SE = Sweden, CH = Switzerland, AU = Australia, NZ = New Zealand, CA = Canada, US = United States

When it comes to the patient-centredness of general practitioners, the experiences of Dutch GP patients are slightly better than those in most other Western countries (OECD, 2013a). Patient experiences appear to be still better in Luxembourg, Switzerland and Germany. The following aspects were assessed: taking sufficient time, explaining comprehensibly, giving opportunities to ask questions and involving patients in decisions about care and treatment.

Table 5.14: Percentages of hospital patients^a aged 18 and older in 2013 that reported receiving written discharge information (source: Faber et al., 2013).

Country	NL	DE	FR	NO	UK	SE	CH	AU	NZ	CA	US
Numbers of hospitalised patients in preceding two-year period	205	292	347	231	142	483	331	392	191	901	444
Percentages that											
... received written information on what to do when back home and what symptoms to watch out for	67	69	70	59	79	55	69	73	77	78	92

^a Cells with highest and lowest values are tinted green and red.

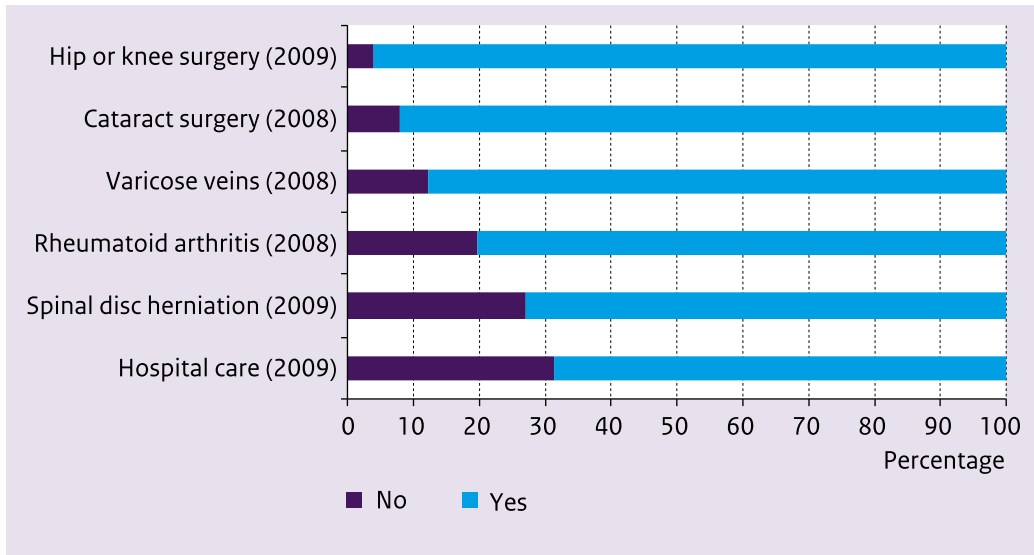
NL = Netherlands, DE = Germany, FR = France, NO = Norway, UK = United Kingdom, SE = Sweden, CH = Switzerland, AU = Australia, NZ = New Zealand, CA = Canada, US = United States

Many Dutch hospital patients receive no written information at discharge; the percentages receiving information vary with the type of treatment

A study by the Commonwealth Fund in 2011 compared the experiences that patients in 11 countries had with the provision of information when they were discharged from hospital. Dutch patients were much less likely than those in most other Western countries to have received a written plan for post-surgical care (table 5.13). On other aspects of information provision, they did not differ much from patients in other countries. The question was repeated in 2013 with a somewhat different wording. The Netherlands still scored below average (table 5.14); New Zealand, Canada, the UK and especially the USA scored best.

In the Netherlands, different categories of patients reported different levels of information provision at discharge (figure 5.33). The percentages receiving written or verbal information on what they should and should not do after returning home from hospital varied from 69% to 95%. Patients who had had surgery received information relatively frequently, but those hospitalised for varicose veins, rheumatoid arthritis or spinal disk herniation received it less frequently. The outcome was least favourable in the diverse ‘hospital care’ category. That the quality of the discharge process in Dutch hospitals needs improvement was likewise evident in an international study in which patients, their carers, hospital doctors and nurses, GPs and community nurses were interviewed (Hesselink et al., 2013). In a Dutch study, wide variations were found between different hospitals and between hospital departments. An initial step towards improvement would be to develop suitable information materials at a nationwide level (Berendsen, 2013).

Figure 5.33: Percentages of patients receiving written or verbal information at hospital discharge (source: NIVEL, CQ-index; see Appendix 3).

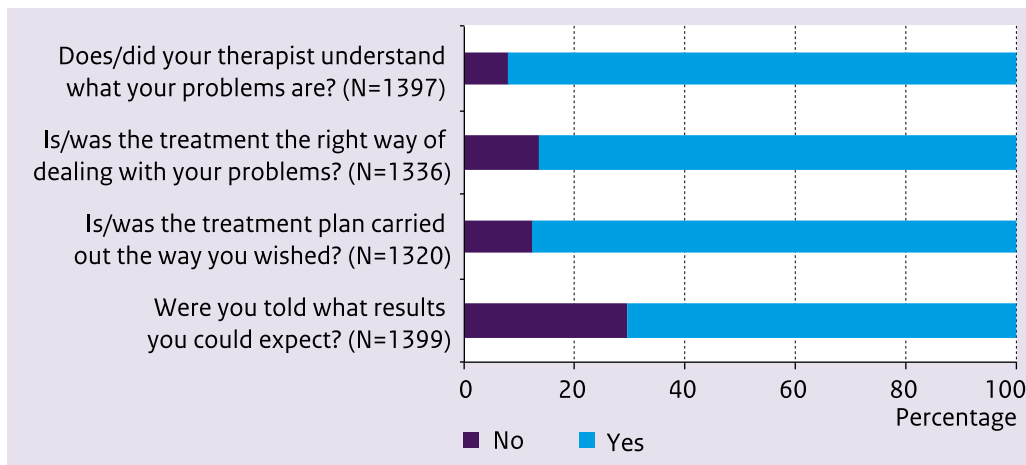


More than 85% of people receiving short-term outpatient mental health care feel the therapy was the appropriate response to their problems and express satisfaction with the delivery

Amongst clients who received outpatient mental health care in the primary and secondary sectors, more than 90% reported that the provider understood their problems well, and over 85% affirmed that the therapy was the appropriate response to their problems and that the treatment plan was carried out satisfactorily (figure 5.34). When a client applies for mental health care, the treatment provider and client draw up a treatment plan together that includes a description of the symptoms, the treatment procedure and the objectives. Fewer clients (about 70%) reported that the expected outcome of the treatment was discussed. It is unclear why the other 30% implied that the expected outcome was not discussed. Possible reasons are that the outcome was too unpredictable to be articulated or that an expected outcome was not discussed as explicitly as it should have been. More research is needed on this question.

More than 90% of all clients of the primary and secondary mental health care sectors receive short-term outpatient treatment lasting less than two years (van Hoof et al., 2011).

Figure 5.34: Patient evaluations of the planning and delivery of their treatment plan in short-term outpatient mental health care, in 2009 (source: NIVEL, CQ-index; see Appendix 3).



5.3.3 Costs

Because the costs of health care cannot be distinguished in terms of acute and non-acute care, a comprehensive review of health care expenditures is provided in chapter 8.

5.4 Conclusions

Our 30 indicators for the current state of affairs in non-acute health care in the Netherlands give no cause for concern, with a number of exceptions. Trends over time are generally positive and comparisons with other countries are seldom unfavourable. Most indicators did raise some issues for further attention.

The numbers of Dutch people who were more than six months in arrears on their health insurance premiums mounted to over 316,000 in the 2010–2013 period. Many defaulters have other debts and are difficult to contact. The 2012 International Health Policy Survey found that higher percentages of people in the Netherlands were foregoing medical treatment on cost considerations than in many other Western countries, with the United States as a notable exception. A Dutch study concluded that about 2% of the Dutch population went without necessary health care due to costs. A positive development was the decline in the number of uninsured people to under 29,000 by year’s end 2013.

In other aspects of health care we studied – financial accessibility, geographical accessibility and timeliness – shortcomings emerged in some areas. Timeliness is important in non-acute health care services, if less so than in acute services. Travel times to reach primary care services and hospitals are low in the Netherlands, excepting a very few regions.

Research in 2010 revealed that 42% of Dutch GP practices did not answer the telephone in person within two minutes, a similar figure to two years previously. Waiting times that exceeded the Treek standard for appointments with medical specialists declined from 24.1% to 13.8% in the 2009–2014 period, although wide variations existed between clinical specialties, ranging from less than 11 days for surgeons to as much as 5 weeks for allergy services. Because neither primary nor specialised mental health care keep central records of waiting times, it is difficult to assess trends. Concerns have recently been voiced by both family members and GPs of people with mental health problems about increasing snags in mental health referral. It therefore seems advisable to monitor the accessibility of mental health care (Landelijk Platform GGZ, 2014; Wiegant, 2014).

The number of people awaiting organ transplants declined by 20% over a 10-year period to 1,149 in 2013. Most of these were awaiting kidney transplantation. People who received donor kidneys in 2013 had been waiting for 960 days on average. In international perspective, the Netherlands scores low on the numbers of successful organ transplants from deceased donors but high on transplants from living donors. The receding waitlists are explained largely by a growing number of living donors.

General practitioners frequently prescribe medicines in conformity with professional guidelines, but guideline deviations are regularly seen for patients with certain health conditions, in particular cardiovascular disease and depression. Although antibiotics are still often prescribed by GPs, the frequency diminished from 2010 to 2012. The use of antibiotics is very low in the Netherlands in comparison with other countries. The numbers of hospital admissions for asthma, COPD and acute complications of diabetes mellitus is likewise lower than in other Western countries, an indication that primary care and outpatient secondary care help to prevent serious symptoms from developing. The numbers of admissions for heart failure and chronic diabetes complications are less favourable, with the Netherlands scoring in the middle range. For people diagnosed with the types of cancer for which Dutch screening programmes are in place – breast, cervical and colorectal cancer – 5-year relative survival ratios remained stable or increased mildly in the 2000–2011 period; in international comparison, Dutch survival ratios for these forms of cancer are in the middle range.

Self-reports from people who have received short-term outpatient mental health care indicate that more than 90% perceive that the therapist understood their problems well and that more than 85% feel the treatment was appropriate to their problems and satisfactorily delivered. In 2013, 32% of the larger Dutch mental health services submitted routine outcome monitoring (ROM) data on treatment effects to the Mental Health Care Benchmark Foundation (SBG). Symptoms diminished in more than three quarters of clients receiving short-term therapies.

Some 40% of Dutch people who commit suicide are in mental health treatment at the time of their deaths; an increase occurred from 2007 to 2012 in the absolute number committing suicide while in treatment. The rate of coercive measures in mental health care decreased by an estimated 22% in the four years from 2009 to 2012. The duration of such interventions in hours is high in international perspective.

Patient self-reports on the quality of Dutch health care are rather positive. The least favourable data concern a lack of involvement in treatment-related decisions, time limitations in medical consultations and a lack of understandable explanations from doctors. The provision of patient information during hospital discharges varies strongly with the type of treatment performed. Some countries have higher rates of discharge information provision than the Netherlands. Patients under the treatment or care of more than one health care provider regularly report problems in the planning and coordination of the care; the Netherlands still performs rather well in international comparison, surpassed only by the UK, Australia and New Zealand.

Improvements in patient safety have been seen in recent years. The Dutch hospital standardised mortality ratio sank by 34% from 2007 to 2011, although variations between hospitals persisted. The percentages of patients that experienced potentially preventable adverse events during hospitalisation decreased from 2004 to 2012, as did the rate of preventable in-hospital deaths. Prevalences of hospital-acquired infections also decreased in the 2008–2012 period.

Since the Dutch Health Care Inspectorate began enforcing volume standards for complex surgical interventions, the numbers of hospitals performing too few operations have declined sharply: in 2012, two such hospitals were still performing surgery for pancreatic cancer, six for bladder cancer and three for oesophageal cancer. According to patient self-reports, patient safety could be improved still further; patients in some other countries, including Switzerland and the UK, report fewer medical errors than Dutch patients.

6

Living with long-term illness or functional limitations

Key findings

- Few people are involuntarily on waiting lists for long-term care longer than the permissible waiting times, but nearly 18,000 people are waiting for care from a provider of their first preference.
- Most clients obtain care within the maximum permissible waiting times.
- The time elapsing between approval and initiation of home help services is less than one month for the majority of clients.
- Most informal carers for people with dementia judge the waiting times for obtaining psychosocial and practical support for their own needs as acceptable.
- The numbers of multiple-bed rooms in nursing and residential care homes continue to decrease.
- The percentages of clients with pressure ulcers have sharply declined in recent years.
- The percentages of clients who are malnourished or at risk of malnutrition have decreased in recent years.
- The percentages of care home clients experiencing fall incidents remained steady in recent years.
- Restraints are used in one in five care home residents in a 30-day period.
- When staff in various sectors rated the quality of the care delivered in their organisations, nursing home care workers gave the least positive ratings.

- One in ten professional care providers in 2013 rated the quality of the care delivered within their own units or teams as regularly or often inadequate.
- Some 42% of care workers in nursing homes and 51% of those in residential care homes believed that sufficient staff was generally available to ensure good-quality care.
- Residents of residential care homes and nursing homes, and representatives of those with psychogeriatric issues, were particularly critical of the quality of care.
- Amongst clients receiving long-term mental health care, the most criticism is about information provision, the amount of consensus among staff and the adjustment of support plans.
- The Netherlands rates well on the quality of dementia care in comparison with other European countries.
- Community support services provided under the Social Support Act spark improvement in perceived self-reliance and social participation.
- Informal care provision constrains social participation.
- Total public long-term care insurance expenditure increased by nearly €27 billion from 1972 to 2013.
- Total public long-term care insurance expenditure was nearly €28 billion in 2013.
- Dutch expenditure on long-term care is high in comparison with that in Finland and France.
- Co-payments by Dutch clients receiving long-term care have increased by more than 10% in recent years.
- Higher-than-average expenditure from statutory health insurance and long-term care insurance occurs for people with disabilities or multiple chronic diseases.
- Regional variations are found in average long-term care insurance expenditure per capita.
- Local authority expenditure for community support services provided under the Social Support Act averaged €225 per resident in 2010.
- Measures to curtail personal health budgets (PHB) reduced the numbers of PHB holders in 2012, but total expenditure on PHBs increased.

6.1 Background

In 2011, about 5.3 million people in the Netherlands were living with a chronic physical or mental health condition, and 1.9 million of them had two or more such disorders (Gijzen et al., 2013). Some 1.8 million people aged 12 or older reported in 2012 that they experienced auditory, visual or mobility limitations (CBS StatLine, 2013). There were about 130,000 people with intellectual disabilities in 2011 (Gommer & Poos, 2013). More than 125,000 people in 2012 were eligible for long-term mental health care funded by the AWBZ insurance scheme (GGZ Nederland, 2014). The estimated number with dementia had topped 260,000 by 2013 (Alzheimer Nederland, 2014). The above figures are not to be summed together, as there is considerable overlap between the various groups. Some of those with long-term psychiatric illness or functional impairments, for example, are included in the numbers with chronic illness.

By and large, people with chronic illnesses or functional impairments utilise more health and social care than people without such conditions. This includes services from primary care providers, hospitals and specialists, associated health professionals and pharmacists, which

are covered by their statutory health insurance under the Health Insurance Act (ZVW). It also includes long-term care funded under the Exceptional Medical Expenses Act (AWBZ), as well as social care and assistance provided under the Social Support Act (WMO). In 2012, approximately 825,000 people, or some 5% of the total Dutch population, utilised some form of AWBZ-funded care, and nearly 95% of these also utilised non-GP services funded under the ZVW (Vektis, 2013a).

This chapter reviews the accessibility, quality and cost of long-term care in the Netherlands. Long-term care includes nursing care, personal care, support and assistance which are provided to people with chronic health conditions or functional limitations. Long-term care is delivered either in the home or in residential facilities. The primary focus in this chapter is on services funded via the AWBZ and the WMO. Previous chapters dealt largely with health care provided under the purview of the Health Insurance Act (ZVW). Obviously those services are also utilised by people with long-term health problems, but they are not the subject of the current chapter. In 2013, wide-ranging reforms were proposed to the Dutch system of long-term care. Various functions are to be modified or transferred from the national government to municipalities. Community support services (e.g. adult day services) and short-term stays in care homes for some client groups will now be transferred from AWBZ to WMO funding, alongside the home help function, which was already transferred in 2007. Nursing and personal care (home care) will be transferred from AWBZ to ZVW auspices, where it will be paid for by health insurance companies. The core AWBZ that will then remain (the new Long-Term Care Act, WLZ) will cover care for people who are no longer able to live in domestic environments (VWS, 2013c; VWS, 2013d).

6.2 Indicators for long-term care

In addition to the indicators we used in previous issues of the Performance Report, we have selected new indicators pertinent to key issues arising from the reform of long-term care – including client autonomy, self-reliance and social participation. We explore the accessibility, quality and costs of long-term care from the perspectives of professional care providers, clients and informal carers. In comparison with the previous Performance Report, we devote more attention to the interests of informal carers in particular, as they are envisaged to play an increasingly prominent role in the provision of long-term care and assistance.

Accessibility (and availability)

- Numbers of people involuntarily on waiting lists for long-term care longer than the permissible waiting times
- Percentages of clients obtaining care within waiting times prescribed by Treek standards
- Percentages of clients receiving home help services within one month of approval
- Percentages of informal carers of people with dementia who receive timely psychosocial and practical support for their own needs

Quality

- Numbers of multiple-bed rooms in residential and nursing homes

- Avoidable problems in clients in care homes and home care: pressure ulcers, malnutrition, malnutrition risks, falls, restraint use
- Percentages of professional care providers expressing satisfaction with the quality of care delivered by their organisation
- Percentages of professional care providers rating the quality of care delivered within their own unit or team as inadequate
- Percentages of professional care providers reporting that sufficient staff and qualified staff is available to ensure good-quality care
- Percentages of clients and their representatives reporting never, or only sometimes, having good experiences with the quality of the care received in the care home and home care sector, in terms of staff-client interaction, communication, engagement in decisions, professionalism, quality of meals and mealtime atmosphere (where appropriate)
- Degree to which clients in long-term mental health care report good experiences with the quality of the care
- Degree to which the quality of Dutch dementia care differs from that in other European countries
- Changes in perceived self-reliance and social participation after receipt of community support services under the Social Support Act (WMO)
- Percentages of informal carers reporting problems with their own social participation as a result of their care provision

Costs

- Trends in total Dutch long-term care insurance (AWBZ) expenditure
- Total AWBZ expenditure in 2013 by sector
- Per capita expenditure on long-term care in the Netherlands in comparison to other OECD countries
- Co-payments by clients receiving care funded by the AWBZ
- Expenditure under the Health Insurance Act (ZVW) and the AWBZ for people with multimorbidity or disability
- Mean AWBZ expenditure per insured person per region
- Mean WMO expenditure per resident per local authority
- Numbers of personal health budget holders and total expenditure on personal health budgets

6.3 State of affairs

6.3.1 Accessibility

Few people are involuntarily on waiting lists for long-term care longer than the permissible waiting times, but nearly 18,000 people are waiting for care from a provider of their first preference

On 31 March 2014, there were 307 ‘problematic cases’ on waiting lists for services from the care home and home care sector, the disability care sector or the mental health care sector, according to data from the Long-Term Care Register (AZR) maintained by the Dutch Health Care Institute (table 6.1a). The problematic case category is composed of clients already assessed as

Table 6.1a: Numbers of clients with waiting times for long-term care exceeding Treek standards, by sector, March 2014 (source: AZR, 2014a).

Sector	Type of accommodation	Actively waiting in excess of Treek standards, without interim care (problematic cases)	Actively waiting in excess of Treek standards, with interim care	On first-preference waiting lists in excess of Treek standards, with or without interim care
Care homes and home care	Residential with treatment (nursing home care)	37	66	8,330
	Residential without treatment (residential care)	2	3	1,271
	Community-based	136	63	941
Disability care	Residential	14	45	2,959
	Community-based	58	97	1,877
Mental health care	Residential with treatment (continued hospitalisation)	1	0	24
	Residential without treatment (sheltered accommodation)	14	7	1,274
	Community-based	45	36	1,269
Total		307	317	17,945

eligible for long-term care under the Exceptional Medical Expenses Act (AWBZ) who have been waiting for funded care longer than the maximum permissible waiting time and who are receiving no interim care. Service providers and health insurance companies have made joint agreements called Treek standards that set permissible waiting times for health and social care services (see table 6.1b for the Treek standards for long-term care by sector). Problematic cases are recorded in the registers in the ‘actively waiting’ category. An additional 317 actively waiting clients did have access to interim care (AZR, 2014a).

The total number of people waiting longer on first-preference waiting lists than the Treek standards prescribe (with or without interim care) is a good deal higher at nearly 18,000. People on first-preference waiting lists are eligible clients who have applied to receive funded

Table 6.1b: Percentages of clients obtaining care within waiting times set by Treek standards, by sector, in 2010 and 2012 (sources: CVZ; in NZa, 2013c and 2013d).

Sector	Type of accommodation	Permissible Treek-standard waiting times	2010	2012
Care homes and home care	Residential with treatment (nursing home care)	≤ 42 days	93	86
	Residential without treatment (residential care)	≤ 91 days	90	79
	Community-based	≤ 42 days	92	98
Disability care	Residential	≤ 91 days	93	93
	Community-based	≤ 42 days	83	86
Mental health care	Residential with treatment (continued hospitalisation)	≤ 42 days	not known	not known
	Residential without treatment (sheltered accommodation)	≤ 91 days	not known	not known
	Community-based	≤ 42 days	not known	not known

care from a provider of their own preference, possibly because the provider is in their region or has services available that are more appropriate to their care needs. In the mental health sector, many regions have only one provider authorised to deliver funded care; consequently, almost all mental health waiting lists in those regions are first-preference lists.

Most clients obtain care within the maximum permissible waiting times

The care home sector and the disability care sector had statistics available on the average times elapsing between eligibility decisions and care initiation (table 6.1b). The figures include ‘dormant’ lists (containing eligible clients not yet opting to receive care) and first-preference lists (of clients wishing to receive care from their preferred provider only) as well as ‘active’ waiting lists. We see that the percentages who obtained nursing home and residential care within Treek limits both declined from 2010 to 2012. In both sectors, the percentages obtaining timely community-based services increased. For residential disability care, the percentage remained unchanged (NZa, 2013c; NZa, 2013d).

The time elapsing between approval and initiation of home help services is less than one month for the majority of clients

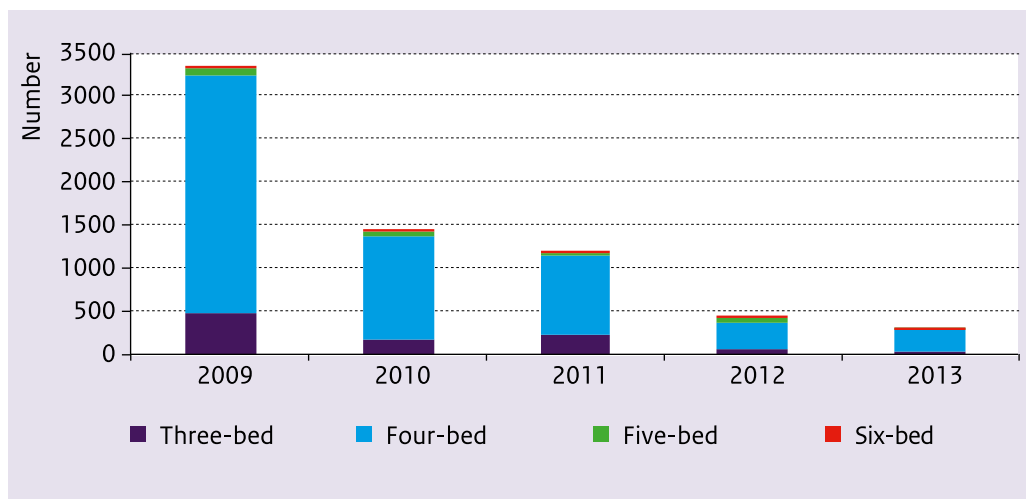
Of the clients applying for help in the household in the 2010–2011 period, 41% received the help within a fortnight of approval, 42% between two weeks and one month and 17% after more than a month. One third of clients reported that the waiting time formed a problem for them; 27% considered it a minor problem and 8% a major problem. The longer the waiting time, the greater the problem was perceived to be: 39% of the group waiting a fortnight to a month found it a problem, compared to 14% of those waiting less than a fortnight (Krol et al., 2012). The statutorily prescribed maximum time from application to local authority decision is eight weeks. Upon approval, the client may apply to a provider for the household help, after which some time can elapse before the help commences.

Most informal carers for people with dementia judge the waiting times for obtaining psychosocial and practical support for their own needs as acceptable

About 55% of the informal carers taking part in the Informal Care Monitoring Study, conducted by the advocacy organisation Alzheimer Nederland and the Netherlands Institute for Health Services Research (NIVEL) in 2011, reported needing psychosocial and practical support for themselves. Some 60% of these had obtained such support. Of those users, 47% reported that the support was definitely received in time, 42% that it was somewhat timely and 11% that it was not received in time. The reasons given for not taking up psychosocial or practical help despite a need for it included lack of availability, unfamiliarity with the available services and reluctance of GPs to cooperate (Peeters et al., 2012). If available, psychosocial support (which might include peer discussion groups or contact networks and visits to Alzheimer cafés) and practical support (such as home adaptations, assistive devices, paperwork and assistance in applying for services) could aid informal carers in the care they are providing.

In 2013, the Netherlands had approximately 300,000 informal carers serving approximately 260,000 people with dementia. Informal carers play an important part in looking after people with dementia, especially those who live at home (about 70% of the total). After a person with dementia is admitted to a nursing or residential home or a small-scale living facility, informal carers are often still directly engaged in his or her care. The majority (70%) of informal carers are women, and they provide an average of 20 hours of care per week for an average duration of five years (Alzheimer Nederland, 2012). In 2011, 36% of informal carers for people with dementia perceived their caregiver burden as rather heavy, and 10% perceived it as extremely heavy or felt overburdened (Peeters et al., 2012).

Figure 6.1: Numbers of places in multiple-bed rooms in nursing homes and residential homes, 2009–2013 (source: VWS, 2013e).



6.3.2 Quality

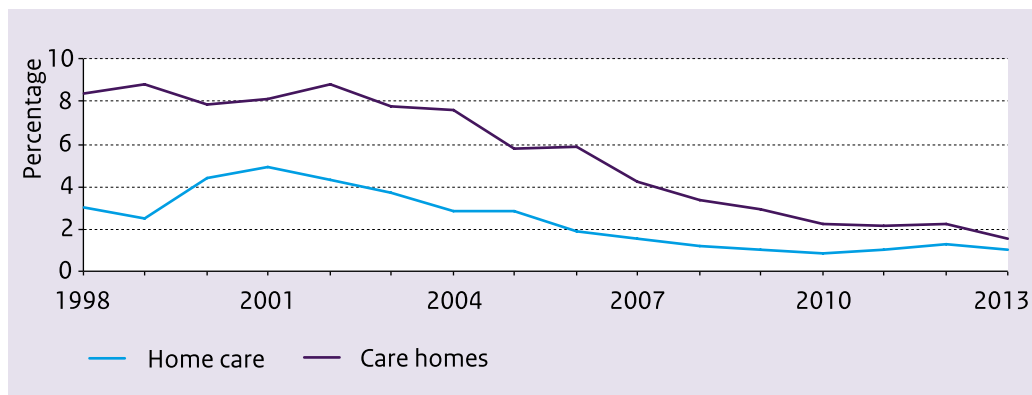
The numbers of multiple-bed rooms in nursing and residential care homes continue to decrease

Since the publication of the Dutch government’s Privacy in Nursing Homes statement in 1996, health ministry policy has sought to ensure more privacy for residents of nursing and residential care homes (VWS, 1996). Two aims of that policy are to reduce the number of multiple-bed rooms (rooms with three or more beds) and the creation of one-bed rooms and (subdividable) two-bed rooms. In 2009, there were 3,338 places in multiple-bed rooms, most of which were in four-bed rooms (83%) or three-bed rooms (14%) (figure 6.1). In 2013, 289 places still remained in multiple-bed rooms, and facilities that still had them are now working to replace them (VWS, 2013e). The health ministry expects that from 2014 or 2015 there will no longer be multiple-bed rooms in Dutch care homes.

The percentages of clients with pressure ulcers have sharply declined in recent years

The prevalence of nosocomial pressure ulcers (also known as bedsores or decubitus ulcers) has declined in the past fifteen years both in nursing and residential facilities and amongst clients of home care organisations (figure 6.2). Nosocomial pressure ulcers are sores that develop whilst people are in the care of such providers. The severity of pressure ulcers is rated in four categories; we examine here categories 2 to 4 only, as category-1 ulcers are more difficult to identify. In 2013, the prevalence rate was 1.0% in clients of home care organisations and 1.5% in clients residing in nursing and residential facilities. The reduction in the prevalence of pressure ulcers may be attributed to a combination of possible factors, including changing client characteristics, improved organisational characteristics such as the use of the most

Figure 6.2: Prevalence of nosocomial pressure ulcers in categories 2–4 in home care clients and clients of care homes, 1998–2013 (source: Halfens et al., 2013).



recent protocols, and improved prevention and treatment options (Amir et al., 2011). Further contributing factors could be the increased emphasis put on pressure ulcers in schemes such as the Dutch National Prevalence Survey of Health Care Problems (LPZ) and quality improvement projects in the long-term care sector (Halfens et al., 2013).

Pressure ulcers are a source of serious pain and discomfort as well as high health care costs. They occur mainly in older clients. Some causes are reduced mobility, poor nutrition and reduced tissue tolerance (Halfens et al., 2013). Pressure ulcers are twice as prevalent in Dutch nursing homes as in German ones. One in three clients recently admitted to Dutch nursing homes develop pressure ulcers within 12 weeks, as compared to one in seven in Germany. One possible explanation lies in elevated risk factors in the Dutch facilities, including a higher use of analgesics and the more frequent or improper use of transfer aids, such as patient lifts, to reposition residents (Meesterberends, 2013). Another explanation may be the higher percentage of Dutch facilities with tissue viability nurses, possibly leading other care providers to neglect the prevention and care of ulcers. Some factors were found in German nursing homes that lowered the risk of pressure ulcers, including the more frequent repositioning of clients and periodic internal quality control.

The LPZ monitoring scheme is a yearly prevalence assessment of health care problems. In 1998, it initiated prevalence assessments of pressure ulcers in a large number of Dutch institutions, and it later expanded the assessments to include chronic wounds, incontinence, malnutrition, intertrigo, fall incidents and restrictive interventions. The numbers of organisations reporting data to the LPZ vary by year and by problem category. The average number of home care organisations reporting on pressure ulcers is 19 and the number of residential or nursing facilities is 142. The numbers of assessed clients averaged over 4,000 and 13,000 respectively.

Figure 6.3a: Prevalence of malnutrition in home care clients and clients of care homes, 2008–2013 (source: Halfens et al., 2013).

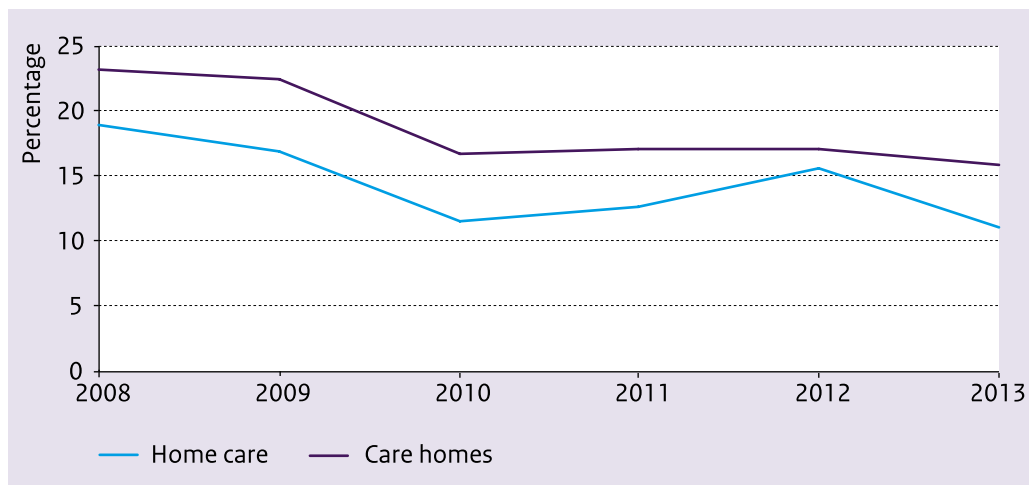


Figure 6.3b: Prevalence of malnutrition risk in home care clients and clients of care homes, 2008–2013 (source: Halfens et al., 2013).

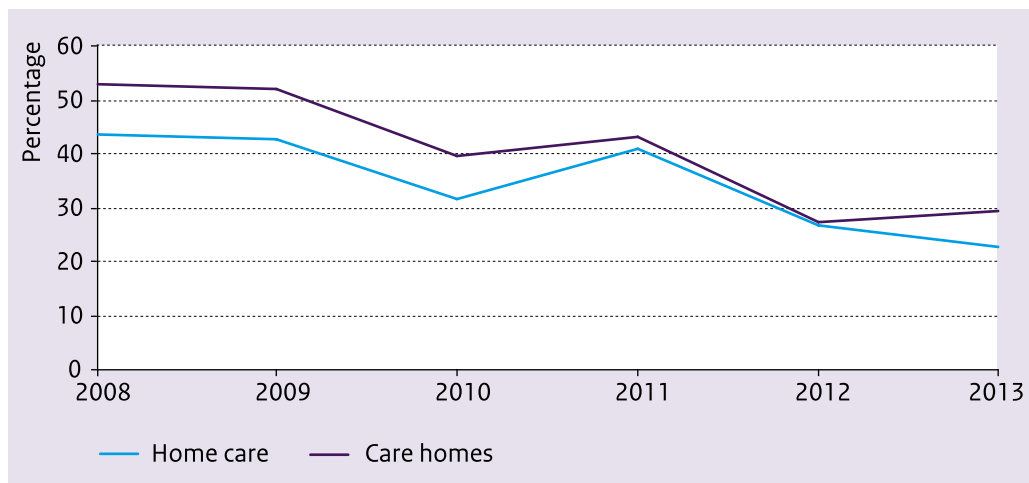
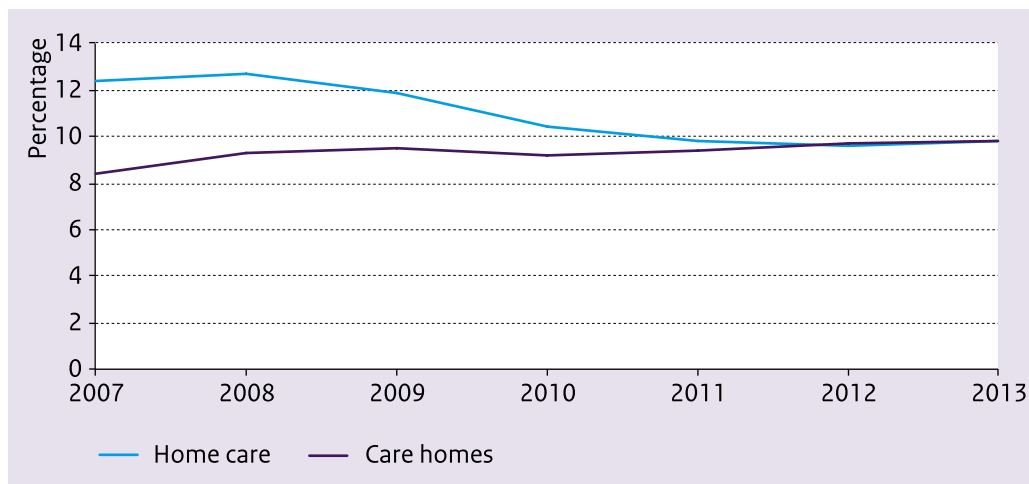


Figure 6.4: Percentages of home care clients and clients in care homes experiencing fall incidents in a 30-day period preceding the LPZ assessment, 2007–2013 (source: Halfens et al., 2013).



The percentages of clients who are malnourished or at risk of malnutrition have decreased in recent years

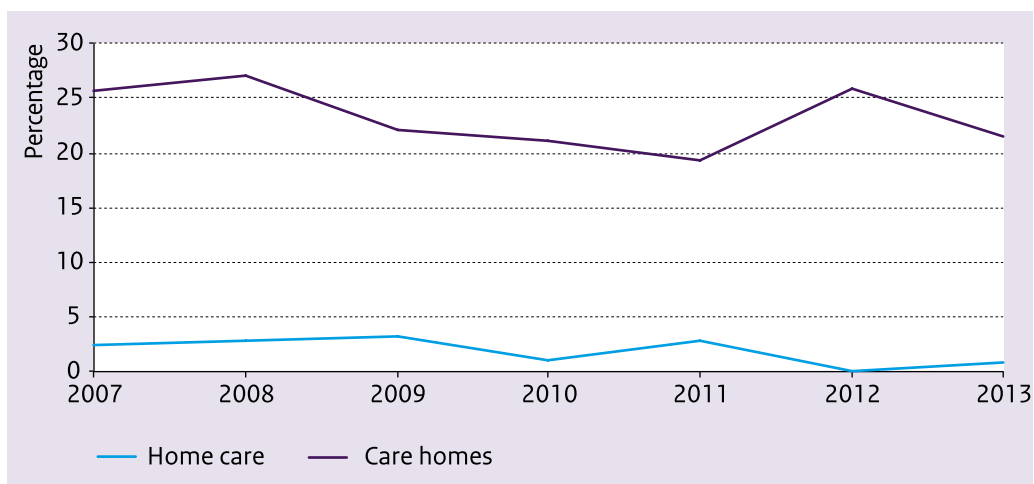
In 2013, the prevalence of malnutrition was 11.1% in Dutch home care clients and 15.9% in care home clients, and the respective prevalence of malnutrition risk was 22.7% and 29.5% (figures 6.3a and 6.3b). These prevalence figures declined sharply in the 2008-2013 period (Halfens et al., 2013).

Malnutrition and malnutrition risk are assessed in terms of body-mass index (BMI), unintended weight loss, age and nutritional intake. Definitions and prevalence assessment methods for malnutrition and malnutrition risk were modified in 2013. Because the newly defined malnutrition risk indicator was not yet fully functional, our figures here are based on the old definition.

The percentages of care home clients experiencing fall incidents remained steady in recent years

In 2013, 9.8% of the home care clients and 9.8% of the clients residing in nursing or residential facilities had experienced one or more falls (with or without injury) in the 30 days preceding the LPZ assessment (figure 6.4). The former rate had declined from about 12% in 2007, but the rate in the care homes remained relatively stable throughout the 2007–2013 period (Halfens et al., 2013).

Figure 6.5: Percentages of home care clients and clients of care homes receiving one or more restraints in a 30-day period preceding the LPZ assessment, 2007–2013 (source: Halfens et al., 2013).

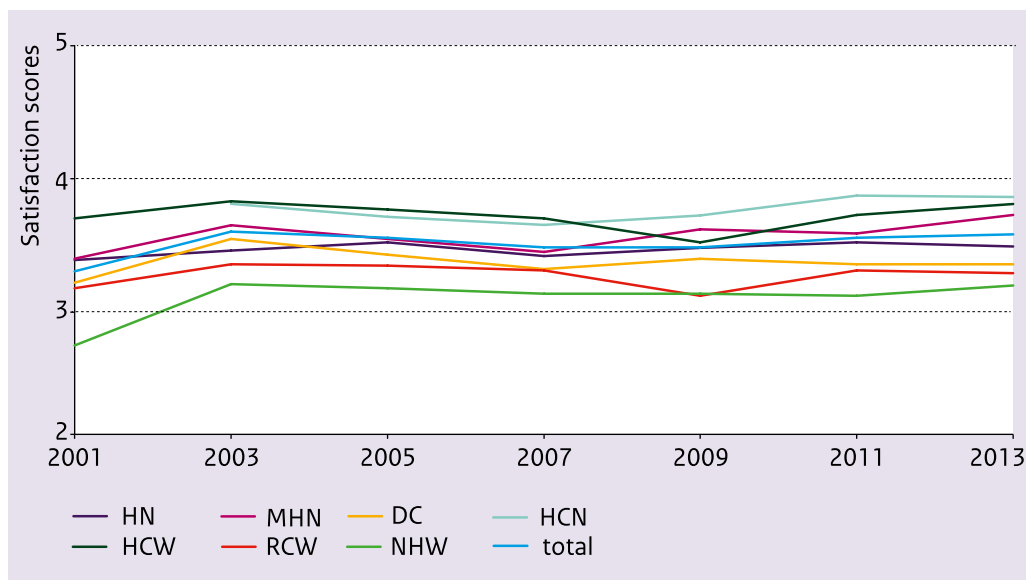


Restraints are used in one in five care home residents in a 30-day period

The use of restraints varies greatly between clients of home care organisations and clients living in care homes (figure 6.5). In the 2007–2013 period, one or more such measures had been used for about 1% to 2% of home care recipients in the 30 days preceding the LPZ assessment. Amongst clients residing in residential or nursing homes, the percentage first declined from 26% to around 19%, then lightly rebounded to over 21%. It is not known whether changes occurred during that period in terms of unnecessary and/or prolonged use of restraint. One reason for the limited reduction in the use of such measures is that years are often needed to implement changes such as the use of alternatives for restraints (Halfens et al., 2013).

Restraints are measures, often referred to as protective measures, to avert dangerous or hazardous situations or to enable medical treatment to be given. Examples of restraints are restraint belts, bed rails, lap trays, deep chairs and psychiatric drugs. Restraints are regarded as restricting freedom of movement if a client cannot independently terminate the measure. In November 2008, a range of stakeholders agreed on a nationwide voluntary commitment to curb the use of restraints and to seek alternatives. Some alternatives are home automation devices, the provision of stimulating activities and adaptations to a client’s physical environment (CG-raad et al., 2008; Zorg voor Beter, 2014). Certain restraints, such as restraint belts, were to be allowed only under specified conditions. Bed rails are the most commonly used restraint (Halfens et al., 2013).

Figure 6.6: Satisfaction levels of professional care providers with the quality of care in their own organisations (1–5 scale), 2001–2013 (N = 503 in 2001, increasing to N = 1053 in 2013) (source: Nursing Staff Panel survey; NIVEL, 2013b).



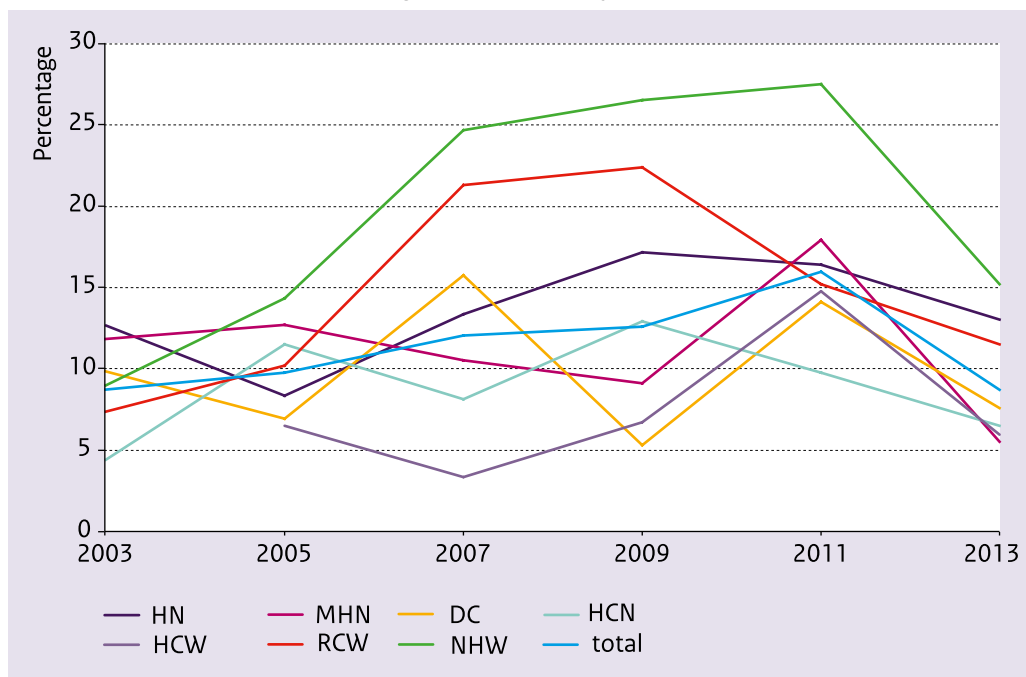
HN = hospital nurses; MHN = mental health nurses; DC = nursing and therapeutic staff in disability care; HCN = home care nurses; HCW = home care workers; RCW = residential care workers; NHW = nursing home workers. Not all care providers in the Nursing Staff Panel worked in long-term care, but no distinction could be made in the analyses between long-term and other care modalities.

When staff in various sectors rated the quality of the care delivered in their organisations, nursing home care workers gave the least positive ratings

Every two years, the Nursing Staff Panel survey of the Netherlands Institute for Health Services Research assesses the satisfaction of professional care providers with the quality of care in their own institutions or agencies (NIVEL, 2014a). The indicator reported here is based on the answers to the following questions: ‘How satisfied are you with (1) the amount of time you generally have available to look after your patients/clients?; (2) the amount of individual care you can provide to your patients/clients?; and (3) the extent to which you feel you can provide psychosocial support to your patients/clients?’ Replies are recorded on a scale from 1 (highly dissatisfied) to 5 (highly satisfied). The combined answers represent the subscale Staff Satisfaction with Quality of Care in Own Institution in the Maastricht Work Satisfaction Scale for Healthcare (MAS-GZ) (Landeweerd et al., 1996).

The average rating in 2013 was 3.55 (figure 6.6). In each of the years assessed, statistically significant differences have emerged between care providers in the different types of

Figure 6.7: Percentages of professional care providers rating the care provided within their own units or teams as regularly or often inadequate, 2003–2013 (N = 503 in 2001, increasing to N = 1053 in 2013) (source: Nursing Staff Panel survey; NIVEL, 2013b).



HN = hospital nurses; MHN = mental health nurses; DC = nursing and therapeutic staff in disability care; HCN = home care nurses; HCW = home care workers; RCW = residential care workers; NHW = nursing home workers. Not all care providers in the Nursing Staff Panel worked in long-term care, but no distinction could be made in the analyses between long-term and other care modalities.

organisations, with care workers in nursing homes usually the least positive. Their average rating in 2013 was 3.20. Nursing staff working in home care organisations are generally the most positive about the quality of the care delivered, their average 2013 rating being 4.00 (NIVEL, 2013b).

One possible explanation for the differences between care providers in the various service types is suggested by another finding that care workers in nursing homes experienced greater work pressure and were less likely to feel they had sufficient time to provide good-quality care, in comparison to staff in other service types. They were also less likely to feel they had sufficient time and opportunities to discuss client-related problems with co-workers or sufficient influence on client care planning. In addition, they were more likely to report that more staff at the bedside, reduced work pressure and better-trained staff would make their

work more appealing. Nurses working in home care expressed more satisfaction with their workloads and perceived having more autonomy in their work than care providers in other service types (Maurits et al., 2014).

Examining the sample of care providers as a whole, we see a significant increase in satisfaction with the quality of care within one's own organisation in the period from 2001 to 2003, followed by a significant decrease from 2003 to 2007. The perceived quality of care then remained more or less stable from 2009 to 2013 (Maurits et al., 2014).

One in ten professional care providers in 2013 rated the quality of the care delivered within their own units or teams as regularly or often inadequate

In the 2013 Nursing Staff Panel survey, 9% of the care providers reported that the quality of the care delivered within their own units or teams was 'regularly' or 'often' inadequate (figure 6.7). Nurses working in mental health care showed the lowest figure of 6%, and care workers in nursing homes the highest at 15%. In the entire sample of care providers over time, considerable fluctuation is apparent. Dissatisfaction grew from 2003 to 2011, but reverted to the 2003 level by 2013. For several years, nursing home workers were significantly more likely than care providers in other service types to report that the care provided within their unit was regularly or often inadequate (NIVEL, 2013b).

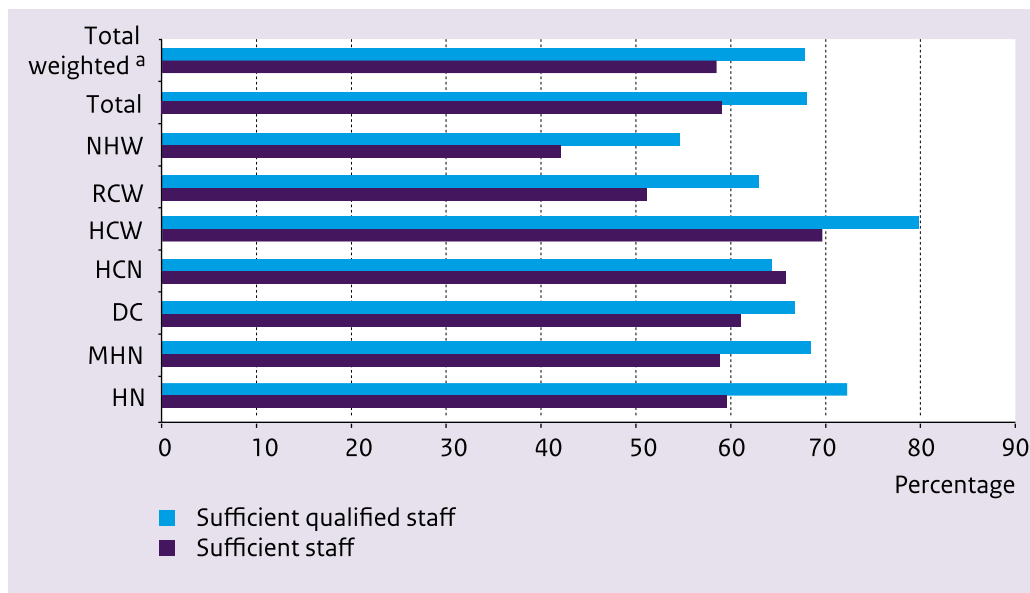
Some 42% of care workers in nursing homes and 51% of those in residential care homes believed that sufficient staff was generally available to ensure good-quality care

In 2013, nearly 60% of all professional care providers in the panel believed that staffing levels were generally sufficient to enable care of good quality to be delivered (figure 6.8). The lowest percentages were found amongst care workers in nursing and residential homes (42% and 51% respectively). The highest percentages of 70% and 66% were amongst home care workers and home care nurses. A similar pattern emerged on the question of whether sufficient qualified staff was available: nursing home and residential care workers were lowest at 55% and 63%, whilst 80% of the home care workers and over 60% of the home care nurses felt that enough qualified staff was available (NIVEL, 2013b).

Residents of residential care homes and nursing homes, and representatives of those with psychogeriatric issues, were particularly critical of the quality of care

Figure 6.9a depicts the experiences of clients in the care home and home care sector, or their representatives, with the various aspects of the quality of care. Four categories of respondents are distinguished: (1) those receiving home care; (2) those receiving home help; (3) representatives of residential or nursing home residents with psychogeriatric issues; and (4) residents of residential or nursing homes (Booij et al., 2010; CQ-index, 2013; de Boer et al., in preparation; Krol et al., 2012). For the latter category, perceptions of mealtime quality are also reported, in the assumption that the tastiness of meals and the mealtime atmosphere may help improve or maintain the health and quality of life of the residents (Mathey et al., 2001; Nijs, 2006). As seen in the diagram, statistics are not available on experiences with all aspects of the care in all categories, nor are all recent statistics from the same years.

Figure 6.8: Percentages of professional care providers in various service types reporting that sufficient staff and sufficient qualified staff is normally available to enable good-quality care, in 2013 (N = 1053) (source: Nursing Staff Panel survey; NIVEL, 2013b).



NHW = nursing home workers; RCW = residential care workers; HCW = home care workers; HCN = home care nurses; DC = nursing and therapeutic staff in disability care; MHN = mental health nurses; HN = hospital nurses. Not all care providers in the Nursing Staff Panel worked in long-term care, but no distinction could be made in the analyses between long-term and other care modalities.

^a The numbers of respondents in subpanels do not reliably reflect the sizes of their respective subsectors in the Dutch health care system. To enable more accurate estimates of percentages and means in the target populations of nurses, care workers and therapeutic support staff by subsector, we have statistically weighted the data.

The proportions of respondents who had reportedly never, or only sometimes, had good experiences with the various aspects of care ranged from small percentages for polite treatment, listening attentively and professionalism to more than 20% for sufficient attention to client well-being, sufficient time, client involvement in decisions and quality of meals. That is, experiences with some aspects of quality were better than with others. In particular the representatives of residential and nursing home residents with psychogeriatric issues reported less positive experiences; possibly they were more critical than the residents or than the recipients of home care or home help.

Figure 6.9b depicts variations between the respondent ratings of care providers in each of the categories of care, thus indicating the extent to which the quality of care diverges between care providers within each category in terms of various aspects of care. The longer the horizontal line, the greater the quality differences reported between care providers within that category on that aspect of care. The greatest ranges of variation are seen in the scores for nursing and residential homes, and in particular on the issues of client involvement in care decisions, sufficient attention to client well-being and mealtime quality. Home care agencies vary mainly in the perceived sufficiency of the time devoted to clients.

It is unclear why there is so much variation between care homes. Many of their residents have long stays in the institutions and have intensive contacts with the care provision; that may generate more distinct and explicit impressions of the providers and clear-cut ratings of experiences with the institutions.

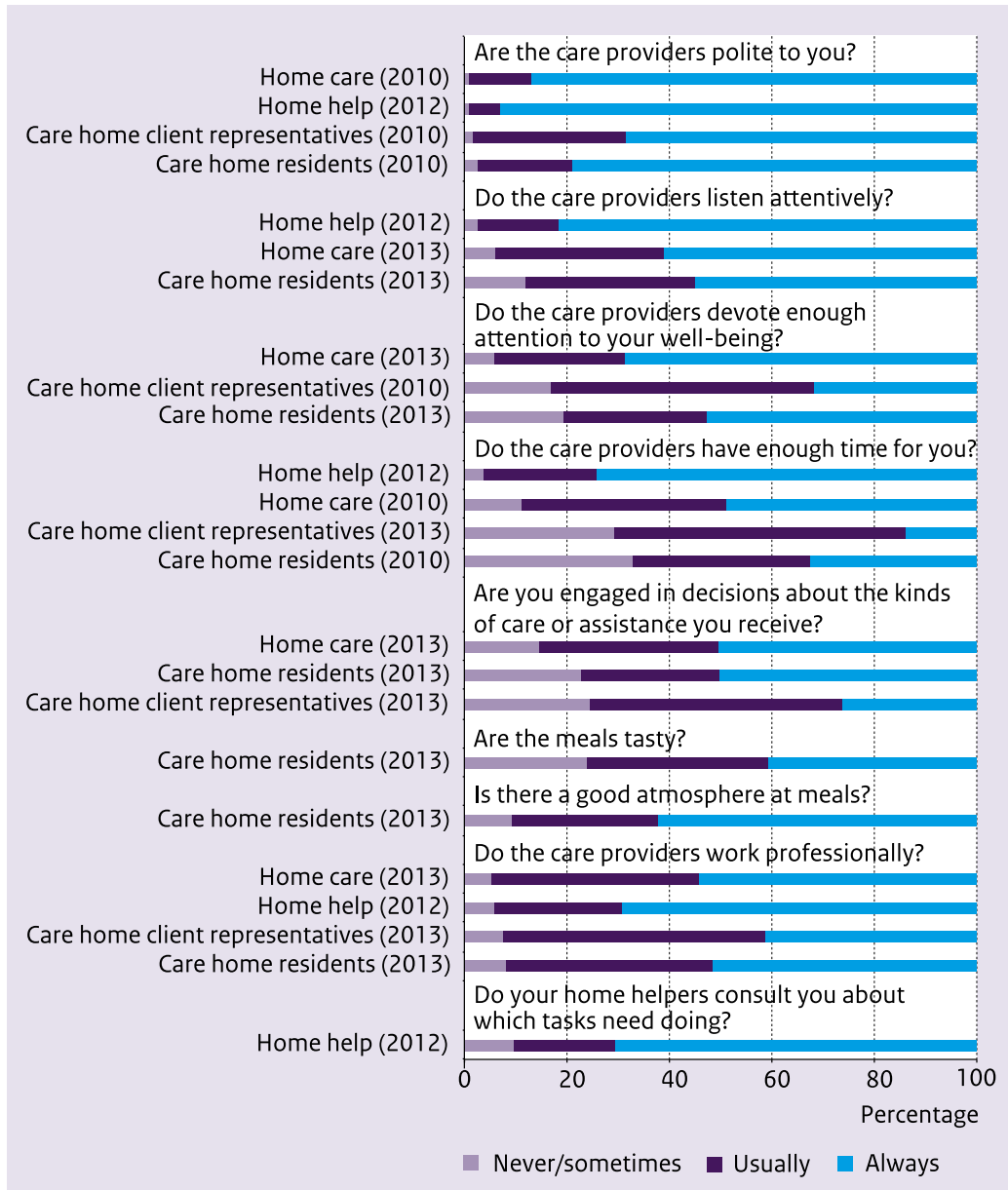
Amongst clients receiving long-term mental health care, the most criticism is about information provision, the amount of consensus among staff and the adjustment of support plans

The Dutch regional organisations for sheltered living (RIBWs) provide support and guidance to people with severe long-term mental illness. It is available in the form of sheltered accommodation as well as community-based care to clients who are living independently. Every two years, the RIBWs administer consumer quality questionnaires to their clients to evaluate their experiences with the care they are receiving (RIBW Alliantie, 2013).

Most clients living in sheltered accommodation reported in 2012 that they had been involved in decisions on the content of their support plan and had consented to the plan (ZiZo, 2013a). They also said much of the support they had received was the right way of dealing with their symptoms (figure 6.10a). In some cases, however, that support plan had not been adjusted during their stay in the programme. There also seemed to be room for improvement in the information provision relating to their mental health symptoms, in the support they were receiving and in the coordination among support staff. As to the latter issue, some clients believed their care providers were not entirely in agreement as to the best strategy for their symptoms (figure 6.10b). Experiences with staff-client interaction were generally positive. Ratings of housing and living conditions were modestly positive (median score 2.64 on a 3-point scale, not shown in figure).

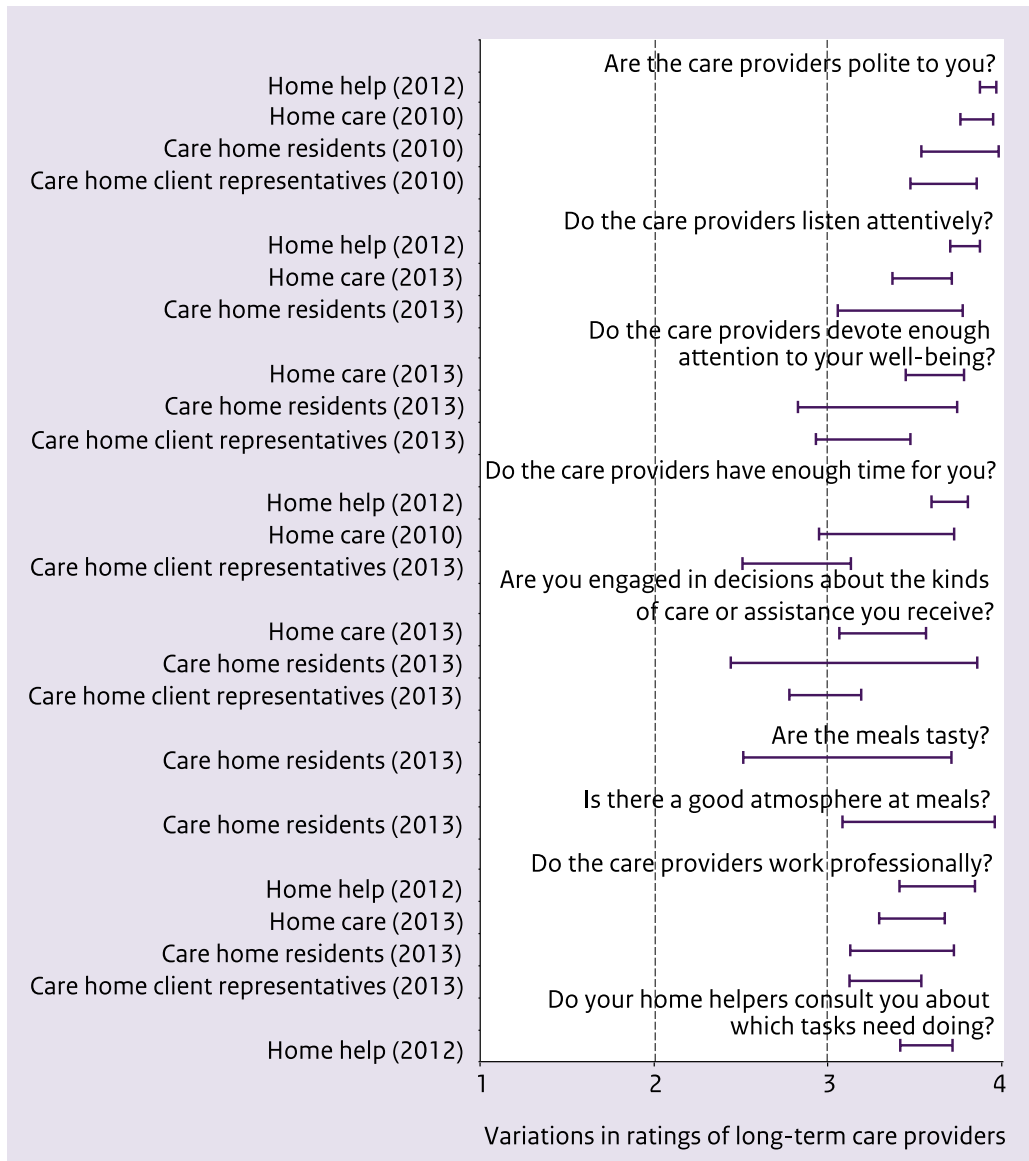
Clients in supported independent living arrangements showed similar patterns to the sheltered living clients in terms of the perceived quality of care. Their median ratings on the indicators were slightly higher, indicating that they were generally a little more satisfied with the care received than the clients in sheltered accommodation.

Figure 6.9a: Client experiences with staff-client interaction, communication, mealtime quality and professionalism in various forms of long-term care (source: NIVEL, CQ-index; see Appendix 3).



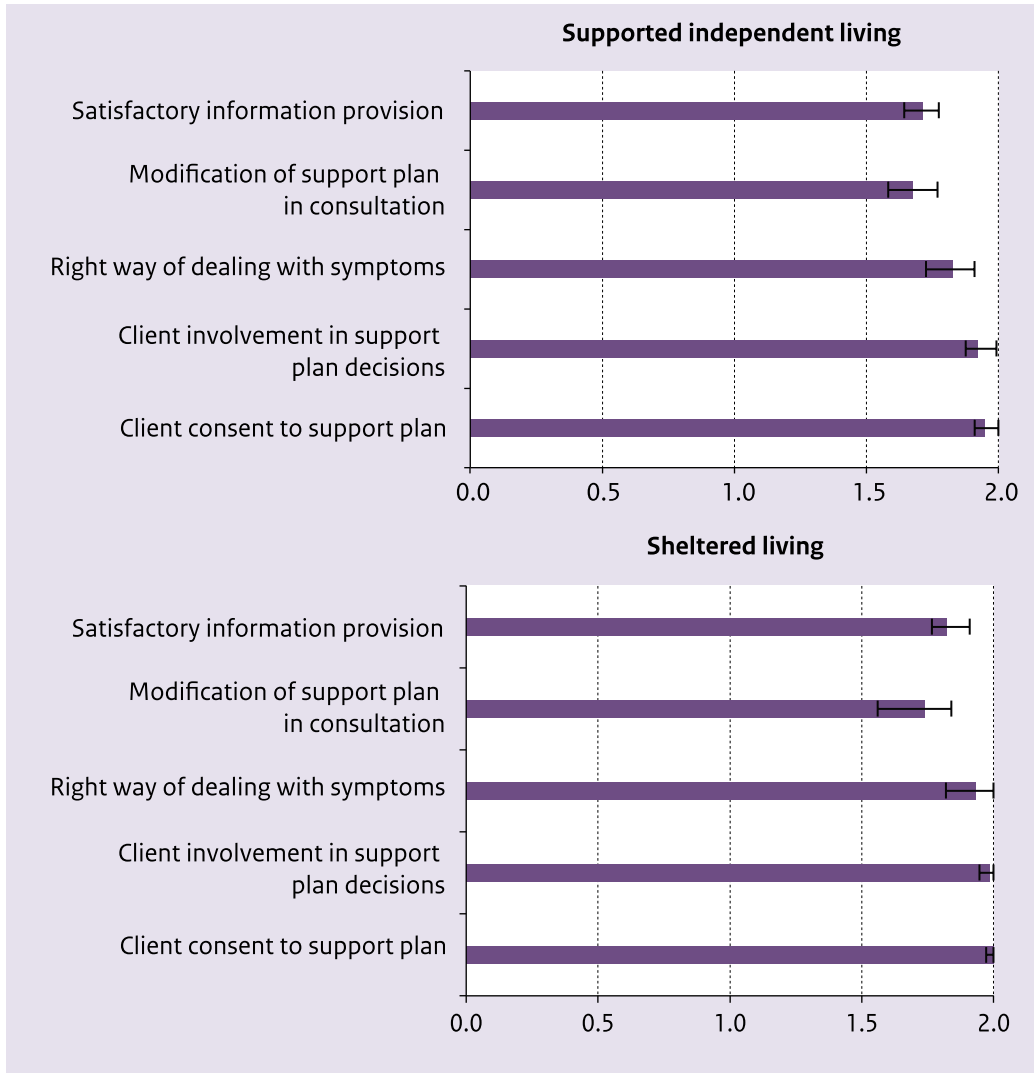
Care home = Nursing homes and residential homes

Figure 6.9b: Variations between care providers in various forms of long-term care rated in terms of client experiences with communication, meals and professionalism, expressed as the range in which 95% of ratings are expected (source: NIVEL, CQ-index; see Appendix 3).



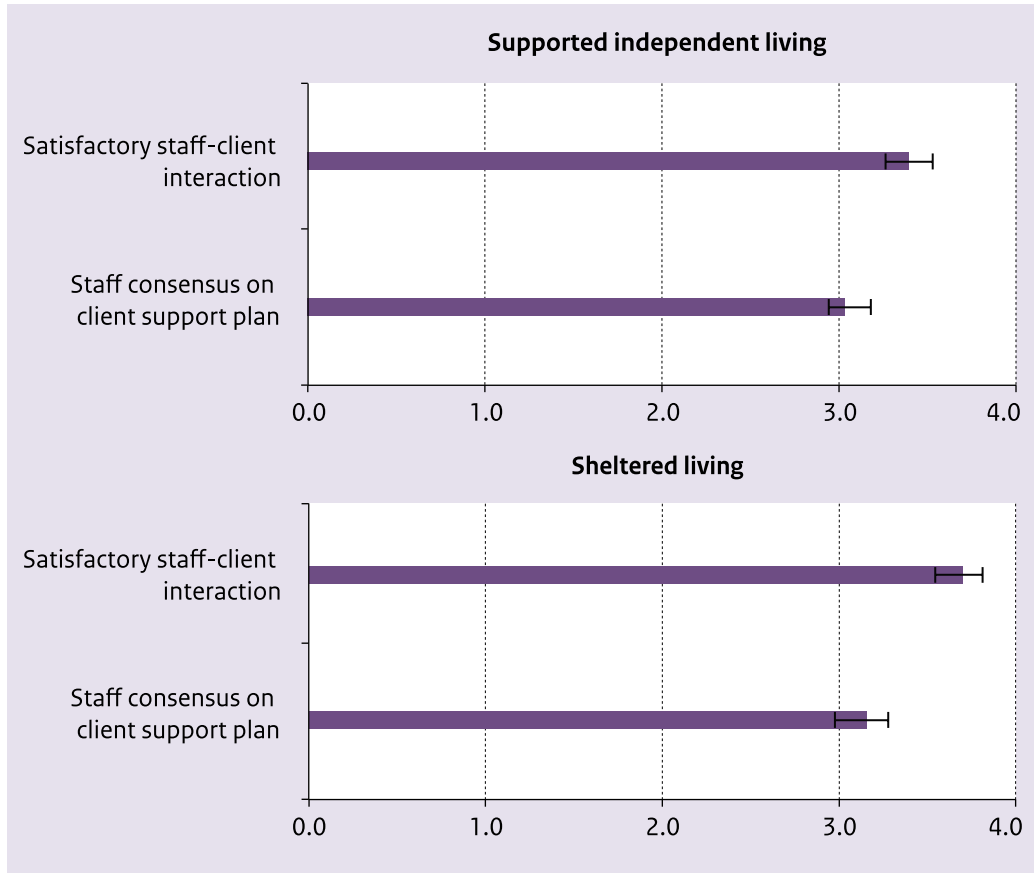
Care home = Nursing homes and residential homes. The ratings 1, 2, 3 and 4 correspond to the answer categories 'never', 'sometimes', 'usually' and 'always'.

Figure 6.10a: Client experiences with quality aspects of sheltered living and supported independent living services, in 2012 (source: ZiZo, 2013a).



Experiences were rated on the basis of questions with two answer categories and are depicted here on a scale ranging from 1 (no) to 2 (yes). The bars show the median rating across all providers, and the horizontal lines span the segment of variation in ratings between the 10th and 90th percentiles. The graph represents 26 sheltered living agencies and 25 supported independent living agencies.

Figure 6.10b: Client experiences with quality aspects of sheltered living and supported independent living services, in 2012 (source: ZiZo, 2013a).



Experiences were rated on the basis of questions with four answer categories and are depicted here on a scale ranging from 1 (never) to 4 (always). The bars show the median rating across all providers, and the horizontal lines span the segment of variation in ratings between the 10th and 90th percentiles. The graph represents 26 sheltered living agencies and 25 supported independent living agencies.

The variations in the median client ratings per provider are depicted in figures 6.10a and 6.10b by horizontal lines spanning the segment between the 10th and the 90th percentiles. Variations between providers were generally limited in both the sheltered and the independent living subsectors. Rather wide variations emerged only in the latter subsector in terms of support plan adjustment in client consultation, revealing considerable differences between providers on this practice. Although this might possibly reflect major differences in the quality of care, it could also reflect differences between providers in terms of client characteristics; some providers might have more clients with addiction problems and others more young adults with developmental disorders. Those groups may differ in terms of the type of care they receive, frequency of incidents and judgments of experiences.

The Netherlands rates well on the quality of dementia care in comparison with other European countries

The quality of care for the people with dementia who receive home care has been found to be better than, or on a par with, that in seven other European countries. The Netherlands scored significantly better than average on the indicators for psychiatric drug use, mortality, the use of physical restraints and fall incidents, as well as on the subjective ratings of quality given by informal carers. Scores on the indicators depressive symptoms, weight loss, pain and pressure ulcers were comparable to those in the other countries (data not graphically depicted) (Beerens et al., 2014).

The quality of care for people with dementia living in institutions was also found better than or equal to that in the other countries. Ratings were significantly better than average on the indicators depressive symptoms and the use of restraints, and were comparable in terms of psychiatric drug use, mortality, weight loss, pain, pressure ulcers, falls and subjective quality perceptions.

The study by Beerens and colleagues (2014) assessed the quality of dementia care in the Netherlands, England, Estonia, Finland, France, Germany, Spain and Sweden in the period from 2010 to 2012. The Dutch sample was obtained in organisations providing long-term care in the provinces of Limburg and North Brabant. The quality of care was determined using eight indicators: two process indicators (use of psychiatric drugs and restraints) and six outcome indicators (depressive symptoms, mortality, weight loss, pain, pressure ulcers and falls). For people receiving home care (who were living at home but were at risk of nursing home admission), the indicators were scored by informal carers. For people in residential care (all of whom were less than three months in residence), the indicators were scored by professional care providers. In both settings, subjective ratings by informal carers were obtained using an adapted version of the Client Interview Instrument (CLINT; Vaarama, 2009).

Community support services provided under the Social Support Act spark improvement in perceived self-reliance and social participation

People applying for services under the Social Support Act (WMO) rated their own self-reliance at an average of 5.2 on a 10-point scale before obtaining the assistance from their local authority. The average rating jumped to 7.9 shortly after the assistance was commenced and receded slightly to 7.6 in the follow-up assessment six months later. The self-reliance of younger WMO claimants (aged 18–54) improved the most, from 4.6 to 7.8 just after receipt of assistance. In terms of social participation, the average overall ratings of WMO claimants rose from 5.7 to 6.8 (Feijten et al., 2013).

In 2011, an estimated 390,000 people lodged WMO applications with their local authorities. The types of assistance most frequently claimed were home help services and transport facilities (37% and 38%). People who claimed WMO assistance did so largely because they had physical, intellectual, mental health or psychosocial issues that constrained them in certain activities. Such limitations can impede social contacts and social participation. Many WMO claimants were above age 65 (70%), female (67%) and had serious impairments (65%). Some 58% of claimants had low levels of education, 47% lived alone and 35% had low incomes (Feijten et al., 2013).

Informal care provision constrains social participation

In 2012, the Netherlands Institute for Social Research (SCP) queried people who were providing informal care about whether they took part less frequently in several types of social participation. Some 26% reported that they often felt impeded in leisure-time activities outside the home, 17% in their own household tasks and 18% in seeing friends or relatives. A total of 36% reported at least one such constraint. A further 13% felt constrained in their hobbies in their own home, 12% in the time and attention they could give to close family members, 11% in performing paid employment and 9% in voluntary work. About 60% of the informal carers queried had been providing at least four hours of help per week for at least three months (Feijten et al., 2013).

More than two million Dutch adults, or more than 18% of the adult population, were providing informal care in 2012. Relatively the most informal carers were in the 55-to-59 age group (van den Brink & Savelkoul, 2013). Although constrained participation does not necessarily directly affect the quality of care, it is an important indicator. Since the current reforms in long-term care rely on a heavier engagement of informal carers, it is advisable to monitor the consequences of those tasks over the longer term.

6.3.3 Costs

Total public long-term care insurance expenditure increased by nearly €27 billion from 1972 to 2013

Since the Exceptional Medical Expenses Act (AWBZ) became law in 1968, costs have risen sharply (figure 6.11). The increase was fuelled by a variety of developments. One of these was a substantial expansion over the years in the types of care covered by the AWBZ; population ageing has also been a factor. In 2013, a slight decline in AWBZ expenditure occurred (CBS StatLine, 2014d). The next section examines the 2013 expenditure in more detail.

Total public long-term care insurance expenditure was nearly €28 billion in 2013

The total Dutch expenditure funded by public long-term care insurance under the Exceptional Medical Expenses Act (AWBZ) has been put at €27.7 billion (table 6.2). The largest amount within that sum was around €16 billion for home care and care home services. The bulk of the long-term care, amounting to about €24.5 billion, was delivered as services in kind (CBS StatLine, 2014e). Extrapolated from previous years, about 80% of that sum would have been for residential care and 20% for long-term community-based care (Monitor Langdurige Zorg, 2013a). Expenditure for care delivered through individualised personal health budgets came to about €2.5 billion. Average AWBZ expenditure per eligible client in 2012 was €24,000 (Vektis, 2013a).

Dutch expenditure on long-term care is high in comparison with that in Finland and France

In 2011, Dutch expenditure on long-term care, allowing for purchasing power differences in relation to the OECD mean, was US\$ 1,600 (€1,350) per capita of the general population (figure 6.12). To enable international comparisons of long-term care expenditure, standardised methods have been devised, as well as standardised definitions of long-term health care (including nursing care, personal care, assistance in activities of daily living) and long-term social care (including home help, assistance in instrumental activities of daily living, accommodation), as outlined in the System of Health Accounts (OECD, 2013d; OECD et al., 2011). Despite the standardised definitions, not all countries were able to provide data on expenditure for long-term social care (see figure 6.12). Consequently, the total Dutch long-term health and social care expenditures could not be reliably compared to those in most other OECD countries. An additional difficulty was that expenditure via personal health budgets was often not included.

Dutch expenditure could be compared most reliably to that in Finland, France and Sweden, which provided data differentiated by long-term health and social care. Their respective total long-term care expenditures amounted to 58%, 38% and 93% of Dutch spending. When funding through personal health budgets was included, the figures for Finland and France were 86% and 82%.

Figure 6.11: Total expenditure in the Dutch long-term care insurance scheme (AWBZ), 1972–2013 (source: CBS StatLine, 2014d).

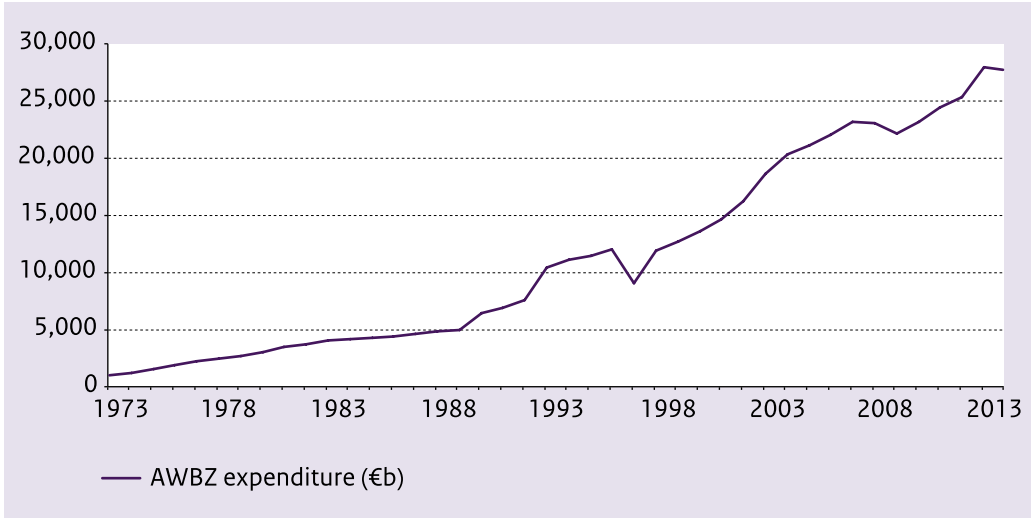


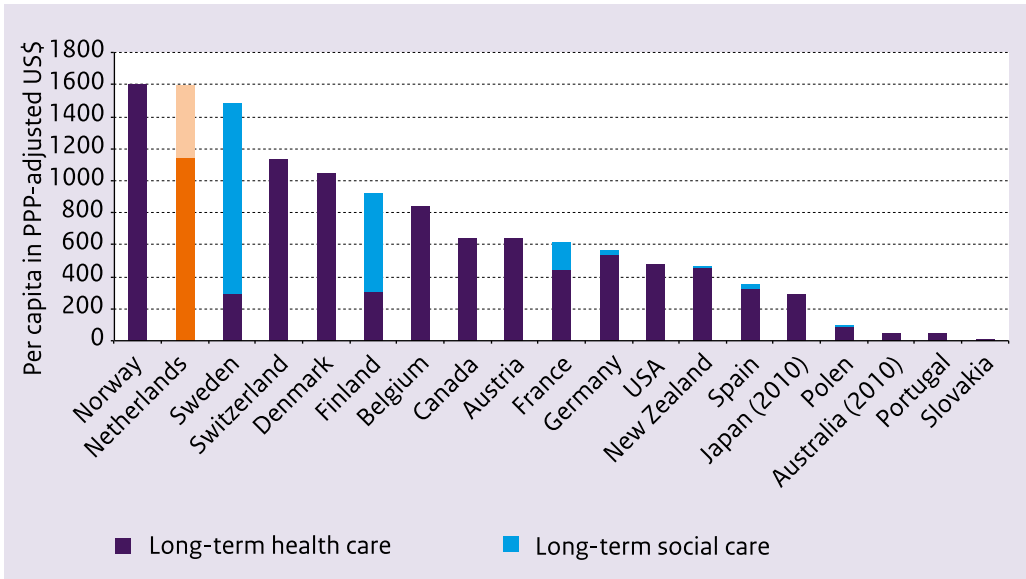
Table 6.2: Total Dutch long-term care insurance (AWBZ) expenditure by care sector in 2013 (source: CBS StatLine, 2014e).

Sector	2013 (€b)
Home care and care homes ^a	16.0
Disability care ^a	8.4
Mental health care	2.5
Other expenditure	0.7
Total ^b	27.7

^a These figures differ slightly from those reported in chapter 8 (€18.2 billion for elder care and €9.4 billion for disability care). Those figures are defined by type of provider and differentiated by source of funding (including AWBZ, WMO and Health Insurance Act). The above figures are based solely on AWBZ expenditures and are differentiated by service types (such as residential or disability care, irrespective of the type of provider).

^b About €24.5 billion of the costs were for conventional service arrangements and €2.5 billion were for individualised personal budgets; due to rounding, the amounts differentiated in the table do not precisely total €27.7 billion.

Figure 6.12: International comparison of expenditure for long-term care, per capita in PPP-adjusted US\$^a, differentiated where possible by health care and social care, in 2011 (unless otherwise indicated) (source: OECD, 2013d).



^a Per capita expenditures in US dollars after adjustment for differences in population size, prices and spending power (purchasing power parity).

Total co-payments by Dutch clients receiving long-term care have increased by more than 10% in recent years

From 2009 to 2012, the total of co-payments imposed by the Central Administration Office for Exceptional Medical Expenses (CAK) on clients receiving long-term care via AWBZ-funded conventional service arrangements increased by 12%, from around €1.6 billion to nearly €1.8 billion (Monitor Langdurige Zorg, 2013b). The increase is explained in part by a growing number of people making co-payments – from about 830,000 in 2010 to over 885,000 in 2012. The amounts charged for co-payments also increased (table 6.3), with low-level co-payments for residential AWBZ care averaging €195 per client per month and high-level co-payments €620 in 2012. The average co-payment for community-based AWBZ care was €19 per month or €226 per year (NZa, 2013c).

The Central Administration Office (CAK) is an agency that administers programmes in the Dutch health and social care sectors, and its tasks include the determination, imposition and collection of legally required co-payments for services received. The amount of co-payment depends on income, family composition, age and type of care.

Table 6.3: Average monthly co-payments for residential and community-based long-term care for persons aged 18 or older, not including co-payments by personal budget holders, 2010–2012 (source: CAK, in NZa, 2013c).

Type of accommodation		2009	2011	2012
Residential	Low-level co-payments per client	-	€ 192	€ 195
	High-level co-payments per client	-	€ 607	€ 620
Community-based	Co-payments per client	€ 14	€ 18	€ 19

Table 6.4: Average yearly per capita costs for various categories of people insured under the Dutch statutory health insurance (ZVW) and long-term care insurance (AWBZ) schemes, 2011/2012 (source: Vektis, 2013a).

Category	ZVW (2011)	AWBZ (2012)
Insured persons	€ 2,070	€ 1,200
Insured persons with multimorbidity	€ 9,500	€ 6,000
Insured persons with disabilities	€ 4,600	€ 52,000

Higher-than-average expenditure from statutory health insurance and long-term care insurance occurs for people with disabilities or multiple chronic diseases

In 2011, the average health care expenditure under the Dutch statutory insurance scheme (regulated by the Health Insurance Act or ZVW) was €2,070 per policyholder per year. In 2012, the average expenditure covered by the long-term care insurance scheme (under the Exceptional Medical Expenses Act or AWBZ) was €1,200 per year for every insured resident of the Netherlands. The average yearly costs for insured persons with multimorbidity or with intellectual, physical or sensory disabilities were higher by comparison (table 6.4) (Vektis, 2013a).

Regional variations are found in average long-term care insurance expenditure per capita

Average yearly expenditure under the AWBZ long-term care insurance scheme in 2012 ranged from €800 to €1,715 per insured resident of the Netherlands, depending on the region in question (Vektis, 2013a). Those calculations do not allow for regional differences in demographic or epidemiological population characteristics, such as age structure or prevalence of chronic diseases. It is not known why the costs per region are so divergent.

Regional differences in population composition, in service availability or in pricing agreements between health insurers and health care providers could all be factors, as well as chance. Regional cost differences were determined by assessing the 43 regions that are charged with ensuring a comprehensive range of community support services; the data were based on insurance claims submitted to the Vektis health care information centre (Vektis, 2013a).

Local authority expenditure for community support services provided under the Social Support Act averaged €225 per resident in 2010

The total expenditure on community support services under the Social Support Act (WMO) in 37 local authorities that took part in a 2010 study by the Netherlands Institute for Social Research (SCP) was more than €323 million, or €225 per resident. Costs per local authority ranged from €157 to €330 per resident. An average of 29 out of every 1,000 residents received home help under the WMO, with a yearly average of 160 hours per recipient (Wapstra et al., 2014). The total number of people nationwide that received home help fluctuated between 430,000 and 445,000 in the period from 2009 to 2012 (Monitor Langdurige Zorg, 2013c).

The 37 local authorities in the SCP study had a total population of 1.4 million. They were representative of all Dutch local authorities in terms of ageing, urbanicity, geographical distribution and low-income households, but they included none of the four largest Dutch cities, Amsterdam, Rotterdam, The Hague and Utrecht. Hence, the findings are generalisable mainly to small to medium-sized communities (Wapstra et al., 2014).

Measures to curtail personal health budgets (PHB) reduced the numbers of PHB holders in 2012, but total expenditure on PHBs increased

After the introduction of personal health budgets (PHBs) for health and social care in the mid-1990s, the number of PHB holders mounted swiftly. Table 6.5 shows the average numbers per year. In 2012, approximately 132,500 Dutch people held personal budgets, against 5,400 in 1996. The costs of health and social care purchased via the budgets grew from about €45 million to €2.7 billion in the same period. Although the average number of holders in 2012 approximately equalled that in the previous year, the numbers declined month by month from nearly 137,000 in January to below 129,000 in December. Total spending did not decline, however. The average expenditure per PHB holder rose from approximately €8,000 in 1996 to about €20,000 in 2012 (van der Torre et al., 2013). Those figures do not include PHBs funded under the Social Support Act (WMO). Approximately 10% of all AWBZ expenditure in 2012 was made via PHBs.

A personal health budget consists of a sum of money that people with assessed eligible needs for care or assistance can use to purchase the care they require from professional as well as non-professional service providers. The personal health budget was designed as an alternative to services in kind (conventional arrangements directly delivered by a care provider). PHBs enable people to give more form and content to their needs for care and assistance. In 2012, the Dutch government introduced measures to curtail the rapid growth in the number of PHBs, and thereby to reduce the associated costs. One effect of the measures was to make PHBs accessible only to people who would otherwise require residential care. From 1 January 2013,

Table 6.5: Average numbers of personal health budget (PHB) holders and average PHB expenditure, in 1996 and 2009–2012 (source: van der Torre et al., 2013).

	1996	2009	2010	2011	2012
Average number of PHB holders per year ^a	5400	113,000	122,000	133,000	~132,500
PHB expenditure (€b) ^b	€ 0.045	€ 2.1	€ 2.3	€ 2.5	€ 2.7
Average expenditure per PHB holder	€ 8,000	€ 18,700	€ 19,200	€ 18,500	€ 20,000

^a The average was determined on the basis of the monthly numbers of PHB holders.

^b Due to slightly different calculation methods, expenditure figures in this table cannot be directly compared to the figure for 2013 mentioned in the notes to table 6.2.

however, the measures were partially reversed, new regulations were introduced and safeguards were implemented to discourage fraud. Although the 2012 measures significantly curbed the uptake of PHBs, the impact on the total number of PHBs is still fairly negligible, as the measures applied to new clients only (van der Torre et al., 2013).

6.4 Conclusions

If we look again at the performance of the various sectors delivering long-term care in the Netherlands, a number of results stand out. Only a limited number of clients in any service type are subject to waiting times longer than the agreed Treec standards without receiving interim care. Considerable numbers of eligible people are still on waiting lists for providers of their first preference. Some 8% of people applying to their local authorities for home help judged the waiting time between application and receipt of the services to be a major problem.

A positive development is that the numbers of residential and nursing home (care home) clients staying in multiple-bed rooms have been substantially reduced. Other positive trends could be observed in the prevalence of avoidable problems in care homes and home care. The prevalence rates of pressure ulcers, malnutrition, malnutrition risks and fall incidents have all been reduced. The use of restraints still needs to be addressed; these are still widely applied in nursing and residential care institutions.

Although clients did express satisfaction with the warmth, attention, respectful treatment and expertise of their professional care providers (ActiZ, 2013a), clients residing in care homes, and their representatives when queried, more often reported that care providers had insufficient time or attention for clients, as compared to users of care in the community. They less often felt they were involved in decision making about the care or assistance. Those findings concur

with reports of nurses and care workers employed in the subsectors in question. Care workers in nursing homes generally gave the least positive ratings to the quality of the care delivered by their own institutions. Care workers in both nursing and residential care facilities were more likely than home care workers and nurses to report that the quality of care provided by their own unit or team was regularly or often inadequate and that insufficient staff and insufficient qualified staff were available. Hence, despite the substantial, and still rising, costs of residential and nursing care, there is clearly still room for quality improvement, for instance in terms of availability of care staff and in terms of services provided by the care institution to stimulate and activate residents (ActiZ, 2013a).

To boost the quality of care, the Dutch health ministry provided €372 million of supplementary 'intensification funding' to long-term care institutions in 2012, which was earmarked for the training and hiring of additional staff, the provision of in-service professional development training to raise qualifications, and the reduction of administrative burdens. About two thirds of that money was spent to provide 'more staff at the bedside' (VWS, 2013f). It is advisable to monitor whether that investment will ultimately result in better-quality care and improved client and staff perceptions. This is especially relevant in the light of recent research by the Dutch Health Care Inspectorate that showed that staff availability and expertise are often still inconsistent with clients' care needs. The Inspectorate points out that staff expertise will be increasingly important in the years to come, particularly because more of the elderly people admitted to residential settings in future are likely to need more complex care than is presently the case (IGZ, 2014d).

A number of developments have occurred in recent years aimed at promoting transparency in the quality of care. Not only public authorities, but also professional associations, patient and consumer organisations and health insurance companies have undertaken efforts to improve the measurability and transparency of long-term care performance. This has spawned a wide variety of indicator sets and datasets for long-term care, in particular for the services provided by nursing, residential and home care establishments. In our previous Performance Report in 2010, we announced that the 2014 report would focus more attention on disability care and long-term mental health care. Significant initial steps have been taken towards evaluating the quality of care in those service types. These include consumer quality assessments in mental health care, as part of the Health Care Transparency Programme; routine outcome monitoring (ROM) in mental health care (see section 5.3.2) and in agencies for sheltered and supported independent living (RIBW Alliantie, 2013); and data collection within the Disability Care Quality Framework (VNG, 2014), which has shed only limited light on performance so far.

As a result of reforms in long-term care sectors, various functions will be significantly modified or transferred, including funding and other responsibilities with respect to the organisation and delivery of certain health and social care services. It is therefore more important than ever to monitor those changes within each of the sectors, focusing in particular on how they affect the accessibility, quality, costs and efficiency of care (Algemene Rekenkamer, 2014). A number of procedures have meanwhile been initiated to translate policy aims into quantifiable targets that will help bring into focus the effects and side-effects the reforms have had on long-term

care – both for the users and their friends and relatives (Peeters & Rademakers, 2014) and for other domains like the labour market (Panteia et al., 2013). This will require the creation of monitoring schemes to safeguard the process. Consultations are now underway to determine the monitoring focuses and to decide whether new indicators need to be incorporated into existing sets. It will still be several years before useful data becomes available.

A first focus will need to be on the degree to which people with long-term illnesses or functional limitations are capable of living independently. The policy concept for long-term care reform recommends that people be encouraged to reside and participate in their own communities for as long as possible, despite any health conditions or limitations they may have, with the support of informal carers and, if necessary, home help and home care (VWS, 2013e; VWS, 2013f). Self-direction, self-reliance and enhanced personal independence are important themes in the reforms. The question arises, however, whether a postponement of intensive residential care is an adequate response to the health care requirements and support needs of people with complex sets of problems. A number of stakeholders have therefore expressed concerns about the consequences the reforms could have for groups such as the elderly, people with intellectual disabilities or vulnerable clients of long-term mental health care institutions (Evenhuis & Hermans, 2012; Evenhuis & Hermans, 2013; GGZ Nederland & RIBW Alliantie, 2013; LHV, 2014b). This makes it essential to monitor whether the reforms will lead to new or exacerbated problems affecting health, well-being and self-reliance (Peeters & Rademakers, 2014), will result in unmet health care needs, or will have undesired repercussions such as bed blocking in hospitals or other facilities, more numerous or recurrent hospital admissions, more acute medical interventions (ambulance callouts, accident and emergency attendances), or more people dying unnoticed at home.

A second focus involves informal carers. Long-term care in the future will no longer hinge primarily on nursing care, personal care or assistance by professionals. The primary emphasis will be, first of all, on seeking informal care and support in a client's own social network and on tapping any financial resources the client might have. Failing this, assessment will be made of whether professional or residential care must be provided. This means greater demands on informal carers. In 2012, more than two million Dutch adults were providing informal care. More than one third of them reported experiencing frequent limitations in their own social participation. A sizeable majority of the informal carers looking after people with dementia reported feeling strained. It is important to comprehensively monitor the personal consequences of this work for informal carers. The research should focus not only on physical and psychological effects such as excessive strain, but also on social constraints such as limitations to their labour market participation and other types of social involvement. This is of particular importance in the light of research findings showing the negative health effects that a lack of participation can have (Bath & Deeg, 2005; Mendes de Leon, 2005).

Because the financial sustainability of long-term care was one of the arguments motivating the overhaul of the system, a third focus should be on monitoring the consequences of the reforms for health expenditure. The costs of long-term care are considerable, as this chapter has shown. In the Netherlands, they constitute about one third of total health spending (see

chapter 8). As well as monitoring expenditure, it will also be important to assess the ramifications the reforms will have for the utilisation of health care services in general. Increases could occur in the use of some types of services or decreases in the use of others.

A fourth key focus should be to monitor the consequences of the reforms for local authorities, which are being assigned more and more responsibilities in arranging or providing long-term care. They face the challenge of improving the quality of community care and support to increasing numbers of people with chronic health conditions or functional limitations, whilst their budgets for some of the services are reduced in comparison to what the national-level authorities previously spent on these functions. Inequities could also arise between local authorities, and hence within the Dutch population at large, because local authorities have been given policy latitude in how they administer the Social Support Act. It will be important to evaluate the consequences that could potentially arise from such challenges in terms of access to services or the quality of the care.

7

End-of-life care

Key findings

- The number of facilities for (terminal) palliative care increased from 497 in 2007 to 891 in 2014
- The number of GPs with a special interest in palliative care increased from 46 in 2007 to 80 in 2012
- Over 10,000 volunteers were providing care and support to terminally ill people in 2012
- The number of consultation requests submitted to Netherlands Integrated Cancer Centre (IKNL) palliative care consultation teams increased from 4863 in 2004 to 6467 in 2013
- The number of people waiting for palliative care (AWBZ VV-10 care) in excess of the Treek standard of 6 weeks is very low. Waiting times for palliative care provided by volunteers are short
- According to the Foundation for Pharmaceutical Statistics (SFK), the number of patients that received palliative sedation doubled in the 2006-2013 period
- The number of SCEN doctors increased from 589 to 608 between 2008 and 2012; the average number of consultations per doctor increased from just under 7 to 11
- The number of euthanasia and assisted suicide reports submitted to regional euthanasia review committees increased from 2331 in 2008 to 4188 in 2012
- The percentages of deaths due to increased symptom or pain relief grew from 25% to 36% of all deaths between 2005 and 2010
- The percentages of deaths due to withholding or withdrawing life-sustaining treatment increased from 16% in 2005 to 18% in 2010
- In 2013, 17 high-care hospices and 3 nursing home palliative care units had been granted palliative care accreditation

- According to relatives of deceased patients, two thirds of deceased patients died in the place where they preferred to die
- Experiences of relatives of deceased patients with discussing the end of life and aftercare services vary
- Relatives of deceased patients felt generally treated politely and taken seriously by care providers
- Experiences of relatives of deceased patients with privacy, support and information provision were moderate to good
- In 2010, many hospital protocols for palliative sedation broadly agreed to the Royal Dutch Medical Association guideline
- The prevalence of continuous deep sedation with morphine alone fell from 15% in 2005 to 6% in 2010
- Artificial hydration or nutrition in continuously and deeply sedated patients decreased from 34% in 2005 to 21% in 2010
- In the 2005-2011 period, an average of 87.4% of patients and 94.5% of relatives were engaged in decisions about palliative sedation in general practice
- The percentages of cases of euthanasia with morphine or benzodiazepines alone decreased from 18% to 17% and from 7% to 2% respectively between 2005 and 2010
- According to SCEN doctors, just under 16% of euthanasia requests did not (yet) meet the requirements of due care in 2012
- The percentage of euthanasia and assisted suicide reports that failed to meet the requirements of due care according to the regional euthanasia review committees, has been less than 0.5% for a number of years
- The average time elapsing between filing a report of euthanasia or assisted suicide and the review of that report by a regional euthanasia review committee increased from 32 days in 2008 to 127 days in 2012. This exceeds the maximum statutory period of 84 days
- There is little clarity as to the amount of money that yearly goes to palliative care

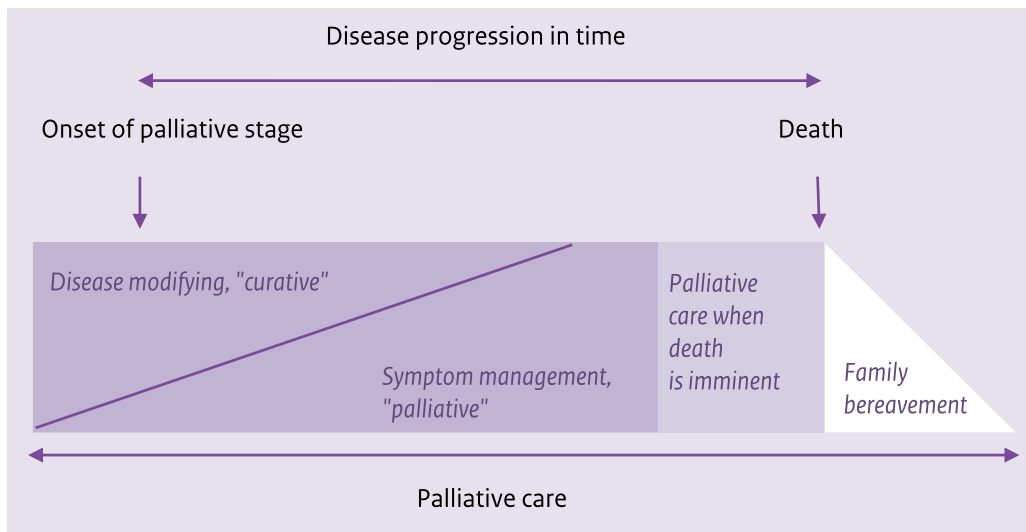
7.1 Background

This chapter on end-of-life-care focuses on palliative care, including palliative sedation, and end-of-life decisions. End-of-life decisions concern increased pain or symptom relief, foregoing life-sustaining treatment, and euthanasia and assisted suicide.

Palliative care

The World Health Organization (WHO) defines palliative care as ‘an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual’ (WHO, 2010). Palliative care is provided by many different providers, in many different places.

Figure 7.1: The model of palliative care (source: Lynn & Adamson, 2003).



Palliative care differs from curative care but does not exclude this

Palliative care is a care continuum that extends from disease oriented palliation to aftercare for the relatives of the deceased patients (figure 7.1). The main focus of disease oriented palliation is on prolonging life and preventing symptoms. With the progression of the disease when it becomes increasingly evident that death is imminent, the focus of care shifts to symptom management and improving quality of life. These two stages cannot always be clearly distinguished. This also depends on the underlying disease. Palliative care in the terminal stage focuses on the quality of dying. The model shows that palliative care starts long before the onset of the terminal stage and does not end with the death of the patient. The periods in which palliative care is provided differ widely. It may be weeks or months, sometimes even years.

It is unknown how many Dutch people receive palliative care. We can, however, make an estimate of the number of people who may benefit from palliative care. In particular, those who die from chronic diseases or cancer are most likely to benefit from palliative care. In 2010, nearly 141,000 people died in the Netherlands; 43,377 people died of cancer, 8,051 people of dementia and over 16,500 people died of chronic conditions, like asthma, COPD, heart failure or diabetes (CBS StatLine, 2013c). So almost half of all people who died, might have benefited from palliative care.

Care providers involved in palliative care

In the Netherlands, all care professionals, who in the exercise of their profession care for terminally ill patients, provide palliative care. Palliative care is not seen as a medical specialty,

but as generalist care and an integral part of regular health care. In many European countries palliative care is considered specialist care.

The main primary care professionals that provide palliative care are GPs, district nurses, home care nurses and home care workers. Secondary care professionals include medical specialists, specialists in geriatric medicine, (specialised) nurses and allied care professionals. For people who die at home, the GP is usually the central care provider and the coordinator of care. Alongside professional caregivers, many informal caregivers and volunteers provide palliative care.

Palliative care facilities

There are a range of facilities that provide terminal palliative care: independent hospices, hospices or palliative care units in nursing homes and residential homes, and special palliative care units in hospitals. Some hospices are run by volunteers (homes-from-home), while others are professionally staffed (high-care hospices). There are also organisations that offer palliative care services but no residential services, like home care organisations. Some hospices offer palliative day care alongside inpatient palliative care.

Palliative care networks

Palliative care is organised in regional networks in which all care professionals and organisations that provide palliative care can participate. The networks aim to improve the organisation and quality of palliative care, so that the needs of patients and their families can be met. Each network is supported by a network coordinator who plays a key role in realising the aim (Agora, 2013). There were 66 networks palliative care in the Netherlands at the end of 2013 (Stichting Fibula, 2013).

Palliative care consultation teams

Care professionals who provide palliative care can request a consultation with a palliative care consultation team. These teams work under the auspices of the Comprehensive Cancer Centre of the Netherlands (IKNL). In 2013, there were 29 palliative care consultation teams across 9 regions. These multidisciplinary teams involve 289 consultants, especially doctors and nurses (Lokker et al., 2014). A number of hospitals have an in-hospital palliative care consultation team.

Expertise Centres for Palliative Care

There are eight expertise centres for palliative care associated with the academic hospitals. These centres aim to improve the organisation and quality of palliative care through research and education. To achieve this goal, the Dutch Federation of University Medical Centres (NFU) has initiated the National Palliative Care Programme (NFU, 2013). Alongside providing complex palliative care to patients when needed, the centres also set out to preserve the generalist nature of palliative care and when possible to transfer care to practice settings closer to the patient. Within this programme, the academic hospitals aim to set up regional consortia in cooperation with existing palliative care networks and their affiliated providers.

Palliative Care Module 1.0

A Palliative Care module has been developed by CBO (Dutch institute for healthcare

improvement) (CBO, 2013). The purpose of this module is 'to contribute to the optimization of care in the palliative stage of a chronic disease process by describing the minimum requirements that the care provided to patients and their families at this stage must meet.' Patients at this stage have a maximum life expectancy of one year. The module is in line with the disease-specific care standards and guidelines for palliative care.

Guidelines and standards for palliative care

Over 50 standards and guidelines for palliative care have been developed by or in cooperation with IKNL. These are available on www.pallialine.nl. Topics include symptoms, specific disorders, end-of-life care, care for specific groups, and non-medical forms of care such as spiritual care. As yet, there is little evidence of any effect on the quality of care, according to IKNL (www.i knl.nl/richtlijnen/overrichtlijnen). The primary target group of the guidelines consists of doctors, nurses and pharmacists. An evaluation of the use of palliative care guidelines carried out in 2012/2013 showed that 93% of the primary target group is aware of their existence, and 85% consulted one or more guidelines in the past 12 months (Verhoof et al., 2013).

Research and ZonMw programmes palliative care

Netherlands Organisation for Health Research and Development (ZonMw) initiated the research Palliative Care programme (2006-2014) with the objective to contribute through research and development to the improvement of palliative care provided to patients and their families, regardless of the settings the patients are in (ZonMw, 2009). To measure the quality of palliative care, a set of quality indicators and a CQ-index Palliative Care for patients and for relatives have been developed. In addition, 'Good Examples' (best practices) have been designed to improve the practice of palliative care (see: <http://www.goedevoorbeldenpalliatievezorg.nl/>). These Good Examples are input to the ZonMw Palliative Care Improvement programme (2012-2016). In 2013 NIVEL started evaluating the improvement programme using the quality indicators. As part of the improvement programme, the Care Module Palliative Care will be implemented and its effect on the quality of palliative care will be evaluated using the indicators. At the request of the Ministry of Health, ZonMw started to design the National Programme for Palliative Care in 2014. The objective of the national programme is to ensure that by 2020 all people who need palliative care will receive the right care and support, in the right place and at the right time (ZonMw, 2014a).

Palliative sedation

Palliative sedation is the deliberate lowering of a patient's level of consciousness in the last stages of life (KNMG, 2009). Sedation may be administered either continuously or temporarily or intermittently and it may be superficial or deep. Requirements for continuous and deep sedation are that the patient is suffering unbearably from one or more untreatable diseases (refractory symptoms) and has a life expectancy of one to two weeks. Sedation can be continued until the moment of death. If a doctor has doubts about his or her own expertise or about the patient's life expectancy, an appropriate expert should be consulted. With exception of acute situations, palliative sedation is started only after consultation with the patient or the patient's representative(s) and the care professionals involved. No artificial hydration and

nutrition should be administered during palliative sedation. The patient's doctor should be present when continuous palliative sedation is started. In the entire process of palliative sedation, good reporting, coordination and adequate information transfer are conditional to ensure the quality and continuity of care.

Continuous deep sedation is a treatment option with the primary aim to relieve suffering at the end of life; its aim is not to hasten death. In this it differs fundamentally from euthanasia. In practice, there may be situations where palliative sedation as well as euthanasia are indicated. In consultation with the doctor, it is up to the patient to choose between the two options (KNMG, 2009).

Euthanasia and assisted suicide

In the Netherlands, euthanasia is defined as deliberately ending a person's life at that person's explicit request by a doctor administering lethal medication. A request for euthanasia does not need to be made in writing, but can also be made verbally. Assisted suicide differs from euthanasia in that the person self-administers medication that is prescribed by a doctor.

Criteria of due care for euthanasia and assisted suicide

Euthanasia and assisted suicide are allowed under the Termination of Life on Request and Assisted Suicide (Review Procedures) Act (WTL), which came into force in 2002 (WTL, 2013). The WTL defines the statutory criteria of due care that euthanasia and assisted suicide should meet to be legal. These criteria require that the doctor

- 1) is convinced that the patient's request is voluntary and well-considered
- 2) is convinced that the patient's suffering is unbearable and hopeless
- 3) has informed the patient about his or her situation and prospects
- 4) and the patient are convinced that there are no reasonable alternatives
- 5) consulted at least one independent doctor who has seen the patient and has indicated in writing whether the criteria for due care have been met
- 6) the termination of life has been performed with due medical care and attention.

The act also sets out how the doctor's actions should be reported and evaluated. The doctor is required to notify the municipal pathologist of a death by euthanasia or assisted suicide and to submit a report of the case for review to a regional euthanasia review committee. The committee assesses whether the criteria of due care are met. Currently there are five review committees.

Patients who have expressed the wish to die, but whose doctor objects to performing euthanasia or assisted suicide, can turn to the End-of-life Clinic, which was established in March 2012. In carrying out euthanasia, the End-of-life Clinic is also bound by the requirements of due care.

In practice, the requirements of due care can be ambiguous. Are people with dementia or psychiatric disorders able to make a well-considered request, and is their suffering hopeless and unbearable? It is also unclear whether being tired of life or existential suffering without an underlying medical cause can be seen as hopeless and unbearable suffering.

Article 2, paragraph 2 of the WTL stipulates a doctor's competencies in case of a request for euthanasia by a written advance directive of a patient who is no longer able to express his or her wishes. A written advance directive specifies a patient's wishes regarding end-of-life care such as continuing, discontinuing or withholding treatment, euthanasia and representation in case of incompetence. An advance directive is considered more valuable when it has been formulated clearly and in detail, and has been updated and discussed with the attending doctor as well as the consulted doctor.

Doctors are under no obligation to meet such requests for euthanasia. If they do, the criteria of due care must be satisfied. If a patient suffers from advanced dementia, the doctor has to assess whether the request is well-considered and the patient's suffering is hopeless and unbearable, and whether the patient's situation matches the specifications in the advance directive.

Intensification of pain and symptom relief

When a patient near the end of life suffers unbearable pain or other symptoms, a doctor may decide to increase pain or symptom relief. Hastening the end of life may be the unintended result.

Withholding life-sustaining treatment

When the quality of life of a patient is so poor and treatment is no longer effective or the side-effects of treatment are unacceptable, a doctor may decide not to start or discontinue life-sustaining treatment. Hastening the end of life may be the result.

7.2 Indicators for end-of-life care

To date, the quality indicators and the CQ-index Palliative Care have been used to a limited extent. The results of a CQ-index survey among relatives of deceased patients (285 respondents) are presented below. In line with the CQ-index questions about perceived quality of long-term care (chapter 6), questions about relatives' experiences with communication with health care providers are included. In addition, questions about the place of death, the support the deceased received in preparing for saying farewell and about end-of-life decisions are discussed. Next, questions that pertain exclusively to experiences of relatives and aftercare are included.

The number of patients that filled out a CQ-index questionnaire is as yet too small to allow for statistical analysis.

Accessibility (and availability)

Palliative care

- Numbers of palliative care facilities
- Numbers of GPs with special interest in palliative care
- Numbers of volunteers that provide palliative care
- Number of consultation requests submitted to IKNL palliative care consultation teams
- Waiting times for terminal palliative care
- Numbers of patients with palliative sedation, according to SFK

End-of-life decisions

- Number of SCEN doctors
- Number of notifications of euthanasia and assisted suicide
- Percentage of deaths due to intensification of pain and symptom relief
- Percentage of deaths due to withholding life-sustaining treatment

Quality

Palliative care

- Number of high-care hospices with a quality accreditation

According to relatives

- Percentage of patients who died at their place of preference
- Degree to which relatives report being treated well by care providers
- Degree to which relatives report care providers having discussed the end of life with patients and relatives and aftercare with relatives
- Degree to which relatives report having the opportunity to be alone with the patients
- Degree to which relatives report being supported by care providers after the death of the patients

Palliative sedation

- Percentage of hospital protocols for palliative sedation matching the Royal Dutch Medical Association (KNMG) guideline
- Percentage of cases of continuous deep sedation with morphine alone
- Percentage of cases of continuous deep sedation in which artificial hydration or nutrition is administered
- Percentage of patients and relatives engaged in decisions about palliative sedation

End-of-life decisions

- Percentage of cases of euthanasia with morphine or benzodiazepines
- Percentage of reports of euthanasia and assisted suicide, that do not meet the criteria of due care according to the regional euthanasia review committees
- The average period between notifying the regional euthanasia review committees of euthanasia or assisted suicide and the review of the notification

Cost

Palliative care

- Expenditure for palliative care

7.3 Current state of affairs

7.3.1 Accessibility

The number of facilities for (terminal) palliative care increased from 497 in 2007 to 891 in 2014

The Dutch advocacy organisation for palliative care Agora presents on its website information about organisations and facilities that provide (terminal) palliative care in the Netherlands. April 2014, there were 68 homes-from-home, 81 high-care hospices, 10 hospice facilities for children, and 103 nursing homes, 40 residential homes and 15 hospitals with a separate hospice facility. Some 200 home care organisations and 190 volunteer organisations offered palliative care (figure 7.2). Between October 2007 and April 2014, the total number of facilities increased from 497 to 891, with home care organisations showing the largest increase. This increase reflects the need for organisations to register with Agora. For reimbursement of palliative care, many insurance companies refer to agencies included in the Agora website.

The number of GPs with a special interest in palliative care increased from 46 in 2007 to 80 in 2012

When GPs have successfully completed the special training Palliative Care, they can register as a GP with a special interest in palliative care at the College of General Practitioners with a Special Interest. The number of GPs with a special interest in palliative care increased from 46 to 80 between 2007 and 2012 (CHBB, 2008-2013). Palliative care GPs provide services like support to palliative care teams (for example in hospices) and training and advice to other GPs (CHBB, 2012).

Over 10,000 volunteers were providing care and support to terminally ill people in 2012

Volunteers for Palliative Care in the Netherlands (VPTZ) is an association of 196 volunteer organisations that provide palliative care in hospices and at home. In 2012, 10,126 volunteers offered 1,331,941 hours of care and support to 10,005 terminally ill people, that is on average 134 hours per volunteer and 136 hours per patient (VPTZ, 2014). Besides providing care and support to terminally ill people, volunteers provide help and support to informal carers. VPTZ offers palliative care training to volunteers.

The number of consultation requests submitted to Netherlands Integrated Cancer Centre (IKNL) palliative care consultation teams increased from 4863 in 2004 to 6467 in 2013

The number of consultation requests submitted to Netherlands Integrated Cancer Centre (IKNL) palliative care consultation teams grew from 4863 in 2004 to 6467 in 2013. In 2013, most consultation requests were filed by GPs (78.9%) and involved cancer patients (78%) staying at home (73%). Topics that were most frequently discussed include pharmacological problems (69%), palliative sedation and / or euthanasia (28%) and the organisation of care (20%). In one in three consultations the requests were inspired by the need for moral support (Lokker et al., 2014). Given the size of the potential target group, the actual number of consultations is limited (Fröhleke et al., 2013).

Figure 7.2: Number of facilities for (terminal) palliative care in the Netherlands, October 2007 - April 2014 (source: Agora, 2007-2014).

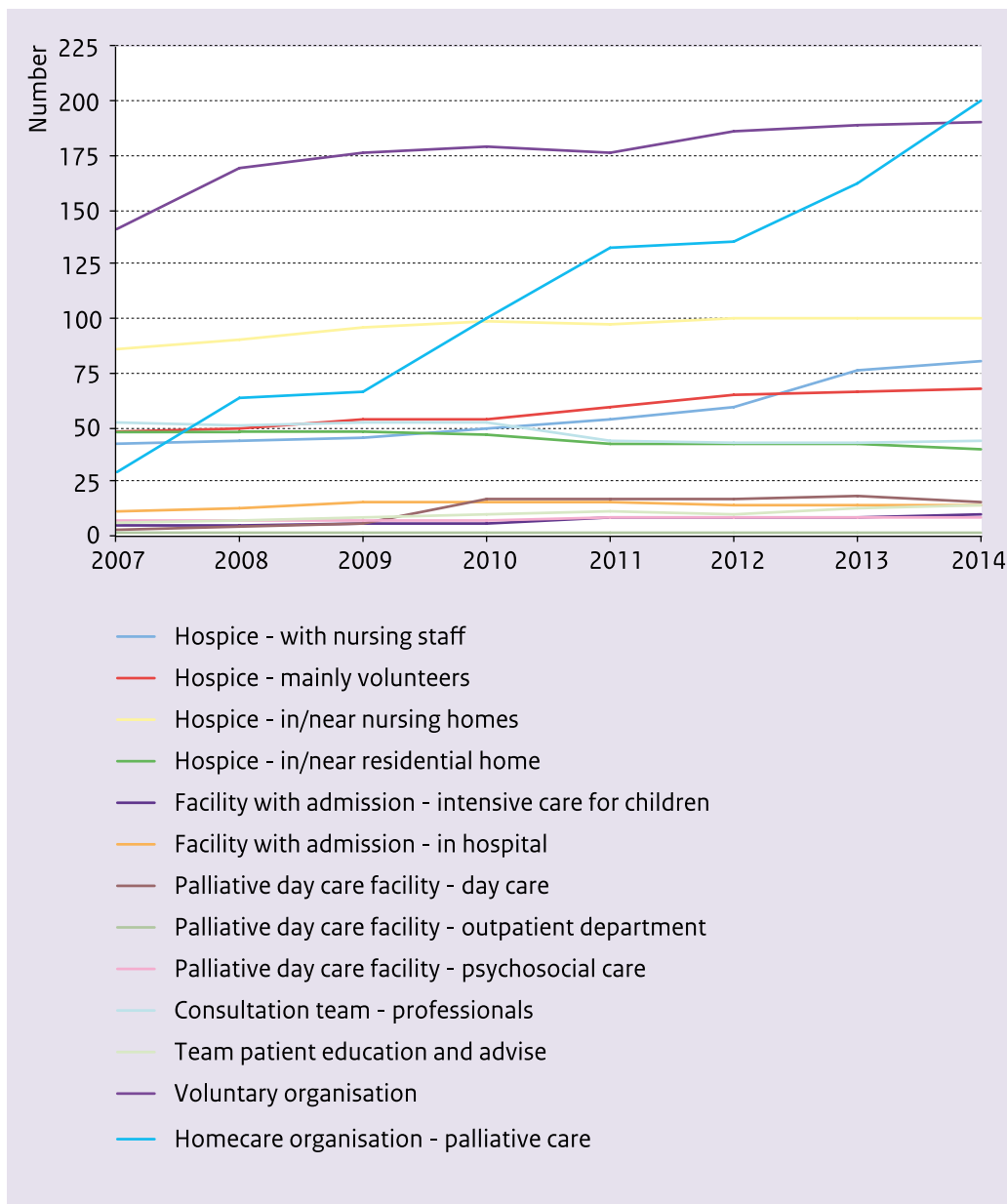


Table 7.1: Number of people that is waiting longer than the Treek standard for AWBZ VV-10-care with or without receiving intermediate care, July 2013 – January 2014 (source: AZR, 2013-2014b).

Waiting time	31/07/2013	31/08/2013	30/09/2013	31/10/2013	31/11+12/2013	31/01/2014
6-13 weeks	1(-)	1(-), 1(+)	1(+)	1(+)	0	1(-)
3-6 months	0	0	1(-), 1(+)	0	0	0
6-12 months	1(-)	0	0	0	0	0

The number of people waiting for palliative care (AWBZ VV-10 care) in excess of the Treek standard of 6 weeks is very low. Waiting times for palliative care provided by volunteers are short

Terminally ill patients who cannot or do not want to be cared for at home, are eligible for residential palliative terminal care (VV-10) under the Exceptional Medical Expenses Act (AWBZ) (CIZ, 2013). They need to apply for approval with the National Care Assessment Centre (CIZ). If granted, they receive care usually for the duration of less than three months. On 1 January 2014, 925 people had CIZ approval for palliative care. According to the Long-Term Care Register (AZR), very few people had to wait longer than the Treek standard for AWBZ VV-10 care, with or without receiving intermediate care in 2013 (AZR 2013-2014b) (table 7.1). The Treek standard for palliative care is 6 weeks.

VPTZ reported that of the patients applying for help with a volunteer organisation, 76% received support by a volunteer or were admitted to a hospice within three days of their requests in 2012. For 85% this was within seven days. Waiting times for care at home were shortest; 55% received help from volunteers within 24 hours and nearly 90% within three days. Twenty two percent of the 12,440 patients who submitted a request to a volunteer organisation ultimately received no support from that organisation. The main reasons were that the patient had died before the request could be met (42%), or the patient was looking for or was referred to another facility (20%) (VPTZ, 2013a).

According to the Foundation for Pharmaceutical Statistics (SFK), the number of patients that received palliative sedation doubled in the 2006-2013 period

According to SFK, community pharmacies dispensed medicines for palliative sedation for approximately 23,000 patients in 2013. Assuming that 140,000 people died that year, this amounts to about 16% of all deaths (SFK, 2014). In 2006, community pharmacies dispensed such medicines for approximately 11,200 patients, that is between 6% and 8% of all deaths (SFK, 2007). These calculations are based on the number of times pharmacies dispensed medzolan or levomepromazine in combination with propofol and the time of up to 14 days that elapsed between the last date of dispensing these medicines and dispensing any other

Table 7.2: Number of registered SCEN-doctors^a, (mean) number of consultations per SCEN-doctor and percentage of consultations in inpatient facilities^b (source: KNMG, 2009-2013).

	Number of registered SCEN-doctors	Mean number of consultations per SCEN-doctor	Percentage of consultations in inpatient facilities
2008	589	7	17.5
2009	555	8	17.2
2010	566	9	17.1
2011	596	10	19.0
2012	608	11	19.8

^a Not all of the registered SCEN-doctors performed consultations.

^b Facilities: hospitals, nursing homes, residential homes, other.

medicine. Medicines dispensed by dispensing GPs, hospitals and nursing homes were not included in the calculations. The 2013 percentage of 16% is therefore a lower limit of the total percentage of deceased who received medicines for palliative sedation.

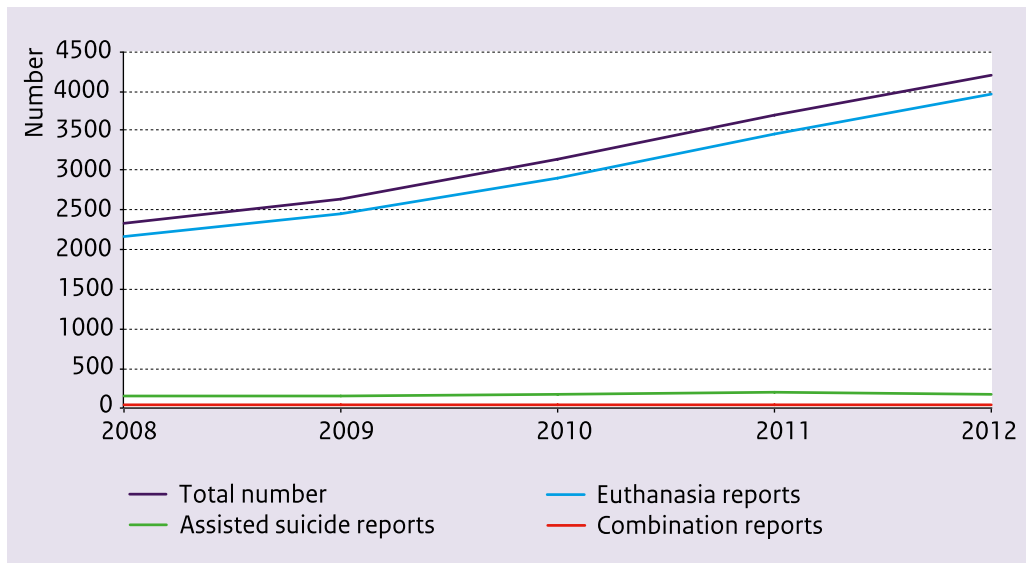
The Dutch Mortality Surveys conducted in 2010, 2005 and 2001 focused on medical decisions at the end of life. The 2010 survey involved a sample of about 6,300 persons who had not died a sudden or unexpected death. Their doctors were asked to fill out a questionnaire (Van der Heide et al., 2012a). According to this survey about 12.5% of all deaths involved continuous deep sedation. The results are difficult to compare with the SFK figures because the study groups as well as the methods and definitions differed. According to the Mortality Survey continuous deep sedation was mainly carried out by GPs (43% of all deaths due to continuous deep sedation), followed by medical specialists (38%) and specialists in geriatric medicine (19%).

The number of SCEN doctors increased from 589 to 608 between 2008 and 2012; the average number of consultations per doctor increased from just under 7 to 11

SCEN doctors have completed the Euthanasia in the Netherlands Support and Assessment (SCEN) programme. Their main task is to provide independent advice to doctors who received a request for euthanasia or assisted suicide.

There were 589 registered SCEN doctors who did on average nearly 7 consultations in 2008. In 2012, 608 registered SCEN doctors performed on average 11 consultations across 32 regions (table 7.2). Between regions, the number of consultations (28-353) and the number of consultations per SCEN doctor (0-43) differed widely (KNMG, 2009-2013).

Figure 7.3: Number of euthanasia and assisted suicide reports, 2008-2012 (source: RTE, 2009-2013).



The number of euthanasia and assisted suicide reports submitted to regional euthanasia review committees increased from 2331 in 2008 to 4188 in 2012

Under the Termination of Life on Request and Assisted Suicide Act (WTL), a doctor has to submit a report of each case of euthanasia or assisted suicide for assessment to a regional euthanasia review committee. Between 2008 and 2012, the number of reports submitted to the committees increased from 2331 to 4188 (RTE, 2009-2013) (figure 7.3). How these numbers relate to the actual numbers of euthanasia or assisted suicide is difficult to say. According to the death statistics of Statistics Netherlands (CBS), 3859 people died as a result of euthanasia and 192 people as a result of assisted suicide in 2010. This suggests that in that year 77% of all cases of euthanasia and assisted suicide were reported to the review committees. As part of the second review of the WTL, a survey was carried out among 810 doctors about their willingness to report. Nearly all of them (98%) indicated that they had reported all cases of termination of life on request since the introduction of the WTL (Van der Heide et al., 2012b).

In 2012, GPs submitted 3777 euthanasia or assisted suicide reports to the review committees, medical specialists 171, specialists in geriatric medicine 166, specialists in training 21 and other doctors 53 (RTE, 2013). Euthanasia or assisted suicide was mainly performed in patients' homes; four times as often as in all other settings combined.

In the years 2009 to 2012, 0, 2, 13 and 14 euthanasia reports concerned patients with psychiatric disorders and 12, 25, 49 and 42 reports patients with dementia.

The percentages of deaths due to increased symptom or pain relief grew from 25% to 36% of all deaths between 2005 and 2010

When patients at the end of life are in severe pain or face refractory symptoms, doctors may decide to increase pain and symptom relief. Hastening the end of life may be the unintended consequence or the explicit purpose. The Mortality Survey shows that 36% of all deaths in 2010 were the result of such actions. In 2005, this was 25% (Van der Heide et al., 2012a). Hastening the end of life was the ultimate goal in almost 3% of cases. It was estimated that life had been shortened with less than a week in 86% of cases.

The percentages of deaths due to withholding or withdrawing life-sustaining treatment increased from 16% in 2005 to 18% in 2010

When the quality of life of a patient is so poor and treatment is no longer effective or the side-effects of treatment are unacceptable, a doctor may decide not to start or to discontinue life-sustaining treatment. Hastening the end of life may be the explicit purpose or the unintended consequence. The Mortality Surveys found that the percentages of all deaths due to withholding or withdrawing treatment rose from 16% in 2005 to 18% in 2010 (Van der Heide et al., 2012a). Hastening a patient's death was the ultimate goal in over 50% of cases in 2010. It was estimated that withholding treatment had shortened life with less than a week in 77% of cases.

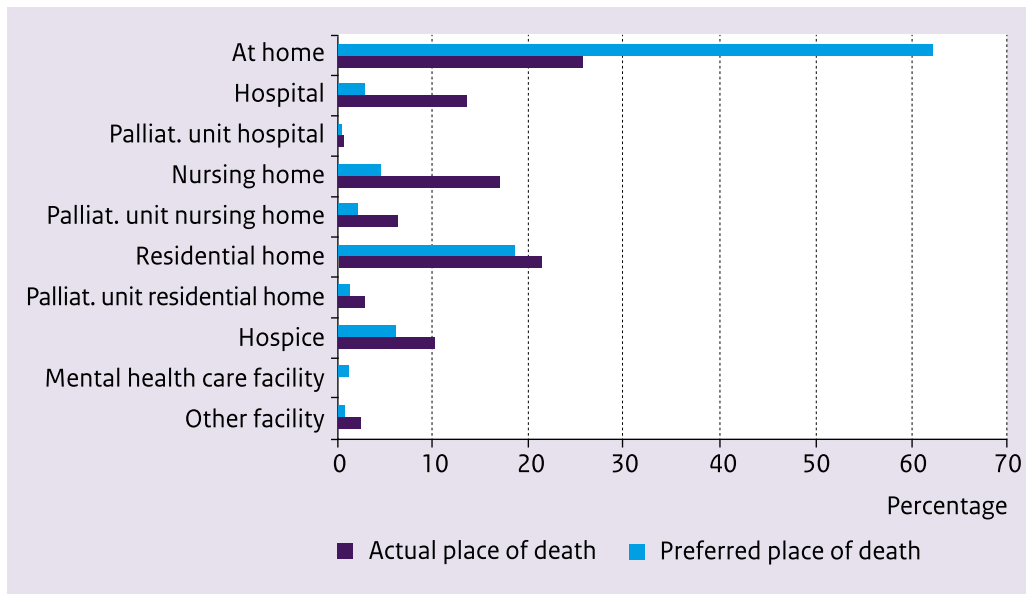
The Mortality Survey also showed that 2.9% of all deaths in 2010 were the result of euthanasia or assisted suicide. This percentage is significantly lower than for increasing pain and symptom relief, foregoing treatment and palliative sedation.

7.3.2 Quality

In 2013, 17 high-care hospices and 3 nursing home palliative care units had been granted palliative care accreditation

A quality accreditation scheme is available for high-care hospices and palliative care units in nursing homes. The scheme is based on the system of the Dutch Foundation Harmonisation of Quality Review in Health Care and Welfare (HKZ). The audits are performed by the auditing company Perspekt. Important quality standards include discussing personal wishes and needs of the clients and their families, the availability of written information about the facility's vision on ethical issues, the privacy of the client, the presence of a psychosocial worker, and support and guidance of the relatives after the death of the client. In 2013, there were 17 high-care hospices and 3 palliative care units in nursing homes that had been granted the Palliative Care Accreditation (Agora, 2014; Perspekt, 2014).

Figure 7.4: Preferred and actual place of death according to relatives (source: CQ-index, see Appendix 3).

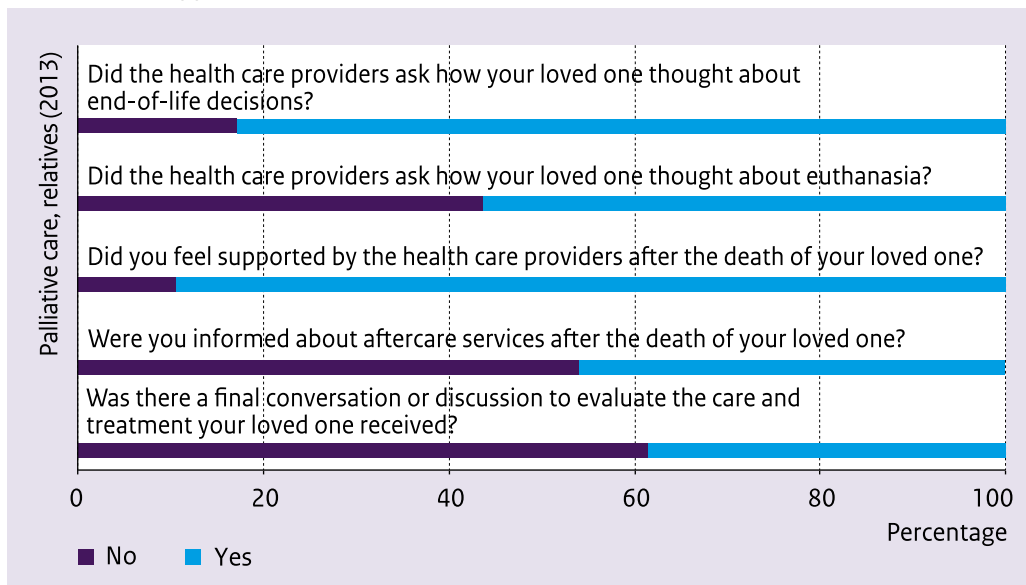


According to relatives of deceased patients, two thirds of deceased patients died in the place where they preferred to die

Figure 7.4 shows where people would have preferred to die according to their relatives and where they actually died. Most of the relatives reported that the deceased had wanted to die at home, while only 25% actually died at home. Thirty percent of the deceased died in a hospital or nursing home, and only 5% had wanted to die there. Although figure 7.4 suggests that there is a considerable discrepancy between the reported preferences of the deceased and what in fact happens, 67% of relatives gave a positive answer to the question whether the patient had died at the place of preference (data not in figure). It may well be that severely ill patients change their initial preference regarding the place of death when their disease progresses (Janssen et al., 2013).

The place of death is used as a quality indicator for palliative care. It is assumed that people prefer to die at home. In a telephone survey among people in seven Western European countries, 84% of 1356 Dutch participants said that if they had terminal cancer they would prefer to die at home (Gomes et al., 2012). To be able meet that wish, health care providers and especially GPs should be aware of it. In the context of EURO IMPACT (European Intersectorial and Multi-disciplinary Palliative Care Research Training), a cross-national study was conducted among GPs in Belgium, the Netherlands, Italy and Spain into the preferred place of death of patients living at home one month before they died and the actual place of death. Some 269 of 512 Dutch patients died at home. According to the GPs this was the preferred place of 79.9%

Figure 7.5: Experiences of relatives with discussing end-of-life decisions and aftercare (source: CQ-index, see Appendix 3).



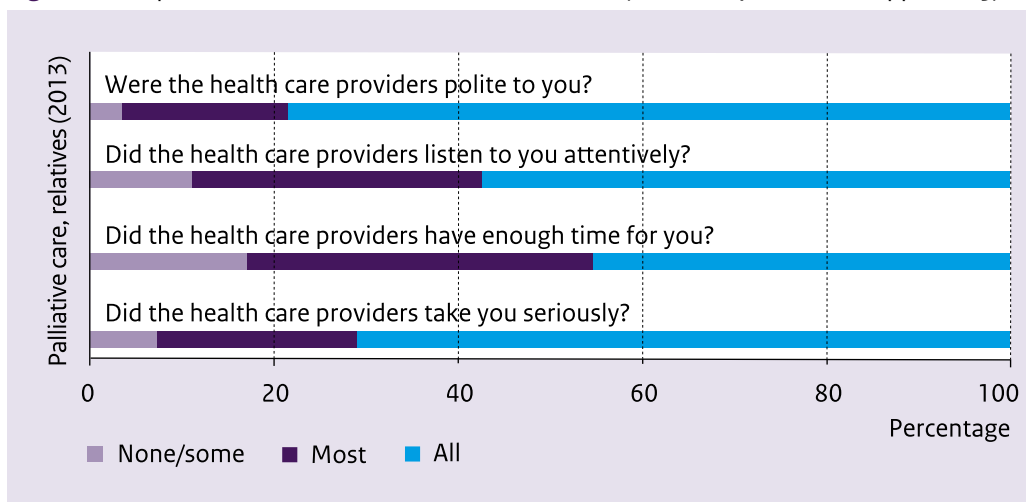
of the deceased, for 2.6% this was not the preferred place, and the preference of 17.5% was unknown. Just over 15% of the 243 patients who did not die at home, died at their place of preference, for 18.1% this was not the case, and the preference of 66.7% was unknown (De Roo et al., 2014). Another EURO IMPACT study focused on GPs awareness of their patients' preferences regarding the place of death. Dutch GPs knew the preferred place of death for 119 of 181 deceased cancer patients. GPs were more often aware of patients' preferences when patients died at home than when they died in hospital (Ko et al., 2013).

Experiences of relatives of deceased patients with discussing the end of life and aftercare services vary

Figure 7.5 presents relatives' experiences (n=285) with discussing the end of life and aftercare with care providers. More than 80% of the relatives reported that care providers had discussed end-of-life decisions with the deceased and over 50% that care providers had discussed euthanasia with the deceased.

About 90% of relatives felt supported by the care providers immediately after the death of the patient. More than half of the relatives reported that possibilities of aftercare had not come up and over 60% that a discussion to evaluate care and treatment had not taken place. It is unclear whether there is an unmet need; perhaps not all relatives need aftercare or to evaluate care.

Figure 7.6: Experiences of relatives with communication (source: CQ-index, see Appendix 3).



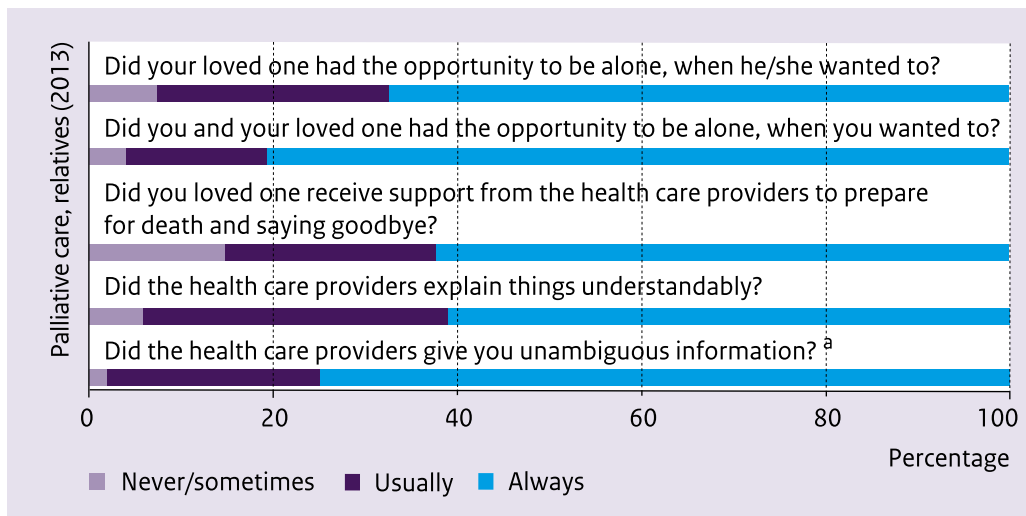
Relatives of deceased patients felt generally treated politely and taken seriously by care providers

Figure 7.6 shows relatives' experiences with various aspects of communication with care providers. Just over 70% of the relatives reported that they were treated politely and taken seriously by all care providers and about 20% of the relatives reported that this was true for most caregivers. The experiences of relatives with care providers listening attentively and taking enough time seem slightly less favourable; some 45% said that all care providers took sufficient time and 57% that all care providers listened attentively.

Experiences of relatives of deceased patients with privacy, support and information provision were moderate to good

The experiences of relatives with privacy, support and information provision are shown in figure 7.7. Over 70% of the relatives reported that the patient usually or always had had the opportunity to be alone, and 90% of the relatives reported that they usually or always had had the opportunity to be alone with the patient. Patients usually or always had been supported by care providers in preparing for death and saying farewell, according to 85% of the relatives. More than 95% of the relatives usually or always had had good experiences with care providers explaining things understandably and providing unambiguous information.

Figure 7.7: Experiences of relatives with communication (source: CQ-index, see Appendix 3).



^a The original question was ‘Did the health care providers give you contradictory information?’ To maintain consistency of presentation, we have reworded the question here.

In 2010, many hospital protocols for palliative sedation broadly agreed to the Royal Dutch Medical Association guideline

Many hospitals have developed a treatment protocol that is based on the Guideline for Palliative Sedation of the Royal Dutch Medical Association (KNMG). A survey of hospitals (n = 66) showed that the treatment protocols broadly complied with the guideline, but that they differed in details or were incomplete (Burgering-van Gelder et al., 2011). No distinction was made between intermittent and continuous sedation in almost 30% of the protocols, almost 25% did not include the advice to consult an expert if sufficient expertise was lacking, over 25% mentioned a different medication schedule and / or dosage, and half of the protocols did not contain any information about agreements on when and how to reach care providers and on information transfer.

The prevalence of continuous deep sedation with morphine alone fell from 15% in 2005 to 6% in 2010

The KNMG Guideline for Palliative Sedation describes the stepwise approach to continuous deep sedation, including the drugs of choice, doses and order of administration (KNMG, 2009). The drugs of choice are midazolam (benzodiazepine), followed by levomepromazine and propofol, optionally in combination with morphine for pain relief and dyspnoea. The use of morphine alone is not recommended as this can lead to drowsiness, but not always to loss of consciousness. Morphine may also have side-effects like delirium (confusion) or myoclonus (muscle twitching) (KNMG, 2009). In 2010, morphine was used in 6% of cases (especially by

medical specialists), compared to 15% in 2005 (Van der Heide et al., 2012a). In 41% of cases benzodiazepines were used and in 49% benzodiazepines in combination with morphine.

Artificial hydration or nutrition in continuously and deeply sedated patients decreased from 34% in 2005 to 21% in 2010

The KNMG guideline assumes that continuous deep sedation is administered only when death is imminent, and that artificial hydration, including artificial nutrition, is of no benefit to the patient and may merely prolong the dying process. It is therefore considered medically futile and not recommended (KNMG, 2009). In 2010, 21% of the doctors administering continuous deep sedation initiated or continued artificial hydration and nutrition. In 2005, this was 34%. Some 98% of GPs and 100% of specialists in geriatric medicine did not do this, while 54% of medical specialists did (van der Heide et al., 2012a).

In the 2005-2011 period, an average of 87.4% of patients and 94.5% of relatives were engaged in decisions about palliative sedation in general practice

In the vast majority of cases of palliative sedation in general practice, the patients and their families were engaged in decisions about palliative sedation, in the 2005-2011 period. Cancer patients were more often engaged in such decisions than patients with other diseases; 90% of people with cancer versus 75% of people with cardiovascular diseases and 57% of people with COPD (Dark et al., 2014).

The percentages of cases of euthanasia with morphine or benzodiazepines alone decreased from 18% to 17% and from 7% to 2% respectively between 2005 and 2010

The KNMG / KNMP guideline for euthanasia and assisted suicide gives recommendations regarding medicines, dosages, and order of administration in performing euthanasia (KNMG / KNMP, 2012). The patient is first put into a coma with thiopental (a barbiturate) or propofol (another anaesthetic). When the coma is deep enough for the patient not to experience the next stage, a muscle relaxant rocuronium, atracurium or cisatracurium is administered causing paralysis. The use of agents like benzodiazepines and opioids (such as morphine) as euthanizing agents is not recommended, because they may delay or fail to have the desired effect of coma or death. In some 17% of cases, morphine, sometimes combined with other drugs, was used without muscle relaxants or barbiturates (especially by medical specialists) in 2010, compared to 18% in 2005 (Van der Heide et al., 2012a). In 2% of cases, benzodiazepines, sometimes combined with other drugs, were used without muscle relaxants, barbiturates or morphine (especially by specialists in geriatric medicine), compared to 7% in 2005.

According to SCEN doctors, just under 16% of euthanasia requests did not (yet) meet the requirements of due care in 2012

All registered SCEN physicians are invited yearly to complete a postal questionnaire on their consultations during the past year. One question pertains to whether the euthanasia request satisfied the criteria of due care during their last consultation. In the 2009-2012 period, this was not (yet) the case for on average 19% of consultations (table 7.3). There is, however, a clear downward trend.

Table 7.3: Percentage of consultations that did not (yet^a) meet the requirements of due care, according to SCEN-physicians (source: KNMG, 2009-2013).

Percentage of consultations that did not (yet) meet the requirements of due care	
2009	24.9
2010	18.5
2011	16.5
2012	15.9

^a Patients whose symptom burden is expected to increase in the near future.

On the basis of the 2006, 2008-2011 questionnaires, it was investigated why the requirements of due care were not (yet) met. The main reasons were that the SCEN doctors did not consider the patients' suffering to be unbearable (70%) or the patients' request well-considered (30%), nor were they convinced that there were no reasonable alternatives (19%) (Brinkman-Stoppenburg et al., 2013). The majority of these patients had given as a reason for their euthanasia requests to be tired of life, not wanting to be a burden, or depression.

The percentage of euthanasia and assisted suicide reports that failed to meet the requirements of due care according to the regional euthanasia review committees, has been less than 0.5% for a number of years

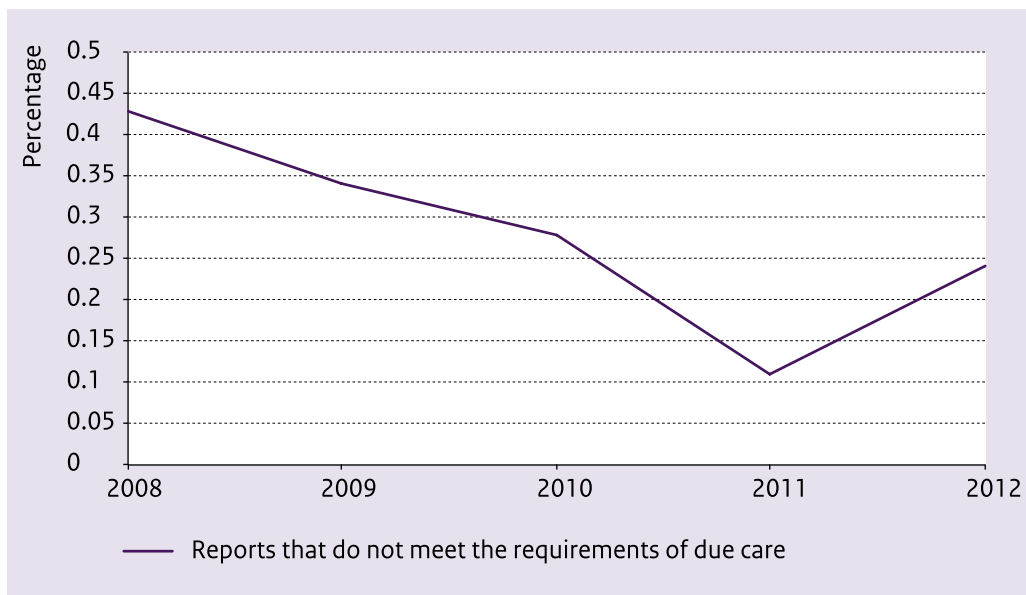
The regional euthanasia review committees assess whether the reports of euthanasia and assisted suicide meet the requirements of due care as set out by the Termination of Life on Request and Assisted Suicide Act (WTL). The percentage of reports that do not meet these requirements has been less than 0.5% for a number of years (figure 7.8) (RTE, 2009-2013). In the 2008-2012 period, a total of 39 reports failed to meet the criteria. Eighteen reports did not meet the consultation requirement because no doctor had been consulted or because the doctor consulted had not been independent. Another 17 reports were found negligent for medical practice reasons, such as using euthanasia agents other than recommended in the KNMG / KNMP guideline or failing to determine the depth of the coma or doing so inaccurately. Some reports did not meet several criteria.

In the 2009-2012 period, all 29 euthanasia reports involving people with mental illness and 40 of the 42 reports involving dementia patients met the requirements of due care.

The average time elapsing between filing a report of euthanasia or assisted suicide and the review of that report by a regional euthanasia review committee increased from 32 days in 2008 to 127 days in 2012. This exceeds the maximum statutory period of 84 days

The statutory period between filing a report and the review of that report by a regional euthanasia review committee is six weeks with a possible extension of another six weeks. Due to the growing number of reports, it has become increasingly difficult for the committees not

Figure 7.8: Percentage of euthanasia and assisted suicide reports submitted to the regional euthanasia review committees that failed to meet the requirements of due care, 2008-2012 (source: RTE, 2009-2013).



to exceed that period. Measures were taken to reduce the actual review times. They included employing more staff and more rapid assessments of unambiguous reports. Despite these measures, the average review time has increased, from 32 days in 2008 to 127 days in 2012 (RTE, 2009-2013).

7.3.3 Costs

Palliative care is provided in many different settings, by many different care providers to many patients. Numbers and volumes are not exactly known. It is therefore impossible to specify exactly what the actual costs of palliative care are. Just to get an impression of the funding of palliative care, the various funding sources are given below.

Next to that, the Ministry of Health has granted research funds to various institutions with the aim to strengthen the scientific basis and improve the practice of palliative care.

There is little clarity as to the amount of money that yearly goes to palliative care

Palliative care in the Netherlands is funded under the Health Insurance Act (ZVW), the Exceptional Medical Expenses Act (AWBZ), the Social Support Act (WMO) and the Regulation Palliative Terminal Care. For hospices, contributions, donations and sponsoring are an important additional source of income.

Health Insurance Act

Palliative care provided by GPs and hospitals as well as most medicines are covered by the statutory health insurance under the Health Insurance Act (ZVW). GPs who provide palliative care to terminally ill patients at home, in community clinics or hospices can claim a fee from health insurers under the modernisation and innovation (M&I) scheme (NZA, 2013e). Six hospital diagnosis-treatment combinations (DBC) palliative care were introduced in 2012. They allow hospitals to claim compensation from health insurers for the palliative care they provide their patients. In addition, there are six DBCs for supportive / palliative care for 21 types of cancer each (NZA, 2013f).

Exceptional Medical Expenses Act

Palliative care provided by home care and in residential homes and nursing homes is funded under the Exceptional Medical Expenses Act (AWBZ). With few exceptions, high-care hospices are considered outpatient facilities; the palliative care they provide is covered by the AWBZ but the residential care is not. A few home-from-home hospices receive a financial contribution from home care organisations via the AWBZ tariff. As a result of reforms in long-term care, outpatient palliative terminal care will be transferred from the AWBZ to the new claim community nursing under the Health Insurance Act (ZVW) as of 1 January 2015 (VWS, 2013g). According to the AWBZ Market scan of the Dutch Healthcare Authority (NZA), the costs of residential palliative terminal care (VV-10 care) amounted to €61.7 million in 2012.

Social Support Act

For home help, transport or home modifications in the palliative terminal stage, people may draw on services provided under the Social Support Act (WMO). It is unknown how often this occurs or how much money is involved.

Out-of-pocket payments

Most hospices charge patients for the services they receive. Out-of-pocket costs for hospice care services ranged from €7 to €95 per day in 2011 (Palliactief, 2011). Depending on the patient's insurance policy, the out-of-pocket costs are compensated under the voluntary supplementary insurance.

Palliative Terminal Care Scheme

Through the Palliative Terminal Care Scheme the Dutch government subsidizes hospices' housing costs, voluntary palliative care and support for informal carers, and the regional palliative care networks. This scheme stipulates the maximum amount that each type of care gets per patient. Subsidies amounted to €13.31 million for operating costs and €2.2 million for housing costs in 2013. Approximately 8750 people received palliative care through this scheme in 2013, that is on average €1,770 per person (VWS, 2013h).

From 2013 onwards €15.51 million per year has been earmarked for the scheme palliative terminal care.

Grants for research and training

The Netherlands Organisation for Health Research and Development (ZonMw) receives a total

subsidy of €7.8 million for its Palliative Care Improvement programme (2012-2016) and €2.5 million for the Programme Quality Palliative Care (2013-2018) (VWS, 2013i).

For the development and implementation of the National Palliative Care Programme the Dutch cabinet has earmarked €8.5 million per year, for the duration of six years (VWS, 2013g). The Netherlands Integrated Cancer Centre (IKNL) receives an annual subsidy of €6.4 million (VWS, 2013i).

The Ministry of Health has granted approximately an additional €10 million per year to improve the quality of terminal palliative care for the period 2013-2017 (VWS, 2013g).

7.4 Conclusions

Over the past decades, more than ever, end-of-life care has attracted the interest of the public, care professionals and policy makers. There has been a growing recognition that end-of-life care is less than optimal while the need for end-of-life care has been increasing. This has led to a wide range of activities and developments. To name a few: research programmes for palliative care have been set up, best practices have been designed and are currently being implemented and evaluated, health care professionals have developed guidelines and training programmes, the number of palliative care services in a range of health care settings has increased considerably, and legislation has been enacted. The Ministry of Health has been closely monitoring the developments and has played an important role by formulating policies, setting priorities, enacting legislation, and providing financial support and grants.

A major development in end-of-life care has been the enactment of the Termination of Life on Request and Assisted Suicide Act (WTL). The act allows for euthanasia and assisted suicide provided the requirements of due care are met. Regional euthanasia review committees assess whether this is the case. The percentage of reports that fail to meet the requirements has been less than 0.5% for a number of years. Since the introduction of the WTL in 2002, the number of reports submitted to the committees has more than doubled. This is partly due to an increased willingness of doctors to report euthanasia. Despite more staff and an accelerated procedure for the review of unambiguous reports, the time it takes the committees to assess the reports increasingly exceeds the statutory review period.

In the course of time, shifts have occurred in the definition and practice of palliative care. Palliative care is no longer seen as limited to terminal care, but as a care continuum that extends from disease oriented palliation to aftercare for the relatives of the deceased. In contrast to many European countries where palliative care is a medical specialty, palliative care in the Netherlands is seen as generalist care and part of regular care.

The number of palliative care services has increased considerably over the past eight years; the number of home care organisation providing palliative care grew almost tenfold and the number of hospices and voluntary organisations has increased by 30%. All academic hospitals have palliative expertise centres and there are 80 GPs with a special interest in palliative care. A national network of regional consultation teams has been set up to support care professionals in the provision of palliative care.

There are over 50 standards and guidelines for palliative care developed by or in cooperation with IKNL. The vast majority of the target group is familiar with the guidelines and also uses them.

To date little is known about the quality of palliative care. An indicator set and CQ-indices have been developed, but measurements are still scarce. There is some information on the quality of palliative care from the perspective of relatives of deceased patients. They were usually or always satisfied with the explanations and information they received from care providers and with the opportunity they and the patients had to be alone if they wanted to. Most of them felt supported by care providers immediately after the death of the deceased, although more than half were not informed about opportunities for aftercare nor did they have a final talk or evaluation discussion with care providers.

Most people prefer to die at home. According to the relatives, 62% of the deceased had wanted to die at home, but only 26% actually died at home.

The number of people that received palliative sedation in a non-hospital setting almost doubled in the 2006-2013 period, according to the SFK.

In conformity with the KNMG Guideline for Palliative Sedation, the use of morphine as well as the administration of fluids and nutrition during palliative sedation has decreased.

The funding of palliative care is covered by a range of laws and regulations and is very fragmented. Hence it is unclear what the actual costs of palliative care are.

In the future, more information about the quality of palliative care will become available. NIVEL is presently evaluating as part of the ZonMw Improvement Palliative Care programme the effectiveness of the 'Good Examples'. The implementation and impact of the Care Module Palliative Care on the quality of palliative care will be monitored and evaluated. These evaluations will use the set of indicators and CQ-indices for palliative care.

8

Health expenditure and efficiency

Key findings

- The increases in total Dutch health expenditure from 2011 to 2013 were low in historical perspective, but there were wide variations between sectors.
- Growth in spending after 2003 was due mainly to rising volume, except for a stronger apparent price effect in 2012; the mental health sector saw the greatest increase in volume.
- Since the economic recession, kinks can be seen in the growth curves of health expenditure in many countries; Dutch expenditure is internationally in the middle range for curative health care and high for long-term care.
- The share of health expenditure in the Dutch GDP had risen to 14.1% by 2013.
- In 2012, more than 21% of total Dutch government spending was on health care.
- Publicly funded health care expenditure per employed person in the Netherlands is higher than the international average.
- From 1990 to 2012, most Western countries showed lower growth in expenditure and/or higher growth in life expectancy than the Netherlands, but Dutch rates improved after 2008.
- From 2001 to 2009, most Western countries showed lower expenditure growth than the Netherlands, but the Dutch rate of avoidable mortality declined more sharply.
- Dutch administrative burdens are in the middle range internationally; Dutch hospitals have relatively high overhead costs compared to other Dutch providers.
- Productivity in hospital services has increased in a decade's time, though it is unclear what health gains might accrue from the additional care.
- Average lengths of stay in Dutch hospitals continue to shorten, but persisting variations between hospitals point to room for improvement.
- Efficiency in the outpatient use of pharmaceuticals has improved since 2008.

- Productivity in mental health care has increased, though it is unclear what health gains might accrue from the additional care.
- Productivity in nursing, residential and home care has diminished over time, though evidence about health gains from the services is scarce.
- In comparison with other Western countries, the quantity of care delivered in the Netherlands appears to be in the middle or lower-middle range on most indicators.
- Wide variations in GP referral behaviour and in avoidable hospital admissions suggest opportunities for substitution of care; in the mental health sector, the expansion of primary and community care services has not yet led to reductions in the use of secondary care.

8.1 Background

In debates about health care, the level of expenditures is always an important theme. There are various reasons for this. A large proportion of health care services are collectively funded. Government makes many choices in parcelling out the state budget to publicly funded sectors like education, health care and social security. The cost of health insurance premiums also affects the buying power of households. This, in turn, affects the supply of labour, because a higher burden of collective contributions makes employment less attractive (Schut, 2011).

The discussion about the magnitude of health expenditure is also about solidarity – between healthy people and those with health care needs, and between people with high and low incomes. If health care spending increases faster than the national income, then an appeal is made to solidarity between groups. Another issue is the need to spend health care euros efficiently. If the returns produced by health care expenditures are high enough in terms of health gains, more spending may in fact be advisable.

Controlling health care spending is an important component of current government policy. Mounting expenditures may undermine solidarity, which forms the basis for a well-functioning health care system. This is particularly the case in the current situation of persisting economic crisis and eroding government finances (VWS, 2013i).

8.2 Indicators for health expenditure and efficiency

This chapter traces developments in health care expenditure in a macro perspective. It also examines how spending is distributed across the different sectors of the health care system. Which sectors have faster mounting costs? Is that due to rising prices or to a growing volume of service use? We compare spending trends with those in other countries. And we analyse the macro-level affordability of care by comparing expenditures to the gross domestic product, to total government expenditure and to employment.

We next explore the efficiency of health care. Efficiency is often defined as the relation between the resources invested and the gains generated by those investments – in this case the relationship between the costs and the returns of health care. Essential elements in

assessing efficiency are the performance of the health care system in relation to its goals, the values attached to those goals, and the resources that are brought to bear in pursuing them. Improving health is the *raison d'être* of the health care system, and it is a fundamental goal of health care services (see chapter 1). At the macro level, we analyse trends in the health of the population in relation to health expenditure. At the meso level we study the efficiency of various sectors of the health system. In many sectors, conclusive evidence for the health gains achieved is still lacking, so that we must focus primarily on the volume of services delivered. That is a major hindrance in drawing conclusions about efficiency at the meso level.

Our meso-level analyses are conducted from two angles: the trends in the average performance within sectors and the ranges of variation between agencies and geographical regions within those sectors. The latter perspective may reveal potentials for improvement. We then turn to the substitution of services. A focus on providing treatment at the right level of the health care system – thus avoiding unnecessarily expensive interventions such as inpatient hospital care – is often put forward as a way of improving efficiency in health care.

Definitions of health expenditure

There are different definitions that can be used to study health expenditure. We have made considerable use of the Health and Social Care Accounts (HSCA) devised by Statistics Netherlands (CBS). CBS calculates the total expenditures for about 80 types of services providing health care or social care. The sum total constitutes the Dutch health expenditures. The services included represent a broad range of health and welfare activities. All such expenditures are included in the HSCA calculations, irrespective of the source of the funding. Hence, collective sources of funding (including the compulsory health insurance excess, mandatory co-payments for long-term care), supplementary insurance policies as well as services paid privately out of pocket are all taken into account.

Which definition of health expenditure is chosen depends on the questions being researched. In its report entitled *Toekomst voor de Zorg (A Future for Health Care)*, for example, CPB Netherlands Bureau for Economic Policy Analysis calculated total health care expenditure by subtracting expenditures for child care, youth services, residential special schools, social and cultural work, and other welfare work from the HSCA total (De Jong & van der Horst, 2013). CPB did not regard those sectors as health care. The other HSCA care sectors were incorporated in full, so that both public and private funding of services were taken into account. This CPB definition encompasses about 89% of the HSCA-defined expenditures (table 8.1). For its macroeconomic analyses and forecasts, CPB includes only the collectively funded expenditures (CPB, 2013).

To obtain sufficient data on the collective affordability of health care and the burden that the costs of health care place on government finances, researchers confine themselves to the total of collectively funded health care expenditures (those paid for from taxes and social security contributions). This mainly involves the Health Care Budgetary Framework (BKZ), which includes all expenditures incurred on the basis of a statutory entitlement or a subsidy under the Health Insurance Act (ZVW) or the Exceptional Medical Expenses Act (AWBZ) (VWS, 2013).

Table 8.1: Dutch health expenditure in 2011 according to various definitions, in millions of euros and as percentages of the Health and Social Care Accounts (source: RIVM, 2013b).^a

Category (CBS provider/supplier)	HSCA (CBS)		CPB ^b		BKZ (VWS)		SHA (OECD)	
	€m	€m	%HSCA	€m	%HSCA	€m	%HSCA	
Health care (CBS definitions)								
Hospitals, medical specialists	22,671	22,671	100	20,439	90	20,004	88	
Mental health care	5,665	5,665	100	5,295	93	5,059	89	
GP practices	2,708	2,708	100	2,602	96	2,698	100	
Dental practices	2,733	2,733	100	717	26	2,723	100	
Allied health professions and midwives	1,931	1,931	100	895	46	1,931	100	
Public health services	772	772	100	77	10	772	100	
Occupational health and reintegration services	1,189	1,189	100	0	0	689	58	
Pharmaceuticals	6,366	6,366	100	4,950	78	6,342	100	
Therapeutic appliances	3,080	3,080	100	1,343	44	2,922	95	
Ancillary services	1,996	1,996	100	975	49	1,490	75	
Other health care providers	2,741	2,741	100	1,407	51	2,739	100	
Social care (CBS definitions)								
Long-term elder care	16,396	16,396	100	16,252	99	12,198	74	
Disability care	8,309	8,309	100	7,473	90	4,017	48	
Child care	4,336	0	0	0	0	0	0	
Youth services	1,915	0	0	38	2	30	2	
Residential special schools	481	0	0	0	0	0	0	
Social and cultural work	1,118	0	0	0	0	0	0	
Other welfare services	1,778	0	0	361	20	347	20	
Policy and management	3,195	3,195	100	239	7	2,796	88	
Total	89,381	79,753	89	63,062	71	66,757	75	

CBS = Statistics Netherlands; HSCA = Health and Social Care Accounts (Dutch abbreviation ZR); CPB = CPB Netherlands Bureau for Economic Policy Analysis; BKZ = Health Care Budgetary Framework; VWS = Netherlands Ministry of Health, Welfare and Sport; SHA = System of Health Accounts; OECD = Organisation for Economic Co-operation and Development

^a The BKZ additionally covers €747m (in 2011) of health expenditures not included in the HSCA: €188m for hospitals, €255m for mental health care, €139m for elder care and €114m for disability care.

^b De Jong & van der Horst, 2013

Those two pieces of legislation are responsible for more than 95% of the total BKZ. The remainder consists of expenditures deriving from the Social Support Act (WMO), the Chronically Ill and Disabled Persons Allowances Act (WTCG), health expenditure in the Caribbean Netherlands, and certain costs for training. The BKZ definition is thereby less comprehensive than the HSCA definition, as it excludes all privately funded care (including that paid for by voluntary supplementary health insurance policies). Moreover, the activities of some collectively funded health or social care services are also excluded from the BKZ, including occupational health and safety services, public health services and child care. As table 8.1 shows, the BKZ comprises about 71% of the total HSCA expenditures.

Assessing the financial accessibility and efficiency of health care also requires knowledge of non-collectively funded care expenditures. As this Performance Report does not define health care according to its sources of funding (see chapter 1), we have largely adopted the definitions used by CPB in its report on the future of health care. These make no selection by funding source, and the welfare sectors it excludes are not relevant to our assessments of health care performance. The analysis of trends in health spending should also not rely on definitions that are sensitive to changes in statutory insurance cover – a further reason why the BKZ definition would have been less suitable to our purposes.

In our international comparisons, we employ the customary definitions of health care and expenditures as set out in the OECD's System of Health Accounts (SHA) (OECD et al., 2011). The purpose of the SHA is to ensure international comparability of data and research results through the use of standardised methods and definitions. The major difference between the SHA and the Dutch HSCA is that the latter takes some services into account that are not covered by the SHA – components of elder care (such as home care), care for people with disabilities, and several other types of welfare services. The total of expenditures covered by the SHA come to 75% of the HSCA total (table 8.1).

Indicators

Expenditure

- Total health expenditure at macro level and by sector
- Determinants of changes in health expenditure in terms of price and volume
- Total health expenditure by OECD country according to SHA definitions
- Percentage of Dutch gross domestic product spent on health care
- Percentage of total publicly funded expenditures devoted to health care
- Publicly funded health care expenditure per employed person internationally, according to SHA definitions

Efficiency

- Health expenditure in relation to life expectancy in the Netherlands and internationally
- Health expenditure in relation to avoidable mortality in the Netherlands and internationally
- Administrative burdens in health care in the Netherlands and internationally
- Productivity in Dutch hospital care
- Average lengths of hospital stays in the Netherlands and internationally
- Efficiency in the outpatient prescription and use of pharmaceuticals
- Productivity in Dutch mental health care
- Productivity in Dutch nursing homes, residential homes and home care
- Variations between countries in terms of health care utilisation
- Substitution of care and the avoidance of unnecessarily expensive care

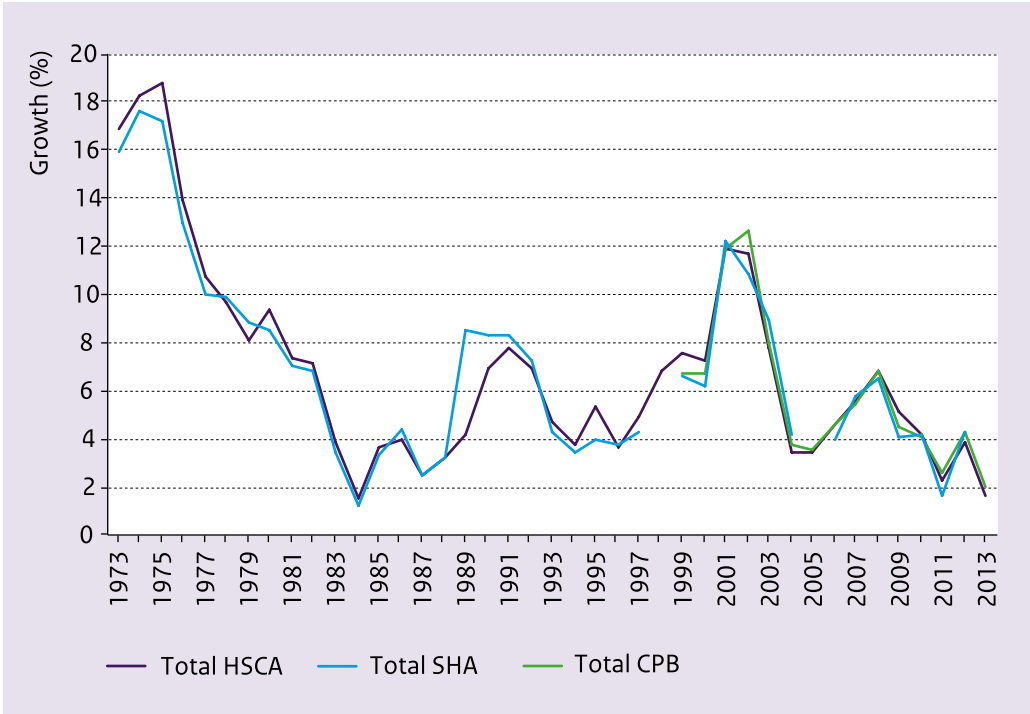
8.3 State of affairs - health expenditure

The increases in total Dutch health expenditure from 2011 to 2013 were low in historical perspective, but there were wide variations between sectors

From 2000 to 2013, Dutch expenditures on health care, measured according to the CPB definition (table 8.1), mounted from €41 billion to €85 billion (CBS StatLine, 2014f), an average rise of 5.5% per year. In the years 2011 to 2013, total expenditure grew at historically low rates of 2.5%, 4.3% and 2% respectively. It makes little difference which definition of health expenditure one applies in assessing these trends (figure 8.1). The growth in expenditure can be unravelled in several ways. We shall first examine the trends within various health care sectors and then the trends in the price and volume of health care.

Figure 8.2 illustrates how the total health care expenditures were distributed over the various sectors in the period from 2000 to 2013. In all the years in question, the largest shares of costs were for hospital care and elder care (€24.8 and €18.2 billion in 2013). Expenditures for other sectors were considerably lower: €2.7 billion for general practice, €5.9 billion for mental health care, €5.6 billion for pharmaceutical drugs and €9.4 billion for disability care. Trends in some sectors diverged, and the low overall rate of growth in 2011–2013 was not observable in all sectors. In 2012, for instance, expenditures for disability care and elder care grew at higher-than-average rates (11.4% and 8.0% compared to 2011), while those for GP care and for pharmaceuticals sank (–2.4% and –8.1%).

Figure 8.1: Yearly percentage growth in total Dutch health expenditure, 1973–2013, according to definitions by Health and Social Care Accounts (HSCA), System of Health Accounts (SHA) and CPB^a (sources: CBS StatLine, 2014f; OECD, 2013e)^b.



HSCA = Health and Social Care Accounts (Dutch abbreviation ZR); CPB = CPB Netherlands Bureau for Economic Policy Analysis; SHA=System of Health Accounts (OECD)

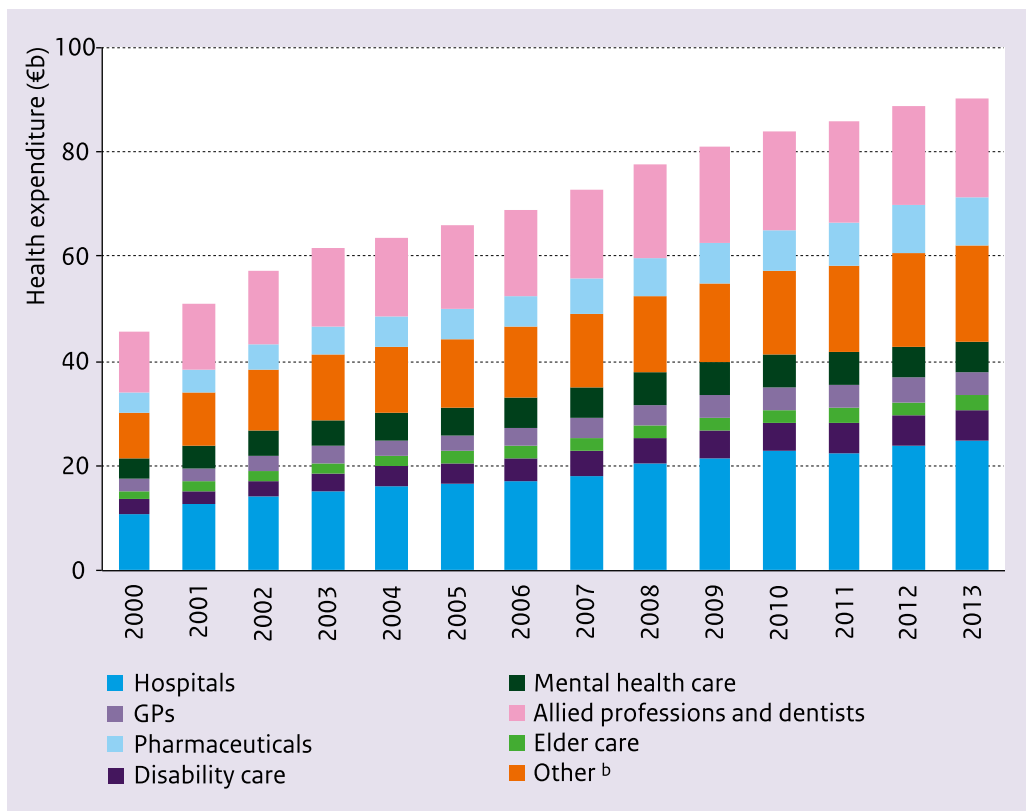
^a The CPB time series was created using data available starting in 1998. The SHA series contains two gaps (1998 and 2005) caused by unreliable growth figures after definition changes.

^b The 2012 and 2013 figures are tentative.

In 2013, the downward trend in pharmaceutical costs continued (-4.1%) and the upward trends in disability care and elder care substantially eased (to +0.7% and +2.4%). The spending trends for long-term care in 2012 and 2013 reflected the impact of government policies: expenditure grew strongly at first (2012), due to fee increases aimed at quality improvements in long-term care and to relatively greater numbers of eligibility decisions for more intensive care (the category with higher fees) (CBS, 2013; CPB, 2013); the exact explanation for the latter development is not yet known. Fees were reduced in 2013 to stem the growth in expenditure (CBS, 2014).

Viewed over a somewhat longer period of time (from 2000), limited shifts occurred in the relative shares of the various sectors in overall expenditure. In the 2000–2013 period, some

Figure 8.2: Expenditures per Dutch health care sector, 2000–2013, in billions of euros (source: CBS StatLine, 2014f)^a.



^a The 2012 and 2013 figures are tentative.

^b The category Other includes public health services, occupational health and reintegration services, therapeutic appliances, ancillary services and policymaking and management organisations.

sectors claimed growing shares of the total: hospital care (from 26.6% to 29.3%), mental health care (from 6.2% to 6.9%) and disability care (from 9.4% to 11.0%). There was a substantial drop in the share of pharmaceutical drugs in the overall expenditures (from 9.7% to 6.6%).

The care delivered was paid for from various sources. The Exceptional Medical Expenses Act (AWBZ) and the Health Insurance Act (ZVW) accounted for the bulk of the funding (together more than €67 billion in 2013). Those two sources are also the largest components (over 95%) of the Health Care Budgetary Framework (BKZ) (see section 8.2). BKZ overruns ranging from 1% to 4% of the total budget occurred in almost every year between 2002 and 2012 (Algemene

Rekenkamer, 2013b); 2007 was the only year in which spending stayed within the budget. In addition to BKZ funding, health care may be also paid for from private insurance, out-of-pocket payments (including voluntary insurance excesses) and general state revenues.

Growth in spending after 2003 was due mainly to rising volume, except for a stronger apparent price effect in 2012; the mental health sector saw the greatest increase in volume

The increase in overall health care costs may be differentiated into price and volume components, in order to distinguish between price trends and real growth (quantities of services delivered). Table 8.2 summarises trends in both price and volume within total health spending; the volume figures are broken down further by demographic (mainly ageing) and other factors. (Disaggregated data were not yet available for 2012 and 2013.)

From 1999 to 2003, growth was high in comparison both to the historical trend and to later time frames. Spending had not risen so sharply since the mid-1970s (figure 8.1). There was a strong price effect in 1999–2003, as table 8.2 shows. In subsequent years, price changes were less prominent but the volume of services grew further (averaging 3% to 4% yearly). The tentative 2012 figures suggest an altered pattern whereby a 4% growth in spending consists of 1% volume growth and 3% price increases.

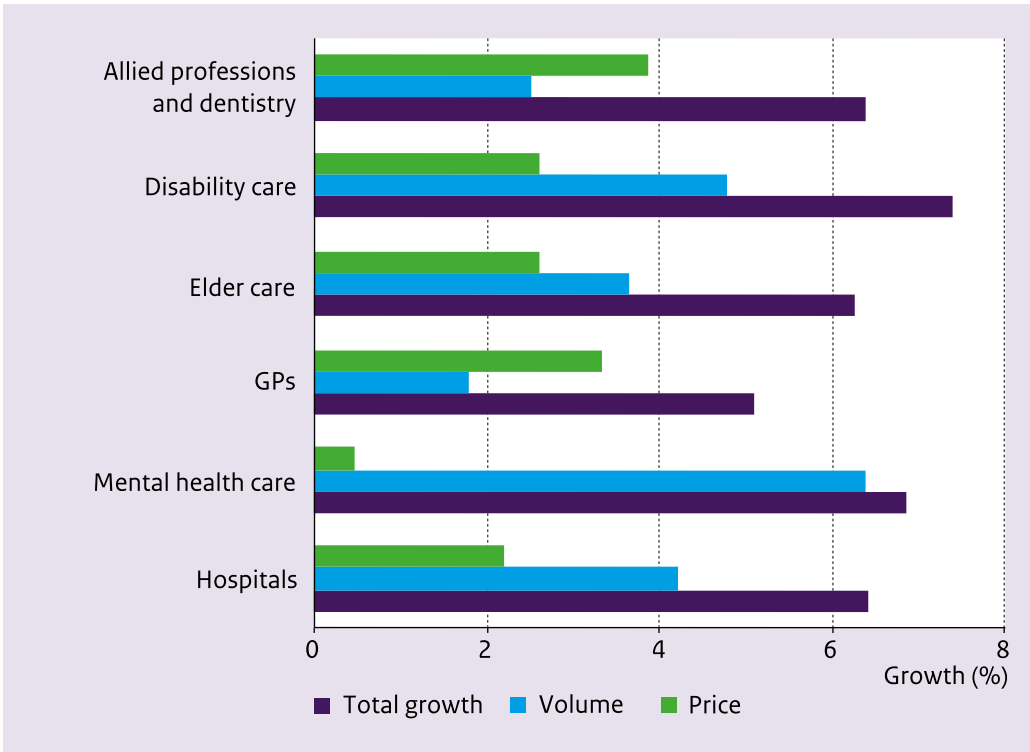
As table 8.2 also shows, the influence of demographic change remained reasonably constant over the years at about 1%, but increased in the 2007–2011 period. The remaining growth in volume was traceable to a variety of factors, including epidemiological and technological changes.

At the sector level, we see a diverse pattern in price and volume trends from 1999 to 2012 (figure 8.3). Particularly in the mental health sector, the volume effect predominated, with a substantial increase in both the numbers of visits and numbers of treatments (Niaounakis, 2013). A major share of that increase seems attributable to improved accessibility, as no

Table 8.2: Average percentage growth in health expenditure in price and volume, 1999–2011, according to the Health and Social Care Accounts definition (source: Slobbe et al., 2011).

Period	Total	Price	Volume		
			Total	Demographic volume	Other volume
1999-2003	9.7	5.7	4.0	1.1	2.9
2003-2005	3.9	0.0	3.9	1.0	2.9
2005-2007	5.0	1.9	3.1	1.0	2.0
2007-2011	4.4	0.3	4.1	1.4	2.6

Figure 8.3: Average yearly growth in Dutch health expenditure by sector, 1999–2012 (source: CBS StatLine, 2014f).



increase in the prevalence of mental illness has been reported (Trimbos-instituut, 2010). The numbers of mental disorders recorded in GP patient record systems, however, have sharply increased (Bijenhof et al., 2012).

For hospital care and disability care, volume effects were likewise greater than price effects. Both the numbers of hospital admissions (including day-patient admissions) and the numbers of treated patients mounted sharply in the past decade, although the growth in hospital admissions stabilised in 2012 (DHD, 2014; Vandermeulen, 2014). In elder care, the volume-price differential was less pronounced. Contrary patterns were seen only in the general practice category and the allied health care and dentistry category, where price effects outweighed volume effects.

From sector to sector we also see differing impacts of demographic factors on the trends in volume and price (Slobbe et al., 2011). The mental health, disability, and allied health and dental care sectors had younger patient populations than sectors such as hospital and elder care. Despite that, the mental health and disability care sectors showed the highest volume

increases in the past decade, thus confirming that other factors besides demographic change have their own strong influences on the volume of care.

Since the economic recession, kinks can be seen in the growth curves of health expenditure in many countries; Dutch expenditure is internationally in the middle range for curative health care and high for long-term care

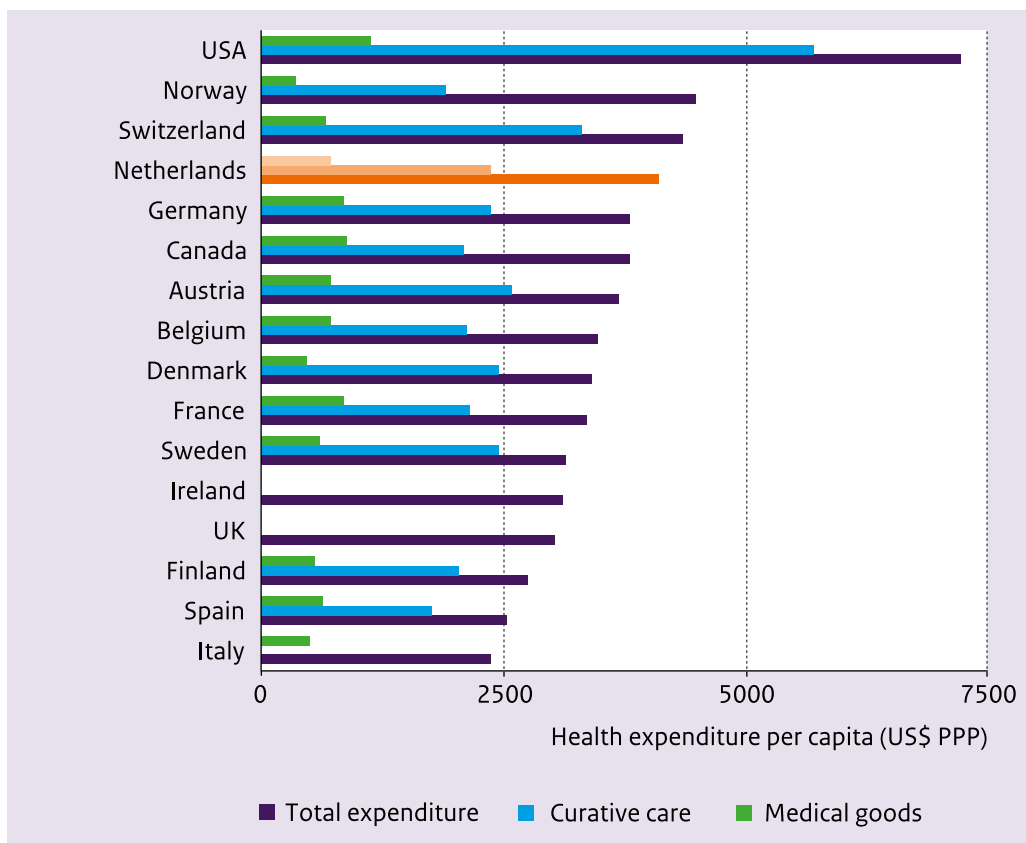
In 2011, total per capita health care expenditure in the Netherlands was above average in comparison to fifteen other Western countries (figure 8.4); spending was higher only in Switzerland, Norway and the USA. Differences emerged between different types of health care. Dutch expenditures for curative care (including rehabilitation) and for medical goods were near average. A large part of the difference lay in the relatively higher Dutch expenditure for long-term health care, which was at a level comparable to those in Denmark and Switzerland and slightly below that in Norway. Caution is advisable in international comparisons of long-term care due to the differing definitions used (OECD, 2012). The data in this chapter concern long-term health care only and do not include expenditure for long-term social care as in chapter 6. These conclusions therefore diverge slightly from those in that chapter.

For this international comparison, we apply a different definition of health care expenditure than that used in figures 8.1–3 and table 8.2. The international statistics do not include major components of elder care and disability care. The various definitions are explained in section 8.2.

The international data reveals low growth in expenditure in Western countries over recent years (OECD, 2013a). For the 16 countries shown in figure 8.4, the average yearly growth rates in total expenditure ranged from 4% to 9% in the 2001–2009 period, but sank to 2.1% and 2.5% respectively in 2010 and 2011. After adjustment for differences in population size, prices and spending power (PPP adjustment), average growth was 2% to 5% in 2001–2009 and 0.0% and 0.4% in 2010 and 2011 (table 8.3). All the countries listed have recently struggled with economic recession, declines in national income and increasing strains on government finances. This reconfirms the established macro-level correlation between health expenditure and national income (Getzen, 2006).

Differences between countries also emerge (table 8.3). Decreases in health care spending occurred in several countries, including Denmark, Ireland and Italy, whereas Germany, Finland and the USA showed yearly increases. In some cases, the differences are traceable to the degree to which national economic growth was affected by economic crisis. Ireland, for instance, experienced a serious decline in national income in 2008 and 2009 (–6% and –5%), followed by major cutbacks in the health sector in 2010 and 2011. Nonetheless, a study of 27 European Union countries found no association between the extent of the economic recession at national level and the scale of health care cutbacks (Reeves et al., 2014). Slumping tax revenues, dependence on loans from international agencies (such as the International Monetary Fund) and national policy decisions appear to be more important variables for explaining changes in total health expenditure.

Figure 8.4: Health care expenditure in international perspective in 2011: totals, curative care and medical goods, according to the System of Health Accounts definition^a, per capita in PPP-adjusted US\$ (source: OECD, 2013e).



PPP = purchasing power parity

^a The three SHA categories depicted here include the following expenditures:

Total expenditure: HC.1–HC.9 Total current health expenditure

Medical goods: HC.5 Medical goods dispensed to outpatients = HC.5.1 Pharmaceuticals and other medical non-durables (prescribed medicines, over-the-counter medicines, bandages etc); HC.5.2 Therapeutic appliances and other medical durables (glasses and other vision products, hearing aids, orthopaedic appliances; medico-technical devices, including wheel-chairs; other medical durables, such as blood pressure meters)

Curative care: HC.1–HC.2 Curative and rehabilitative care = HC.1 Curative care (the delivery of medical and allied health care services aimed at restoring the physical or mental health of a patient); HC.2 Rehabilitative care (the delivery of medical and allied health care services aimed at improving the physical or mental functions of the patient subsequent to curative care).

Table 8.3: Yearly percentage growth in health expenditure in 16 countries, 2008–2012, in nominal terms and per capita based on PPP-adjusted US\$, according to the System of Health Accounts definition (source: OECD, 2013e).^a

	Total nominal growth					Per capita growth (PPP)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Austria	5.3	3.5	2.6	2.8	-	3.1	1.6	0.6	0.2	-
Belgium	7.3	5.1	3.6	4.0	-	4.3	3.1	0.4	0.7	-
Canada	6.9	5.9	5.5	4.5	3.7	1.5	6.7	1.3	0.2	1.2
Denmark	5.7	7.3	2.2	-0.2	-	0.8	6.0	-2.3	-1.2	-
Finland	6.8	2.1	2.2	6.4	4.3	3.2	0.1	1.3	2.7	1.0
France	3.9	4.0	2.4	2.7	1.4	0.8	2.8	0.8	0.8	-0.5
Germany	4.0	5.2	3.5	2.1	-	3.4	4.3	2.7	1.0	-
Ireland	9.6	0.4	-9.7	-4.0	-	11.5	4.5	-8.9	-5.3	-
Italy	6.1	0.9	1.8	-0.3	-1.1	2.7	-1.7	0.9	-2.0	0.0
NETHERLANDS	6.5	4.0	4.1	1.6	4.3	3.9	3.4	2.5	-0.3	3.1
Norway	9.7	6.2	4.7	6.5	6.9	3.8	2.4	-0.7	2.5	-4.6
Spain	9.0	4.4	0.3	-1.4	-	4.9	3.5	-0.5	0.3	-
Sweden	5.6	4.4	1.7	4.4	-	1.6	1.4	0.0	2.5	-
Switzerland	5.8	4.4	2.5	3.4	-	1.7	3.5	0.8	2.1	-
UK	6.2	8.3	2.1	2.8	-	2.4	6.2	-1.4	-0.2	-
USA	4.6	4.5	4.1	3.9	-	1.3	2.7	1.8	1.0	-
Average	6.4	4.4	2.1	2.5		3.2	3.2	0.0	0.4	

PPP = purchasing power parity

^a Total expenditure = HC.1–HC.9 Total current health expenditure.

The Total Nominal Growth column is based on total spending in the national currency; the growth rates in the Per Capita Growth column are adjusted for differences in population size, prices and purchasing power.

Besides variations between countries in terms of declining economic growth and the need for budget cuts, there were also national differences in the policy decisions made (Mladovsky et al., 2012). It is not clear in all cases whether such decisions followed from earlier policy commitments or reflected new policy in response to the economic crisis. Many countries opted to raise cost-sharing for health care users. France and Ireland increased co-payments for hospital care, and Italy and other countries for outpatient care. One of the Dutch increases affected mental health care.

In some countries, wages for health care workers were cut, frozen or restrained (France, Denmark, Ireland, UK). Almost no countries downsized the cover of the basic health insurance package. Existing policies to curb pharmaceutical prices were continued. What influence all such policy decisions might have had on the quality and accessibility of care will become apparent in the longer term.

In international perspective, downward trends in spending growth were seen in a number of different health domains, including curative and long-term care, medical goods and prevention services (Morgan & Astolfi, 2013; OECD, 2013a). The steepest relative plunges in 2010 and 2011 occurred in spending on prevention, the sector that had seen the greatest increases in 2008 and 2009. In 2011, spending for medical goods declined internationally; in view of the relatively limited growth in those expenditures in 2008 and 2009, that was evidently a continuation or intensification of existing policy.

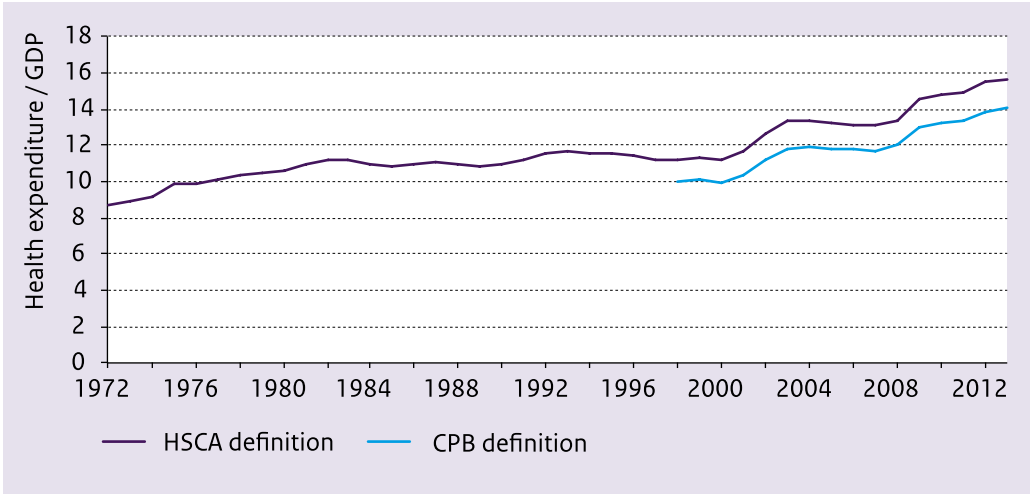
The share of health expenditure in the Dutch GDP had risen to 14.1% by 2013

The affordability of health care depends both on the scale of expenditure and the level of available revenues. More room for spending hikes is available in times of economic growth than in times of recession. Even so, health care costs as a percentage of Dutch national income have increased persistently over the years. Expressed as a share of the gross domestic product (GDP), health care expenditure (according to the CPB definition in table 8.1) rose from 10.1% in 1998 to 14.1% in 2013 (figure 8.5). The time series based on the CPB definition has been maintained since 1998, but for a fuller picture we have added to figure 8.5 a longer-term trend from 1972 based on the HSCA definition. The main difference between the two lines lies in the calculated levels of expenditure; progression over time is virtually parallel (see section 8.2 for an explanation of the differences in magnitude). The historical trend reveals a limited rise in health expenditure as a percentage of GDP over the 1980s and 1990s, but a marked increase around 2001. This is attributable both to strong increases in health expenditure and to flagging economic growth in several of the subsequent years, such as 2009 and 2012.

Although the percentage of GDP claimed by health expenditure has considerably expanded, that does not automatically mean that other sectors have no room for growth. As long as they do, that is an indication that health care spending does not have an adverse impact on other spending, and that the health care is still affordable (irrespective of its sources of funding and its affordability at the household level) (Chernew et al., 2009).¹ Figure 8.6 depicts the absolute growth of Dutch health care expenditure (according to the CPB definition) from 2001 to 2013. It was €1.5 to €6 billion per year. The figure also shows the yearly latitude for growth in other consumption (spending on other products and services). In most years, health care claimed between 10% and 50% of the overall growth in national income. The years 2009 and 2012 were atypical, in that national income declined in 2009 and barely grew in 2012.

¹ Chernew and colleagues (2009:18) described affordability as 'never ... a downward trend in non-health spending'.

Figure 8.5: Health expenditure as percentage of Dutch GDP, 1972–2013, according to the HSCA and CPB definitions (source: CBS StatLine, 2014f).^a

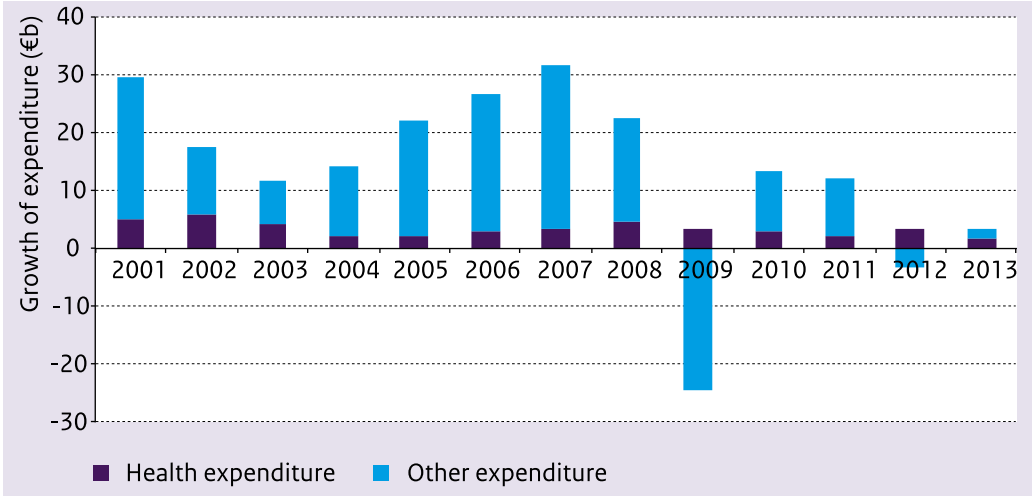


GDP = Gross Domestic Product; HSCA = Health and Social Care Accounts (Dutch abbreviation ZR); CPB = CPB Netherlands Bureau for Economic Policy Analysis

^a The 2011 and 2012 figures are tentative.

In international comparison, the Netherlands spends a relatively large share of its national income on health care; the level is comparable to that in France, Switzerland and Germany (figure 8.7). As noted above in section 8.2, in our international comparisons we employ a different definition of health expenditure which is more limited than our Dutch national-level definitions. In virtually all countries represented in figure 8.7, GDP growth slackened in 2008, even swinging to negative in 2009, as a consequence of economic crisis. In most countries, including the Netherlands, that did not immediately lead to cutbacks in health expenditure.

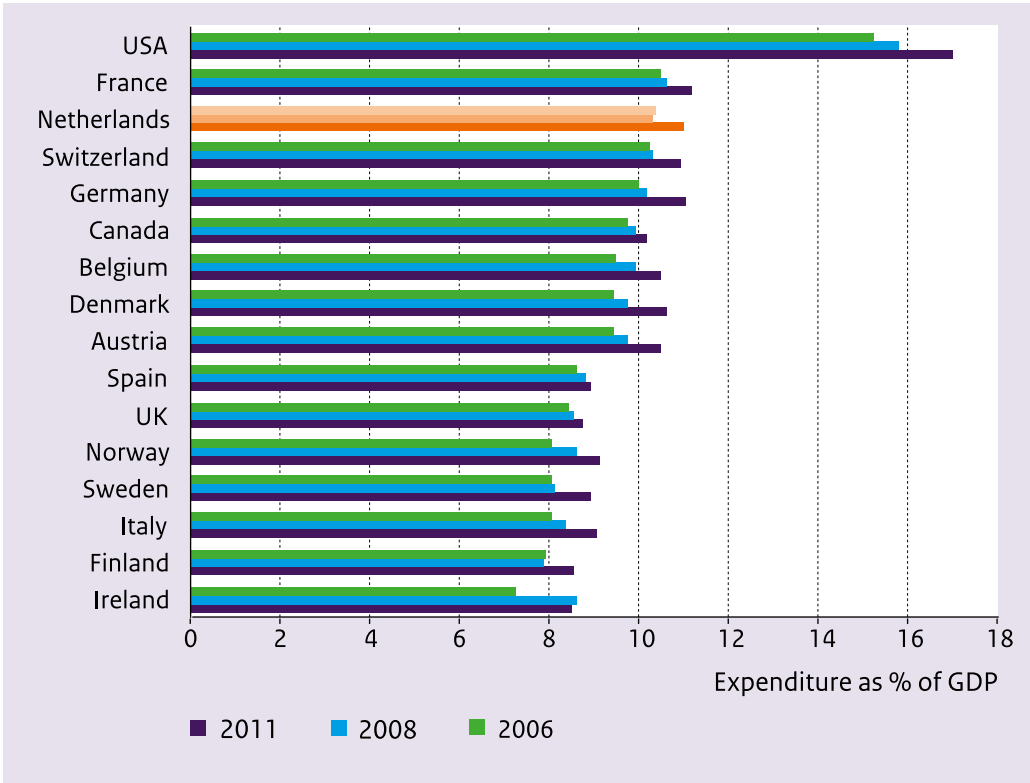
Figure 8.6: Breakdown of Dutch absolute GDP growth into health expenditure (CPB definition) and other expenditure, 2001–2013, in billions of euros (source: CBS StatLine, 2014f).



CPB = CPB Netherlands Bureau for Economic Policy Analysis

As a consequence, strong increases were seen in 2009 in the percentages of GDP spent on health care. Several countries in figure 8.7 (including Italy, the Netherlands and Spain) also experienced limited growth or contractions in national income in 2012, but because no statistics on health expenditure are available yet for most countries, the ratio of spending to GDP cannot be displayed for that year.

Figure 8.7: Health expenditure as percentage of GDP in 16 countries in 2006, 2008 and 2011, according to the System of Health Accounts definition (source: OECD, 2013e).^a



GDP = gross domestic product

^a Total expenditure: HC.1–HC.9 Total current health expenditure.

In 2012, more than 21% of total Dutch government spending was on health care

If public health care expenditures rise swiftly, that could threaten spending for other public resources such as defence and education (presupposing limits to total government spending and to the total burden of taxes and social contributions). Table 8.4 shows the shares of the various collectively funded sectors in overall Dutch government spending from 2000 to 2012. The percentage for health care increased over the years from 9% in 1980 (not in table) to over 13% in 2000 and to over 21% in 2012. In the years before 2000, the health care increase was largely offset by a relative easing of costs for social security (CPB, 2013). After 2000, relative costs eased in several other categories, including defence and the interest burden.

Table 8.4: Percentage breakdown of total Dutch public expenditure, 2000–2012 (source: CPB, 2013).

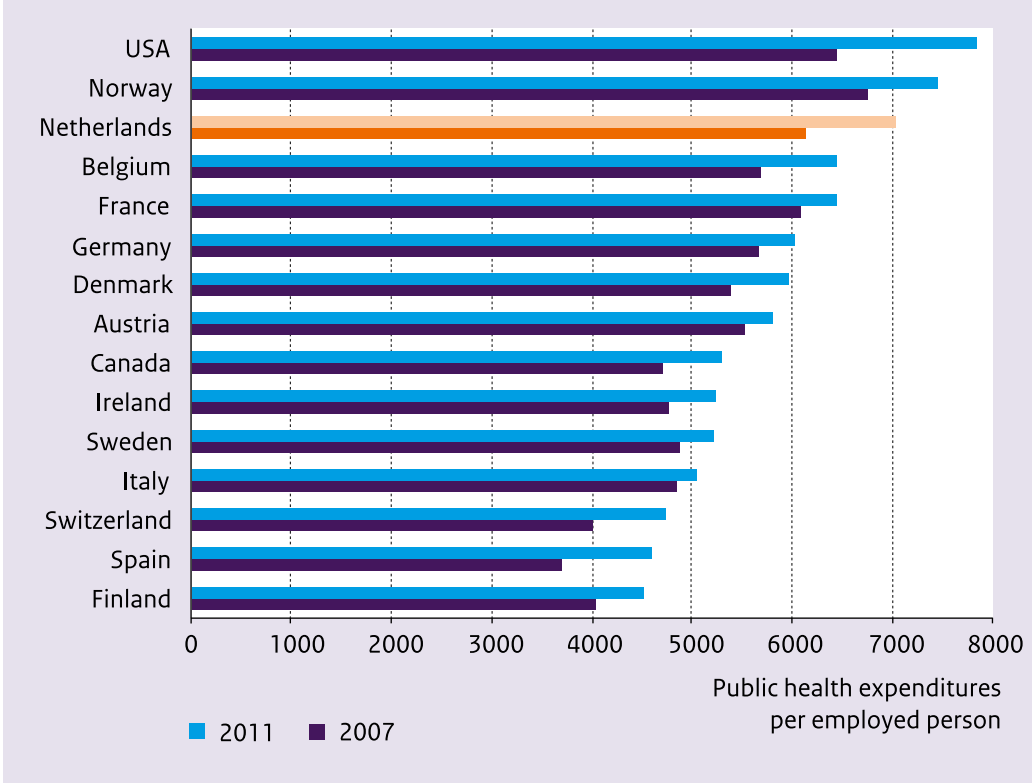
	2000	2004	2008	2012
Health care	13.3	15.6	19.0	21.4
Public administration	22.9	23.2	22.5	21.0
Public safety	2.9	3.9	3.9	3.8
Defence	2.9	2.8	2.4	2.2
Infrastructure	3.6	3.7	3.7	3.4
Education	10.7	11.1	11.0	10.7
Social security	24.9	24.9	24.0	25.8
Transfers to private sector	5.1	4.6	3.5	3.6
International cooperation	5.3	4.8	5.0	4.2
Interest payments	8.2	5.4	4.8	3.6

Publicly funded health care expenditure per employed person in the Netherlands is higher than the international average

Health expenditure is largely financed from employment income. The contributions for the publicly funded components of health care, such as the income-dependent AWBZ and ZVW contributions, are levied directly on income from employment. That also applies indirectly to the community-rated health insurance premium, as it is partially reimbursed to lower-income people from general revenues via the health care allowance. In this way, labour costs are affected by the level of publicly funded health expenditure. Higher income-dependent health insurance premiums, taxes and contributions make labour more costly and employment less attractive. The affordability of health care is therefore dependent on the total number of employed persons who must share the collective costs. Hence, we express the public health expenditures here in relation to the number of people in employment.

Because we are making international comparisons of health care costs, we will use here the OECD's definitions (see section 8.2). As figure 8.8 shows, public health care expenditure per employed person in the Netherlands in 2007 and 2011 was above average in comparison with a selection of Western OECD countries. Only Norway and the USA had higher public health care costs per working person. These scores are high in spite of the relatively high rates of labour participation in the Netherlands and Norway and the moderate US rate. Those countries thus have a high level of publicly funded health care expenditure.

Figure 8.8: Public health expenditure per employed person in 15 countries in 2007 and 2011, according to System of Health Accounts definition, in millions of euros (source: OECD, 2013e).^a



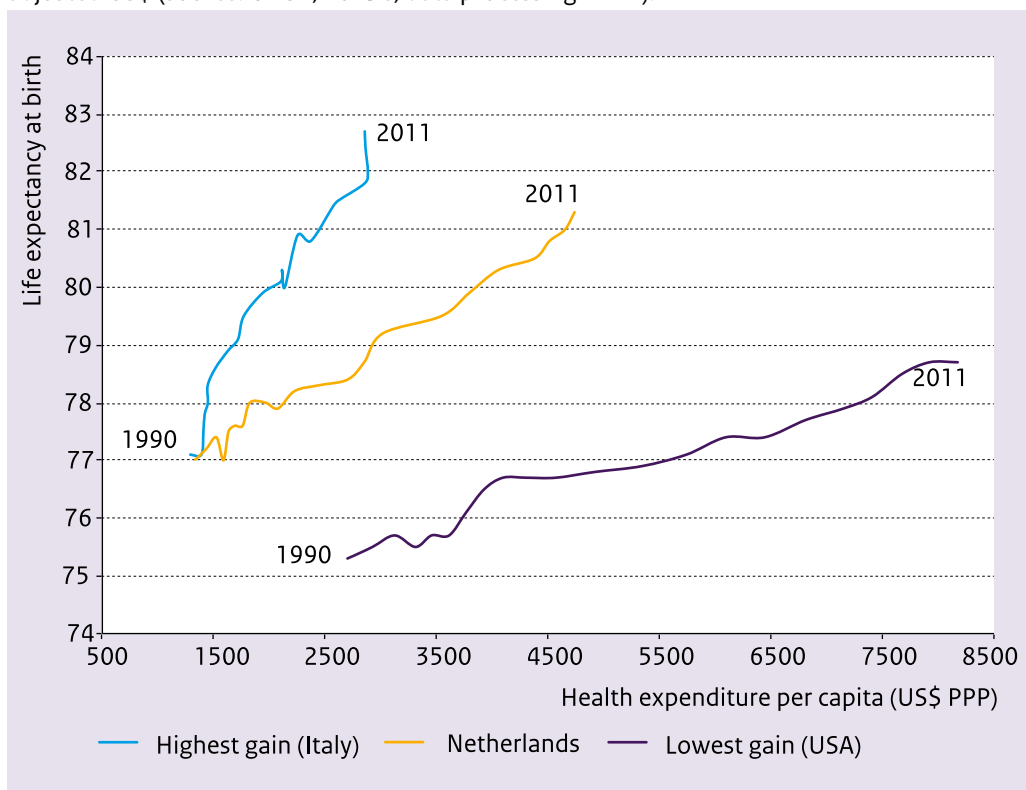
^a Numbers of employed persons according to the OECD definition of total civilian employment (not adjusted for international variations in working hours).

8.4 State of affairs - efficiency

From 1990 to 2012, most Western countries showed lower growth in expenditure and/or higher growth in life expectancy than the Netherlands, but Dutch rates improved after 2008

In this Performance Report, health care is defined as ‘the entire field of health care providers, supporting staff, institutions, resources and activities whose direct aim is to maintain or improve people’s health status or self-reliance and to prevent, resolve, alleviate or offset deficiencies in health and personal functioning’. Improving health is one of the central aims of health care. The efficiency of the health system – or the relationship between the costs of health care and the returns it produces – is thus determined by how the health status of the population evolves.

Figure 8.9: Life expectancy at birth and health expenditure, 1990–2011, per capita in PPP-adjusted US\$ (source: OECD, 2013e; data processing RIVM).^a



PPP = purchasing power parity

^a Highest and lowest rates of health gain were derived from a selection of 16 countries: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA.

Life expectancy at birth is a frequently used measure of population health status. From 1990 to 2012, Dutch life expectancy increased from 73.8 to 79.1 years for men and from 80.1 to 82.8 years for women. In figure 8.9, we have plotted the combined life expectancy at birth for men and women against the Dutch per capita health care costs from 1990 to 2011. The same relationship was determined for 15 other high-income countries (see note to figure 8.9), and we have added the highest and lowest trends to the graph. A steeper line indicates higher health gains and lower growth in spending – that is, a more favourable trend in efficiency. The USA saw a strong increase in health expenditure alongside limited improvement in population health status, yielding the USA the least favourable trend scores of the 15 countries studied.

Most countries showed better results than the Netherlands by recording stronger absolute and relative rates of life expectancy growth and slower absolute and relative rates of health expenditure growth. Dutch outcomes were more favourable in recent years (2008–2011).

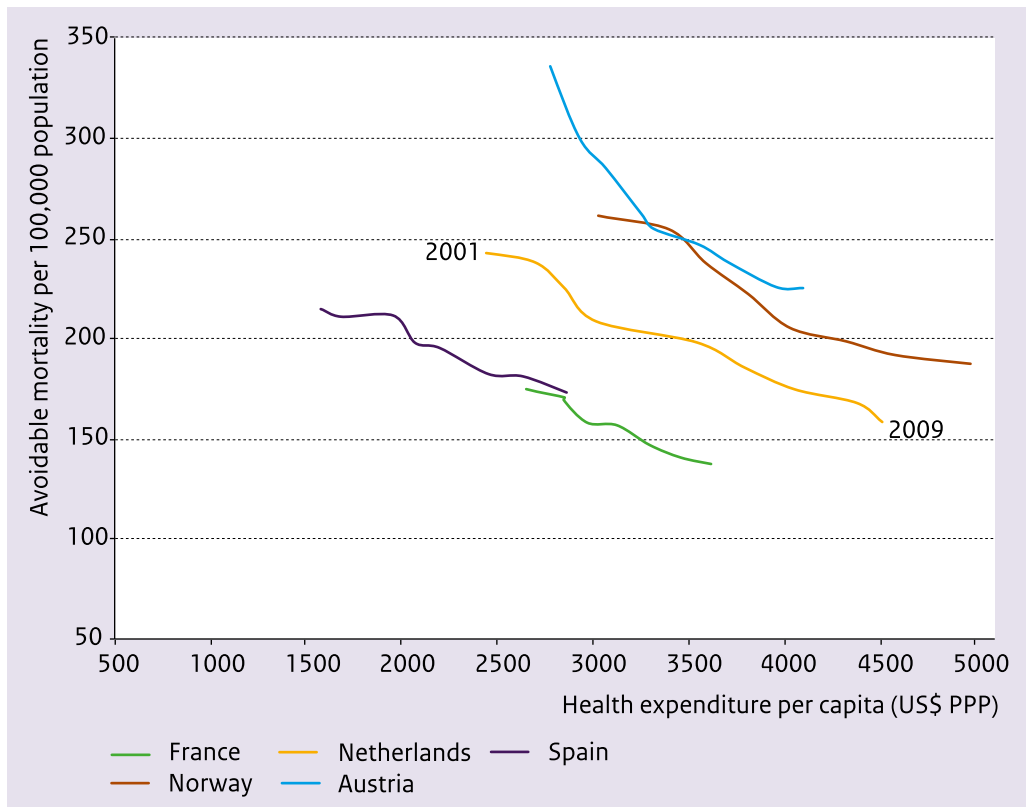
Trends in life expectancy are also influenced by other factors, such as changes in demography, lifestyle and socioeconomic status. Figure 8.9 should therefore be taken mainly as an indicator of efficiency. At the same time, a number of international studies that allowed for factors like these have concluded that health care does make its own contribution to rising life expectancy (see also chapter 9) (Nolte et al., 2009).

From 2001 to 2009, most Western countries showed lower expenditure growth than the Netherlands, but the Dutch rate of avoidable mortality declined more sharply

Avoidable or amenable mortality refers to deaths from health conditions that should have been treatable, given the current state of the art in medicine and science. The health care system has the potential to substantially reduce mortality from such illnesses over time (Nolte & McKee, 2004). Section 9.4 gives a detailed explanation of this indicator.

Figure 8.10 is comparable to figure 8.9 except that it plots avoidable mortality per 100.000 population as its outcome measure. The graph is based on data from 15 high-income countries from 2001 to 2009. Again, only the Netherlands and the two countries with the highest and lowest avoidable mortality ratios are shown. In practically all years, France and Spain achieved lower rates of avoidable mortality with lower health care expenditures. Avoidable mortality decreased relatively more sharply in the Netherlands than in the other countries, while Dutch health expenditure growth was slightly above average. Trend patterns for the various countries were comparable over time.

Figure 8.10: Avoidable mortality per 100,000 population and health expenditure, 2001–2009, per capita in PPP-adjusted US\$ (source: Plug et al., 2011; data processing RIVM).^a



^a Highest and lowest rates of avoidable mortality were derived from a selection of 16 countries: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA

Dutch administrative burdens are in the middle range internationally; Dutch hospitals have relatively high overhead costs compared to other Dutch providers

Research on health care efficiency, or more specifically on the degree of waste, often focuses on administrative costs (Bentley et al., 2008). Since these do not directly contribute to the core processes of health care delivery, they are not of immediate benefit to the patients. Obviously some administrative costs are inherent to running any organisation. How high or low these should ideally be is not easy to determine. Variations between countries, or between years or sectors within countries, provide us with some points of leverage.

Figure 8.11: Expenditure on health administration and insurance as percentage of total health spending, 2000 and 2011 (source: OECD, 2013e; data processing RIVM).

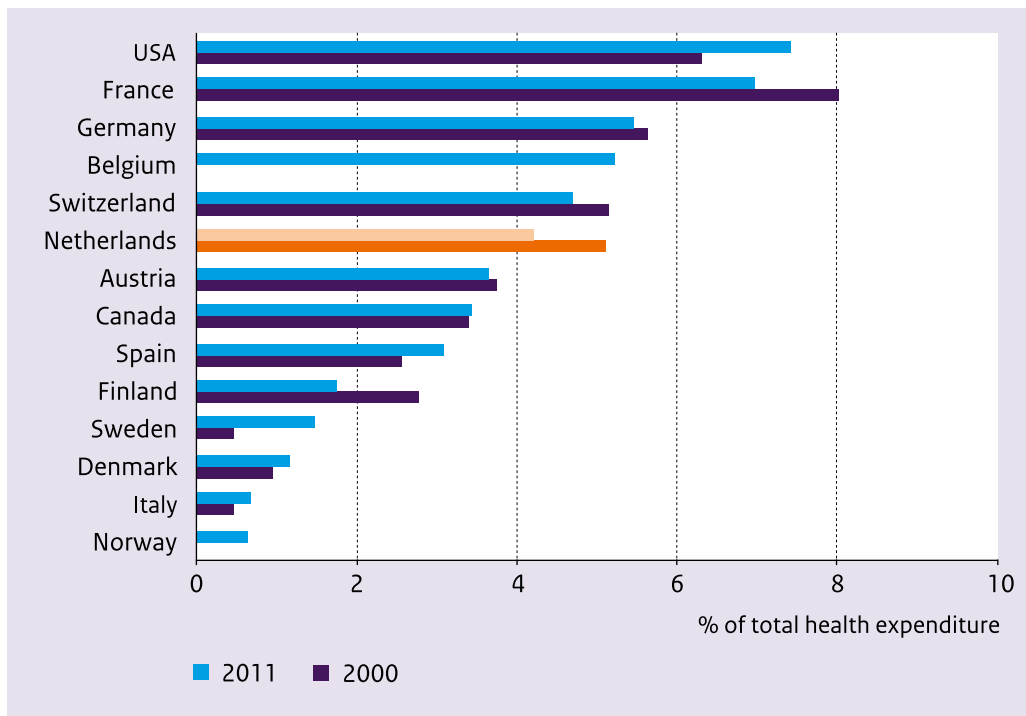
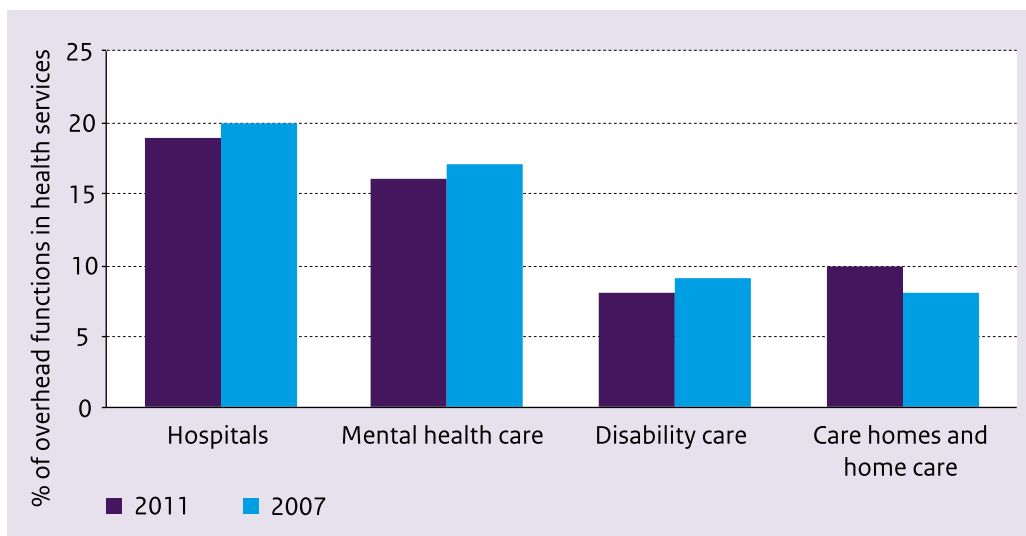


Figure 8.11 depicts the shares of total health care expenditure that are devoted to health care administration and health insurance in 14 countries. These represent the operational costs of government agencies and health insurers for activities related to the financing of health care (planning, management, fee collection, processing of claims and receivables). The Netherlands was in the middle range both in 2000 and 2011 in terms of these operating costs. The level was relatively low in Scandinavian countries and in Italy and relatively high in the USA and France. As noted earlier, no clear correlations are evident in terms of the different types of health care system: high operational burdens are seen both in systems whose basic insurance packages are privately based (Germany, Netherlands, Switzerland) and in those with publicly based packages (France, Belgium) (Joumard et al., 2010).

Figure 8.12 shows the percentages of staff employed in overhead functions (non-patient-related posts) in Dutch health care services as an indicator of administrative burden. The share of overhead functions in the hospital sector (based on full-time equivalents) was relatively high and in the disability care sector and the care home and home care sector it was relatively low. The latter sector was the only one with a shrinking percentage of overhead functions from 2007 to 2011; other sectors saw slight increases.

Figure 8.12: Staff in overhead functions as percentage of total sectorial employment (based on FTE), 2007 and 2011 (source: CBS StatLine, 2013d).



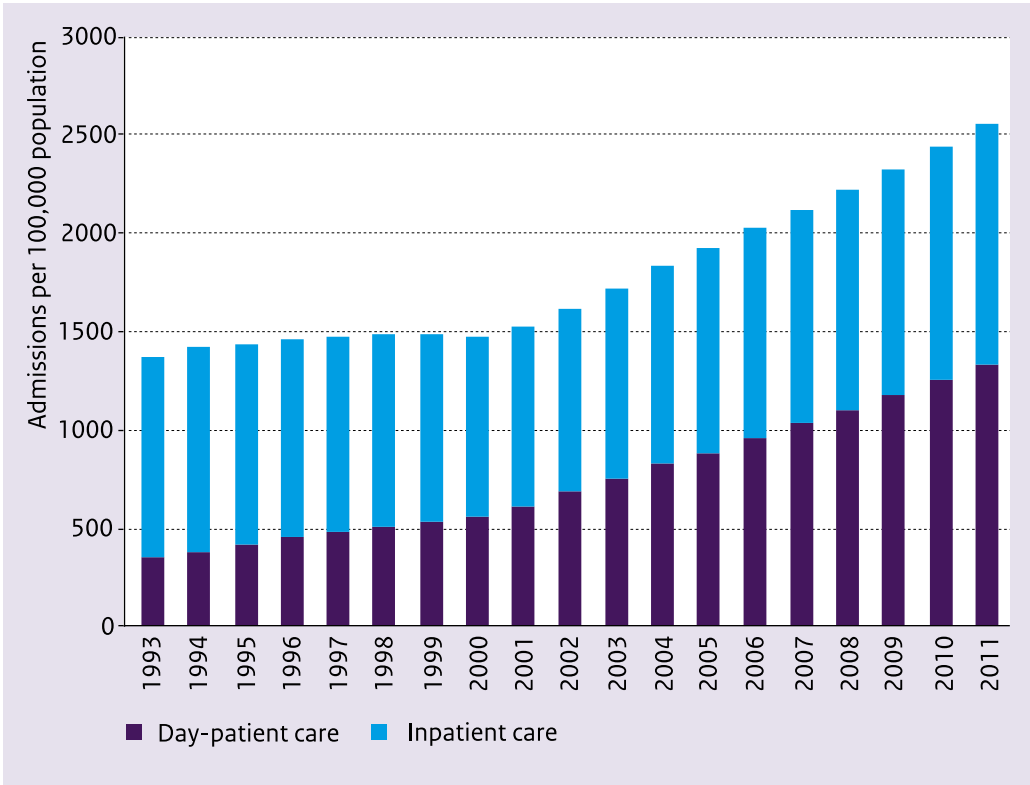
Productivity in hospital services has increased in a decade’s time, though it is unclear what health gains might accrue from the additional care

In the Dutch hospital sector, substantial increases in the numbers of admissions have occurred since 2001 (CBS StatLine, 2014g), with a particularly sharp rise in day-patient admissions. As figure 8.13 reveals, increasing proportions of hospital interventions were delivered in day-patient attendances. Previous research has shown that hospital productivity increased by 2.3% per year in the 2003–2009 period (IPSE Studies, 2011). In other words, the same number of admissions could be carried out in 2009 at lower cost than in 2003. The trend was largely attributable to organic growth (general technological development) in all hospitals. Because the study did not assess quality of care, it is unclear whether the additional production resulted in additional health gains.

Hospital size was found to have mildly adverse effects on productivity. From the point of view of efficiency, virtually all Dutch hospitals were operating on a scale that was somewhat larger than the optimum size, so that increases in scale or production would result in disproportionate cost increases. As most hospitals did not diverge much from the best performing hospital, there was limited variation between the hospitals in terms of efficiency (IPSE Studies, 2011).

That pattern began to change in 2012, at least in terms of the rising admissions (DHD, 2014; NVZ, 2013; Vandermeulen, 2014). The growth in the number of day-patient admissions slackened and the numbers of inpatient admissions and initial outpatient specialist consultations declined slightly. Trends varied amongst clinical specialties, however. Initial

Figure 8.13: Breakdown of Dutch hospital admissions into day-patient and inpatient care, 1993–2011 (source: CBS StatLine, 2014g).

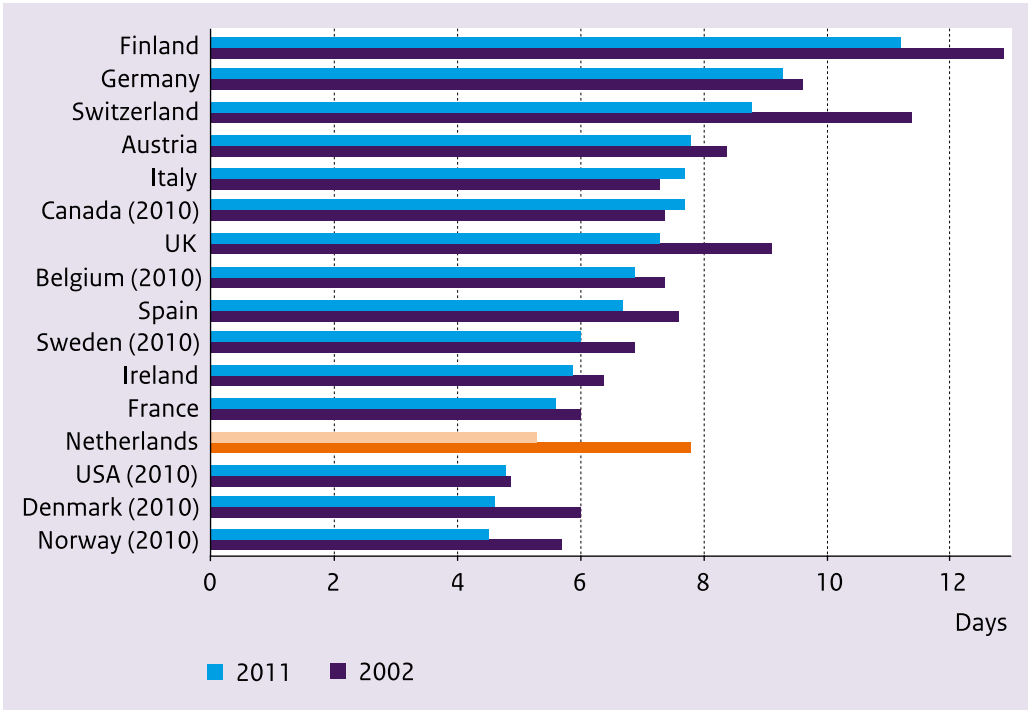


cardiology consultations increased in 2012 by 6.1% while initial anaesthetics consultations fell by 6.7%. The decline in inpatient admissions was steeper in small hospitals than in large ones (NVZ, 2013). Whether the downturn in hospital production has affected productivity rates will depend on the cost trend.

Average lengths of stay in Dutch hospitals continue to shorten, but persisting variations between hospitals point to room for improvement

An oft-used indicator for hospital efficiency is the average length of inpatient stays. It has been decreasing for many years, both in the Netherlands and abroad. Shorter stays have been brought about by new types of interventions, such as minimally invasive surgery, and the streamlining of patient care processes via clinical care pathways. If the intensity of care remains the same, shorter patient stays mean lower costs per hospital admission. From 2002 to 2011, the average stay in Dutch hospitals shrank from 7.8 to 5.3 days, bringing the Netherlands closer to the countries with the shortest lengths of stay (Norway, Denmark and the USA) (figure 8.14).

Figure 8.14: Average inpatient hospital stays in 16 countries, 2002 and 2011 (source: OECD, 2013e).^a

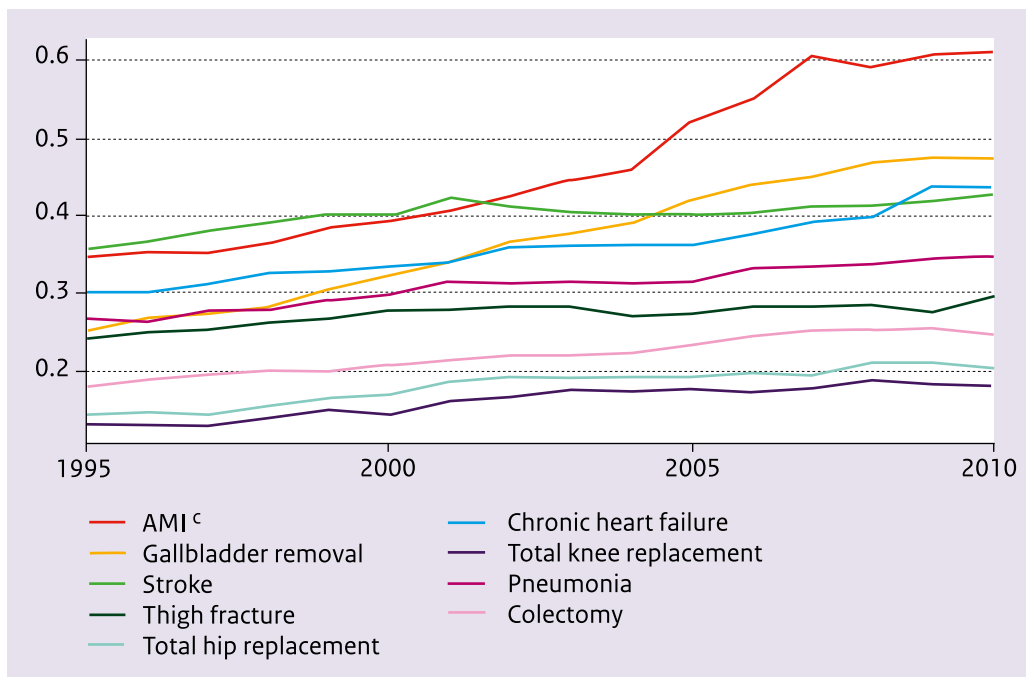


^a Differences between countries should be interpreted with some caution due to variations in definitions and in types of services included (Dutch data include curative care only, whilst some countries report broader data).

A recent study analysed variations between Dutch hospitals in terms of the lengths of stay in nine patient categories² (Van de Vijzel et al., submitted). The degree of variation between admissions and the changes in such variations over time may indicate opportunities for improvement. Wide variations in length of stay were found in each of the patient categories. In 25% of admissions for acute myocardial infarctions, for instance, patients were hospitalised for two days or less, whereas another 25% of patients stayed more than eight days. Very limited amounts of variance (between 0% and 10% in six of the nine categories) were

² The categories were defined by five diagnoses (acute myocardial infarction, stroke, thigh fracture, chronic heart failure, pneumonia) and four surgical interventions (gallbladder removal, hip replacement, knee replacement, partial colectomy).

Figure 8.15: Coefficients of variation^a for lengths of Dutch hospital stays, adjusted for patient characteristics^b, 1995–2010 (source: LMR, data processing RIVM; van de Vijzel et al., submitted).



^a Coefficient of variation = standard deviation divided by mean.

^b Patient characteristics: age, sex, comorbidity, reason for admission, regional-level SES and ethnicity

^c Acute myocardial infarction

explained by patient characteristics such as age, sex, comorbidity and socioeconomic status, and the percentage attributable to hospitals was likewise very small.³

Despite the decreasing lengths of stay, the variations between admissions, in relation to the mean lengths of stay, did not narrow. Figure 8.15 shows the degrees of variation for the nine patient categories for the years 1995 to 2010. The ranges of variation in most groups remained stable or increased.

³ Variations between hospitals may be expressed as intraclass correlation coefficients (ICCs). An ICC of 0 indicates absence of hospital influence and an ICC of 1 indicates full hospital influence (which would be out of the question). In five of the nine categories, ICCs were lower than .07 in all the years studied; in two categories they ranged from .05 to .15 and in two others from .14 to .26.

As many of the differences between individual hospitals were non-significant, hospital-level comparisons of average patient stays ought to be interpreted with caution. Hospitals with relatively long patient stays for diagnosis A did not necessarily report longer stays for diagnosis B. That suggests that hospital-wide policies regarding length of stay are lacking or ineffective.

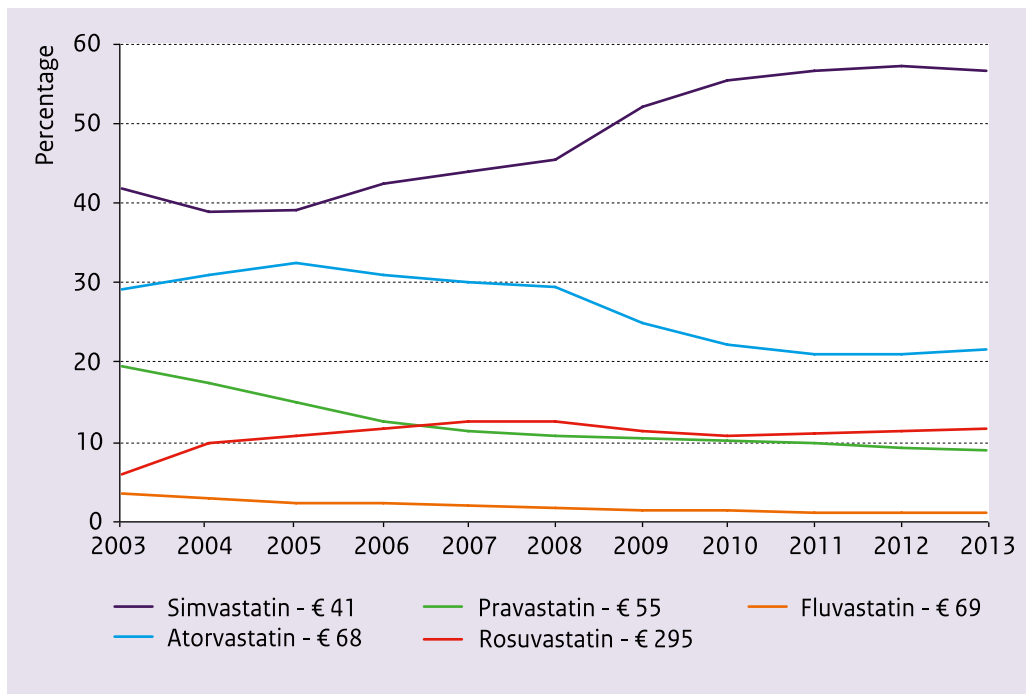
The trends seen in the variations suggest that there is room for further reduction in the lengths of hospital stays. The question of how much reduction would be feasible without compromising the quality of care has remained unanswered in a number of studies (Clarke, 2002; Borghans, 2012).

Efficiency in the outpatient use of pharmaceuticals has improved since 2008

Since 2008, expenditures for outpatient pharmaceutical drugs have been increasing at lower rates than expenditures for other Dutch health care categories. Nominal growth was limited to 0% to 2% per year from 2008 to 2011, and costs actually sank by 8.1% and 4.7% in 2012 and 2013 (CBS StatLine, 2014f). Since total pharmaceutical consumption is still on the rise, the moderating cost trends must be largely due to price reductions. Consumption in terms of defined daily doses (DDDs) in 2012 was more than 30% above that in 2004 (CVZ, 2013b). Under the Medicine Prices Act (WGP), Dutch pharmaceutical prices are not to exceed the average prices in the neighbouring countries of Belgium, France, Germany and the UK. The preferred drugs policies pursued by Dutch health insurance companies allow for reimbursement of the lowest-priced pharmaceuticals via the basic statutory package, provided their effectiveness is comparable to that of higher-priced preparations and they are suited to the same patient categories. This often favours generic above brand drugs. Since 2004, Dutch health insurers have been granted more powers in determining medication options, whereas that was previously the role of pharmacists. The WGP and the preferred drugs policies have yielded efficiency improvements, as seen in the reduced costs per user (assuming equal clinical effectiveness). The National Health Care Institute (ZI, formerly the Health Care Insurance Board or CVZ) has attributed nearly two thirds of the returns from the price reductions to the Dutch WGP legislation, estimating that the 2012 volume of medicine consumption would have cost €3 billion more at 2004 prices (CVZ, 2013b).

In preferred drugs policies, the lower-cost variants are often generic drugs, which contain the same substance(s) as the original brand, or patented, drug and enter the market after the patent expires. The proportion of generic drugs in the total of Dutch pharmaceutical consumption has grown substantially, from 43% in 2004 to 65% in 2012 (based on DDDs) (CVZ, 2013b). Figures 8.16 and 8.17 show trends in the percentages of users taking various branded and generic variants of statins and proton pump inhibitors, two common drug categories. The number of users of each was slightly under two million in 2013, with total costs for statins of nearly €150 million and for proton pump inhibitors almost €110 million. The graphs show increasing percentages taking the lowest-priced generic variants, simvastatin and omeprazole – a favourable development in terms of efficiency – although trends have stabilised since 2010. Similar trends were found for new users are prescribed simvastatin and omeprazole (CVZ, 2013b).

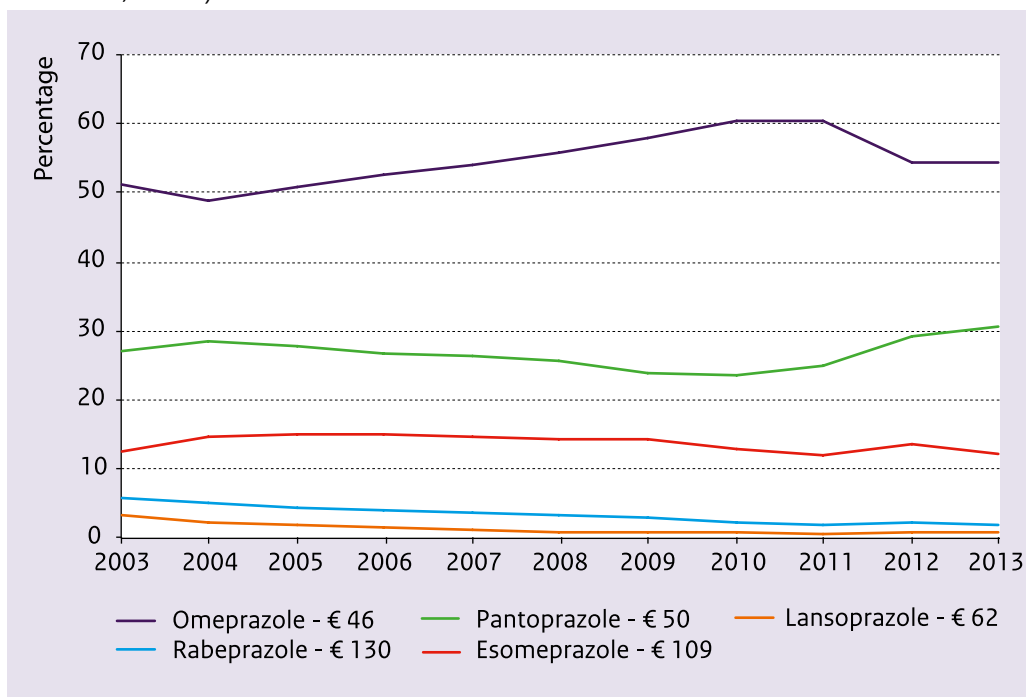
Figure 8.16: Patients taking different types of statin as percentages of all statin users, 2003–2013 (with 2013 prices) (source: Zorginstituut Nederland, 2014b).



In a report from the Dutch Institute for Rational Use of Medicine (IVM) that investigated GP prescribing behaviour, some examples were analysed in more detail (IVM, 2013a). Basing itself on standards published by the Dutch College of General Practitioners (NHG), the IVM designated certain drugs within several drug categories (antidepressants, statins, ACE inhibitors, proton pump inhibitors and angiotensin II antagonists) as preferred drugs. These were drugs with higher effectiveness at an equal or lower price or with equal effectiveness at a lower price. The IVM found wide ranges of variation⁴ between GP practices in the degrees to which they prescribed preferred drugs. This suggests potential efficiency gains. Preferred antidepressants were prescribed in as few as 20% of cases or as many as 89% of cases by the GPs within the 10th-to-90th percentile range. For ACE inhibitors, prescription of preferred drugs varied 23% to 100%, for proton pump inhibitors from 82% to 100% and for angiotensin II antagonists from 6% to 100% (IVM, 2013a).

⁴ The ranges of variation here are based on the span between the 10th and the 90th percentile scores.

Figure 8.17: Patients taking different types of proton pump inhibitor as percentages of all users of proton pump inhibitors, 2003–2013 (with 2013 prices) (source: Zorginstituut Nederland, 2014b).



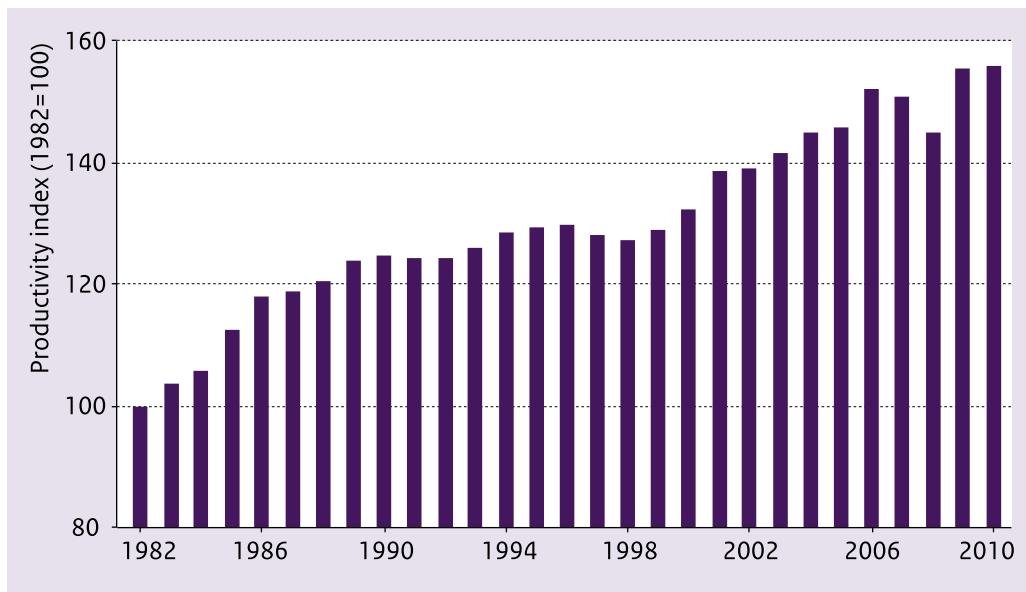
Earlier research identified several possible influences on GP prescribing behaviour: medical training, GP preferences and routines, pharmaceutical industry, patient assertiveness, and policies of government or health insurance companies (Haaijer-Ruskamp & Denig, 2001).

Productivity in mental health care has increased, though it is unclear what health gains might accrue from the additional care

Productivity increased in the Dutch mental health sector from 1982 to 2010 (figure 8.18). Notable increases occurred in the periods 1982–1987 and 2000–2010 (averaging 4.1% and 1.5% per year) (Niaounakis, 2013).

In the study by Niaounakis, mental health care productivity was measured in terms of the numbers of outpatient sessions, part-time treatments, inpatient days and days in sheltered accommodation. Weights were determined on the basis of recent fee levels to estimate the relative intensity of care in those four categories. Particularly strong increases occurred in the numbers of outpatient therapy sessions (up to 8.1% per year). The numbers of days in sheltered accommodation also increased, but the numbers of inpatient days diminished slightly. Part-time treatments increased in number until 2004 and declined thereafter.

Figure 8.18: Productivity in the Dutch mental health sector, 1982–2010 (index values, 1982 = 100) (source: Niaounakis, 2013).



The costs of mental health care mounted from just over €1 billion in 1982 to more than €5 billion in 2011 (or by 5.6% per year on average). Hence, accompanying the substantial growth in costs was an even sharper increase in production.

The researchers attribute the productivity development in part to the restrictive budgetary policies pursued in the 1980s, which curbed cost increases. Policies to deinstitutionalise people with psychiatric disabilities gave a strong boost to community care services. The study had no information available to enable assessment of quality in mental health care or of changes in care intensity over time in the different client categories. No conclusions can therefore be drawn as to whether the expanded mental health services generated additional health gains.

Productivity in nursing, residential and home care has diminished over time, though evidence about health gains from the services is scarce

A slow decline in productivity has been observed in the sector comprising nursing homes, residential homes and home care services over a period of many years (1970–2010; not illustrated graphically) (Dumaij, 2011). Three segments were distinguished within that time frame on the basis of the prevailing funding approach: the period of agency-based funding (1972–1996), the period of agency-based funding with specific quality-of-care policies (1997–2003) and the period of service-based funding (2004–2010). Productivity declined with 0.6% per year in the first period and 2.0% per year in the second and third periods.

Productivity trends may be examined separately for the various types of care or subsectors: the numbers of nursing home bed days and the numbers of home care hours increased in the 40-year period by an average of 2% per year, whilst the numbers of residential care days decreased by 1% yearly. Annual cost increases averaged more than 5%, with the largest share of cost increases attributable to staffing costs.

In the present study, it was not possible to assess trends in the quality of care. Chapter 6 reports on reductions in the prevalence of decubitus and undernourishment in the past decade and on the relatively unchanged rates of falling incidents. The former two statistics are indications for quality improvements in parts of the care home and home care sector that might make up for the mild decline in productivity. Another conceivable explanation for the decline might be increased intensity of care to clients in the sector.

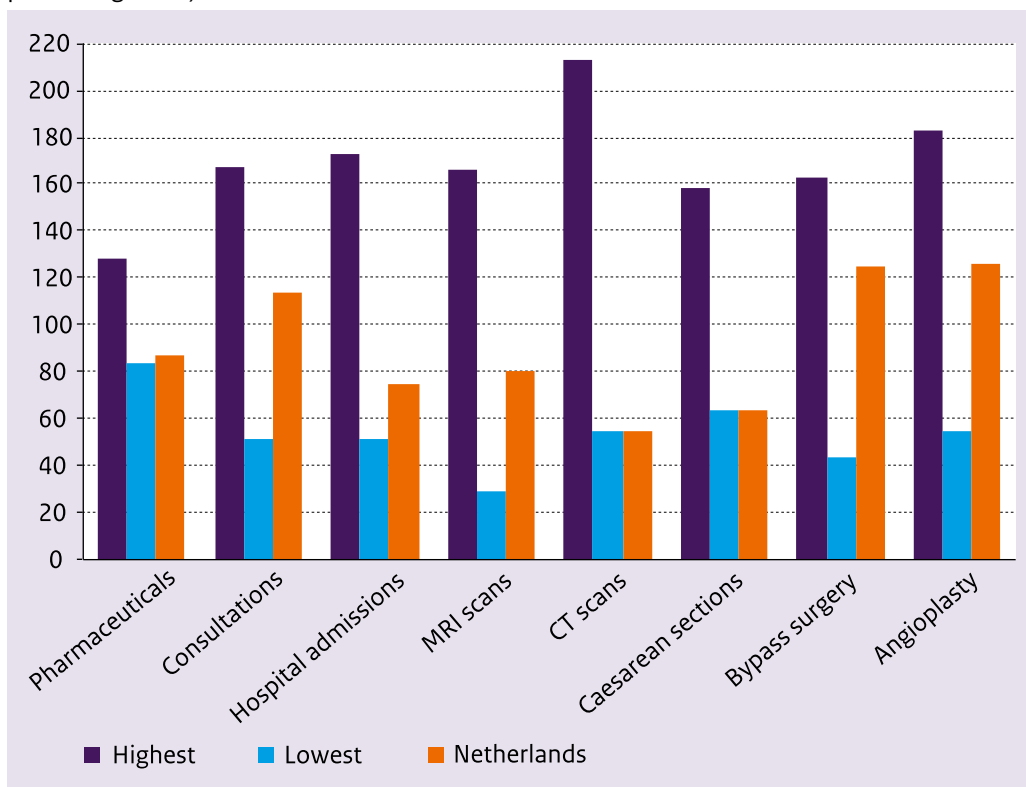
In comparison with other Western countries, the quantity of care delivered in the Netherlands appears to be in the middle or lower-middle range on most indicators

Research on the efficiency of health care systems focuses increasingly on variations in service utilisation between countries, regions or health care providers. Wide ranges of variation, especially when not explainable by differentials in client needs, are indications of inefficiency in health care. Overtreatment and undertreatment are both potential causes.

Figure 8.19 examines variations in the use of several types of health care services across 16 OECD countries in 2011. Each set of columns shows the Netherlands alongside the two countries with the lowest and highest rates of utilisation of that service type. The Dutch rates for several types were below the average level (set here at 100). Among them was the consumption of pharmaceuticals, which included antibiotics, antihypertensives, cholesterol-lowering drugs, antidiabetics and antidepressants; only the rate for antidiabetics was above average in the Netherlands. The Dutch ratio of inpatient hospital admissions was also low, with lower rates seen only in Canada and Spain; rates in Germany and Austria were considerably higher.

A more mixed picture emerged for the utilisation of specific technologies or treatment procedures by hospitals. The Dutch rate for CT scans was the lowest in the 16 countries, and that for MRI scans was below average. Although no standards have been set for those two indicators, discussion mainly focuses on appropriate use (and avoiding unnecessary use) of the scan technologies (Baker et al., 2008; OECD, 2013a). The Dutch ratio of Caesarean sections to total births was also the lowest, just below Finland and Sweden. That ratio has been strongly increasing worldwide in recent decades, and the debate centres on whether it might be growing too high and whether the procedure is performed excessively for low-risk deliveries (McPherson et al., 2013); differences between countries seem associated in large part with cultural and preferential variations in perinatal care.

Figure 8.19: Utilisation of various categories of health care assessed for 16 OECD countries in 2011: highest, lowest and Dutch index values (mean = 100) (source: OECD, 2013b; data processing RIVM).^a



^a Countries from which figures were derived: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA.

Some treatment procedures presented a different picture for the Netherlands. The numbers of bypass and angioplasty interventions per 100,000 population was above average and not linked to heart disease incidence (estimated from mortality figures) (OECD, 2013a). Comparatively low rates of appendectomy prevail in the Netherlands, together with a downward trend in most countries and limited overall variation.

To summarise, variations between countries differed depending on the health conditions or types of treatment assessed.

Wide variations in GP referral behaviour and in avoidable hospital admissions suggest opportunities for substitution of services; in the mental health sector, the expansion of primary and community care services has not yet led to reductions in the use of secondary care

Substitution of care is seen as one way to improve efficiency in the health care system. Substitution or transfer of services means that health care once provided at a particular site is transferred to another site where it can be delivered at lower cost but with equal or better quality. In many cases this involves substitution from the secondary, specialist sector to the less costly primary care sector.

Recent research by NIVEL has mapped out the areas where efficiency gains could still be achieved by transferring services (NIVEL, 2013c). In a literature review, it identified opportunities for efficiency improvement in several areas – long-term care, low-intensity mental health care, minor surgical procedures and dermatology.

It sought further improvement potential by analysing variations between GPs in their referrals of patients to secondary care providers. In the period 2006–2010, Dutch GP practices varied from just over 9% to more than 25% in the percentages of their patients they referred for specialist care. The differences were seen in referrals to the full range of secondary care specialties, and not to some more than others. Only limited amounts of the variance (0% to 10%) were explained by patient characteristics such as age, gender or chronic health conditions. The wide range of variation is an indication that some of the current secondary care services could be performed in the primary sector.

The referral behaviour showed no associations with differing characteristics of practices or location, such as the availability of practice nurses or the distance from secondary care units. Nor did practices already performing more services transferred as part of modernisation and innovation (M&I)⁵ efforts seem to make fewer referrals. Two organisational characteristics did show associations: practices that adhered more closely to referral guidelines were slightly less likely to make referrals, and GPs in single-handed practices were slightly more likely to refer than GPs in two-partner practices (NIVEL, 2013c).

Avoidable hospital admissions are another indicator that could uncover potentials for efficiency improvement through transfer of services (see chapter 5 for a more detailed analysis). Asthma, COPD, heart failure and diabetes mellitus are widely prevalent diseases that can normally be treated by primary care providers or outpatient specialists. Hospitalisation should be avoidable. The rate of hospital admissions for asthma, COPD and heart failure is relatively low in the Netherlands, though there are countries that perform better. Admissions

⁵ Modernisation and innovation (M&I) is a scheme whereby services formerly performed by secondary care providers are transferred to primary care. Examples are diagnostic tests for asthma or hearing impairments, lung function tests, diabetes management and minor surgical procedures. Special insurance procedure codes have been introduced for such services to encourage transfer to primary care.

for chronic diabetes complications were at somewhat higher levels, suggesting that improvement is possible.

The mental health sector has also been trying for years to transfer care from secondary to primary care providers. Recent research found that a substantial expansion of community mental health care services had not yet led to a reduction in the volume of care provided in inpatient institutions. Although closer cooperation was observed within the primary care sector – between GPs and community psychiatric nurses and between GPs and primary care psychologists – that had not yet lowered the rates of secondary care referrals. The transfer of psychiatric services from inpatient institutions to lower-cost community agencies had not yet been accomplished (Bijenhof et al., 2012).

8.5 Conclusions

Health care expenditures have risen steeply in recent decades and form an increasingly larger share of national income and public expenditure. Recent economic recession has put a growing strain on government finances, and consequently on health care spending. Governments at home and abroad have responded to this, and the growth in health care expenditure has slowed since 2009. The growth in Dutch expenditure from 2011 to 2013 was low by historical comparison.

Each country has approached the issue differently, depending on policy preferences and the ways the health system is organised. The content and the cover of the basic benefit packages have been little altered, but out-of-pocket payments have been raised for many services. The Netherlands has done likewise, including increased co-payments for mental health care. The Administrative Outline Agreements on health care, concluded in mid-2013 by government, health insurers and representatives of health care providers, reiterated the need to curtail the rising expenditures. The parties agreed to limit the growth in expenditure in hospitals (to a maximum real growth of 2% in 2013, 1.5% in 2014 and 1% in 2015–2017), general practice (2.5% in 2014–2017) and mental health care (1.5% in 2014 and 1% in 2015–2017). Those growth rates are substantially lower than the average rates over the past decade. The parties to the agreement acknowledged a shared responsibility for getting health care costs under control.

Controlling costs is a complex challenge, as seen in the yearly cost overruns of the Dutch Health Care Budgetary Framework (BKZ). The necessary additional returns would ideally be achieved in efficiency improvements, in order to ensure that cost control has no negative impact on the quality or accessibility of care. As we have seen, efficiency has been improved in a number of areas. Price reductions in the pharmaceutical sector have led to substantial savings, and the hospital and mental health sectors have delivered more care per euro invested. There is too little evidence to judge whether the additional care has resulted in better health.

Improvements in efficiency do not necessarily improve cost control, as developments in the hospital and mental health sectors have shown. More efficient care can result in growing volumes of care and hence in rising costs. Dutch expenditure for long-term health care is relatively high by international comparison, but targeted investments in elder care have been made in order to improve quality, and the same is true of disability care (which is not included in the international comparisons). This shows that trends in health care expenditure cannot be analysed in isolation from trends in quality, and unfortunately that is not yet feasible for all sectors.

9

Health care and public health

9.1 Background

In this Performance Report, health care is defined as ‘the entire field of health care providers, supporting staff, institutions, resources and activities whose direct aim is to maintain or improve people’s health status or self-reliance and to prevent, resolve, alleviate or offset deficiencies in health and personal functioning’ (see chapter 1). More briefly, the ultimate aim of health care is to improve health.

In the 1970s, discussion arose about the contribution made by health care services to the improvement of public health. Some researchers, including McKeown (1976) and Cochrane and his co-authors (1978), asserted that the contribution of health care was very limited. Analysing trends in mortality from infectious diseases in England and Wales from 1850 to 1970, for example, they argued that the steepest drop in mortality had already taken place before the introduction of major medical innovations like antibiotics. Improved nutrition and socioeconomic conditions were brought forward as more decisive factors. Publications like these touched off widespread debate about the benefits of the health care system.

Later studies called McKeown’s and Cochrane’s findings into question. Mackenbach (1996), for instance, carried out a comparable analysis for the Netherlands from 1875 to 1970, which included infectious disease mortality and perinatal mortality. He found that the introduction of new treatment interventions in surgery, anaesthesia and perinatal care was positively associated with declines in disease-specific mortality; an estimated 18.5% of the drop in

mortality was attributable to health care. Nolte and McKee (2004) later showed that the decline in tuberculosis mortality accelerated after the introduction of chemotherapy and vaccinations in the late 1940s and mid-1950s. A further counterargument was that the period studied by McKeown was a time of relatively few developments in health care. A sequence of key innovations occurred from the 1960s onwards, including new forms of treatment and medication (such as beta-blockers) to alleviate common health conditions like hypertension, cardiovascular disease and respiratory diseases (Colgrove, 2002; Nolte et al., 2009). It was also argued that organisational changes in health care provision and the application of evidence-based medicine in recent decades have further helped to improve public health (Nolte et al., 2009).

9.2 Indicators for health care and public health

The focus of this chapter is on the relationship between health care and public health. Our primary aim is to help clarify the contribution made by the health care system in improving the health of the population. In view of the complexity of the question, we shall not attempt to represent that contribution in a single statistic like that in the above example from Mackenbach. Our intention is rather to offer more tools for interpreting the relationship between health care services and public health.

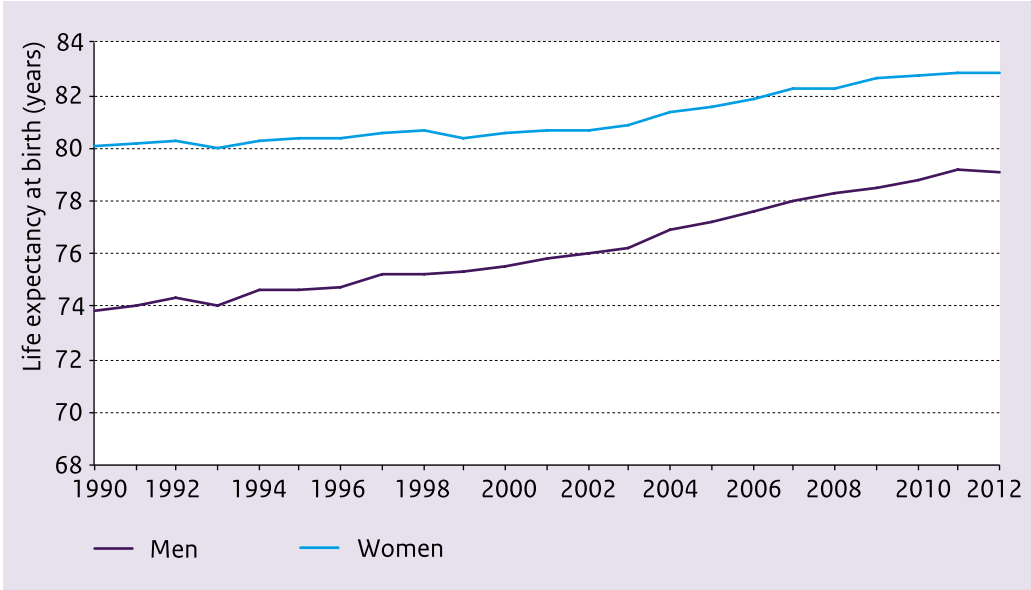
The chapter consists of four parts. We begin by summarising key trends in public health in terms of indicators such as life expectancy and healthy life expectancy. We then examine domestic and international trends in mortality in several diagnostic categories. Because changes in health care provision often take place with respect to specific disease diagnoses, analyses of this type can open insights into specific contributions that health care makes to public health. Our choice of diagnoses is informed in part by earlier studies on avoidable mortality – deaths from medical conditions that are treatable given the current state of health care and scientific knowledge.

We next turn to the relationship between specific health indicators and expenditures on health care over time and in international comparison. The final part of the chapter reviews the various quality indicators from chapters 2 to 7 of this Performance Report which have made direct assessments of health outcomes, such as the mortality rate within 30 days of hospital admission for heart attack.

Our focus includes:

- Life expectancy and healthy life expectancy at birth
- Mortality from diseases that could be treated with the current level of knowledge and health care
- Overall mortality from cardiovascular diseases, cancer and infant mortality
- Relationship between health care expenditure and life expectancy
- Quality indicators and health outcomes in summary.

Figure 9.1: Life expectancy at birth for Dutch males and females, 1990–2012 (source: CBS StatLine, 2013a).

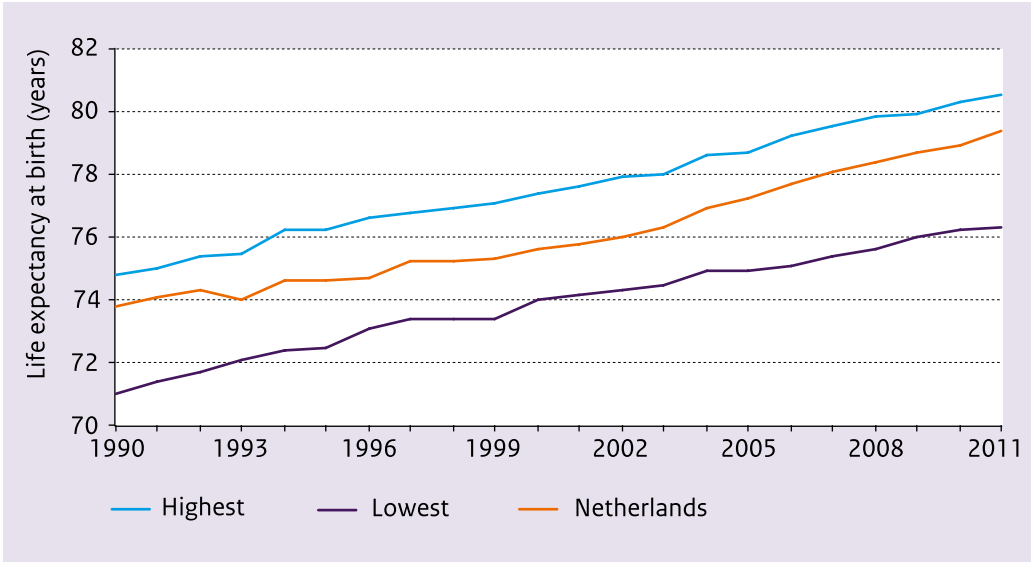


9.3 Trends in life expectancy

The years 1990 to 2012 saw gradual increases in Dutch overall life expectancy at birth from 73.8 to 79.1 years for men (an increase of 5.3 years) and from 80.1 to 82.8 years for women (an increase of 2.7 years) (figure 9.1). A distinct rise in life expectancy occurred after the year 2000, especially for men. After 2010, women saw only limited growth in life expectancy, and men saw a slight decline in 2012. The rising life expectancy since 2000 is strongly correlated with a substantial decrease in mortality amongst people older than 65 (RIVM, 2014a).

In a comparison with 15 other high-income countries (see footnote to figure 9.2), Dutch men rank higher than Dutch women in terms of life expectancy. Figure 9.2 (men) and figure 9.3 (women) depict the lowest and highest life expectancies in those 15 countries in comparison with Dutch levels. Dutch male life expectancy is one of the highest, as it has been since 1990. In 2011, only Switzerland (+1.1 years), Italy (+0.7 years) and Sweden (+0.5 years) had higher male life expectancies than the Netherlands.

Figure 9.2: Male life expectancy at birth in 16 countries^a, showing highest, lowest and Dutch figures, 1990–2011 (source: OECD, 2013c).

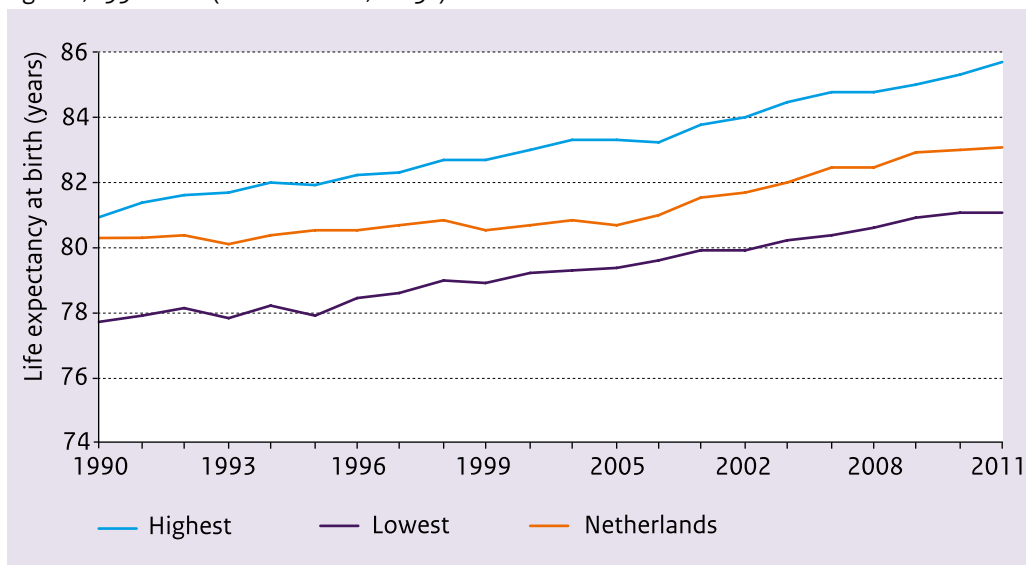


^a Countries represented in figure: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA

Until the mid-1990s, Dutch female life expectancy ranked above average in comparison with other high-income Western countries, but it has been below average ever since. A lag in growth was particularly evident from 1990 to 2002. By 2011, eleven of the 15 other countries represented in figure 9.3 had higher female life expectancies than the Netherlands, and especially France (+2.6 years), Spain (+2.3 years) and Italy (+2.2 years); in 1990 the differentials with France and Spain had been only +0.6 and +0.3, and there was no difference with Italy.

Figures 9.4 and 9.5 depict several trends in healthy life expectancy, whereby we also take into account the state of health in which people spend their years of life. Health status was assessed in terms of self-perceived state of health, prevalence of chronic health conditions, prevalence of physical limitations and state of mental health. As figure 9.4 shows, Dutch life expectancy in the absence of chronic health problems declined over the past three decades.

Figure 9.3: Female life expectancy at birth in 16 countries^a, showing highest, lowest and Dutch figures, 1990–2011 (source: OECD, 2013e).

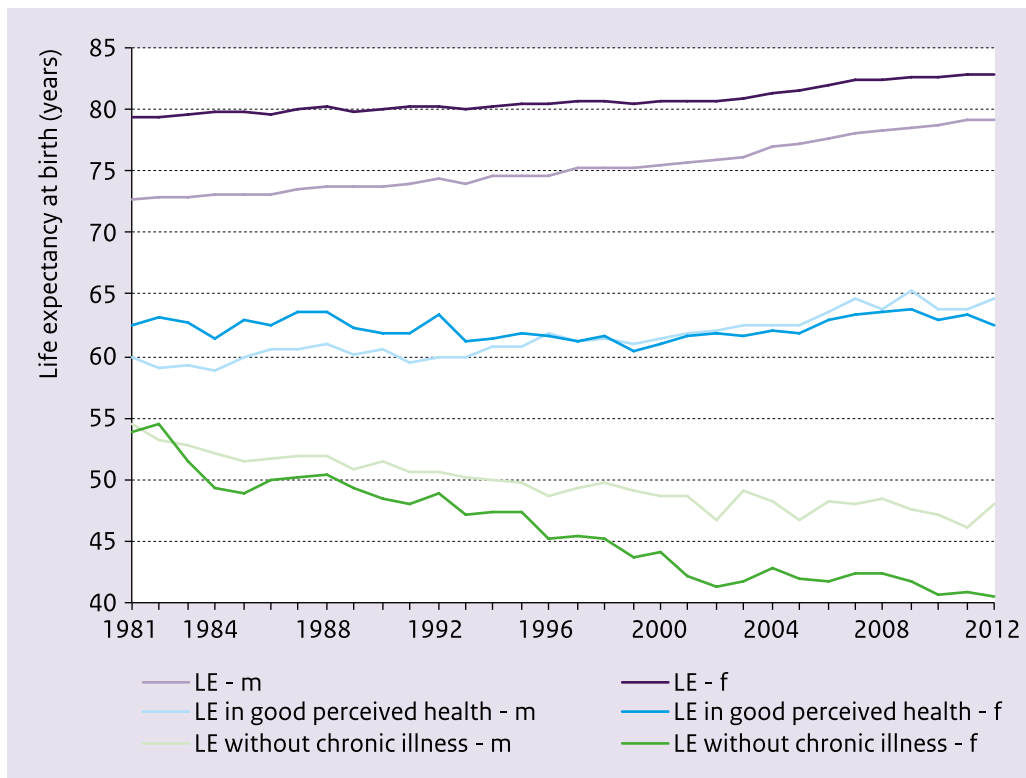


^a Countries represented in figure: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA

Men experienced fewer chronic health conditions than women, as well as a less rapid decline in life expectancy without long-term illness.

At the same time, life expectancy in a good perceived state of health increased for both men and women (figure 9.4), a trend ostensibly at odds with the shorter life expectancy in the absence of long-term illness. One possible explanation is that chronic health conditions may now have a less pervasive impact on personal functioning and perceived health. People with long-term illnesses may be better able to cope with their conditions, partly by virtue of improved care and support. Beyond that, the more proactive efforts to detect chronic health conditions, also at younger ages, and the heightened public awareness about such conditions may have given some impetus to the growth in recorded prevalence of chronic illnesses (RIVM, 2014). Figure 9.5 shows that life expectancy without physical limitations as well as life expectancy in good mental health have likewise increased over time.

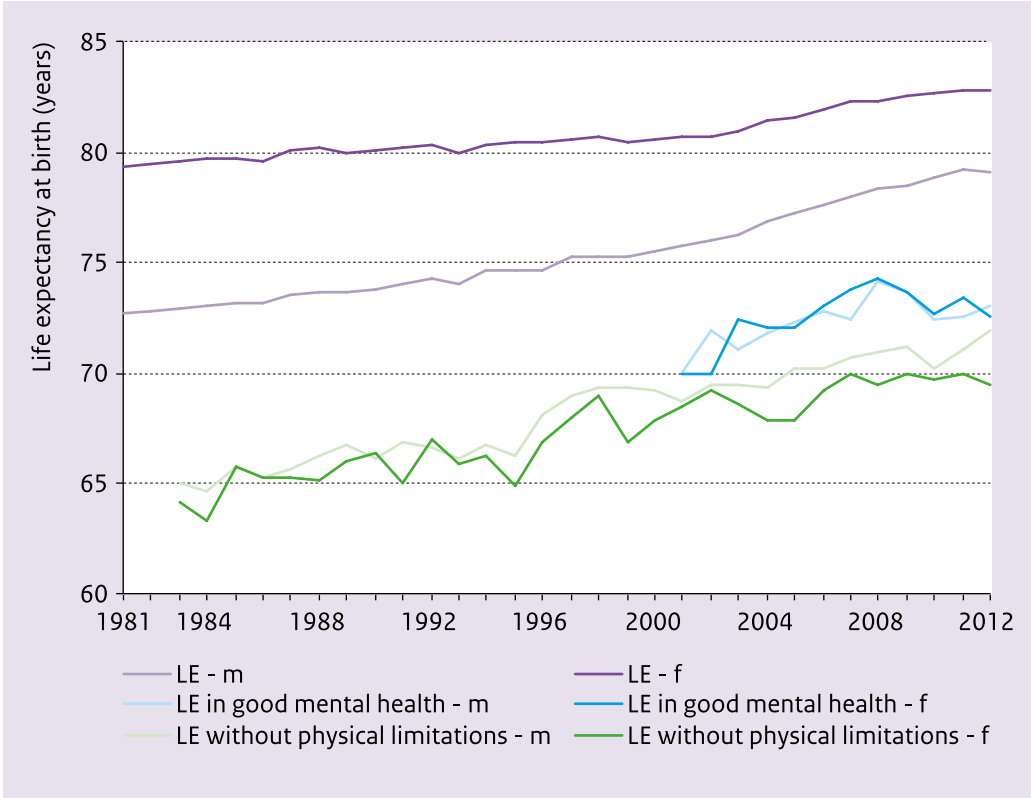
Figure 9.4: Life expectancy in good perceived health and life expectancy without chronic illness⁶ for Dutch men and women, 1981–2012 (source: CBS StatLine, 2013e).



LE = life expectancy

⁶ Health status is based on data from the Statistics Netherlands Health Interview Survey in a large Dutch population sample. 'Good perceived health' is based on the answers of 'good' or 'very good' to the question 'How is your health in general?' 'Without chronic illness' means that none of the following conditions were experienced in the past 12 months: asthma, heart conditions, stroke, hypertension, gastrointestinal disorders, diabetes, back trouble, arthritic or rheumatoid conditions, migraine or cancer.

Figure 9.5: Life expectancy without physical limitations and life expectancy in good mental health⁷ for Dutch men and women, 1981–2012 (source: CBS StatLine, 2013e).



LE = life expectancy

⁷ 'Without physical limitations' means no limitations on 7 items: carrying on conversations, following group conversations, reading small newsprint, recognising someone at a distance, carrying a full shopping bag, picking up something from the floor and walking 400 metres without stopping. 'In good mental health' is based on answers to the following questions: Have you been very nervous? Have you felt so down in the dumps that nothing could cheer you up? Have you felt calm and peaceful? Have you felt downhearted and depressed? Have you been happy?

9.4 Avoidable mortality

Avoidable mortality involves deaths that occur from illnesses that should be treatable in view of the current state of health care and knowledge. The notion was introduced by Rutstein and colleagues (1976), who called it ‘unnecessary untimely deaths’. It was subsequently also used in the *European Community Atlas of Avoidable Death* (Holland, 1988) as a measure of the quality of health care systems. The list of avoidable death causes included tuberculosis, asthma, influenza, maternal death and cervical cancer. A number of international studies have shown that avoidable mortality has decreased more swiftly than all other kinds of mortality since 1980. It played a significant role in the increasing levels of life expectancy (Nolte & McKee, 2008; Nolte & McKee, 2004).

A new European project on avoidable mortality has recently been completed (Plug et al., 2011). Drawing on scientific evidence about the effectiveness of medical treatment interventions implemented since the 1970s, the project compiled a list of treatment-amenable causes of death. Only those causes were included for which sufficiently large numbers of cases were available to make reliable analyses, for which substantial declines in mortality were evident, for which incidence rates had not been rising since 1970 and for which combined effects of multiple causes were unlikely. A list of diagnoses was drawn up that met these criteria (see table 9.1). The table also lists interventions for which one or more studies have demonstrated that they contribute to a reduction in mortality. Such interventions include screening programmes for cervical cancer and the prescription of beta-blockers for cardiovascular diseases.

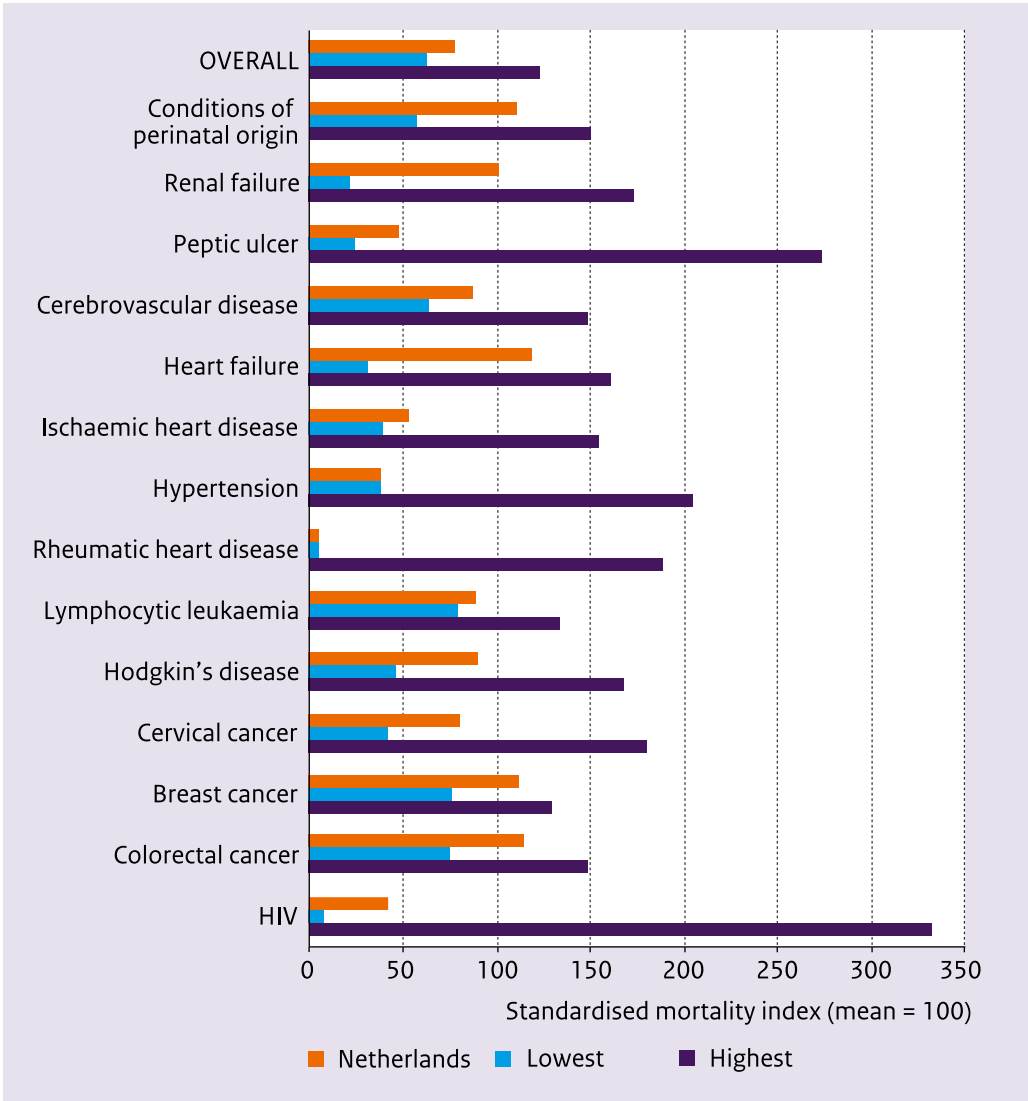
Monitoring the mortality trends that relate to specific causes of death enables more accurate identification of any role played by health care than analysis of more general trends in mortality. It also makes it possible to use international variations in mortality as indications of how the health care systems in different countries are performing. Figures 9.6 (women) and 9.7 (men) show the standardised Dutch rates of mortality in comparison with the highest and lowest yearly rates in 13 other high-income countries (see table footnote for the countries represented). The graph is based on index values with the cross-national mean set at 100. Overall standardised mortality (that is, all the included causes of death taken together) in the Netherlands is lower than the cross-national average for both men and women. Only France has lower mortality rates for men and women. The countries with the highest overall avoidable mortality are Germany and the UK for women (both approximately 20% above the average) and Finland and Germany for men (25% and 15% above average). The Dutch standardised mortality rates are not below average on all diagnoses. Dutch females have higher rates of mortality from colorectal cancer, breast cancer, heart failure and perinatal complications than the average rates for the countries included. Dutch males have relatively high rates for colorectal cancer, testicular cancer, heart failure and conditions of perinatal origin.

Figures for 5-year survival after diagnosis for stroke, breast cancer and colorectal cancer are also known (see chapters 4 and 5). The survival ratios for breast and colorectal cancer confirm

Table 9.1: Selected avoidable causes of death, with associated treatment interventions (source: Plug et al., 2011).

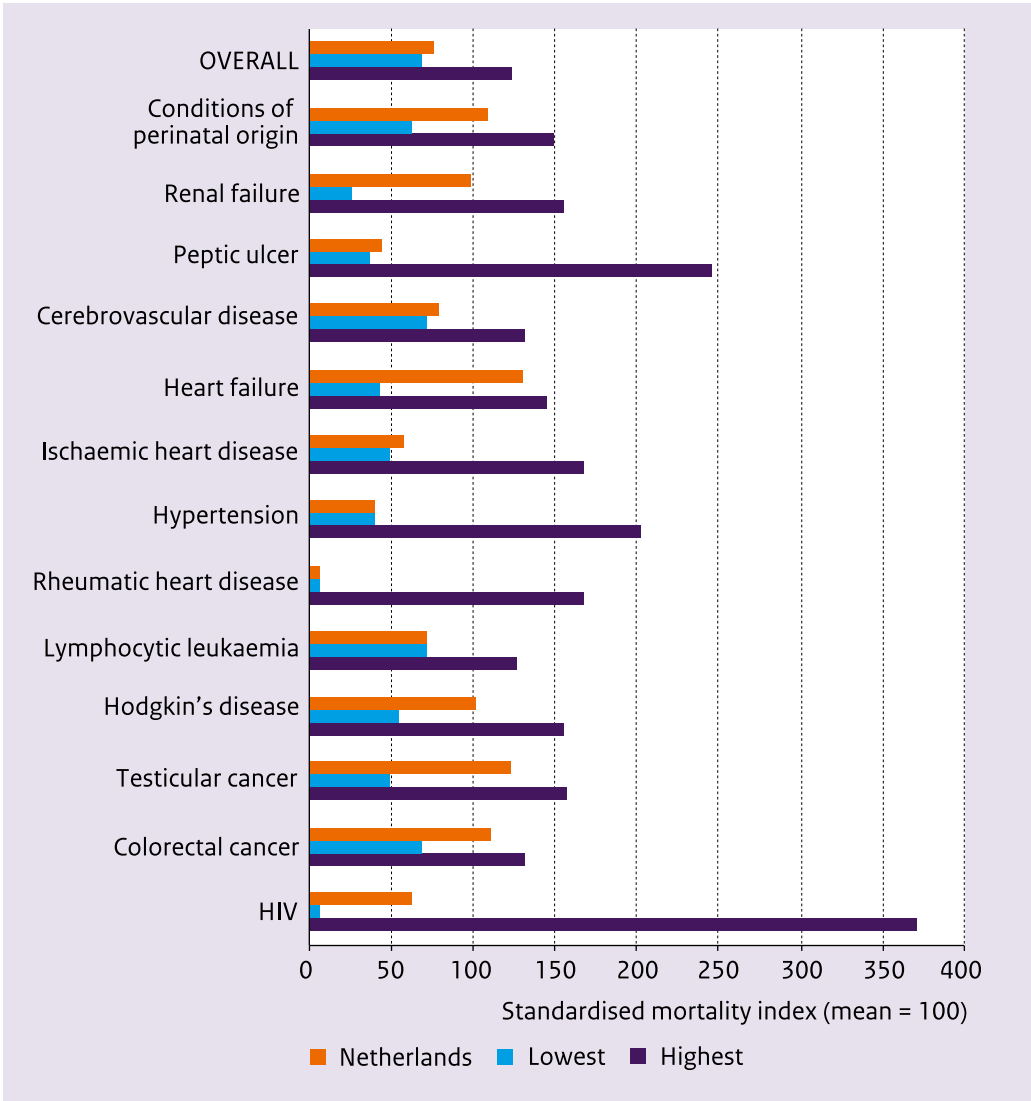
Diagnostic code (ICD 9)	Description	Treatment
042-044	HIV	Antiretroviral drugs
153-154	Colorectal cancer	Combination of specific treatments and improved management of disease process by screening
174	Breast cancer	Screening and chemotherapy
180	Cervical cancer	Screening
186	Testicular cancer	Advances in surgery and adjuvant treatment (cisplatin)
201	Hodgkin's disease	Combined chemotherapy
204-205	Lymphocytic leukaemia	Improved treatment and management of disease process and complications in people aged < 45
390-398	Rheumatic heart disease	Combined treatment; antibiotics and advanced surgical techniques
401-404	Hypertension	Antihypertensive drugs
410-414	Ischaemic heart disease	A combination of specific treatments (in coronary care units) and improved management of disease process (beta-blockers)
428-429	Heart failure	Combination of specific treatments (e.g. ACE inhibitors) and improved management of disease process
430-438	Cerebrovascular disease	Treatment of hypertension
531,532	Peptic ulcer	H2 blockers
584,585,586	Renal failure	Kidney transplantation and dialysis
745-746	Congenital heart disease	Improved surgical techniques e.g. deep hypothermia and circulatory arrest (DHCA)
760-779	Conditions originating in the perinatal period	Incremental introduction of a wide range of treatments e.g. special care baby units

Figure 9.6: Age-standardised mortality rates for women per 100,000 European standard population for 14 causes of death (index value of cross-national mean = 100), in 2009 or most recent available year (source: Plug et al., 2011; data processing by RIVM)^a.



^a Countries represented in figure: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and UK

Figure 9.7: Age-standardised mortality rates for men per 100,000 European standard population for 13 causes of death (index value of cross-national mean = 100), 2009 or most recent available year (source: Plug et al., 2011; data processing by RIVM)^a.



^a Countries represented in figure: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and UK

the above-depicted findings that some countries have better outcomes than the Netherlands. For breast cancer, both 5-year survival and overall mortality were better in the Scandinavian countries, France and Italy (chapter 5). For colorectal cancer, only Norway and Denmark (of the countries represented in figures 9.6 and 9.7) had higher standardised mortality rates than the Netherlands, though Norway had a comparable level of survival (OECD, 2013a). The Norwegian survival ratio for breast cancer was likewise comparable, but overall mortality was lower than the Dutch rate. Perinatal mortality (high on average in the Netherlands) is discussed in more detail in chapter 2.

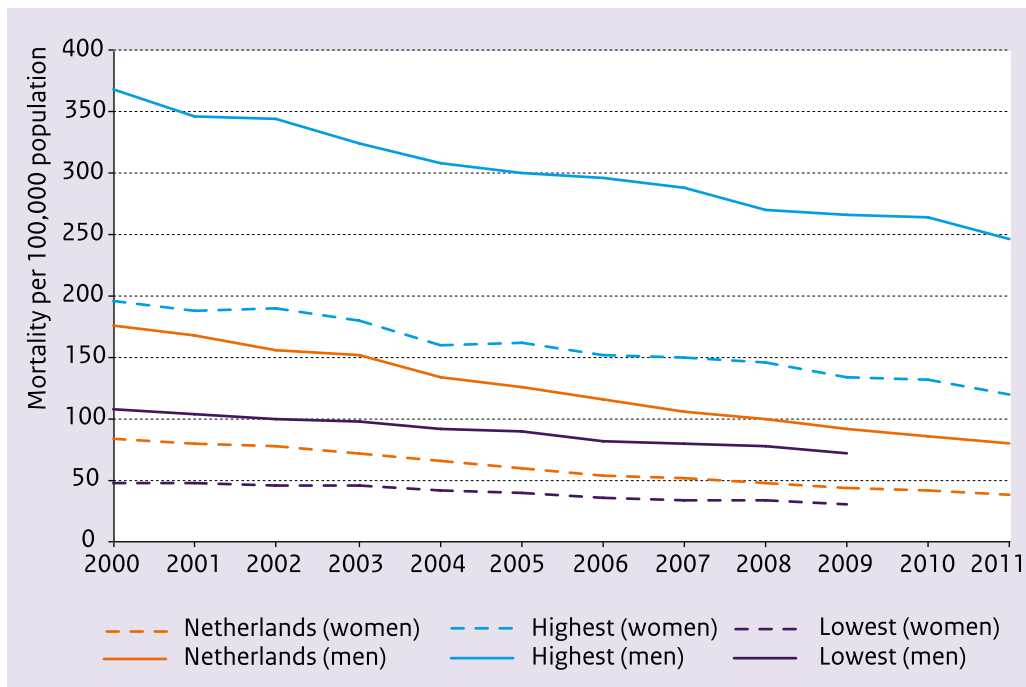
Plug and colleagues (2011) also examined correlations between mortality trends and the years in which new treatment interventions were introduced. Significant associations emerged for four causes of death: stroke, cardiovascular diseases, HIV and colorectal cancer. Mortality for all of these causes declined more sharply after new treatments were implemented. The fact that no correlation was found for other diseases might have been attributable to delays in implementing new interventions or to variable quality of application. Too little research was available on the population-level effects of new treatment interventions. Differences in record-keeping and coding practices were other factors that might have affected variations in mortality.

9.5 Trends in mortality for cardiovascular diseases, cancer and infant mortality

Figures 9.8 to 9.10 summarise mortality trends in three diagnostic categories: cardiovascular diseases, cancer and deaths in infancy. We have chosen them because relatively large bodies of research are available on the effectiveness of specific treatment interventions in these categories. Variations in mortality trends provide more evidence about the quality of health care systems than do figures on overall mortality.

Coronary or ischaemic heart disease is one of the most common causes of death both in the Netherlands and in other countries (RIVM, 2014a), but mortality rates have substantially fallen in recent decades. From 1990 to 2011, mortality declined by about 40% in OECD countries and by 70% in the Netherlands (OECD, 2013a). As figure 9.8 shows, Dutch mortality declined in relation to that in 15 other high-income Western countries; it is now approaching the level in France, the country with the lowest mortality. Explanations for the decreasing mortality lie in lifestyle trends (in particular the lower numbers of smokers) as well as in improved surgical interventions (such as coronary bypass and angioplasty) and improved heart disease medication (Nolte et al., 2009; OECD, 2013a). International studies have estimated that 40% to 50% of the decline in the mortality from cardiovascular diseases can be attributed to health care (Nolte et al., 2009).

Figure 9.8: Standardised mortality from cardiovascular diseases in men and women in 16 countries, showing highest, lowest and Dutch levels, 2000–2011 (source: OECD, 2013e)^a.

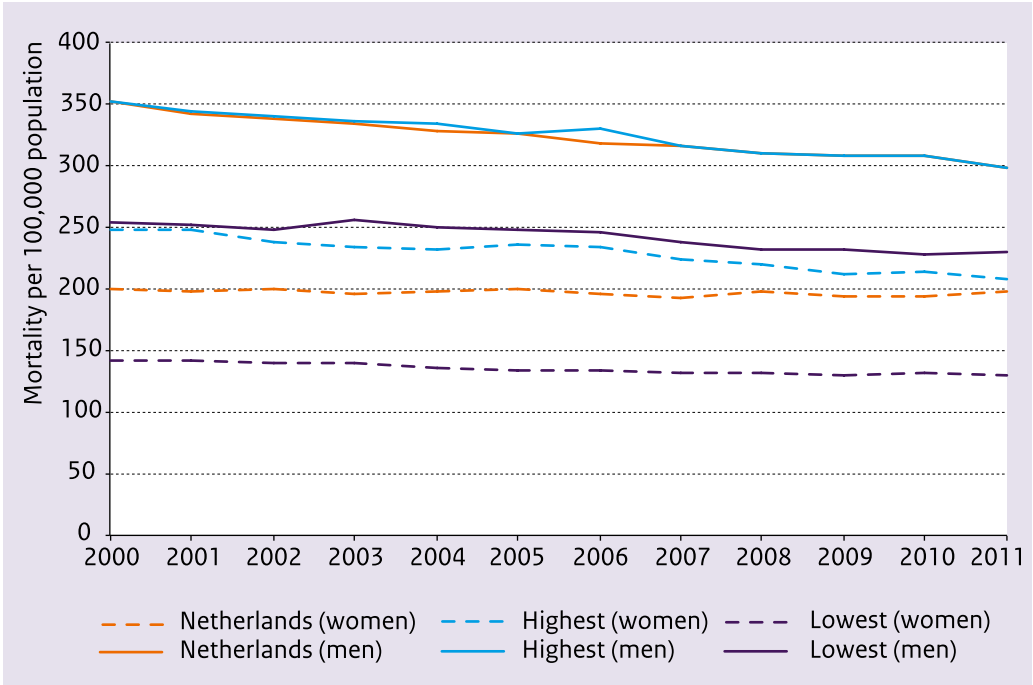


^a Countries represented in figure: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA

Another frequently used indicator for health care quality in cardiovascular diseases is the rate of patient mortality within 30 days of hospital admissions. This also tells something about the contribution that health care makes to the health status of that patient population. In chapter 4 we have examined 30-day mortality for acute myocardial infarction (AMI) and for ischaemic and haemorrhagic stroke. All those rates have declined sharply. The Dutch rates for AMI mortality dropped by 43% for men and 46% for women in the period between 2000 and 2010. In international comparison, the Netherlands is in the middle range in terms of 30-day AMI mortality and the low range in terms of overall AMI mortality. Downward trends in 30-day mortality were also seen in the Netherlands for ischaemic strokes (40%–49%) and haemorrhagic strokes (18%–26%).

Various forms of cancer are second to cardiovascular diseases as the most common cause of illness both in the Netherlands and internationally. For all OECD countries combined, total deaths attributable to cancer make up one quarter of all deaths, and the Dutch rate exceeds 30% (RIVM, 2014a). Cancer mortality has declined since 1990 in virtually all high-income Western countries, with the Dutch rate sinking by 15% up to 2011 (OECD, 2013e). As figure 9.9

Figure 9.9: Standardised cancer mortality in men and women in 16 countries, showing highest, lowest and Dutch levels, 2000–2011 (source: OECD, 2013e)^a.

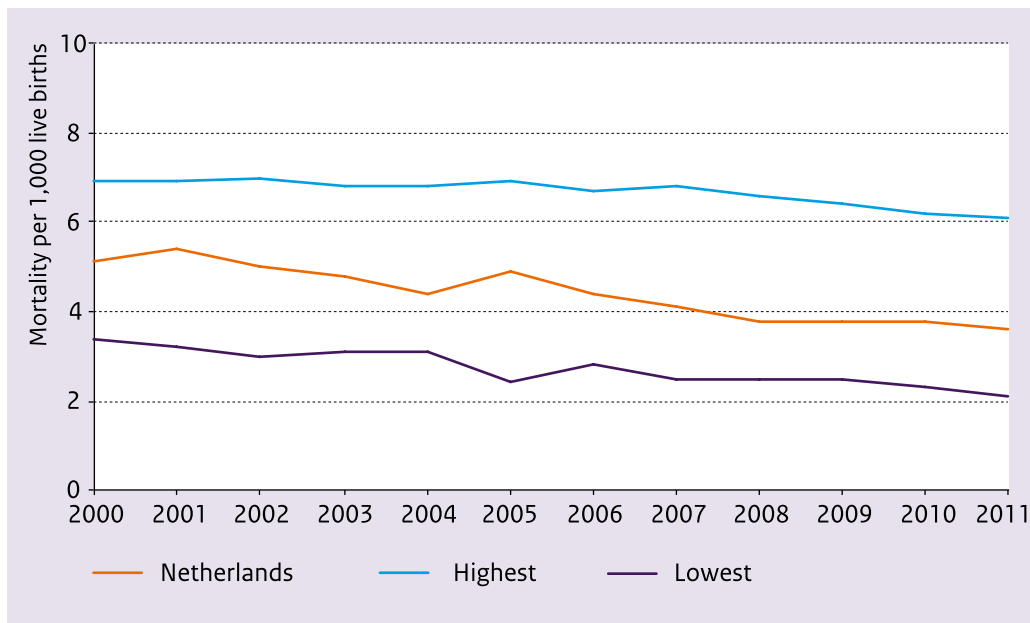


^a Countries represented in figure: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA

shows, female cancer mortality in the Netherlands remained steady after 2000, and by 2011 it was converging on the highest rate (in Finland). Although male cancer mortality in the Netherlands considerably declined in the same period, it was the highest of the 16 countries almost every year.

Trends in cancer mortality are subject to a number of influences: lifestyle and environmental factors, improved cancer detection (screening) and improved treatment procedures (including surgery, chemotherapy and radiation therapy) (Cutler, 2008; OECD, 2013c). It is a complex matter to determine which factors are responsible for what proportions of the decline in mortality. Some reasons for the complexity are the initially slow and undetected course of illness (before clinical symptoms emerge), the co-occurrence of cancer with other diseases and the wide variations in treatment effectiveness between different types of cancer. A US study has attributed 35% of the decrease in cancer mortality to screening and 20% to treatment (Cutler, 2008).

Figure 9.10: Standardised mortality rates for infants (< age 1) in 16 countries, showing highest, lowest and Dutch levels, 2000–2011 (source: OECD, 2013e)^a.



^a Countries represented in figure: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA

In cancer treatment, 5-year survival ratios are another commonly employed indicator for health care quality alongside overall mortality rates, particularly in those types of cancer in which treatment has been shown to reduce mortality. In chapter 5 we have reported that the Dutch survival ratios for breast, cervical and colorectal cancer mildly improved in the previous decade, though they remain in the middle range in international comparison and are poorer than those in some other Western countries.

Infant mortality rates (based on deaths of children below age 1) are depicted in figure 9.10. This is a further indicator used internationally in gauging the quality of health care systems. In all the countries represented in the figure, infant mortality declined since 2000, continuing earlier trends. Dutch infant mortality decreased by 30% (see chapter 2). Finland, Norway and Sweden have long had markedly lower rates of infant mortality than the Netherlands. Most infant mortality is due to perinatal complications. In addition to the quality of health care, other factors affecting infant mortality include the average ages of mothers at delivery, mothers' lifestyles (smoking in particular) and cultural and socioeconomic influences.

9.6 Health care expenditure and public health

The relationship between health care and health is often assessed by comparing health care expenditure to the health status of the population. If health care contributes to the health of the population, then more health care or better but costlier health care – that is, higher health expenditure – should result in better public health. Figure 9.11, assessing 34 OECD countries in 2011, shows that higher levels of health care spending generally correspond to higher life expectancies. Yet the figure also illustrates another well-known pattern: increases in life expectancy tend to level off as health care spending continues to rise. Life expectancies between 80 and 83 years are achieved at widely varied levels of health expenditure. If we examine trends in different countries over time, as we have done in chapter 8 (see figure 8.9), it becomes clear that higher health spending does correspond to higher life expectancy in all countries.

There are many underlying factors that figure in this relationship, and a correlation between health expenditure and health status (in terms of either yearly levels or trends) does not necessarily indicate a causal connection. A range of studies on the relationship between health expenditure and public health has been carried out in recent decades which attempted to adjust for confounding factors such as lifestyle, socioeconomic and environmental influences. Van Baal and colleagues (2013) recently reviewed those studies, and table 9.2 summarises the outcomes of several of them. Although none of the reviewed studies succeeded in addressing all the methodological problems involved in analysing the relationship between health care and public health, the authors conclude that it is highly plausible that health care did contribute to longer life expectancy. Some additional studies have examined the effects that changes in the organisation or funding of health care systems may have had on public health (e.g. Moreno-Serra & Wagstaff, 2010), but these have yet to produce clear results in terms of public health improvement. How organisational or funding changes affect the levels of service utilisation and health care costs is more clearly documented in the literature.

Figure 9.11: Health expenditure and life expectancy at birth in 34 OECD countries, 2011 (source: OECD, 2013e).

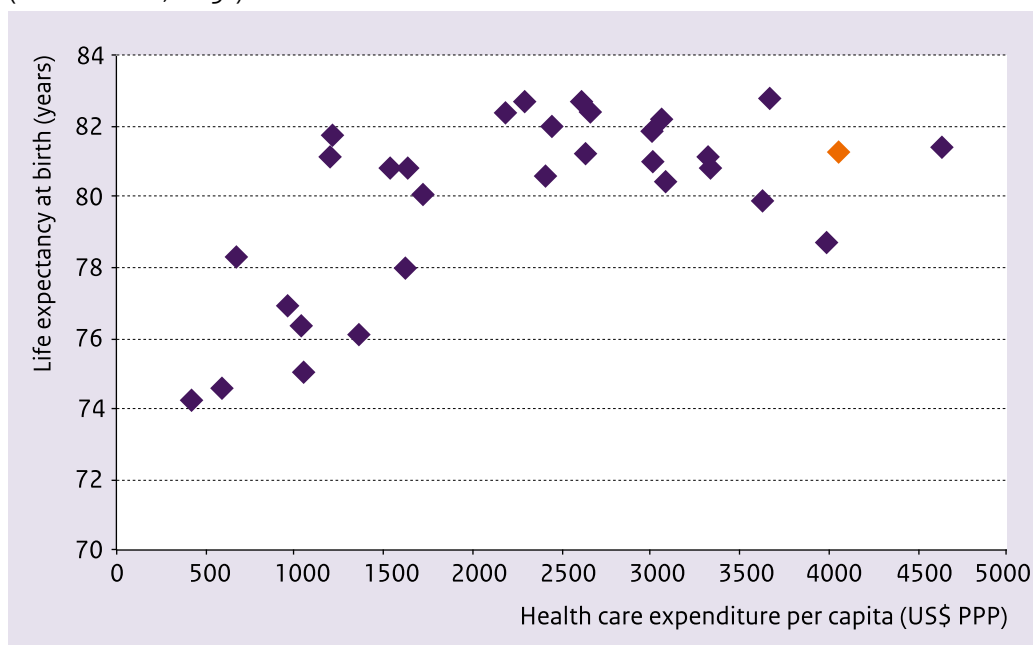


Table 9.2: Selected studies on the relationship between health expenditure and public health (source: van Baal et al., 2013).

Study	Setting	Outcome
Wolfe & Gabay (1987)	22 OECD countries (1960, 1970, 1980)	Higher spending -> longer life expectancy
Hitris & Posnett (1992)	20 OECD countries (1960–1987)	Higher spending -> lower mortality
Elola et al. (1995)	17 European countries (1990, 1991)	Higher spending -> lower neonatal mortality
Or (2000)	21 OECD countries (1970–1992)	Higher spending -> lower female mortality
Berger & Messer (2002)	20 OECD countries (1960–1992)	Higher spending -> lower overall mortality
Nixon & Ulmann (2006)	15 EU countries (1980–1995)	Higher spending -> longer life expectancy
Heijink et al. (2012)	14 OECD countries (1996–2006)	Higher spending -> lower mortality

9.7 Quality indicators

Table 9.3 summarises the results of the quality indicators we have assessed in chapters 2 to 6. These were based on health outcomes in specific diagnoses or in specific categories of patients. Outcome assessments like these may lead to a better understanding of the health gains deriving from specific types of health care or treatment interventions. However, since the indicators are varied in nature and are to some degree non-random, they cannot create a full picture of the macro-level contribution that health care makes to public health. We therefore present them as a further elaboration on the developments in public health we have reported above. Virtually all these outcome indicators show health improvements over time. Fetal mortality, neonatal mortality, infant mortality, 30-day mortality after stroke and AMI, and in-hospital mortality (HSMR) all declined, and 5-year survival after breast cancer and colorectal cancer increased. All such figures may point to positive contributions that health care has made to population health in the course of the years. At the same time, improvements could well be made in the Netherlands on a number of indicators, as became clear in comparisons with other countries.

9.8 Conclusions

The health of the Dutch population, as measured in terms of life expectancy, has improved remarkably since 1990, and especially in the first decade of the 21st century. People are living longer, and they are living longer in good health (although little further increase in life expectancy has been seen in recent years, 2012 in particular). In diseases whose mortality rates are known to be influenceable by health care, diagnosis-specific trends over time have shown improved health outcomes. These can be seen in overall mortality rates as well as in measures such as 30-day mortality (for cardiovascular diseases) and 5-year survival ratios (for cancer). Statistics like these are evidence for the positive value of health care in improving public health. International studies of the same diagnostic groups have confirmed that contribution. Just how strong the impact of health care may be on public health in terms of life expectancy and healthy life expectancy is a difficult issue to unravel. A number of international studies on the relationship between health care expenditure and life expectancy do point to a positive contribution, and nearly all outcome indicators for health care quality reveal improvements. Hence, in terms of these attributes, health care indeed appears to promote better health.

One major limitation to the studies and statistics we have employed in this chapter is their predominant focus on mortality as an outcome measure. Obviously mortality is an important and relevant measure. Moreover, in comparison with other health measures it is recorded in most countries in ways that are sufficiently reliable and the most amenable to international comparison. Nonetheless, another important aim of health care is to improve the health status of individuals, their psychological and physical functioning and their quality of life throughout life. Few if any population-level studies as of yet have focused on the effectiveness of health care in improving those types of health outcomes.

Table 9.3: Results on indicators of health outcomes for the Netherlands, chapters 2 to 6.

Domain / Indicator	Trend	International ^a
Chapter 2		
Apgar score at birth	Stable	not known
Fetal mortality	Lower (by over 30%, 2004–2012)	Higher than average
Neonatal mortality	Lower (2004–2012)	Higher than average
Infant mortality	Lower (by 30%, 2000–2011)	Higher than average
Chapter 3		
Bacterial meningitis incidence	Lower (by 50% since 2010)	not known
Chapter 4		
30-day mortality after ischaemic stroke	Lower (by 48% in men and 36% in women, 2000–2010)	Mid-range
30-day mortality after haemorrhagic stroke	Lower (by 26% in men and 18% in women, 2000–2010)	Mid- or higher range
30-day mortality after AMI	Lower (by 43% in men and 46% in women, 2000–2010)	Mid-range
Chapter 5		
5-year survival after breast cancer	Higher (from 80% to 86%, 2000–2011)	Mid-range
5-year survival after cervical cancer	Stable	Mid-range (no significant differences)
5-year survival after colorectal cancer	Higher (from 55% to 63% in men and 58% to 63% in women)	Mid-range
Hospital-standardised mortality	Lower (by 30%, 2007–2012)	not known
Hospital-acquired infections	Lower (from 6.2% to 3.2%, 2008–2013)	not known
Chapter 6		
Pressure sores prevalence	Lower (from nearly 9% to 1.5% in care homes and from 4.5% to 1% in home care, 2002–2013)	In care homes, twice the German rate
Malnutrition prevalence	Lower (from 23% to 16% in care homes and from 19% to 11% in home care, 2008–2013)	not known

^a Comparison with other high-income Western countries

10 Equity

Key findings

- Dutch people with higher levels of education are more likely to go to dentists, physiotherapists and medical specialists than people with lower levels; the latter are more likely to be admitted to hospital.
- In international perspective, the costs of periodic dental check-ups are virtually no obstacle in the Netherlands, not even for the lowest income category.
- There is no evidence of disparities between ethnic groups in access to mental health care for common mental disorders.
- No differences in the perceived patient-centredness of care were found between patients with lower and higher levels of education.
- The highest income class spends less than 1% of its income on out-of-pocket health care costs; the lowest income class spends more than 4%.
- People with chronic diseases or disabilities have extra health-related costs; these have not changed substantially over the years.
- In official terms, Dutch homeless people have reasonable access to standard medical care except dental care, but service-avoidant behaviour is a strong impeding factor.
- For people without legal residence status, access to primary health care has improved in the past decade; access to secondary care appears to be less impeded by cost factors.

10.1 Background

Chapters 2 to 7 have examined the accessibility of Dutch health care in terms of proximity and timeliness. Beyond the issues of geographical dispersion of health care services, their available capacity and the length of their waiting lists, it is also important to determine whether people's access to services is consistent with their personal needs. In this chapter we analyse the accessibility of Dutch health care from the angle of personal needs. A need for health care exists as long as it can help improve a person's state of health (Wagstaff & van Doorslaer, 2000). The needs of every individual are thereby assigned equal weight. This is called the equity principle. An important aspect of this needs perspective is financial accessibility. Because it was not feasible to analyse this aspect within the domains covered by chapters 2 to 7, we are now focusing on it in a separate equity chapter.

From the needs perspective, accessibility means both equal accessibility and equal utilisation of equal-quality health care for those with equal needs (Whitehead, 1991). Equal quality is not an absolutely invariable concept here. Quality care should not only be appropriate to individual characteristics such as age, sex, gender, ethnicity or socioeconomic status, but also to each patient's capabilities and circumstances. That could mean that patients with the same presenting problems might need widely different amounts of care or explanation.

We begin this chapter by listing a number of indicators that can measure differences between various groups in terms of their utilisation of health care services. The indicators have been adjusted for health differences between the groups. They are consistent with the traditional approach to equity, in which an individual's health care needs are equated to that individual's self-reported state of health. That approach is appropriate in cases where no disagreement exists about a particular way of treating a particular condition. One limitation is that equal utilisation cannot always be automatically equated with equal needs adjusted for health status. There are also health conditions (often less acute ones) for which individuals may have different wants or needs independently of their health status, even if the condition is precisely the same. In such cases it is important to consider the perceptions of different categories of patients. The issue becomes whether different groups of patients perceive that they are approached and treated differently by health care providers. Such perceptions then serve as indicators as to whether the needs of patients are being met. The limitation of these indicators is a potential systematic reporting bias, as when patients with lower levels of education tend to give more positive self-reports about health care than those with higher levels of education (Rademakers et al., 2012).

As noted above, the financial status of a health care patient plays an important part in the equity perspective, since any financial barriers would be major factors in impeding equal access. We have therefore included two indicators in this chapter that focus on the costs of health care.

Two further indicators measure the accessibility of health care to vulnerable groups – information that is often a meaningful indication of accessibility to the population in general.

Specifically, we examine the accessibility of Dutch health care to homeless people and to people without legal residence status.

10.2 Indicators for equity

Three kinds of indicators of variations between population categories are discussed here in terms of health care access: indicators for differences in service utilisation, patient-centredness and financial accessibility. We also focus more specifically on people who are homeless or who have no legal residence status. For these two vulnerable groups, we have no indicators available that have been assessed periodically in identical ways, that detect regional differences or that enable international comparisons. We have therefore taken a descriptive approach in gauging their degree of access to health care.

Differences between groups in service utilisation

- Variations in health care utilisation by less and more highly educated people
- Percentages of the population that forego periodic dental check-ups due to costs
- Ethnic variations in access to mental health care

Differences between groups in patient-centredness

- Variations in patient-centredness as perceived by less and more highly educated groups

Differences between groups in financial access to care

- Variations between income categories in out-of-pocket health care expenses as a percentage of disposable income
- Percentages of people with a chronic disease or disability that have additional expenditures for health reasons

Accessibility to vulnerable groups

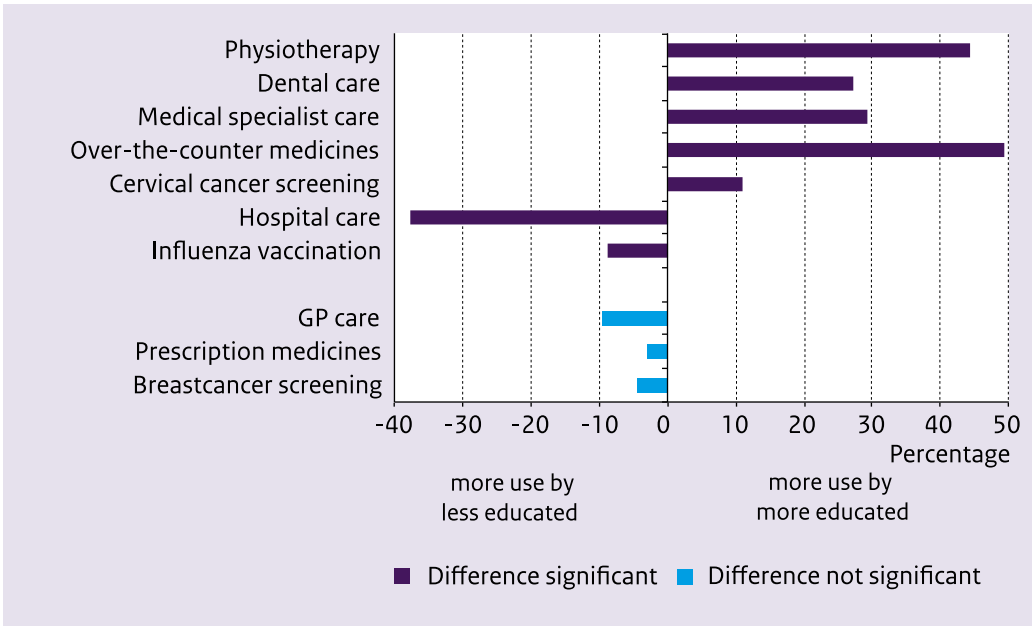
- Health care access for homeless people
- Health care access for people without legal residence status

10.3 State of affairs

Dutch people with higher levels of education are more likely to go to dentists, physiotherapists and medical specialists than people with lower levels; the latter are more likely to be admitted to hospital

People with less education are less healthy on average than those with more education. One important cause lies in their less healthy lifestyles (Hoeymans et al., 2014). Another possible cause might be poorer access to health care services, and that could be reflected in lower levels or different patterns of service utilisation. Figure 10.1 depicts differences between less and more highly educated people in their use of ten types of health care in 2012, with differences in health status held constant. The probability that more highly educated people would go to a physiotherapist was 44% greater than for less highly educated people in a similar state of health. For a dental check-up it was 27% greater and for a medical specialist consultation 29%. For the use of over-the-counter medicines the probability was nearly 50% higher. Women with

Figure 10.1: Variations in health care utilisation by educational level in the Netherlands: proportionally higher and lower use by the more highly educated as a percentage of use by the less highly educated, adjusted for age, gender and health, status, in 2012 (source: CBS Gezondheidsenquête, 2012a; data processing by RIVM).

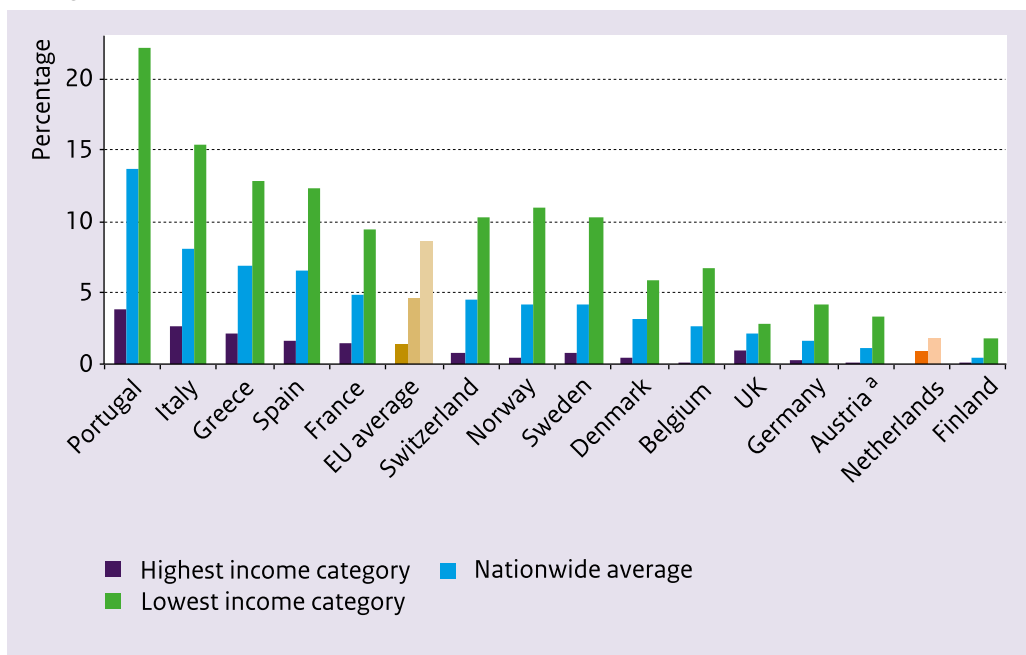


more education had a greater likelihood of having had themselves screened for cervical cancer. The other side of the coin is that people with less education were 38% more likely to be admitted to hospital. They were also significantly more likely to report having ever had an influenza vaccination. Some smaller, non-significant differences were that the less highly educated more often reported going to a GP, using prescription medicines and undergoing breast cancer screening.

One thing that stands out in particular is the higher rate of hospital admissions amongst the less highly educated. This may be a counterweight to the greater likelihood of the more highly educated to use medical specialist care. With the exception of specialist care, the services used more extensively by the more highly educated, such as physiotherapy and dental care, have little or no insurance cover in the Dutch basic benefits package. They must be paid out of pocket or from voluntary supplementary insurance at additional charge.

The non-significant trend to greater uptake of the breast cancer screening programme by the less highly educated is remarkable in that other research has found that the more highly educated make more use of the programme (von Wagner et al., 2011). Some social desirability survey bias might have occurred here.

Figure 10.2: Percentages of population in 15 EU countries that reported foregoing periodic dental check-ups for reasons of cost: highest and lowest income quintiles and national averages, in 2012 (source: EU-SILC, 2012).



^a Data from 2011

In addition to our analysis of variations in service use by people with different levels of education in 2012, we also examined trends in those variations over longer periods of time when possible. For flu shots, the gap between those with less and more education widened from 1992 to 2012, whereas it narrowed for cervical cancer screening (1992–2012) and for physiotherapy (1990–2012). The disparities remained about the same for hospital admissions (1990–2012), for breast cancer screening (1992–2012) and for over-the-counter and prescription medicine use (source: POLS, Gezondheid en Welzijn 1990/1992–2009; CBS Gezondheidsenquête 2010–2012b; data processing by RIVM).

In international perspective, the costs of periodic dental check-ups are virtually no obstacle in the Netherlands, not even for the lowest income category

Problems with access to dental care exist in many countries, especially for people in low-income groups. Dental care is often not covered by health insurance. In the European Union as a whole, an average of 55% of dental costs are paid out of pocket. The Dutch percentage of 18% in 2011 was much more favourable (OECD, 2013a). This may explain that less than 1% of the population avoided periodic dental check-ups due to cost factors (figure 10.2). Some differences did emerge in terms of income class. The highest income quintile reported virtually

no cost obstacles, while the lowest quintile reported obstacles in approximately 2% of the cases (source: EU-SILC, 2012).

Wide gaps are seen between the highest and lowest income quintiles in all the countries investigated. This suggests large disparities for the lowest-income groups in access to dental care. Although the disparities in the Netherlands are also wide, the low overall percentages in comparison with other countries lead to the conclusion that the cost of periodic dental check-ups does not form a serious problem for the lowest Dutch income quintile.

There is no evidence of disparities between ethnic groups in access to mental health care for common mental disorders

People with non-Dutch ethnic backgrounds have equal access to mental health care in comparison to people of ethnic Dutch origin, according to a survey held in Amsterdam, Rotterdam, Utrecht and The Hague in 2008 (Klaufus et al., 2014). Of the 11,678 respondents with ethnic Dutch backgrounds, 43% had elevated risks of anxiety or depression, as compared to 50% of those with Turkish, 37% of those with Moroccan, 52% of those with Surinamese and 45% of those with Dutch Antillean backgrounds. Of the respondents with possible mental health symptoms, 81% of the ethnic Dutch and nearly 90% of the ethnic Turkish, Moroccan or Surinamese people had seen their GP in the past year. Of the urban residents of Turkish background, 26% had also used secondary mental health care, as compared to 16% of ethnic Dutch respondents and about 20% of the other three groups.

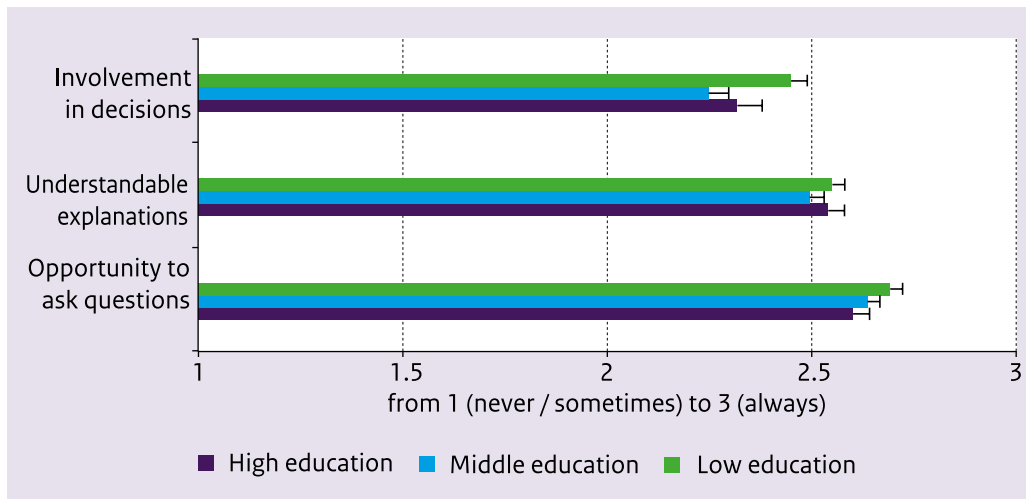
Although the sample studied was rather large, response rates in the minority groups were very low. Additional study was therefore made of the demand for mental health care in the non-responding groups in both the majority and minority ethnic populations. No substantial differences were detected and the conclusions were deemed to be sufficiently robust (Klaufus et al., 2014).

No differences in the perceived patient-centredness of care were found between patients with lower and higher levels of education

Patient-centred care is health care that addresses a patient's self-perceived needs. This indicator gauges needs not in terms of a patient's state of health but in terms of the needs expressed by the patient. We assessed differences in how low-, middle- and high-educated patients perceived the patient-centredness of their health care by focusing on three aspects of the care: patient involvement in decision making, understandable explanations and opportunities to ask questions. Patients rated these aspects on a 1-to-3 scale. The average ratings were just under 2.5 points, with the highest scores for question opportunities and the lowest for decision involvement. Variations by education level were small and non-significant (figure 10.3).

A number of studies have found that people with less education feel less need for patient-centred health care than do people with more education. Another finding has been that the more highly educated receive care that is less patient-centred than they want and that the less highly educated receive care that is more patient-centred than they want (Rademakers et al., 2012).

Figure 10.3: Variations in three aspects of perceived patient-centredness of health care, by education level of patients (source: Rademakers et al., 2012).

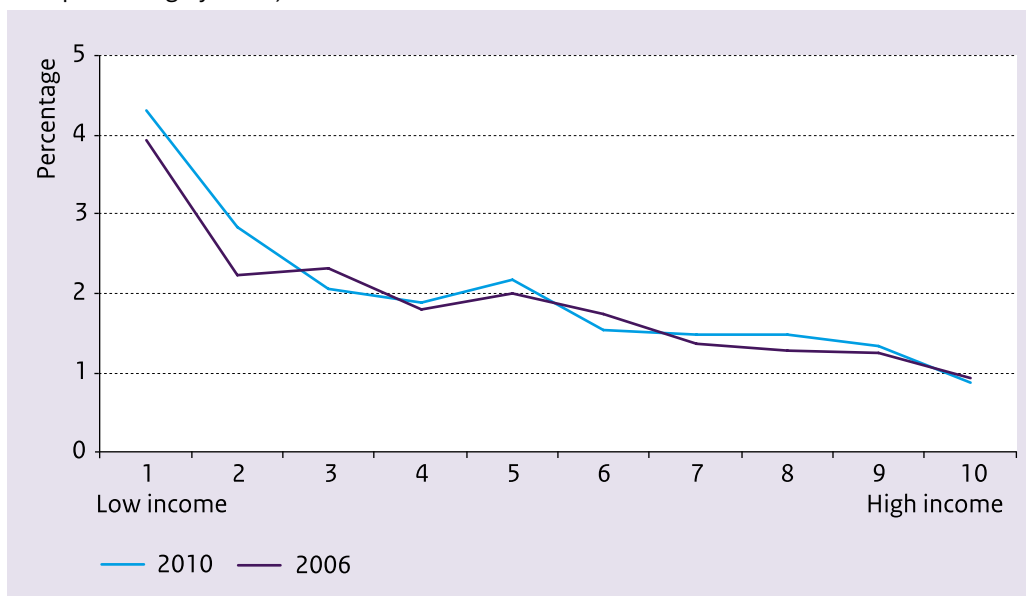


The highest income class spends less than 1% of its income on out-of-pocket health care costs; the lowest income class spends more than 4%

Out-of-pocket health care costs impinge directly on people’s spending margins. That may lead people to postpone or completely forego a visit to a health care provider. High out-of-pocket expenses may thus be a source of accessibility problems in health care. We have therefore taken them as one of our indicators of financial accessibility. If no health insurance were to exist, all people would need to pay all of their health care costs out of their own pockets. Those using more care would pay more than those using less care. Health insurance distributes the financial burdens of health care across the population, thus ensuring that care is financially accessible to all groups and that people who are ill can continue to obtain health care even if their income is low.

In theory, health care that is not covered by the Dutch statutory insurance package is therefore less readily accessible. The National Health Care Institute (ZI) advises government on the content and extent of the package to be required by law. If the remuneration of health care services becomes more dependent on out-of-pocket payments by patients, the financial burdens shift towards those who need more care. To address this problem, many countries have government schemes designed to protect vulnerable groups from excessive out-of-pocket health care expenses. Such schemes ensure full or partial payment exemptions for specified groups such as low-income or older people or those with chronic diseases or disabilities (OECD, 2013a).

Figure 10.4: Dutch out-of-pocket health care expenditures as percentage of disposable household income, by income decile, 2006 and 2010 (source: CBS, Bestedingen naar huishoudenkenmerken 2006 en 2010; CBS, Inkomstenbelasting particuliere huishoudens 2006 en 2010; data processing by RIVM).



The financial burden of out-of-pocket health care payments is expressed here as a percentage of disposable household income. The out-of-pocket expenditures are exclusive of the premium for mandatory statutory health insurance but inclusive of premiums for supplementary insurance, the compulsory and voluntary excess and co-payments for long-term care (AWBZ). Figure 10.4 shows the percentage of financial burden on ten disposable-income classes. Each class contains 10% of the Dutch households, the first representing those with the lowest disposable incomes and the tenth those with the highest. In absolute terms, the tenth class has the highest average out-of-pocket expenditures (just under €1,350 per household per year), whereas the first group has the lowest expenditures (just under €450). In percentage terms, the relationship is precisely reversed. From 2006 to 2010, a slight increase in the percentage of the burden is observable in the lower income classes but not in the higher ones.

People with chronic diseases or disabilities have extra health-related costs; these have not changed substantially over the years

Research has shown that 94% of the Dutch people who had a chronic disease or disability in 2011 had out-of-pocket health care expenses. That percentage had increased gradually, but not significantly, in the period from 2004 to 2011. The introduction of the Health Insurance Act (ZVW) in 2006 did have a clear effect on the breakdown of those expenses. From 2006

Table 10.1: Excess monthly health care expenditures by Dutch people with a chronic illness or disability, 2004–2011 (sources: van den Brink-Muinen et al., 2009; van der Veer et al., 2013).

Year	Percentage with excess costs	Excess costs (€)
2004	88	72
2005	87	73
2006	87	81
2007	86	74
2009	89	73
2011	94	86

onwards, fewer people with chronic diseases or disabilities had out-of-pocket expenditures for GPs, dentists, medical specialists, physiotherapists or prescription medicines, whereas more of them had costs for assistive devices and home adaptations (van den Brink-Muinen et al., 2009).

People with a chronic disease or disability spent an average of €86 more per month in 2011 on health-related purchases than people with no disease or disability. Table 10.1 summarises these expenditures for recent years. These included all health-related expenses not reimbursed via the Health Insurance Act (ZVW), Exceptional Medical Expenses Act (AWBZ), Social Support Act (WMO), employers, tax authorities or social benefits agencies.

Serious health impairments often entail higher health-related expenditures than less serious impairments. In 2011, the average monthly out-of-pocket expenditures for people with serious impairments was €149 (95% CI 131–166), compared with €75 (95% CI 62–88) for people with moderate impairments. No appreciable change in that differential occurred from 2004 to 2011 (van der Veer et al., 2013).

As well as having higher health-related costs, many people with long-term illnesses or impairments have lower incomes than the general population average. One quarter of them report having to draw on savings or incur debts to make ends meet (NIVEL, 2014b), as compared to 7% in the general population. Until 2014, a range of schemes existed to compensate people with chronic conditions for the associated higher costs. These included the Compulsory Excess Compensation scheme (CER), the Chronically Ill and Disabled Persons Allowances Act (WTCG) and tax deduction arrangements for specific health care costs. Almost two thirds (64%) of Dutch people with a chronic disease or physical disability received compensation for the compulsory health insurance excess, half of them received general WTCG compensation, and more than one third (38%) claimed the tax deduction (NIVEL, 2014b).

As of 1 January 2014, these national-level compensation arrangements have been replaced by a single scheme administered by local authorities. The Dutch government hopes that the new approach will ensure more individualised provision to compensate those who need it most. It also hopes to achieve savings. We strongly recommend monitoring the consequences such changes have for people with chronic diseases or disabilities. Local authorities have wide latitude in applying the new scheme.

In official terms, Dutch homeless people have reasonable access to standard medical care except dental care, but service-avoidant behaviour is a strong impeding factor

Most homeless people are in poor health. The lives of Amsterdam homeless are 25 years shorter on average as compared to the general Dutch population (van Laere, 2009). This raises the question of whether their poor state of health can be attributed in part or in full to inadequate access to health care services. Homeless adults, homeless youth, people with substance dependency, current and former psychiatric patients, ex-offenders and undocumented migrants do not always have good access to medical care. Many have no GP registration or have poor relations with their GP. Some are uninsured and/or exhibit service-avoidant behaviour (Provinciale Raad Gezondheid, 2010).

If homeless people have poor access to health care, subjective barriers may figure heavily. Non-uptake of medical care has been found to be due not so much to a lack of knowledge or information, but to a feeling that a doctor's assistance is not needed. Such a perception may be evidence of service avoidance, given that the health of homeless people is markedly worse than that of the overall population. A relationship of trust between a homeless person and a health or social work professional is of prime importance in overcoming health care avoidance (Akkermans, 2008). In a programme entitled Primary Care for the Homeless, currently operating in Eindhoven and modelled on Rotterdam's Street Doctor project, the focus is on overcoming treatment-avoidant behaviour (Elissen et al., 2009; Elissen et al., 2011). GP facilities specifically aimed at the homeless also exist in several other cities, including Amsterdam, The Hague and Nijmegen.

Financial accessibility could also present problems. Although the Dutch health insurance companies have an acceptance requirement for the statutory package, many homeless people have never taken out a health insurance policy. If a need for medical care arises, they do often receive help in obtaining a policy (Akkermans, 2008). Problems with financial access are mainly an issue when it comes to services not covered by the statutory package, such as dental care.

For people without legal residence status, access to primary health care has improved in the past decade; access to secondary care appears to be less impeded by cost factors

Three categories of people without legal residence permits are distinguished in the Netherlands: asylum seekers, foreign nationals detained for deportation and undocumented migrants. People from these categories are considered vulnerable groups in the health care system due to language and cultural barriers, their often poorer state of health and their uncertain position in society (IGZ, 2011d).

The Central Agency for the Reception of Asylum Seekers (COA) introduced a new model from 1 January 2009 which was designed to ensure that health care for asylum seekers would be provided to the greatest possible extent within the mainstream Dutch health care system. Asylum seekers make use of existing facilities. To evaluate the new model, the Health Care Inspectorate (IGZ) carried out a study on the accessibility of GP care to asylum seekers. It concluded that the model provided effective opportunities for access to GP care and that public health services were sufficiently able to reach asylum seekers, provided that health care providers and services remain alert to certain risks in the model, such as inadequate self-reliance on the part of some asylum seekers (IGZ, 2011d).

The Inspectorate further specifically evaluated asylum seekers' access to perinatal care. It concluded that staff in both the COA and the Asylum Seekers Health Centre (GCA), as well as practising midwives, gynaecologists, obstetricians and maternity practitioners, focus specific and intensive attention on asylum seekers. As a result of the dedication and engagement of these professionals, the interviewed clients expressed overall satisfaction with Dutch perinatal care. Improvements were needed in the availability of professional interpreters and in the continuity of care when pregnant asylum seekers move or get transferred to new locations (IGZ, 2014e).

In 2013, a report was published by the National Ombudsman Service which concluded that too many obstacles still existed to the accessibility of medical care in COA facilities. It pointed out additionally that the self-reliance expected of Dutch people could not always be expected of asylum seekers (De Nationale Ombudsman, 2013). In a reaction, the Ministry of Security and Justice argued that the same applied to other groups, including vulnerable older people, people with chronic illnesses and people of low socioeconomic status (VenJ, 2013). The Ministry of Health, Welfare and Sport observed that *'the perception among some uninsurable foreign nationals that governmental agencies, the Institute for Health Care Quality (KI), the Health Care Inspectorate or even doctors are an extension of the police force does not form a de facto constriction of their access to health care'* (VWS, 2014d).

From 1 January 2012, modifications were made to the remuneration of interpreters for non-Dutch speakers in health care settings. Interpreters' fees were no longer to be publicly reimbursed, except for victims of human trafficking, asylum seekers in reception centres and women staying in refuges. The new regulations thereby exclude people in migrant detention centres and undocumented migrants. The Royal Dutch Medical Association (KNMG) has argued that more exceptions need to be made for the public funding of interpreters. It will assess which additional groups and situations ought to be eligible for funding and will propose possible approaches (VWS, 2014f). The most serious problem has actually been found to lie in the underuse of interpreters in health care settings and not in a lack of funding (Meeuwesen, 2012).

A second category of people without legal residence status are foreign nationals held in migrant detention facilities. The Health Inspectorate concluded in 2014 that suitable medical care was available to people confined in detention and removal centres. It wrote that careful

medical screening was performed within 24 hours of admission and that access to essential medical care was sufficiently low-threshold. The conclusions were based on assessments carried out by the Inspectorate from February to August 2013. It inspected all detention and removal centres twice and verified whether they met the standards of good care. It specifically assessed the quality of care, accessibility of care, staff expertise, transfer of medical information and safety of medication. During the visits, the inspectors spoke with detainees and staff members and they had access to policy and other documents and to files and records. Three issues were found to need additional attention: record-keeping was fragmentary and lacked transparency; assessment of detainees' mental health status was insufficiently systematic, increasing the danger of overlooking risk factors (such as suicidal tendencies) as well as protective factors; and there were no comprehensive professional regulations that defined and allocated the duties and powers of the various types of staff. Unannounced inspections were to follow in the course of 2014 to verify whether improvements had been implemented (IGZ, 2014f). The Dutch Safety Board (Onderzoeksraad voor Veiligheid) carried out its own assessment and drew rather more stringent conclusions (Onderzoeksraad voor Veiligheid, 2014). It argued that, although there was no evidence of systematically unsafe conditions for current or denied asylum seekers living in reception or detention centres, they were definitely subject to risks. One concern was that staff did not always have necessary medical information available. Foreign nationals with mental health problems did not always receive the care they needed, thus increasing the chances that people with untreated psychological traumas would become a risk to themselves or their surroundings. A further conclusion was that decisions to expel foreign nationals with medical problems did not take sufficient account of the availability and realistic access to medical care in their countries of origin.

The third group are the undocumented migrants (including denied asylum seekers whose appeal rights have been exhausted) and other uninsurable foreign nationals. When the Benefit Entitlement (Residence Status) Act, a partial amalgamation of the Aliens Act and several other pieces of legislation, came into force on 1 July 1998, the entitlement of foreign nationals to Dutch public services became linked to their residence status. Undocumented migrants were thereby officially excluded from public services relating to employment and social security, including health insurance. They did retain the right to health care if they paid for it themselves or if it was deemed 'medically essential'. Health care providers who provided such services were not reimbursed. The implementation of the Health Insurance Act in 2006 brought no change in the situation.

On 1 January 2009, however, an amendment to the Health Insurance Act (article 122a) was put in place which was designed to compensate health care providers for loss of income they suffer in providing medically essential services to specified categories of people. The principle that the patients themselves were still accountable for the costs remained unchanged. If fees cannot be collected, compensation can now be claimed from the National Health Care Institute (ZI, formerly the Health Care Insurance Board or CVZ), provided the services are covered by the statutory insurance package. In most cases, 80% of uncollectible fees are claimable, but perinatal care is covered in full.

Table 10.2: Insurance claims made to the National Health Care Institute (ZI) by health care providers for services to undocumented migrants, 2009–2012, in euros (sources: CVZ, 2012; CVZ, 2013c).

Type of care	2009	2010	2011	2012
Hospitals	2,620,000	8,626,000	11,870,000	9,982,000
Pharmacies	2,760,000	3,279,000	3,510,000	3,753,000
Mental health care	0	1,098,000	3,689,000	4,313,000
AWBZ ^a care	0	159,000	889,000	1,211,000
Primary care	1,138,000	1,098,000	1,949,000	1,786,000
Assistive devices	20,000	30,000	77,000	79,000
Ambulances	10,000	124,000	237,000	249,000
Total	6,790,000	14,414,000	22,221,000	21,596,000

^a AWBZ = Exceptional Medical Expenses Act

Since 2009, the National Health Care Institute has issued an annual publication entitled *Monitoring Report on the Health Care Funding Regulations for Illegal Immigrants*. It shows rapidly increasing reimbursements from year to year (table 10.2), which stabilised in 2012, mainly due to a drop in hospital care reimbursements. The institute says the latter effect is explained by the transition to a new system for insurance claims called DOT, designed to introduce more transparency into hospital claims for episodes of care and other health care services. Not all hospitals were able to bill via DOT in 2012, and the institute anticipates a catch-up effect in 2013 (CVZ, 2013c).

The rising claims for pharmaceutical costs are an indication that both health care providers and undocumented migrants are largely familiar with the funding regulations (CVZ, 2013c). From 1 January 2014, co-payment of €5 is required for each medication prescribed to an undocumented migrant. The health ministry has reiterated the principle that uninsurable foreign nationals are required to pay for their medically essential services as far as possible. Health care providers can still claim compensation if they cannot collect the full fee from an uninsured patient. Research by the National Health Care Institute has revealed that many uninsurable foreign nationals are meanwhile aware that pharmacies can claim compensation for unpaid medication bills, and that this has triggered a sharp decline in their willingness to pay. The funding regulations had thus been transformed into ‘free medication for illegal immigrants’. The minister of health has stated her displeasure with this development, arguing that policyholders of the Dutch mandatory health insurance pay monthly premiums as well as a compulsory excess of €360 per year.

To ensure health care access for undocumented migrants, the National Health Care Institute is now endeavouring to contract one or more primary care providers in every locality and hospitals in every region. Although that would appear to substantially improve the accessibility of both primary and secondary care to undocumented migrants in comparison with a decade ago, some problems still exist. Health care costs not covered by the statutory insurance package, such as dental fees or certain antidepressants, are not reimbursed. Patients may then wait too long before seeking help for their symptoms and could even wind up in casualty departments.

10.4 Conclusions

In this chapter we have investigated the accessibility of Dutch health care from the point of view of health equity. The primary focus was on whether the health care system is accessible to all people in the Netherlands. We have analysed variations in health care utilisation by various population categories, with health status held constant. Any emerging differences could be evidence of inequitable access. People with higher levels of education were found to utilise more dental care, physiotherapy and medical specialist care than less highly educated people, as well as using more over-the-counter medicines. None of these services except specialist care are covered by the Dutch statutory health insurance package. Although that could be taken as evidence that people with less education have reduced access to these types of care, it may also not be ruled out that people with more education (many of whom have higher incomes) make excessive use of them. Households from the lowest income category report out-of-pocket health care expenses of approximately €450 per year, whereas those in the highest income group spend three times as much. The available data allows no conclusions as to whether the health care they purchase is essential.

People with less education make greater use of inpatient hospital care. This might be seen as a counterweight to the greater use of specialist care by the more highly educated. It is worth noting that, according to an international comparative study by the OECD, dental care is readily accessible to low-income people in the Netherlands (who often have less education), with no more than 2% of them reporting avoidance of dental care for reasons of cost. Coupled with the finding that far greater numbers of more highly educated people utilise dental care per year than the less highly educated, one might conclude that the former group makes too much use of dental care.

It is difficult to obtain reliable information on ethnic differences in health care accessibility. People with minority ethnic backgrounds tend to be underrepresented in survey data. We found one Dutch study that specifically analysed variations in mental health care accessibility in terms of ethnicity. It found no differences between the groups studied. If in the future, the community health services Health Monitoring Scheme, Statistics Netherlands and the RIVM were to include questions about the utilisation of medical and mental health care, that would provide an excellent source of data for investigating any differences between ethnic groups.

In addition to analyses of health care utilisation with adjustment for health status, there are studies available that focus on perceptions of patient-centredness in health care, thus illuminating equity from a different angle. Data deriving from the Consumer Quality (CQ) Index revealed no significant differences in the ways that less and more highly educated people perceive health care services as patient-centred.

The accessibility of health care to vulnerable groups may serve as a good indication of accessibility for the entire population. The financial accessibility of Dutch health care for people with chronic diseases or disabilities is below average. They spend approximately €86 per month, or €1000 a year, more on health care than people without such health conditions. As of 2014, compensation schemes for that group have been revamped, and we strongly recommend monitoring the consequences for people with chronic health conditions.

Homeless people are another vulnerable group. In official terms, they have reasonable access to standard medical care, but many are hindered by their own treatment-avoidant behaviour. Their access to dental care is additionally impeded by the lack of cover in the Dutch statutory insurance package.

Our final focus was on the accessibility of health care for three categories of people without legal residence status in the Netherlands: asylum seekers, foreign nationals detained for deportation and undocumented migrants. Because most health care for asylum seekers has been available since 2009 within the mainstream health care system, there are no official barriers to access for them.

For people in migrant detention and removal centres, the quality of the available health care was assessed by the Health Care Inspectorate in 2013. It concluded that sufficiently low-threshold medical care for essential health needs was available and that new arrivals in the centres received careful medical screening within 24 hours, but that three concerns needed further attention: the haphazard record-keeping, the insufficient assessment of mental health status, and the lack of formalised arrangements about staff duties and powers. In 2014, the Dutch Safety Board likewise found no evidence of systematically unsafe conditions, but pointed to several specific risks: the needed medical information was not always available, necessary mental health care for psychological problems was not always provided, and insufficient account was taken in expulsion decisions of the availability and accessibility of medical care in countries of origin.

Health care was found to be accessible to undocumented migrants in the Netherlands, provided that they pay the costs themselves or that the care is deemed 'medically essential'. After amendment of the Health Insurance Act in 2009, health care providers can claim reimbursement of up to 80% of uncollectable fees. This represents a de facto improvement in the financial accessibility of Dutch health care for undocumented migrants.

11

Need for information: what we do not yet know

The Dutch Health Care Performance Report has several functions. The three most important are:

- providing policymakers with information. Information to support them in amongst others determining policy objectives and priorities as formulated in the coalition agreement and policy papers, and in policy evaluation;
- providing an overview of the performance of Dutch health care;
- identifying gaps in available knowledge and data about the performance of health care.

The first two functions are particularly essential and they are the subject matter of the previous chapters. The present chapter focuses on the knowledge and information we have at our disposal. Obviously, the extent to which we are able to give insight into the performance of Dutch health care depends above all on the availability and quality of information. The Dutch Health Care Performance Report (DHCPR) uses available data sources; we may analyse the data ourselves, and we may use analyses that were carried out by others.

This is the fourth edition of the Performance Report, and hence we will look back on how the availability of information relates to previous editions. Without being exhaustive, we will also identify ‘knowledge gaps’; knowledge that is needed, but that is not or insufficiently available.

Table 11.1: Percentages of indicators that allow comparison between countries, in time and with policy standards, in present and previous editions of the DHCPR.

Comparison	Percentages of indicators that allow comparison in four editions of the DHCPR			
	DHCPR 2006	DHCPR 2008	DHCPR 2010	DHCPR 2014
International	20	26	24	24
Time trend	50	61	71	73
Policy standard	<5	21	18	17

Comparability of indicators

Indicators need a context to be interpreted in a meaningful way. Figures become meaningful relative to other figures. In the Performance Report this is done in three ways:

- comparisons with previous years (time trend)
- comparisons with other countries (international comparison)
- comparisons with policy standards.

Table 11.1 summarizes the percentages of indicators that allow comparison by these three parameters. Compared to the previous edition of the Performance Report, the percentages have changed little. Nearly one quarter of indicators allowed for international comparison, 73% contained time trends, and 17% could be compared with policy standards. These percentages tell us something about the Performance Report itself, but also about the availability of information in the Netherlands.

Time trends

Since the first Performance Report the proportion of indicators containing trends over time has increased considerably. To be able to relate performance indicators to policy measures in a meaningful way, trends over time are essential. For the objective of most policy measures is to improve matters. Although the identification of causal relationships needs more thorough investigation, time trends can give an impression of the effectiveness of certain measures. In many cases, the Performance Report refers to such studies.

Evidently, continuity of measurement methods is essential to be able to show time trends. Still, definitions and methods are often adapted in the course of time. That seems undesirable, but is more or less unavoidable. A major driver of change is the fact that knowledge progresses: measurement methods improve thereby allowing a more accurate presentation of the state of affairs. For example, small adjustments have been made over the years to the calculation methods of the Hospital standardized mortality ratio. A second driver may be that the measured object itself changes. In the past, separate time trends were presented for the prevalences of pressure ulcers in nursing homes and in residential homes. Today, however, this

distinction is becoming increasingly blurred, and they have been combined under the term “care homes”. In most cases, it was possible to retrospectively calculate time trends based on new definitions. In some cases, both the ‘old’ and ‘new’ time trends are presented, for example, health care expenditure as percentage of GDP.

The production of relevant time trends is often a matter of investing in good quality registers. When monitoring the intended effects of policy, it is recommended to start collecting data as early as possible.

International comparisons

The OECD quality indicators are one of the main sources for international comparisons. These indicators are among others published in the biennial report *Health at a Glance*. The OECD set of indicators is evolving constantly. The development of most indicators is an extended process of refinement, analysis and scientific research. The outcome is extensively discussed by experts from the OECD member states. Several Dutch experts, including members of the DHCPR team, are involved in this process.

The patients surveys of the Commonwealth Fund are another important source of information. Catching up with international projects is an important way of learning from successful policies abroad and a major incentive to improve the quality of indicators. Furthermore, international comparisons can enhance awareness. A point in case is the launch of perinatal care initiatives as described in chapter 2. The publication of the Euro-Peristat study, that presents international figures on perinatal mortality, gave a strong impetus to these initiatives.

In recent years, the OECD indicator programme has devoted increasing attention to the investigation of the reasons behind the differences between countries.

Information that is lacking

In the previous Performance Report we called for improvements in the provision of information. Although we could again draw on a wealth of data for the present Performance Report, the information landscape in the Netherlands is by no means what it should be. By information landscape we mean the totality of available data sources, their compatibility, the quality and the ‘filling’ of registers and registration standards, and the arrangements and agreements regarding ownership, drawing rights and transparency.

The *Multi-annual Agenda Health Care Information* (VWS, 2013k) presents the vision of the Ministry of Health on information provision and describes the trajectory to achieve a sustainable health care information system.

The indicators described in the Performance Report, are the resultant of on the one hand what needs to be measured and on the other hand what can be measured. It is impossible for many

issues to provide even little insight into critical aspects because data are missing or inaccessible. Without being exhaustive, here are some important white spots or gaps in knowledge.

Prevention

There are many preventive interventions delivered by the health care system. To name a few: the preventive services in child and adolescent health care, the detection of child abuse in emergency departments, needle exchange programmes by community health services, promotion of oral health in dental practices, the prevention of cardiometabolic disorders and mental disorders in GP practices, e-health interventions, and the detection of vulnerable elderly people by hospitals and community nurses. Recent reports on the quality and effectiveness of health promotion and disease prevention in the Dutch health care system show that general information is available about what services are on offer, but that there is little information on the reach of the services. There is information on their impact on health from scientific research, but there are hardly any established sources of information and even less estimates of costs and financial returns (Koopmans et al., 2012; Van den Berg et al, 2013; Hamberg-van Reenen & Meijer, 2014).

Following the patient through care

Most sources of information are related to providers. They include general practice registers, hospital registers and pharmaceutical registers. Understandably so, as it are usually care providers who keep records, not the patients. However, there is a growing awareness that quality of care depends not only on the performance of individual health care providers or organisations. More and more, people using health care have to deal with more and more providers. The overall outcome of care depends to a considerable extent on the cooperation and coordination between these different care providers. The Performance Report includes a number of indicators that are related to the coordination of care. Such indicators include patient survey questions on receiving contradictory information or doctors ordering medical tests that had already been performed. Next to these subjective questions, it would enhance our knowledge of the quality of care when people could be 'followed' through the system, as this would allow the linking of more objective data. Unity in registration, connectivity and clear agreements about privacy, data accessibility and linkage are essential. The afore mentioned *Agenda Health Care Information* (VWS, 2013k) addresses these issues.

Socially vulnerable groups

There are people who are socially vulnerable. They lack the capacity to cope with life's difficulties and setbacks, and run the risk of social marginalisation and exclusion. Vulnerable people have a combination of problems and are unable to provide for their basic needs. From the perspective of care providers, they do not get the care they need to survive in society and mainstream services are unable to meet their needs for care and assistance; they are often offered assertive outreach services from outside the 'regular' system. Vulnerable groups include homeless people, people who are addicted to drugs and people without legal residence status.

In compiling the Performance Report, we more or less depend on data that are collected through mainstream services. Many vulnerable people are not served by these services and are therefore not included in the statistics. Hence, next to a social issue, there is also an information issue: we can say little about the groups that are most likely to have problems with access and quality of care. People who are most vulnerable rarely participate in surveys and are often missing in databases.

Currently, there is a project going on to develop a model for monitoring socially vulnerable groups. This could well become a valuable source of information for the Performance Report (Tranzo, 2014).

The future

Information in the Performance Report is always based on matters that can be quantitatively assessed. By definition, then, that data says nothing about the future. Yet we do take certain anticipated developments into account. One major change will be the transfer of the funding of long-term care from the Exceptional Medical Expenses Act (AWBZ) to the Social Support Act (WMO) and the Health Insurance Act (ZVW). We shall be monitoring that process closely and are currently designing still more accurate indicators to evaluate it. Transparency in health care quality will definitely continue to be an issue in the foreseeable future. Especially in times like these, when the health care system is in such a high state of flux, we need robust instruments for the ongoing assessment of quality, accessibility and costs. New developments often necessitate new and different indicators. In the years to come, the Performance Report will accommodate to this wide range of new developments, but its core business will remain the assessment of quality, accessibility and affordability.

References

- Achterberg P, van Kranen HJ, Conyn M, Lock A, van den Berg M. Effecten van vaccinatie en screening in Nederland. Achtergrondrapportage bij VTV2010 deelrapport 'Effecten van preventie'. Bilthoven: RIVM, 2010.
- ActiZ. In beweging, achtergrondrapportage. Inzichten vanuit de Benchmark in de zorg 2013. Utrecht: ActiZ, 2013a.
- Agora. Statistieken zorg kiezen – cijfers palliatieve zorg Nederland 2007-2014. www.agora.nl/ZorgKiezen/Statistieken/tabid/3847/View/H/Mod/10198/Default.aspx. Geraadpleegd mei 2014.
- Agora. Netwerken palliatieve zorg. <http://www.agora.nl/ZorgKiezen/Netwerkenpalliatievezorg.aspx>. Geraadpleegd december 2013.
- AHRQ, Agency for Health Research and Quality. Patient Safety Indicators Overview: AHRQ Quality Indicators. Rockville, MD: AHRQ, 2006.
- Akkermans C. Omdat ik er geen last van heb... De toegankelijkheid van sociaal-medische zorg voor dak- en thuislozen in de maatschappelijke opvang. *Sociale interventie* 2008;17(1):35-43.
- Algemene Rekenkamer. Rijksbrede resultaten en thema's verantwoordingsonderzoek 2013. Den Haag: Algemene Rekenkamer, 2014.
- Algemene Rekenkamer. Transparantie ziekenhuisuitgaven. Uitgavenbeheersing in de zorg deel 2. Den Haag: Algemene Rekenkamer, 2013b.
- Altobelli E, Lattanzi A, Paduano R, Varassi G, di Orio F. Colorectal cancer prevention in Europe: burden of disease and status of screening programs. *Prev Med* 2014;62(May):132-41.

- Alzheimer Nederland. Neemt het aantal mensen met dementie toe of af? <http://www.alzheimer-nederland.nl/actueel/onderzoek/2014/februari/aantal-mensen-met-dementie.aspx>, 2014. Geraadpleegd juni 2014.
- Alzheimer Nederland. Cijfers en feiten over dementie. Alzheimer Nederland, 2012.
- Amir Y, Meijers J, Halfens RJG. Retrospective study of pressure ulcer prevalence in Dutch general hospitals since 2001. *J Wound Care* 2011;20:18-25.
- Arah OA. Performance reexamined. Concepts, content and practice of measuring health system performance. Amsterdam: Universiteit van Amsterdam, 2005. Dissertatie.
- Arah OA, Westert GP, Hurst J, Klazinga NS. A conceptual framework for the OECD Health Care Quality Indicators Project. *Int J Quality Health Care* 2006;18:Suppl:5-13.
- Ashenden R, Silagy C, Weller D. A systematic review of the effectiveness of promoting lifestyle change in general practice. *Fam Pract* 1997;14(2):160-76.
- AZN, Ambulancezorg Nederland. Ambulances in-zicht 2012. Zwolle: AZN, 2013.
- AZN, Ambulancezorg Nederland. Ambulances in-zicht 2008. Zwolle: AZN, 2009.
- AZR, AWBZ-brede Zorgregistratie. Tabellen toegankelijkheid AWBZ (peildatum 31 maart 2014). <https://www.zorgregistratie.nl/web/zorgregistratie/wachttijstinformatie>, 2014. Geraadpleegd mei 2014a.
- AZR, AWBZ-brede zorgregistratie. Wachttijstinformatie. <https://www.zorgregistratie.nl/web/zorgregistratie/wachttijstinformatie>. Geraadpleegd februari 2014b.
- Baghestan E, Irgens LM, Bordahl PE, Rasmussen S. Trends in risk factors for obstetric anal sphincter injuries in Norway. *Obstet Gynecol* 2010;116:25-34.
- Bailit JL, Garrett J. Comparison of risk-adjustment methodologies for cesarean delivery rates. *Obstet Gynecol* 2003;102(1):45-51.
- Bailit JL, Love TE, Dawson NV. Quality of obstetric care and risk-adjusted primary caesarean delivery rates. *Am J Obstet Gynecol* 2006;194(2):402-7.
- Baker L, Atlas SW, Afendulis CC. Expanded Use of Imaging Technology and the Challenge of Measuring Value. *Health Aff* 2008;27(6):1467-1478.
- Bastiaannet E, Portielje JE, van de Velde CJ, de Craen AJ, van der Velde S, Kuppen PJ, et al. Lack of survival gain for elderly women with breast cancer. *Oncologist* 2011;16(4):415-23.
- Bastos J, Peleteiro B, Gouveia J, Coleman MP, Lunet N. The state of the art of cancer control in 30 European countries in 2008. *Int J Cancer* 2010;126(11):2700-15.
- Bath PA, Deeg DJ. Social engagement and health outcomes among older people: introduction to a special section. *Eur J Ageing* 2005;2:24-30.
- Berens HC, Sutcliffe C, Renom-Guiteras A, Soto ME, Suhonen R, Zabalegui A, et al. Quality of life and quality of care for people with dementia receiving long term institutional care or professional home care: The European RightTimePlaceCare Study. *J Am Med Dir Assoc* 2014Jan;15(1):54-61. doi:10.1016/j.jamda.2013.09.010.
- Bejot Y, Aouba A, de Peretti C, Grimaud O, Aboa-Eboule C, Chin F, et al. Time trends in hospital referred stroke and transient ischemic attack: results of a 7-year nationwide survey in France. *Cerebrovasc Dis* 2010; 30(4): 346-54.
- Bentley TG, Effros RM, Palar K, Keeler EB. Waste in the U.S. Health care system: a conceptual framework. *Milbank Q* 2008;86(4):629-59.
- Berendsen AJ. Ontslag uit het ziekenhuis: kink in de keten. Commentaar. *Ned Tijdschr Geneeskd* 2013;157:A6394.

- Bijenhof AM, Folkertsma MA, Slobbe LCJ, Polder JJ. Kostenontwikkeling GGZ. Bilthoven: RIVM, 2012.
- Bonsel GJ, Birnie E, Denktas S, Poeran J, Steegers EAP. Lijnen in de perinatale sterfte, Signalementstudie Zwangerschap en Geboorte 2010. Rotterdam: Erasmus MC, 2010.
- Booij J, de Boer D, van der Hoek L, Delnoij D. Meetverantwoording cliëntgebonden indicatoren VV&T 2010. Utrecht: Centrum Klantervaring Zorg, 2010.
- Borghans I. Reducing hospital length of stay by improving quality and safety of care? Nijmegen: Radboud Universiteit Nijmegen, 2012.
- Brandt HE, Francke AL, Pasma HRW, Claessen SJJ, van der Putten MJA, Deliens L. Indicatoren voor palliatieve zorg; ontwikkeling en toetsing van een set kwaliteitsindicatoren voor de palliatieve zorgverlening. NIVEL i.s.m. EMGO+/VUmc en IGZ. Utrecht: NIVEL, 2009.
- Brenner H, Hakulinen T. Implications of incomplete registration of deaths on long-term survival estimates from population-based cancer registries. *Int J Cancer* 2009;125(2):432-7.
- Brickell TA, Nicholls TL, Procyshyn RM, McLean C, Dempster RJ, Lavoie JAA, et al. Patient safety in mental health. Edmonton, Alberta: Canadian Patient Safety Institute and Ontario Hospital Association, 2009.
- Brinkman-Stoppelenburg A, Vergouwe Y, van der Heide A, Onwuteaka-Philipsen B. Obligatory consultation of an independent physician on euthanasia requests in the Netherlands: What influences the SCEN physicians judgment of the legal requirements of due care? *Health Policy* 2014;115(1):75-81.
- Buitendijk SE, Nijhuis JG. Hoge perinatale sterfte in Nederland in vergelijking tot de rest van Europa. *Ned Tijdschr Geneesk* 2004;148(38):1855-60.
- Buitendijk S, Zeitlin J, Cuttini M, Langhoff-Roos J, Bottu J. Indicators of fetal and infant health outcomes. *Eur J Obstet Gynecol Reprod Biol* 2003;111(1):66-77.
- Burgering-van Gelder EG, van Meggelen ML, Middelburg-Hebly MH. Palliatieve sedatie in Nederlandse ziekenhuizen. Eindrapportage. 29 april 2011. KNMG in samenwerking met IKNL. Utrecht: KNMG, 2011.
- Cammu H, Martens G, Ruysinck G, et al. Outcome after elective labor induction in nulliparous women: a matched cohort study. *Am J Obstet Gynecol* 2002;186:240-4.
- Carroli G, Mignini L. Episiotomy for vaginal birth. *Cochrane Database of Systematic Reviews* 2009, Issue 1. Art. No.: CD000081. doi:10.1002/14651858.CD000081.pub2.
- Casusregister Argus. Gegevens verkregen van het Casusregister Argus. Den Dolder: Expertisecentrum Agressie management, 2014. <http://www.veiligezorgiederszorg.nl/speerpunten/dwang-en-drang/argus.html>.
- CBO. Zorgmodule Palliatieve Zorg 1.0. Den Haag: CBO, 2013.
- CBS, Centraal Bureau voor de Statistiek. Laagste groei zorguitgaven in 15 jaar. CBS Persbericht PB14-031 14 mei 2014. Den Haag/Heerlen: CBS, 2014.
- CBS, Centraal Bureau voor de Statistiek. Uitgaven aan zorg met 3,7 procent gestegen. CBS Persbericht PB13-037 16 mei 2013. Den Haag/Heerlen: CBS, 2013.
- CBS, Centraal Bureau voor de Statistiek. CBS, Gezondheidsenquête, 2012a.
- CBS, Centraal Bureau voor de Statistiek. CBS, Gezondheidsenquête, 2010-2012b.
- CBS, Centraal Bureau voor de Statistiek. CBS, Bestedingen naar huishoudkenmerken 2006 en 2010.

CBS, Centraal Bureau voor de Statistiek. CBS, Inkomstenbelasting particuliere huishoudens 2006 en 2010.

CBS, Centraal Bureau voor de Statistiek. POLS, Gezondheid en Welzijn 1990/1992-2009.

CBS, Centraal Bureau voor de Statistiek. Gezondheid en zorg in cijfers. Perinatale sterfte onder de loep genomen. Den Haag/Heerlen: CBS, 2009.

CBS Statline. Bevalling, lengte en gewicht bij geboorte, borstvoeding. 2014a. <http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=37302&D1=0-1,45-48&D2=0,5-1&HD=110413-1418&HDR=G1&STB=T>. Geraadpleegd februari 2014.

CBS, Centraal Bureau voor de Statistiek. Statline. Sterfte, kerncijfers; zuigelingensterfte. 2014b. http://statline.cbs.nl/StatWeb/Download/Sterfte__regio_naar__260614101938.xlsx.

CBS Statline. Zorguitgaven internationaal vergelijkbaar; functies en aanbieders. 14 mei 2014c. <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=81892NED&D1=0&D2=0,24-26,1&D3=0&D4=a&HDR=T,G2,G3&STB=G1&VW=T>. Geraadpleegd mei 2014.

CBS Statline. Berekeningen ten behoeve van RIVM Zorgbalans, op basis van Zorgrekeningen. 2014d. <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71914ned&D1=37-43&D2=a&HDR=G1&STB=T&VW=T>.

CBS Statline. Zorgrekeningen; uitgaven en financiering vanaf 1972. 2014e. <http://statline.cbs.nl/StatWeb/publication/default.aspx?DM=SLNL&PA=71988NED&D1=7%2c12%2c16&D2=a&VW=T>. Geraadpleegd juni 2014.

CBS Statline. Zorgrekeningen; uitgaven (in lopende en constante prijzen) en financiering. 14 mei 2014f. <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71914ned&D1=0-23&D2=a&HDR=G1&STB=T&VW=T>. Geraadpleegd mei 2014.

CBS Statline. Ziekenhuisopnamen; geslacht, leeftijd, regio en diagnose-indeling VTV. 6 juni 2014g. <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71862ned&D1=0-5&D2=0&D3=0&D4=0&D5=0&D6=a&HDR=T,G1&STB=G2,G4,G3,G5&VW=T>. Geraadpleegd april 2014.

CBS Statline. Ziekenhuisopnamen; kerncijfers; geslacht, leeftijd en regio. 26 april 2013a. <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71857ned&D1=4&D2=0&D3=0&D4=0&D5=26-30&HDR=T,G1&STB=G2,G3,G4&VW=T>. Geraadpleegd april 2014.

CBS Statline. Doodsoorzaken; zelfdoding (inwoners), diverse kenmerken. 5 augustus 2013b. <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=7022GZA&D1=0&D2=0&D3=0&D4=57-62&VW=T>. Geraadpleegd april 2014.

CBS Statline. Gezondheid, leefstijl, zorggebruik en -aanbod, doodsoorzaken; kerncijfers. 23 december 2013c. <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=81628ned&D1=103-106&D2=a&HDR=G1&STB=T&VW=T>. Geraadpleegd februari 2014.

CBS Statline. Sterfte; kerncijfers naar diverse kenmerken. 18 oktober 2013d. <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=37979ned&D1=26-27&D2=0,5,10,15,20,25,30,35,40,45,50,55,60-62&VW=T>. Geraadpleegd april 2014.

CBS Statline. Gezonde levensverwachting; vanaf 1981. 12 september 2013e. <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71950ned&D1=0-1,7&D2=a&D3=0,7,14&D4=0&D5=0,10,20,28-31&VW=T>. Geraadpleegd april 2014.

CBS Statline. Bestedingen; beknopte indeling naar huishoudkenmerken. 14 september 2011. <http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=60046ned&D1=0-1,3&D2=21&D3=10-17&HD=140507-1344&HDR=T&STB=G1,G2>. Geraadpleegd april 2014.

- CG-raad, LOC-LPR, VGP, NIP-NVO, NVAVG, NVVA, et al. Intentieverklaring. Zorg voor vrijheid. Samen naar minder vrijheidsbeperking in 2011. Ede, 2008. <http://www.kennispleingehandicaptensector.nl/kennispleindoc/showcases/Intentieverklaring.pdf>. Geraadpleegd mei 2014.
- Chavannes NH, Kaper J, Frijling BD, van der Laan JR, Jansen PWM, Guerrouj S, et al. NHG standaard stoppen met roken. *Huisarts Wet* 2007;50(7):306-14.
- CHBB, College voor Huisartsen met Bijzondere Bekwaamheden. Jaarverslagen, 2007-2012. Utrecht: CHBB, 2008-2013.
- CHBB, College voor Huisartsen met Bijzondere Bekwaamheden. Regeling CHBB 2006-7. Utrecht: CHBB, 2012.
- Chernew ME, Hirth RA, Cutler DM. Increased Spending On Health Care: Long-Term Implications For The Nation. *Health Aff* 2009;28(5):1253-55.
- Chernew ME, Hirth RA, Cutler DM. Increased Spending On Health Care: How Much Can The United States Afford? *Health Aff* 2003;22(4):15-25.
- CIZ, Centrum indicatiestelling zorg. Indicatiwijzer versie 6.0. Toelichting op de Beleidsregels indicatiestelling AWBZ 2013 zoals vastgesteld door het ministerie van VWS. Driebergen: CIZ, 2013.
- Clarke, A. Length of in-hospital stay and its relationship to quality of care. *Qual Saf Health Care* 2002;11(3):209-210.
- Cochrane AL, St Leger AS, Moore F. Health service 'input' and mortality 'output' in developed countries. *J Epidemiol Community Health* 1978;32:200-5.
- Coenen S, Ferech M, Haaijer-Ruskamp FM, Butler CC, vander Stichele RH, Verheij TJ, et al. ESAC Project Group. European Surveillance of Antimicrobial Consumption (ESAC): quality indicators for outpatient antibiotic use in Europe. *Qual Saf Health Care* 2007;16(6):440-5.
- Coleman MP, Quaresma M, Berrino F, Lutz JM, De Angelis R, Capocaccia R, et al. Cancer survival in five continents: a worldwide population-based study (CONCORD). *Lancet Oncol* 2008;9(8):730-56.
- Colgrove J. The McKeown thesis: a historical controversy and its enduring influence. *Am J Public Health* 2002;92:725-9.
- Coonrod DV, Drachman D, Hobson P, Manriquez M. Nulliparous term singleton vertex caesarean delivery rates: institutional and individual level predictors. *Am J Obstet Gynecol* 2008;198(6):694-711.
- CPB, Centraal Planbureau. Macro Economische Verkenning 2014. Den Haag: CPB, 2013.
- CQ-index. <http://www.centrumklantervaringzorg.nl/cqi-richtlijnen.html>. 2013.
- Cutler DM. Are we finally winning the war on cancer? *J Econ Perspect* 2008;22:3-26.
- CVZ, College voor Zorgverzekeringen. GIPdatabank. Gegevens over geneesmiddelen. Geactualiseerd op 12-11-2013. Diemen: CVZ, 2013a.
- CVZ, College voor Zorgverzekeringen. GIPeiliningen 2012. Ontwikkelingen genees- en hulpmiddelengebruik. Diemen: CVZ, 2013b.
- CVZ, College voor Zorgverzekeringen. 7e monitor Regeling financiering zorg onverzekerbare vreemdelingen. Diemen: CVZ, 2013c.
- CVZ, College voor Zorgverzekeringen. 6e monitor Regeling financiering zorg onverzekerbare vreemdelingen. Diemen: CVZ, 2012.

- CVZ, College voor Zorgverzekeringen. Verloskundig Vademecum. Eindrapport van de Commissie Verloskunde van het College voor zorgverzekeringen. Diemen: CVZ, 2003.
- De Angelis R, Sant M, Coleman MP, Francisci S, Baili P, Pierannunzio D, et al.; EURO CARE-5 Working Group. Cancer survival in Europe 1999-2007 by country and age: results of EURO CARE-5 - a population-based study. *Lancet Oncol* 2014;15(1):23-34.
- De Beurs E, den Hollander-Gijsman ME, van Rood YR, van der Wee NJA, Giltay EJ, van Noorden MS, et al. Routine outcome monitoring in the Netherlands: Practical experiences with a web based strategy for the assessment of treatment outcome in clinical practice. *Clin Psychol Psychother* 2011;18(1):1-12.
- De Beurs E. De genormaliseerde T-score. Een 'Euro' voor testuitslagen. *MGv* 2010;65:684-695.
- De Blok C, Koster E, Schilp J, Wagner C. Implementatie VMS Veiligheidsprogramma. Evaluatieonderzoek in Nederlandse ziekenhuizen. Utrecht/Amsterdam: NIVEL/EMGO+ Instituut, 2013.
- De Boer D, Krol M, van der Hoek L, Plass AM. Ontwikkeling van een versnelling van de casemixcorrectie in de VV&T. Utrecht: NIVEL, in voorbereiding.
- De Boer D, Delnoij D, Rademakers J. The importance of patient-centered care for various patient groups. *Patient Educ Counsel* 2013;90(3):405-410.
- De Bruijne MC, Zegers M, Hoonhout LHF, Wagner C. Onbedoelde schade in Nederlandse ziekenhuizen. Dossieronderzoek van ziekenhuisopnames in 2004. Utrecht/Amsterdam: NIVEL/EMGO Instituut, 2007.
- De Groot MH, van de Glind G (red.). Multidisciplinaire richtlijn diagnostiek en behandeling van suïcidaal gedrag. Versie 1.0. Utrecht: Trimbos-instituut, 2012.
- De Jong J, van der Horst A. Grenzen aan de groei van de zorg. In: Van Ewijk C, van der Horst A, Besseling P (red.). Toekomst voor de zorg. Den Haag: CPB, 2013.
- De Kok IM, van der Aa MA, van Ballegooijen M, Siesling S, Karim-Kos HE, van Kemenade FJ, et al. Trends in cervical cancer in the Netherlands until 2007: has the bottom been reached?. *Int J Cancer* 2011;128(9):2174-81.
- De Korte D, Nagelhout G, Willemsen M. Themapublicatie. Stoppen-met-rokenadvisering door huisartsen in Nederland 2001-2009. Den Haag: STIVORO, 2010.
- De Leeuw J, de Wit C, Bruinse H, Kuijken J. Mediolateral episiotomy reduces the risk for analsphincter injury during operative vaginal delivery. *BJOG* 2008;115:104-108.
- De Leeuw JW, Struijk PC, Vierhout ME, Wallenburg HCS. Risk factors for third degree perineal ruptures during delivery. *BJOG* 2001;108(4):383-7.
- de Nationale ombudsman. Medische zorg vreemdelingen. Over toegang en continuïteit van medische zorg voor asielzoekers en uitgeprocedeerde asielzoekers. Den Haag: de Nationale ombudsman, 2013.
- De Roo ML, Miccinesi G, Onwuteaka-Philipsen BD, van Den Noortgate N, van den Block L, et al.; EURO IMPACT. Actual and preferred place of death of home-dwelling patients in four European countries: making sense of quality indicators. *PLoS One* 2014;9(4):e93762. doi:10.1371/journal.pone.0093762.
- De Wilde RF, Besselink MG, van der Tweel I, de Hingh IH, van Eijck CH, de Jong CH, et al; Dutch Pancreatic Cancer Group. Impact of nationwide centralization of pancreaticoduodenectomy on hospital mortality. *Br J Surg* 2012;99(3):404-10.

- Delnoij D. Kritiek op CQI. *Zorgvisie*, 2011;8 nov. <http://www.zorgvisie.nl/Kwaliteit/Verdieping/2011/11/Kritiek-op-CQI-ZVS012636W/>. Geraadpleegd november 2013.
- Deuning CM (RIVM). Reistijd (in minuten) tot dichtstbijzijnde ziekenhuis 2013. In: *Volksgezondheid Toekomst Verkenning, Nationale Atlas Volksgezondheid*. Bilthoven: RIVM, <<http://www.zorgatlas.nl>> *Zorgatlas\Zorg\Ziekenhuiszorg\Algemene en academische ziekenhuizen\Aanbod*, 20 september 2013a.
- DGV, Nederlands instituut voor verantwoord medicijngebruik. FTO-peilingen 2004-2007. *Kwaliteit van farmacotherapieoverleg in Nederland in beeld*. Utrecht: DGV, 2005-2008.
- Dik E, Meulepas M, Smeenk I. *Handboek FTO. Werken aan verbetering van het FTO-niveau*. Utrecht: Instituut voor Verantwoord Medicijngebruik, 2008.
- Dikken JL, Dassen AE, Lemmens VEP, Putter H, Krijnen P, van der Geest L, et al. Effect of hospital volume on postoperative mortality and survival after oesophageal and gastric cancer surgery in the Netherlands between 1989 and 2009. *Eur J Cancer* 2012;48(7):1004-1013.
- Donker GA, Slotman FG, Spreeuwenberg P, Francke AL. Palliatieve sedatie Nederlandse huisartspraktijken. Dynamische cohortstudie van trends en redenen in de periode 2005-2011. *Ned Tijdschr Geneesk* 2014;158(A7265).
- Douven R. Ex-postcorrectiemechanismen in de Zorgverzekeringswet: hoe nu verder? Den Haag: CPB, 2010. CPB Document 212.
- Drijver R, Jochems P (red.). *Nederlands Triage Systeem. Op weg naar eenduidige triage*. NHG, LAMP, NVSHV en GGZ Nederland, 2006.
- Dumaij ACM. *Productiviteitstrends in de sector verpleging, verzorging en thuiszorg. Een empirisch onderzoek naar het effect van regulering op productiviteit 1972-2010*. Delft: IPSE Studies, TU Delft, 2011.
- ECDC, European Centre for Disease Prevention and Control. *Surveillance of antimicrobial consumption in Europe 2011*. Stockholm: ECDC, 2014a.
- ECDC, European Centre for Disease Prevention and Control. *Antimicrobial consumption interactive database (ESAC-Net)*. Stockholm: ECDC, 2014b.
- Ehrenthal DB, Jiang X, Strobino DM. Labor induction and the risk of a Cesarean delivery among nulliparous women at term. *Obstet Gynecol* 2010;116:35-42.
- Elferink MA, van Steenbergen LN, Krijnen P, Lemmens VE, Rutten HJ, Marijnen CA, et al. Marked improvements in survival of patients with rectal cancer in the Netherlands following changes in therapy, 1989-2006. *Eur J Cancer* 2010;46(8):1421-9.
- Elissen AMJ, van Raak AJA, Derckx EWCC, Vrijhoef HJM. Improving homeless persons' utilisation of primary care: lessons to be learned from an outreach programme in The Netherlands. *Int J Social Welfare* 2011;22:80-89. doi:10.1111/j.1468-2397.2011.00840.x.
- Elissen A, van Raak A, Derckx E, Vrijhoef B. Dokter voor vagebonden. Laagdrempelige straatdokerspraktijk haalt daklozen wél binnen. *Med Contact* 2009;64(19):842-5.
- Ende A van der, Spanjaard L. Bacteriële meningitis in Nederland 2001-2010. *Infectieziekten Bull* 2011;22(6):189-193.
- EU, Raad van de Europese Unie. Aanbeveling van de Raad van 22 december 2009 inzake de vaccinatie tegen seizoensinfluenza. (Voor de EER relevante tekst) (2009/1019/EU). *Publicatieblad EU* 2009;(L 348):71-72.

- EURO-PERISTAT European Perinatal Health Report. Data from 2004. EURO-PERISTAT project in collaboration with SCPE, EUROCAT & EURONEOSTAT, 2008. EURO-PERISTAT <http://www.europeristat.com/>.
- EURO-PERISTAT Project with SCPE and EUROCAT. European Perinatal Health Report. Health and care of pregnant women and babies in Europe in 2010. May 2013. EU-SILC, 2012.
- Evenhuis H, Hermans H. ZZZP-VG3; zelfstandigheid en gezondheid van 50-plussers, geïndiceerd voor ZZZP-VG3: een analyse op basis van de studie Gezond Ouder met een verstandelijke beperking (GOUD). Rotterdam: Erasmus MC, 2013.
- Evenhuis H, Hermans H. Zelfstandigheid en gezondheid van 50-plussers, geïndiceerd voor ZZZP-VG4: gegevens op basis van de studie Gezond Ouder met een verstandelijke beperking (GOUD). Rotterdam: Erasmus MC, 2012.
- Faber MJ, van Loenen T, Westert GP. International Health Policy Survey 2013. Commonwealth Fund. Onderzoek onder burgers in 11 landen. Nijmegen: UMC St. Radboud Scientific Institute for Quality of Healthcare (IQ Healthcare), 2013.
- Faber MJ, Burgers JS, Westert GP. International Health Policy Survey 2011 Commonwealth Fund. Onderzoek onder patiënten in 11 landen. Nijmegen: UMC St Radboud, Scientific Institute for Quality of Healthcare (IQ healthcare), 2011.
- Faber MJ, Burgers JS, Voerman GE, Grol RPTM. International Health Policy Survey 2010 Commonwealth Fund. Onderzoek onder burgers in 11 landen. Nijmegen: UMC St Radboud, Scientific Institute for Quality of Healthcare (IQ healthcare), 2010.
- Faber M, Bosch M, Wollersheim H, Leatherman S, Grol R. Public reporting in health care: how do consumers use quality-of-care information? A systematic review. *Med Care* 2009;47(1):1-8.
- Farmatec. Apotheekhoudende huisartsen. Kerkrade: Farmatec, 2014. <http://www.farmatec.nl/geneesmiddelen/vergunningen/apotheekhoudendehuisartsen/default.aspx>. Geraadpleegd april 2014.
- Feijten P, Marangos AM, de Klerk M, de Boer A, Vonk F. De ondersteuning van Wmoaanvragers en hun mantelzorgers in 2012. Tweede Wmo-evaluatie, deelrapport aanvragers en mantelzorgers. SCP-publicatie 2013-20. Den Haag: SCP, 2013.
- Flenady V, Koopmans L, Middleton P, Frøen JF, Smith GC, Gibbons K, et al. Major risk factors for stillbirth in high-income countries: a systematic review and meta-analysis. *Lancet* 2011b; 377(9774):1331-1340.
- Flenady V, Middleton P, Smith GC, Duke W, Erwich JJ, Khong TY, et al. Stillbirths: the way forward in high-income countries. For the Lancet's Stillbirths Series steering committee. *Lancet* 2011a;377(9778):1703-1717.
- Francke AL, Claessen SJJ, Deliëns L. Kwaliteitsindicatoren voor Palliatieve Zorg: Praktische Handleiding voor Zorgaanbieders. NIVEL i.s.m. EMGO+/VUmc. Utrecht: NIVEL, 2012.
- Fröhleke B, Watering M van de, Jansen-Landheer M. Te weinig consultatie bij palliatieve zorg. IKNL wordt onvoldoende ingeschakeld om het lijden te verlichten. *Med Contact* 2013;(11):608-610.
- Gardosi J, Madurasinghe V, Williams M, Malik A, Francis A. Maternal and fetal risk factors for stillbirth: population based study. *Br Med J* 2013;346:f108.
- Geodan. Afstandenmatrix 2013.

- Getzen TE. Aggregation and the measurement of health care costs. *Health Serv Res* 2006;41(5):1938-54; discussion 55-8.
- GGZ Nederland. Sectorrapport ggz 2012. Feiten en cijfers over een sector in beweging. Amersfoort: GGZ Nederland, 2014.
- GGZ Nederland. GGZ in de Zorgverzekeringswet. Tabellen over de jaren 2008-2010. Amersfoort: GGZ Nederland, April 2013a.
- GGZ Nederland. Slotrapportages GGZ instellingen. Projectgelden terugdringen Dwang en Drang 2012. Amersfoort: GGZ Nederland, 2013b.
- GGZ Nederland & RIBW Alliantie. Hervorming langdurige zorg: de positie van de GGZ. Amersfoort/Tilburg: GGZ Nederland/RIBW Alliantie, 2013.
- Giesbers H (RIVM). Donorregistraties per gemeente 1 februari 2014. In: *Volksgezondheid Toekomst Verkenning, Nationale Atlas Volksgezondheid*. Bilthoven: RIVM, <<http://www.zorgatlas.nl>> Zorgatlas\Zorg\Genees- en hulpmiddelen, lichaamsmaterialen\Lichaamsmaterialen, 12 maart 2014.
- Giesbers H (RIVM), Kommer GJ (RIVM). Reistijd naar ziekenhuis met afdeling spoedeisende hulp 2013 (met de auto). In: *Volksgezondheid Toekomst Verkenning, Nationale Atlas Volksgezondheid*. Bilthoven: RIVM, <<http://www.zorgatlas.nl>> Zorgatlas\Zorg\Ziekenhuiszorg\Algemene en academische ziekenhuizen\Aanbod, 17 maart 2014.
- Giesbers H (RIVM), Eskes M (PAN), Waelpuut AJM (PAN), Kommer GJ (RIVM). Reistijd overdag naar ziekenhuis met afdeling verloskunde 2011 (met ambulance). In: *Volksgezondheid Toekomst Verkenning, Nationale Atlas Volksgezondheid*. Bilthoven: RIVM, <http://www.zorgatlas.nl/zorg/ambulancetzorg/reistijd-overdag-naar-ziekenhuis-met-afdelingverloskunde-met-ambulance/>, 14 juni 2012.
- Giesbers H (RIVM), Kommer GJ (RIVM). Bereikbaarheid 24/7 MMT-zorg (vier helikopters) 2011. In: *Volksgezondheid Toekomst Verkenning, Nationale Atlas Volksgezondheid*. Bilthoven: RIVM, <<http://www.zorgatlas.nl>> Zorgatlas\Zorg\Ziekenhuiszorg\Traumazorg, 12 juni 2012.
- Gijsen R, van Oostrom SH, Schellevis FC, Hoeymans N. Chronische ziekten en multimorbiditeit samengevat. *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*. <http://www.nationaalkompas.nl/gezondheid-en-ziekte/ziekten-en-aandoeningen/chronische-ziekten-en-multimorbiditeit/hoeveel-mensen-hebben-een-of-meerchronische-ziekten/>, 14 november 2013.
- Gijsen R (RIVM), Kommer GJ (RIVM), Bos N (Julius Centrum), Stel H van (Julius Centrum). Waaruit bestaan de verwijzingen binnen de acute zorg? In: *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Nationaal Kompas Volksgezondheid\Zorg\Acute zorg, 22 maart 2012.
- Gijsen, R (RIVM), Kommer GJ (RIVM), Bos N (Julius Centrum), Stel H van (Julius Centrum). Wat is een afdeling Spoedeisende hulp? In: *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Nationaal Kompas Volksgezondheid\Zorg\Acute zorg\Spoedeisende hulp, 7 december 2010a.
- Gijsen R (RIVM), Kommer GJ (RIVM), Bos N (Julius Centrum), Stel H van (Julius Centrum). Wat is een huisartsenpost? In: *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Nationaal Kompas Volksgezondheid\Zorg\Acute zorg\Huisartsenposten, 7 december 2010b.

- Giordano L, von Karsa L, Tomatis M, Majek O, de Wolf C, et al. Mammographic screening programmes in Europe: organization, coverage and participation. *J Med Screen* 2012;19(Suppl 1):72-82.
- Gomes B, Higginson IJ, Calanzani N, Cohen J, Deliens L, et al.; PRISMA. Preferences for place of death if faced with advanced cancer: a population survey in England, Flanders, Germany, Italy, the Netherlands, Portugal and Spain. *Ann Oncol* 2012Aug;23(8):2006-15.
- Gommer AM, Poos MJJC. Welke ziekten hebben de hoogste prevalentie? In: *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*. <http://www.nationaalkompas.nl/gezondheid-en-ziekte/ziekten-en-aandoeningen/welke-ziekten-hebben-de-hoogsteprevalentie/>, 11 december 2013.
- Gonda X, Pompili M, Serafini G, Montebovi F, Campi S, Dome P, et al. Suicidal behavior in bipolar disorder: epidemiology, characteristics and major risk factors. *J Affect Disord* 2012;143(1-3):16-26.
- GR, Gezondheidsraad. Grip op griep. Den Haag: GR, 2014.
- GR, Gezondheidsraad. De basis moet goed zijn! Kwaliteit bij een Basis Spoedeisende Hulp binnen een regionaal netwerk. Den Haag: GR, 2011.
- Groeneweg N. Role of patient experiences in healthcare purchasing. Presentation at the EUPHA pre-conference workshop 'Integrating the patient's perspective in public health and health care'. Amsterdam: EUPHA, 2010.
- Gulliford MC, Charlton J, Rudd A, Wolfe CD, Toschke AM. Declining 1-year case-fatality of stroke and increasing coverage of vascular risk management: population-based cohort study. *J Neurol Neurosurg Psychiatry* 2010;81(4):416-22.
- Gurol-Urganci I, Cromwell D, Edozien L, Mahmood T, Adams E, Richmond D, et al. Third- and fourth-degree perineal tears among primiparous women in England between 2000 and 2012: time trends and risk factors. *BJOG* 2013;120:1516-1525.
- Haaijer-Ruskamp FM, Denig P. Invloeden bij het kiezen van geneesmiddelen. *Geneesmiddelenbull* 2001;35:37-42.
- Hackenitz E, van Ginkel E (red.). *Evaluatie Programma Palliatieve Zorg in de Terminale Fase – ZonMw*. Den Haag: ZonMw, 2004.
- Halfens RJG, van Nie NC, Meijers JMM, Meesterberends E, Neyens JCL, Rondas AALM, et al. *Landelijke Prevalentiemeting Zorgproblemen. Rapportage resultaten 2013*. Maastricht: Universiteit Maastricht, CAPHRI School for Public Health and Primary Care, Department of Health Services Research, 2013.
- Hamaker ME, Bastiaannet E, Evers D, van Water W, Smorenburg CH, Maartense E, et al. Omission of surgery in elderly patients with early stage breast cancer. *Eur J Cancer* 2013;49(3):545-52.
- Hamberg-van Reenen HH, Meijer SA (red.). *Gezond opgroeien: Verkenning jeugdgezondheid. RIVM Rapport 270752001*. Bilthoven: RIVM, 2014.
- Harbers MM (RIVM). *Verkeersongevallen: Zijn er verschillen tussen Nederland en andere landen?* In: *Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid*. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Nationaal Kompas Volksgezondheid\Gezondheidstoestand\Ziekten en aandoeningen\Letsels en vergiftigingen\Verkeersongevallen, 10 september 2013.

- Heffner LJ, Elkin E, Fretts RC. Impact of labor induction, gestational age, and maternal age on cesarean delivery rates. *Obstet Gynecol* 2003;102:287-93.
- Heijink R, Koolman X, Pieter D, van der Veen A, Jarman B, Westert G. Measuring and Explaining Mortality in Dutch Hospitals; the Hospital Standardized Mortality Rate between 2003 and 2005. *BMC Health Serv Res* 2008;8:73.
- Hermens M, van Wetten H, Sinnema H (red.). *Kwaliteitsdocument Ketenzorg bij suïcidaliteit. Aanbevelingen voor zorgvuldig samenwerken in de keten*. Utrecht: Trimbos-instituut, 2010.
- Hesselink G, Schoonhoven L, Vernooij-Dassen M, Wollersheim H. Worden patiënten met zorg ontslagen? Een onderzoek naar de percepties van patiënten, naasten en zorgverleners. *Ned Tijdschr Geneeskd* 2013;157:A6097.
- Hoeymans N, van Loon AJM, Schoemaker CG. *Een gezonder Nederland. Kernrapport van de Volksgezondheid Toekomst Verkenning 2014*. Bilthoven: RIVM, 2014.
- Holland W. *European Community atlas of 'avoidable death'*. Oxford: Oxford University Press, 1988.
- Hurks R. *Discrepancies in abdominal aortic aneurysm expressions and repair*. Utrecht: Universiteit Utrecht, 2011. Dissertatie.
- IGZ, Inspectie voor de Gezondheidszorg. *Het resultaat telt Ziekenhuizen 2003-2012*. Den Haag/ Utrecht: IGZ, 2005-2014.
- IGZ, Inspectie voor de Gezondheidszorg. *Het resultaat telt Ziekenhuizen 2009-2012*. Utrecht: IGZ, 2011-2014.
- IGZ, Inspectie voor de Gezondheidszorg. *Het resultaat telt Ziekenhuizen 2004-2008*. Den Haag: IGZ, 2006-2009.
- IGZ, Inspectie voor de Gezondheidszorg. *Apothekersregister van de Inspectie voor de Gezondheidszorg*. IGZ: Den Haag, 20 april 2014a. http://www.igz.nl/onderwerpen/curatieve-gezondheidszorg/apotheken/apotheekregister/Register_van_gevestigd_apothekers.aspx. Geraadpleegd april 2014.
- IGZ, Inspectie voor de Gezondheidszorg. *Het resultaat telt Ziekenhuizen 2012*. Utrecht: IGZ, 2014b.
- IGZ, Inspectie voor de Gezondheidszorg. *Werkplan IGZ 2014*. Utrecht: IGZ, 2014c.
- IGZ, Inspectie voor de Gezondheidszorg. *Verbetering van de kwaliteit van de ouderenzorg gaat langzaam. Intensivering toezichtbezoeken aan verpleeg- en verzorgingshuizen in de periode 2011 en 2012*. Utrecht: IGZ, 2014d.
- IGZ, Inspectie voor de Gezondheidszorg. *Inzet professionele tolken en overdacht bij overplaatsing moeten beter voor verantwoorde geboortezorg aan asielzoekers*. Utrecht: IGZ, 2014e.
- IGZ, Inspectie voor de Gezondheidszorg. *Verantwoorde medische zorg in detentie en uitzetcentra; Signaleren van psychische kwetsbaarheid moet systematischer*. Utrecht: IGZ, 2014f.
- IGZ, Inspectie voor de Gezondheidszorg. *Kwaliteitsindicatoren Basisset ziekenhuizen 2014*. Utrecht: IGZ, 2013a.
- IGZ, Inspectie voor de Gezondheidszorg. *Aantal meldingen van suïcides in de GGZ*. Den Haag: IGZ, 07 november 2013b. http://www.igz.nl/actueel/nieuws/aantal_meldingen_van_suïcides_in_de_ggz.aspx. Geraadpleegd april 2014.

- IGZ, Inspectie voor de Gezondheidszorg. Bevindingen en conclusies van de inventarisatie naar de stand van zaken rond de implementatie van het Advies van de Stuurgroep Zwangerschap en Geboorte in ziekenhuizen in Nederland op 1 november 2011. Utrecht: IGZ, 2012a.
- IGZ, Inspectie voor de Gezondheidszorg. Huisarts voldoet aan veldnormen telefonische bereikbaarheid. Den Haag: IGZ, 2012b.
- IGZ, Inspectie voor de Gezondheidszorg. Telefonische bereikbaarheid huisartsen nog steeds onder de maat. Den Haag: IGZ, 2011a.
- IGZ, Inspectie voor de Gezondheidszorg. Het resultaat telt Ziekenhuizen 2010. Utrecht: IGZ, 2011b.
- IGZ, Inspectie voor de Gezondheidszorg. Terugdringen separeren stagneert, normen vereist rondom insluiting psychiatrische patiënten. Uitkomsten inspectieonderzoek naar de preventie van separeren 2008-2011. Utrecht: IGZ, 2011c.
- IGZ, Inspectie voor de Gezondheidszorg. Goede vooruitgang in toegankelijkheid huisartsenzorg en bereik publieke gezondheidszorg volgens nieuw zorgmodel voor asielzoekers. Utrecht: IGZ, 2011d.
- IGZ, Inspectie voor de Gezondheidszorg. Het resultaat telt Ziekenhuizen 2004. Den Haag: IGZ, 2005.
- IGZ & NPCF, Inspectie voor de gezondheidszorg / Nederlandse Patiënten en Consumenten Federatie. Telefonische bereikbaarheid van huisartsen moet sterk verbeteren. Den Haag: IGZ, 2008.
- IKNL, Ingegraal Kankercentrum Nederland. Kankerzorg in beeld. Utrecht: IKNL, 2014a.
- IKNL, Ingegraal Kankercentrum Nederland. Kankerzorg in beeld: Mammacarcinoom. Utrecht: IKNL, 2014b.
- IKNL, Ingegraal Kankercentrum Nederland. Kankerzorg in beeld: Colorectaal carcinoom. Utrecht: IKNL, 2014c.
- IKNL, Ingegraal Kankercentrum Nederland. Gegevens uit de Nederlandse Kanker Registratie, verkregen op verzoek. Utrecht: IKNL, 2013a.
- Intomart GfK. Keuzegedrag bij zorg. Intomart GfK, 2013.
- IOM, Institute of Medicine. Crossing the Quality chasm: A New Health System for the 21st century. Washington DC: National Academies Press, 2001.
- IPSE Studies. Ziekenhuismiddelen in verband. Een empirisch onderzoek naar productiviteit en doelmatigheid in de Nederlandse ziekenhuizen 2003-2009. Delft: IPSE Studies, TU Delft, 2011.
- Israëls A, van der Laan J, van den Akker-Ploemacher J, de Bruin A. HSMR 2012: Methodological report. Den Haag/Heerlen: CBS, 2013.
- IVM, Instituut voor Verantwoord Medicijngebruik. Monitor Voorschrijfgedrag Huisartsen 2013. Utrecht: IVM, 2013a.
- IVM, Instituut voor Verantwoord Medicijngebruik. FTO-peiling 2011. Kwaliteit van farmacotherapieoverleg in beeld. Utrecht, 2013b.
- IVM, Instituut voor Verantwoord Medicijngebruik. Monitor Voorschrijfgedrag Huisartsen 2011. Utrecht: IVM, 2012a.
- IVM, Instituut voor Verantwoord Medicijngebruik. Monitor Voorschrijfgedrag Huisartsen 2012. Utrecht: IVM, 2012b.

- Jansen B, Tacken M, Mulder J, Korevaar J, Schlieff A, Tiersma W, Braspenning J. Monitoring vaccinatiegraad Nationaal Programma Grieppreventie 2012. Nijmegen: IQ Healthcare, 2013.
- Jansen B, Tacken M, Mulder J, Visscher S, Schlieff A, Tiersma W, et al. Monitoring vaccinatiegraad Nationaal Programma Grieppreventie 2011. Nijmegen: IQ Healthcare, 2012.
- Jansen JB, van Rossum LG, Laheij RJ. Bevolkingsonderzoek naar dikkedarmkanker; Bij voorkeur met een immunologische test op fecaal occult bloed. *Ned Tijdschr Geneeskd* 2009;153:A474.
- Janssen DJA, Spruit MA, Schols JMGA, Wouters EFM. Dynamic preferences for site of death among patients with advanced chronic obstructive pulmonary disease, chronic heart failure, or chronic renal failure. *J Pain Symptom Managem* 2013;46(3):826-836.
- Janssen W, Noorthoorn E, van de Sande R, Nijman H, Smit A, Hoogendoorn A, et al. Zes jaar Argus. Vrijheidsbeperkende interventies in de GGZ in 2012 en ontwikkelingen ten opzichte van voorgaande jaren. Den Dolder: Expertisecentrum Agressie management, 2014.
- Jarman B, Gault S, Alves B, Hider A, Dolan S, Cook A, et al. Explaining differences in English hospital death rates using routinely collected data. *Br Med J* 1999;318(7197):1515-20.
- Jones L, Othman M, Dowswell T, Alfirevic Z, Gates S, Newburn M, Jordan S, Lavender T, Neilson JP. Pain management for women in labour: an overview of systematic reviews. *Cochrane Database of Systematic Reviews* 2012, Issue 3. Art. No.: CD009234. doi:10.1002/14651858.CD009234.pub2.
- Joumard I, André C, Nicq C. *Health Care Systems: Efficiency and Institutions*. Paris: OECD Publishing, 2010.
- Klaufus LH, Fassaert TJL, de Wit MAS. Equity of access to mental health care for anxiety and depression among different ethnic groups in four large cities in the Netherlands. *Soc Psychiatry Psychiatr Epidemiol* 2014; doi:10.1007/s00127-014-0837-9.
- KNMG, Koninklijke Nederlandsche Maatschappij tot bevordering der Geneeskunst. Spiegelinformatie SCEN 2008-2012. Steun en Consultatie bij Euthanasie in Nederland. Utrecht: KNMG, 2009-2013.
- KNMG, Koninklijke Nederlandsche Maatschappij tot bevordering der Geneeskunst. KNMG richtlijn Goede steun en consultatie bij euthanasie voor SCEN-artsen. Utrecht: KNMG, 2012.
- KNMG, Koninklijke Nederlandsche Maatschappij tot bevordering der Geneeskunst. KNMG richtlijn Palliatieve sedatie. Utrecht: KNMG, 2009.
- KNMG/KNMP, Koninklijke Nederlandsche Maatschappij tot bevordering der Geneeskunst / Koninklijke Nederlandse Maatschappij ter bevordering der Pharmacie. KNMG/KNMP Richtlijn Uitvoering euthanasie en hulp bij zelfdoding. Utrecht/Den Haag: KNMG/KNMP, 2012.
- KNOV, Koninklijke Nederlandse Organisatie van Verloskundigen. Standaard 'Prenatale verloskundige begeleiding'. Utrecht: KNOV, 2008.
- KNOV, Koninklijke Nederlandse Organisatie van Verloskundigen. Standaard 'Prenatale diagnostiek'. Bilthoven: KNOV, 2005.
- KNOV/NHG, Koninklijke Nederlandse Organisatie van Verloskundigen / Nederlands Huisartsengenootschap. Standaard 'Preconceptiezorg'. Utrecht: KNOV/NHG, 2013.

- Ko W, Beccaro M, Miccinesi G, van Casteren V, Donker GA, et al.; EURO IMPACT. Awareness of general practitioners concerning cancer patients' preferences for place of death: evidence from four European countries. *Eur J Cancer* 2013 May;49(8):1967-74. doi:10.1016/j.ejca.2013.01.006.
- Kool T, van der Veen A, Westert G. Sterftemaat is valide instrument. *Med Contact* 2007;62(50):2090-1.
- Koopmans B, Korevaar J, Nielen M, Verhaak P, de Jong J, van Dijk L, et al. NIVEL Overzichtstudies: preventie kan effectiever! Deelnamebereidheid en deelnametrouw aan preventieprogramma's in de zorg. Utrecht: NIVEL, 2012.
- Kotseva K, Wood D, de Backer G, de Bacquer D, Pyorala K, Keil U. Cardiovascular prevention guidelines in daily practice: a comparison of EUROASPIRE I, II, and III surveys in eight European countries. *Lancet* 2009;373(9667): 929-40.
- Krol M, Sixma H, Plass AM. CQI Spoedeisende Ambulancezorg: Actualisatie en bepaling van het discriminerend vermogen. Utrecht: NIVEL, 2013.
- Krol MW, de Boer D, Booij JC, Rademakers J, Delnoij DMJ. Ervaringen van cliënten met de hulp in het huishouden. Resultaten van de eerste en tweede verwerkingsronde van de landelijke meting met de CQ index hulp bij het huishouden. Utrecht: NIVEL/CKZ, 2012.
- Kwee A, Elferink-Stinkens PM, Reuwer PJ, Bruinse HW. Trends in obstetric interventions in the Dutch obstetrical care system in the period 1993-2002. *Eur J Obstet Gynecol Reprod Biol* 2007;132(1):70-5.
- Lackland D, Roccella EJ, Deutsch AF, Fornage M, George MG, Howard G, et al. Factors influencing the decline in stroke mortality: a statement from the American Heart Association/American Stroke Association. *Stroke* 2014;45(1):315-53.
- Laine K, Gissler M, Pirhonen J. Changing incidence of anal sphincter tears in four Nordic countries through the last decades. *Eur J Obstet Gynecol Reprod Biol* 2009;146:71-5.
- Landelijk Platform GGz. Patiënten melden lange wachttijden bij psychiaters en instellingen. Utrecht: Landelijk Platform GGz, 23 mei 2014. <http://www.platformggz.nl/lpggz/newsitems/nioo2657>. Geraadpleegd mei 2014.
- Landelijk Platform GGz, GGZ Nederland, Zorgverzekeraars Nederland, Nederlandse Vereniging voor Psychiatrie, Nederlands Instituut van Psychologen, Landelijke Vereniging Georganiseerde eerste lijn, Landelijke Vereniging van Eerstelijnspsychologen, Meer GGZ, Nederlandse Vereniging van Vrijgevestigde psychologen en & Psychotherapeuten, Ministerie van VWS. Bestuurlijk Akkoord Toekomst GGZ 2013-2014. Den Haag, 2012.
- Landeweerd JA, Boumans NPG, Nissen JMF. Arbeidsvoldoening bij verplegenden en verzorgenden. De Maastrichtse arbeidssatisfactieschaal voor de gezondheidszorg. Handboek Verpleegkundige Innovatie. Houten: Bohn Stafleu, 1996.
- Langelan M, de Bruijn MC, Baines RJ, Broekens MA, Hammink K, Schilp J, et al. Monitor Zorggerelateerde Schade 2011/2012: dossieronderzoek in Nederlandse ziekenhuizen. Utrecht/Amsterdam: NIVEL/EMGO+ Instituut, 2013.
- Langelan M, Baines RJ, Broekens MA, Siemerink KM, van de Steeg L, Asscheman H, et al. Monitor zorggerelateerde schade 2008: dossieronderzoek in Nederlandse ziekenhuizen. Utrecht/Amsterdam: NIVEL/EMGO+ Instituut, 2010.
- Lanting CI, van Wouwe JPK, van den Burg I, Segaar D, van der Pal-de Bruin KM. Roken tijdens de zwangerschap. Trends in de periode 2001-2010. *Ned Tijdschr Geneesk* 2012;156:A5092.

- LEBA, Landelijke Evaluatie Bevolkingsonderzoek Baarmoederhalskanker. LEBA rapportage tot en met 2011. Rotterdam: Erasmus MC, 2013.
- LEBA, Landelijke Evaluatie Bevolkingsonderzoek Baarmoederhalskanker. LEBA rapportage 2011. Rotterdam: Erasmus MC, 2012.
- LEBA, Landelijke Evaluatie Bevolkingsonderzoek Baarmoederhalskanker. LEBA rapportage 2009. Rotterdam: Erasmus MC, 2010.
- LEBA, Landelijke Evaluatie Bevolkingsonderzoek Baarmoederhalskanker. Rapportage 2004-2008. Rotterdam: Erasmus MC, 2009.
- Lee S, Shafe AC, Cowie MR. UK stroke incidence, mortality and cardiovascular risk management 1999-2008: time-trend analysis from the General Practice Research Database. *BMJ Open* 2011f;1(2):e000269.
- LETB, Landelijk Evaluatie Team voor bevolkingsonderzoek naar Borstkanker. Landelijke evaluatie van bevolkingsonderzoek naar borstkanker in Nederland 1990-2011/2012. Het dertiende evaluatierapport. Rotterdam/Nijmegen: Erasmus MC/Radboud UMC, 2014.
- LETB, Landelijk Evaluatie Team voor bevolkingsonderzoek naar Borstkanker. Landelijke evaluatie van bevolkingsonderzoek naar borstkanker in Nederland 1990-2007. Het twaalfde evaluatierapport. Rotterdam/Nijmegen: Erasmus MC/UMC St Radboud, 2009.
- LHV, Landelijke Huisartsen Vereniging. Onderzoek Zorgmijden 2014a. <http://lhv.artsennet.nl/web/file?uuid=bc7618d5-obeg-41e1-8e18-14de2631227a&owner=4bb84018-g2e3-4e3b-83e7-5d5e5e0a5192>. Geraadpleegd juli 2014.
- LHV, Landelijke Huisartsen Vereniging. Ledenpeiling Landelijke Huisartsen Vereniging: ledenpeiling. Utrecht: LHV, 2014b.
- LHV, Landelijke Huisartsen Vereniging. Update van de richtlijnen voor de bereikbaarheid en beschikbaarheid van de voorziening huisartsenzorg. Rapportage van de werkgroep bereikbaarheid & beschikbaarheid. Utrecht: LHV, 2013.
- Lokker I, Tummers R, Galesloot C, Klinkenberg M. Consultatie Palliatieve Zorg Jaarverslag 2013. IKNL, 2014.
- Lumley J, Chamberlain C, Dowswell T, Oliver S, Oakley L, Watson L. Interventions for promoting smoking cessation during pregnancy. *Cochrane Database Syst Rev.* 2009;(3):CD001055.
- Lynn J, Adamson DM. *Living Well at the End of Life. Adapting Health Care to Serious Chronic Illness in Old Age.* Santa Monica, CA: Rand, 2003.
- Mackenbach JP. Korten op preventie? Niet doen! *Med Contact* 2013(46):2388-9.
- Mackenbach JP (red.). *Successen van preventie 1970-2010.* Rotterdam: Erasmus Publishing/ Erasmus MC, afdeling Maatschappelijke Gezondheidszorg, 2011.
- Mackenbach JP. The contribution of medical care to mortality decline: McKeown revisited. *J Clin Epidemiol* 1996;49:1207-13.
- Main EK, Moore D, Farrell B, Schimmel LD, Altman RJ, Abrahams C, et al. Is there a useful cesarean birth measure? Assessment of the nulliparous term singleton vertex caesarean birth rate as a tool for obstetric quality improvement. *Am J Obstet Gynecol* 2006;194(6):1644-1651.
- Malschaert R, van de Belt TH, Giesen P. *Ambulance A1 spoedritten: Wat is de relatie tussen responstijd en gezondheidswinst?* Nijmegen: Scientific Institute for Quality of Healthcare & Acute Zorgregio Oost, 2008.

- Mathey MF, Vanneste VG, de Graaf C, de Groot LC, van Staveren WA. Health effect of improved meal ambiance in a Dutch nursing home: a 1-year intervention study. *Prev Medicine* 2001;32:416-23.
- Maurits EEM, de Veer AJE, Spreeuwenberg P, Francke AL. De aantrekkelijkheid van werken in de zorg 2013. Cijfers en trends. Utrecht: NIVEL, 2014.
- McKeown T. The role of medicine: dream, mirage, or nemesis? London: The Nuffield Provincial Hospitals Trust, 1976.
- McPherson K, Gon G, Scott M. International Variations in a Selected Number of Surgical Procedures. OECD Health Working Papers No. 61. Paris: OECD Publishing, 2013.
- Mediquest. Wachtlijden ziekenhuiszorg; polikliniek, behandeling en diagnostiek. Utrecht: Mediquest, 2009-2014.
- Meesterberends E. Pressure ulcer care in the Netherlands versus Germany 0-1; what makes the difference?. Maastricht: Maastricht University, 2013. Dissertatie.
- Meeuwesen L. Language barriers in migrant health care: a blind spot. *Patient Educ Couns* 2012;86(2):135-6. doi:10.1016/S0738-3991(12)00012-2. PubMed PMID: 22284163.
- Mendes de Leon MF. Social engagement and successful aging. *Eur J Ageing* 2005;2:64-6.
- Meulepas M. Relatie tussen FTO-niveau en score op voorschrijfindicatoren. Utrecht: DGV, 2008.
- Mladovsky P, Srivastava D, Cylus J, Karanikolos M, Evetovits T, Thomson S, et al. Health policy responses to the financial crisis in Europe. Copenhagen: WHO, 2012.
- Mohangoo AD, Buitendijk SE, Hukkelhoven CWPM, Ravelli ACJ, Rijninks-van Driel GC, Tamminga P, et al. Hoge perinatale sterfte in Nederland vergeleken met andere Europese landen: de PERISTAT II studie. *Ned Tijdschr Geneeskd* 2008;152(50):2718-27.
- Monitor Langdurige zorg. Indicatie zorg zonder en met verblijf. <http://www.monitorlangdurigezorg.nl/kerncijfers/indicatie/indicatie-zorg-zonder-en-met-verblijf>, 2013a. Geraadpleegd mei 2014.
- Monitor Langdurige zorg. Eigen bijdrage. <http://www.monitorlangdurigezorg.nl/kerncijfers/eigen-bijdrage>, 2013b. Geraadpleegd mei 2014.
- Monitor Langdurige zorg. Gebruik zorg zonder verblijf. <http://www.monitorlangdurigezorg.nl/kerncijfers/gebruik/gebruik-zorg-zonder-verblijf>, 2013c. Geraadpleegd mei 2014.
- Moreno-Serra R, Wagstaff A. System-wide impacts of hospital payment reforms: evidence from Central and Eastern Europe and Central Asia. *J Health Econ* 2010;29:585-602.
- Morgan D, Astolfi R. Health Spending Growth at Zero: Which Countries, Which Sectors Are Most Affected? Paris: OECD, 2013.
- Mulder M (RIVM), Kommer GJ (RIVM), Zwakhals SLN (RIVM). Rijtijd vanaf dichtstbijzijnde ambulancstandplaats 2013. In: Volksgezondheid Toekomst Verkenning, Nationale Atlas Volksgezondheid. Bilthoven: RIVM, <<http://www.zorgatlas.nl>> Zorgatlas\Zorg\ Ambulancezorg, 24 september 2013.
- Nauta ST, Deckers JW, Akkerhuis M, Lenzen M, Simoons ML, van Domburg RT. Changes in Clinical Profile, Treatment, and Mortality in Patients Hospitalised for Acute Myocardial Infarction between 1985 and 2008. *PLoS One* 2011a;6(11):e26917.
- NFU, Nederlandse Federatie van Universitair Medische Centra. Naar acht expertisecentra en één Nationaal Programma Palliatieve Zorg. Visie van de umc's op de toekomstige palliatieve zorg. Utrecht: NFU, 2013.

- Niaounakis TK. Productiviteitstrends in de geestelijke gezondheidszorg. Een empirisch onderzoek naar het effect van regulering op de productiviteitsontwikkeling tussen 1982 en 2010. Delft: IPSE Studies, TU Delft, 2013.
- NICE, National Institute for Clinical Excellence. Collaborating Centre for Women's and Children's Health. Caesarean Section. Clinical Guideline. London, UK: Royal College of Obstetricians and Gynaecologists, 2004.
- Nijs K. Optimizing the ambiance during mealtimes in Dutch nursing homes (Phd thesis). Wageningen: Wageningen University, 2006.
- NIVEL. Panel Verpleging & Verzorging. <http://www.nivel.nl/panel-verpleging-verzorging-o>. Utrecht: NIVEL, 2014a.
- NIVEL. Inkomenspositie chronisch zieken en gehandicapten: een kwart teert in. Utrecht: NIVEL, 2014b. <http://www.nivel.nl/nieuws/inkomenspositie-chronisch-zieken-en-gehandicapteneen-kwart-teert-in>. Geraadpleegd januari 2014.
- NIVEL. Beroepenregistratie 2013a. <http://www.nivel.nl/beroepen-in-de-gezondheidszorg>. Geraadpleegd februari 2014.
- NIVEL. Aanvullende analyses resultaten Panel Verpleging & Verzorging, niet gepubliceerd. Utrecht: NIVEL, 2013b.
- NIVEL. Ruimte voor substitutie? Verschuivingen van tweedelijns- naar eerstelijnszorg. Utrecht: NIVEL, 2013c.
- NIVEL. Vaker overgestapt door prijs aanvullende verzekering. Utrecht: NIVEL, 2012.
- NIVEL. Cijfers uit de registratie van verloskundigen. Peiling 2008. Utrecht: NIVEL, 2008.
- Nolte E, Bain C, McKee M. Population health. In: Smith PC, Mossialos E, Papanicolas I, Leatherman S (red.). Performance Measurement for Health System Improvement: Experiences, Challenges and Prospects. Cambridge: Cambridge University Press, 2009.
- Nolte E, McKee CM. Measuring the health of nations: updating an earlier analysis. *Health Aff* 2008;27:58-71.
- Nolte E, McKee M. Does health care save lives? Avoidable mortality revisited. London: The Nuffield Trust, 2004.
- NPCF, Nederlandse Patiënten Consumenten Federatie. Acute Zorg: Uitgangspunten en kwaliteitscriteria vanuit patiëntenperspectief. Utrecht: NPCF, 2006.
- NRBM, Netherlands reference laboratory for bacterial meningitis (AMC/RIVM). Bacterial meningitis in the Netherlands; annual report 1995-2012. Amsterdam: University of Amsterdam, 1996-2013.
- NTS, Nederlandse Transplantatie Stichting. Cijferbijlage bij het jaarverslag van de Nederlandse Transplantatie Stichting 2011-2013. Leiden: NTS, 2012-2014a.
- NTS, Nederlandse Transplantatie Stichting. Wachtljst neemt af: goed of slecht nieuws? NTS: Leiden, 21 januari 2014b. <http://www.transplantatiestichting.nl/nieuws/wachtljst-neemtaf-goed-slecht-nieuws>. Geraadpleegd april 2014.
- NTS, Nederlandse Transplantatie Stichting. Communicatie rond donatie. Leiden: NTS, 2014c. <http://www.transplantatiestichting.nl/professionals/cursussen/communicatie-ronddonatie>. Geraadpleegd april 2014.
- NTS, Nederlandse Transplantatie Stichting. Jaarverslag 2004-2010. Leiden: NTS, 2005-2011.
- NVOG, Nederlandse Vereniging voor Obstetrie en Gynaecologie. Indicatiestelling Sectio Caesarea. Utrecht: NVOG, 2011a.

- NVOG, Nederlandse Vereniging voor Obstetrie en Gynaecologie. Richtlijn dreigende vroeggeboorte. Utrecht: NVOG, 2011b.
- NVOG, Nederlandse Vereniging voor Obstetrie en Gynaecologie. Richtlijn Foetale Groeibeperking versie 2.1. Utrecht: NVOG, 2008.
- NVOG, Nederlandse Vereniging voor Obstetrie en Gynaecologie. Inductie van de baring. Utrecht: NVOG, 2006.
- NVOG, Nederlandse Vereniging voor Obstetrie en Gynaecologie. Vaginale kunstverlossing. Utrecht: NVOG, 2005.
- NVOG, Nederlandse Vereniging voor Obstetrie en Gynaecologie. De kwaliteit van verloskundige zorg en het aantal keizersneden in uw ziekenhuis. Utrecht: NVOG, 2004.
- NVZ, Nederlandse Vereniging van Ziekenhuizen. Zorg loont. Brancherapport algemene ziekenhuizen 2013. Utrecht: NVZ, 2013.
- NZa, Nederlandse Zorgautoriteit. Marktscan en beleidsbrief Ambulancezorg. Weergave van de markt 2010-2013. Utrecht: NZa, 2014a.
- NZa, Nederlandse Zorgautoriteit. Eén prijs voor ambulanceritten. 27-06-2013. <http://www.nza.nl/zorgonderwerpen/zorgonderwerpen/ambulancezorg/Nieuws/Een-prijs-voorambulanceritten/>, 2013a. Geraadpleegd december 2013.
- NZa, Nederlandse Zorgautoriteit. Marktscan en beleidsbrief Medisch specialistische zorg. Weergave van de markt 2009-2013. Utrecht: NZa, 2013b.
- NZa, Nederlandse Zorgautoriteit. Marktscan en beleidsbrief AWBZ. Weergave van de markt 2010-2012. Utrecht: NZa, 2013c.
- NZa, Nederlandse Zorgautoriteit. Marktscan en beleidsbrief GGZ. Weergave van de markt 2008-2012. Utrecht: NZa, 2013d.
- NZa, Nederlandse Zorgautoriteit. Tariefbeschikking. TB/CU-7053-02. Utrecht: NZa, 2013e.
- NZa, Nederlandse Zorgautoriteit. Tarieventabel-DBC-zorgproducten-en-overige-producten per 1 oktober 2013. Utrecht: NZa, 2013f.
- NZa, Nederlandse Zorgautoriteit. Ziekenhuizen moeten sterftcijfers publiceren. Utrecht: NZa, 2013g. <http://www.nza.nl/publicaties/nieuws/Ziekenhuizen-moeten-sterftcijferspubliceren/>. Geraadpleegd maart 2014.
- NZa, Nederlandse Zorgautoriteit. Marktscan Zorg rondom zwangerschap en geboorte 2012. Weergave van de markt 2007-2012. Utrecht: NZa, 2012a.
- NZa, Nederlandse Zorgautoriteit. Advies Bekostiging integrale zorg rondom zwangerschap en geboorte. Het stimuleren van samenwerken. Utrecht: NZa, 2012b.
- OECD, Organisation for Economic Co-operation and Development. OECD Health Data: Pharmaceutical market. OECD Health Statistics (database). Paris: OECD, 2014.
- OECD, Organisation for Economic Co-operation and Development. Health at a Glance 2013: OECD Indicators. Paris: OECD Publishing, 2013a.
- OECD, Organisation for Economic Co-operation and Development. OECD Health Data: Health care utilisation. OECD Health Statistics (database). Paris: OECD, 2013b. Geraadpleegd mei 2014.
- OECD, Organisation for Economic Co-operation and Development. Cancer Care: assuring quality to improve survival. OECD Health Policy Study. Paris: OECD Publishing, 2013c.

- OECD, Organisation for Economic Co-operation and Development. Health at a Glance 2013, chapter 8.9.1. Long-term care public expenditure (health and social components), as a share of GDP, 2011 (or nearest year). 2013d. <http://dx.doi.org/10.1787/health-data-en>. Geraadpleegd mei 2014.
- OECD, Organisation for Economic Co-operation and Development. OECD Health Data 2013. Paris: OECD, 2013e.
- OECD, Organisation for Economic Co-operation and Development. Note on general comparability of Health Expenditure and Finance Data in OECD Health Data 2012. Paris: OECD Publishing, 2012.
- OECD, Organisation for Economic Co-operation and Development. Health at a Glance 2011: OECD Indicators. Paris: OECD Publishing, 2011.
- OECD, Organisation for Economic Co-operation and Development. Health Care Systems: Efficiency and Policy Settings. Paris: OECD Publishing, 2010.
- OECD, Organisation for Economic Co-operation and Development, Eurostat, WHO. A System of Health Accounts. Paris: OECD, Eurostat, WHO, 2011.
- Onderzoeksraad voor Veiligheid. Veiligheid van vreemdelingen. Den Haag: Onderzoeksraad voor Veiligheid, 2014.
- Palliactief. Financiering & organisatie van palliatieve zorg: De pioniersfase voorbij? Een verkennend signalement van knelpunten in de palliatieve terminale zorg bij patiënten, nabestaanden en medewerkers van palliatieve terminale zorgvoorzieningen. Nijmegen: Palliactief, 2011.
- PAN, Stichting Perinatale Audit Nederland. <http://www.perinataleaudit.nl/onderwerpen/161/deelname>. Geraadpleegd mei 2014.
- PAN, Stichting Perinatale Audit Nederland. A terme sterfte 2011. Perinatale audit: de voortgang. Utrecht: PAN, 2013.
- Panteia, SEOR, Etil. Arbeidsmarkteffecten maatregelen AWBZ en Wmo en stelselwijziging JZ. Eindrapport Onderzoeksfase 1. Zoetermeer: Panteia, 2013.
- Pasman HRW, Brandt HE, Deliens L, Francke AL. Quality-indicators for palliative care: a systematic review. *J Pain Symptom Man* 2009;38(1):145-156.
- Peeters J, Rademakers J. Actuele kennisvraag. Monitoren van veranderingen in de Langdurige Zorg. Inventarisatie van indicatoren, instrumenten en "witte vlekken". Utrecht: NIVEL, 2014.
- Peeters J, Werkman W, Francke AL. Dementiemonitor mantelzorg. Problemen, zorgbehoeften, zorggebruik en oordelen van mantelzorgers. Utrecht: NIVEL/Alzheimer Nederland, 2012.
- Perspekt Keurmerk Palliatieve Zorg. <http://www.perspektkeurmerk.nl/keurmerkregister/keurmerk-palliatieve-zorg>. Geraadpleegd januari 2014.
- Plug I, Hoffmann R, Mackenbach J. AMIEHS - Avoidable mortality in the European Union: Towards better indicators for the effectiveness of health systems. Rotterdam: Erasmus MC Rotterdam, 2011.
- Post N (RIVM), Gijzen R (RIVM). Wat is gezondheidszorg? In: Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Nationaal Kompas Volksgezondheid\Zorg, 5 september 2013.
- PRN, Stichting Perinatale Registratie Nederland. Jaarboek. Perinatale Zorg in Nederland 2009. Utrecht: PRN, 2013a.

- PRN, Stichting Perinatale Registratie Nederland. Jaarboek. Perinatale Zorg in Nederland 2010. Utrecht: PRN, 2013b.
- PRN, Stichting Perinatale Registratie Nederland. Jaarboek. Perinatale Zorg in Nederland 2011. Utrecht: PRN, 2013c.
- PRN, Stichting Perinatale Registratie Nederland. Jaarboek. Perinatale Zorg in Nederland 2012. Utrecht: PRN, 2013d.
- PRN, Stichting Perinatale Registratie Nederland. Jaarboek. Perinatale Zorg in Nederland 2008. Utrecht: PRN, 2011.
- PRN, Stichting Perinatale Registratie Nederland. Jaarboek. Perinatale Zorg in Nederland 2007. Utrecht: PRN, 2009.
- PRN, Stichting Perinatale Registratie Nederland. Jaarboek. Perinatale Zorg in Nederland 2005. Utrecht: PRN, 2008a.
- PRN, Stichting Perinatale Registratie Nederland. Jaarboek. Perinatale Zorg in Nederland 2006. Utrecht: PRN, 2008b.
- Provinciale Raad Gezondheid. Factsheet Medische zorg voor dak- en thuislozen en zwervingjongeren in Noord-Brabant. 's Hertogenbosch: Provinciale Raad gezondheid, 2010.
- Rademakers J, Delnoij D, Nijman J, de Boer D. Educational inequalities in patient-centred care: patients' preferences and experiences. *BMC Health Services Research* 2012, 12:261;doi:10.1186/1472-6963-12-261.
- Rahmel A (ed.). Annual Report 2012; Eurotransplant International Foundation. Leiden: Eurotransplant, 2012.
- Raisanen S, Vehvilainen-Julkunen K, Gissler M, Heinonen S. The increased incidence of obstetric anal sphincter rupture – An emerging trend in Finland. *Prev Med* 2009;49:535–40.
- Rauvata L, Lehtonen L, Peltola M, Korvenranta E, Korvenranta H, Linna M, et al., for the PERFECT Preterm Infant Study Group. *Pediatrics* 2007;119(1):e257–e263.
- RCOG, Royal College of Obstetricians and Gynaecologists. Patterns of maternity care in English NHS hospitals, 2011/2012. Londen: RCOG, 2013.
- Reeves A, McKee M, Basu S, Stuckler D. The political economy of austerity and healthcare: Cross-national analysis of expenditure changes in 27 European nations 1995-2011. *Health Policy* 2014;115(1):1-8.
- Renfrew MJ, McCormick FM, Wade A, Quinn B, Dowswell T. Support for healthy breastfeeding mothers with healthy term babies. *Cochrane Database Syst Rev.* 2012; 5:CD001141. doi:10.1002/14651858.CD001141.pub4.
- RIBW Alliantie. Brancherapport 2012. Resultaten en trends. Tilburg: RIBW Alliantie, 2013.
- RIVM, Rijksinstituut voor Volksgezondheid en Milieu. Een gezonder Nederland. De VTV 2014. 2014a. <http://www.eengezondere nederlandse.nl>.
- RIVM, Rijksinstituut voor Volksgezondheid en Milieu. Eerstelijnszorg. Volksgezondheid Toekomst Verkenning, Nationale Atlas Volksgezondheid. Bilthoven: RIVM, 20 maart 2014b. <http://www.zorgatlas.nl/zorg/eerstelijnszorg/>. Geraadpleegd maart 2014.
- RIVM, Rijksinstituut voor Volksgezondheid en Milieu. Wereldkansen voor Preventie? Bilthoven: RIVM, 2013a.
- RIVM, Rijksinstituut voor Volksgezondheid en Milieu. Kosten van Ziektenstudie. Bilthoven: RIVM, 2013b. <http://www.kostenvanziekten.nl>.

- Rosso S, Gondos A, Zanetti R, Bray F, Zakelj M, Zagar T, et al. Up-to-date estimates of breast cancer survival for the years 2000-2004 in 11 European countries: the role of screening and a comparison with data from the United States. *Eur J Cancer* 2010;46(18):3351-7.
- RTe, Regionale toetsingscommissies euthanasie. Oordelen 2013 (VO's). <http://www.euthanasiecommissie.nl/oordelen/oordelen2013vo/>. Geraadpleegd april 2014.
- RTe, Regionale toetsingscommissies euthanasie. Jaarverslag 2008-2012. Regionale toetsingscommissies euthanasie, 2009-2013.
- Rutstein DD, Berenberg W, Chalmers TC, Child CG, Fishman AP, Perrin EB. Measuring the quality of medical care. A clinical method. *N Engl J Med* 1976;294:582-8.
- RVZ, Raad voor Volksgezondheid en Zorg. Acute Zorg: achtergrondstudies. Achtergrondstudies uitgebracht door de Raad voor de Volksgezondheid bij het advies Acute zorg. Zoetermeer: RVZ, 2003.
- Safrany N, Monnet DL. Antibiotics obtained without a prescription in Europe. *Lancet Inf Dis* 2012;12(3):182-3.
- SBG, Stichting Benchmark GGZ. Gegevens verkregen op verzoek. Bilthoven: SBG, 2014.
- Schoen C, Osborn R, Squires D, Doty MM. Access, affordability, and insurance complexity are often worse in the United States compared to ten other countries. *Health Aff* 2013;32(12):2205-15.
- Schoen C, Osborn R, Squires D, Doty M, Pierson R, Applebaum S. New 2011 survey of patients with complex care needs in eleven countries finds that care is often poorly coordinated. *Health Aff* 2011;30(12):2437-48.
- Schut E. De houdbaarheid van de stijgende zorguitgaven. *Econ Stat Ber* 2011;96:448-51.
- SFK, Stichting Farmaceutische Kengetallen. Palliatieve sedatie bij een op de zes sterfgevallen. *Pharm Weekbl* 2014;149(16).
- SFK, Stichting Farmaceutische Kengetallen. Meer dan 6% palliatieve sedatie. *Pharm Weekbl* 2007;142(8).
- Siesling S, Visser O, Luth TK, Karim-Kos HE, van de Poll-Franse LV, Aben KK, et al. Volwassen kankerpatienten overleven langer in Nederland; 5-jaarsoverleving 12% toegenomen tussen 1989-1993 en 2004-2008. *Ned Tijdschr Geneesk* 2011b;155:A3169.
- Slobbe LCJ, Smit JM, Groen J, Poos MJJC, Kommer GJ. Kosten van Ziekten in Nederland 2007. Trends in de Nederlandse zorguitgaven 1999-2010. Bilthoven: RIVM, 2011.
- Smits JPJM, Droomers M, Westert GP. Sociaal-economische status en toegankelijkheid van zorg in Nederland. Bilthoven: RIVM, 2002.
- Social Force: De taaierheid van wanbetaling zorgpremie in beeld; zoektocht van Menzis, Stadsbank Oost-Nederland en Enschede, Hengelo en Almelo naar de preventieve werking van een financiële quick scan. Veenendaal: Social Force, 2014.
- St-AB, Stichting Adviesgroep Bestuursrecht. Stichting Adviesgroep Bestuursrecht. Tijdelijke wet ambulancezorg. 2012. http://www.st-ab.nl/wetten/1182_Tijdelijke_wet_ambulancezorg.htm. Geraadpleegd februari 2014.
- Stead LF, Buitrago D, Preciado N, Sanchez G, Hartmann-Boyce J, Lancaster T. Physician advice for smoking cessation. *Cochrane Database Syst Rev* 2013;5:CD000165.
- Steiner N, Weintraub AY, Wiznitzer A, Sergienko R, Sheiner E. Episiotomy: the final cut? *Arch Gynecol Obstet* 2012;286(6):1369-73.

- Steinert T, Lepping P, Bernardsgrütter B, Conca, A, Hatling T, Janssen W, et al. Incidence of seclusion and restraint in psychiatric hospitals: a literature review and survey of international trends. *Soc Psychiat Epidemiology* 2010;45(9):889-97.
- Steinert T, Lepping P. Legal provisions and practice in the management of violent patients. A case vignette study in 16 European countries. *Eur Psychiatry* 2009;24(2):135-41.
- Stichting Fibula. Lijst netwerken. <http://www.stichtingfibula.nl/Netwerken/Lijstnetwerken.aspx>. Geraadpleegd december 2013.
- Stuurgroep zwangerschap en geboorte. Een goed begin. Veilige zorg rond zwangerschap en geboorte. Utrecht: 2009.
- Tacken M, Mulder J, Visscher S, Tiersma W, Donkers J, Verheij R, et al. Monitoring Nationaal Programma Grieppreventie 2009. Nijmegen: IQ healthcare, 2010.
- Tacken M, Mulder J, Hoogen H van den, Tiersma W, Donkers J, Verheij R, et al. Monitoring Nationaal Programma Grieppreventie 2008. Nijmegen: IQ Healthcare, 2009.
- Terhaar Sive Droste JS, Craanen ME, van der Hulst RW, Bartelsman JF, Bezemer DP, Cappendijk KR, et al. Colonoscopic yield of colorectal neoplasia in daily clinical practice. *World J Gastroenterol* 2009;15(9):1085-92.
- TNO. Monitor en evaluatie van de neonatale hielprikscreening bij kinderen geboren in 2002-2011. Leiden: TNO, 2004-2013.
- Tranzo <http://www.tilburguniversity.edu/nl/onderzoek/instituten-en-researchgroepen/tranzo/onderzoek/lopend/standaardmodelmonitorsociaalkwetsbaregroepen/>. Geraadpleegd juni 2014.
- Trimbos-Instituut. Trendrapportage ggz 2010. Deel 2 Toegang en zorggebruik. Utrecht: Trimbos-Instituut, 2010.
- Vaarama M. Care-related quality of life in old age. *Eur J Ageing* 2009;6:113-25.
- Van Baal P, Obulqasim P, Brouwer W, Nusselder W, Mackenbach J. The influence of health care expenditures on life expectancy. Rotterdam: Institute of Health Policy & Management, Erasmus University Rotterdam, 2013.
- Van Bakel AM (RIVM). Wat zijn de mogelijke gezondheidseffecten van borstvoeding? In: Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Nationaal Kompas Volksgezondheid\ Determinanten\Leefstijl\Borstvoeding, 25 september 2013.
- Van de Vijzel AR, Heijink R, Schipper M. Has variation in length of stay in acute hospitals decreased? Submitted.
- Van de Water W, Bastiaannet E, Liefers GJ. Ouderen met borstkanker niet evidence based behandeld. *Ned Tijdschr Geneesk* 2011;155:A3359.
- Van den Berg MJ, Kringos DS, Marks LK, Klazinga NS. The Dutch health care performance report: seven years of health care performance assessment in the Netherlands. *Health Res Policy Sys* 2014;12:1.
- Van den Berg M, Post NAM, Hamberg-van Reenen HH, Baan CA, Schoemaker CG (red.). Preventie in de zorg. Themarapport Volksgezondheid Toekomst Verkenning 2014. RIVM rapport nr. 010003002. Bilthoven: RIVM, 2013.
- Van den Berg MJ, Deuning C, Gijzen R, Hayen A, Heijink R, Kooistra M, et al. Definitierapport Zorgbalans. RIVM Rapport 260612001/2011. Bilhoven: RIVM, 2011.

- Van den Berg M, Schoemaker CG (red.). Effecten van preventie. Deelrapport van de Volksgezondheid Toekomst Verkenning 2010 Van gezond naar beter. RIVM-rapport nr. 270061007. Bilthoven: RIVM, 2010.
- Van den Berg M, Heijink R, Zwakhals L, Verkleij H. Health care performance in the Netherlands: Easy access, varying quality, rising costs. *Eurohealth* 2010;16(4):27-29.
- Van den Brink CL (RIVM), Savelkoul M (RIVM). Gezondheidsmonitor GGD'en, CBS en RIVM. In: Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid. Bilthoven: RIVM, <<http://www.nationaalkompas.nl>> Nationaal Kompas Volksgezondheid\ Meta-informatie\Bronbeschrijvingen, 11 september 2013.
- Van den Brink-Muinen A, Rijken PM, Spreeuwenberg P, Heijmans MJWM. Kerngegevens Maatschappelijke situatie 2008, Nationaal Panel Chronisch Zieken en Gehandicapten. Utrecht: NIVEL, 2009.
- Van der Heide A, Brinkman-Stoppelenburg A, van Delden H, Onwuteaka-Philipsen B. Euthanasie en andere medische beslissingen rond het levenseinde. Sterfgevallenonderzoek 2010. Den Haag: ZonMw, 2012a.
- Van der Heide A, Legemaate J, Onwuteaka-Philipsen B, Bolt E, Bolt V, et al. Tweede evaluatie Wet toetsing levensbeëindiging op verzoek en hulp bij zelfdoding. Den Haag: ZonMw, 2012b.
- Van der Ploeg CPB, Rijpstra A, Verkerk PH. Monitoring van de neonatale gehoorscreening door de jeugdgezondheidszorg in 2012. Met voorlopige diagnostiekuitkomsten. Rapportnummer TNO/CH/2013/R11874. Leiden: TNO, 2013.
- Van der Ploeg CPB, van de Pal SM, van Gameren-Oosterom HBM, Oomen P. Procesmonitoring prenatale screening infectieziekten en eryocytenimmunisatie 2009-2011. Rapportnummer TNO/CH 2012 R10893. Leiden: TNO, 2012.
- Van der Ploeg CPB, van de Pal SM, Oomen P. Procesmonitoring prenatale screening infectieziekten en eryocytenimmunisatie 2007-2009. Rapportnummer KvL/P&Z/2010.066. Leiden: TNO, 2010.
- Van der Torre A, Ooms I, de Klerk M. Het persoonsgebonden budget in de zorg. Monitor 2012. SCP-publicatie 2013-18. Den Haag: SCP, 2013.
- Van der Veer J, Waverijn G, Spreeuwenberg P, Rijken M. Werk en Inkomen: kerngegevens & trends, Rapportage 2013, Monitor zorg- en leefsituatie van mensen met een chronische ziekte of beperking. Utrecht: NIVEL, 2013.
- Van Dillen J, Brouwers H, Buist F, Hermus M, Waelput A, Eskes M, van Swigchum F. Wat komt er uit de PAN? Samen om de tafel: perinatale audit in heel Nederland. *Tijdschr Verloskundigen* 2013;(Juni):72-74.
- Van Dishoeck AM, Oude Wesselink SF, Lingsma HF, Steyerberg E, Robben PB, Mackenbach JP. Transparantie: is het effect van toezicht te meten? Haalbaarheid van effectmeting door de Inspectie. *Ned Tijdschr Geneeskd* 2013;157:A1676.
- Van Ewijk C, van der Horst A, Besseling P. Toekomst voor de zorg. Gezondheid loont. Tussen keuze en solidariteit. Den Haag: CPB, 2013.
- Van Gestel YR, Lemmens VE, Lingsma HF, de Hingh IH, Rutten HJ, et al. The hospital standardized mortality ratio fallacy: a narrative review. *Med Care* 2012;50(8):662-7.

- Van Hoof F, Knispel A, Schneider J, Beeley C, Agaard J, Putten M. Trendrapportage GGZ 2011. Ambulante zorg en maatschappelijke ondersteuning voor mensen met ernstige psychische aandoeningen. Utrecht: Trimbos-instituut, 2011.
- Van Laere IRAL, Social medical care before and during homelessness in Amsterdam. Amsterdam: Universiteit van Amsterdam, 2009. Dissertatie.
- Van Lier EA, Oomen PJ, Giesbers H, Conyn-van Spaendonck MAE, Drijfhout IH, Zonnenberg-Hoff IF, de Melker HE. Vaccinatiegraad Rijksvaccinatieprogramma Nederland; verslagjaar 2014. RIVM-rapportnummer 150202003. Bilthoven: RIVM, 2014.
- Van Steenbergen LN, Elferink MA, Krijnen P, Lemmens VE, Siesling S, Rutten HJ, et al. Improved survival of colon cancer due to improved treatment and detection: a nationwide population-based study in The Netherlands 1989-2006. *Ann Oncol* 2010;21(11):2206-12.
- Van Steenbergen LN, Lemmens VE, Louwman MJ, Straathof JW, Coebergh JW. Increasing incidence and decreasing mortality of colorectal cancer due to marked cohort effects in southern Netherlands. *Eur J Cancer Prev* 2009;18(2):145-52.
- Van Veldhuizen H, Heijnen M, Lansdorp-Vogelaar I. Aanpassing uitvoering bevolkingsonderzoek darmkanker in 2014 en 2015. Bilthoven: RIVM, 2014.
- Van Venrooij T. Registreren, terugkoppelen en publiceren. *Med Contact* 2009;64(11):449-51.
- Van Wensveen D. Onderzoeksresultaten Zorgmonitor TNS NIPO herfst 2013. Amsterdam: TNS NIPO, 2013.
- Vandermeulen L. Waarom de patiënten wegblijven. *Zorgvisie* 2014:3.
- Vektis. *Zorgthermometer, zorg in regio's*. Zeist: Vektis, 2013a.
- VenJ, Ministerie van Veiligheid en Justitie. Kabinetsreactie onderzoek Nationale ombudsman naar de medische zorg voor vreemdelingen. Den Haag: VenJ, 2013.
- Verhoof E, Uitdehaag M, van der Veer W, Veerbeek I. Evaluatie gebruik richtlijnen oncologische en palliatieve zorg. *Onderzoeksverslag*. Utrecht: IKNL, 2013.
- VHN, Vereniging Huisartsenposten Nederland. *Benchmarkbulletin 2009-2012*. Utrecht: VHN, 2010-2013.
- VMSzorg. *Geaccrediteerde/gecertificeerde ziekenhuizen, 2014*. <http://www.vmszorg.nl/over-ons/geaccrediteerde-or-gecertificeerde-ziekenhuizen>. Geraadpleegd april 2014.
- VNG, Vereniging Nederlandse Gemeenten. *Terugblik op eerste regietafel decentralisaties*. <https://www.vng.nl/onderwerpenindex/decentralisaties-sociaal-domein/nieuws/terugblikop-eerste-regietafel-decentralisaties>, 2014. Geraadpleegd mei 2014.
- Von Wagner C, Good A, Whitaker KL, Wardle J. Psychosocial determinants of socioeconomic inequalities in cancer screening participation: a conceptual framework. *Epidemiol Rev* 2011 Jul;33(1):135-47. doi:10.1093/epirev/mxq018. Epub 2011 May 17. Review. PubMed PMID:21586673.
- VPTZ, Vrijwilligers Palliatieve Terminale Zorg Nederland. *VPTZ Organisaties*. <http://www.vptz.nl/page/142/vptz-organisaties.html>. Geraadpleegd december 2013.
- VPTZ, Vrijwilligers Palliatieve Terminale Zorg. *VPTZ Trendrapport 2014*. Bunnik: VPTZ, 2014.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. *Brief van minister Schippers aan de Tweede Kamer over financiering van eerstelijns geboortecentra d.d. 14 maart 2014a*.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. *Brief van minister Schippers aan de Tweede Kamer over de ruzie binnen de perinatale zorg d.d. 27 maart 2014b*.

- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Landelijke agenda suïcidepreventie en Jaarrapportage vermindering suïcidaliteit 2013. Den Haag: VWS, 20 januari 2014c.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Kabinetsreactie op rapport Nationale Ombudsman. Den Haag: VWS, 2014d.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Beantwoording Kamervragen over de 5 euro die onverzekerbare vreemdelingen moeten betalen voor medicijnen (2014Z00604). 191272-116406-Z. Den Haag: VWS, 2014e.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Brief over inzet van tolken in de zorg. <http://www.rijksoverheid.nl/documenten-en-publicaties/brieven/2014/03/11/brief-over-deinzet-van-tolken-in-de-zorg.html>. Den Haag: VWS, 2014f.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Verzoek tot uitstel van de plenaire behandeling van het wetsvoorstel in verband met toezending van een nota van wijziging. Den Haag: VWS, 2014g.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Alles is gezondheid... Het Nationaal Programma Preventie 2014–2016. Den Haag: VWS, 2013a.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Rijksbegroting 2014. Hoofdstuk XVI Volksgezondheid, Welzijn en Sport. Den Haag: VWS, 2013b.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Hervorming van de langdurige ondersteuning en zorg. Bijlage bij de brief “Hervorming langdurige zorg: naar een waardevolle toekomst” van drs. M.J. van Rijn aan de voorzitter van de Tweede Kamer der Staten-Generaal d.d. 25 april 2013. Den Haag: VWS, 2013c.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Nadere uitwerking brief Hervorming Langdurige Zorg van drs. M.J. van Rijn aan de voorzitter van de Tweede Kamer der Staten-Generaal d.d. 6 november 2013. Den Haag: VWS, 2013d.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Inventarisatieronde meerbedskamers 2013. Den Haag: VWS, 2013e.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Intensiveringsmiddelen langdurige zorg. Brief van de Staatssecretaris van Volksgezondheid, Welzijn en Sport d.d. 13 april 2013. Aan de Voorzitter van de Tweede Kamer der Staten-Generaal. Den Haag: VWS, 2013f.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Investeren in palliatieve zorg. Kamerbrief aan de Voorzitter van de Tweede Kamer der Staten-Generaal, d.d. 11 december 2013g.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Regeling palliatieve terminale zorg. Regeling van de Staatssecretaris van Volksgezondheid, Welzijn en Sport van 8 november 2007, nr. DLZ-KZ-2802433, houdende subsidiëring van palliatieve terminale zorg. De regeling vervalt op 1 januari 2017. Geraadpleegd december 2013h.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Rijksbegroting 2014 XVI Volksgezondheid, Welzijn en Sport. Vergaderjaar 2013–2014. 33 750 XVI Nr. 1. Voorstel van wet, 17 september 2013i.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Risicovereveningsmodel 2014. Den Haag: VWS, 2013m.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Verzekerdenmonitor 2012. Den Haag: VWS, 2012a.

- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Betreft Aanpak terugdringen doorlooptijden euthanasiemeldingen. Brief aan de Voorzitter van de Tweede Kamer der Staten-Generaal, d.d. 12 april 2012b.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Herziening zorgstelsel. Den Haag: VWS, 2012d.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Gezondheid dichtbij. Landelijke nota gezondheidsbeleid. Den Haag: VWS, 2011a.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Bestuurlijk Hoofdlijnenakkoord 2012-2015. Den Haag: VWS, 2011b.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Kamerstuk Kwaliteitsinstituut. Den Haag: VWS, 2010a.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Ketenzorg zwangerschap en geboorte. Kamerstuk 29 323/ 22 , nr 49. Juli 2008a.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Kamerstuk: Kiezen voor bereikbaarheid en kwaliteit van zorg. Kenmerk MC-U-2860925. Den Haag: VWS, 2008b.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Rijksbegroting 2008. Hoofdstuk XVI Volksgezondheid, Welzijn en Sport. Den Haag: VWS, 2007.
- VWS, Ministerie van Volksgezondheid, Welzijn en Sport. Privacy in verpleeghuizen. Brief van de Staatssecretaris van Volksgezondheid, Welzijn en Sport d.d. 25 november 1996. Aan de Voorzitter van de Tweede Kamer der Staten-Generaal. Vergaderjaar 1996-1997, 25 123, nr. Den Haag: VWS, 1996.
- Waelput AJM (PAN), Achterberg PW (RIVM). Welke factoren beïnvloeden de sterfte rond de geboorte? In: Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid. Bilthoven: RIVM, <http://www.nationaalkompas.nl/gezondheid-en-ziekte/sterftelevensverwachting-en-daly-s/sterfte-rond-de-geboorte/welke-factoren-beïnvloeden-desterfte-rond-de-geboorte/>, 27 mei 2013.
- Wagstaff A, van Doorslaer E. Equity in health care finance and delivery In: Culyer AJ, Newhouse JP (eds.). Handbook of Health Economics. Amsterdam: Elsevier, 2000.
- Wapstra B, Salomé L, Koppelman L. De Wmo-uitgaven van gemeenten in 2010. Den Haag: SCP, 2014.
- Warner B, Musial MJ, Chenier T, Donovan E. The effect of birth hospital type on the outcome of very low birth weight infants. *Pediatrics* 2004;113:35-41.
- WHA, World Health Assembly. The Fifty-sixth World Health Assembly. Prevention and control of influenza pandemics and annual epidemics. Geneva: World Health Organization, 2003.
- Whitehead M. Policies and strategies to promote social equity in health. Stockholm: Institute for Future Studies, 1991.
- WHO, World Health Organization. WHO Definition of Palliative Care. <http://www.who.int/cancer/palliative/definition/en/>. Geraadpleegd februari 2014.
- WHO, World Health Organization. Evidence for the ten steps to successful breastfeeding. Geneva: WHO, 1998. WHO/CHD/98.9.
- WHO, World Health Organization. Care in normal birth: a practical guide. Report of a technical working group. Safe motherhood practical guide. Geneva: WHO, 1996.
- Wiegant E. Tweede LHV-PeilinG over GGZ-nieuwe stijl. Huisartsen pakken GGZ voortvarend op. *De Dokter* 2014(mei):14-17.

- Wtl, Wet toetsing levensbeëindiging op verzoek en hulp bij zelfdoding. Geldend op 15-12-2013. www.studies-obsgyn.nl. Geraadpleegd april 2014.
- Yngve A, Sjöström M. Breastfeeding determinants and a suggested framework for action in Europe. *Public Health Nutr* 2001;4(2B):729-39.
- ZiZo, Zichtbare Zorg. Cliëntervaringsindicatoren uit de Kernset Prestatie-Indicatoren 2012; Geestelijke gezondheidszorg en verslavingszorg. Den Haag: Zichtbare Zorg, 2013a.
- ZiZo, Zichtbare Zorg. Zorginhoudelijke Indicatoren. Zichtbare Zorg Eerstelijnsverloskunde. Verslagjaar 2011. Den Haag: Zichtbare Zorg, 2011.
- ZonMw. Jaarverslag ZonMw 2013. Den Haag: ZonMw, 2014.
- ZonMw. Nationaal Programma Palliatieve Zorg binnenkort van start <http://www.zonmw.nl/nl/actueel/nieuws/detail/item/nationaal-programma-palliatieve-zorg-binnenkort-van-start/>. Geraadpleegd juni 2014a.
- ZonMw. Programma Zwangerschap en geboorte. Een impressie van de regionale consortia en onderzoeksprojecten. Den Haag: ZonMw, 2013.
- ZonMw. Programmaschets Palliatieve Zorg. Den Haag: ZonMw, 2009.
- Zorg voor Beter. Thema Vrijheidsbeperking. Afbouwen van bestaande maatregelen. Zorg voor Beter. <http://www.zorgvoorbeter.nl/ouderenzorg/Vrijheidsbeperking-Leren-Acties-Afbouw.html>, 2014. Geraadpleegd mei 2014.
- Zorginstituut Nederland. Gegevens verkregen op verzoek. Diemen: Zorginstituut Nederland, 2014a.
- Zorginstituut Nederland. GIPdatabank. Diemen: Zorginstituut Nederland, 2014b. <https://www.gipdatabank.nl>.
- Zuiderent-Jerak T, Kool T, Rademakers J. De relatie tussen volume en kwaliteit van zorg: tijd voor een brede benadering. Utrecht/Nijmegen/Rotterdam: Consortium Onderzoek Kwaliteit van Zorg; 2012.
- Zwakhals SLN (RIVM). Tarieven huisartsenposten 2014. In: Volksgezondheid Toekomst Verkenning, Nationale Atlas Volksgezondheid. Bilthoven: RIVM, <<http://www.zorgatlas.nl>>Zorgatlas\Zorg\Eerstelijnszorg\Huisartsenzorg\Aanbod, 2 juni 2014.
- Zwakhals SLN (RIVM). Reistijd (in minuten) tot dichtstbijzijnde huisartsenpost 2012. In: Volksgezondheid Toekomst Verkenning, Nationale Atlas Volksgezondheid. Bilthoven: RIVM, <<http://www.zorgatlas.nl>> Zorgatlas\Zorg\Eerstelijnszorg\Huisartsenzorg\Aanbod, 21 maart 2013.
- Zwakhals SLN, Kommer GJ. Analyse gevoelige ziekenhuizen 2013. Bilthoven: RIVM, 2013. <http://www.rijksoverheid.nl/bestanden/documenten-en-publicaties/publicaties/2013/09/20/analyse-gevoelige-ziekenhuizen-2013/analyse-gevoelige-ziekenhuizen-2013.pdf>.

Appendices

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Appendix 2

Indicators

Chapter 2 Antenatal, perinatal and postpartum care

Accessibility

- Percentage of pregnant women that can reach the nearest midwife practice within 10 minutes
- Percentage of pregnant women that can reach a hospital maternity unit by car within 30 minutes
- Percentage of pregnant women that can be transported to a hospital maternity unit by ambulance within 45 minutes

Quality

Preventive care

- Percentages of pregnant women (all pregnant women and pregnant women from deprived areas) that have their first prenatal visit before 10 weeks of pregnancy
- Percentage of women that smokes during pregnancy

Midwifery

- Episiotomy rate among homebirths
- Rate of perineal tears after vaginal birth without instrument
- Percentage of live births at home with an Apgar score at 5 minutes of less than 7
- Percentage of babies that is breast fed within 48 hours after birth

Secondary and tertiary obstetric care

- Mode of delivery
 - Percentage of spontaneous deliveries in the nulliparous term singleton vertex group
 - Percentage of induced deliveries in the nulliparous term singleton vertex group
 - Percentage of instrumental deliveries in the nulliparous term singleton vertex group
 - Percentage of emergency caesarean deliveries in the nulliparous term singleton vertex group
 - Percentage of elective caesarean deliveries in the nulliparous term singleton vertex group
- Episiotomy rate among spontaneous deliveries
- Episiotomy rate among instrumental deliveries
- Rate of perineal tears among instrumental vaginal deliveries
- Rate of perineal tears among unassisted vaginal deliveries

Maternity care

- Percentages of women who reported to have usually or always good experiences with maternity care

Integrated care

- Fetal mortality rate per 1,000 live births and stillbirths
- Neonatal mortality rate per 1,000 live births and stillbirths

- Percentage of attended perinatal audits
- Percentage of preterm births delivered in maternity units without an on-site neonatal intensive care unit

Costs

- Total expenditure for midwifery
- Total expenditure for hospital obstetric care
- Total expenditure for maternity care

Chapter 3 Staying healthy

Quality

- Percentages of people in target groups that take part in organised population screening schemes
- Percentages of newborn infants with rare serious disorders that are detected in the neonatal blood spot programme
- Percentages of 2-year-old children not having received basic vaccinations and living in communities with below-target immunisation coverage rates (below the critical threshold for herd immunity)
- Yearly numbers of new bacterial meningitis cases
- Percentages of people in target groups of the National Influenza Prevention Programme that have received flu vaccinations
- Percentages of smokers visiting GPs who were given smoking cessation advice
- Percentages of people visiting paediatricians at child health centres who report good experiences with the available time, the explanations received and the opportunity to ask questions

Costs

- Percentage of total health expenditure devoted to prevention
- Per capita percentage of health expenditure devoted to preventive care

Chapter 4 Acute care

Accessibility

- Percentage of people living within 15 minutes' reach of the nearest ambulance station
- Percentage of people who can be taken by ambulance to the nearest emergency department within 45 minutes
- Percentage of people living more than a 30-minute car journey from the nearest out-of-hours GP centre
- Percentage of people who can be reached within 30 minutes by a mobile medical team in the daytime hours

Quality

- Percentage of emergency ambulance callouts that arrive on the scene within the 15-minute standard
- Percentage of GP practices conforming to the practice standard of 30 seconds for emergency telephone calls
- Percentage of emergency calls to out-of-hours GP centres answered within the practice standard of 30 seconds

- Percentage of patients dying within 30 days of hospital admission for an acute myocardial infarction
- Percentages of patients dying within 30 days of hospital admission for ischaemic and haemorrhagic stroke
- Percentage of patients with hip fractures receiving surgery within 24 hours of presentation
- Percentages of people reporting good experiences with ambulance services and with emergency departments in terms of communication and information provision

Costs

- Costs of acute care (ambulance services, out-of-hours GP centres, emergency departments, major trauma centres)
- Nationwide variations in consultation fees charged by out-of-hours GP centres

Chapter 5 Getting better: Non-acute curative health care

Accessibility

Financial access

- Percentage of people with health insurance who are six months or more in payment arrears
- Percentage of people who forego care due to costs
- Out-of-pocket health care expenses as percentage of disposable household income

Geographical access

- Percentages of people living more than a 10-minute car journey from nearest GP practice and nearest pharmacy
- Percentage of people living more than a 30-minute car journey from nearest hospital

Timeliness

- Percentage of GP practices not accessible by telephone within two minutes for non-urgent calls
- Percentages of secondary care units with waiting times above Tweek standards
- Numbers of people awaiting donor organs

Quality

Effectiveness

- Degrees of guideline adherence in GP prescribing behaviour on 20 indicators
- Percentage of pharmacotherapy audit groups functioning at levels 3 and 4
- Percentages of patients with breast, cervical or colorectal cancer still surviving 5 years later in relation to percentage of general population still surviving
- Numbers of hospital admissions per 100,000 population per year for conditions whose prevention and treatment is managed primarily by outpatient services
- Percentages of episodes of care in mental health services whose treatment effects were assessed in routine outcome monitoring (ROM)
- Percentage of short-term episodes of care in mental health services with positive treatment effects
- Percentages of patients perceiving problems with planning and coordination of health care

Patient safety

- Percentages of patients experiencing an adverse event during hospitalisation
- Percentages of patients experiencing medical, medication or diagnostic errors
- Hospital standardised mortality ratio (HSMR) of hospitalised patients

- Number of health care infections among 100 hospitalised patients
- Percentages of hospitals satisfying minimum volume standards for complex surgical interventions
- Percentage of patients committing suicide while in mental health treatment
- Numbers of coercive measures per 1000 psychiatric admissions

Client-centredness

- Degree to which health care users report being able to ask questions of health care providers
- Degree to which health care users report polite treatment by health care providers
- Degree to which health care users report receiving understandable explanations from health care providers
- Degree to which health care users report receiving unambiguous information from health care providers
- Degree to which health care users report being engaged in decisions about treatment
- Degree to which health care users report having sufficient consultation time with health care providers
- Percentages of patients receiving discharge information at hospital discharge
- Percentages of clients receiving short-term outpatient mental health care who were satisfied with the planning and delivery of treatment

Chapter 6 Living with long-term illness or functional limitations

Accessibility (and availability)

- Numbers of people involuntarily on waiting lists for long-term care longer than the permissible waiting times
- Percentages of clients obtaining care within waiting times prescribed by Treek standards
- Percentages of clients receiving home help services within one month of approval
- Percentages of informal carers of people with dementia who receive timely psychosocial and practical support for their own needs

Quality

- Numbers of multiple-bed rooms in residential and nursing homes
- Avoidable problems in clients in care homes and home care: pressure ulcers, malnutrition, malnutrition risks, falls, restraint use
- Percentages of professional care providers expressing satisfaction with the quality of care delivered by their organisation
- Percentages of professional care providers rating the quality of care delivered within their own unit or team as inadequate
- Percentages of professional care providers reporting that sufficient staff and qualified staff is available to ensure good-quality care
- Percentages of clients and their representatives reporting never, or only sometimes, having good experiences with the quality of the care received in the care home and home care sector, in terms of staff-client interaction, communication, engagement in decisions, professionalism, quality of meals and mealtime atmosphere (where appropriate)
- Degree to which clients in long-term mental health care report good experiences with the quality of the care

- Degree to which the quality of Dutch dementia care differs from that in other European countries
- Changes in perceived self-reliance and social participation after receipt of community support services under the Social Support Act (WMO)
- Percentages of informal carers reporting problems with their own social participation as a result of their care provision

Costs

- Trends in total Dutch long-term care insurance (AWBZ) expenditure
- Total AWBZ expenditure in 2013 by sector
- Per capita expenditure on long-term care in the Netherlands in comparison to other OECD countries
- Co-payments by clients receiving care funded by the AWBZ
- Expenditure under the Health Insurance Act (ZVW) and the AWBZ for people with multimorbidity or disability
- Mean AWBZ expenditure per insured person per region
- Mean WMO expenditure per resident per local authority
- Numbers of personal health budget holders and total expenditure on personal health budgets

Chapter 7 End-of-life care

Accessibility (and availability)

Palliative care

- Numbers of palliative care facilities
- Numbers of GPs with special interest in palliative care
- Numbers of volunteers that provide palliative care
- Number of consultation requests submitted to IKNL palliative care consultation teams
- Waiting times for terminal palliative care
- Numbers of patients with palliative sedation, according to SFK

End-of-life decisions

- Number of SCEN doctors
- Number of notifications of euthanasia and assisted suicide
- Percentage of deaths due to intensification of pain and symptom relief
- Percentage of deaths due to withholding life-sustaining treatment

Quality

Palliative care

- Number of high-care hospices with a quality accreditation

According to relatives

- Percentage of patients who died at their place of preference
- Degree to which relatives report being treated well by care providers
- Degree to which relatives report care providers having discussed the end of life with patients and relatives and aftercare with relatives
- Degree to which relatives report having the opportunity to be alone with the patients
- Degree to which relatives report being supported by care providers after the death of the patients

Palliative sedation

- Percentage of hospital protocols for palliative sedation matching the Royal Dutch Medical Association (KNMG) guideline
- Percentage of cases of continuous deep sedation with morphine alone
- Percentage of cases of continuous deep sedation in which artificial hydration or nutrition is administered
- Percentage of patients and relatives engaged in decisions about palliative sedation

End-of-life decisions

- Percentage of cases of euthanasia with morphine or benzodiazepines
- Percentage of reports of euthanasia and assisted suicide, that do not meet the criteria of due care according to the regional euthanasia review committees
- The average period between notifying the regional euthanasia review committees of euthanasia or assisted suicide and the review of the notification

Costs

Palliative care

- Expenditure for palliative care

Chapter 8 Health expenditure and efficiency

Expenditure

- Total health expenditure at macro level and by sector
- Determinants of changes in health expenditure in terms of price and volume
- Total health expenditure by OECD country according to SHA definitions
- Percentage of Dutch gross domestic product spent on health care
- Percentage of total publicly funded expenditures devoted to health care
- Publicly funded health care expenditure per employed person internationally, according to SHA definitions

Efficiency

- Health expenditure in relation to life expectancy in the Netherlands and internationally
- Health expenditure in relation to avoidable mortality in the Netherlands and internationally
- Administrative burdens in health care in the Netherlands and internationally
- Productivity in Dutch hospital care
- Average lengths of hospital stays in the Netherlands and internationally
- Efficiency in the outpatient prescription and use of pharmaceuticals
- Productivity in Dutch mental health care
- Productivity in Dutch nursing homes, residential homes and home care
- Variations between countries in terms of health care utilisation
- Substitution of care and the avoidance of unnecessarily expensive care

Chapter 9 Health care and public health

- Life expectancy and healthy life expectancy at birth
- Mortality from diseases that could be treated with the current level of knowledge and health care
- Overall mortality from cardiovascular diseases, cancer and infant mortality
- Relationship between health care expenditure and life expectancy
- Quality indicators and health outcomes in summary

Chapter 10 Equity

Differences between groups in service utilisation

- Variations in health care utilisation by less and more highly educated people
- Percentages of the population that forego periodic dental check-ups due to costs
- Ethnic variations in access to mental health care

Differences between groups in patient-centredness

- Variations in patient-centredness as perceived by less and more highly educated groups

Differences between groups in financial access to care

- Variations between income categories in out-of-pocket health care expenses as a percentage of disposable income
- Percentages of people with a chronic disease or disability that have additional expenditures for health reasons

Accessibility to vulnerable groups

- Health care access for homeless people
- Health care access for people without legal residence status

Appendix 3

CQ-index

The abbreviation CQI or CQ-index stands for Consumer Quality Index. The CQI is a standardized method for measuring, analysing and reporting patient experiences with healthcare. The method has been developed by NIVEL in cooperation with the Department of Social Medicine of the Amsterdam Medical Centre. Next to written questionnaires, online questionnaires are used and interviews are conducted. As the CQI is a standardized method and many CQI questionnaires include a number of the same questions, CQ indicators could be designed for the Dutch Health Care Performance Report (DHCPR).

The Performance Report presents two types of graphs containing CQI data: bar graphs and variance graphs. The bar graphs present just straight counts of the answers given by specific patient categories to specific questions. Answers like “I do not know” and “not applicable” are not included. The variance graphs serve a different purpose and involve statistical analyses.

The variance graphs show the extent to which patient responses differ between providers. To this purpose, multi-level linear regression analyses were performed on two levels: patients and care providers. The standard deviation from the model at the level of health care providers - together with the constant (the average of all healthcare providers) - was used to compute the range in which 95% of providers' scores are expected. This range is calculated as the constant ± 2 standard deviations. It would have been easier to use the 2.5th and 97.5th percentiles, but since these are sensitive to outliers, we did not opt for that possibility. The dependent variable was always the answer to the question, usually with four answer categories: never, sometimes, usually and always. Independent variables (e.g., characteristics of patients) were not included, because our analyses did not focus on the question whether one provider was better than another, but on the question to what extent the quality of care diverged between care providers. For example, when analysing the question whether care providers were polite to hip or knee surgery patients, it was not taken into account that some hospitals perform that type of surgery relatively more often on elderly patients with osteoarthritis and other hospitals on young polytrauma patients after a serious car accident.

Table Appendix 3.1 summarizes all reports containing CQI data used in the Performance Report. Information on matters like sampling and response rate and the questionnaire are usually included in the reports. The left column presents the patient categories and the years of publication. This presentation corresponds to the way in which patient categories are presented in the graphs in the Performance Report. The second column gives the full references of the reports (almost all reports have been published). The number of respondents

and - if applicable - the number of participating institutions for that particular dataset are presented in column three and four.

CQI data were processed by RIVM in close cooperation with NIVEL. For more information about the CQI, we refer to <http://www.nivel.nl/cq-index/> (in Dutch) and about the CQI method to <http://www.zorginstituutnederland.nl/kwaliteit/toetsingskader+en+register/de+cq-index> (in Dutch).

Table Appendix 3.1: Summary of the reports containing CQ-index data used in the Dutch Health Care Performance Report 2014.

Patient category	Reference	N	N
		patients	organisations
Ambulancezorg (2010)	H. Sixma, E. Bloemendal, I. van Wagten-donk & J. Rademakers (2010). CQ-index Ambulancezorg: Ontwikkeling en psychometrische test. Utrecht: NIVEL.	348	-
Ambulancezorg (2013)	M. Krol, H. Sixma & AM. Plass (2013). CQI Spoedeisende Ambulancezorg: Actualisatie en bepaling van het discriminerend vermogen. Utrecht: NIVEL.	1.628	16
Astma (2008)	E. Bloemendal, A.H.M. Triemstra & J.J.D.J.M. Rademakers (2008). CQ-index Astma: meetinstrumentontwikkeling. Utrecht: NIVEL.	421	-
Audiologische centra (2013)	J. Booij, M. Hendriks, L. van der Hoek, A.M.C. Plass & J. Rademakers (2013). CQ-index Audiologische centra: Meetinstrumentontwikkeling, psychometrische eigenschappen en het discriminerend vermogen. Utrecht: NIVEL.	1.695	-
Bewoners VV (2010)	J Booij, D. de Boer, L. van der Hoek & D. Delnoij (2010). Meetverantwoording cliëntgebonden indicatoren VV&T 2010. Utrecht: Centrum Klantervaring Zorg.	13.538	510
Bewoners VV (2013)	D. de Boer, M. Krol, L. van der Hoek & AM. Plass (in voorbereiding). Ontwikkeling van een versnelling van de casemixcorrectie in de VV&T. Utrecht: NIVEL.	7.487	282

Table Appendix 3.1: continuation

Patient category	Reference	N	
		patients	organisations
Borstafwijking goedaardig (2007)	O.C. Damman, M. Hendriks, A.H.M. Triemstra & H.J. Sixma (2007). CQ-index Mammacare: meetinstrumentontwikkeling. Utrecht: NIVEL.	629	-
Borstafwijking kwaadaardig (2007)	O.C. Damman, M. Hendriks, A.H.M. Triemstra & H.J. Sixma (2007). CQ-index Mammacare: meetinstrumentontwikkeling. Utrecht: NIVEL.	629	-
Borstafwijking kwaadaardig (2008)	L. Koopman & J. Rademakers (2008). CQ-index Mammacare: onderzoek naar het discriminerend vermogen. Utrecht: NIVEL.	2139	-
Cerebrovasculair accident (2011)	W. den Brok, M. Triemstra & J. Rademakers (2011). CQ-index CVA: meetinstrumentontwikkeling. Utrecht: NIVEL.	2323	-
Chronische huidaandoening (2013)	O.D. van Cranenburgh (2013). CQ-Index Chronische Huidaandoening: meetinstrumentontwikkeling. Huidpatiënten Nederland: NIVEL.	1.160	20
Chronische pijn (2013)	M. Krol, D. de Boer, AM. Plass & J. Rademakers (2013). CQ-index module Pijn: meetinstrumentontwikkeling. Utrecht: NIVEL.	886	-
Consultatiebureau (2009)	M. Reitsma-van Rooijen, O.C. Damman, H.J. Sixma, P. Spreeuwenberg & J. Rademakers (2009). CQ-index Jeugdgezondheidszorg: meetinstrumentontwikkeling. Utrecht: NIVEL.	1.985	13
Diabetes (2009)	Miletus (2009). Beleidsrapportage CQI Diabetes 2009. Zeist: Stichting Miletus.	4530	30
Farmacie (2007)	M. Vervloet, C.P. van Linschoten & L. van Dijk (2007). CQ-index Farmaceutische Zorg: kwaliteit vanuit het perspectief van patiënten. Utrecht: NIVEL.	1.295	-

Table Appendix 3.1: continuation

Patient category	Reference	N	
		patients	organisations
Farmacie (2009)	M. van Greuningen, M. Vervloet, L. van der Hoek & L. van Dijk (2009). Het discriminerend vermogen van de CQ-index Farmaceutische zorg. Utrecht: NIVEL.	2.976	68
Fysiotherapie (2009)	D. de Boer, C. Veenhof & D. Delnoij (2009). CQ-index Fysiotherapie, versie 2.3: Psychometrische eigenschappen en discriminerend vermogen. Utrecht: NIVEL.	1.644	24
Hartfalen (2010)	T. Oosterhuis, M. Triemstra & J. Rademakers (2010). CQ-index Hartfalen: meetinstrumentontwikkeling. Utrecht: NIVEL.	397	-
Heup- of knieoperatie (2009)	Stichting Miletus (2009). Beleidsrapportage CQI Heup- of Knieoperatie. Zeist: Stichting Miletus.	5.163	72
Heup- of knieoperatie (2010)	Stichting Miletus (2010). Beleidsrapportage CQI HeupKnie 2010. Zeist: Stichting Miletus.	6.246	78
Huisartsenzorg (2008)	L.E. Meuwissen & D.H. de Bakker (2008). CQ-index huisartsenzorg: meetinstrumentontwikkeling. Utrecht: NIVEL.	5.539	32
Hulp bij het huishouden (2012)	M. Krol, D. de Boer, J.C. Booij, J. Rademakers & D.M.J. Delnoij (2012). Ervaringen van cliënten met de Hulp bij het Huishouden. Utrecht: NIVEL.	27.159	355
Kankerzorg (2013)	J. C. Booij, M. Zegers, M. P. J. Evers, M. Hendriks, D. M. J. Delnoij & J. J. D. J. M. Rademakers (2013). Improving cancer patient care: development of a generic cancer Consumer Quality Index questionnaire for cancer patients. BMC Cancer.	732	-
Kortdurende ambulante GGZ (2010)	J.C. Booij, N.C. Zwijnenberg, L. Koopman, L.S. van der Hoek, D. de Boer, M. Hendriks & D. Delnoij (2010). Landelijke meting CQ-index kortdurende ambulante GGZ 2009. Utrecht: Nivel.	1.426	17

Table Appendix 3.1: continuation

Patient category	Reference	N	
		patients	organisations
Kraamzorg (2010)	I. van Wagtendonk, L. van der Hoek & T. Wiegers (2010). Ontwikkeling van een CQ-index voor de kraamzorg. Utrecht: NIVEL.	1.851	20
Palliatieve zorg, nabestaanden (2013)	N.J.H. Raijmakers, J.M. Hofstede, E.J.M. de Nijs, L. Deliens & A.L. Francke (2014). The effect and process evaluations of the national quality improvement programme for palliative care: the study protocol (voorlopige data). BMC Palliative Care.	285	-
Reumatoïde artritis (2007)	M. Zuidgeest, M. Hendriks, A.H.M. Triemstra & H.J. Sixma (2007). CQ-index Reumatoïde Artritis: meetinstrumentontwikkeling. Utrecht: NIVEL.	407	-
Reumatoïde artritis (2008)	L. Koopman & J. Rademakers (2008). CQ-index Reumatoïde Artritis: onderzoek naar het discriminerend vermogen. Utrecht: NIVEL.	2.757	20
Revalidatie (2010)	M. Zuidgeest, P.M. Reitsma-van Rooijen, H.J. Sixma, L. van der Hoek & J.J.D.J.M. Rademakers (2010). CQ-index Revalidatiecentra: meetinstrumentontwikkeling en bepaling van het discriminerend vermogen. Utrecht: NIVEL.	1.959	23
Rughernia (2009)	L. Koopman, E. Bloemendal & J. Rademakers (2009). CQ-index Rughernia: onderzoek naar het discriminerend vermogen. Utrecht: NIVEL.	1.521	20
Spataderen (2009)	L. Koopman & J. Rademakers (2009). CQ-index Spataderen: onderzoek naar het discriminerend vermogen. Utrecht: NIVEL.	2.391	20
Spierziekten revalidatiezorg (2012)	J. Nijman, T. Sibma, J. Rademakers & D. Delnoij (2012). CQ-index Spierziekten: meetinstrumentontwikkeling. Utrecht: NIVEL.	197	-

Table Appendix 3.1: continuation

Patient category	Reference	N patients	N organisations
Spierziekten ziekenhuis (2012)	J. Nijman, T. Sibma, J. Rademakers & D. Delnoij (2012). CQ-index Spierziekten: meetinstrumentontwikkeling. Utrecht: NIVEL.	386	-
Spoedeisende hulp (2013)	N. Bos & H.F. van Stel (2013). Consumer Quality Index Spoedeisende hulpafdeling (CQI SEH). Utrecht: Julius centrum, UMCU.	2.441	22
Staaroperatie (2008)	Stichting Miletus (2008). Beleidsrapportage CQI Cataract. Zeist: Stichting Miletus.	11.868	85
Staaroperatie (2010)	Stichting Miletus (2010). Beleidsrapportage CQI Cataract 2010. Zeist: Stichting Miletus.	18.739	100
Thuiszorg (2010)	J Booij, D. de Boer, L. van der Hoek & D. Delnoij (2010). Meetverantwoording cliëntgebonden indicatoren VV&T 2010. Utrecht: Centrum Klantervaring Zorg.	4.973	187
Thuiszorg (2013)	D. de Boer, M. Krol, L. van der Hoek & AM. Plass (in voorbereiding). Ontwikkeling van een versnelling van de casemixcorrectie in de VV&T. Utrecht: NIVEL.	5.101	135
Vertegenwoordigers VV (2010)	J Booij, D. de Boer, L. van der Hoek & D. Delnoij (2010). Meetverantwoording cliëntgebonden indicatoren VV&T 2010. Utrecht: Centrum Klantervaring Zorg.	9.599	338
Vertegenwoordigers VV (2013)	D. de Boer, M. Krol, L. van der Hoek & AM. Plass (in voorbereiding). Ontwikkeling van een versnelling van de casemixcorrectie in de VV&T. Utrecht: NIVEL.	6.066	225
Ziekenhuiszorg (2009)	H. Sixma, P. Spreuwenberg, M. Zuidgeest & J. Rademakers (2009). CQ-index Ziekenhuisopname: meetinstrumentontwikkeling. Utrecht: NIVEL.	22.380	78

Appendix 4

Abbreviations

AAA	abdominal aortic aneurysm
ACE inhibitor	angiotensine converting enzyme inhibitor
ACM	Autoriteit Consument & Markt
AHRQ	Agency for Healthcare Research and Quality
AMI	acute myocardial infarction
ASA	American society of anaesthesiologists
AWBZ	Algemene wet bijzondere ziektekosten - Exceptional Medical Expenses Act
AZN	Ambulancezorg Nederland – Dutch sector organisation for ambulance care
AZR	AWBZ-brede Zorgregistratie - Long-Term Care Register
BKZ	Budgettair Kader Zorg - Health Care Budgetary Framework
CAK	Centraal Administratiekantoor - Central Administration Office for Exceptional Medical Expenses
CBS	Centraal Bureau voor de Statistiek - Statistics Netherlands
CHBB	College voor Huisartsen met Bijzondere Bekwaamheden - College of general practitioners with special interests
CI	Confidence interval
CIZ	Centrum Indicatiestelling Zorg - National Care Assessment Centre
CLINT	Client Interview Instrument
CMS	Centers for Medicare and Medicaid Services
CMWF	Commonwealth Fund
COA	Centraal Orgaan opvang Asielzoekers - Central Agency for the Reception of Asylum Seekers
COPD	chronic obstructive pulmonary disease
COR	Continu Onderzoek Rookgewoonten - Continuous Survey of Smoking Habits
CPB	Centraal Planbureau - Netherlands Bureau for Economic Policy Analysis
CPZ	College Perinatale Zorg - College for Perinatal Care
CQ-index	Consumer Quality Index
CVRM	cardiovascular risk management
CVZ	College voor zorgverzekeringen - Health Care Insurance Board
DBC	diagnose-behandelcombinatie - diagnosis-treatment combination
DDD	defined daily dose
DHCPR	Dutch Health Care Performance Report
DHD	Dutch Hospital Data
DICA	Dutch Institute for Clinical Auditing
DIS	DBC-informatiesysteem - DBC Information System

DOT	DBC's Op weg naar Transparantie - DBCs on their way to transparency
DTwP/IVP	diphtheria, tetanus, whooping cough and polio
ECDC	European Centre for Disease Prevention and Control
ED	emergency department
EMGO	EMGO instituut voor onderzoek naar gezondheid en zorg – EMGO+ Institute for Health and Care Research
EU	European Union
EUR	Erasmus Universiteit Rotterdam - Erasmus University Rotterdam
EUR/iMTA	EUR/Institute for Medical Technology Assessment
FTO	Farmacotherapeutisch Overleg - pharmacotherapy audit
GCA	Gezondheidscentrum Asielzoekers - Asylum Seekers Health Centre
GDP	gross domestic product
GGD	Gemeentelijke/Gewestelijke Gezondheidsdienst - community health services
GHOR	Geneeskundige Hulpverleningsorganisatie in de Regio - Regional Medical Emergency Preparedness and Planning Office
GP	general practitioner
HA	Health Accounts
HDS	huisartsendienstenstructuur - GP services structure
HFA	Health for All
HIV	human immunodeficiency virus
HPV	humaan papilloma virus
HSCA	Zorgrekeningen (CBS) - Dutch Health and Social Care Accounts
HSMR	Hospital Standardised Mortality Rate
ICT	information and communication technology
IGZ	Inspectie voor de Gezondheidszorg - Health Care Inspectorate
IKNL	Integraal Kankercentrum Nederland - Netherlands Integrated Cancer Centre
IOM	Institute of Medicine
IVF	in vitro fertilisation
IVM	Nederlands instituut voor verantwoord medicijngebruik - Dutch Institute for Rational Use of Medicine
KI	Kwaliteitsinstituut - Institute for Health Care Quality
KNMG	Koninklijke Nederlandsche Maatschappij tot bevordering der Geneeskunst - Royal Dutch Medical Association
KWZ	Kwaliteitswet zorginstellingen - Care Institutions Quality Act
LEBA	Landelijke Evaluatie Bevolkingsonderzoek Baarmoederhalskanker – National Evaluation of Cervical Cancer Screening
LETB	Landelijk Evaluatie Team voor bevolkingsonderzoek naar Borstkanker – National Evaluation Team for Breast Cancer Screening
LHV	Landelijke Huisartsenvereniging - National Association of General Practitioners
LINH	Landelijk Informatie Netwerk Huisartsenzorg (NIVEL) - National Information Network of General Practitioners
LMR	Landelijke Medische Registratie - National Medical Register

LPZ	Landelijke Prevalentiemeting Zorgproblemen - Dutch National Prevalence Survey of Health Care Problems
M&I	Modernisering & Innovatie - Modernisation & Innovation
MMR	measles, mumps and rubella
MMT	Mobiel Medisch Team - Mobile Medical Team
MVH	Monitor Voorschrijfgedrag Huisartsen - GP Prescribing Behaviour Monitoring Scheme
NFU	Nederlandse Federatie van Universitair Medische Centra - Netherlands Federation of University Medical Centres
NHG	Nederlands Huisartsen Genootschap - Dutch College of General Practitioners
NICE	National Institute for Clinical Excellence
NICU	neonatal intensive care unit
NIVEL	NIVEL Nederlands instituut voor onderzoek van de gezondheidszorg – NIVEL Netherlands Institute for Health Services Research
NPCF	Nederlandse Patiënten/Consumenten Federatie - Dutch Federation of Patients and Consumer Organisations
NPP	Nationaal Preventie Programma - National Prevention Programme
NSAID	non-steroidal anti-inflammatory drug
NTSV	nulliparous term singleton vertex
NVOG	Nederlandse Vereniging voor Obstetrie en Gynaecologie - Dutch Society of Obstetrics & Gynaecology
NVvH	Nederlandse Vereniging voor Heelkunde - Association of Surgeons of the Netherlands
NVZ	Nederlandse Vereniging van Ziekenhuizen - Dutch Hospitals Association
NZa	Nederlandse Zorgautoriteit - Dutch Healthcare Authority
OCR	oesophaguscardia resection
OECD	Organisation for Economic Co-operation and Development
PAN	Stichting Perinatale Audit Nederland - Foundation Perinatal Audit in The Netherlands
PHB	personal health budget
POLS	Permanent Onderzoek Leefsituatie (CBS) - Integrated System of Social Surveys
PPI	proton pump inhibitor
PPP	purchasing power parities
PREZIES	PREventie ZIEkenhuisinfecties door Surveillance - Dutch surveillance network for nosocomial infections
PRN	Stichting Perinatale Registratie Nederland - Netherlands Perinatal Registry
PROM	Patient Reported Outcome Measure
RAS inhibitor	renin-angiotensin system inhibitor
RCP	Regionale Coördinatie Programma - Regional Coordination Programme
RIBW	Regionale Instellingen voor Beschermd Wonen - Dutch regional organisations for sheltered living

RIVM	Rijksinstituut voor Volksgezondheid en Milieu - National Institute of Public Health and the Environment
ROAZ	Regionaal Overleg Acute Zorg - Regional Councils on Acute Care
ROM	Routine Outcome Monitoring
RVP	Rijksvaccinatieprogramma - National Vaccination Programme
SBG	Stichting Benchmark GGZ - Mental Health Care Benchmark Foundation
SCEN	Steun en Consultatie bij Euthanasie in Nederland - Euthanasia in the Netherlands Support and Assessment
SCP	Sociaal Cultureel Planbureau - Netherlands Institute for Social Research
SFK	Stichting Farmaceutische Kengetallen - Foundation for Pharmaceutical Statistics
SHA	System of Health Accounts (OECD)
SONCOS	Stichting Oncologische Samenwerking - Foundation for Cooperation in Oncology
SSR inhibitor	selective serotonin reuptake inhibitor
SWAB	Stichting Werkgroep Antibiotica Beleid - Working party on antibiotic policy
TWAZ	Tijdelijke wet ambulancezorg - Temporary Ambulance Services Act
UMC	Universitair Medisch Centrum - University Medical Centre
VMS	veiligheidsmanagementsysteem
VPTZ	Vrijwilligers Palliatieve Terminale Zorg Nederland - Volunteers for Palliative Care in the Netherlands
VTV	Volksgezondheid Toekomst Verkenning - Public Health Forecasts
VWS	Ministerie van Volksgezondheid, Welzijn en Sport - Ministry of Health, Welfare and Sport
WGP	Wet Geneesmiddelenprijzen - Medicine Prices Act
WHA	World Health Assembly
WHO	World Health Organization
WIP	Werkgroep Infectie Preventie - Working party on infection prevention
WMG	Wet marktordening gezondheidszorg - Health Care Market Regulation Act
WMO	Wet maatschappelijke ondersteuning - Social Support Act
WOB	Wet openbaarheid van bestuur - Government Information Public Access Act
WTCG	Wet tegemoetkoming chronisch zieken en gehandicapten - Chronically Ill and Disabled Persons Allowances Act
WTL	Wet toetsing levensbeëindiging op verzoek en hulp bij zelfdoding - Termination of Life on Request and Assisted Suicide (Review Procedures) Act
WTZi	Wet toelating zorginstellingen - Health Care Institutions Act
WZT	Wet op de zorgtoeslag - Health Care Allowance Act
ZI	Zorginstituut Nederland - National Health Care Institute
ZN	Zorgverzekeraars Nederland - Association of Dutch Health Insurers
ZonMw	ZonMw - Netherlands Organisation for Health Research and Development
ZVW	Zorgverzekeringswet - Health Insurance Act



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Access to Dutch health care is overall good. Essential health services are within easy reach and most waiting times have been reduced. Financial access, however, seems to have decreased for some groups.

For many quality indicators the Netherlands scores above average compared to other Western countries. For many types of care, though, wide variations exist between care providers or facilities.

Health care expenditure shows a striking trend after 2011. Expenditure increased on average by 5.5 percent a year between 2000 and 2013, but this increase slackened in the last three years. Within Europe, the Netherlands is still one of the countries with the highest percentage of gross domestic product spent on health care.

The Performance Report describes the accessibility, quality and costs of the Dutch health care system using 140 indicators.

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