

Learning from promising primary care practice models  
for the USA



# Country Case Study: The Netherlands

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# Executive summary

This case study aims to identify features of primary care practice models within the Netherlands that show positive health outcomes in terms of access, equity, quality, and efficiency and that are associated with effective use of resources to achieve improved health outcomes, especially for those with highest health needs. The Academic Medical Centre of the University of Amsterdam, Department of Social Medicine, prepared this case study for the Training and Research Support Centre with support from Robert Wood Johnson Foundation through Charities Aids Foundation America.

The case study was based on document review, which included published and grey literature, and key informant interviews. The key informant interviews included a mix of policy, management and professional level/primary care provider informants and representatives of civil society organisations for community views. The findings from the literature review were triangulated with the evidence from key informant interviews and external peer review. In the Netherlands, primary care is defined as directly accessible care, generalist care, provided in an ambulatory setting. The case study used the conceptual framework developed for the project to explore the context, service models and processes, outcomes and change management in primary care (PC) in the Netherlands.

The economic crisis, advances in technology and increased population education levels have contributed to a transition in the Netherlands from welfare to participatory state [*participatiestaat*]. However, this assumes a level of social inclusion and literacy that may not always be present. People in lower socio-economic groups (often living in deprived urban areas and including ethnic minorities) have higher morbidity and mortality rates than those in higher socio-economic groups. In large part this arises from social determinants where measures beyond the health sector are key for improved health, including replacing the housing stock, improving green spaces and community environments and tackling safety issues, nuisance and conflicts. Such policies and prevention interventions in the health sector have been associated with improvements in life expectancy, particularly those interventions relating to:

smoking, physical activity, alcohol consumption, healthful eating habits, air pollution, traffic safety, and stress. People living in a relatively green outdoor environment have better general and mental health. It implies links between health services and such proven interventions, attention to inequalities in access to healthcare and training activities that build competencies, including cultural competencies in health personnel, currently required of all medical schools.

The Dutch healthcare sector is administered by the government and the self-governing sector, including associations of providers, insurers, trade unions and employers. The new Health Insurance Act in 2006 gave Dutch health insurance companies greater responsibility to optimise healthcare delivery. The Social Support Act (2007) decentralised responsibilities for the organisation of healthcare from national to local governments. The reforms led to a regulated market competition in primary care, hospital care and parts of mental healthcare. The government's task is to oversee, regulate, define the rules of the healthcare system and enforce professional self-regulation within certain limits, which are set in collaboration with civil society actors. Many insurance companies funded pilot studies to take on these responsibilities, particularly to address health services for people with high, chronic and complex health needs and thus costs.

All Dutch citizens are obliged to enroll in a private health insurance plan for basic care coverage for which they pay a flat premium (with income dependent contributions) for a pre-defined health service package. All people aged 18 years or older pay a deductible of €360 (\$490) when they use healthcare services, with the exception of general practice services and midwifery care. Low-income and chronically ill people are compensated for their premiums. People can opt to take on complementary health insurance to cover deductibles.

Health insurers should contract sufficient PC providers in their region to guarantee access to their insured clients. They negotiate contracts based on volume, tariffs, and quality of care. General practitioners are obliged to use a list system, which makes them responsible for a geographically

defined population group. Large-scale PC cooperatives provide after-hours care. It has been shown that increased integration of hospital emergency departments and PC cooperatives results in increases in contacts with PC, reduces emergency care use and self-referral, ambulance calls and hospital admissions and raises patient satisfaction.

Various measures are used to stimulate the quality of PC, including: continuous medical education; peer review audits for certification; a client complaints systems; patient councils; and regular measurement of patient experiences. Services are also obliged by law to provide care of a good quality, in an effective, efficient and patient-oriented way, be responsive to the actual need of the patient and comply with various guidelines.

The Netherlands has some innovations in PC organisation and process that are reported in the case study. These include a preferred pharmaceuticals policy to stimulate lowest cost medicine prescribing; transfer of services or elements of services from secondary to primary care practitioners; shifts in the location of specialist care from outpatient clinics to PC without changing the people who deliver the service; and cooperation between primary and secondary-care clinicians in the management of individual patients. The referral behaviour of PC practitioners and integrated care models are encouraged through bundled payments for all aspects of care of selected chronic conditions. New legal entities called 'care groups' have been assigned as principal contracting agencies to whom insurers pay a single negotiable fee covering a full range of chronic disease-care services for a fixed period. First results of the introduction of bundled payments show improvements in care coordination and efficiency gains.

Patient participation occurs both individually and socially, with guidelines to support it. Most health services are legally obliged to have a client council in place. Municipalities often involve local citizens through public hearings or theme meetings in the development of policies related to issues such as spatial planning and safety. Social participation in public policies also happens via client organisations and client bodies, community commissions and self-organisations. The government has formulated an Action Plan [*Actieplan laaggeletterdheid 2012-2015*] to tackle low literacy levels, after an earlier plan successfully increased societal attention to literacy.

Healthcare changes are often managed in self-governing arrangements. When major national health policy changes are being developed, the government consults key stakeholders. There is, however, room for bottom-up initiatives. Many changes in healthcare are first initiated and implemented, sometimes on an ad hoc basis by health professionals themselves, with the financial and regulatory framework adapted at national level after some time. The Ministry of Health, Welfare and Sports has moved away from a high level of regulation of health care financing and markets to allow increasingly more room for PC providers to innovate their care organisation. The interests of key stakeholders driving change in the Dutch PC system are thus even more pertinent, including: government interests to set and ensure minimum standards and access to responsible care; health insurer concerns about reputation and cost savings; health professionals' concerns for their professionalism and delivery of quality care; and patient and public concerns for individual health and social needs, health beliefs and freedom of choice.

# 1. Background

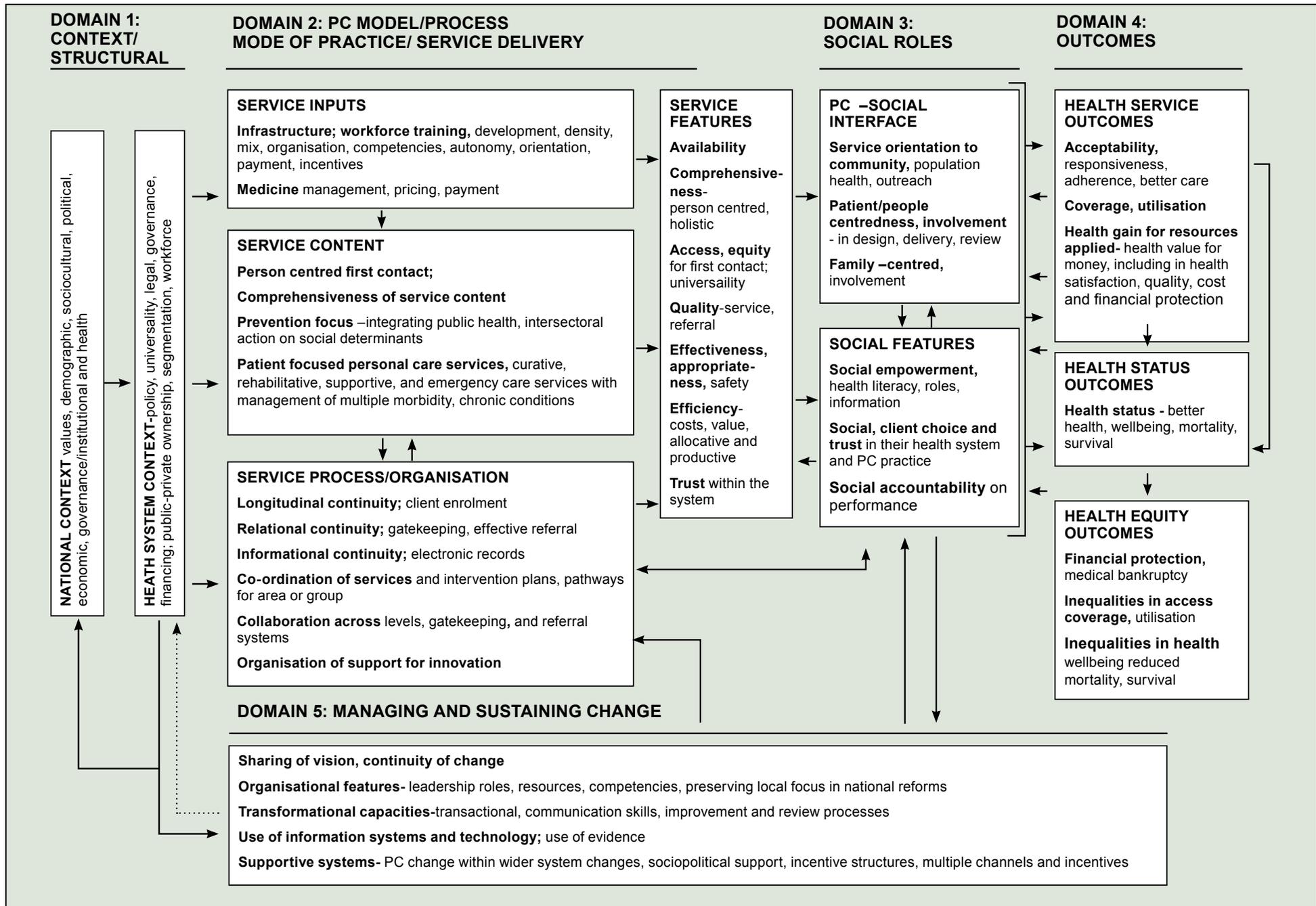
This case study aims to identify features of primary care practice models within the Netherlands that are associated with positive health outcomes in terms of access, equity, quality, and with efficient and effective use of resources to achieve improved health outcomes, especially for those with highest health need. The Academic Medical Centre of the University of Amsterdam, Department of Social Medicine, has prepared this case study for (and with technical review and edit from) Training and Research Support Centre. The Robert Wood Johnson Foundation through Charities Aids Foundation America supports this work.

The case study presents evidence on the general and health system contexts, primary care (PC) systems and service delivery models, social roles and interactions and other factors that support improved health and healthcare outcomes. It gives particular attention to measures and models that have relevance to the USA and examines how policies and practices were introduced and sustained. The conceptual framework is shown in *Figure 1* as developed by Loewenson and Simpson (2014).

The case study is structured based on the main domains in *Figure 1*, and the priorities identified by Loewenson et al. (2014):

- Section 1 focuses on the context for the PC system.
- Section 2 covers primary care services delivery, including service inputs, content, organisation, process, and innovations.
- Section 3 covers the social roles in the primary care system. It provides a hypothetical case of a patient's experience of the system from the lens of a homeless person.
- Section 4 focuses on the health outcomes from PC services and practices, particularly those healthcare, health status and cost outcomes associated with specific PC as identified from monitoring or evaluations.
- Section 5 explores the capacities, resources and roles for leadership and management of change, the opportunities for small-scale testing and spread of practices and the monitoring and support systems for managing and sustaining change.
- Six appendices provide further detail on key areas of system design or practice.

## Conceptual framework for analysis of the role of PC



Source: Loewenson and Simpson , 2014.

## 2. Methods

The case study was based on document reviews and key informant interviews. The scope is national and system wide and covers relevant macro- (national), meso- (institutional) and micro-(local) level information, at system level. It makes reference to relevant local unique examples. Within the conceptual framework in *Figure 1*, focus was given to areas of relevance, challenges and opportunities facing PC in the USA (Loewenson et al. 2014).

The document review included both published and grey literature, including: key government/policy documents, statements and reviews; relevant operational documents from health authorities and systems; and reports and evaluations of specific reforms, innovations or practices. Documents were retrieved via PubMed and Google Scholar using as search terms all key terms mentioned in *Figure 1* in combination with ‘primary care’ and ‘the Netherlands’ in both English and Dutch. Primarily documents produced from 2000 onwards are included. In total 171 documents were included in the case study.

The document review was not a systematic review of literature, which may have limited the number and type of studies that have been included. Further, it is not exhaustive of all areas of PC practice. However, the findings were triangulated with the evidence from key informant interviews and external peer reviews.

The key informant interviews included a mix of policy, management and professional level/primary care provider informants and representatives of civil society organisations for community views. Key informants were purposively selected for being well recognised in key areas of PC systems, for their understanding of current practices, the on-the-ground outcomes of practices and the underlying strategy and mechanisms for achieving results, with review feedback from TARSC. Ten key informants interviews of one hour each were implemented covering information relevant to the case study purpose. The interviewer summarised and documented the information resulting from the interviews. This, combined with the findings from the literature, was synthesised in the report, which was validated by the interviewed key informants.

The research team respected ethical principles in the Charter of Fundamental Rights of the European Union and the Dutch Data Protection Act (2001). According to these instruments, as no individual patient data was collected it was not necessary for this study to apply for medical ethics approval in the Netherlands. Consent was obtained from interviewees before commencing the interview using an approved consent form; all interviews are confidential and no identifying characteristics of interviewees are reported.

# 3. The context for the primary care system

## 3.1 General context

**T**he national socio-political culture and values The Netherlands is a parliamentary democratic constitutional monarchy, with a parliamentary system of government. A large number of political parties are part of the government. Traditionally the Labour Party (PvdA), the Christian Democrats (CDA) and the centre-right movement (VVD) have been the dominant political parties. Although Cabinet is intended to serve four years, in recent decades this has fallen to two years due to political struggles. In 2014 the dominant coalition in Cabinet are the Liberals (VVD), and the Labour Party (PvdA).

Since World War II, society has become more individualised, attributed in part to the rising level of education in the population (de Hart 1995). An increasing share of the population now has tertiary education, estimated at 31% of the population in 2011 (Hertog et al. 2013). Dutch society is currently becoming less hierarchical, with less obvious division of roles between government, citizens, the market and societal organisations, and increasing networking across these actors, including in the healthcare market (Huygen et al. 2012). These social features, the economic crisis and advances in technology are argued to have accelerated a transition from the Netherlands being a welfare state (where the government takes a strong role in providing welfare) to becoming a participatory state [*participatiestaat*] (where citizens need to take care of each other) (Kooiker and Hoeymans 2014). The latter demands a certain level of

social cohesion. Yet this is also noted to have fallen with reduced participation in church, volunteer work, political parties or craft societies, complicating efforts to implement a participatory state (De Botton 2011).

Dutch citizens support the principle that individuals take more responsibility for their health and actions in matters such as incomes, child rearing and day care and individual healthy lifestyles (Dekker and den Ridder 2011; Veldheer et al. 2012; Van Noije et al. 2014). People are becoming more involved in decision making on treatment or care. Higher education levels mean that the average Dutch patient is better informed, better able to distinguish between available options, and often brings high expectations when interacting with professionals, whether medical doctors, teachers or policemen. This has changed the authority of professionals and the way they need to communicate with citizens or patients (Kooiker and Hoeymans 2014). *Table 1* shows dimensions of citizen involvement in healthcare policy within local government areas.

There are exceptions to this pattern, given that 10% of the working population has a low literacy level (see *Section 3 Social Roles*). People reportedly do not think that increased individual and social responsibility should result in increased costs for individuals. Government is seen to have a leading role in collective preventive care and public health programmes that also protect vulnerable groups, such as safe sanitation, food safety, healthy work conditions, education, care of older people and community

**Table 1: Roles of citizens and patients in healthcare and health, 2014**

	Citizens	Patients
<b>Individual</b>	Lifestyle and health Informal carer Volunteer	Self-management and eHealth Choice in healthcare Health literacy
<b>Collective</b>	Citizen participation in healthcare policy development	Patient participation in healthcare treatment Contributing to guideline development Patient association

Source: Kooiker and Hoeymans, 2014:12 (reproduced under creative commons open license)  
[http://www.rivm.nl/dsresource?objectid=rivmp:243712&dtype=organddisposition=inline&dns\\_nc=1](http://www.rivm.nl/dsresource?objectid=rivmp:243712&dtype=organddisposition=inline&dns_nc=1)

facilities (Bijl et al. 2013). Government intervention through media, education in schools and removing cost barriers for teenagers to access birth control pills led to the Netherlands having amongst the lowest rate of teenage pregnancy of all European countries in 2012 (CBS 2014).

It is likely that prevention, medication and treatment plans may be even further personalised, based on a person's DNA (Van den Bernd 2012). The consequences of this for social inequality, including in access to care, are unknown.

There is concern that these technological developments may restrict personal freedoms and privacy, if for example they are used for prenatal testing or for job interviews, with a concern that societal pressure and regulations protect against these harms (Stol and Nelis 2010).

### The socio-demographic profile

Table 2 summarises the socio-demographic features of the Dutch population.

**Table 2: Socio-demographic features of the Dutch population**

Feature (year)	
Population size (2012)	16,754,962 <sup>1</sup>
Life expectancy at birth, men (2012)	79.1 <sup>2</sup>
Life expectancy at birth, women (2012)	82.8 <sup>2</sup>
% population aged 0-14 years (2012)	17 <sup>2</sup>
% population aged 65 years or older (2011)	15.6 <sup>3</sup>
% population aged 80 years or older (2011)	4.2 <sup>3</sup>
Number of live births per 1000 population (2012)	10.5 <sup>1</sup>
Ranking on Human Development Index (2010)	7 <sup>th</sup> 4
% of the population aged 25+ that obtained secondary education as highest degree (2010)	56.9 <sup>1</sup>
% of the population aged 25+ obtained postsecondary education (2010)	31.9 <sup>1</sup>

Sources: <sup>1</sup>WHO 2014; <sup>2</sup>RIVM 2014b; <sup>3</sup>CBS 2014; <sup>4</sup>UNDP 2014.

The Netherlands is the most densely populated country of Europe. Dutch society is rapidly becoming more multicultural, with the percentage of ethnic minorities rising from 9% in 1972 to 21% in 2012 (CBS 2014). Dutch society is also reported to be becoming more fragmented as people socialise more with peers, and shun groups that differ in lifestyle, opinions or beliefs (BZK Ministerie 2013). Some sectors, such as housing, are making explicit efforts to increase social cohesion, such as by mixing low-, middle- and high-income housing and including older people in the mix. This is not yet an explicit policy in the health sector.

### The national economic context and access to care

The Dutch welfare state was shaped during a period of high economic growth from the 1940s to the 1960s (Kooiker and Hoeymans 2014). Government provided various social protections, including against unemployment due to disability (Law for Disability Insurance [AOW] 1966) or high medical expenses due to chronic illness or a disability by establishing a system in which all citizens pay a monthly premium for exceptional medical expenses, irrespective of their health status (National Act on Exceptional Medical Expenses 1968; Schuyt 2013).

After 2008, the economic crisis was associated with rising unemployment and poverty. By 2012 60% of the population viewed employment, income and the economy as the biggest

current problems in the Netherlands, a level only seen during the 1982 economic crisis (Dekker and den Ridder 2013). At the same time, government has increasingly decentralised its responsibilities in healthcare to municipalities and individual citizens. There is general satisfaction with the Dutch healthcare system, but wide social concern about its future, about the cost and affordability of care, and about budget cuts reducing the quality and accessibility of the healthcare system, particularly for low income, older people, and people with chronic illness or disability (European Commission 2012; Dekker et al. 2012). While there is as yet no formal evidence on this, as noted in the next paragraph, there is a persistent presence of social inequality in health that could give grounds to these fears.

### Inequality in health and its determinants

Inequalities in health in the Netherlands have not decreased since the beginning of the 1990s. Important social determinants of these health inequalities include unemployment and low income, low education, unsafe/unhealthy housing, limited physical neighbourhood environment, little social cohesion and safety problems in neighbourhoods (Marmot et al. 2012). People in lower socio-economic groups (often living in deprived urban areas and including ethnic minorities) have higher morbidity and mortality rates than others (Hoeymans et al. 2010; Schaap et al. 2008; Stronks et al. 2001). In a review of the evidence, the

Dutch National Institute for Public Health and Environment identified that such health inequalities are more effectively tackled through integrated policies aimed at: people's socio-economic position, living and working conditions and lifestyle, employment of people with health problems, as well as policies that improve access to and effectiveness of healthcare for those at greater socio-economic disadvantage (Schrijvers and Storm 2009). *Appendix A2* provides more

information about the recommended policies for reducing health inequalities. The findings point to the need for action by the health sector but also by related sectors such as education, social affairs and environmental planning to address inequalities in health (Schrijvers and Storm 2009). The District Approach outlined in *Box 1* is one example of this.

### Box 1: The District Approach to improving population health

From 2007 to 2012, the Dutch government provided up to €5 billion (\$6.8 billion) for complex area-based interventions in 40 of the most deprived urban districts in the Netherlands (covering 18 large cities) to tackle six key determinants of health: employment, education, housing and the neighbourhood environment, social cohesion and safety. This was known as the District Approach. The 40 districts were selected based on the physical and social problems reported by residents and of evidence on physical and socio-economic deprivation. In most of these districts, the activities covered all six areas of determinants. Those estimated to have had the highest benefit to population health were those that were implemented across the community, including replacing the housing stock, improving green spaces and tackling safety, nuisance and conflict within neighbourhoods. Researchers evaluating the interventions suggested from the evidence that longer-term health benefits would be achieved when interventions are area wide, improve residents' socio-economic circumstances and improve education and income.

Source: Droomers et al. 2014. See *Appendix A1* for further detail.

The evidence from the District Approach draws attention to the need for health services and interventions to fit the cultural profile of the various social groups and minorities who may have higher health needs (Bhopal 2009; Nierkens et al. 2013). It also points to the need for health professionals to develop cultural competencies, including attitudes (or awareness), knowledge and skills needed to deliver high quality care to an (ethnically) diverse population (Seeleman et al. 2009).

To make sure that all health professionals obtain these skills, a framework has been developed and implemented that includes a comprehensive set of competencies that all medical schools should guarantee to provide training in, so that all graduated basic health professionals can practice these skills. The competencies that relate to cultural competencies are that every graduated basic health professional should be able to:

- signal when a translator should be involved in the consultation with a patient;
- communicate adequately with various patient groups such as children, men, women, and patients with different ethnic origins;
- take into consideration ethnic backgrounds and cultural differences that may be important in the delivery of healthcare to individuals;

- gather information and knowledge on contextual factors such as family, socio-economic aspects, ethnicity, culture and philosophies that may influence the care process and methods to treat individuals; and
- be unprejudiced (Van Herwaarden et al. 2009).

Local authorities play an important role in measures that tackle inequalities in health and that improve the uptake of preventive services in lower socio-economic groups (See *Appendix A3* on the role of municipal public health policies). However, only one-third of municipal public health policies were found to prioritise the reduction of health disparities in 2013 and, of these, only one-fifth was playing a coordinating role (GGD Nederland 2013). Further investments in this area have declined (Van den Berg et al. 2014).

The Health Insurance Act in 2006 increased the responsibility for Dutch health insurers to optimise healthcare services delivery; while the Social Support Act 2007 further decentralises responsibilities for organisation of healthcare from national to local governments. Given the increasing number of high-cost, high-burden population groups in deprived neighbourhoods, many insurance companies have funded pilot studies investigating ways to fine-tune healthcare services to the needs of high-cost patients. For example, in 2008 Agis Health Insurance (a major Dutch health insurance company) signed a memorandum of understanding termed 'Utrecht Healthy', with Utrecht municipality (the third largest city in the Netherlands)

to implement a pilot study to improve health and reduce healthcare costs for a population living in a deprived district of the municipality. The collaboration from 2006 onwards sought to integrate fragmented primary care, public health, social care and secondary care services and emphasise prevention and self-management (Van den Broeke et al. 2014). Professionals were trained in new competencies to coach clients on prevention and to implement population health measures. Preliminary results of this pilot found fewer referrals to clinical treatment in hospitals, fewer regular GP consultations, but longer GP consultations and more use of out-of-hours PC services, compared to the pre-pilot study phase and compared to control areas where care was not integrated (Kringos et al. 2014b in press). The impact on costs and quality of care still needs to be evaluated.

### **The priority given to the social sectors**

The 2007 Social Support Act [WMO, Wet Maatschappelijke Ondersteuning] prioritises the social sector. The WMO Act aims to foster the life skills and social participation of citizens, to increase social cohesiveness and to stimulate innovation and responsiveness of care, particularly given that municipalities are closer to the clients. People are expected to first use their personal social support network (family, friends) when they need social support, and only when that is not sufficient to turn to their municipality (Kroneman et al. 2012). To effect this, when an individual asks the municipality for support services, a municipal officer visits the person (for a so-called 'kitchen table conversation') to discuss with them possibilities for solving their problems within their resources and in their social environment. For example, the individual is asked if friends, family, neighbours can provide support (such as for shopping). If this is not possible, the person then obtains support from the municipality. There is no documented evidence on the impact of this approach on health and healthcare uptake, especially for groups with high health needs. In Dutch society there is a potential contradiction between the current expectation that citizens increasingly draw on their social networks for support and societal trends of weakening social linkages.

The WMO stipulates that local authorities must fund and provide equipment or services to help with mobility, transportation or social contacts, amongst other areas. Local authorities are expected (in policy, not law) to meet targets in nine areas, including: promoting social cohesion and quality of life; promoting social and life skills and participation for people with impairments; and supporting informal carers and volunteers. Local authorities are free to decide how they meet these targets, and are accountable to the Municipal Committee for their performance (The Netherlands Institute for Social Research 2014). There is no system of compensation in place if municipalities have

not provided adequately for some people or if they have incurred debt as a result.

When people apply for social support their situation is first evaluated, and when they are eligible (there are no nationally set eligibility criteria) they have freedom to choose whether to obtain a personal budget (a fixed amount) to buy their own support (professional services) or to receive the support in kind. Municipalities are also responsible for organising sufficient and adequate transportation for people who cannot use public transport. The national government sets the law, monitors its implementation and provides each municipality with a budget. The funds are not earmarked, giving municipalities administrative and political freedom to set priorities on provision of social support services and to set co-payments. This can lead to inequalities in access to services between municipalities. These are seen as acceptable if national targets are achieved (no information is available on the consequences when targets are not met (Kroneman et al. 2012). Almost all municipalities have client councils in place to advise on policy development and service improvement. The councils include people with physical disabilities and older people, leaving others, such as less educated people and migrants, underrepresented. Patient organisations have positively viewed the functioning of the client councils (De Klerk et al. 2010), but their impact and the overall social impact of the WMO is not documented.

### **Distribution of disease and health care access and coverage**

Dutch people value 'being healthy' as the most important purpose in life (Huber et al. 2013). Health is seen as an all-inclusive concept, covering physical health, being able to perform daily activities, participate in societal interactions, and pursue personal goals. People generally perceive their health as good or very good (Galenkamp and Van der Noort 2013).

Some important changes have taken place in Dutch mortality and morbidity patterns. Life expectancy increased between 2002 and 2012, attributed to improved healthcare services for older people and increased healthcare spending (Mackenbach et al. 2012). Some key morbidity patterns and trends include

- A rise in suicides since the 2008 economic crisis, especially among men and adolescents;
- A decline in mortality from cardiovascular conditions to 2012 (23/1000), increasing thereafter;
- Increased mortality due to cancers (26/10 000 in 2012);
- Reduced mortality from traffic accidents;
- Reduced perinatal mortality and a rise in the average age of mothers from 25.6 years in 1980 to 29.4 years in 2010 (CBS 2013).

The most common causes for avoidable mortality for women and men are (from high to low): heart failure, (female) breast cancer, colorectal neoplasm, perinatal conditions, renal failure, lymphocytic leukaemia, Hodgkin, cerebrovascular, cervix neoplasm, ischemic heart condition, peptic ulcer, HIV hypertension, and rheumatic heart (Van den Berg et al. 2014, in press). *Table 3* shows the conditions with the highest disease burden. The causes for visiting a general

practitioner indicate an increase in the level of chronic conditions and multimorbidity in recent years at all ages (Van Oostrom et al. 2012; Tacken et al. 2011).

Homeless people have poorer health than those with secure housing, with a 25-year shorter life expectancy; harmful use of alcohol and substances and mental illness are common causes of mortality (Van Laere 2009).

**Table 3: Top 10 diseases with highest burden in 2011**

Top 10 diseases with highest burden in 2011 (from high to low)	Years Lost due to Disability (YLD x 1000 DALYs)
Anxiety disorders	180.2
Coronary heart disease	174.1
Diabetes	165.2
Mood disorders (e.g. depression)	164
Neck and back complaints	153.9
Arthrosis	122.4
COPD	113.6
Stroke	113.1
Private accidents	102.6
Lung cancer	5.8

Source: RIVM 2014b

### 3.2 The health system context

*Table 4* overleaf summarises some of the features of the Dutch (primary) healthcare system, in comparison with the USA. These are further elaborated in this section.

#### Policy, legal and governance features

*Figure 2* presents the organisation of the Dutch healthcare system. The healthcare sector is governed by the government and by associations of providers, insurers, trade unions and employers (Helderman et al. 2005). Since the 2006 Health Insurance Act, primary care, hospital care and parts of mental healthcare are provided in a system of regulated market competition (See *Appendix A4* for an overview of the major changes). The main task of the Ministry of Health, Welfare and Sports is to oversee, regulate, define the rules of the healthcare system and enforce professional self-regulation within certain limits, which are set in collaboration with civil society actors. This is an accepted system by the population, because the behaviour of civil society actors is closely monitored by governmental organisations, such as the Dutch Healthcare Authority (for example to avoid monopoly behaviour), and the Healthcare Insurance Board (for example to monitor tariff setting).

A number of advisory bodies support government priority setting, these include: the Health Council (*Gezondheidsraad*, to advise on the scientific state of the art); the Council for Public Health and Healthcare (*Raad voor de Volksgezondheid en Zorg*, RVZ, to provide strategic advice on all areas of healthcare, social care and public health); the Healthcare Inspectorate (IGZ, to promote safe, effective and patient-centred care by setting and enforcing minimum standards); the Dutch Healthcare Authority (NZa, to monitor competition and enhance transparency for purchasers and service users); the Healthcare Insurance Board (CVZ, to implement insurance legislations and develop conditions for the insurance system); and the Institute for Healthcare Quality, to steer, coordinate and guide stakeholders involved in improving quality of care (Schweppenstedde et al. 2014).

**Table 4: Key features of (primary) healthcare in the Netherlands compared to the USA**

	Netherlands	USA
Healthcare spending		
Total health expenditure as % of GDP (year) (2011) <sup>a</sup>	11.9	17.7
Healthcare resources		
% general practitioners of total physicians (year) <sup>a</sup>	24.6 (2010)	12.1 (2011)
% practicing nurses per 1000 population (year) <sup>a</sup>	8.4 (2008)	11,1 <sup>b</sup> (2011)
Hospital beds per 1000 population <sup>a</sup>	4.7 (2009)	3.1 (2010)
Primary care role - Patients required to register <sup>c</sup>	Yes	No
Affordability of care- Rate medical tests, treatment or follow-up skipped due to costs, per 100 interviewees <sup>a</sup>	2.8 (2010)	n.a.
Quality of care		
Asthma hospital admission rates per 100,000 population aged 15 and over (2010) <sup>a</sup>	31.8	117
Uncontrolled diabetes hospital admission rates per 100,000 population aged and over <sup>a</sup>	n.a.	19 (2010)
Mammography screening, % women aged 50-69 screened <sup>a</sup>	85.6 (2011)	80.4 (2010)
Strength of primary care (2009/10)		
Governance of primary care <sup>d</sup>	Strong	n.a.
Economic conditions of primary care <sup>d</sup>	Strong	n.a.
Primary care workforce development <sup>d</sup>	Strong	n.a.
Access to primary care <sup>d</sup>	Strong	n.a.
Continuity of primary care <sup>d</sup>	Weak	n.a.
Coordination of primary care <sup>d</sup>	Strong	n.a.
Comprehensiveness of primary care <sup>d</sup>	Medium	n.a.
Overall primary care system strength <sup>d</sup>	Strong	Weak <sup>e</sup>

Sources: <sup>a</sup>OECD 2013; <sup>c</sup>Schoen et al. 2007; <sup>d</sup>Kringos et al. 2013a; <sup>e</sup>Estimates.

NOTES: <sup>b</sup> refers to % professionally active nurses per 1000 population.

The Dutch health system is a mixed system. It has features of:

- i. managed care - health insurers act as purchasers of healthcare, clients have a free choice of insurer, state regulates the market by setting an appropriate incentive structure to guarantee universal access;
- ii. a national health service; and
- iii. a social health insurance system.

In the Netherlands, primary care is defined as directly accessible care, generalist care, provided in an ambulatory setting. It includes the provision of curative care, long-term care and public health activities (further outlined in *Appendix A3*). It is provided by general practitioners (GPs) (who act as care coordinators) and other professionals, including practice nurses, community nurses, midwives, physiotherapists, pharmacists, dentists, home care, occupational therapists, speech therapists, social workers/primary care psychologists.

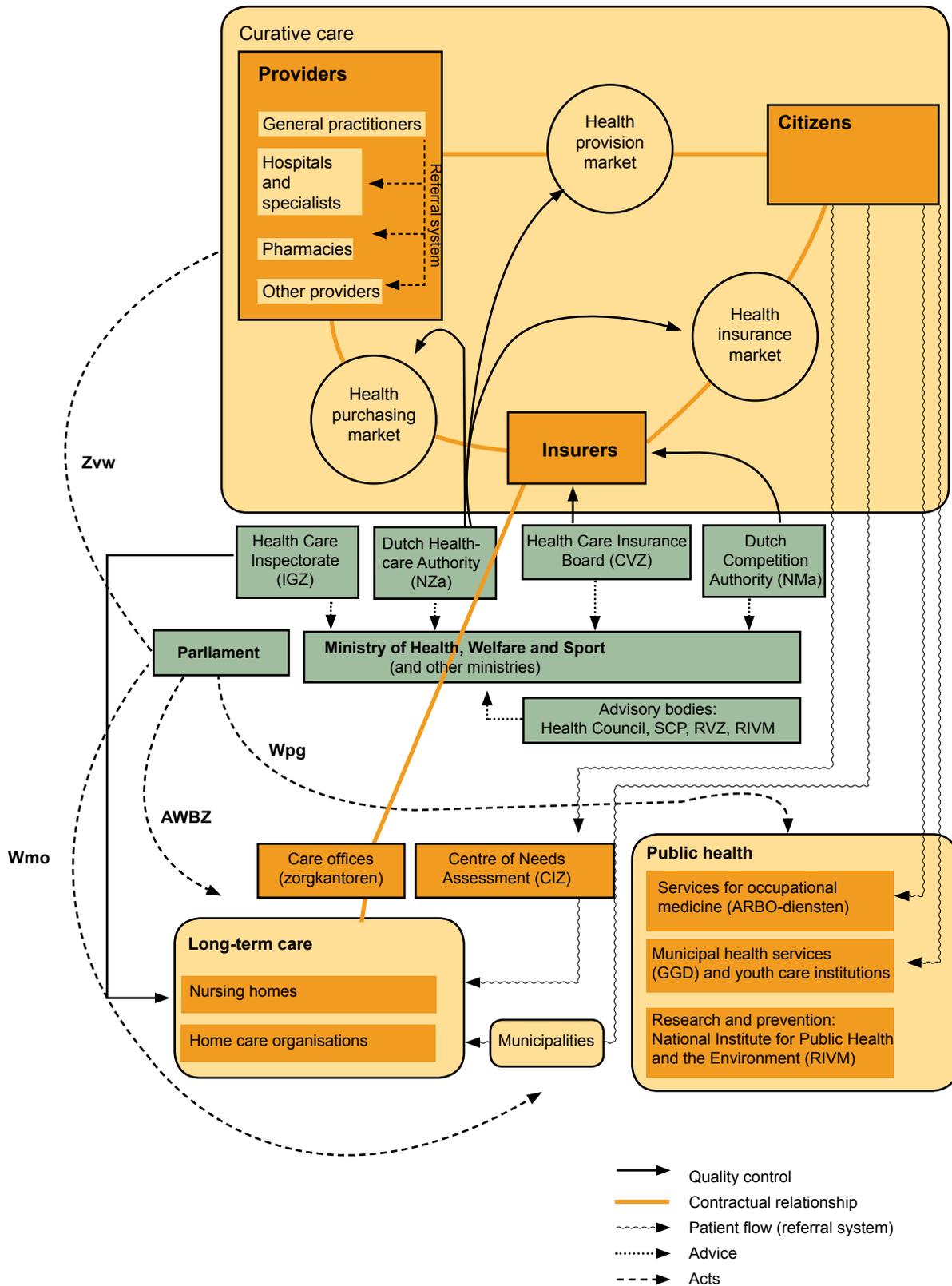
Given its central position in the healthcare system, PC in the Netherlands works closely with other providers and facilities for public health, curative and long-term care. Curative and

personal care services are governed at central level by the national government, while local government governs and provides social and preventive services.

Private providers working in both the ambulatory and hospital sectors are predominantly responsible for the provision of care. They are remunerated by a combination of capitation and fee-for-service. Hospitals are mostly owned and operated by private, not-for-profit organisations. Hospitals and health insurers are largely nonprofit. This is explained by the fact that the first hospitals were established and run by religious groups, local initiatives and municipalities, and health insurers originated from collaborative initiatives of employers and employees to reduce risks.

Long-term care includes: i) institutional care, such as nursing homes, semi-residential care for the disabled and sheltered housing, which are mostly non-profit organisations; ii) professional home care services such as assistance, personal care, nursing care and treatment, covered under the AWBZ and mostly provided by private, not-for-profit organisations; and iii) informal care such as domestic health, meals on

Figure 2: Organisational overview of the Dutch healthcare system.



Source: Schäfer et al. 2010:14. Reproduced with permission from WHO Regional Office for Europe © World Health Organization 2010, on behalf of the European Observatory on Health Systems and Policies. Available at: [www.euro.who.int/\\_\\_data/assets/pdf\\_file/0008/85391/E93667.pdf?ua=1](http://www.euro.who.int/__data/assets/pdf_file/0008/85391/E93667.pdf?ua=1)

wheels, and home adjustment and transport: all services covered under the Social Support Act.

Secondary care is accessed through referral by PC general practitioners. That this system works to support access is suggested by the 2010 study of 11 countries that found that only 16% of adults in the Netherlands said they had to wait for a specialist appointment. (The lowest percentage of adults who had to wait more than two months was 5% (Switzerland) and the highest 41% (Canada). Notably, in Canada PC services do not play this gatekeeping role (Thomson et al. 2013).

PC features in national policy debates on improving the organisation of acute care, on increasing cooperation between PC disciplines, on improving the coordinating role of PC providers and on integrating of PC services with public health, welfare, and secondary care. Efforts are being made, described in this paper, to increase innovation, to stimulate shared decision with patients on treatment plans and to improve transparency and quality of PC (ActiZ Visienota Eerstelijns 2008; Klink 2008; Samenwerkende Gezondheidsfondsen 2010).

National policies and financing incentives (discussed later) have enabled or facilitated a shift in PC organisation from mono-disciplinary small-scale practice towards networks of inter-professionals and inter-organisational collaboration (VWS 2008a/b). For example, the Integrated primary care and innovation policy (2007) provided financial incentives funded by health insurers to stimulate collaboration between PC professionals (NZA 2007a/b). PC professionals who are part of a multidisciplinary collaboration are entitled to additional funding if it is part of their agreement with their health insurer. At regional level, policies have been implemented to stimulate integration and collaboration across local PC services in the ‘regional support for primary care and quality development’, supported by advice and guidance to PC practitioners from a network of twenty consultancy companies across the Netherlands. Specific bundled funding for care of people with chronic illness (diabetes, COPD, cardiovascular risk) provided through case groups stimulates networks among different professionals responsible for care programmes for these conditions, contracted with health insurers (RIVM 2012a). (This is further discussed in *Section 4.3*.) The Netherlands Organisation for Health Research and Development (ZonMw) has since 2009 supported 70 collaboration initiatives to support PC services or PC personnel nationally (ZonMw 2011; see also *Appendix A7*). There is no evidence yet on the impact of many of these multidisciplinary collaborations, but intermediate results of the ZonMW projects indicate that it has been easier to create forms of inter-professional collaboration (multidisciplinary consultation,

inter-professional education) than collaborations between organisations (Valentijn 2012).

At local level, the municipal public health departments (GGDs) play a major role in public health service provision. They collect population health statistics, organise prevention programmes, advise municipalities on public health policy issues and provide needs assessments for acute psychiatric hospitalisation (see also *Appendix A3*). They work closely with local health and PC providers and with social, welfare services, policy actors and other stakeholders (Schäfer et al. 2010).

### Health and PC financing

All persons that live and work in the Netherlands are obliged to enrol with a health insurer for basic coverage (see also *Appendix A4*). The Exceptional Medical Expenses Act (1968) (*Algemene Wet Bijzondere Ziektekosten*, AWBZ) regulates a mandatory, social health insurance for long-term care (continuous care for chronic conditions), mainly financed through income-dependent contributions (Schäfer et al. 2010). The Health Insurance Act (2006: *Zorgverzekeringswet*, Zvw) regulates basic healthcare coverage for curative care. It is financed by a flat-rate premium and income-dependent contributions. The contributions are pooled into a Health Insurance Fund and allocated among the health insurers using a risk-adjusted mechanism (*Appendix A5* provides further details on the mechanism). In addition, people are free to take on voluntary, complementary health insurance for services not covered under the AWBZ or Zvw, usually dental care. Although, as indicated below, uptake is low as only 4% of health service financing derives from this (RIVM 2012b).

Health insurers, most not-for-profit, must accept all Dutch residents who apply for insurance and must offer a flat premium (with income dependent contributions) for a pre-defined health service package (Schäfer et al. 2010). The basic benefits package, the composition of which is defined by law, includes care provided by the general practitioner and midwife. It sets a maximum number of care sessions provided by physiotherapists, occupational, speech and remedial therapists and dieticians. See *Appendix A4* for the full list of entitlements.

There are further co-payments. All those 18 years or older pay €360 (\$490) when they use health services, except for use of GPs and midwifery services. This mandatory deductible has risen from €150 (\$204) in 2008 to €360 (\$490) in 2014 and cannot be covered via the voluntary insurance. People can, however, choose to pay a higher deductible in exchange for a discount on their monthly insurance premium. In 2011, people with a chronic condition or disability spent on average €86 (\$117) more on healthcare compared to people without such a condition (Van der Veer et al. 2013). People receive

compensation for premiums if their income is below a certain threshold. There are also specific criteria for chronically ill patients to receive a financial compensation when they have used healthcare for more than €360 (\$490) (CAK 2014). From 2014, regulations such as the Compensation on Co-Payments provide for compensation for people with chronic illness and disabilities varying from €148 (\$201) to €494 (\$671) (this is stipulated in the *Wtcg, Wet tegemoetkoming chronisch zieken en gehandicapten*). The government is, however, currently considering replacing this compensation policy with an extra budget provision to municipalities to provide care for and financial compensation to chronically ill patients (Rijksoverheid/Zorgverzekering 2014c). Despite these measures, there are still issues in ensuring financial protection: people with a lower income spend on average 6.2% of their annual income on co-payments to healthcare (excluding insurance premiums), while people with a higher income spend 1.6% for (Van den Berg et al. 2014, in press).

Nearly half (40.7%) of service costs are paid from the Health Insurance Act premiums, 27.9% from the Exceptional Medical Expenses Act premium, 14.3% from government taxes, 9.6% from out-of-pocket payments, 4% from complementary health insurance, and 3.5% from other sources. A two-earner family with average income and two children is estimated to pay 23.5% of their annual income towards healthcare. This is less for people with low income due to the subsidies and compensations noted above (RIVM 2012a).

As a result of this system, 98% of Dutch citizens are insured for health expenses. Uninsured people can use healthcare services and will receive the services defined in the basic benefit package, but they will immediately need to register for health insurance. Uninsured people are followed up by the government agency Zorginstituut Nederland. They first receive a warning by post to take out health insurance within a specified time, and if they fail to do so, the agency will do it for them. People who refuse to pay health insurance premiums have the premiums deducted from their income by the Zorginstituut Nederland, with an additional fine for non payment (Westert et al. 2010). Uninsured people are mostly undocumented migrants and homeless people who are obliged to be insured, but are difficult to identify and follow up. The Municipal Healthcare Services (GGD) have specific healthcare programmes providing care for homeless via outreach programmes (Van Laere 2002) (described further in *Section 3.5*). There are also individuals who refuse to take out insurance for religious reasons. Such persons are obliged to pay a general income tax contribution equivalent to the income-dependent employer contribution, which is then deposited in personal accounts and used to offset the healthcare costs they incur (Schäfer et al. 2010).

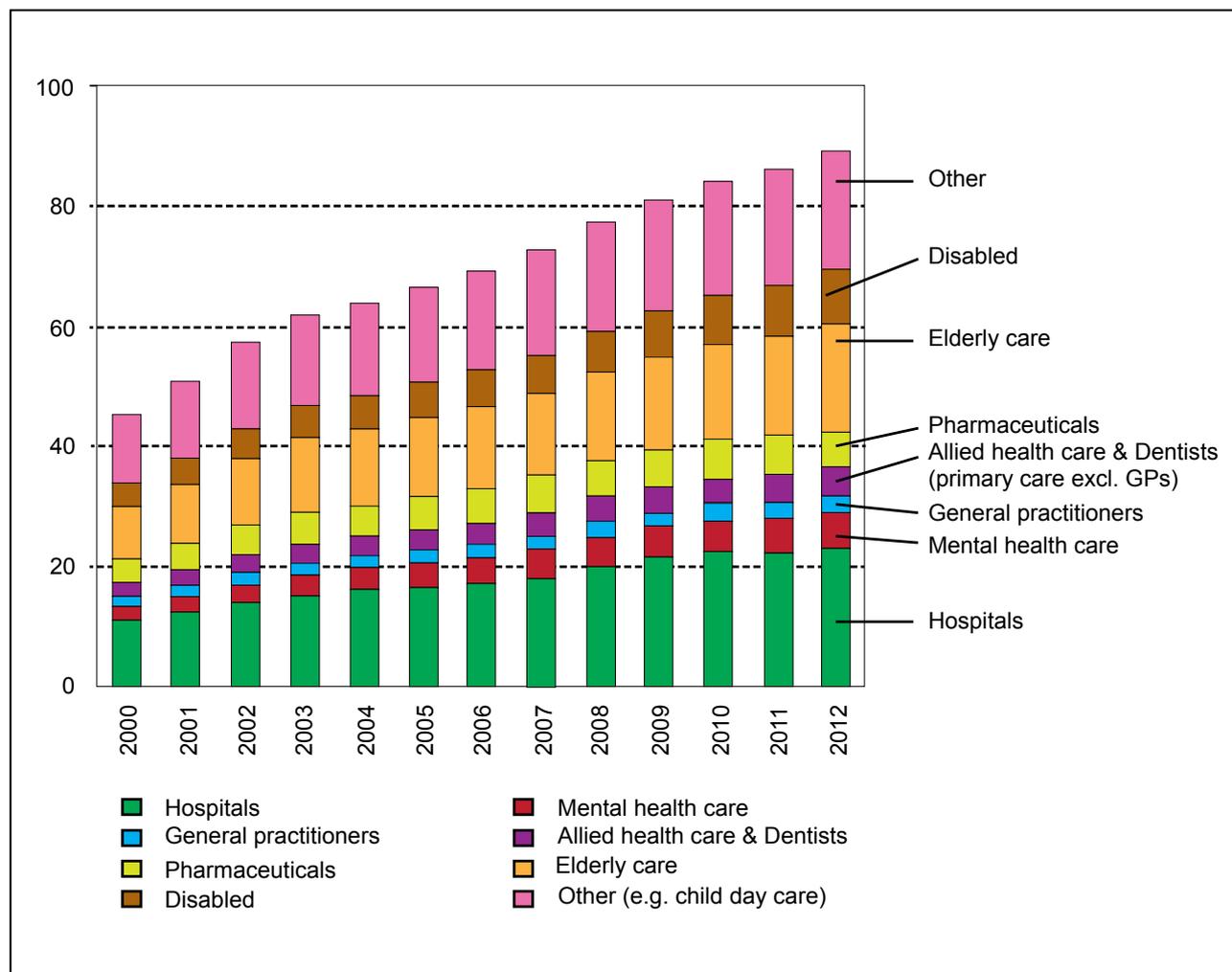
### Health expenditures

In 2012, healthcare at 21.4% of government spending was the second largest area of government expenditure following social security (25.8% on pension schemes) (Van den Berg et al. 2014). In 2012, 15% of GDP was spent on healthcare in the Netherlands. Real expenditure on healthcare (including social care) grew annually between 2000 and 2012, as shown in *Figure 3*, with slower growth after 2008 due to the economic crisis.

The Ministry of Health, Welfare and Sports allocates expenditures, sets tariffs for PC services (those that are not subject to negotiations), decides the content of the basic health insurance package, sets public health targets, sets the capacities required for long-term care institutions and safeguards affordability, efficiency, accessibility and quality of healthcare. The total healthcare budget does not include a designated budget for PC. The government sets the price and fees for PC services, but with room for negotiations between PC providers and the health insurers who reimburse them (Ministerie van Volksgezondheid 2010). In 2010 an estimated 14.7% of the total health expenditures was spent on primary care (Kringos et al. 2013a). Note *Figure 3* only shows part of the primary care expenditure by discipline. In 2012, the largest share of health expenditure was on hospitals and care for older people. Notably, much less was spent on PC (4%), pharmaceuticals, and care for people with disabilities (see *Figure 3*).

Most money is spent (in order from high to low) on mental disorders (including dementia and mental disability), cardiovascular diseases, digestive diseases and cancer (RIVM 2012a). (*Appendix A6* outlines the main interventions for these and other avoidable causes of mortality). Comparing Dutch healthcare expenditures to other European countries, curative care expenditures are similar to the European average, but long-term care expenditures are much higher (Van den Berg et al. 2014, in press). The latter is partly explained by broad entitlements covered from public funding, with growth in long-term care expenditures due to an increase in tariffs implemented by the government to increase the quality of long-term care. Hospital costs in contrast have fallen due to technological advances that have enabled more one-day hospital admissions, reducing the length of stay in hospitals. This has been supported by a government effort to move patients from secondary to PC and by government set hospital budget growth caps (see *Section 2*).

All providers and insurers must produce an annual accountability report on the costs, activity and quality of care provided. Further, the National Institute for Public Health and Environment (RIVM) produces a report on the performance of the Dutch healthcare system every four years (Van den Berg et al. 2014).

**Figure 3: Healthcare expenditures, in million Euro 2000-2012**

Source: Van den Berg et al. 2014:194; CBS 2014).  
Reproduced with permission from RIVM.

### Healthcare coverage and access

Universal insurance coverage has been an important determinant of health care access. Health insurers are obliged to contract sufficient PC providers in their region to guarantee access to their insured clients (see *Appendix A4*). They negotiate contracts based on volume, tariffs, and quality of care within minimum and maximum tariffs set by government (NIVEL 2009). The government has regulated that people should only have to travel up to 15 minutes to reach the nearest general practice, and the average travel time by car is less than this, with only about 10% of the population travelling for 10 to 15 minutes in less densely populated parts of the countries (RIVM 2014a; Westert et al. 2010). Pharmacies (public, hospital pharmacies and dispensing GPs) are also available with about 1,900 public pharmacies covering approximately 92% of the population and rural areas largely covered by about 500 dispensing general practices (Schäfer et al. 2010; Westert et al. 2010).

However, although there is nearly universal insurance coverage, there are inequalities in some dimensions of access to healthcare. While small differences are reported in the 'patient-centeredness' of care (shared decision making, understandable explanations of physicians, and room to ask questions) by income level, more educated people use more medical specialist care (though not statistically significant), more dental care (statistically significant), and more physiotherapist care, over the counter medicine and breast cancer screening. The opposite is the case for visits to a GP, a hospital and use of prescription medicines, all of which occur more often among people with lower education (Van den Berg et al. 2014, in press). People with lower socio-economic status do not visit a dentist (4% coverage) due to the cost of care, as dental care is only reimbursed for children under 18 years of age).

The poorer health of homeless people was noted in *Section 3.1*. Homeless people have reduced access to healthcare

as they cannot afford insurance premiums and are more likely to be uninsured or face longer distances to services or long waiting times (Van Laere 2009). In addition to measures to increase their insurance cover, in Amsterdam the Public Health Service supports them to take on health insurance. At the same time, other factors need to be addressed to support uptake, such as creating a consistency of relationships and trust between PC health personnel and homeless people (Akkermans 2008). PC providers (GPs, midwives, pharmacists, dentists and physiotherapists), hospitals and long-term care facilities (mental healthcare, care for older people and home care) are required to provide

irregular immigrants with basic healthcare services. They can be reimbursed via a fund controlled by the Healthcare Insurance Board (CVZ). A co-payment of €5 (\$6.8) for pharmaceuticals was introduced when extremely high use of medicines was found in this group (CVZ 2013; LAMPION 2014).

The next section explores more deeply the specific features of the PC system, given this broader socio-economic and health system context.

# 4. Primary care service delivery

## 4.1 The PC workforce

While GPs are the main providers of PC in the Netherlands, they also work with community nurses, specialised nurses, practice nurses (POH), home care nurses, physiotherapists, midwives (ambulatory), occupational therapists, speech therapists, dentists, community pharmacists, primary care psychologists, social workers, and dieticians (discussed further in *Section 2.2*). Since 2008, practice assistants/nurses have worked in PC practice to support GPs in a range of areas, including management of diabetes, mental health and other aspects of chronic diseases (discussed in more detail in *Section 2.3*).

*Figure 4* (RIVM 2014a) shows the density of general practitioners in the Netherlands per region. Doctors work as a GP or other PC speciality after completing six years of medical education, and three years postdoctoral training for a GP. On average, 20% of medical graduates annually choose general practice as their medical specialty. Primary care providers can only practice when they are registered with the Individual Healthcare Profession Act (Wet BIG) and GPs are included in the Register of GPs. There were 8,879 GPs active in January 2012, of which 89% were self-employed and 11% employed within a collaborative structure with colleague GPs (called HIDHA). The average density of 2,379 patients per full-time GP in 2012 has hardly grown since 2011 (2,371) but most GPs are located in urban areas, especially for older GPs (See *Figure 4*). In 2012, 12% of GPs were over 60 years of age and 43% of GPs were female, rising from 21% in 1996. Both male (37%) and female (85%) GPs often work part time (Hassel and Kenens 2013). Early retirements threaten to reduce the workforce and younger GPs prefer working part time due to the high workload. An average full-time GP works 45.2 hours a week, still lower than the average weekly hours of a medical specialist (52 hours) (Grol et al. 2009). The majority of PC physicians (88%) are satisfied with their work (Faber et al. 2009).

Regular planning studies are undertaken on the capacity needs and projections for PC, with the 2013 study

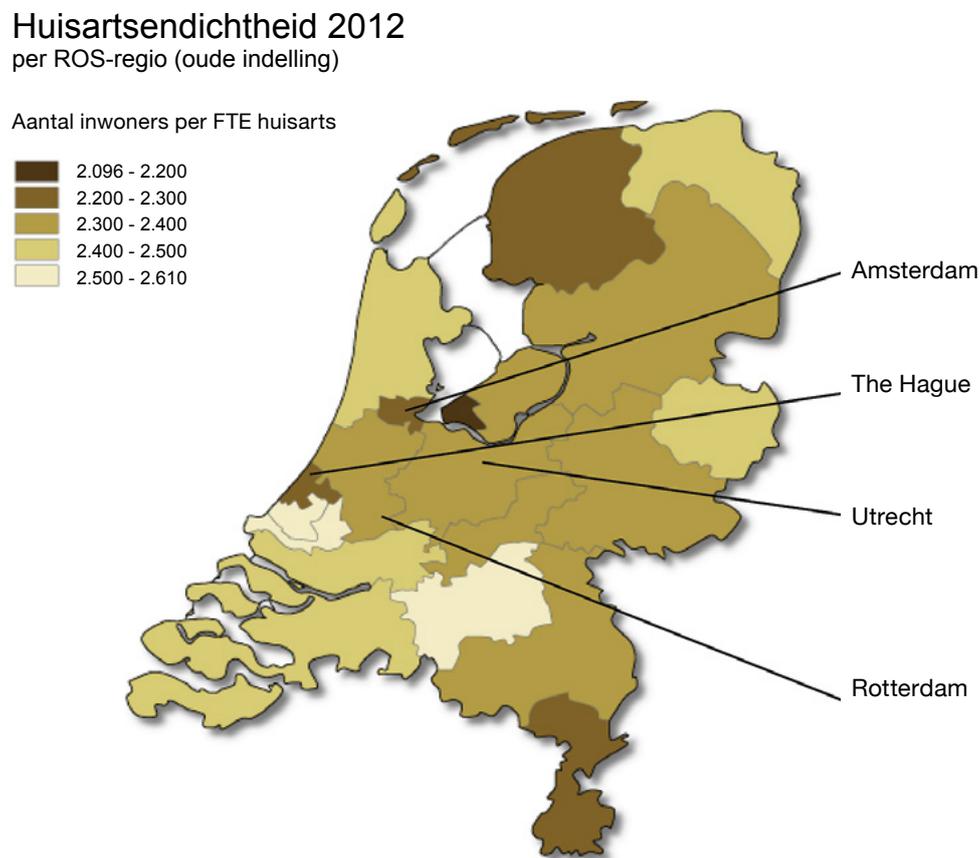
recommending a reduction in undergraduate medical education due to the limited places for specialist training (Capaciteitsorgaan 2009). From 2014 onwards a maximum of 2,078 to 2,353 basic medical doctors are allowed to specialise, with 720 training places specifically for general practice. It is expected that general practitioners in the near future will take over more tasks of medical specialists (Visser 2013).

There are eight medical faculties, all of which have had a postgraduate training programme in family medicine since 1974, under the responsibility of the College for Medical Specialties (Huisartsopleidingen Nederland 2010). This postgraduate programme takes three years, of which 21-30 months are spent in general practice and 6-15 months of internship in hospital within three different specialties (College voor Huisartsgeneeskunde 2008). Primary care practice nurses are trained in a separate post-basic programme, which can take 1-2 years depending on their vocational diploma. District or community nurses have no dedicated training programme. They enrol in the general nursing training of four years (V&VN Praktijkverpleegkundigen en Praktijkondersteuners 2007).

Government seeks to invest in more places for community and practice nurses in PC, to substitute GP tasks and to provide check-ups for chronic care. To realise this, the government intends to change the Individual Healthcare Profession Act (Wet BIG), which stipulates the competences of medical professionals and to expand the number of places in the medical training programmes for nurses (Rijksoverheid 2014b).

The Dutch Advisory Board for the MoH (RVZ) has recommended that the education programmes include structured inter-professional education (Raad voor de Volksgezondheid and Zorg 2011). It has stimulated initiatives such as the 2012 manifesto of gynaecologists and obstetricians to build mutual educational programmes (KNOV 2012).

**Figure 4: General practitioner density per region, 2012**



Source: RIVM 2014c (reproduced under creative commons open license).

Table 5 overleaf shows the employment status and average income levels of different PC providers. GPs (the predominant providers) receive a capitation payment for each listed patient, determined by the age of patients and location (whether in a deprived neighbourhood). A further €1(\$1.36) is paid per patient annually when GPs submit their reimbursement requests electronically.

There are two further payment elements:

- A fee for service of €9 (\$12.24) is paid for each regular consultation with a GP or practice nurse (including a regular 10-minute patient visit to the practice, a home visit, or a repeat prescription). For seeing a patient not listed in his/her practice (discussed in the next subsection) a GP receives €24.80 (\$33.74) and the patient does not pay (Van Dijk et al. 2009).
- A specific fee is paid for modernisation and innovation procedures, that is those that potentially substitute secondary care, such as minor surgery, or that improve the quality of care (such as cognitive tests). Health insurers and general practitioners are free to choose

the procedures and fee levels to be applied (Zorg en Zekerheid 2004; Vogelaar 2005). This has been taken up by all GPs as a way of increasing their income and performance.

As noted earlier, payment levels are negotiated within limits set by government, but PC practices collaborating in networks strengthens their negotiation position with health insurers.

GPs receive substantial additional payments when they work with a practice nurse and/or collaborate with other practices with patients from deprived areas. As a result, almost all general practices currently employ a practice nurse. Task delegation from GPs to nurses is now common, particularly for disease management programmes like Diabetes Mellitus or COPD. This has increased the efficiency of general practice management, improved the quality of chronic care, and decreased the workload of general practitioners (Wiegers et al. 2011). Experts involved in a European Primary Care Study (called the PHAMEU study) indicated from a list of ten medical technical procedures the frequency in which they are performed by GPs or GP/PC

**Table 5: Remuneration and employment of primary care team members**

	Usual method of remuneration	Any additional financial incentives	Employment status	Estimated gross annual income in Euros
General practitioner / family physician	Mix of capitation and fee-for-service	Bonus payment for modernising and innovation (MandI) and integrated services (GEZ)	Approx. 80% self-employed	Approx. €120,000 (\$163,068)
Primary care nurse	Salary	None	Approx. 95% salaried employee	Approx. €35,000 (\$47,561)
Specialised nurse (e.g. on diabetes)	Salary	None	Approx. 95% salaried employee	Approx. 38,000 (\$51,638)
Home care nurse	Salary	None	Approx. 95% salaried employee	Approx. €35,000 (\$47,561)
Physiotherapists (ambulatory)	Fee-for-service	Integrated services (GEZ), additional bonus payments per health insurance fund	Approx. 56% self-employed	Approx. €40,000 (\$54,356)
Midwife (ambulatory)	Fee-for-service	Separate charges for ultrasound scans, prenatal screenings, etc.	Approx. 55% self-employed	Approx. €35,000 (\$47,561)
Community pharmacist	Fee-for-service	Additional bonus payments per health insurance fund	Approx. 48 % self-employed, 52% salaried	Approx. €80,000 (\$108,712)

Note: The above numbers must be interpreted with caution. The numbers are based on rough estimations of available data in The Netherlands. In particular, the salaries and employment status for the non-medical professionals (e.g. physiotherapist, nurse, midwife) must be interpreted with caution.

Source: Kringos and Klazinga 2014a (in press).

practice nurses. Nurses perform wound suturing, excision of warts, wedge resection, sebaceous cyst, removal of rusty spot from the cornea, funduscopy, joint injection, insertion of IUD, intravenous infusion set up, and ankle strapping (Kringos et al. 2013a).

Separate funding mechanisms for population and personal care services and the use of fee for services (particularly for medical specialists) are seen to impede inter-professional collaboration. Bundled payments have been introduced for specific chronic conditions (such as Diabetes Mellitus, COPD) to overcome the fragmented funding system by paying one amount to a network of healthcare providers per condition. This interprofessional collaboration can still be hampered by an uneven distribution between PC practices of professionals and hospitals or medical specialists, and collaboration may still be too focused on diseases that do not fit the needs of people with multimorbidity. Health insurance funds and the Ministry of Health are working on options to address these problems (see *Appendix A8*) (Kringos and Klazinga 2014a in press).

Various measures have been implemented to stimulate quality of PC workforce practice:

- **Continuing medical education:** to keep up to date and qualify for re-registration in the Register of GPs, PC providers must have done at least 40 hours of continuous medical education and at least 10 hours of peer review activities annually. Almost all primary care disciplines have their own national association, and often several peer reviewed journals.
- **Peer review audit:** despite its voluntary nature, most GPs undergo a peer review audit by a colleague general practitioner to receive certification from the Dutch College of General Practitioners (NHG). The evaluation covers 385 aspects within six themes: practice building and equipment; task delegation and collaboration; services and organisation; medical recordkeeping; expertise and professional development; and workload (Huisarts and Wetenschap 2003).
- **Complaints system:** All healthcare providers are required by law to have a complaints system in place, although this is still weakly linked to quality of care.

- **Patient council:** As required in the Client Representation Act all healthcare providers (institutions and private professionals) have a patient council to address client issues of demand, access, patient rights to informed consent, patient access to own medical files, confidential use of medical records and complaint procedures, all protected by law (further discussed in *Section 3*).
- **Measuring patient experiences of healthcare:** done annually to improve PC system responsiveness (Schäfer et al. 2010).
- **Legal obligation to provide high quality care:** set in the Care Institutions Quality Act (1996) (*Kwaliteitswet Zorginstellingen*), and obliging all healthcare providers to provide “care of a good quality... in an effective, efficient and patient-oriented way and which is responsive to the actual need of the patient” (Chapter II, Article 2).
- **Guidelines** developed by the Dutch College of General Practitioners (NHG) (the scientific society of GPs) and by the Dutch Association for General Practitioners (LHV) (their trade union) are followed unless specific reasons are provided. More than 100 guidelines have been developed for PC, including treatment criteria, prescription guidelines, and physical practice environment requirements, and on continuous medical education training (Francke et al. 2008; Schäfer et al. 2010). Publication of guidelines does not guarantee effective use (Francke et al. 2008) and use is stimulated by a range of measures, including (i) an ‘NHG-formularium’ providing advice on medication prescription integrated into the digital General Practice Information System [HIS] that all general practitioners apply (NHG 2014); and (ii) quality indicators used by the Inspectorate for Health Care, the College of General Practitioners (NHG), or primary care research institutes for quality improvement purposes and to stimulate patient adherence to treatment (Francke et al. 2008). The NHG has a department dedicated to support implementation of newly developed guidelines: to explain treatments through information letters written in a way that diverse patient populations, including ethnic minorities, can understand. GPs largely act in line with guidelines in various areas: in 65% of cases on diagnostics, in 68% of the cases on prescribing medications, and 89% on referrals (Braspenning et al. 2004; Schellevis et al. 2005). Deviation mainly occurs due to co-morbidities, making the required treatment more complex than the guidelines prescribe.

## 4.2 Service features and content

GPs and their practice staff provide generalist care and are responsible for first contact care, treatment, follow-up care, medical technical procedures, disease management and preventive care. They cover a geographically defined population group. Thus, they only accept patients on their list who live within 15 minutes of the practice. People must be registered with a general practice and have a personal doctor to facilitate continuity of care. This also facilitates public health, as providers build a sound knowledge of the living, working and social environment of their patient population in addition to their medical history. Patients are free to choose whom they want to register with, within the 15 minutes travelling time. In practice, in the big cities the list sizes are very long and people do have difficulty, although they do succeed in finding a practice able to take on another patient. Practices are regulated to have a minimum list size of 800 and a maximum of 2,750 patients, as set by the National Association of General Practitioners. A regular consultation takes 10 minutes. When GPs see patients with complex conditions, they tend to book a double consultation, which is reimbursed as such (Verheij et al. 2010).

In 2009, 58.1% of GPs worked in group practices with two or more practitioners, while the remainder were solo practices (NIVEL 2009). It is becoming more common for practices to have cooperative relations with other care providers, such as physiotherapists and midwives to improve quality of care, with various payment supports for this noted in the earlier section. GPs keep medical records (including on medicines prescribed, financial administration) using an electronic GP Information System (HIS, *Huisarts Informatie Systeem*) (Dobrev et al. 2008; Faber et al. 2009). Some practices also have a ‘care chain information system’ (KIS), a multidisciplinary information system especially set up for disease management programmes. There are problems in inter-operability of different practice information systems, hampering exchange of patient records between professionals (Kringos and Klazinga 2014a, in press). While electronic medical records (EMRs) were first introduced in PC practice, the challenges relate largely to the different software programmes used.

All general practices are obliged to be open and available to patients from Monday to Friday from 8am to 5pm. Access during out-of-hours (from 5pm to 8am on weekdays and from 5pm on Friday to 8am on Monday) is guaranteed by an obligation of GPs to 24 hours and 7 days a week care. While out-of-hours access was initially organised by individual PC providers, it presented a significant additional workload for GPs and has since 2000 been organised through large-scale PC cooperatives, based on the models used in the United Kingdom and Denmark (Giesen et al. 2011) (see *Box 2*), with over 120 such cooperatives in 2005 (Van Uden 2006).

## Box 2: Features of large-scale PC cooperatives

- After-hours is from 5pm to 8am daily and the entire weekend;
- 40 to 250 PC providers (4 hours duty per week per professional with a compensation of about €65 (\$88) per hour) taking care of 100,000 to 500,000 citizens;
- Distances of no more than 30 km to a PC cooperative;
- Usually situated near a hospital;
- Access through a single, regional telephone number is available;
- Telephone triage is conducted by nurses who are supervised by PC providers;
- Per shift PC providers have different roles: home visits, centre consultations and telephone triage supervision;
- Drivers use identifiable cars fully equipped (e.g. oxygen, intravenous drip equipment, automated external defibrillator and medication);
- Information and communication technology support is available, including electronic patient files, online connection to the primary care car and sometimes connection with the electronic medical records in the daily primary care practice.

Source: Giesen et al. 2011:110.

Government has stimulated that cooperatives locate their services near or within a hospital, to avoid unnecessary ER use by patients, although still separate to the hospital services (LOK 2013). Evaluations have shown that cooperatives have reduced physician workloads, increased job satisfaction, improved patient satisfaction, reduced patient safety incidents (to less than 2.4% of contacts) and improved cost efficiency of care by including nurses in the telephone triage and decreasing the need for home visits and care consultations (Giesen et al. 2011). Physicians were found to have improved adherence to clinical guidelines for prescribing antibiotics, and treatment in emergency cases. Although patients at home needed to wait on average 30 minutes for a home visit, 70% of patients with life-threatening problems were visited within the target time of 15 minutes (Giesen et al. 2011; Smits et al. 2013). Increased integration of hospital emergency departments (EDs) and PC cooperatives has led to a 25% increase in contacts with PC, a 53% reduction in contacts with emergency care, 89% fewer self-referrals to ED, 12% reduction in ambulance calls, 34% fewer hospital admissions and high patient satisfaction (Grol et al. 2006).

PC services are ideally positioned to coordinate medical specialist services. Direct access is possible to home care nurses, physiotherapists, ambulatory midwives, occupational therapists, remedial therapists and dentists (Verheij et al. 2010a). People consult specialists only after a GP referral with an average of 4% of patients referred to secondary care. GPs receiving bundled care or modernisation and innovation payments have a financial incentive to limit referrals to secondary care and to maintain patients longer

in PC (Rijksoverheid 2014b). All GPs use electronic referral letters supported by their GP Information System (60%) (Van den Heuvel and Kaag 2004). Surveys have shown that 90% of people indicate that they (almost) always received the care they needed, with problems, mainly noted in telephone access, reduced after substantial media attention (Westert et al. 2010) and government promotion of PC use of internet consultations (Rijksoverheid 2014b).

PC services are also organised in growing numbers of community-oriented and disease-oriented ventures, such as community health centres and care groups (Batenburg and Eyck 2011).

Community health centres are multidisciplinary practices with family practice, nursing care, home care, pharmaceutical, paramedical, psychological, child, social and mental healthcare and diagnostic facilities (Hansen 2010). They are directly accessible and located centrally in neighbourhoods. They include clustered or non-clustered combinations in different locations of solo practices (called HOED), duo practices and group practices (Hansen 2010). Care groups were introduced through the bundled payment system, discussed in *Section 4.3*, for people with specific conditions. GPs lead care groups and collaborate with medical specialists, nurses and professionals from other disciplines. An estimated 78% of general practitioners are member of a care group (Van Til 2010; RIVM 2012a).

The Public Health Services (GGD) in the local authorities collect and develop demographic profiles of the communities in which PC practices function and work within the PC

practices in their area (see *Appendix A3*) They have legal duties to: monitor socio-demographic developments; monitor the health impact of policies; develop and implement prevention programmes; identify local health priorities every four years and formalise these in a policy document. They work on environmental health, public hygiene, psychosocial support in case of disasters, prevent and monitor infectious diseases, provide youth healthcare services, prenatal care to new parents and care for older people. While GPs provide personal mental healthcare, the GGDs provide community mental healthcare services for high risk or vulnerable groups, including people who are homeless or addicted to drugs (Mackenbach and Stronks 2012).

PC providers are commonly registered with a public health monitoring network. Most such networks are funded by Ministry of Health, but others are supported by universities and research networks. The Primary Care Registry by NIVEL, for example, currently includes patient and practice data from 386 general practitioners, 543 primary care mental health workers, 62 physiotherapists, 49 exercise therapists, 62 dieticians and 130 pharmacies. The data is analysed by researchers at NIVEL (researchers from other organisations can ask permission to obtain access) and reported back to the professionals to monitor the prevalence of diseases, physician and patient behaviours and the delivery of care process (NIVEL 2014).

#### **Informal care**

Between 1.5 million and 2.3 million Dutch people have a severe or minor physical impairment (Heijmans et al. 2012). Almost half of them (49%) receive professional care at home, and 59% receive informal domestic and nursing care and support in daily activities (Heijmans et al. 2012). Informal care is a growing sector, about 20% of the people provide informal care for more than three months or eight hours per week for a partner or next of kin (De Boer and De Klerk 2013). It is common for older people to receive home care or be institutionalised in a nursing home when they cannot live independently anymore. This has become more difficult due to budget cuts, high workloads and increasing demand for places for older people. Government is encouraging children to start taking care of their sick parents, or neighbours, not a common practice to date (Dekker and den Ridder 2011). People providing informal care currently receive €200 (\$272) when the person they take care of is entitled to long-term care benefits (with a set minimum number of weeks of full-time care annually), but there are ongoing discussions to abolish this entitlement from 1 January 2015 due to the decentralisation of long-term care responsibilities to municipalities. Several health insurance companies provide additional cover for this type of informal care (Mezzo 2014). In general - with the exception of some migrant groups - this

form of care is not publicly favoured, particularly for intense care. People would only accept it on a voluntary basis and not as an obligation (Dekker and den Ridder 2011; Hootsen et al. 2013).

### **4.3 Innovations in service processes and organisation**

#### **Preferred pharmaceuticals**

Since 2008, spending on medicines has only grown by 1-2% per year, lower than other areas of spending, despite a 30% increase in levels of medicine used between 2004 and 2011 (CVZ 2012). This is due to measures by government and insurers to reduce medicine prices. The Act on Pharmaceutical Pricing (1996) [*Wet Geneesmiddelenprijzen*; WGP] stipulates that average medicine prices cannot be higher than that in neighbouring countries. In June 2012, the government agreed with the National Association for General Practitioners (LHV) that GPs, whenever possible without loss of quality of care, should prescribe medicines with the lowest price. The government and insurers agreed that when two pharmaceuticals vary in price but have the same effectiveness and user group, insurers will only reimburse in the basic benefit package the pharmaceutical with the lowest price. This 'preference policy' has resulted in substantial savings in both costs per user and per unit of health benefit, estimated at about €3 billion (\$4.1 billion) in total (CVZ 2012). In most cases the cheaper pharmaceuticals are generics (RIVM 2013).

#### **Transfer of services or elements from secondary to primary care**

As noted earlier, placement of a PC practice in the same location as the Emergency Department of a hospital has reduced unnecessary hospitalisations and expensive ER visits (Kool 2008; Sturms 2009). PC services have taken on some services previously provided at secondary care level since 2002 (such as minor surgery) and have halved the share of diabetic patients treated at secondary level to 10% (Zorg en Zekerheid 2004; Vogelaar 2005; Van Dijk et al. 2011). The substitution in diabetic care is a result of a set of measures including: a media campaign; introduction of practice assistants/practice nurses who now provide diabetic treatment programmes; stimulation of guideline adherence by the introduction of financial incentives for diabetes management (in the Modernisation and Innovation procedures); links across different PC services; and introduction of bundled payments for chronic care (Van Dijk et al. 2010). Practice assistants/nurses also provide care programmes within primary care practices for patients with COPD, cardiac risk management, mental health and depression, paid through bundled payments described in Section 4.3 (De Bakker et al. 2012; Heiligers et al. 2012).

The national programme called Visible Link of the Netherlands Organisation for Health Research and Development (ZonMw) has also made it possible for PC practices to employ community nurses to provide a link between clients, informal carers, healthcare providers and official bodies (Kringos and Klazinga 2014a, in press). New professionals have been introduced in PC in dermatology (skin therapists) (Hansen and Schepman 2009) and in eye and glaucoma care and follow up (optometrists and ophthalmic technicians) (Holtzer-Goor et al. 2010). This has reduced referrals to eye specialists (Batenburg and Van Hassel 2012). Practice assistants/nurse-led diabetes treatment programmes have reduced referrals to the hospitals by 40%. This did not, however, reduce total hospital costs for diabetes care, possibly as hospitals shifted spending to other aspects of care (Struijs et al. 2012b). Further, hospitals are still to support fully these practices as many mental health patients with mild problems are still treated within secondary care and are not quickly referred back to PC (Nederlandse Zorgautoriteit 2011).

These practices are supported by teleconsultation, reimbursable as modernisation and innovation procedures. Teledermatology has for example reduced referrals to dermatologists. Teleconsultations can take place between patients and physicians independent of time and place (Van der Heijden and Schepers 2011). Teleconsultation has also been applied in areas of eye care, cardiology, lung care, and nephrology (Van der Heijden and Schepers 2011) and has reduced referral to secondary care by about 50% (Van der Heijden and Schepers 2011).

#### **Strengthening primary care roles, links and capacities**

There are many options for supporting capacities at PC level to strengthen their roles. It is common for GPs to ask telephone advice on the treatment of specific patients from paediatricians, internists, gynaecologists, surgeons, neurologists, dermatologists and geriatrists (Kringos et al. 2013a). There are National Primary Care Agreements (LESAs) on collaboration among different PC professionals in a given region, supported by NHG guidelines for specific conditions and National Transmural Agreements (LTAs) between GPs and medical specialist (Kringos and Klazinga 2014a in press). GPs in some regions, such as in Limburg, team up with different specialists each year, to have joint face-to-face consultations, with an associated reduction of referrals to secondary care (Carrousel 2012; Vlek et al. 2003).

#### **Professional behaviour change**

In addition to the modernisation and innovation procedure and bundled care payment incentives discussed earlier, other interventions have changed the referral behaviour of PC practitioners. Referral guidelines generally recommend

that only patients in exceptional situations be referred. PC practices that adhere to guidelines regarding referrals have lower referral rates to secondary care (Van Dijk et al. 2013).

Shifts in provider behaviours are also stimulated by inter-professional or multidisciplinary collaboration and by the way insurers reimburse, as discussed earlier. Teams are organized at community level in community health centres, where different disciplines are housed (general practitioner, physiotherapists, dieticians, social work, pharmacist, community nurse, midwife), informing each other about procedures to follow around a specific patient group. Professionals often start with developing local protocols and guidelines on how to organise and align the different disciplines. In daily practice this is organised through multidisciplinary meetings (Kringos and Klazinga 2014a, in press; Kringos et al. 2013).

#### **Integrated care through bundled payments**

Bundled payments, discussed earlier, are not simply a payment mechanism, but are evidently important for changing service organisation and provider behaviour. Health insurers pay a single fee to a contracting entity (the care group) covering all PC needs required by patients with chronic conditions. The care group sub-contracts to general practitioners, medical specialists, nurses and other disciplines and coordinates delivery of care as contracted with a health insurance fund (RIVM 2012a). The approach was approved in 2010 and then implemented nationwide. Initially, it was applied for diabetes and then for chronic obstructive pulmonary disease (COPD) and vascular risk management. By 2010, 100 care groups were running diabetes care across the Netherlands (Struijs and Baan 2011). *Box 3* provides an overview of the features of integrated care through bundled payments.

Although the programme is still relatively new, early evaluation studies show the following results (Struijs and Baan 2011; Struijs et al. 2012a): after the first introduction of care groups and bundled payments in 2007, large differences were seen in reimbursements for diabetes care bundles ranging from €258 (\$351) to €474 (\$645) per patient per year. This difference was the result of freely negotiable prices, differences in the care provided (e.g. frequency of dietary advice, guidance in smoking cessation etc.) and the inexperience of care groups and insurers in setting prices for care bundles.

In the years after 2010 it was observed that the price variations persisted, which is likely due to differences in interpretations by insurers of the treatment standards (such as Dutch Diabetes Federation Care Standard, DDFCD) seeking to contain costs by restricting care activities.

### Box 3: Features of integrated care through bundled payments

- New legal entities called Care groups are formed, which are a principal contracting agency to whom insurers pay a single fee (freely negotiable by insurers and care groups), covering a full range of chronic disease care services for a fixed period.
- Care groups consist of multiple healthcare providers, but are often dominated by GPs.
- Care groups have both full clinical and financial responsibility for all assigned patients within a chronic care programme.
- Care groups either deliver care itself or sub-contract with other providers such as specialists, dieticians or laboratories (price is freely negotiable between care group and individual providers).
- At national level, general decisions (concerning the treatment activities to be included) were made about patient services to be covered within the disease programmes. For example, for diabetes II these decisions were approved by all national providers and patient associations and codified in the DDFCD.
- Patients are assigned to a care group based on their disease.
- Since services for chronic conditions are covered by the standard basic benefit package, all residents are insured and patients receive the care free of charge.

Source: Struijs and Baan 2011

Improvements and benefits to services and patients have now been noted in:

- *The coordination of care:* Healthcare providers have reported that care delivery has improved because care groups are now fully responsible for all arrangements, with clearly defined activities, division of responsibilities and transparency of prices. This resulted in improved coordination among care providers, improved protocol adherence (also by sub-contracted providers as a result of further training), attendance of multidisciplinary consultations, and use of electronic health records.

- *Transparency and quality monitoring:* Due to record-keeping obligations in the contracts between care groups and individual providers, there is increased transparency of care. This makes it easier to monitor quality of care and to set up quality improvement projects. However, the information technology capabilities still need to be improved for this to function optimally.

At the same time, individual sub-contracted providers report that care groups have substantial market power and that some GPs are both commissioning and providing care, raising a conflict of interest. It is too early to draw conclusions about the quality of care and the effects on the overall costs of care.

# 5. Social roles

## 5.1 Relations with patients, families and communities

**Mechanisms for community involvement**  
Patient participation can occur both individually (e.g. in the primary care practice) and collectively, for instance by participating in patient organisations, client bodies to guide/advise research, quality and policy development processes. Individual patient organisations are a member of the overarching National Patient and Consumer Federation (NPCF).

The Participation by Clients of Care Institutions Act (1996) [*Wet Medezeggenschap Clienten Zorginstellingen*] obliges various healthcare organisations to have a client council in place: general hospitals, psychiatric hospitals, mental healthcare organisations, organisations for people with disabilities, nursing homes, and organisations for long-term care. These client councils are aimed at protecting the interests of patients and clients and both patients and their families can participate. The board of a healthcare organisation is obliged to take the advice of its client council into account when developing new policies or making key decisions. Each client council has the right: to be informed; to meet with key organisations; to advise; to initiate a survey; and to provide input to the composition of the board of the healthcare organisation (Rijksoverheid 2014a).

The Social Care Act (2007) [WMO] obliges municipalities to install a mechanism involving local residents, although people with a lower income, migrants and older people are underrepresented in such organs (Peeters 2012; WRR 2012).

### Within policy and system level processes

Social participation in public policies happens via client organisations and representative bodies. It has become almost standard procedure that when the Ministry is contemplating a new health policy, that it also consults with the National Patient and Consumer Federation. Patient organisations often take part in developing guidelines and participating in scientific studies; this is a relatively recent practice and evidence on it is limited (Nederland 2003).

A study on outcome of participation by the Dutch Association of Patient Organisations for Cancer [NFK] in the development of oncological guidelines showed that:

- One or two patient representatives do not sufficiently represent the diversity of relevant patient experience and that patient focus groups may provide better insight.
- Health professionals seem to respect and value input from ‘professional patient representatives’ more than individual patients, especially those that have knowledge of scientific evidence.
- The roles, responsibilities and goals of patient participation need to be formalised and integrated from early stages of guideline development.
- Patient representatives have particular influence on guideline content related to organisation of care, the post-treatment phase and nutrition.

Based on this study researchers are developing a profile for patient representatives to increase the effectiveness of their participation in guideline development (ZonMw 2014). The Institute for Healthcare Quality (a new institute created in 2013 within the Healthcare Insurance Board [CVZ]) has the role of steering, coordinating and guiding stakeholders involved in improving quality of care. It also facilitates the contribution of patient or client organisations in the development of guidelines (CVZ 2014). While this input to guidelines has been initiated, patient organisations have complained that they have not been involved in the content of care groups, which are key to the mechanism of bundled payments for chronically ill patients (Lemmens et al. 2012).

### Within PC practice and community level

While local governments are seen to have the role of deciding on community facilities, people expect to be consulted and to have a say in this (Dekker and den Ridder

2011). Municipalities often involve local citizens through public hearings or theme meetings in the development of policies on spatial planning and safety, but less so in areas related to public health, prevention and healthcare where national/local governments are seen to set priorities in these areas.

People often prefer to see their general practitioners first before consulting another directly accessible primary care provider. Performance reports (Westert et al. 2010) have for years confirmed the public satisfaction with primary care. One form of patient autonomy that has become increasingly important is patient choice for their care provider. People value choosing their GP. Forty percent of the people tend to look for quality information first before deciding on their medical specialist or hospital (Reitsma et al. 2012), but this is primarily based on the advice of their GP or the experiences of relatives or friends. In general, people tend to choose the nearest hospital or provider, and only in cases of rare disease or a need for second opinion are more active choices made (Victoor et al. 2012; Mol. 2006).

Within PC practice the extent of shared decision-making differs by condition, and is particularly low for lower educated patients or patients that are insecure (RVZ 2013). Although patients have the right to view their medical records, they are not always provided with all the necessary information to allow for shared decision making, and PC health personnel are not obliged to set up an individual healthcare plan for people with chronic conditions (RVZ 2013). Barriers to participation in these areas may now increase with the abolition of access to translation services.

Until 2012, every PC provider could call on a professional translator when he/she was seeing a migrant patient with Dutch language problems free of charge. The government abolished the *Tolk-en Vertaalcentrum Nederland* translation service when it adopted a policy that all learn the Dutch language when becoming Dutch citizens, thus saving €19 million (\$26 million). PC providers and mental health workers now only use informal translators (often family members), with uncertain effects. A guideline has been developed to support physicians in their decision whether or not it is necessary to involve a translator in the consultation (Broersen 2014), and in some municipalities, such as in Amsterdam, initiatives have been set up to support PC providers in deprived neighbourhoods with free access to professional translators.

Technology can be used to support patients to better manage their conditions. Although eHealth offers great opportunities for involvement by patients in their treatment, few people currently apply eHealth applications. There are currently 300 Dutch health apps available for smart

phones. They are given a quality accreditation when they are in line with European standards (guideline 93/42/EEG) for safety, health, environment and consumer protection (De Eerstelijns 2013). From January 2014, it has become obligatory for all healthcare related apps to be certified in a certification process monitored by the Dutch Healthcare Inspectorate) according to various criteria and steps:

- Qualifying a health app as needing to be tested for a quality accreditation, and the level intensity of accreditation;
- A MEDDEV Essential requirements checklist to verify if the health app meets all requirements for safe use;
- A technical file produced by the developer, including a comprehensive risk analysis, clinical data and evaluation, and information on the quality improvement system, development of the app and its functioning to show that it meets European standards;
- If a high-risk app, certification by an independent organisation and registration with Farmatec, an organ of the Ministry of Health, Welfare and Sports.
- Issuing by the developer of a quality certification (marked as CE), after its technical file is approved; and
- A procedure for review, sharing and feedback on use, and for notifying incidents and reporting follow up actions (Ekker and Van Rest 2013).

Informal forms of care have been raised in *Section 2.3* and there are an estimated 450,000 people working as volunteers in healthcare (Scholten 2011), of whom 25,000 provide intense care, against an estimated demand for such care of 45,000-50,000 people per year. As a result, most volunteer organisations have large waiting lists of people in need of services (Mezzo 2011). As noted earlier, while communities see that they have a role in care, they would see it as taking a form that is voluntary and not intensive (Dekker and den Ridder 2011; Hootsen et al. 2013; Van der Kanne et al. 2010).

## 5.2 Social and client health literacy

Current policies, raised earlier, that increase opportunities for public choice and that seek to make people responsible for their own health assume that people can make informed choices. Particularly patients with chronic conditions are seen to have a role to play in their healthcare, an important factor in the management of their health, including using developments in e-Health. Patients' individual strength and responsibility for their own health and lifestyle play a key role in government policies (Gezondheidsraad 2011).

In contrast to this expectation, a report by the Health Council (an independent scientific health advisory body to the government and parliament) noted in 2011 that

- educational materials for patients are often textual and are not effective since many patients cannot read well;
- health professionals have become more aware that patients may have trouble understanding their own health situations, but may not detect problems with literacy as patients may hide this;
- medical professional education programmes should give more attention to competencies in communications;
- informing patients should play a role in all key healthcare processes;
- quality indicators play an important role in measuring and improving healthcare in the Netherlands and should not only include disease characteristics but also factors related to health literacy; and
- the effectiveness of health policies should not only be measured on average outcomes. Averages hide important variations in population groups and more attention needs to be given to positive and negative effects of policies on different population groups, including those with low health literacy levels (Gezondheidsraad 2011).

About 1.3 million people (8% of those aged 16-65 years) have low, general literacy levels, of whom 65% are citizens of Dutch origin. Almost half (43%) of the people with low literacy levels are unemployed and live in one of the 30 largest municipalities in the Netherlands (*Stichting Lezen en Schrijven* 2014). In 2011, about 29% of the population was estimated to have difficulty understanding and applying information on their health and healthcare, a lower average than most other European countries (Pelikan et al. 2012). Nijman et al. (2014) found that 22% of the Dutch population do not have the motivation, knowledge, self-confidence or competencies to take on an active role in their own health, particularly older people and those with a low educational level.

People with low health literacy have been noted to report poor health status more often, and to more frequently suffer from illnesses like asthma, diabetes, cancer, cardiovascular diseases and mental health problems (Gezondheidsraad 2011). In response, government formulated an Action Plan [*Actieplan laaggeletterdheid* 2012-2015] to tackle low literacy levels, and to reach out to people with limited literacy levels. Various organisations have received public funding to implement the Action Plan, including those in *Box 4*.

These organisations have developed tools to support health professionals and clients in health literacy. There are also Internet resources, such as the [www.oefenen.nl](http://www.oefenen.nl) website that provides information and

#### **Box 4: Organisations involved in improving health literacy**

*Pharos*, the National Knowledge and Advisory Centre on Migrants, Refugees and Healthcare Issues, works with migrants and refugees, healthcare providers, health insurers, municipalities and other stakeholders to improve the quality and effectiveness of healthcare for migrants, refugees and people with limited health literacy. They organise school programmes for refugee youth in primary and secondary education; protect and improve care for victims of torture, and provide parental support to immigrants. Further information is available at: <http://www.pharos.nl/information-in-english/about-us>.

The *Stichting Lezen en Schrijven* [The Reading and Writing Foundation] founded in 2004 stimulates and activates organisations and individuals in public and private sectors by communicating information on health literacy. In the context of the Action Plan, the government has asked the foundation to implement six pilot tests in various regions where language directors and coaches will be trained to support people with limited literacy. Further information is available at: <http://www.lezenenschrijven.nl/>.

The *Alliantie Gezondheidsvaardigheden* [Alliance for Health Literacy] is an expert network that was set up in 2010 to improve health literacy in the Netherlands. Any organisation with expertise in health literacy can join the Alliance and it currently has over 60 members. The Alliance focuses on reading and writing, capacity to perform calculations, knowledge on illness and health and the capacity and confidence to ask questions. A steering committee organises the collaborative actions and agenda for the Alliance, thematic working groups carry out work in areas such as communication, primary care, research, patient experiences and participation and a coordinator functions as contact point. The working group on PC exchanges experiences, materials and tools to support health literacy, relating patient education to cognitive levels and providing information for migrants on the organisation of the Dutch healthcare system. Further information is available at: Source: <http://www.gezondheidsvaardigheden.nl/>

Sources: Pharos 2014; Stichting Lezen en Schrijven 2014; Alliantie Gezondheidsvaardigheden 2014.

skills tools for people with low health literacy. The Project Understand Your Body is accessible at [www.thuisarts.nl](http://www.thuisarts.nl), an initiative of many stakeholders in the field (e.g. health professional organisations, migrant health stakeholders, health insurance companies) providing online education materials about the human body that can be used by GPs, nurses or other health professionals to explain health problems to patients (Oosterberg et al. 2012).

### 5.3 Experiencing the system from the patient's lens

The example in Box 5 illustrates how the Dutch healthcare system functions from the experience of the patient. In this case it is from the perspective of a homeless person, a fictional person called Ben, who represents an average homeless person living in a city in the Netherlands.

#### Box 5: Experiences of the PC system from the lens of a homeless person

Ben (a fictional person) is a 30-year-old male born in the Netherlands. He has a problematic housing situation as he is mostly living and sleeping on the street in Amsterdam. At times he is able to sleep on a friend's couch. In addition, Ben has a problematic financial situation (no job, debts, and always out of cash), he suffers from multiple health problems, including intellectual disability and related psychosocial problems; and he is addicted to alcohol and has diabetes.

Like any other homeless person living in a city or village in the Netherlands, Ben can go to the Central Access Point for Social Relief (CAPSR) [*Centrale Toegang van de Maatschappelijke Opvang*] of his municipality to ask for financial support and housing. Ben will be subjected to two different paths. One path will be run by social services at CAPSR, which will test whether Ben fulfills a number of criteria to get financial support from the municipality. The other trajectory will be run by a team of professionals of the Public Health Services (which we will call Ben's support team) working at CAPSR, who will use the Dutch self-Sufficiency Matrix (SSM-D) for which they are trained, to inform decisions on allocating the appropriate public mental healthcare services and housing solution for Ben.

The SSM-D expresses Ben's functioning and status in levels of self-sufficiency. Self-sufficiency is defined by the realisation of an acceptable level of functioning either by oneself or by adequately organising the help of informal or formal care providers. Based on the assessment Ben's support team will develop an integrated care programme that addresses all his mental, physical and social problems. In the meantime Ben is put on a six-month waiting list for an Entry House [*instroomhuis*].

'Luckily' Ben belongs to a municipal priority group as he not only has a housing and financial problem, but also suffers from an addiction. Because of his addiction, Ben can go live in an Entry House after one month of waiting and sleeping on a friend's couch. If Ben had not belonged to this priority group, he would have had to wait six months because he has alternate accommodation. Some homeless people were moved up the list because they could not rely on the support of friends or family members.

Ben will stay for about six weeks in the Entry House where he will live with other homeless people, receiving a thorough assessment in all areas where he is (potentially) experiencing problems. The health professionals in the Entry House will use the standardised Registration Diagnosis form [*Aanmeld Diagnose formulier*], which is implemented in all major cities in the Netherlands (and often in surrounding smaller places).

After six weeks of being subjected to thorough assessments, Ben's file is discussed at a so-called fieldtable [*veld tafel*] by three members of his social support team of the CAPSR, representatives from the local mental healthcare organisations under coordination of a professional on behalf of the Public Health Service (GGD). The fieldtable members discuss an integrated treatment plan for Ben and assign him a case manager who will organise and monitor his treatment. The case manager will contact a social housing organisation and all needed care providers and visit them together with Ben.

When Ben needs to see a GP, he will visit the local GP employed by the Public Health Service. Given the important role for the case manager, the Public Health Service monitors the functioning of the case manager. When during Ben's treatment phase the case manager suggests that any substantial changes are needed, Ben's file will again be discussed at the fieldtable to approve the proposed changes to his treatment plan. Given the complexity of Ben's problems it is very likely that it will take him about ten years to complete the proposed treatment plan, to overcome most of his problems and to be able to live independently.

When the case manager assesses that Ben will be able to live independently, his file will be discussed at the fieldtable for potential leavers in which the housing services of the municipality participate. They will discuss all the transition steps that Ben needs to take to become fully independent. Ben will probably first need to live in a 24-hour shelter or, if he is lucky, he will be allowed to live independently in a 'discus home' where he lives on his own and pays his own rent, but receives 24/7 support and all care providers can easily continue his treatment plan. The idea is that this transitional housing will strengthen Ben's self-sufficiency, so that in the near future he can fully live by himself, and consult with his own healthcare providers when he deems it is necessary.

Ben is worried that he will need to stay an unnecessarily long time in this transitional phase, just because it simplifies the work of his care coordinator and all involved healthcare providers. The financial incentives in this system are geared towards filling each institutional bed, and not towards the number of homeless people that go out of the system. Once Ben is out of this transitional phase he will receive financial support from the municipality to get relief in his debts, get support to find work, and his care coordinator will monitor him in a more distant manner. He will also be able to visit the regular healthcare system (not just the organisations and providers employed or commissioned by the Public Health Services).

*Sources:* Cohort study amongst homeless people in Amsterdam, 2014; Van Straaten et al. 2014; Lauriks et al. 2012; Lauriks et al. 2013; Lauriks et al. 2014; Fassaert et al. 2014).

The case study illustrates a successful part of the healthcare system that offers integrated care adapted to the needs of vulnerable and complex patients. The basis for this streamlined approach across the Netherlands has been the Strategy Plan for Social Relief which was launched in 2006 in the four largest cities of the Netherlands: Amsterdam, Rotterdam, The Hague and Utrecht (G4). The Strategy Plan aims to prevent and reduce homelessness and to improve the quality of life of homeless people.

Referring to the references and experiences cited in *Box 6*, the local programmes indicated for homeless people are fully funded by the municipalities, which receive a budget from the national government for the programme. It is particularly successful because homeless people do not need to visit different healthcare providers on their own initiative. Instead one person (a case manager) organises the complete treatment process. Another important success factor is that municipalities have outreach programmes to identify vulnerable citizens, including arrangements with police, energy companies, housing companies and mental healthcare services. These services inform the Public Health Services when, for example, someone has not paid his/her energy bills for more than three months, or

shows other out-of-the-ordinary behaviour that puts them at risk for becoming homeless, experiencing mental and social problems. However, information exchange between different care providers can be problematic because of the strict national privacy regulations and the unwillingness of care providers to share sensitive patient records (e.g. if a psychiatrist would share patient records with the social housing service it may not be in the best interests of the patient). The Public Health Services are currently developing and implementing a patient tracking system to which the case managers have access. Another weakness of the current system is the relative difficulty homeless people experience to become fully independent. They often stay for a long period in the transitional housing facilities out of convenience for the healthcare providers.

Based on intermediate studies, the experiences of health professionals, and the visible changes in cities in care for the homeless seem to be successful (in terms of quality of life for the homeless and safety in cities). To support the evidence base, the Ministry of Health, Welfare and Sport has initiated a large cohort study (run by an independent research group) to study the efficacy of the person-oriented approach in the G4, which is currently ongoing.

# 6. Health and healthcare outcomes

Many of the health and healthcare outcomes relating to specific measures have been discussed in other sections of the paper. This section does not repeat this information.

In particular other sections of the paper have noted:

- Positive effects of care guidelines, PC cooperatives and inclusion of non-physician professionals in the PC team on patient contact and satisfaction with PC and on reduced hospital care admission (*Section 3 and 4*);
- Improved health benefit for lower income groups from interventions that are area wide, improved residents' socio-economic circumstances and improved education and income (*Section 3.1*);
- Improved healthcare access and coverage from mandatory insurance measures (*Section 3.2*);
- Reduced cost of medicines from preference pricing policies (*Section 4.3*);
- Reduced referral to secondary care and improved management in PC from telemedicine initiatives (*Section 4.3*); and
- Poorer health status, more frequently chronic illnesses in people with low health literacy (*Section 5.2*).

In general, studies have tried to measure the contribution of healthcare in the Netherlands to life expectancy improvements. In the last 50 years the Dutch population gained seven years in life expectancy from 76 to 84 years (Heijink and Post 2014). Studies indicate that more than half of the gained seven years is due to prevention and treatment of infectious diseases, cardiovascular conditions and cancers (Meerding et al. 2007) with the largest gains due to treatment for cardiovascular conditions. Prenatal care, long-term care and diabetes care were estimated to contribute to two years gained in life expectancy (Pomp 2010). There has been a small improvement in the five-year survival of breast cancer and colon cancer patients, estimated at least partly to have been the result of screening programmes at primary care level for breast cancer and colon cancer (Heijink and

Post 2014). Previous sections (particularly *Section 2*) have noted the contribution of innovations in PC to diabetes and long-term care, although direct links to PC are not possible to make.

In general the paper notes the limited measured evidence on impacts of changing practice, particularly in recent reforms. It also notes some efforts underway to gather improved evidence. In any efforts to attribute change to specific areas of the health system, it is important to note that although the healthcare sector has an important contribution to improving health, non-healthcare related policies have also shown to provide valuable contributions to the improvement of (determinants of) the health of the population in the Netherlands. *Appendix A9* summarises policies in the Netherlands where there is sufficient evidence of their effectiveness on improving determinants of health outcomes, including: smoking, physical activity, alcohol consumption, eating habits, air pollution, traffic safety and stress (Storm et al. 2009).

A European study from 2010 showed that strong PC systems governance, workforce development, financing, access, coordination and comprehensiveness have led to lower unnecessary hospitalisations for conditions that can also be treated in PC. People with PC sensitive conditions lose less years of total life expectancy due to these conditions when they are treated in healthcare systems with a strong, coordinated and comprehensive PC services. Strong PC support reduced socio-economic inequalities in self-assessed health. Countries with stronger PC were found to have higher total healthcare expenditures but slower growth in healthcare expenditures (Kringos et al. 2013b).

# 7. Managing and sustaining change in PC

**K**ey stakeholders that drive change in the Dutch PC system bring specific and different interests, exemplified in this section:

- Government is concerned about implementation of legal duties in relation to standards and guarantees on access to and quality of care;
- Health insurers are concerned about their reputation and about cost savings;
- Health professionals have concerns on professionalism, including delivering high quality care; and
- Patients raise concerns on respect for individual needs, health beliefs and freedom of choice.

## 7.1 Collaboration across actors

The healthcare system in the Netherlands is built on self-governing arrangements. The paper has shown how regulatory authority is delegated by the state to various actors, including associations of providers, insurers, trade unions and employers.

As noted in *Section 3.1* government's main role is to oversee, regulate, define the rules of the healthcare system and enforce professional self-regulation, within parameters set in collaboration with non-state actors. The Dutch 'polder model', is characterised by coordination based on negotiations and consensus seeking between the societal partners in healthcare, that is the state, professional bodies, health providers, patients and insurers (Schweppenstedde et al. 2014). When major national health policy changes are being developed, government consults key stakeholders, while also providing room for bottom up initiatives for change.

## 7.2 Primary care provider and professional bottom-up approach

Some of the changes referred to in the paper were initiated and implemented by health professionals. Government and insurers may take these up later, setting the financial and

regulatory framework at national level. Thus, initiatives from an experimental success are turned into sustainable change. For example, GPs organised academic and professional standards, making the Netherlands the first country in Europe (in the 1970s) with an academic chair in Family Medicine. In addition, GPs have set up departments of family medicine in universities, working together with the NHG.

These actions, in their own professional interests, have also contributed to quality of care, guidance and innovation. Based on the knowledge gained from performing scientific research, for example, the NHG was able to develop the first NHG guideline on diabetes care. This was developed on the initiative of the professionals, based on the experienced need to increase the scientific evidence base of their functioning and to improve the quality of care. Since then, many different clinical guidelines followed, as well as IT guidelines and multidisciplinary guidelines. (Examples are available at <https://www.nhg.org/nhg-standaarden>). The process of developing guidelines has itself been standardised. This flow of developments was implemented by professionals out of professional awareness and the desire to deliver high quality care, which resulted in political recognition for this profession. There was transparency on the tasks, roles and content of PC services, which was also important for the government and health insurers. Other PC professions have undergone similar developments (though at a later point in time). For example, there are currently academic chairs in the Netherlands in rehabilitative care, physiotherapy, dietary, pharmacy and nursing (source: key informant interviews).

There is debate on how this voluntary regulation and standard setting by PC professionals has been used in healthcare (source: key informant interviews). There is external pressure from the media, patient organisations and insurers on getting value for money. Guidelines that have been developed by the profession and intended to support professionals in providing high quality care, may be used in this case to penalise health professionals when they deviate from them. Health insurers use the standards in their purchase of healthcare. Health insurers seek to purchase

care based on price, content and quality, to stimulate quality improvement among health professionals and costs savings.

This does not work, however, when patients do not select their health professionals based on their quality of care. At the moment, when patients visit a healthcare provider that is not contracted by their health insurers, they usually get 80% of the costs reimbursed. There is debate on a change to this system that would abolish the freedom of health insurers to reimburse non-contracted healthcare providers, including for PC. This would reduce patient freedom of choice and stimulate decision making based on quality of care. This is a sensitive discussion because patients value their freedom of choice and such access restrictions have never been implemented before in PC (source: key informant interviews).

### 7.3 Financing innovation while monitoring implementation and outcome

There is some latitude within national guidelines for voluntarily innovation in the organisation of PC, with some of these innovations reported in this paper, such as the financial incentives for interprofessional teams and multidisciplinary meetings, or the collaboration with other PC providers. The system of bundled payments described in *Section 4.3* is a further example of a voluntarily scheme motivated by funding incentives for PC providers that both reduced costs and improved quality of care. The first experiments were limited to diabetes care in selected areas, and the approach was rolled out nationwide and to other chronic diseases when it was found to yield positive health and service improvements.

Subsequent pressures, also discussed in *Section 4.3* to address the needs of patients with multimorbidity has led to further pilots funded on limited scale on population management, where multidisciplinary networks receive fixed budgets to care for their patient populations. These budgets are calculated on the expected health needs based on a complex set of patient population characteristics (see *Appendix A8* for further information). When the ministry invites such pilot initiatives they often give the RIVM the task to monitor and evaluate the effects. First results on the outcomes of population management are expected to be published at the beginning of 2015.

The ministry also frequently funds practice-oriented studies (performed by public-private partnerships) through the Netherlands Organisations for Health Research and Development (ZonMw) to stimulate and test innovation. When these are scaled up, the financial, regulatory or organisational conditions are, however, not always adapted, such as in the level of training offered to health professionals to change their traditional way of working.

Many of the recent initiatives to delegate tasks to other PC professionals have been initiated by health insurers to reduce costs, particularly to reduce GP costs by giving nurses more responsibilities. Health insurers have also supported the direct access to allied health professionals, rather than relying on them being referred by a GP for the same reason.

However, insurers do also resist investing in innovations out of fear of financial losses, or out of uncertainty of when financial gains can be expected (source: key informant interviews).

### 7.4 Strong role for patient associations

Patients in the Netherlands are reasonably well organised in patient associations, and have a strong influence on the behaviour of health insurers. The reputation of a health insurance company often depends on public image, which can easily be damaged by bad publicity or voiced patient complaints (source: key informant interviews). Patient organisations play an active part in public policy discussions (e.g. on topics like concentration of care), particularly disease-specific patient organisations. This brings them in as actors for specific interests in the health market: such as when they negotiate for additional health insurance benefits for their specific members and in return convince members to join that health insurance company (source: key informant interviews).

### 7.5 Urgency as a driver of change

At organisational level, principles of new public management are being applied also in the health sector, with targets set that professionals are expected to achieve. Particularly in long-term care, managers from corporate companies are being hired to manage long-term care services. Although such managers often have the best intentions to provide high quality care, due to strict and fragmented financial regulations set at government level, there is little room to optimise quality of care, and more attention is often given to meeting budget expectations and administrative rules. One example is in nursing homes. These received bad publicity over the past few years due to forced cuts in personnel that undermined quality of care.

On a more positive note, it has become common practice for long-term care organisations to employ an innovations manager, although it appears to be challenging for such managers to achieve innovations as they have limited power to stimulate innovation strategies. They have been more likely to succeed when they build trust with health professionals and management, which often takes time to realise.

Urgency seems to be an important condition for initiating change. The negative media attention given to the long-term care sector has, for example, spurred many initiatives by the Ministry of Health, Welfare and Sports to improve incentives for quality of care. These include examples to reduce the administrative burden of long-term care by making the rules more flexible, taking measures to strengthen the role of community nurses as care coordinators, implementing home visits and collaborating closely with GPs. While such initiatives generate positive outcomes, they need to be situated within wider reforms taking place, such as under the decentralised tasks for municipalities and social community teams providing long-term care under the WMO Act, raised in *Section 3*.

## 7.6 Conclusions on learning on PC

The findings of this case study suggest some areas of learning on strengthening PC contributions to health outcomes and value for money that may have relevance to the USA:

- i. *Complementary measures are needed beyond the health sector:* Government supported district approaches on housing, environment and social safety have the highest potential to address social determinants of health and improve health benefits.
- ii. *Universal coverage* is achieved by obliging all residents to enroll with a (basic) private health insurance for which they pay a flat premium (with income dependent contributions) for a pre-defined package, and by obliging health insurers to accept all applications.
- iii. *Financial protection and access* is supported by compensation for premiums and deductibles and special programmes, such as municipal level care to homeless people.
- iv. *Access to out-of-hours care* is improved by integration of hospital emergency departments and PC cooperatives, leading to increased contacts with PC, reduced emergency care contacts, self-referrals to ED, ambulance calls and hospital admissions and high patient satisfaction.
- v. *Investing in cultural competencies of health professionals* is necessary, requiring cultural competencies to be included in medical school training.
- vi. *Continuity of primary care* is stimulated by having a list system for general practitioners and obligations for enrollment with a general practitioner within 15 minutes of homes.
- vii. *Care coordination and efficiency gains* are supported by integrated care through bundled payments managed through care groups, allowing for a single negotiable fee covering a full range of chronic disease care services for a fixed period, with improvements in care coordination and efficiency.
- viii. *Changing provider behaviour* to reduce referral to secondary care can be achieved through incentives and improved PC management with telemedicine initiatives.
- ix. *Quality of care and patient satisfaction* improves when there are clear guidelines and with inclusion of non-physician professionals in the PC team.
- x. *Medicine costs are reduced* by applying reference pricing policies.

Change management in an environment of self-governing arrangements as in the Netherlands is supported by government consultation with key stakeholders on policy development. This is combined with space and support for bottom-up initiatives for change, while noting time lags between ad hoc health professional-initiated pilots and national scale up, including the financial and regulatory framework.

The Ministry of Health, Welfare and Sports has allowed increasing room for PC providers to voluntarily innovate their care organisation. The interests of key stakeholders driving change in the Dutch PC system are thus even more pertinent, including: government interests to set and ensure minimum standards and access to responsible care; health insurer concerns about reputation and cost savings; health professionals' concerns for their professionalism and delivery of quality care and patient and public concerns for individual health and social needs, health beliefs and freedom of choice.

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# Appendices: Further information on key practices

## A1. Features of the ‘District Approach’

In 2007, the Dutch government launched the ‘District Approach’, a broad thematic programme designed to address problems with employment, education, housing and the physical neighbourhood environment, social cohesion, and safety in the 40 most deprived districts in the Netherlands with the following features: (1) each district developed an action plan tailored to its specific local problems and needs for the key determinants; (2) local authorities were given the autonomy to deliver locally tailored activities and be accountable locally; and the national government had no say in the content of the local District Approach, its organisation, choice or implementation of interventions to achieve the local goals set. Implementation of district action plans to tackle each of the social determinants of health commenced in 2008 and is ongoing. Examples of the types of interventions and related activities are outlined below.

**Employment, income and education:** Interventions targeting employment focused on reintegration programs for unemployed residents and stimulating local economic activities. Improving the income of the residents was addressed by debt assistance and tax reductions. For example, coaches individually mentor residents to promote social employment including visiting residents at home to understand their individual circumstances and develop a tailored approach to improve the participant’s social participation or job opportunities. **Educational** interventions focused on preventing teenage dropout from school and developing a system of primary schools that offer extracurricular activities and after-school care – broad based primary schools. This usually includes existing primary schools to change their curriculum, extend opening hours, and even improve their accommodation. Additional school time was spent on educational activities as well as sports and cultural activities, in cooperation with various specialized organisations.

**Housing and the physical neighbourhood environment:** Interventions to improve housing quality focused on replacing the housing stock or renovating existing houses to improve their quality. Examples include demolishing old

houses and constructing new ones. In many neighbourhoods these activities were part of a long-term urban planning program but others were just beginning regeneration, which will take many more years to complete. Interventions to improve the **physical environment** also focused on the neighbourhood layout to promote active transportation, parks and public gardens, or recreation and sports facilities. For example, improving or extending parks to increase the amount and or quality of green space (adding trees or shrubbery) for residents for recreation and socialisation.

**Social neighbourhood environment and safety:** Interventions to improve the **social environment** of the neighbourhood included activities to improve social cohesion, social neighbourhood networks and support, and social capital in the district. For example assignment of social housing was restricted to new tenants who have to spend a minimum number of hours per year making a social investment in the neighbourhood, such as art activities with children, helping with administrative work, or mentoring young people from disadvantaged backgrounds. **Safety problems** were addressed by interventions that tackle conflicts and nuisance, burglary, or traffic safety, and increase tidiness. For example, individual youth programs including individual counselling about meaningful activities like schooling or employment to coercive measures or legal repercussions.

Source: Droomers et al 2014:123

## A2. Effectiveness of policies with high potential to contribute to reducing health inequalities

In 2009, the National Institute for Public Health and Environment evaluated the effectiveness of 153 policy resolutions related to tackling health inequalities, that were identified in the 2008 national budget of the government (Schrijvers and Storm 2009). *Table A2* shows the policies with the highest potential to contribute to reducing health inequalities.

**Table A2: Policies with the highest potential to contribute to reducing health inequalities.**

Policy	Aim	Effectiveness in achieving policy aim
Reducing differences in socioeconomic position, e.g. in education, occupation or income		
Education for pre-school children	Prevention/reduction of language problems of children	Medium positive effect
Stimulating 'comprehensive schools' [brede scholen] that have under the same roof a primary school, childcare, sporting clubs, cultural and welfare organisations. Such schools are for children and for parents and residents of a local neighbourhood.	Increasing opportunities for the development of children	Effectiveness not (sufficiently) studied yet
Reducing early school dropout	Reducing early school dropout	Effectiveness not (sufficiently) studied
Financially supporting low income families	Increasing the participation in sports and cultural (social) activities	Effectiveness not (sufficiently) studied yet
Reducing negative impact of health problems by education, occupation and income		
Providing support to youth in relation to absenteeism due to illness	Preventing early school dropout due to illness	Effectiveness not (sufficiently) studied yet Medium positive effect
Health intervention targeting individuals receiving state benefits	Reducing health related barriers to returning to the labour market	
Improving particular health determinants among low socioeconomic groups, like housing, job conditions and life style		
Establishing play and sports facilities, hiking and bike paths and green public spaces in neighbourhoods	Improving living environment	Medium positive effect
Neighbourhood-focused interventions to promoting health lifestyle	Tackling determinants of unhealthy lifestyle	Medium positive effect
Improving indoor conditions of houses	Improving health quality of housing, in particular to prevent high concentrations of carbon monoxide in homes	Medium positive effect
Health promotion in schools	Improving healthy lifestyle	Medium positive effect
Health promotion at the workplace	Improving healthy lifestyle	Medium positive effect
Improving the accessibility and effectiveness of health care for lower socioeconomic groups		
Adequate supply of accessible care in deprived neighbourhoods	Increase accessibility of primary care facilities in deprived neighbourhoods	Effectiveness not (sufficiently) studied yet
Utilize immigrant care consultants in primary care	Improving the effectiveness of primary care for immigrants	Medium positive effect
Early detection of developmental and behavioural problems in youth	Prevention of developmental and behavioural problems	Medium positive effect

Source: Reproduced under creative commons licence from Schrijvers and Storm 2009:76.

### A3. Public Health Services

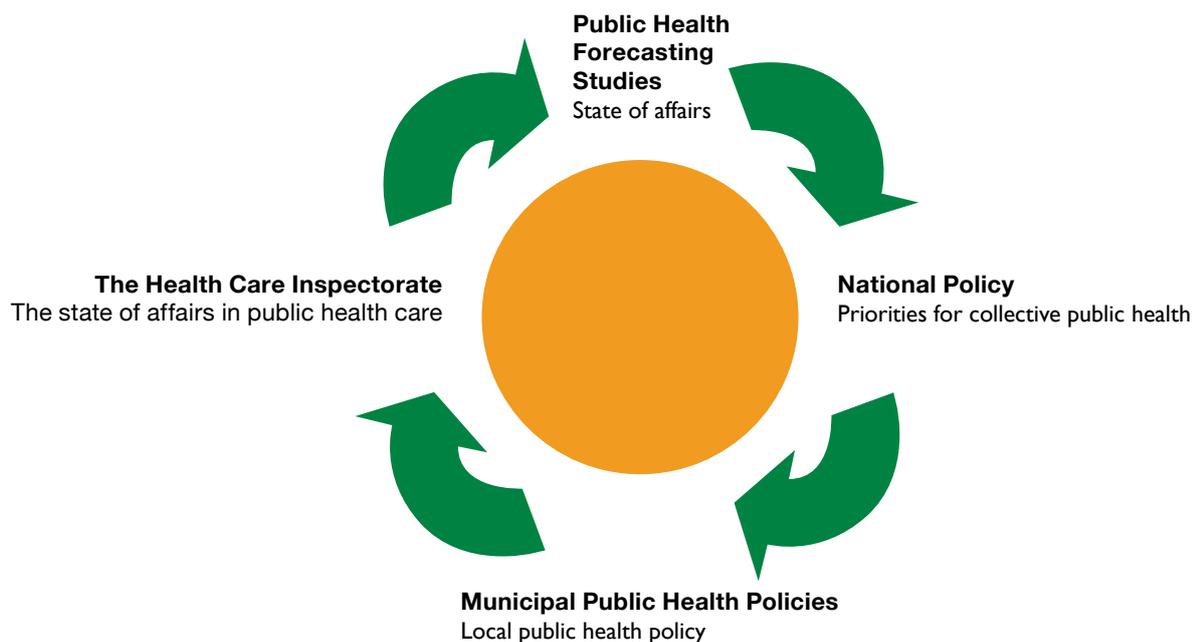
**Four yearly public health cycle.** Each of the municipalities should have a Public Health Service Organisation (GGD) (the Act on Public Health (Wpg; Wet Publieke Gezondheid, 2008) to provide public health services (as stipulated in the Act). Currently (2014) there are 25 Public Health Service Organisations, covering all municipalities. The Act only provides general guidance, meaning municipalities have

significant policy latitude in developing specific actions for most services except youth care and infectious diseases, allowing organisation of services responsive to the local context and needs. Every four years, all municipalities are legally required to develop and publish their planned Health Promotion Activities for the upcoming four years in a municipal public health policy. These planned

activities are based on the national public health policy set by government, according to the four-year public health cycle (see *Figure A3*). The government recently changed to Public Health Act to strengthen the public health cycle to increase implementation of national policy. Responsibility for measuring the performance of public health has progressively been shifted from the Health Care Inspectorate to the GGDs (Loketgezondleven.nl, 2014). The

Municipal Committee of Mayors and Aldermen [College B en W] is obliged to consult the GGD for advice in decisions related indirectly or directly to public health issues. The 'PGV Nederland' is the national organisation representing the interests of all regional GGDs, aiming to provide a platform for all GGDs to exchange experiences, coordinate activities and provide support.

**Figure A3: Four-year public health policy cycle**



Source: Reproduced with permission from RIVM from Loketgezondleven.nl Bilthoven: RIVM, Available at: <http://www.loketgezondleven.nl>

#### Overview of executive organisations in public health.

The government's responsibility for coordinating certain collective preventive care tasks has been decentralized to the RIVM, including the prevention of infectious diseases and population health screening programmes. RIVM supports health professionals and policymakers who are active in the area of health promotion and preventive care at local level. Every four years RIVM publishes an overview in trends in public health based on national epidemiological and forecasting data. The national government uses this overview as input for the development of its four-year national public health policy (see <http://www.loketgezondleven.nl/algemeen/english/>). There are also a number of national organisations and knowledge centres that are focused on a specific public health theme for example the National Institute for Sports and Physical Activity and the Dutch Knowledge Centre for Child and Adolescent Psychiatry. Several of these centres are within RIVM, for example the Centres for Healthy Living and for prevention of infectious diseases. Also, there are national foundations and organisations with a specific disease/health theme

focus such as the Dutch Cardiac and Kidney Foundations. These different organisations and knowledge centres play a central role in health promotion and prevention, and are responsible for informing and advising citizens, developing interventions, performing research and/or gathering expertise. They receive (partial) government funding, either directly or via the Netherlands Organisation for Health Research and Development (ZonMw) (Meijer 2011).

**Public health services (GGD).** Given the policy freedom that municipalities have for their public health service content and organisation there is not one picture that can be shown. To illustrate the work of GGDs, however the GGD in Amsterdam's has been used as an example and provides the following services (GGD Amsterdam 2006):

- **Ambulance** transportation in cooperation with a private transportation company and **emergency** medical assistance is obtained by calling a national emergency number linked to a national incident room that coordinates with other emergency services (police, fire department and hospitals).

- **Youth care** where all children aged 0-19 years receive free basic childcare. Parents receive age-specific information to support their care for their child and can take children between the ages 0-4 years regularly to a child health centre for immunisations, medical check-ups and information. In primary school, special education and secondary education a school physician checks the child's physical and mental condition and behaviour. Each district has parent and child centres, which employ a midwife, maternity assistant, parenting support services and child care services, and children from families with complex problems such as child abuse or neglect are targeted through the Public Health Services' Youth Safety Net.
- **Wider environment:** the Hygiene and Inspection Department inspects on the basis of national guidelines hygiene on locations at risk, such as day care accommodations for children. It also develops its own guidelines such as in the area of settings where tattoos and piercings are provided, to prevent infections like hepatitis B and HIV/AIDS. A Pest Control Service commissioned by institutions, businesses, and private individuals assists in the extermination of animals causing nuisance or danger to public health. The Medical Environment and the Air Research Departments investigate, report and provide advice on the quality of the indoor and outdoor environment.
- **Medical care:** the Public Health Service employs: forensic doctors and nurses to provide autopsies and care in case physical or mental problems; and occupational health physicians to assess parking permits and supplementary benefits for people with a disability. In terms of *infectious diseases*, including tuberculosis, diagnosis, vaccinations, travel advice and treatment are provided, including STD Outpatients' Clinics that provide free advice and treatment for individuals. This area of the GGD also conducts 'source and contact' investigation when infections occur, and coordinate care in case of outbreaks. There is also a Regional Laboratory, which is used by all medical professionals in the region.
- **Specific population services:** In collaboration with GPs the Public Health Service also provides care to drug users such as the provision of methadone through mobile buses, or care (condoms, clean needles, free vaccination for Hepatitis B and medical care) via the Outpatients' Clinics for Drug Addiction Assistance. The Ambulatory Medical Team and Outpatients' Clinics also provide wider care services, for example by mediating during an admission to hospital or organising accommodation for drug users who are homeless (boarding houses). Sex workers who use drugs or alcohol also receive support from the ambulatory service teams. The Support Centre for Sexual Violence provides prevention programs and coordinates action related to sexual abuse and violence.
- **Social care** such as services to respond to mental distress, nuisance issues and for people who are homeless. It includes a telephone Complaints Desk for Care and Nuisance and the Safety Net and Advice Department includes health professionals such as psychiatric nurses who handle complaints and collaborate closely with the police. Care for people who are homeless is provided by the Ambulant Medical team, including treatment, holding surgery sessions and referring – see above and the patient lens example of Ben in *Section 3.5*
- **Research and education.** Health promotion education is provided for example at secondary schools or to targeted populations, such as combating obesity among Turkish and Moroccan women. The Public Health Service studies the effectiveness of its own executed health promotion programs and other related issues. Many GGDs have long-term structural scientific collaborations with universities, in joint so-called academic workshops. For instance in Amsterdam, this collaboration is with the Academic Medical Centre (AMC). This increases the scientific basis of research, and the usability for practice (GGD Amsterdam 2006).

#### A4. 2006 Health care system reform

Before 2006 the Dutch health insurance system consisted of a mixture of mandatory public insurance (sickness funds) covering 67% of the population and voluntary private insurance for the remaining 33% of the population. The health care reform of 2006 introduced a system of regulated market competition through the Health Insurance Act (see *Figure A4*). The rationale was to contain rising health expenditures, to reduce inequity in the system (sickness funds versus private health insurance), and to increase transparency. All citizens are now obliged to enrol in mandatory private insurance. Prior to 2006, there had been several attempts at integrating social health insurance and private health insurance into a single scheme e.g. the 1987 the 'Dekker report' recommended the introduction of managed competition. Smaller incremental reforms via pilots in 1990s paved the way for the reform of 2006 with health insurers and providers 'preparing' for the reform by increasing in scale and mergers.

**Figure A4: A comparison between the pre 2006 and post 2006 insurance system**

OLD (-2005)		Compartment	NEW (2006-)
Private complementary VHI		3 <sup>rd</sup> Compl. care	Private complementary VHI
Sickness funds	Private insurance	2 <sup>nd</sup> Curative care	Basic health insurance (Zvw)
<ul style="list-style-type: none"> <li>• annual income &lt;€29,493 (compulsory)</li> <li>• 63% of population</li> <li>• 85% income related,</li> <li>• 15% income unrelated flat rate</li> <li>• Employee 1,25% (€239-390 per year for 2003), employers 6.75%</li> </ul>	<ul style="list-style-type: none"> <li>• annual income &gt; €29,493 (voluntary)</li> <li>• 30% of population</li> <li>• risk related</li> <li>• premium level: set by insurer except "standard policies" for €1824 (students €440) per year</li> </ul>		
Long-term care: Exceptional Medical Expenses Act (AWBZ)		1 <sup>st</sup>	Long-term care: Exceptional Medical Expenses Act (AWBZ)
<ul style="list-style-type: none"> <li>• Compulsory, 13.45% of taxable income</li> </ul>		Long-term care	<ul style="list-style-type: none"> <li>• Compulsory, 12.55% of taxable income</li> </ul>

Source: Reproduced with permission from NIVEL from Schäfer W (2011) 'General introduction to health care structure,' Presentation May 2nd 2011 to the Leyden Academy on Vitality and Ageing, *Structure and financing of Healthcare*. Nivel: Utrecht.

**Key principles.** The 2006 reform made it mandatory for all citizens in the Netherlands to buy individual private health insurance, providing a standard benefits package. Health Insurers now act more as contracting parties towards providers demanding effective, high-quality services, and providers are now expected to be more performance- and demand-oriented. The mandatory deductible was initially €150 (204 USD) per person (18+) in 2008, but rose rapidly to reach €360 (489 USD) annually in 2014. More than 40% of the population (mainly people on low incomes) relied on premium subsidies from the government in 2011. While the subsidies are a major administrative burden in terms of cost and complexity, they make health insurance affordable for everyone. Since 2009 health insurers have had more freedom to negotiate fees for some specialist disciplines and primary care services, through selective contracting but only for additional entitlements beyond the basic package. Risk equalization however ensures that health insurers can afford to accept all people, and health insurers are compensated for high-risk people via a risk-adjusted capitation formula (see *Section 3.2* and *Appendix A5*).

The **basic benefits package** is defined by law, and in 2014 includes the following services: specialist mental health care (GGZ), including treatment by a psychiatrist; care by GPs, medical specialists and obstetricians; hospital stay; medication; primary mental health care; support equipment for treatment, nursing, rehabilitation, care or a specific restriction (not excluding simple walking aids);

physical therapy <18 years; (limited) physical therapy and exercise therapy from the 21st treatment for certain chronic conditions; pelvic physiotherapy at urinary incontinence to the 9th treatment; speech therapy and occupational therapy; dental care (control and treatment) for children up to 18 years; dental surgical care (oral surgeon) and dentures; fluoride treatment for children < 6 years; patient transport; maternity care; up to 3 hours diet advice; the fee for 3 IVF treatments; dyslexia care; and smoking cessation programmes. The full list of entitlements is accessible at: <http://www.rijksoverheid.nl/onderwerpen/zorgverzekering/vraag-en-antwoord/wat-zit-er-in-het-basispakket-van-de-zorgverzekering.html>

**Initial evaluations** found the reform a success in the sense that no political party or interest group called for a return to the former system. There is also broad support for citizens having the option to choose another insurer or health insurance contract annually. Other positives include: a good system of cross-subsidies ('solidarity') is in place; price competition among insurers; increasing information about price and quality of insurers and providers of care; and increasingly insurers are purchasing care, and quality of care is on top of the political agenda. However, there are no substantial changes in quality of care noticeable compared to before the reform e.g. no major differences in quality trends in care compared to neighboring countries. Also since 2006 there have been no reported substantial

changes in accessibility and macro costs have been rising more sharply.

Possible explanations of the limited evidence of effects include: (1) the necessary conditions for regulated competition are not yet fully in place (e.g. not sufficient information on quality of care, consumers do not switch insurers much, insurers still have limited incentives to purchase care on the basis of quality criteria, there is still a lot of government regulations limiting the freedom to increase market competition), so it is not yet clear whether intended effect have been achieved; (2) quality still plays a limited role in the health care purchasing process with price still the deciding factor; (3) information and transparency about quality is essential and is not yet sufficiently available and competition solely on a price basis carries risks; (4) health care reforms are a long-term process, requiring continuous evaluation and monitoring of the effect on quality, accessibility and costs; and (5) about 1% of the population are still uninsured plus 319,000 people (2010) didn't pay their premiums for more than six months. Since 2011 it has become possible by Law for the government to deduct the insurance premium from defaulting workers' wages, in addition to giving a premium fine.

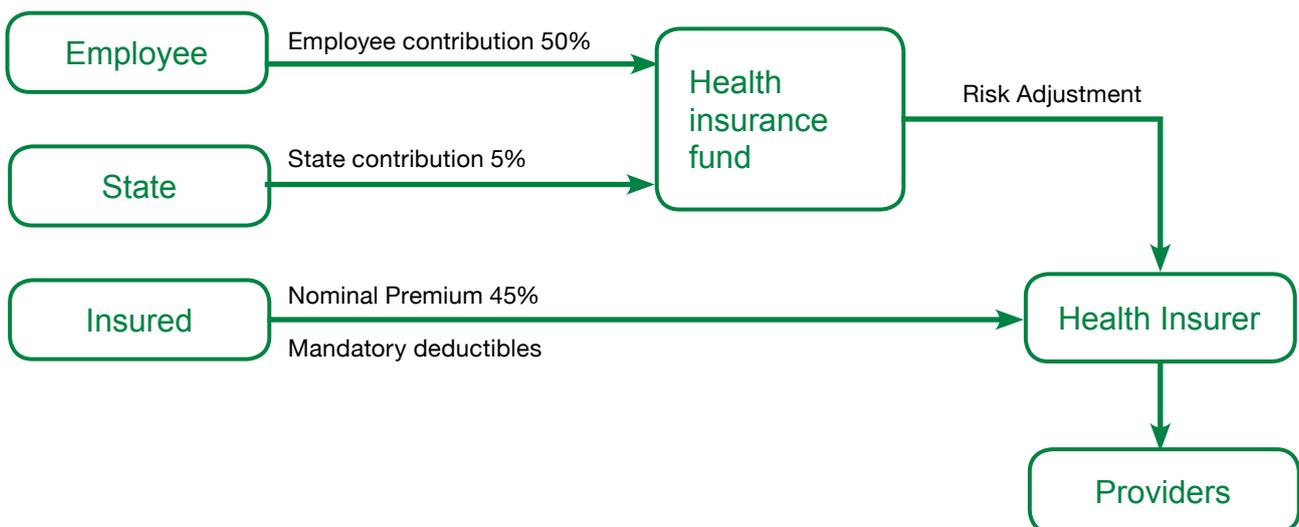
Sources: Schäfer et al. 2010; Westert et al. 2010; Okma et al. 2011.

## A5. Risk adjustment system for health insurers

The administration and provision of basic health insurance is delegated to private health insurers who are funded by: a nominal premium directly received from clients (45%); a contribution the Health Insurance Fund (HIF), which pools the income-dependent employer contributions (collected by the Tax Office) (50%); and the state-contribution (5%) (see *Figure A5*).

The system of risk adjustment for the Health Insurance Fund contribution, aims to prevent preferred risk selection in the provision of basic health insurance and to promote fair competition between insurers. The insured pay a nominal premium (the same for all insurers in the Netherlands) and an income-related part of the premium, set by the government. Health insurers are financially compensated for insured persons with unfavourable risk profiles and potentially high costs (e.g. older people, chronically ill). Annually all insurers receive an ex ante risk adjustment contribution from the HIF based on the expected expenditures and calculated on the basis of age, sex, region, pharmaceutical use, diagnoses, socioeconomic status, and income. At the end of the year, health insurers receive an ex post compensation correcting for insufficient ex ante risk adjustment. To reduce ex post compensations, the government is working to improve ex ante risk predications (Ministerie van VWS, 2007).

**Figure A5: Simplification of financial flows under the Health Insurance Act**



Source: Schafer et al. 2010: 80 (reproductive under creative commons)

## A6. Selected avoidable causes of death and accompanying interventions

Diagnosis code (ICD9)	Description	Treatment
042-044 153, 154	HIV Bowel cancer	Treatment with antiretroviral medication Combination of specific treatment and improved management of illness process by screening
174	Breast cancer	Mammography screening and chemotherapy
180 186	Cervical cancer Testicular cancer	Screening programmes Surgical progress and adjuvant therapy (cisplatin)
201 204-205	Hodgkin disease Lymphoma leukemia	Combined chemotherapy Improved treatment and management of illness process and complications of leukemia patients aged below 45 years
390-398	Rheumatic heart disease	Combined treatment; antibiotics and advanced surgical techniques
401-404 410-414	Hypertension Ischaemic heart disease	Antihypertensive drugs Combination of specific treatments (in coronary care units) and improved management of illness process (beta blockers)
428-429	Heart failure	Combination of specific treatments (ACE blockers) and better management of illness process
430-438 531, 532 584, 585, 586 745-746	Cerebrovascular disease Ulcer Kidney failure Genetic heart disease	Treatment of hypertension H2 blockers Kidney transplant and dialysis Improved surgical techniques, like 'Deep hypothermia' and 'circulatory arrest' (DHCA)
760-779	Perinatal disorders	Various innovations like special units in hospitals for newborns

Source: Van den Berg et al. 2014: 222; Plug et al. 2011 (reproduced under creative commons).

## A7. The 'Primary Focus Program' run by the Netherlands Organisation for Health Research and Development (ZonMw)

The Primary Focus Program has received total funding of €16,625,000 (22,591,722 USD) for 2009-2013 and funded 67 projects. Examples of 2 funded successful projects are provided below.

**Project 'Kapstok': Collaboration between primary care and social care in Emmen.** The project partners are the General Practice Cooperative from Southeast Drente, Icare homecare, social care Sedna, Municipality of Emmen, Veranda Advisory Group. The project contributed to setting informal care on the agenda of primary care meetings and stimulated collaboration between PC professionals, social care workers/informal care advisors, and the municipality providing support for informal carers in the city Emmen. Results include PC providers giving greater attention to informal carers, including more frequent referrals to informal care consultants and working more in collaboration with the informal care department of the municipality. Seventy-five percent of the surveyed primary care providers reported that this resulted in improved quality of supporting informal carers. At the national level, the results of the project have been adopted by national organisations that will and are being used to improve the Toolkit 'Information

care in primary care' which was developed by the National General Practice Federation (LHV) (ZonMw 2014).

**Project 'SOLK': Health organised by primary care.** The project partners include four primary care centres in Overvecht (part of City of Utrecht), Agis Health Insurer, Public Health Service (GGD), Comulus welfare organisation, Indigo, Clientinterest Utrecht, Readlijn and involvement of 31000 inhabitants of the city of Utrecht. The project resulted in the development of an integrated care approach for citizens with complex problems provided at the neighbourhood level. One outcome has been strengthened collaboration with health care centres and partners in the neighbourhood. Also patients re positive about the initiative, experiencing coherent care, it is well organised and professionals seem to speak the same language (ZonMw 2014).

## A8. Population management

In early 2014, the Dutch Ministry of Health, Welfare and Sports designated nine initiatives as pioneer sites to reorganise health services with the aim of promoting intersectoral collaboration at regional level. All initiatives were selected because of their focus on the health needs of a specific population. The project aims to improve population health and quality of care and to control health care costs. The interventions will be implemented from 2014 onwards with monitoring by RIVM to enable evaluation. The project

will focus on understanding the implementation process, the determinants of successful population management in the Dutch context, and the impact of the initiatives in terms of population health, quality of care and health spending. Currently all nine sites are still developing their project plans. Key stakeholders include hospitals, health insurers, and care providers such as local government. There are however no definitive contracts in place yet between the health insurers and providers of care. The target population at each site is geographically defined (including all citizens living in one or more municipalities) or based on the catchment area of specific care providers or based on enrolment in a health insurance program. A set of parameters and themes with accompanying interventions to inform the learning goals of the project have been established for each pioneer site, with varying scope. For example, some interventions will

focus on intermediate goals such as substitution of care (e.g. from secondary to primary care) and others on improved preventive care (Drewes et al. 2014:4)

### A9. Policies outside the health care sector with the highest evidence base for their effectiveness on improving determinants of health

*Table A9* summarizes Dutch policies that have demonstrated effectiveness in improving the key determinants of health, including: smoking, physical activity, alcohol consumption, health eating habits, air pollution, traffic safety, and stress (Storm et al. 2009).

**Table A9: Dutch policies that improve the key determinants of health**

Policy area	Health determinant: policy measure
Communication / awareness	<i>Smoking</i> : Education in schools and at work; <i>Physical activity</i> : Education in schools, providing options <i>Alcohol</i> : Education within families <i>Eating habits</i> : Education within families <i>Air quality</i> : specific advice for indoor environment <i>Traffic quality</i> : Media campaigns <i>Stress</i> : social and emotional skills training of families (support upbringing/nurture)
Financial / subsidies	<i>Smoking</i> : Financial compensation for people ceasing to smoke <i>Physical activities</i> : Making it financially attractive for employees to cycle to work <i>Air quality</i> : providing financial support for filtering black smoke, and financially supporting a clean shipping industry <i>Stress</i> : Improving office spaces
Financial / taxation	<i>Smoking</i> : tobacco taxation and prices <i>Alcohol</i> : alcohol taxation and prices
Increasing supply and dispersion	<i>Physical activity</i> : more gymnastics education in schools, hiking and cycling paths, attractive school courts for physical activities, facilities that people can reach by foot or bicycle, offering physical activity programs at work <i>Eating habits</i> : production of food by industry, offering sodas and snacks at schools through machines they need to pay for <i>Alcohol</i> : Alcohol controls in traffic Air quality: Bicycle friendly cities <i>Safety</i> : Control of traffic regulations, local traffic regulations, education programs on safety for the older people <i>Stress</i> : Making healthy work schedules for personnel, improving work related factors, relaxation exercises
Limiting supply and dispersion	<i>Smoking</i> : cigarette-free schools, cigarette free offices <i>Alcohol</i> : limited sales points and permits
Legal / prohibition	<i>Smoking</i> : smoking ban at schools and work places <i>Alcohol</i> : Controlling limiting hours for selling alcohol and setting minimum age limits to buying alcohol <i>Air quality</i> : Reducing traffic emission (prohibiting certain trucks from driving through cities; having speed limits of 80km/h near built environments), guaranteeing high quality houses <i>Safety</i> : safety measures in public swimming pools, vehicles measures, traffic legislation

Source: Reproduced under creative commons licence from Storm et al. 2009:37.



